REAUTHORIZATION OF THE PATENT AND TRADEMARK OFFICE, U.S. DEPARTMENT OF COMMERCE

HEARINGS

BEFORE THE

SUBCOMMITTEE ON INTELLECTUAL PROPERTY AND JUDICIAL ADMINISTRATION

OF THE

COMMITTEE ON THE JUDICIARY
HOUSE OF REPRESENTATIVES

ONE HUNDRED SECOND CONGRESS

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REAUTHORIZATION OF THE PATENT AND TRADEMARK OFFICE, U.S. DEPARTMENT OF COMMERCE

WEDNESDAY, MAY 8, 1991

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON INTELLECTUAL PROPERTY
AND JUDICIAL ADMINISTRATION,
COMMITTEE ON THE JUDICIARY,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:05 a.m., in room 2237, Rayburn House Office Building, Hon. William J. Hughes (chairman of the subcommittee) presiding.

Present: Representatives William J. Hughes, Carlos J. Moorhead, Howard Coble, F. James Sensenbrenner, Jr., and Craig T. James.

Also present: Hayden W. Gregory, counsel; Elizabeth R. Fine, assistant counsel; Michael J. Remington, assistant counsel; Veronica L. Eligan, staff assistant; and Thomas E. Mooney, minority counsel.

OPENING STATEMENT OF CHAIRMAN HUGHES

Mr. HUGHES. The Subcommittee on Intellectual Property and Judicial Administration will come to order. Good morning. Today this subcommittee is conducting the first of 2 days of oversight and reauthorization hearings on the Patent and Trademark Office in the U.S. Department of Commerce.

The sound functioning of the Patent and Trademark Office is as important as the substantive rules of patents and trademarks to assure that we do encourage innovation and protect American technology. PTO's statutory authority expires at the end of September of this year, and Congress must act to reauthorize the agency to assure its continued operation and service to the public.

In certain respects, our task is made more difficult this year than it has been in the past because of deficit reduction provisions contained in the Omnibus Budget Reconciliation Act of 1990. This legislation, based on an agreement with the administration, substantially increased certain patent fees and almost completely eliminated taxpayer support for PTO. While cooperating with the budget agreement, the committee incorporated safeguards to ensure PTO's continued accountability to Congress and to the public, notwithstanding the fact that almost all of its funds would come from user fees.

Now we face the difficult questions of how a user fee funded agency should be administered, how to equitably distribute user

fees, and how to protect the interests of the public. The Patent and Trademark Office is currently in the hands of a very capable and knowledgeable Commissioner, Harry F. Manbeck, as well as a highly professional and dedicated staff. This does not, however, relieve Congress of its responsibility to set forth the principles for the Office's fair and efficient administration.

The administration has proposed a 2-year reauthorization, which Mr. Moorhead and I introduced by request on March 22, 1991. This bill, H.R. 1613, contains the following features:

First, it would authorize appropriations and approve a fee structure to fund a budget of $462 million in fiscal year 1992 and $555 million in fiscal year 1993. PTO's proposed budget for fiscal year 1992 represents an increase of $110 million in 1992 over the fiscal year 1991 budget, an increase we will review with care.

Second, it would eliminate the small entity fee structure for all user fees paid after the initial filing fee. This would dramatically increase fees paid by independent inventors, universities, and small businesses, and I fear that it could deter important innovations.

Third, the bill would expand the Commissioner's authority to raise certain fees, and, finally, would allow the Commissioner to use trademark fees for activities other than the processing of trademark operations.

I would like to state at the outset of these hearings that the committee will consider the administration's proposal, but we will subsequently draft our own reauthorization legislation, incorporating those provisions that we believe to be in the best interest of the public. The testimony of our witnesses this morning, and the testimony of Commissioner Manbeck and Representative Ron Wyden tomorrow, will be of enormous assistance to the committee in developing reauthorizing legislation for this important agency.

The Chair recognizes the distinguished gentleman from California.

Mr. MOORHEAD. I'd like to welcome our witnesses this morning. We've had to make a substantial adjustment over the past two decades from a primarily taxpayer-funded, outdated, declining patent system to an almost 100-percent user fee funded, updated, modernized, and efficient patent system.

Although in the early 1980's I believe we did the right thing for the betterment of the system, it has not been easy. Users and practitioners have resisted the evolution all the way. Our job in Congress is to do what's best for the common good. It's tough when you raise fees and rates and I can't blame people for not liking it, but it's necessary to do not just what's best for the user or what's best for the patent lawyer or the corporation or the Patent Trademark Office, but try to do what's best for everyone concerned. If it helps one, in the long run it's probably going to help all.

But, in the early 1980's we directed the PTO to modernize and computerize its 25 million documents and come into the 20th century. Nobody supported that directive. When we substantially increased the fees in the early 1980's, very few supported that directive. But, if we hadn't taken those steps a decade ago, we would be so far behind the European and Japanese patent offices, we would never be able to catch up. That's not the case today. Al-

though we have our problems and plenty of work to do, I believe we are about to surpass all of the other patent offices in the quality of patents issued. This turnaround was accomplished through the efforts of many people, some of whom are in this room this morning, including the efforts of this subcommittee.

Mr. Chairman, I believe that we are coming close to achieving the goal we announced back in 1980 of making our patent system a model for the world. However, today we are at an important crossroad as to whether we continue to move forward or do we stop? Mr. Chairman, I hope we can agree to quickly move forward and take legislation to the floor as soon as possible.

Thank you, Mr. Chairman.

Mr. HUGHES. I thank the gentleman.

I ask unanimous consent that the subcommittee permit the meeting today to be covered in whole or in part by television broadcast, radio broadcast, and/or still photography, pursuant to rule 5(a), the rules of the committee. Any objection?

[No response.]

Mr. HUGHES. There being none, so ordered.

It is indeed a pleasure to welcome our first witness this morning, the Honorable Pauline Newman, a judge on the U.S. Court of Appeals for the Federal Circuit. Judge Newman started her distinguished career as a scientist. She then became a lawyer and developed an expertise in the area of intellectual property. She made notable contributions to the improvement of our intellectual property system before assuming the bench and has advanced our jurisprudence since joining the court in 1984.

Judge Newman, we are grateful to you for sharing your expertise with us today. Your written statement, which we've read, will be part of the record in full, and we hope you can summarize for us.

I might indicate also, for all the other witnesses and those attending, that we will be breaking at about 10:50 a.m. for a joint session of Congress, so we'll attempt to complete as much testimony as we can and then we'll come back at about 11:45 a.m. to finish the testimony before we break for lunch.

Judge Newman, welcome.

STATEMENT OF PAULINE NEWMAN, JUDGE, U.S. COURT OF APPEALS FOR THE FEDERAL CIRCUIT

Judge NEWMAN. Thank you, Mr. Chairman. I welcome the invitation to appear this morning. As in my written testimony, which I will summarize, my purpose is, very briefly, to put into historical perspective the system of governmental grant of patents, and particularly the role of the Patent Office as administrator of these grants.

The patent law was one of the first that President Washington asked the first Congress to enact. It still, as history shows, is very well—in fact, ideally—suited to an industrial culture that's built on private enterprise. But its roots are in the principles of the American Revolution, the belief in the natural right to property and the fruits of one's intellectual efforts.

The idea of controlling the right to profit from a new invention, for a limited time, was not new. In ancient Sybarus, a Greek colony

at the foot of Italy, 600 years before Christ, a cook who created a new recipe, a confection, was granted its exclusive use for a year.

The Venetians had an active patent law. Its statutory provisions included novelty within the Venetian commonwealth, the requirement for reduction to practice—the term patent lawyers use to mean that "it's more than a mere idea,"—a limited term, provision for license, and remedies for infringement, including criminal remedies. History records the application by Galileo in 1594 for a 20-year exclusive right, a longer than usual term, for a new pump that he invented, as he described it, "with great labor and expense."

In 1624, when James I agreed to eliminate the grant of monopolies as favors of the king, there was an exception for inventions. In France, at the time of the French Revolution, one of the earliest enactments of that tribunal was a patent law, on the basis that, "It would be a violation of the rights of man in their essence not to regard an industrial discovery as property of its author."

On this continent the colonial legislatures authorized patent grants as early as 1641 in Massachusetts. The securing of the exclusive right to one's "writings and discoveries," in the words of the Constitution were seen as the affirmation of a natural right. Chief Justice Marshall wrote that patents fulfilled "the great fundamental principles of right, and of property."

History ascribes to James Madison the recognition of a need for a Federal patent system. In his vision, the grant of an exclusive right to the profits of invention would encourage practical application, while the new ideas thus encouraged would add to human knowledge. In the Federalist, Madison wrote that in the patent and copyright clause, the public good fully coincides with the claims of individuals.

Imagine that extraordinary period in our newborn Nation when Thomas Jefferson, then Secretary of State, examined every application for patent. During the first 3 years of his tenure some 300 patent applications were filed and 57 patents were granted. Jefferson remarked of this experience, "The law has given a spring to invention beyond any conception."

When Jefferson ran out of time to examine patent applications himself, he established a registration system, in 1793. He explained that what he called the maturing of the process should be turned over to the judiciary, for the courts to develop the laws of patentability and enforcement in an evolutionary way, in the common-law tradition. Indeed, that is what happened.

The U.S. Patent Office was established in 1802, in the State Department. I think this was the first administrative agency. An examination system, very much like the present one, was introduced in 1836. The industrial revolution blossomed, and patent filings increased from some 500 a year in the 1840's to 7,000 a year in the 1860's. It's now over 150,000 a year. President Lincoln, himself a patentee, described the system as adding "the fuel of interest to the fire of genius."

The technological and research world of today is quite different from that of even 50 years ago, yet no more useful foundation for technology-based industry has appeared in any society. It's quite interesting to observe the search in the developing countries for in-

novation incentives: Rarely does history have a chance to repeat itself, or do we have a chance to learn from it.

The path in this country has not been even. Although inventors, investors, and industry in general have understood the factors underlying commercial risk-taking in new technology, history shows that these factors were less well understood by economists and even by judges. The subjective judicial determination of what was patentable contributed to the unreliability of the patent grant as a basis for investment. I suppose this will always be with us.

An effective patent system not only aids industrial development, it also enlarges the body of knowledge by the public disclosure that's required of patentees. I like Jefferson's words, "He who receives an idea from me receives instruction himself without lessening mine; as he who lights his taper at mine receives light without darkening me."

Much of today's technological information appears only in patent documents. The Patent and Trademark Office serves a vital function in disseminating this information.

The core of an effective patent system is its administration by the Patent and Trademark Office. As technology becomes more complex, increasing reliance must be placed on the expertise of the patent examining corps. With the increasing costs of research and commercialization of new products and processes, it's of critical importance that a presumptively valid patent be granted. The patent should be, it must be, a reliable basis for commercial risk and investment when the patent is issued, not years later when it is litigated. Although the Federal circuit has added a certain stability to the law, we still have a way to go.

A critical value of this stability is the increased reliability of the product of the Patent Office. A patent that is fairly presumed valid, as the statute states it must be, is a powerful resource—as an incentive, and as an instrument of justice.

Mr. Chairman, I know that there are difficult questions on the agenda for these hearings. I welcome the chance to express my personal views on the importance of these issues to the Nation. I would be glad to answer your questions.

Mr. HUGHES. Thank you, Judge.

[The prepared statement of Judge Newman follows:]

SUMMARY STATEMENT
May 8, 1991

PAULINE NEWMAN

Judge, United States Court of Appeals
for the Federal Circuit

Foundations of the United States Patent System

The governmental grant of patents for inventions is authorized in the Constitution. It was one of the first laws that President Washington asked the First Congress to enact. Although the patent law is well suited to an industrial culture that recognizes and encourages private enterprise, its philosophic and economic roots are in the principles of the American revolution. It is a system of property right, a simple system that recognizes the right of creators to the products of their ingenuity, while providing a natural incentive to investment and innovation. Concurrently it adds to the store of scientific and technologic knowledge, often providing information that is not available elsewhere.

Thomas Jefferson, as first Secretary of State, examined every patent application filed under the 1790 Patent Act, granting fifty-seven patents out of several hundred applications. A formal Patent Office was established in 1802, and an examination system was initiated in 1836, very much like the present one.

The patent system is a foundation of today's high-tech industry, but the core of the patent system today is its administration by the Patent and Trademark Office. A patent is far more useful as a basis for commercial risk and investment if patent validity is reliably established when the patent is issued, not years later when it is litigated. It is important to the nation to have an effective patent incentive, for every stage of applied research and technologic advance is benefitted.

STATEMENT to the

Subcommittee on Intellectual Property and
Judicial Administration

Committee on the Judiciary

United States House of Representatives

Hearings on the Patent and Trademark Office

May 8, 1991

* * *

PAULINE NEWMAN

Judge, United States Court of Appeals
for the Federal Circuit

Foundations of
the United States Patent System

The activity that we consider today is as old as the nation. Unlike today's regulatory apparatus, it was envisioned by the nation's Founders. The governmental grant of patents for inventions was not only authorized in the Constitution; it was one of the first laws that President Washington asked the First Congress to enact.

In striking ways the patent law is suited to an industrial culture that recognizes and encourages private enterprise. Yet its philosophic and economic roots lie in the principles of the American revolution. It is a system of property right, a simple system that recognizes the natural right of creators to the products of their ingenuity, while fostering the Framers' view of a great commercial, and literate, nation.

The idea of granting the exclusive right to a new invention, for a limited time, was not new. In ancient Sybarus, a Greek colony on the foot of Italy, six hundred years before Christ, the cook who created a new recipe, a new confection, was granted its exclusive use for a year.

The Venetians had an active patent law. History records the grant to Galileo in 1594 of the twenty-year exclusive right to a new pump that he invented, he wrote in his application, with "great labor and expense". And in 1624 when James the First agreed to eliminate the grant of monopolies as favors of the King, there was an exception for inventions. In France, one of the earliest enactments of the Revolutionary tribunal was a patent law, on the basis that "it would be a violation of the Rights of Man, in their essence, not to regard an industrial discovery as property of its author."

On this continent, ingenuity came with the early settlers. The colonial legislatures authorized patent grants, patterned after those in England, as early as 1641 in Massachusetts. The securing of the exclusive right to one's "writings and discoveries", in the words of the Constitution, was the affirmation of a natural right. Chief Justice Marshall wrote, in a case decided in 1813, that patents fulfilled the "great fundamental principles of right, and of property."

History ascribes to James Madison and Thomas Jefferson the concept and shape of the American patent system. In Madison's vision the grant of an exclusive right to the profits of invention would encourage practical application, while new ideas

would add to the wealth of human knowledge. Imagine that extraordinary period in our newborn nation when Jefferson as first Secretary of State examined every application for patent. During the first three years of the nation's existence some three hundred patent applications were filed, and fifty-seven patents were granted. Jefferson's personal concern for the quality of the patented invention may have been due to his knowledge of the historical abuses in England, or it may have been his genius for technology and his interest in its advancement. He remarked of this experience that "the law has given a spring to invention beyond any conception."

When Jefferson ran out of time to examine patent applications himself, a registration system was established. Jefferson explained that what he called the "maturing" of the process should be turned over to the judiciary, for the courts to develop the conditions for patentability and the laws of enforcement in an evolutionary way, in the common law tradition. Indeed, that is what happened.

What must have been the first administrative agency, the United States Patent Office, was established in 1802. The first Superintendent of Patents, Dr. William Thornton, not only submitted the winning design of the Capitol, but he also dissuaded the British soldiers from burning the Patent Office in 1814, by telling them of the irreplaceable knowledge it housed.

The need for reinstituting patent examination soon became apparent, and an examination system quite like the present one was established in 1836. The industrial revolution blossomed,

and patent filings increased from some five hundred a year in the 1840's, to seven thousand a year in the 1860's. Today it's a hundred and fifty thousand a year. President Lincoln, himself a patentee, described the system as adding "the fuel of interest to the fire of genius".

The technological and research world of today is quite different from that of even fifty years ago, yet no more useful foundation for technologic advance has appeared in any society. By recent count 172 countries have patent statutes; and although the statutes aren't identical, they've adapted patent principles to each nation's needs.

Although inventors, investors, and industry in general understood the factors underlying commercial risk-taking and technological advance, experience shows that they were less well understood by some economists and indeed by some judges. Judges, for example, created the "flash of creative genius" standard of patentability, reflecting not only an erroneous view of how inventions are made, but a misunderstanding of the purpose of the patent system to encourage commercialization of inventions, not to recognize genius. And economists, while appreciating that it is the discovery itself that provides the public benefit, did not always appear to recognize that that benefit will not flow absent commitment of capital and other resources. The subjective judicial determination of what was deemed to be patentable invention was the major contributor to the unreliability of the patent grant as a basis for commercial investment. I suppose that this aspect will always be with us.

Our industrial culture has changed greatly in recent times. Not just changes in science and technology, but changes in economic and commercial structure, changes in the complexity of investment decisions, changes in the cost of research, changes in international commerce. Yet there was a twenty-two year period, from 1944 to 1966, in the midst of this technological ferment, when the Supreme Court invalidated every patent that reached it; and by the 1970's there was a notorious disregard of patent rights in the United States. It wasn't just the cynics who understood that the chances of upholding a meritorious patent diminished when the patent could be attacked in court after court, until it finally fell, or expired.

When the economy turned unhealthy in the 1970's, when inflation and other factors weighed against technological innovation, it was recognized that this disregard of patent rights contributed a significant disincentive. This Subcommittee exercised creative and effective leadership, in legislation establishing the reexamination of patents and in forming a national court of appeals for patent cases.

The enhanced reliability of the patent grant has again made it an effective resource of technology-based industry. This resource value includes the powerful benefit, to the body of technological knowledge, of the public disclosure that is required of patentees. In Jefferson's words:

> He who receives an idea from me receives instruction himself without lessening mine; as he who lights his taper at mine receives light without darkening me.

Today the patent system is a repository of information that is not available anywhere else. It has become an essential foundation of scientific and technologic progress.

The core of an effective patent system is its administration by the Patent and Trademark Office. As technology becomes more complex, increasing reliance must be placed on the expertise of the patent examining corps. It is of critical importance that a presumptively valid patent be granted, a patent that can be a reliable basis for commercial risk and investment when the patent is issued, not years later when it is litigated. It is still possible to tie up patents in court for a good chunk of their life, and the high cost and delay and uncertainty of litigation still burden the industrial incentive. Although the Federal Circuit has added some stability to the law, the practical value of this stability is in the reliability of the patent grant as it leaves the Patent Office.

Today most economically useful innovation is expensive: the research is expensive, the development, the evaluation, the marketing, and, particularly, the mistakes and the false starts and the failures. The copier pays for none of this. In very few fields of modern technology does it suffice simply to have a head start, for copying is itself easier. The speed with which new products are copied or counterfeited is itself a tribute to modern technology. Thus the patent system has a continuing, and essential vigor in today's high-tech world. The purposes, as from the first days of our nation, are the innovation incentive; public disclosure; and fundamental fairness.

Mr. HUGHES. The Patent and Trademark Office has reached an 18-month average pendency on patent applications. From where you sit, do you believe the quality of review has been preserved while PTO reached and maintains this particular goal?

Judge NEWMAN. I have not had a basis personally to investigate the quality of the issued patent. I have had a substantial basis to observe that there is nothing more important to the innovation goal of the patent system than the quality of the patent as it is issued by the Patent and Trademark Office.

Mr. HUGHES. Do you have any advice to offer the subcommittee in assuring the Patent and Trademark Office continues accountability to Congress and to the public in light of the increase in user fee funding?

Judge NEWMAN. Before answering the question, I would like to commend from my own experience, the leadership role that this subcommittee has taken in assuring the value of the patent system to the Nation.

As far as user fees are concerned, my primary concern as a citizen is that we not discourage or dissuade those who are highly creative in our society, and perhaps least able to afford a heavy fee structure. I would urge that we consider a structure which does not place a load on those people at a time when they are least able to afford it.

Mr. HUGHES. Patents, as you know, are grants of monopoly protection made on behalf of the public to promote the progress of science and useful arts. Do you believe any constitutional issues are raised by a 100-percent user fee funded Patent and Trademark Office, one where even the Commissioner's salary is paid from user fees?

Judge NEWMAN. Mr. Chairman, I have not studied the constitutional aspects of that question. I would, however, like to comment on the word "monopoly." We realize that before a patent monopoly or exclusive right is granted it is to something which did not previously exist, and, therefore, the contribution to society that is reflected in the patent merits the exclusivity that the statute requires.

Mr. HUGHES. Do you believe that a first-to-file patent system, as opposed to our current first-to-invent system, would reduce or simplify litigation?

Judge NEWMAN. Yes, I do believe it would simplify litigation. Whether that is an appropriate tradeoff is, I know, one of the very difficult questions facing this committee.

Mr. HUGHES. Let me ask a related question. Our patent system, as you well know, differs in certain basic respects from other systems around the world. Do you believe we should move toward a uniform, international standard?

Judge NEWMAN. I understand there are many advantages to the Nation of a uniform, international standard. To the extent that can be met without sacrificing the important American values, I would favor an accommodation.

Mr. HUGHES. You commented about your concerns over discouraging inventors through the fee structure. What are your views on the small entity category of inventors? Do you believe it is well to maintain that special small entity category and ensure that those

fees, in particular, are not overly burdensome? What are your views?

Judge NEWMAN. Yes, I do believe that it's important to maintain an adequate opportunity for some of the most creative elements in our society to have appropriate access to the incentive aspects of the patent system. Whether a favorable fee treatment is appropriate I imagine would depend on what the ultimate fee structure is.

Mr. HUGHES. OK. Thank you. The gentleman from California.

Mr. MOORHEAD. Thank you, Mr. Chairman.

Tying up patents with interferences and in court with the high cost of patent litigation are two concerns that most of us have and there doesn't seem to be any way that you can deal with that subject successfully. Do you have any suggestions?

Judge NEWMAN. I believe that the best answer to the cost of patent litigation is the reliability of the product as it leaves the patent examination process in the Patent and Trademark Office. I think that many patents are litigated and are brought into litigation because of a perceived inadequacy in the examination.

Mr. MOORHEAD. Then you would agree with us that building up the quality of patent examinations and the work of the Patent Office is one area where we've accomplished a lot but we could accomplish more?

Judge NEWMAN. I think that more can always be done. I also do agree with some who have expressed the view that perfection can never be achieved in Patent Office examination because many of the additional sources of references are not available through that mechanism. However, I do believe that there is more that can be done.

Mr. MOORHEAD. Thank you for coming this morning.

Mr. HUGHES. The gentleman from Florida.

Mr. JAMES. I was just asking the question of counsel, What are the range of fees now as they exist for a patent of a device? How is it charged? Can you give a high or a low of the average patent cost for fees?

Judge NEWMAN. I would have to defer to the Patent Office representatives who are here.

Mr. HUGHES. You'll have witnesses who can appropriately respond to that.

Mr. JAMES. I was wondering, philosophically, what the basis would be to discriminate between the small business entity in your mind and a larger one, as far as having a different scale of charge? You said that it would discourage some of the more creative efforts on behalf of small entities to patent items, but my question would be: How would you make the determination in advance as to what is creative and what isn't in order to establish the fee structure, if you were to do it on the basis of creativity?

Judge NEWMAN. You have asked a question for the ages as to how one distinguishes degrees of creativity. I don't think anyone knows the answer. The patent statute, in fact, abandoned the concept of inventiveness for a concept that they called unobviousness in determining patentability, for the very reason that you mention, the difficulties of distinguishing creativity.

I was referring to the university inventors, the small businesses, the individuals who have ideas that they would like to develop and for whom a front-end commitment of several thousand dollars in a combination of legal fees and Patent Office fees is a burden on their creative efforts; that, if alleviated, might serve the Nation by allowing them to concentrate on their creativity rather than on the financial aspects.

Mr. MOORHEAD. Which leads me to the next question. From my limited knowledge as an attorney of the patent fee charges, since I didn't specialize in patent law, the attorney's fees rather dwarf the fees charged by the Patent Office in most instances. So, if we were to try to change the scale, it would seem to me that we wouldn't really accomplish our intended purpose because in most cases the attorney's fees themselves are so proportionately large in relationship to the Patent Office fees that it wouldn't be that much of a benefit. Is that an accurate or inaccurate observation?

Judge NEWMAN. I agree completely that it was accurate at one time. I am told that now the magnitude of the fees has grown to where they match the attorney's fees.

Mr. MOORHEAD. I see. We have that problem with the Copyright Office now. Apparently, it has a $24 million budget, not counting the Library of Congress storage facilities with $10 million in receipts. In other words, the Patent Office apparently pays for itself; the Copyright Office doesn't. Do you see why one should be treated differently than the other?

Judge NEWMAN. That is not a topic that I have thought about.

Mr. MOORHEAD. Thank you, very much. No further questions.

Mr. HUGHES. Judge, thank you very much. We appreciate your giving us those insights on the history of patent law over the centuries. You've been very helpful and we appreciate your other contributions this morning.

I would like to welcome our first panel of witnesses this morning: Dr. Jacob Rabinow, Mr. Howard Bremer, and Mr. James Love.

Mr. Rabinow is an independent inventor who holds 226 U.S. patents for a variety of mechanical and electrical inventions, including many devices with which we are all familiar, including automatic car clocks and the letter sorting machine used by the U.S. Post Office.

Mr. Howard W. Bremer is a past president and trustee of the Association of University Technology Managers. He has been a valuable witness before this subcommittee in the past and we welcome him once again today.

Mr. James Love is the director of the Taxpayer Assets Project for the Center for Study of Responsive Law. Mr. Love is an economist, an expert on issues of privatization and the range of issues related to the management and sale of government assets.

We thank you for appearing today. We have your statements which, without objection, will be made a part of the record and we hope you can summarize for us because we have read your statements.

Why don't we begin with you, Dr. Rabinow? Welcome.

STATEMENT OF DR. JACOB RABINOW, INVENTOR AND AUTHOR OF "INVENTING FOR FUN AND PROFIT"

Dr. RABINOW. Thank you, Mr. Chairman.

I am an electrical and mechanical engineer and have been doing this for a long time. I enjoyed hearing Judge Newman's history. I would like to add the fact that the first modern patent system was set up in Venice in 1474 and, since then, has been adopted by every major and most minor countries. I was much surprised that countries like China and Russia now also have patent systems like ours and I know of one case where a Russian inventor is now a millionaire because they pay him money. Apparently, it's important for us to do what we do.

I object to the whole principle that the Patent Office must be self-supporting. I would like to suggest that this is a stupid system. It's the same as saying that the Congress should be self-supporting or the Supreme Court should be self-supporting and I think it has no justification in fact.

We, in the Bureau of Standards where I work, do hand out big sums of money to inventors. There are at least two programs going. One is the ATP program, Advanced Technology Program, which is funded for some $35 million and we give big companies, little companies, and private citizens millions of dollars to develop new technologies and they will keep all patent rights when they do so.

In another program, in which I am personally involved, the Office of Energy-Related Inventions, we evaluate inventions sent by mostly "small" technical people, and the Department of Energy gets our recommendations and gives out money. It might interest you to know that during the last 5 years we evaluated some 35,000 inventions. We approved some 500 for grants. The business that resulted is now running at $400 million per year. I would like to suggest that the taxes on the business now more than pay for our work. This is, of course, true of the patent system.

I would like to point out that the history of the invention business is that private inventors—people who don't work for large corporations—do create most of the great inventions and most of the minor inventions that are useful. It may interest you to know, of course, that more than half of the patents issued do get used during their lifetime, during the 17 years. This always surprises people, but this is not surprising when you consider that most companies get patents on the things they already produce, or will produce.

The great invention—the things that get us honors and create the publicity—are mostly done outside of large laboratories. I submitted as my evidence two pages listing some of these inventions. I would like to name just 10. For example: Atomic energy was done outside of large corporations; computers were done by two college students, Eckert and Mauchly; xerography was done by a patent attorney, Carlson; the laser was done by two people, depending on which one you believe. The Patent Office says that each one did something. They were Townes and Gould, Columbia University in New York; FM system, the frequency modulated transmission and reception was done by Armstrong, privately; color photography was invented by two violinists, Mannes and Godowski in the 1920's; the Polaroid camera, of course, came from Edwin Land right after

World War II when he was still a private individual before Polaroid became a big corporation; magnetic recording was done by Camras; and I could go on and on.

This is not surprising. You have to understand that when you work for a large corporation, as I have for some time, Control Data, you're busy with the day-to-day commercial products. You have to improve them; you have to compete with other commercial products. The focus of the inventor is to do the immediate things that have to be done. It is the outsider who is free of this and who tries these far-fetched things, and sometimes, of course, they become commercial. Eventually, they all do, but not immediately.

Many of my inventions were made as part of my job as a government employee. So, when I talk about the value of patents, I have some experience about patents that are made free to everybody. This brings me to the point of these maintenance fees. I object to them most violently, not because they cost so much compared to the lawyer's fees that were mentioned today, but because of the psychology of it. You invent something and you're willing to pay the money for the lawyer and for the patent fee. Then the years go by and you don't sell it. A couple of years later, you have to pay another fee and then another fee. What you do in practice by that time—you're a little bit discouraged—you abandon the patent.

I speak of this with great experience because I have many patents in foreign countries where I have to pay maintenance fees. As a matter of fact, I got the latest patent yesterday. It might interest you to know that there is ~~such a thing~~ as a European patent. I have never seen one before yesterday and it's a pretty piece of paper, like all patents.

I often wondered what I would do with my 226 U.S. patents. I think they would make beautiful wall paper. Some of them have more value than that.

This is a European patent. By the way, the patent is in three languages, German, English, and French. The letter from my European lawyer says, "Now if you would like to get patents in the various European countries, you have to pay some fees; you have to translate it into a few more languages, and then you have to pay fees every year."

I can tell you what will happen to this patent. A year or two will go by and I won't be able to sell it because usually it takes a little while. Then I'll abandon it, not because the money is so great, but I'll abandon it because I'll be discouraged.

I invented a watch regulator. I'm wearing one. It regulates itself. When you change the setting, you also change the rate. It took me 9 years to sell it. If I had to pay maintenance fees in those days, I would certainly have abandoned it because nobody wanted to buy it. Then a lucky accident happened. Some people at Chrysler liked the idea. They told the American watch industry that they would like to have it. It was put into all cars and I did make a penny a piece. People say that doesn't make much of a royalty, but when you multiply a penny by large numbers, it comes out to be a large number. I made some $600,000 in royalties on it. My attorney also made $600,000 because we were splitting it 50–50. I can assure you that if I had to pay maintenance fees, I would have abandoned it. I wouldn't have waited 9 years.

So, I object both on principle and I object to it in practice. It isn't only the money; it's the fact that it hits you when you haven't sold it. And the reason for this maintenance fee business is: First, you'd like to have the Patent Office support itself. I object to that. The patent system is supposed to help all of the people, and if it doesn't help the people, then there's no reason for it. If it does help the people, then there's no reason why I should pay for it any more than I should pay for the judicial system, or the military, or anything else.

Now, the question is: What should you do? I think the patent system should be supported out of taxes, and the taxes on the inventions that come out of our system are enormous.

Many years ago I looked into the business of how much does the patent system in the United States earns on patents, not as products. That's another story which is not provable. It happened in the 1960's, that our royalties from foreign countries alone amounted to billions of dollars. The fact that we licensed foreigners to work under our patents brought to our country millions of dollars which should certainly more than pay for the patent system itself. If you consider the patents, for instance, that I produced—the post office equipment, the clutches used in automobiles today, the reading machines that I invented—if you consider that business and the royalties and taxes that I and other people paid, there is really no excuse for you to say that I have to support the patent system because I am a user of it. Either the patent system does produce wealth for the country or it doesn't. If it doesn't, it should be abolished. If it does, there's no reason why the inventors have to support it. I think that's a ridiculous thing to do.

Now there's another drive to adopt the fees. I think that large corporations in general—and I was a vice president of Control Data—do not particularly like the patent system. I will quote you the words of the vice president of the largest computer company in the world, which shall be nameless, but you can guess who it is, and he said, "Patents are a damn nuisance to us. I have to maintain 97 patent attorneys and their staff. I have to file in 67 countries in some 35 languages. We do not make money on royalties. We make money by selling computers. We make money by service. We make money by competing all over the world. To us, patents mean nothing except that we must get them to protect ourselves. If there were no patents, not only would I save money directly, but we could use whatever we like and we would do less R&D, and this is important because much of the R&D is protective. We would not be in every field, to be in whatever happened. If there were no patents, I would not have to do so much R&D. We would do only what we needed to do for our market and whatever came out, we would use."

I heard this from the chief attorney of one of our largest automobile companies, that patents are a nuisance. They never sue each other. He says, "We each control thousands of patents and if we started to sue each other, we'd have a Pandora's box that we cannot open."

So, I have a funny feeling that abandoning patents and making them free to society destroys the patent, as many of mine have been destroyed, and large corporations like it.

Now there are large corporations in chemistry and medicine which do like patents. But, by and large, I think there's a pressure—and I don't know how it gets to Congress—but I've heard testimony from patent attorneys of large corporations that have a completely different view of patents from what I have. I think you should be careful of this. I think abandoning patents is a terrible thing to do. I have made inventions for the Government for which I got great honors but the patents are free to everybody.

Let me give you one example. I invented a magnetic particle clutch for which I got a gold medal, a lot of publicity, and it was made free to everybody. The result is that no automobile in the United States used it. But in foreign countries where I did have private rights, I did sell them to the Eaton Co., and I did make $26,000—which at that time was good money—it did go into many automobiles. It was used in the Renault, and it is now in the Subaru. This is a shining example of what happens to a patent when it's made free to everybody. A patent should not be abandoned, and I think the fees will cause patents to be abandoned much faster.

There are other things that I would like to talk about in the patent system. I think the first-to-file should be looked into. I think certain compromises are possible to keep the advantage of the first-to-invent and the first-to-file, this almost has to be done because of the European system, but there's no time and I was told that I have only 5 minutes. I'm sure I've exceeded that and I would be very happy to answer questions.

Mr. HUGHES. Thank you very much.

[The prepared statement of Dr. Rabinow follows:]

SUMMARY

Testimony of Dr. Jacob Rabinow - May 8, 1991

Subcommittee on Intellectual Property and Judicial Administration

Committee of the Judiciary

I have been an inventor since I was eight years old (see the attached one-page Biography). The great advancements in American technology over the last two hundred years were based on inventions and patents issued to our people. Most of the great inventions were patented by independent inventors. Examples:

Atomic Energy	FM Radio
Computers	Color Photography
Xerography	Polaroid Cameras
Laser	Optical Character Recognition

Inventors should not be asked to financially maintain the Patent Office. Maintenance fees charged by our Patent Office are counterproductive and should not be raised. I believe they should be eliminated completely.

We have an excellent Patent Office but I have experienced and witnessed poor results due to the interference procedures. The "First to File" procedures should be carefully considered.

Jacob Rabinow

Jacob Rabinow was born in Kharkov, Russia, on January 8, 1910. After what he calls a too eventful life as a child in European Russia and Siberia during the revolution, his family moved to China in 1919 and finally came to the United States in 1921. He was educated in the schools of New York and graduated from the city College of New York in 1933 with a BS in Engineering, and with a graduate degree in Electrical Engineering in 1934.

Jacob Rabinow spent the depression years at various jobs and finally was appointed as a Mechanical Engineer to the National Bureau of Standards in 1938. Here he worked on a great many ordnance devices during the war and rose rapidly through the ranks to become Chief of the Electro-Mechanical Ordnance Division.

In 1954, he left the Government to form his own engineering company. Ten years later, in 1964, his company joined Control Data Corporation and until 1972 he was Vice-President of that company and Head of the Rabinow Advanced Development Laboratory. In 1968 he also formed the RABCO Company to manufacture his straight-line phonographs. This company was later acquired by the Harmon Kardon Corporation.

In March 1972, he rejoined the National Bureau of Standards and held several positions, among them that of Chief Research Engineer, National Engineering Laboratory.

In April 1989, Dr. Rabinow retired from Government service and is now a consultant at the National Institute of Standards and Technology (formerly NBS). His main duty is the evaluation of inventions submitted to the Office of Energy-Related Inventions.

Jacob Rabinow holds 226 US patents on a very wide variety of mechanical and electrical devices. Among these are the automatic regulation of clocks and watches formerly used in all American automobiles, the automatic letter-sorting machine used by the US Post Office, the magnetic particle clutch, formerly used in several European automobiles, now used in a Subaru car, in airplanes, servo-mechanisms and in a great many other machines, the "best-match" principle in optical and magnetic character reading machines, many safety mechanisms for ordnance devices, and the straight-line phonograph.

In addition his patents concern such diverse arts as photography, computer equipment (the World's first magnetic disc memory), card punches and card sorting equipment and a wide variety of optical, electromagnetic and mechanical inventions.

For his scientific work, he holds the following honors:

> The Exceptional Service Award of the Department of Commerce (1949); the President's Certificate of Merit (1948); the War Department's Certificate of Appreciation (1949); the Naval Ordnance Development Award 1945); a Certificate of Commendation from the NDRC (1945); The Edward Longstreth Medal from the Franklin Institute (1959); The CCNY Engineering School's 50th Anniversary Medal (1969); the Jefferson Medal Certificate from the American Patent Law Association (1973); the IEEE's Harry Diamond Award (1977); the Industrial Research and Development Scientist of the Year (1980); Doctor of Humane Letters, Towson State University (1983).

He is a member of the National Academy of Engineering, the Cosmos Club, the Philosophical Society of Washington, and the Signa XI. He is a Fellow of the IEEE, of the American Association for the Advancement of Science, and of the Audio Engineering Society.

In addition to his technical work, Jacob Rabinow has delivered literally hundreds of talks on specific technologies and on invention in general. He was a Regent's Lecturer at the University of California at Berkeley, a frequent guest on Radio and TV programs and has authored many papers. His only full-length book entitled "Inventing for Fun and Profit" was published in 1989 by San Francisco Press.

TESTIMONY OF DR. JACOB RABINOW - MAY 8, 1991, BEFORE THE SUBCOMMITTEE ON INTELLECTUAL PROPERTY AND JUDICIAL ADMINISTRATION COMMITTEE OF THE JUDICIARY

My name is Jacob Rabinow. I am an electrical and mechanical engineer. I live at 6920 Selkirk Drive, Bethesda, Maryland.

To make this as brief as possible, I have attached hereto my short biography and a short list of important inventions made by inventors who were not part of the staff of large corporations. They were what are generally called independent inventors.

There is no need to defend the value of Patent Systems to the countries of the world. The first Patent System was formulated in Venice in 1474 and since then all important countries of the world followed suit. This includes the communist countries of the USSR and China.

The Patent Systems were not instituted for the benefit of inventors. They were needed for the common good. The U.S. Constitution clearly states this.

Yet, suddenly, in very recent times, it has been argued that our Patent Office should be supported by the inventors and/or their employers. This is like saying that our judicial system should be supported by the people who appear in our courts. Why not make the Supreme Court self-supporting?

As can be seen from my biography, I have 226 U.S. Patents. I also have received something like 100 patents from foreign countries. There I have to pay yearly maintenance fees The result of this is that I am forced to abandon my patents unless I am lucky enough to sell one or another of them almost on the date of issue.

My watch and clock rate regulator was invented in the middle forties. In spite of the fact

that I had good patent protection, and had made fine working models, I could not interest any watch or clock company in my invention. It was only by a lucky accident of some discussion with engineers of Chrysler that the clock industry was goaded into obtaining a license under my patents. This occurred seven years after I had applied for the basic patent.

If I had to pay maintenance fees on these patents, I would have abandoned them. As it was, my clock rate regulators were incorporated into all automobile clocks for 20 years. I received a penny for each such clock.

I have heard arguments that if patents are abandoned and the inventions become available to everyone free, their use will increase. This is nonsense. A free invention is worthless. No one will spend money to develop it if the next competitor will be able to ride on the back of the originator.

Many of my inventions were made as part of my job as a government employee. Many of my inventions were made available free to everyone. My magnetic particle clutch was an important invention. It started a separate sub-class in the Patent Office. It found very little use in the United States. I had private rights in foreign countries. I patented it in 22 countries and sold my rights to the Eaton Company. The clutch was used in several European cars and is now a part of the transmission in a Subaru car.

It is also important to note that patents are at best a *nuisance*, and at worst a *terrible* expense to most large corporations. I can quote the statement made to me by the vice-president of patent activities of one of the largest corporations of the world when we were discussing patents. He said, "Patents are great expenses to us. I have to employ 97 patent attorneys and their staffs. We file patent applications in 67 countries. We do not make money on royalties.

We do not sue infringers. If there were no patents, we could use any idea or technology without paying royalties. We would do less R&D in fields that are not directly needed for our immediate products. We do such R&D as a defensive measure and to protect ourselves against independents like you."

U.S. technology is slipping. The Japanese are getting ten times as many patents per person as we are. We should do everything possible to encourage inventors and help them and their backers to be innovators. Increasing patent costs is the worst thing we can do. The maintenance fees should not be increased. I am certain because of my lifetime experiences as an independent inventor, as an employee of the U.S. Government, and an employee of industry, that maintenance fees are a tragic attack on the inventors of this country. I realize that it costs money to maintain the Patent Office, but it is there to serve the nation, not the inventors, and the nation that receives the untold benefits should support this organization.

Finally, I find it very strange that while the Department of Commerce, through the National Institute of Standards and Technology, has earmarked some $35 million to be granted to large and small industrial organizations to develop new technologies, while the Department of Energy gives grants to inventors to help them develop their energy-related inventions, and while other agencies of the Federal and State Governments are doing everything possible to improve the competitive position of our industries, the Patent Office, the base of our technology, has to raise the price the inventor has to pay for the protection he needs from the Patent System.

After I had written the above paragraphs, I learned that I could make some general comments about the Patent Office. I much admire this institution, but I have had very unsatisfactory experiences with the interference proceedures. Serious consideration should be given to "First-to-File" rights rather than the present "First-to-Invent" laws. There are compromises that can also be considered between these two philosophies.

SOME IMPORTANT INVENTIVE CONTRIBUTIONS OF INDEPENDENT INVENTORS AND SMALL ORGANIZATIONS IN THE TWENTIETH CENTURY

INVENTION	INVENTOR
Atomic Energy	Einstein, many others
Computers	Eckert/Mauchly
Vacuum Tube	Lee De Forest
Xerography	Chester Carlson
FM Radio	Edwin Armstrong
Laser	Townes
Microwave Technology	
Penicillin	Alexander Fleming
Radar	
Inertial Guidance	
Insulin	Frederich Banting
Catalytic Cracking of Petroleum	Eugene Houdry
Jet Engine	Frank Whittle/Hans von Ohain
Mechanized Wiring (Printed Circuits)	
Fiber Optics	Kapany
Flotation Glass	
Magnetic Recording	Camras
Holography	
Oxygen Steel-making Process	C. V. Schwartz/J. Miles/ R. Burrer
Heterodyne Radio	Reginald Fessenden
DDT	J. R. Geigy & Co.
Streptomycin	Selman Waksman
Gyrocompass	A. Kaempfe/E. A. Sperry/ S. G. Brown
Cyclotron	Ernest O. Lawrence
Rockets	Robert Goddard
Titanium	W. J. Kroll
Shell Molding	Johannes Croning
Cotton Picker	John & Mack Rust
Shrink-proof Knitted Wear	Richard Walton
Dacron Polyester Fiber "Terylene"	J. R. Whinfield/J. T. Dickson

INVENTION	INVENTOR
Zipper	Whitcomb Judson/Gideon Sundback
Automatic Transmission	H. F. Hobbs
Self-winding Wristwatch	John Harwood
Continuous Hot-strip Rolling of Steel	John B. Tytus
Helicopter	Juan de la Cierva/H. Focke/ Igor Sikorsky
Mercury Dry Cell	Samuel Ruben
Power Steering	Francis Davis
Color Photography	L. Mannes/L. Godowsky, Jr.
Air Conditioning	Willis Carrier
Polaroid Camera	Edwin Land
Ball Point Pen	Ladislas and George Biro
Cellophane	Jacques Brandenberger
Tungsten Carbide	Karl Schroeter
Bakelite	Leo Baekeland
Velcro Fasteners	George de Mestral
Hovercraft	Christopher Cockerell
OCR	Dave Shepard
Magnetic Core Memories	
TV Tape Recording	
Continuous Casting of Metals	
Foam Rubber	

Mr. HUGHES. Mr. Love, welcome.

STATEMENT OF JAMES P. LOVE, DIRECTOR, TAXPAYER ASSETS PROJECT, CENTER FOR STUDY OF RESPONSIVE LAW, PRINCETON UNIVERSITY

Mr. LOVE. Thank you. I'm not a person who has ever applied for a patent. I'm not a person who has ever represented anyone in a patent proceeding. I don't in any way make my living off the patent system. The organization I work for is interested in a wide range of public policy decisions. Primarily, we focus on the way the Government manages different types of property it owns, including intellectual property rights, information resources, and other government assets.

I've studied the reauthorization proposal, including the fee proposal. In my written testimony, I point out that for the budget as a whole the idea that the Government is going to raise large amounts through user fees to fund agency operations does not appear to be promising.

About 7 percent of the total Federal expenditures are for things other than national defense, direct payments to individuals, interest on the national debt, and the savings and loan crisis. In other words, for 93 percent of the budget there is absolutely no potential for user fees. The very small part of the budget which goes to the ongoing operation of things like the Patent and Trademark Office and other regulatory agencies is not ever going to provide large sources of revenue, but the attempts to fund these agencies through large user fees, in my opinion, will in many cases make it more difficult for these agencies to carry out their fundamental purpose and mission. I believe that will be the case in the Patent and Trademark Office.

Certainly many agencies which convey special benefits to certain industries don't pay anything in user fees. The Nuclear Regulatory Commission, for example, whose job it is to ensure that nuclear facilities and operating plants are operated safely, receives virtually none of its operating income from user fees.

The other regulatory agencies, such as the Occupational and Health and Safety Administration, the Federal Communications Commission, and the Federal Aviation Administration in the past have operated out of general tax revenues. There are proposals, in the Omnibus Budget Reconciliation Act, to increase the fees of some agencies in a rather random fashion. There are proposals, as there have been for 7 or 8 years, to increase fees at the FDA and the FCC, but these are in many respects going to make it more difficult for these agencies to operate as governmental entities.

Within the area of the Patent Office, you see a wide disparity between the cost of filing different types of patent applications. When I was growing up, as a young man I used to think of patents as the better mousetrap. Now my children today think of patents as the better mouse. The complexities of the patent system probably range to a much greater degree today than they ever have before. It's much more costly to process some patent applications than it is for others. By imposing uniform fees for each invention, what you are doing is proposing fees which on an average are much too high for very simple inventions which patents are applied for, and

probably very trivial for other types of applications which are far more complex.

From our point of view, we prefer a system where general tax revenue supports the Patent Office, and I think that when the patent holders themselves are asked to pay for the public depository library program and other functions of the Patent Office, it really is a type of tax on inventive behavior. If the Patent Office is going to try to raise funds through the fee system, it should consider systems that try to have a better approximation between the value of the patents, or the potential benefits of the patents, and the fees, so that the standardized fees do not have the type of effects they have right now.

The types of things you want to focus on are the problems of risk aversion that face the small individual inventors to ensure that the large, enormous increases in the fees do not result in a decrease of patent activity in the United States in general.

You may consider things, for example, as percentages of relicensing fees. I'm not saying that these things are really the approach I would recommend, but there certainly has to be an attempt to look at things other than the standard average cost. It's already the case that the Patent and Trademark Office is imposing fees which do not closely correspond to the cost of processing the individual applications. Some applications are very costly and some are very simple. The maintenance fees are clearly an attempt to raise revenue in an area which is not directly associated with the true cost of maintaining the paper work in the Patent and Trademark Office.

I would also like to talk for just 1 minute on the issue of the information resources of the Patent and Trademark Office. I've been working with the American Library Association and many other organizations on problems which are related to public access to Government data bases.

There are many data bases that the Government maintains at the expense of the public to which the public is not allowed to have direct remote access through modems even though the capability for that sort of thing is clearly technically feasible. This could be economic statistics, such as the LABSTAT system for the Bureau of Labor Statistics which was first proposed to be online by the Government in 1978. For 13 years the Data Resources Co., has opposed online public access to the LABSTAT data base. It could include things such as the SEC's new system of securities filings and the Federal Maritime Commission's tariff system.

Now we have the capability in the Patent and Trademark Office of having very important scientific information online. You've had a lot of testimony from the Bar Association and patent lawyers about how this information should be online at the PTO. I talked to the Patent and Trademark Office on Monday about the availability of these systems. The text retrieval is online. I was told on Monday that there are no plans whatsoever to allow a member of the public, such as myself, to have a subscription so I could pay to access this data base through my telephone and call up patent information in my home. It could only be provided through the relatively small patent depository library program. They said the reason for that is that they didn't want to compete with the private

industry. This is a very special subsidy to private companies which sell this information.

Patent claim abstracts from Dialogue cost $140 an hour and $.50 a record for every record that's retrieved. This service is based on data that is digitalized at government expense but which is sold in formats that are only usable to commercial data vendors. I think it's an outrage that the public is paying millions of dollars to automate agencies throughout the Federal Government and, simultaneously, the Government is denying the public the right to access, even if they're willing to pay the cost of accessing that information.

I think that every high school teacher in America that teaches science should be able to take his students into the library in his school, dial in the patent system, and have his students sit down and pull patents off the system about things they're interested in. If a student wants to sit down and learn about some new technology at a high school, or even a junior high school, they should be able to do it, and they should be able to do it if they're willing to pay the cost of accessing that data base which has already been developed at public expense.

Furthermore, the larger volume that you have in terms of accessing this data base greatly drives down the average cost for all users. I've developed commercial data bases myself in the private sector and I can tell you that fixed costs are the biggest expense; the incremental cost of providing additional users is always very low, and the biggest benefit you can have to all users is to have large volumes of users accessing the data bases. It's economically the most efficient way to do things.

So, I would recommend that the Commission ensure that this data base and all data bases and data products available to the Patent and Trademark Office receive as wide a dissemination as possible using the most modern technology.

In terms of the issue of being in competition with the private sector, we've told other committees of Congress and the OMB, that in this country the first amendment gives the information industry the freedom to publish. In my opinion, that's the most important and the only real protection that the publishing industry has ever needed in this country.

In the area of paper products, for hundreds of years the information industry has developed interesting and important newsletters, analyses, special indexes, and things like that, which they've made a lot of money on and they're performed an enormously important role.

The freedom to publish is the only protection in America that the information industry needs. The exclusive right to commercialize government information is not something you have to give the information industry. That's also a new idea which has been introduced by computer technology, because the computer technology makes it easier to monitor and meter the pricing of information.

So, I would urge the committee to take steps to ensure that the Patent and Trademark Office corrects the erroneous impression that they should not provide public access to those data bases.

Finally, the last point I mention in my testimony has to do with publicly funded research. The U.S. Government in fiscal year 1992 budget includes $76 billion in federally funded research.

We became interested in the area of federally funded research by looking at problems involving the marketing of the drug AZT, which members of the committee I am sure know, was originally invented through financing by the National Cancer Institute. The National Cancer Institute did the initial test on both humans and in test tubes to establish that it was effective against the AIDS virus. The drug was patented by the Burroughs Wellcome Co., although they failed to disclose to the Patent Office investigators the role of the federally financed research. They subsequently billed AIDS patients $10,000 a year to use the drug.

This is a special case, I think, where the issues involving the representations made by Burroughs Wellcome may be critical, but there are many, many other federally funded inventions where, because of government policy changes in the last decade, patents on government inventions have been going directly to private commercial firms.

What we are asking the committee to do is to have the Patent and Trademark Office, as a matter of course, collect better information on the role the Government has played in the financing of the inventions for which people apply for patents. I think just the availability of the information itself will help the study and analysis of public policy in this area. I should be able to know, in searching through the automated patent system, how many patents of a particular type were financed by the taxpayers and the nature of the financing to better understand the effectiveness of our policies to transfer technology to commercial firms.

I've discussed these points in greater detail in my written testimony. Thank you very much.

Mr. HUGHES. Thank you, Mr. Love.

[The prepared statement of Mr. Love follows:]

Summary of the Testimony of James P. Love
May 8, 1991

I address three issues. First, should the PTO be fully funded by user fees? Second, how should the PTO price its information resources? And third, what should the PTO do to provide better information about the policy of giving private firms the right to patent inventions that are funded by the government.

1. Patent and Trade Office User Fees.

The Administration's current budget proposal is the final step in a series of efforts to provide full user fee funding of the Patent and Trademark Office, a situation which hasn't been achieved since the 1940's.

There are substantial limits to the revenue potential of federal user fees. In the Administration's fy 1992 budget federal expenditures are $1.45 trillion. Ninety three percent of this total goes toward direct benefits for individuals, national defense, gra- to states and localities, interest on the national debt, and the S&L bailout: all areas where there is little or no potential for user fees.

While at first blush user fees seem to present a fair and equitable way of financing federal activities, in practice they often present substantial difficulties. Sometimes it is more efficient to internalize markets, and to suppress prices, in order to avoid the considerable waste that is often accompanied by bargaining, negotiations and pricing rigidities.

The "fairness" or "unfairness" of the Administration proposal is probably less important than the actual impact of the increased user fees on the number of U.S. patents issued and maintained. If the November 5, 1990 69 percent surcharge on patent fees leads to a substantial reduction in the issuance of patents, the fiscal impact of the decision will be very unimportant, relative to the economic impact of reduced patent activity. Likewise, if the proposed reduction in the differential fees charged "small entities" creates an even greater reduction in patent activity by individuals and small firms, we may well witness an increase in economic concentration.

Lower fees for patents would provide a direct incentive for investors in inventive activity, and one that is more market driven, and perhaps more based on merit, than many of the government's programs to fund research through grants or contracts.

We urge the Subcommittee to reject the Administration's proposal to eliminate the small entity subsidy at this time, and to instruct the PTO to study the impact of the 69 percent surcharge on patent fees on level of U.S. patent activity.

2. Management of PTO Information Resources.

The PTO staff to us that remote access to the APS database will be limited to Patent and Trademark Depository Libraries only, since the PTO was "prohibited from competing with the private sector."

We have studied the issue of federal managment of information resources in some detail, and find it rather alarming that the public, which owns substantial information resources, is often prevented from obtaining access to databases except through commerical vendors, often at extremely high prices.

OMB is currently revising its Circular A-130 regarding the management of government information resources. In our May 2, 1991 comments we urged OMB to reject policies that restrict public access to government databases, and we specifically rejected commercial vendor complaints against "unfair" government competition:

The First Amendment gives the information industry the only protection they need, which is the **freedom** to publish. Government agencies should not be prevented from providing services private firms want to sell.

The words "unfair government competition" should be permanently retired from the debate over government information policy. Agencies should be encouraged to use any technology to make access to government information easier and cheaper. If private commercial vendors have something to add, they should be free to offer their own products and services. The truly useful commercial products and services will always find a market, just as they have for hundreds of years with information products and services disseminated in paper formats.

This subcommittee should tell the PTO to provide for remote access to the APS database, and insure that such access is priced at the marginal cost of the dissemination of the information. Since online databases typically require large fixed costs and rather low incremental costs for additional users, a large volume of remote users should generate the income sufficient to pay the incremental costs of the increased use of the database, and will lower the average cost of pubic access.

3. Publicly Funded Research and Development.

Over the past decade the federal government has adopted policies to allow federal contractors or grant receiptants to patent inventions funded by the government. The Taxpayer Assets Project is investigating the impact of these and other policies on the welfare of the public as taxpayers and consumers. In particular, we are evaluating

whether or not Congress or the Administration have gone too far in their efforts to privatize the products of publicly funded research.

The issue which concerns our organization is the larger policy question of whether or not publicly funded inventions should, as a matter of policy, be turned over the private sector, without a careful evaluation of the role of the government in financing the research that led to the invention, or alternative methods of developing the invention, such as exclusive or nonexclusive licensing agreements.

While there is much folklore regarding the R&D and patent process, we are interested in developing a better factual basis for making policy judgements. We ask the Subcommittee to direct the PTO to gather, as a routine item, information about the role of the government, if any, in financing the research that results in patents. Moreover, we ask the Subcommittee to instruct the PTO to code this information on the APS database, so it will be possible to develop better statistical studies of the technology transfer process.

STATEMENT OF JAMES P. LOVE
Director, Taxpayer Assets Project

before the

Subcommittee on Courts, Intellectual Property,
and the Administration of Justice

of the
Committee on the Judiciary

United States House of Representatives

May 8, 1991

Mr. Chairman and members of the Subcommittee, thank you for the opportunity to testify today.

My name is James P. Love. I live in Princeton, NJ, where I am director of the Center for Study of Responsive Law's Taxpayer Assets Project. I have also held teaching and research positions at Princeton University, Rutgers University, and the National Bureau of Economic Research. From 1988 to 1990 I was senior economist for Russell-Zisler, a subsidiary of the Frank Russell Company, a large pension fund consulting firm.

The Taxpayer Assets Project was started by Ralph Nader to investigate a wide range of issues related to the management and sale of government assets. Over the past year we have focused our attentions on questions involving the management or disposition of government owned mineral assets, timber and information resources, and intellectual property rights from federally funded research and development.

My testimony today concerns the reauthorization of the Patent and Trademark Office (PTO). In particular, I will address three issues. First, should the PTO be fully

funded by user fees? Second, how should the PTO price its information resources? And third, what should the PTO do to provide better information about the policy of giving private firms the right to patent inventions that are funded by the government.

1. Patent and Trade Office User Fees.

The Administration's current budget proposal is the final step in a series of efforts to provide full user fee funding of the Patent and Trademark Office, a situation which hasn't been achieved since the 1940's.

In a sense, the Administration's PTO budget reflects a curious case of schizophrenia regarding the government's promotion of industry. There are hundreds of federal programs that provide billions of dollars in direct subsidies for regional economic development, small business development, foreign marketing programs, agriculture programs, and many other programs that directly benefit business enterprises.

The federal government also transfers billions of dollars in government assets every year to private firms at ridiculously low prices. For example, large mining corporations, U.S. or foreign, are given a free, zero royalty, right to mine gold, silver, cooper, molybdenum and many other minerals found on public lands. These same mining companies are allowed to buy millions of acres of federal land for no more than $5 an acre[1]. The U.S. Forest Service reports that two thirds of its timber sales actually lose money. The National Marine Fisheries Service is reportedly considering transferring

[1]Jonathan G. Dushoff, "A Primer on Mining Law Reform," *Studies in Public Policy*, Working Paper No. 1. Washington, DC: Taxpayer Assets Project.

the legal rights to ocean fishing to private commercial fishing concerns, at no cost[2]. The federal government also spends billions of dollars to collect information resources which in many cases are only available to the public through private companies, that effectively use the federal government to produce entire product lines.

A particularly relevant example of the federal government's funding of business activities is in the area of research and development. In its fiscal year 1992 budget the Administration has proposed $76 billion in direct government funding for research and development. In fiscal year 1990 fifty three percent of all federal research and development funding was committed to private commercial firms.[3] The Administration is also proposing a permanent extension of the tax credit for research and experimentation.

The Administration proposal to have the firms that want to secure patent and trademark protection fully fund the Patent and Trademark Office is a byproduct of the fiscal crisis the federal government has experienced over the past decade. The failure of the Administration or the Congress to confront the structural imbalance between federal tax revenues and expenditures has lead to significant curtailments in fundamental public

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[2]Peter Passell, "U.S. Starts to Allocate Fishing Rights in Coastal Waters to Boat Owners," *New York Times*, April 22, 1991.

[3]According to the National Science Foundation's *Science Resources Studies*. About one quarter of R&D funding is carried out by federal agencies themselves, and the remainder is carried out by universities and other non-profit entities. The Bayh-Dole Act, passed in 1980, allows small business and non-profit contractors to patent inventions developed under federal funding. In his February 18, 1983 Presidential Memorandum, President Reagan instructed all federal agencies to, within the limits of the law, extend the same patent rights to *all* firms that receive federal funding.

services and a never ending quest for non-tax sources of revenues. The PTO is one of several agencies that are being asked to levy higher user fees, often with negligible effects on the federal deficit, and sometimes at a real cost to the public in terms of reduced accountability or by compromising the very purpose for the agency in the first place.

There are substantial limits to the revenue potential of federal user fees. In the Administration's fy 1992 budget federal expenditures are $1.45 trillion. Ninety three percent of this total goes toward direct benefits for individuals, national defense, grants to states and localities, interest on the national debt, and the S&L bailout: all areas where there is little or no potential for user fees.

The degree to which the federal agencies charges fees for services varies a great deal. The Coast Guard, for example, is expected to collect only $3.4 million in offsetting fees from non-federal sources in fiscal year 1992, out of a budget of $2.65 billion, or about one tenth of one percent. The National Oceanic and Atmospheric Administration, which administers the National Marine Fisheries Service, the National Weather Service, the National Environmental Satellite, Data, and Information Service, and other agencies, is expected to collect $42 million in fees from non-federal sources, out of a total budget of $1.95 billion, or about 2 percent of its budget. The Federal Communications Commission (FCC) received 65 thousand dollars in fees from non-federal sources in fy 1991, but is asked to increase that amount a thousand fold in the fy 1992 budget, for a total of $65 million, out of a total budget of $113.4 million, or 57 percent of the budget.

Several agencies seem to be able to resist repeated attempts by OMB to impose substantial user fees. For example, the Food and Drug Administration (FDA), which

performs a similar function to the PTO on behalf of the pharmaceutical industry, will receive virtually nothing in non-federal offsetting revenues for fy 1991, despite the fact the Administration has been proposing large increases in user fees since 1984. Indeed, in the fy 1992 budget the Administration is again proposing stiff user fees, amounting to $198 million, or 25 percent of the FDA's total budget.

User fees as agency prices

While at first blush user fees seem to present a fair and equitable way of financing federal activities, in practice they often present substantial difficulties. The reasons that it is difficult to meter and "sell" public services are many. This shouldn't be too surprising, since the govenrment is frequently providing services in precisely those areas where markets don't work very well. The problem of metering and pricing services is more than a government problem, however.

Consider first the function of the modern firm. Why do large firms exist at all? Departments or parts of firms could exist as separate firms themselves, obtaining services from its parts through a series of purchases for goods and services. Exxon's R&D department could "sell" its services to Exxon's other divisions, and they in turn could all "buy" services from Exxon's human services or accounting divisions. Within this large family of independent firms it would then be necessary to carry out cost benefit analysis of the services each entity needed to buy. To be efficient, some contracts would have to be very complex, reflecting the complex economies or diseconomies of scale or scope that existed in the production or consumption of those services.

Thinking about the elimination of the large corporation illustrates one of the great facts about real markets. Sometimes it is more efficient to internalize markets, and to suppress prices, in order to avoid the considerable waste that is often accompanied by bargaining, negotiations and pricing rigidities.[4]

One can think of the many public services that we enjoy for free or negligible fees as the privileges of belonging to a large organization. Some services are priced in order to relieve congestion or eliminate frivolous consumption or use, with others are free for the asking. Consider, for a moment, how an athletic club works. Often the club charges a membership fee, but then lets its members have free use of some facilities, while they pay for others. Perhaps the bar or restaurant charges for services, or even operates at a profit, while other services, such as showers or swimming privileges, are free. Decisions about which services are free and which are priced may be rather arbitrary, and the same could be true about decisions to price services above or below their marginal or average costs. The members of the organization may find this preferable to a system that attached a single minded devotion to pricing every service and benefit of club membership.

The United States of America is a very large organization, and it devotes about seven percent of its budget to the operation of hundreds of special agencies and bureaus that provide a wide variety of public services. While no one benefits from every service,

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[4]For further discussion on this topic, see Oliver E. Williamson, "Transaction Cost Economics," included in Richard Schmalensee and Robert Willig, *Handbook of Industrial Organization*, Vol 1, Chapter 3. New York: North Holland, 1989. For an early treatment, see R. Coase, "The Nature of the Firm," *Economica*, 4:386-405, 1937.

everyone benefits from some of the services.

The Patent and Trade Office (PTO) is entrusted to carry out a mission that was spelled out in the Constitution of the United States and for which the statutory authority dates from 1790: "to promote the progress of science and the useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." In addition to its responsibilities for the examination and issuance of patents and trademarks, the PTO maintains important scientific library resources, including a network of Patent and Trademark Depository Libraries, maintains the capability to provide remote computer searches of its patent and trademark databases, publishes the *Official Patent Gazette*, and participates in international efforts to cooperate on patent and trademark policy.

The Administration's budget proposal would reduce taxpayer support to the PTO to $3.3 million, or less than 1 percent of the total budget. Holders of patents or trademarks would be asked to pay fees that *exceed* the direct costs of examination and issuance of property rights, covering the additional costs of the public information programs, participation in international patent and trademark organizations, and the PTO's other overhead expenses.

The "fairness" or "unfairness" of the Administration proposal is probably less important than the actual impact of the increased user fees on the number of U.S. patents issued and maintained. If the November 5, 1990 69 percent surcharge on patent fees leads to a substantial reduction in the issuance of patents, the fiscal impact of the decision will be very unimportant, relative to the economic impact of reduced patent

activity. Likewise, if the proposed reduction in the differential fees charged "small entities"[3] creates an even greater reduction in patent activity by individuals and small firms, we may well witness an increase in economic concentration.

As noted above, there is a curious inconsistency between the policies of spending $76 billion on government funded research, and giving private commercial firms the rights to patent inventions developed with government funding, and a policy of sharply increased fees to obtain and maintain patents. Lower fees for patents would provide a direct incentive for investors in inventive activity, and one that is more market driven, and perhaps more based on merit, than many of the government's programs to fund research through grants or contracts. Consider, for example, the Administrations fiscal year 1992 budget document[4]:

> The hallmark of the Federal Government's support for R&D has been the awarding of grants and contracts through a competitive process. This merit-based approach is intended to maximize the potential return on these investments by selecting only the highest quality research for support.
>
> This merit-based approach, however, has been increasingly eroded in recent years due to the Congressional practice of "earmarking", i.e. requiring that R&D funds be awarded to particular institutions or even to particular researchers. This practice is most visible in the area of new university buildings. However, the practice of earmarking is actually much more pervasive, reaching down to individual research projects.

We urge the Subcommittee to reject the Administration's proposal to eliminate

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[3]Individuals, universities, and firms with fewer than 500 employees are defined as small entities.

[4]*Budget of the United States Government, Fiscal Year 1992.* Part two, page 63.

the small entity subsidy at this time, and to instruct the PTO to study the impact of the 69 percent surcharge on patent fees on level of U.S. patent activity.

2. Management of PTO Information Resources.

The American Intellectual Property Law Association has provided your Committee with a number of excellent suggestions regarding the management of the PTO's information resources. For example, during the 1988 PTO authorization Joseph DeGrandi testified:[7]

> AIPLA [is] trying to ascertain whether the APS system, the automated patent system, is actually going to meet the needs of the public. AIPLA firmly believes that the data base being assembled for the automated patent system should not be considered as being primarily a tool for patent examiners to conduct novelty searches.
>
> This is going to be an extremely expensive tool, if that is the primary purpose of the data base.
>
> Neither should it be considered to be a system which will be used only by patent lawyers and professional patent searches, in addition to the examiners. The data base is going to be an invaluable asset for all members of the public.
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> It should be made easily accessible to universities, to industry, to research companies, to all interested parties throughout the United States. It should be viewed not only as a national resource, but as a national treasure.

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[7]U.S. House of Representatives, Committee on the Judiciary, Subcommittee on Courts, Civil Liberties, and the Administration of Justice, *Patent and Trademark Office Authorizaton*, Hearings, July 27, 1988, pp. 72-4.

> . . .The Japanese Patent Office is currently automating its research files and its automation effort has always been primarily focused on assisting Japanese Industry. They have three public search rooms outside of Tokyo and they have a public search room in Tokyo.
>
> The patent search file data base can be searched by the public at all three of these four locations on the same type of computer terminals used by the Japanese Patent Office examiners and the Japanese researchers pay no fees whatsoever to use the system.
>
> . . .The automation benefits are being shared with the public. The public is learning how to use this system being developed by the Japanese Patent Office.
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> The public and examiner needs are continually monitored and the system is adjusted as necessary. The public really has hands-on use of the system.
>
> This is what we would like to see here in the U.S. The PTO focus in this country is to provide the APS to the patent examiners. They are spending several hundred millions of dollars to develop a system for 1,500 examiners. AIPLA recommends that the subcommittee urge the PTO to devise effective methods to disseminate the information in the APA data base to industry, to universities and to the public. Satellite public search rooms in various locations throughout the country should be considered.

It would be difficult to make a better case for broad and low cost dissemination of the APS database. On monday of this week I talked with the PTO staff about remote access to the APS database and was told it would be limited to Patent and Trademark Depository Libraries only, since the PTO was "prohibited from competing with the private sector." According to the PTO staff, Mead Data Central's *LEXPAT* and commercial products available through *Dialog* and *Orbit* would be the public's only remote source of the PTO's patent information online. Services such as these are valuable, but they should not be used as an excuse to deny the public access to government databases such as the APA.

We have studied the issue of federal managment of information resources in some detail, and find it rather alarming that the public, which owns substantial information resources, is often prevented from obtaining access to databases except through commerical vendors, often at extremely high prices.[8]

OMB is currently revising its Circular A-130 regarding the management of government information resources. In our May 2, 1991 comments we urged OMB to reject policies that restrict public access to government databases, and we specifically rejected commercial vendor complaints against "unfair" government competition:[9]

> The First Amendment gives the information industry the only protection they need, which is the **freedom** to publish. Government agencies should not be prevented from providing services private firms want to sell.
>
> The words "unfair government competition" should be permanently retired from the debate over government information policy. So long as the government provides public access to its databases at the marginal cost of dissemination, and private commercial vendors have the freedom to sell any information products they want, the public will be well serviced by a vigorous information industry.
>
> The information industry is far larger than those few companies that sell access to government statistics and documents. It also includes the thousands of firms that take those facts and documents and add value to them. If private commercial vendors gain the exclusive right to provide public access to the basic government facts and documents, this will hurt the information industry, rather than help it, by restricting access to

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[8]"Statement of Ralph Nader and James Love," U.S. House of Representatives, Subcommittee on Procurement and Printing, *Oversight of the U.S. Government Printing Office General Sales Program*, Hearings. Washington DC: GPO, July 26 and 27, 1990. "Statement of James P. Love, Director, Taxpayer Assets Project, on Government Information as a Public Asset," Joint Committee on Printing, April 25, 1991.

[9]Comments of the Taxpayer Assets Project on OMB Circular A-130. May 2, 1991.

> government information, by price, at the source. OMB should protect those firms in the information industry, such as journalists, academics, or business analysts, who are "further up the food chain," and add more "value" to government information that do firms that only provide access to raw data.
>
> Private Commercial vendors want agencies to sell information in bulk only, forcing the public to use commercial firms to obtain government information in convenient formats. To imagine how offensive this policy is, consider the reaction if the public was told that it could no longer obtain copies of paper publications, except in lots of 1,000 or more, forcing the public to search for commercial firms that happened to carry IRS Form 1040A, White House Press Releases, VA rules on eligibility, the Department of the Interior's 5-Year Plan, or other documents. Such an approach would lead to an incredible restriction of the public' access to government information, yet it is precisely the policy recommended by the powerful vendor lobby for electronic information.
>
> Before OMB proposes any rules for electronic information, it should ask itself, would this rule make sense for paper products? If not, then in most if not all cases, the proposal is wrongheaded.
>
> Agencies should be encouraged to use any technology to make access to government information easier and cheaper. If private commercial vendors have something to add, they should be free to offer their own products and services. The truly useful commercial products and services will always find a market, just as they have for hundreds of years with information products and services disseminated in paper formats.

Finaly, on the issue of the costs of accessing the APS, OMB has cautioned agencies against using databases as a source of funding for other activities. In January 4, 1989 Advance Notice of Further Policy Development on Dissemination of Information, OMB stated:

> User charges higher than the cost of dissemination are a barrier to public access. Second, given that the government has sunk the costs of creating and processing the information for governmental purposes, the economic benefit to society is maximized when the information is publicly disseminated at the cost of dissemination.

Other element of this notices were controversial, however, and on June 9, 1989 OMB withdrew the January 1989 notice, citing public concern that the January 1989 notice and OMB Circular A-130 "were heavily biased, concentrating so much on private sector prerogatives that OMB had failed to elaborate a positive role for Federal agencies in the dissemination of government information, even in situations where dissemination of such information was basic to agencies' missions." OMB also stated:

> OMB wishes to make clear that its fundamental philosophy is that government information is a public asset; that is, with the exception of national security matters and such other areas as may be prescribed by law, it is the obligation of government to make such information readily available to the public on equal terms to all citizens; that to the extent the flow of information from the government to the public can be enhanced by the participation of the private sector, such participation should be encouraged; and that participation by the private sector supplements but does not replace the obligations of the government.
>
> . . . as regards reliance on the private sector to disseminate government information, OMB did not intend, either in Circular No. A-130 or in the January 1989 notice, that Federal agencies or the public should be made to rely primarily on the private sector for the dissemination of government information.
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> . . . OMB agrees that government information dissemination products should be tailored to users' needs, and that software development is often a legitimate government activity.
>
> . . . OMB agrees with the view that the Government has a responsibility to guarantee equitable access to government information. As to the concern that overdependence on the private sector could result in higher prices for users, OMB notes the requirement in Circular A-130 that agencies shall disseminate information products "in a manner that ensures that members of the public whom the agency has an obligation to reach have a reasonable ability to acquire the information." . . . The discussion of this policy highlights to the need to avoid unreasonably high prices for information products.

On the question of user fees, the June 1989 notice defended the January 1989 position, stating:

> The January 1989 notice suggested a change in user charges policy as compared with the existing policy found in OMB Circular No. A-25, User Charges. The change consisted of treating government information products as fundamentally different from other goods and services. OMB proposed a ceiling on charges for information products, asserting that, with relatively rare exception, user charges for government information products should never be set higher than a level sufficient to recover the costs of disseminating, not collecting the information. The proposed policy, therefore, would generally preclude user charges that might attempt to recover costs of collecting and processing the information, and would preclude using other standards such as the market value of the information.
>
> . . . OMB intended to reassure the public that prices would not be raised above the costs of dissemination. In effect, agencies would be precluded from using information products as a profit center or budgeting mechanism.

This subcommittee should tell the PTO to provide for remote access to the APS database, and insure that such access is priced at the marginal cost of the dissemination of the information. Since online databases typically require large fixed costs and rather low incremental costs for additional users, a large volume of remote users should generate the income sufficient to pay the incremental costs of the increased use of the database, and will lower the average cost of pubic access.

3. Publicly Funded Research and Development.

Over the past decade the federal government has adopted policies to allow federal contractors or grant receiptants to patent inventions funded by the government. As

noted above, the Bayh-Dole Act, passed in 1980, allows small business and non-profit contractors to patent inventions developed under federal funding, and in his February 18, 1983 Presidential Memorandum, President Reagan instructed all federal agencies to, within the limits of the law, extend the same patent rights to *all* firms that receive federal funding.

The Taxpayer Assets Project is investigating the impact of these and other policies on the welfare of the public as taxpayers and consumers. In particular, we are evaluating whether or not Congress or the Administration have gone too far in their efforts to privatize the products of publicly funded research.

One case were are looking at involves Burroughs Wellcome, the British firm that was given a patent for the idea of using AZT on aids patents. As this Committee undoubtely knows, AZT was discovered in 1964 by Dr. Jerome Horowitz of the Michigan Cancer Institute, with funding from the the National Cancer Institute (NCI). The discovery was published and passed into the public domain.

In February 1985 the NCI determined that AZT was effective in treating AIDS in test tube experiments. Over the next half year the NCI conducted extensive tests on human patients. Finally, in the summer of 1985, Burroughs Wellcome joined NCI in research on AZT. In September of 1985 Burroughs Wellcome filed for a U.S. patent for the idea of using AZT to treat AIDS patents, which it obtained on February 9, 1988, after denying to the PTO examiners that the federal government played any role in the discovery that AZT could treat AIDS patients. A number of NCI AIDS researchers protested the Burroughs patent in a letter to the *New York Times* on September 28, 1989,

but despite considerable public controversy about the origin of the AZT/AIDS discovery, the Burroughs Wellcome patent remains intact,[10] although it was recently challenged in the District of Columbia U.S. District Court by a group representing AIDS patents.[11]

The issue which concerns our organization is the larger policy question of whether or not publicly funded inventions should, as a matter of policy, be turned over the private sector, without a careful evaluation of the role of the government in financing the research that led to the invention, or alternative methods of developing the invention, such as exclusive or nonexclusive licensing agreements.

While there is much folklore regarding the R&D and patent process, we are interested in developing a better factual basis for making policy judgements. Thus, we ask the Subcommittee to direct the PTO to gather, as a routine item, information about the role of the government, if any, in financing the research that results in patents. Moreover, we ask the Subcommittee to instruct the PTO to code this information on the APS database, so it will be possible to develop better statistical studies of the technology transfer process.

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[10]"Prepared Statement of Robert E. Windom, MD, Assistant Secretary for Health," U.S. House of Representatives, Subcommittee on Health and the Environment, *Aids Issues (Part 1)*, Hearings. March 10, April 27, and September 22, 1987, p. 31.

[11]People with AIDS Health Group, William Ceyrolles, and William Neithamer v. Burroughs Wellcome and the United States of America, U.S. District Court, Civil Action 91-0574.

Mr. HUGHES. Mr. Bremer, welcome.

STATEMENT OF HOWARD W. BREMER, ASSOCIATION OF UNIVERSITY TECHNOLOGY MANAGERS AND AMERICAN COUNCIL ON EDUCATION

Mr. BREMER. Rather than summarize the statements I've made, I'd like to emphasize a few of the points in the statement that was presented. Primarily, they are these:

Since the passage of Public Laws 96–517 and 98–620, universities, and particularly the major research universities, have mounted a very substantial technology transfer effort through the patenting and licensing of inventions made on the campuses to the point that by 1988 universities received about 2 percent of all the patents issued. That's almost double the number since 1978. Another factor is that more universities are participating in the patent function, for example, in 1989, 144 universities had at least one patent issued to them. Also, over 7,000 patents have been issued to universities in the period from 1980 to 1990.

But the numbers aren't as important as the nature of those patents. Those patents almost always are generated as a result of basic research and they, therefore, tend to form the building blocks for fundamental innovation.

I would like to refer particularly to the probability study that was conducted among 76 major American firms in seven manufacturing industries where the executives responded that their products could not have been developed, without substantial delay in the absence of academic research or were developed with substantial aid from academic research.

I think that data are also significant in that they are indicative of one of the thrusts of Public Laws 96–517 and 98–620, which is to promote an ongoing, cooperative effort between industry and the universities to enhance the global competitiveness of the United States.

Because of budgetary constraints which are very severe in universities and because their primary missions are basic research and teaching, universities seldom have discretionary funds which they can allot to pursue patenting. Consequently, any increase in the cost of obtaining patent protection is of great concern to the university sector. As a consequence, any legislative change which increases patent costs is going to limit severely the ability of universities to obtain the patent protection necessary to the collaborative effort with the private sector.

If adequate patent protection is precluded because of the cost factor, the results of basic research—since, as you all well know, there's a publish-or-perish syndrome in the universities—the published information will inure to the benefit of foreign companies and countries, and in such situations the United States is placed at risk in its ability to compete on a global basis. Therefore, Congress must consider very carefully any legislation which results in a decrease of our ability to establish a competitive base.

It appears, on the one hand, that the administration and Congress are trying to make the United States more competitive on a global basis but, on the other hand, they are taking away the ability to do so by pricing the U.S. patent system out of the market

for many inventors. The positions represented by such activities, would seem to be antithetical.

Considering also the seminal or embryonic nature of most university inventions, it is unusual that a given invention will be licensed at the time of filing the patent application. Even though the universities can enter the system as a small entity, paying only small entity fees, that does not inure to their benefit with the increased maintenance fees that are proposed. It's not unusual for the commercial state-of-the art to lag substantially behind the technology embraced by university inventions. Consequently, the universities would have to pay the increased fees to issue the patent and also for the maintenance fees, at least at the 3.5- and 7.5-year intervals required, if they wanted to maintain a position for licensing.

Also, we should not overlook in this situation that the bulk of inventions emanating from university basic research have been made with the expenditure of some Federal moneys. The basic premise for the expenditure of those Federal moneys has to be that the public will ultimately benefit from the results of that research. Of all the research and development done in academia in 1989, the Federal Government provided about 59 percent of the funding, or about $6.5 billion. Two-thirds of that was given for basic research.

If the public is to ultimately benefit, inventions emanating from that research will require development by the private sector. If the private sector has no incentive in the form of patent protection, it will choose not to elect to develop those embryonic inventions. Hence, the premise for federally supporting research will never be realized. The expenditure then made by the Government for research will only enhance competition from foreign sources rather than promote competition by the United States. The ultimate loser will be the public.

Another factor which must be taken into consideration is the impact which increased patent fees would have on the university-industry collaboration and the technology transfer function. In many collaborative licensing arrangements within industry, the industrial partner generally finances the patenting and maintenance costs for the university. If the licensee is considered a large entity under the current two-tier system, large entity fees must be paid after consummation of the licensing agreement. It's been the experience of the university sector that large entities are very cost-conscious and, consequently, with the increased fees imposed on large entities already in position, it will make the universities' task much more difficult in persuading an industrial partner to enter into a licensing arrangement. As a consequence, the university sector believes that further increases in large entity fees, as a way of retaining the two-tier system—in other words, of subsidizing the small entity approach—would also be counterproductive to the transfer of technology from universities to the marketplace.

The fundamental purpose in the passage of Public Laws 96–517 and 98–620, was to promote the transfer of technology developed with Federal funds from universities, nonprofit organizations, and small business to the public. The effect of those laws has been found to have fulfilled the premise that the public should benefit from the Federal research support by increasing the flow of tech-

nology from those entities into the hands of the public. What has been accomplished by the foresight of Congress, evidenced in the passage of those laws as a means to increase the ability of the United States to compete in a global market, might well be lost through the imposition of burdensome fees on those entities.

Because of significant contributions to society as a result of the basic research conducted at universities, I would even suggest that, in any event, the university sector should be accorded the small entity status under all fees which are assessed for patenting purposes. I might also add that it is the view of some of the parties in the university sector that in a sense the user-fee-supported Patent and Trademark Office is viewed as a system of buying justice. Those who can afford the fees can be in the system; those who cannot afford the fees are outside of the system.

Thank you for your attention.

Mr. HUGHES. Thank you, Mr. Bremer.

[The prepared statement of Mr. Bremer follows:]

PREPARED STATEMENT OF HOWARD W. BREMER, ON BEHALF OF THE ASSOCIATION OF UNIVERSITY TECHNOLOGY MANAGERS AMERICAN COUNCIL ON EDUCATION

SUMMARY OF STATEMENT

- Universities are an important national resource and source of inventions since the majority of basic research in the United States is conducted by them.
- Inventions arising from such research tend to be primarily seminal or embryonic in nature and not product oriented.
- Such inventions require a commercial partner to do the necessary development to bring them to the marketplace.
- Patent protection on the invention is an essential element to finding such commercial partner since, without such protection, the incentive to provide the risk money for development of the invention is absent.
- Universities have limited discretionary funds to engage in the patenting process.
- Any increase in patent fees could severely limit the ability of universities to seek early patent protection on valuable inventions.
- The increase of 69% in patent fees under the Budget Reconciliation Act of 1990 was looked upon as eroding the ability of universities to seek patent protection on valuable inventions.
- The proposed increase in small entity fees under the provisions of H.R. 1613, particularly since that increase would be added to the 69% increase of 1990, would even more seriously erode the ability of universities to obtain patent protection on their valuable inventions.
- A further increase in large entity fees to offset retention of the two-tier system now in effect would also impact adversely on university patenting and its collaboration with industry.
- The imposition of burdensome patent fees is viewed to be antithetical to the effort to make and keep the United States competitive on a global basis.
- The unlimited opportunity to increase fees for processing, services or materials under 35 USC 41(d) over those which are required to recover the estimated average cost to the Patent and Trademark Office to provide such processing, services or materials is also viewed as adversely affecting the university sector's ability to obtain patent protection.
- Because of its significant public function, the Patent and Trademark Office should receive at least a portion of its support from appropriated funds.
- The university sector endorses the oversight of patent and trademark fees as provided in Section 3 of H.R. 1613.

Mr. Chairman and Members of the Subcommittee:

The organizations which I represent here today, and I, personally, am pleased to have this opportunity to present our collective views on H.R. 1613, to authorize appropriations for the Patent and Trademark Office.

The Association of University Technology Managers is a professional association of individuals, primarily from universities, who are engaged in or connected with the transfer of technology from the university sector to the marketplace, for the most part by utilizing the patent system. The Association currently has over 700 members and represents in its membership about 100 universities and patent management organizations.

The American Council on Education represents over 1600 colleges, universities and associations in higher education.

The university community is vitally concerned with intellectual property and intellectual property-related legislation among which H.R. 1613 is included. Since the passage of Public Laws 96-517 and 98-620, the provisions of which have been incorporated into title 35 of the United States Code and Chapter 37 of the Code of Federal Regulations, universities, and particularly the major research universities, have mounted a substantial technology transfer effort through the patenting and licensing of inventions made on their various campuses.

Although the number of U.S. patents issued to universities, or to patent management organizations associated with

universities, is not large in comparison with the total number of patents issued by the U.S. Patent and Trademark Office in any given year, since the passage of Public Law 96-517, the number has been increasing every year since 1980 to the point that by 1988 universities received about 2% of all patents issued. This is an increase from 0.9% in 1978. In addition, the number of universities participating in the patenting effort has also increased. For example, in 1989, 144 universities had at least one patent issued and in the period from 1980-1990 universities had over 7000 patents issued to them.

More importantly, the patents issued to universities, since they most often are generated during the course of basic research, tend to form the building blocks for fundamental innovation. In a recent probability sample study[1] of 76 major American firms in 7 manufacturing industries, executives responded that a substantial proportion of new products and processes introduced between 1975 and 1985 depended upon academic research and development in that they either:

- could not have been developed (without substantial delay) in the absence of academic research; or
- were developed with substantial aid from recent academic research.

[1]Mansfield, "Science and Engineering Indicators", 1989, copy attached.

These data are also significant in that they are indicative of ongoing cooperative effort as between industry and universities in enhancing the competitiveness of the United States in a global economy. Moreover, it is fully expected that this cooperation will increase since the university sector performs about 65% of the basic research in the United States, the bulk of that effort being supported by various government agency funds. Since invention without innovation benefits no one, appropriate legislation, which not only recognizes the universities as an important source of invention, but also aids university-industry cooperation to develop those inventions, is essential to the transfer of university-generated technology for the benefit of the public.

Because of the budgetary constraints under which universities must operate and because their primary missions are education and basic research, universities seldom have unlimited discretionary funds available to pursue patenting. Consequently, any increase in the cost of obtaining patent protection is of great concern to their collective technology transfer function.

In addition, most university inventions tend to be embryonic in nature. Arising as they do out of basic research, they tend not to be product oriented and require a great deal of development to bring them to the market. To accomplish that end, the universities seek a commercial partner, with which they can collaborate and cooperate, to do the necessary development. However, the absence of, or limited, patent protection makes it

very difficult to find and obtain the necessary commitment of a commercial entity to product development. The right to exclude others afforded by patent protection is considered a necessity to calling forth the risk capital necessary to the development effort. Therefore, any legislative change, such as increased patenting costs, will limit the ability of universities to obtain the patent protection necessary to the collaborative effort with the commercial (private) sector. The public will thus be deprived of the benefits which can result from basic research.

Moreover, if adequate patent protection is precluded because of the cost factor the results of basic research, since those results are almost always published, will inure to the benefit of foreign companies and countries. In such situations, the United States is placed at risk in its ability to compete on a global basis. Therefore, Congress must consider very carefully any legislation which results in a decrease in our ability to establish a competitive base. It appears that on the one hand the Administration and Congress is driving to make the United States more competitive on a global basis, but on the other hand is taking away the ability to do so by pricing the United States patent system out of the market for many inventors. The positions represented by such activities are antithetical.

In the two-tier system of fees established in the United States Patent and Trademark Office, the universities qualify for small entity status unless the particular invention for which fees are to be paid is licensed or becomes licensed to a party

that is considered a large entity. Considering the seminal or embryonic nature of most university inventions, it is unusual that a given invention will be licensed at the time of filing so that the universities can enter the system as a small entity paying only small entity fees. However, it is not unusual for the commercial state of the art to lag the technology embraced by many university inventions for several years and for that reason university inventions tend to be licensed years after filing. Because of those circumstances, as a practical matter, the universities themselves must consider that they will have to inevitably pay the issue fee on a filed application as well as the maintenance fees at 3 1/2 and 7 1/2 years if they wish to maintain a position for licensing.

What should also not be overlooked in this situation is the fact that probably the bulk of inventions emanating from university research have been made with the expenditure of some monies supplied by Agencies of the Federal Government. The basic premise must be that those Federal monies are spent on research so that, ultimately, the public will benefit from the results of that research. Of all the research and development done in academia in 1989, the Federal Government provided about 59% of the funding or about $6.5 billion. Since, as mentioned before, and because the bulk of that money was spent for basic research, if the public is to ultimately benefit, inventions emanating from that research will require development by the private sector. If the private sector has no incentive, in the form of patent

protection established by the universities, under which it can justify risking the money to do the necessary development of an invention to the marketplace, i.e., if it has no protection from potential competition through operation of the patent system, it will not elect to develop the seminal or embryonic invention. The ultimate loser will be the public. Hence, the premise for Federal support of the research will never be realized. The expenditures for the research may then only serve to enhance competition from foreign sources because of publication of the research results which is the common practice and one of the goals of academia.

The enactment of the Budget Reconciliation Act of 1990 (P.L. 101-508) on November 5, 1990, which increased statutory patent fees by 69% caused grave concern in the university community that the ability of universities to continue to file patent applications on significant inventions would be eroded because of the added cost imposed by that surcharge. This concern was enhanced by the fact that the surcharge had the practical effect of being applied retroactively since it applied not only to fees for prosecuting patent applications but also to fees for maintaining a patent in force. Such surcharge alone was viewed as not only discouraging the filings of patent applications but causing universities to abandon existing patent rights on basic inventions prior to the time that the commercial state of the art was at the point that the inventions could be considered candidates for further development by the private sector.

This problem would be exacerbated by the proposed increase in "small entity" fees under the provisions of H.R. 1613. The loss of "small entity" status for the issue fee and the maintenance fees, added to the 69% surcharge imposed last year, would mean that small entity fees would have increased about 200% between November 5, 1990, and October 1, 1991, and about 3500% in the last 9 years. This would even more seriously erode the ability of universities to protect many valuable discoveries which offer the potential for later development by the private sector for the public benefit.

Another factor which must be taken into consideration is the impact which increased patent fees would have on university-industry collaboration and the technology transfer function through licensing. In many collaborative and licensing arrangements between universities and industry the industrial partner finances the patenting and maintenance costs. If the licensee is considered a large entity under the current two-tier system, large entity fees must be paid after consummation of the licensing arrangement. It has been the experience of the university sector that large entities are extremely cost conscious. Consequently, with the increased patent fees already imposed on large entities it will make it much more difficult to persuade an industrial partner to enter into a licensing arrangement for undeveloped inventions or those at a very early stage of development. As a consequence, the university sector believes that further increases in large entity fees as a way of

retaining the two-tier fee system now in effect would also be counterproductive to the transfer of technology from universities to the marketplace.

The fundamental purpose in the passage of Public Laws 96-517 and 98-620 was to promote the transfer of technology developed with the use of Federal funds from universities, non-profit institutions and small business. The effect of those laws has been to fulfill the premise that the public should benefit from Federal support of research by increasing the flow of technology from those entities into the hands of the public. What has been accomplished by the foresight of Congress evidenced in the passage of those laws as a means to increase the ability of the United States to compete in a global market could well be lost through the imposition of burdensome patent fees on those entities.

The university sector, for the foregoing reasons, is opposed to any change in the current two-tier system of patent fees. If, as a consequence, of maintaining a small entity status for individual inventors, small businesses and non-profit organizations, including universities, there is a danger of a shortfall in revenue which adversely impacts on the efficient operation of the Patent and Trademark Office, Congress should reinstate a level of appropriations from taxpayer revenue to cover any such shortfall.

In addition, the university sector advocates that the costs of operating the Patent and Trademark Office which confers no

direct benefit on patent and trademark applicants but are in the interests of the national economy or are of benefit to the general public, for example, operation of the public search room and engagement of the Patent and Trademark Office in international affairs and appropriate legislative activities, should also be supported by the appropriation of public funds and not be derived from user fees.

The university sector is further concerned with the proposal for authority in the Patent and Trademark Office to raise fees for non-specified processing, services and materials. Currently 35 USC 41(d) requires the setting of such fees to recover the estimated average cost to the Office of such processing, services or materials. Because of the Budget Reconciliation Act and the decision that the Patent and Trademark Office should be wholly user fee supported, it can be anticipated that the Office would be forced to look upon such fees as "profit centers" to make up any shortfall in revenue experienced from operations in other areas. Since the universities must avail themselves of such services in their patent management functions, substantial increases in such fees would also impact adversely on the ability of universities, given their severe budgetary constraints, to seek protection for valuable inventions and discoveries.

The university sector also endorses the oversight of patent and trademark fees by Congress as set forth in Section 3 of H.R. 1613.

The opportunity to present their views is sincerely appreciated. I will be pleased to answer any questions which the members of the Subcommittee have.

DEPENDENCE OF INDUSTRY ON ACADEMIC RESEARCH

INDUSTRY	PERCENTAGE DEPENDENT ON ACADEMIC RESEARCH	
	PRODUCTS	PROCESSES
INFORMATION PROCESSING	28	27
ELECTRICAL	9	7
CHEMICAL	8	6
INSTRUMENTS	21	3
DRUGS	44	37
METALS	22	21
OIL	2	2

SOURCE: SCIENCE & ENGINEERING INDICATORS-1989 (MANSFIELD)

Mr. HUGHES. Do you think the administration's goal of maintaining the 18-month pendency for patent application is important?

Mr. BREMER. I don't think it's as important as seems to be emphasized. I know that was the goal that was tried to be achieved, but I think that if pendency was increased to 24 months it wouldn't make a great deal of difference.

Mr. HUGHES. Mr. Love, what's your feeling on that?

Mr. LOVE. I'm not an expert on the 18-month issue.

Mr. HUGHES. Dr. Rabinow, how about you?

Dr. RABINOW. I don't think it's very important. I'm very concerned about the quality, of course, as the judge so well pointed out. That makes a difference. I'd like to point out the reason quality is so important is that when a patent goes into litigation by somebody who wants to prove that it's invalid, the decision is based not so much on the paper of the patent, but on the possible royalties.

Dr. Kateng who is professor of patent law at George Washington, points out that if somebody is going to pay $2 million or $3 million in royalties and the patent case in court will cost $100,000, it pays to try to patent and see if it's invalid because you'll risk $100,000 but you may gain $2 million or $3 million, and sometimes $30 million.

So, the good patents end up in court and it's very important that they be very good, indeed, because the number of cases would be lowered. People don't like to go against a patent that is clear, well-written, and well-documented through the Patent Office. I don't really care whether it takes 18 months or 24 months; I just want to make sure that when I get a patent, it does not go to court because it is so strong.

My experience, by the way, has been very good. I have received 226 U.S. patents and perhaps 100 in foreign countries, and none of them has ever been tried in court. I've never been sued and I've never sued anybody because I make great effort to make sure I claim nothing except what I deserve and my attorneys work with me very hard. I do fight with the Patent Office and very often disagree violently, but I think that it's possible to get good patents and, by and large, we get them.

Mr. HUGHES. For any member of the panel, in your experiences has the quality of the review of patent applications been maintained while the patent pendency has been reduced?

Mr. BREMER. Yes, I think for the most part our experience is that the quality is there. The Patent Office is doing a reasonably good job. I know they've lost a lot of experienced people over the years and that certainly has affected the attorney's ability to get a patent issued. Very often, again from the university perspective, the nature of the technology is very new and it does require an element of teaching the patent examiner. That can be overcome very often through the interview process.

Mr. HUGHES. Any member of the panel: Professor Wegner will be testifying subsequently and he proposes two changes to the patent system to protect small entities.

First, he recommends backloading fees and progressively increasing maintenance fees during the final years of the patent term.

Second, he proposes a delay of 2 or 3 years before a patent application is examined.

What are your views on that, Dr. Rabinow?

Dr. RABINOW. There are such systems in Europe where, when you apply for a patent, it is open for discussion. In Germany, for example, and many European countries, the patent is published as soon as you apply for it. They let possible opponents have their say. That is, you read a patent application by somebody and you say that you know some prior art and you're allowed to write to the patent office.

I don't particularly like it. I think it delays the issuance of the patent. I think that people will have their say later in the United States, too, by requiring a reexamination, or certainly a system comes up. I would like to see the system kept as simple as possible and ours is basically simple.

Mr. HUGHES. How about the backloading of fees? How do you feel about that?

Dr. RABINOW. I think that the whole idea of fees later is objectionable. When I apply for a patent, I'm willing to spend some money on it but because of the lawyer fees, the patent fees, and the cost of developing the device, the costs are not small. I certainly don't want to be saddled with the expenses 10 years later after I haven't been able to sell the patent. I don't want to suddenly get another bill and then another bill, as I do in Europe. I get the bills every year. I think the psychological effort is that I'll abandon them. I think abandoning a patent makes it worthless. It becomes a piece of paper in which nobody wants to invest money. Why should you invest money when your competitor will have the advantage of producing it after you?

You have to realize that the second producer has a tremendous advantage: (a) The market is made, he doesn't have to make the market; (b) he sees that the public is buying it so he has much less risk; and, (c) he can make a better product because by being second he can improve on the product. He can see where the difficulties have been and what people didn't like. People ask me, Why don't I invent the second version first? I would like to know how to do that. The difficulty is nobody is smart enough.

Mr. HUGHES. I'm going to have to interrupt you right there. I had hoped to be able to conclude this panel but, unless somebody has a time constraint, I'm going to ask if you will remain so that we can go back to questioning.

We'll come back in about an half hour after the session of Congress welcomes Mr. Schwartzkopf.

The subcommittee stands recessed.

[Recess.]

Mr. HUGHES. The subcommittee will come to order.

We're all set. Let's continue with Mr. Love.

Mr. LOVE. One thing I think the committee can look at in the home run department would be whether or not the fee system is a hidden tax on inventions. If you're going to go ahead and tax inventors, maybe you should think about other ways to do it.

One way would be to have the fees related to the relicensing fees. Now if you did relate the fees to relicensing fees, they would only pay when the invention was commercially available. You would pay

more for something that would add a thousand times greater revenue than one that had less revenues. So, the fee would fall only on people who could afford to pay it. The person that's looking at an invention and has no idea what the crystal ball is going to say about the future wouldn't have to worry about that problem. It would lower the risk of holding onto an invention. It would shift more of the cost of the patent fees on the people who are benefiting the most from it.

I will say that I think it would be better if the Patent Office was funded out of general tax revenue because I think that, as has been stated before, the Patent Office is for the benefit of the public, not for the benefit of the individual inventors. But, if you are going to do that, I think this would be something you should explore.

Mr. HUGHES. Dr. Rabinow, why don't you respond?

Dr. RABINOW. I would like to make some comments about the crystal ball business. First of all, it is not possible when you invent something to predict whether it will be successful or not. It is also true, and I agree with you, that the more basic the invention, the less you can predict.

For example, there are two things I would like to say about this. When Mr. Faraday in England discovered the fact that the passing of electric current produces magnetism, a magnetic field near a wire produces electricity, the exchequer of the British empire said, "Mr. Faraday, what do you do with this?" Mr. Faraday said, "I don't know, but someday you'll be taxing it." This is, of course, a fact,

When I invented the first magnetic disk file for computers, people said, "Who needs it? Who needs that much information storage that fast? Tapes do it well enough."

Well, of course, years later disks are used on all computers. Nobody can predict what happens, and I can tell you this, if you want to know which inventions are going to be important and which are not, you can't really know. You can only tell this later.

I once asked the Secretary of Commerce, Betsy Ancher Johnson, to ask the Internal Revenue people to change the forms slightly, the income tax forms we use to pay our taxes, where it says "royaltly"—and it may be all kinds of revenues, including musical, and so on—that they should have another line, "Revenues on Patents, U.S., Local, Other" so that, without changing the tax in any way, the Internal Revenue Service and the Congress could tell how much moneys are involved, at least in those cases where there is money exchanged. That's not always the case; sometimes cross-licensing doesn't do this, but at least it would be a handle on how much the patent system brings in cash on patent royalties. She never did this. I think that many people would rather not know. Whatever the reason is, I think it would be very nice if Congress would ask the Internal Revenue Service to put another line in the damn form, which is already too long——

Mr. HUGHES. Which form is that?

Dr. RABINOW. The form on which I pay my taxes, where it says, "Royalties." There is a line, but it doesn't say what kind of royalties. I see no reason why they couldn't have two or three more lines, "Royalties on patents," "Royalties from foreign countries." This would help tremendously.

Mr. HUGHES. Let me take it a step further. What would you think of having the line you suggest, but then really backloading it and having an additional incremental tax? It would be small on the revenue generated from a patent.

Dr. RABINOW. The thing is that now nobody knows. Everybody is guessing what the patents are worth. They're guessing how much they produce and nobody really knows. The Internal Revenue Service could find out and it would help a lot if the Patent Office could point to itself and say, "Look how much money we make for the United States."

Mr. HUGHES. I'll tell you what concerns me and I'd like to hear your thoughts on it. Maybe, Mr. Bremer, you could take a stab at this. I really wonder whether or not we shouldn't have some public financing just to ensure some degree of accountability.

Dr. RABINOW. What do you mean by that, please?

Mr. HUGHES. If the Patent and Trademark Office is self-sufficient and generates sufficient revenues, I wonder whether or not those of us who are in policymaking positions would have as much influence if they don't have to rely upon a budget request?

Dr. RABINOW. The mechanics get a little involved. That way it can be self-supporting, I suppose.

Mr. HUGHES. How do you feel about that, Mr. Bremer?

Mr. BREMER. I think the oversight aspect would tend to be less certain under those circumstances. There would be less interest in doing it. Maybe it would be likened, for example, to the TVA approach.

Mr. HUGHES. Well, I like likening it to the post office. They don't pay attention to anything we say.

[Laughter.]

Mr. BREMER. Maybe that's a better example. I think that oversight function may tend to disappear under those circumstances.

Let me add one other thing to what Dr. Rabinow said. In the experience of the organization for which I was patent counsel for 28 years, the organization made money on 1 out of every 40 patent disclosures throughout its historical life. So, it's a numbers game. The normal pattern—and I followed this with other universities, too—we find is that, we tend to file patent applications on, roughly, about one-third of the patent disclosures we get. Then, we have been able to license about a third of those on which we have filed applications.

There are other elements that contribute to the number of filings. One is that if you have a basic invention which is licensed, you can find yourself in a situation where you tend, even at the university level, to get into a defensive patenting position to protect the licensees that you have. Of course, those are all added costs but, in the meantime, you are probably deriving revenue from the license. So, filing such applications really becomes a business decision for the most part.

Those are all factors that can affect the total picture.

Mr. HUGHES. This is for anybody on the panel. In your own experience, has the 69-percent fee increase imposed in the Budget Reconciliation Act we passed just last year discouraged independent inventors, universities, or small business patent filers?

Mr. BREMER. I think there's been discouragement by the 69-percent increase. Again, budgetary constraints will allot very small amounts of money for the patenting function.

Mr. HUGHES. Do you have any data or are you just——

Mr. BREMER. No, I think it's too soon after that increase to put any data together that's solid in the circumstances. I know that the university sector expressed great concern about that increase. Very often, what they will try to do in the universities is to look for a potential licensee and arrange some kind of licensing package so that the commercial entity will pick up the cost of those filings. Often, however, that's not possible.

Mr. HUGHES. Mr. Love makes the point that we should make that information in the Patent Office public information and easily accessible to the public. What's your reaction to that? Mr. Bremer.

Mr. BREMER. By that, do you mean the application itself? If you're in the business of licensing, the tendency now is to look at it globally. We've done that for a number of years. Then if you file a patent application in a foreign country, the application will be published within 18 months of your filing date or priority date. In those circumstances, that information is therefore available at a fairly early stage.

Mr. HUGHES. Dr. Rabinow, anything you want to add to that?

Dr. RABINOW. I happen to like the U.S. system. But it is true that when I file in foreign countries, it does become public information very soon and I don't think it affects much.

I have talked to inventors all over the world and I can tell you that the European inventors envy us. They like our system and they don't like the yearly maintenance fees. Here we're going to have 3.5-, 7-, and 10.5-year fees. In Europe, it's every year and the result is that the private inventor is worse off in Europe—this was, admittedly, before any fees were instituted in the United States, so they all said that it was wonderful. In the United States you get a patent and then you can try to sell it for 17 years, if you can. Now the United States I think is getting worse.

The number of private inventors in the United States percentagewise is falling, and I think it's due to many factors, but certainly expense will be one of those things.

I'd like to point out to you about statistics. I have in my notebook some 3,000 inventions—good, bad, indifferent, some terrible. I decide on the basis of many things whether I'm going to apply for a patent or not. One of the things that concerns me is the cost. If the cost is high, I select only those that I think have the best promise. I may be wrong, but at least I try. If the costs were low, I would file more patents and, for all I know, some of them probably would be useful.

Mr. HUGHES. Mr. Bremer said the same thing. Most universities and colleges do not have discretionary funds. They have their own budget problems today and they're going to be doing a lot of prioritizing. That means fewer patent applications.

Mr. LOVE. I would just like to emphasize, with regard to your comment about the idea of the information being publicly available, that the idea is to make the scientific information that's available from the patent files available to as wide an audience as possible and as inexpensively as possible so that other inventors, students,

and researchers can benefit from the scientific value. It's not a system run primarily for patent lawyers or patent examiners, and we should make it consistent with the broader philosophy that the public should have easy access to government information.

Dr. RABINOW. I would like to follow that up with one statement. The Patent Gazette that's published by the Patent Office is a very useful document. Every week they come out with a short, brief statement and a drawing about each patent that's issued. The Printing Office, in order to be self-supporting, which is another crazy thing to do, is going to charge $590 a year for this magazine. I don't know any inventor who is going to subscribe to a magazine for close to $600 a year. I won't, and I think it's a shame that a very useful piece of information suddenly becomes out of reach for almost any private citizen.

Mr. BREMER. Let me add that, of course, in universities, the emphasis is on publishing the research results and that always comes out early. As a matter of fact, early publication can be the bane of our existence and operation because very often inventors, when they're asked the question, "Have you published on a patent application?" say, "Well—." We ask, "How long ago?" The answer may be 50 weeks. That gives you only 2 weeks to get an application filed, even with the grace period, and then you've already lost your opportunity for foreign patent coverage.

That's a problem that we face all the time. As a matter of principle, our foundation works within the policies of the university on publication and their policies as closely as we can.

Mr. HUGHES. One more question: How would you rate the Patent Office's automation system on a scale of 1 to 10, 10 being the best? Do you want to comment?

Dr. RABINOW. I think our patent system is excellent. Last year they issued 97,000 patents. Some of them, I think, should not have been issued, but when you issue 100,000 patents a year, and two or three are silly, it means that somebody is human and made a mistake. But I think overall they do a beautiful job and you should do everything possible to raise their salaries and get the best people in the world to do it.

Mr. HUGHES. You must have a patent application pending.

Dr. RABINOW. As a matter of fact, I don't have any patent applications pending now in the Patent Office.

[Laughter.]

Mr. HUGHES. I was only kidding. So, you give them a 10. Mr. Love.

Mr. LOVE. The question was on the automated patent system? I think the committee should ask the Patent Office every year to publish in the Federal Register a request for comments on its total information dissemination program so you can have a public file with a public record——

Mr. HUGHES. I only asked you how you rated it. Mr. Bremer.

Mr. BREMER. The system as a whole operates very well in the constraints under which it has to operate. I can't speak directly to the automated system because only a part of that is available to the public to use. I think the next steps in terms of automation and making all of the information available is still some time away.

Mr. HUGHES. So, you have basically some limited knowledge on the subject.

Thank you very much. You've been very helpful to me. I appreciate your contributions.

I would like to call our final panel today. Prof. Harold Wegner teaches intellectual property law at George Washington University Law School and has a private practice as well.

Mr. Thomas Smegal practices intellectual property law and chairs the American Bar Association's Patent, Trademark, and Copyright Section. I would note parenthetically that Mr. Smegal served on the Legal Services Board and has testified in that capacity before this committee in the past.

Our final witness this morning is Dr. Donald Banner, the president of Intellectual Property Owners, Inc., and a frequent and valuable witness before this subcommittee.

Gentlemen, we have your testimony which, without objection, will be made a part of the record. We hope you can summarize for us because we have read your statements.

Professor Wegner, welcome.

STATEMENT OF PROF. HAROLD C. WEGNER, GEORGE WASHINGTON UNIVERSITY LAW SCHOOL

Mr. WEGNER. Thank you, Mr. Chairman. I am a professional lecturer in law at George Washington.

I won't read anything from my statement, but I would like to comment on some of the points previous witnesses have made and try to synthesize the view that I think we all share.

I think we all, without question, share the view that there should be government funding to support the patent system. But, today, I'm here to see what we can do in lieu of that government funding. It would be a macroapproach to find government funding, something that we can't solve jointly or severally within this room.

Judge Newman made a very important point that dissemination of information is a prime point of the patent system. In other words, you encourage inventors to give their disclosure of how to make their widget, their better mouse—or their mousetrap. The rest of the world is doing a better job than we are.

Europe, Japan, and other countries all publish their patent applications 18 months after the first filing date. Of all the patent information that comes out first in the United States through patents, it accounts for only about 20 percent of the total world base of information from patents. In other words, 80 percent comes out in Japan or Europe first. Now why is that?

We have an arbitrary goal of an 18-month pendency to grant. Well, 18 months in our sense is not 18 months in international real time. The international 18-month counting—publishing at 18 months in Tokyo, everything in the Japanese language, publication in Munich, Geneva, and everywhere else—is 18 months from the first filing date anywhere in the world for any patent application.

Our 18-month pendency does not count foreign priorities, earlier U.S. cases which are just recycled and given new numbers and new artificial filing dates, so our net pendency is closer to 24 to 30 months in such "real time" accounting.

The first reform we accomplish is to publish at 18 months. Once we publish at 18 months, then we can introduce what is called "flexible examination," to give the applicant the right to defer his application free from any prosecution costs.

Congressman James talked about the high attorney fees. He's right on the money. He's got it right there. It's high attorney fees, high prosecution costs, and not the filing fees, which eat up the small and the big inventor. So, let's introduce 18-month publication; let's let examination be taken up on request. If somebody needs a patent right away, take it up right away, today. Say, "Mr. Examiner, I want my case examined." But if I don't go and say that I want my case examined, let it sit for 2 or 3 years.

If you do this, other nice things happen. You don't need so many examiners. You can piggyback the U.S. examination, which takes place then at 3 years, off the parallel European examination. In other words, almost every major invention has patent applications filed in triplicate. The Japanese examiner, the European examiner in Munich, and the Crystal City U.S. examiner, each examines the same case.

Let's tie this into quality. Would I like to piggyback off the European examiner's results if I'm the U.S. examiner? You bet I would. Why is that? It's a better examination. Let's say that all examiners are created equal, they come into the patent offices of the world as equals. In the United States, they are churned through the system at an enormous rate. It's a "Kiddie Corps" examiner corps today. It's not because I'm getting older or that I was 21 years old when I was in the Patent Office. It's just that they are younger, cycling through, churning, churning, churning. In Europe, on the other hand, the examiners stay for a longer period of time.

Let's take the time an examiner has to examine a case. The average European examiner, who is a senior examiner, has 85 cases to examine a year. A U.S. examiner has 100 to 130 cases a year, and not only does he do examinations, he must search the case. The European examiner in Munich does not have to do that.

So, if you can let examinations slide for 2 or 3 years, the U.S. examiner could piggyback off the European, instead of the other way around. Instead of uncorking $1 billion in funds over the next few years for automated searching, bloating the examiner corps to 3,000, we can do quite fine by having a more modest budget, lower fees, and just simply by having this flexible examination.

For user fees, I agree with everything Dr. Rabinow and Mr. Bremer said about the need for getting the small inventor into the system. They need the patent hook to get their ideas commercialized. I think Prof. Edmund Kitch at the University of Virginia has explained this best. He has a mining claim theory. We should imagine that if we were the forty-niners mining gold in the Sacramento River, if we find a territory we want to mine, we can register the claim on this area and then we can leisurely cull out the gold, the silver, or the other ore. If we don't have a mining claim, it's chaos. There's no incentive to find a place. You're just going to try to pirate off of other people's mining territory. You need that patent incentive to get university inventions into the commercial laboratories.

But, as Congressman James pointed out, the attorney fees are what eat people up. So, if you can have flexible examination with 2 or 3 years' deferral of the necessity of the examination, then the university can save $2,000, $5,000, or $10,000 in prosecution costs that can be incurred in the first 2 or 3 years. They can use that 2- or 3-year period in order to find a licensee to hook the invention into the commercial network, to unload this intellectual property with a license or an assignment, to get it into the real world. I think this is more important even than subsidizing small entity fees.

Let's talk briefly about a point you raised on backloading of fees. There really are several basic points. Dr. Rabinow mentioned that it takes him some time to find a licensee or to exploit an invention. That's true. I think that very high maintenance fees should be in the last few years of the life of the patent, certainly after the first 10 years from filing.

How do you measure the "home run?" Congressman, you're right on the money again. You measure the home run simply by the way I determine it myself. If I own the patent, if it's a home run, I pay the home run fee. If not, I let the patent go abandoned. Now, I sympathize with the individual that Dr. Rabinow has found that said it may take more than 10 years to get an invention into commerce. But, as a policy matter for the United States of America, we cannot afford to wait 10 years to get inventions into commerce.

In the modern world of the 1990's, every inventor, if he is not first approached by industry, who is scouring the Official Gazette that he mentioned looking for the latest inventions, can go to Wall Street and get financing. If the invention looks good, you get financing and then it gets into the marketplace.

I would like to see 5, 10, or more years for this opportunity to put an invention into play, but realistically 2 years is a nice thing to give to the inventor to give him time to do that.

These basically are the comments on other people's testimony and I'll give back my time.

Mr. HUGHES. I appreciate that.

[The prepared statement of Mr. Wegner follows:]

HOUSE OF REPRESENTATIVES
COMMITTEE ON THE JUDICIARY

SUBCOMMITTEE ON INTELLECTUAL PROPERTY AND JUDICIAL ADMINISTRATION

Summary of Testimony on May 8, 1991

Harold C. Wegner

1. The "Benson Initiatives" of the American Intellectual Property Law Association that were given to the Commissioner in May 1990, and which now only gather dust, should be introduced in this Congress. This would permit publication of *most* patent applications 18 months from filing that in turn would both alleviate the need for hurried prosecution and also permit *all* entities the chance to defer *all* prosecution costs for two years. (Even if the legislation is not effective for two years, the PTO could relax its rushed examination during this period to put the United States more in line with the timing of parallel examinations in the European Patent Office.)

2. The United States Patent and Trademark Office (PTO) should selectively introduce off-the-shelf computers, modems and CD-ROMs to increase efficiency while decreasing overall costs, starting with biotechnology and the other areas of technology targeted by the Administration as vital to U.S. interests.

3. The "Automated Patent System" should be recognized as the failure that it is, and terminated once and for all, saving the $ 300,000,000.00 anticipated future expenses of the APS.

4. Examiner hiring should be frozen at 1990 levels for the next two years: The plan to go to 3000 Examiners by the year 1995 would provide a Kiddie Corps with roughly 85 % of all Examiners being at an extremely junior level. If there is to be growth in the examining corps, it should not exceed the ability to first train and absorb the approximately 65 to 70 % of the examining corps that have only started since about 1988.

5. Savings from killing APS plus Examiner hiring freezes should permit a reduction in *all* fees. Coupled with decreased expenditures, whatever fees that remain should be backloaded: High maintenance fees after the tenth year should secure income to permit very low filing fees for *all* entities, not just the small entities.

6. "Small entity" fee termination is clearly unacceptable when the alternative of an "all entity" fee with low front end costs is possible.

Subcommittee on Intellectual Property and Judicial Administration
Testimony of Harold C. Wegner

Thank you, Mr. Chairman, for inviting me to express my views on the functioning of the United States Patent and Trademark Office. I speak as a concerned citizen, one who represents both individuals, universities and other "small entities" as well as major multinational concerns.

There are three major challenges that need to be addressed under the premise that the 102nd Congress is bound to a user fee funding of the PTO:

First, the goal of prompt dissemination of patent information at 18 months should be met through the international norm of automatic publication -- a bloated 3,000 plus examiner corps is not the answer.

Second, there is the pressing need for off-the-shelf automation, but not the anachronistic "Automated Patent System"; saving the $ 300,000,000.00 anticipated future expenses for APS is necessary both for budgetary as well as quality reasons.

Third, there is the need for an overall management view of the PTO to focus funding into the better integration of the triangular patent system of the 1990's in Washington, D.C., Munich and Tokyo. Following the program outlined here permits a better alternative than such drastic measures as an effective abolition of "small entities" fees.

With both a new Commissioner and a new Subcommittee, we should stay on the road to international progress that, until recently, we had shared with sister patent offices in Munich and Tokyo. Radical departures are unwise, not to mention very expensive.

(1) Publishing Patent Applications at 18 Months

Today, the latest information from patent applications is automatically published in Tokyo, Munich, Geneva and elsewhere at 18 months from the first filing of a patent application. For example, this gives the inventor in Tokyo a Japanese language text of American, European and Japanese innovation through publication of the Japanese patent application. Parallel applications are published elsewhere at this very same time, thus fulfilling one of the primary objectives of the patent system, *to disseminate to the local research community the very latest technology to stimulate further innovation and competition. The United States is odd man out; the U.S. maintains applications in secrecy until grant.*

The U.S. system fails to keep pace with the rest of the world. Only about twenty percent of all information from patents and published patent applications comes out first in the United States, despite the heavy emphasis placed on speed of examination and grant -- the so-called "18 month pendency" goal. As a general rule, the United States publishes its counterpart of parallel European and Japanese patent applications about six months to one year later than abroad. If Americans are given year old technology a year after competitors in Japan and Europe receive native language publications, by the time the "old" technology is republished in the United States in a granted patent, improvement inventions have already been made and second generation patent applications filed by Europeans and Japanese.

To be sure, the world shrinks year by year. Many sophisticated American companies monitor the kokai in Japan, the Offenlegungschriften in Germany and other parallel 18 month publications. This is expensive and, where translations are required, an always frustrating, expensive and delayed procedure. That major American companies

go through this exercise shows how vital they consider this source of information to be. That individuals and small businesses are effectively denied this information due to cost considerations is manifestly bad public policy.

The Assistant Secretary of Commerce has estimated that it would cost about $ 30,000,000.00 to publish all patent applications at 18 months. But, if the Commissioner were willing to accept the simpler but equally effective method used by the European Patent Office, the figure is cut to ten percent, roughly $ 3,000,000.00.

With automatic publication, the need to attempt to meet the 18 month pendency goal could be scrapped. This goal is the motive force behind a drive that would effectively triple the number of Patent Examiners in just four years, versus 1981 staffing levels. A "Kiddee Corps" of Examiners would be created by the PTO expansion where roughly sixty percent of the Examiner's in 1995 are now in college or anywhere but the PTO it is today.

The lack of professionalism here is contrasted with the highly professional atmosphere of the European Patent Office. Over there, over 70 percent of the Examiners have at least three years experience. Here, in Washington, D.C., the number is less than 30 percent. If the PTO bloats to 3000 Examiners by the year 1995, the figure will be closer to 15 percent.

Whereas European Patent Examiners receive an excellent *legal* education necessary for patent law principles and whereas 30 years ago 100 % of all U.S. Examiners at level GS-13 and above were attorneys, today the number of lawyer-Examiners in the United States who actually examine patent applications hovers at about the 100 level. The nearly 200 law student-Examiners may be expected to largely cycle into private industry or law firms by the time of graduation.

More importantly, after several hundred million dollars is expended to meet the goal of an examination corp of over 3000 professionals, the 18 month goal would no more be met by then than today.

As a bookkeeping exercise, 18 months can be met, instantly. All that is necessary is to calculate the pendency of patent applications from an arbitrary point in time *after* the first filing of a patent application and/or to set a grant date before the actual mailing of the granted patent by the PTO. Both of these techniques have been employed to "win" the battle of 18 month pendency in October 1989. Then, when Commissioner Quigg declared victory in his war for 18 month pendency, now in 1991, and in 1995 when the move to 3000 plus Examiners is to be completed, it was, is and will be a fact that *the net pendency will remain at least six months to one year more than the 18 month goal, counting pendency from the time of first filing up to the grant date.*

(2) Off-the-Shelf Automation

The American Intellectual Property Law Association, the AIPLA, is on the money when it favors shelving the present "Automated Patent System", the APS, that breaks the PTO's budget and has made small entity fees a necessity. I have had access to the Noe Report – the detailed investigation of the APS by a select committee within the AIPLA that reaches devastating conclusions about the failures of APS. I endorse and commend the Noe Report to this Subcommittee.

Off-the-shelf automation in PC's and CD-ROM's should be the priority focus for automation; an immediate halt should be called on the already underway $ 500,000,000.00 "automation" program in search file integrity and equipment already out of date.

Automation of the PTO is long overdue. Patent practice may be the single most important area for word processor-based automation that can be imagined. The heavy processing of paper on a daily basis that is shuffled from patent attorney as a patent application to the Patent Examiner is then regurgiated as an "Office Action" which is then followed by an attorney's "Amendment" and numerous other papers that can add up to five to ten or more entries in the "file wrapper", the manilla folder housing what often becomes a couple of inches of paper. This paper merry-go-round is multipled by the 160,000 or so patent applications filed each year. Already in the chemical and biochemical arts, patent attorneys use their modems or CD-ROM systems to search the literature for the state of the art -- to judge the patentability of the new "Widget" that is the subject of a patent application. Why not the Patent Examiner?

It would be unthinkable for a patent attorney in the 1990's to lack the $ 2,000 or so investment in a PC and software to reach this state of off-the-shelf automation. The investment is paid for in months (if not weeks) in terms of attorney time, not to mention the use of secretarial services.

Many Patent Examiners have barely entered the dictaphone age! As a pilot project, at least 150 modem-served computers should be installed in Groups 120 and 180 that have art best searched through the commercially available data bases such as Chemical Abtracts Service (CAS). This would include virtually all of biotechnology and related pharmaceutical inventions that are so vital to American competitiveness and the search for treatments for cancer and diseases of the 1990's such as AIDS.

"Automation" in the sense of the PTO's drive for its unique system of searching

and file integrity should be scrapped. To pour a further $ 300,000,000.00 into what is already a $ 200,000,000.00 mistake would be akin to reordering $ 6,000.00 "screwdrivers" in a defense project. In an era of user fees and tight budgets, the last thing needed is a further $ 300,000,000.00 mistake.

"Automation" in the PTO version takes an entirely different approach than buying off-the-shelf PC's and the like. "File integrity" is said to be a goal of the APS. This is a cruel hoax. Theoretically, the Examiner is to examine *every* patent in a given area of subject matter. If there are, say, 1,000 patents classified for "Widgets", and if, say, 150 of these patents are missing at any given time from the search folders, then there is no "file integrity": The Examiner may not search all the relevant prior art.

Per the PTO, file integrity is assured when there is automation, because an Examiner cannot "remove" a patent from the search file. But, even 100 percent file integrity only gives a complete picture of the total data base which comprises only United States patents. But, *all* patents and published applications from Europe, Japan and everywhere else are part of the *relevant* data base. *Since only about twenty percent of all patents and published patent applications are first available as U.S. patents, it is ludicrous to seek file integrity for this twenty percent of the overall patent and published patent application data base.* There is no plan to provide a complete text of the *kokai*, the Japanese language publications that comprise the leading source of information at 18 months.

Are we falling behind if we scrap "automation"? Not at all. Saving $ 300,000,000.00 will permit the PTO to piggyback off the interesting automation pathways already under perfection in the European and Japanese Patent Offices. While it may be premature to sample the Japanese "paperless" filing system proposed by Commissioner Mossinghoff a decade ago but now introduced in Tokyo just this past year, the European Patent Office is in the midst of implementing CD-ROM searching that serves the same function as the U.S. automation program.

(3) Patent Harmonization

The United States has been on a thoughtful and cautious road to patent harmonization as part of a World Intellectual Property Organization treaty exercise that commenced with a Geneva Committee of Experts in 1985. It was to have concluded by June 28, 1991, with a Patent Harmonization Treaty signing at the Hague, as culmination to the five years of discussions and treaty drafts and a four week diplomatic conference. Now, all that is left is an abbreviated, preliminary session at the Hague that will end a week early, without conclusion of a treaty.

The Administration has now cried, Halt! A Secretary's Commission was created in early 1990 -- almost a year ago to the day -- that was to deal with patent reforms compatible with harmonization. Yet, it took ten months for the Commission to even hold its first organizational meeting. The long awaited notice in the PTO's *Official Gazette* that calls for public comments on key issues has not yet hit the streets.

Scrambling for directions today overlooks the five hard and productive years of work in Geneva that have produced a "Model Patent Code". Literally thousands of pages of pink originals have been generated as WIPO documents including a sophisticated

treaty that is a blueprint for any modern patent system. Canada, unilaterally, scrapped its American-based patent system in favor of this model code. America is now odd man out.

The benefits of a single patent law for Europe, Japan and the United States are most important. American patent applicants would have the benefit of filing patent applications in English for coverage in Japan and elsewhere. A grace period would be provided that exists today only for domestic protection; this would permit salvaging American patent rights in Europe and Japan that are today forfeited when a brilliant but patent-naive university inventor publishes his experiments in *Nature* or elsewhere prior to seeking a patent. Japan would provide a stronger system of patent claim interpretation that would greatly benefit Americans seeking a commercial patent-based beachhead in that country.

The United States has now backed away from the tentative agreements long reached in Geneva, to rethink and reconsider anew key points such as first-to-file. With United States retreat from first-to-file, the treaty is now apparently dead. While some treaty may be renegotiated if America moves back to first-to-file, the momentum is lost. The immediate advantages of the treaty can be regained only if new life is quickly breathed into the document by an immediate return to the principles that had been crafted by the Committee of Experts.

Quite apart from the better rights Americans would receive in Europe and Japan, closer cooperation possible by a single patent law would permit load sharing between Tokyo, Munich and Washington, D.C. To the extent that tasks now performed in triplicate need be performed only once, the enormous cost savings that can flow from a harmonized patent system should be self-evident.

The Benson Initiatives

What can Congress do, beyond freezing the size of the examiner corps and killing the APS? It is too late to undo the foulup at the Hague next month. What can be done, however, is to study the patent system in parallel with the work of the Secretary's Commission so that at the time the Administration is again willing to move, both Congress and the Administration will be in a position to take positive action.

Both in the unilateral self-interest of the United States and to show movement in a positive direction toward patent harmonization, the Benson Initiatives should be promptly introduced and considered in this Congress.

The Benson Initiatives comprise an AIPLA-sponsored blueprint for unilateral change under the leadership of Robert B. Benson. Jointly with the Hon. Pauline Newman during the Carter Administration, the Newman-Benson team crafted the key patent reform legislation of the early 1980's. More recently, a Benson Committee was created to find legislative solutions for America's patent system that meet the criteria of: (i) strengthening *American* innovation; (ii) absence of major controversy; and (iii) consistency with the Geneva patent harmonization exercise -- in the event that a patent harmonization treaty could be reached.

The Benson Initiatives took several years and the efforts of leading members of the intellectual property community before presentation to the AIPLA's Board of Directors. Both draft legislation and policy reasons were submitted. After unanimous

approval by the AIPLA Board on May 8, 1990, they were presented to the Commisssioner. For the past year, the proposals have languished in Crystal City.

Enactment of the Benson Initiatives should be a primary task of this Congress. To enact the Benson Initiatives into law would instantly take away any need for the further bloating of the examiner corps, an atmosphere of professionalism among the patent examiner corps would be restored, and significant cost cutting could permit a reduction in the fees for patent applicants.

"Small Entity" Fees

Abolition of small entity fees without parallel reforms as suggested today is unthinkable. Immediate implementation of the Benson Initiatives, coupled with backloading of fees and other reforms that I support, should permit a lowered net expenditure for small -- and *all* -- entities during the first two years of the life of the patent application.

It is precisely because there is no funding available for a university inventor that he needs a fee break in the first two years -- a period of time sufficient to attempt to find a licensee or other financial backer. If the backer is found in that period, then the costs of prosecution and maintenance of the patent are borne by the licensee or backer. If nobody is found in that period, then it is time to move on to the next project.

The Administration proposes a break on the initial filing fees. That is an illusory benefit. What eats up the small and every other entity in costs is not the filing fee, significant as it may be, but the prosecution costs in a "compact prosecution" that is integral to the "18 month" pendency goal. Early actions by the Examiners eat up

hundreds or thousands of dollars in attorney fees while extensions for response to office actions now can accumulate to over $ 1,000.00 where there are just two office actions. The answers are two-fold. First, patent fees should be heavily backloaded to progressively higher maintenance fees during the final years of a patent term, which would be paid only by those who have achieved commercial success with the patent syste; this would permit lowered filing costs for everyone. Second, the applicant should be given a reasonable period of time, say, two or three years, to ask for examination; no applicant, unless a third party makes a request, should be forced to undergo examination before that until he or she is ready. The policy goal of early dissemination of information heretofore achieved only by early grant is no longer a problem: The automatic publication at 18 months ends the race to early grant.

To be sure, an occassional patent application is of pressing importance and requires an early examination and grant. The system of examination-on-request facilitates just such an applicant, who can move to a short line awaiting examination, instead of finding himself or herself in a series of long lines awaiting prosecution under today's system.

* * *

Thank you, Mr. Chairman, for permitting me to share my views with your subcommittee.

Mr. HUGHES. Mr. Smegal, welcome.

STATEMENT OF THOMAS F. SMEGAL, JR., CHAIRMAN, SECTION OF PATENT, TRADEMARK, AND COPYRIGHT LAW, AMERICAN BAR ASSOCIATION

Mr. SMEGAL. Thank you, Mr. Chairman

I am Thomas F. Smegal, Jr., of the San Francisco law firm of Townsend & Townsend. As you pointed out, I currently serve as the chairman of the American Bar Association's Patent, Trademark, and Copyright Section. I am also here on behalf of John Curtin, the president of the American Bar Association and the association's 378,000 lawyer members. My written statement covers a substantial number of ABA concerns. These brief remarks will focus on two of those.

The first is the essential need for the many hundreds of millions of dollars needed to complete the automated patent system to be spread out over some corresponding useful life of that system, something more representative of the time that system will be in effect rather than the time involved in the fee generation, which is the current next 2 or 3 years.

The other issue that is of most concern to the American Bar Association is the need to reestablish partial taxpayer funding, not only to the small entities, but also of those PTO functions that are unrelated to the direct examination of patent applications. That, I believe, is consistent with what this Congress has—while not as a mandate, necessarily—but as a power that has been provided by article I, section 8, of our Constitution. I might point out to you that article I, section 8, has 18 clauses. The only clause which involves the power to promote is clause 8, which relates to the protection and promotion of science and the useful arts. That's the key word, I think, in this particular context,"promotion."

Now you're certainly not promoting the patent system by taxing the individuals who use that system. Where we are now with respect to those user fees, we're at 100 percent for large entities, and last November 5 when the omnibus appropriation bill removed from the Patent Office budget about $100 million—I guess it was $98 million and $2 million for my Legal Services Corporation—but $98 million from the Patent Office, that 69 percent surcharge that was added represents a 69-percent tax on large entities. We no longer pay 100 percent of the user fees that maybe they should be obligated to pay—and I'm not responding to that—but they are paying another 70 percent tax, tax on an entity of the Government that this Congress is supposed to be promoting. Now I suggest to you that promotion of the patent system does not involve taxing the users by such a dramatic amount.

The administration is back here this year asking for a large tax, more taxes on the users of the system. Clearly, Congress, as the prior panel pointed out, has to pull their oar in this. There's got to be some contribution that's made, as there was for many years.

This House Judiciary Committee in 1980, for example, in report 96–1307, part I, said that, "The cost of processing patent applications should not include the cost of automation." Yet, we've got this incredible charge in the budget that's been there for several years, supported by taxpayer money up until last year. Now, it's on the

back of the user. It's a tax on the user; it has nothing to do with what's going on in the prosecution or the examination of patent applications today, tomorrow, next year, or for several years from now. We're talking about a system that won't be fully operative for at least 5 years.

There are certain parts of automation that are in there now just because computers have automated various parts of all government activities, and so there's some justification for some computerized activity. Certainly you can say, "Well, some of this funding is going for that activity and it helps locate files and do other things like that." But the bulk of this money—already $300 million has been spent and we're talking about another $500 million—is for a system that isn't even going to be there for another 5 years.

Now Mr. Rabinow, or whoever files patent applications tomorrow, is going to pay these fees if we continue with the lack of government funding as we did in fiscal year 1991, and they shouldn't be paying it. It isn't fair. It's a tax on a part of the Government that should be promoted as the Constitution provides for.

I testified before the Senate on the possibility of having some tax credits. Let's give not only small entities, not only individual inventors, but all inventors who create revenue that becomes a tax base, give them a credit. You're going to charge them more than what user fees require, even if you're going to charge them 100 percent of user fees. Let's give them an opportunity to recoup at least part of that as a tax credit.

One of the things that the Patent Office information gives you is that about $12.5 million the year before last was spent subsidizing foreign filing by individuals—$12.5 million. Those people don't pay taxes in this country. The tax credit will not go to them. Right away on their numbers a few years ago you would have a $12.5 million savings. If your intent is to raise small entity fees to 100 percent of what purportedly is user fees, at least let's get a tax credit on the end of it.

There's no reason why this tax credit shouldn't be available to large entities who generate an awful lot of taxpayer dollars. Thirty-four percent of every corporate dollar goes into the tax coffer. If they generate, and they do generate, billions of dollars in licensing fees with respect to transfer of patent technology, 34 percent of every one of those dollars goes into the tax revenue of this country. That's a lot of money. That's a lot more than the $100 million that's been used, roughly, for the last few years to promote the patent system.

It's been suggested that we have an independent government corporation. You asked the question about that a bit ago. I was on the Legal Services Corporation for a number of years. I have testified, as you indicated, before this committee on several prior occasions.

There was a lot of micromanagement going on there but that Government agency was 100 percent taxpayer funded. In contrast to that is the post office. As you mentioned, no taxpayer funds are provided and they run rampant, or at least that impression is made.

Well, there's got to be a mix, somewhere between the Legal Services Corporation fully taxpayer-funded and the post office with no taxpayer funding. There's got to be a place where this Federal Gov-

ernment, this Congress, can promote, as article I, section 8, clause 8, would provide, promote the patent system—provide an oversight function that makes sense from an economic point of view, and provide the incentive to invent that's been in this country for 200 years. Shouldn't we have some money from the Federal Government, so that there's a more responsible mechanism for overseeing what the Patent Office does?

Thank you, Congressman.

[The prepared statement of Mr. Smegal follows:]

PREPARED STATEMENT OF THOMAS F. SMEGAL, JR., CHAIRMAN, SECTION OF PATENT, TRADEMARK AND COPYRIGHT LAW, AMERICAN BAR ASSOCIATION

STATEMENT ON LEGISLATION TO AUTHORIZE APPROPRIATIONS
FOR UNITED STATES PATENT & TRADEMARK OFFICE

EXECUTIVE SUMMARY

The ABA approves in principle reasonable PTO fee increases; favors fee charges that are apportioned in accordance with the cost of providing a particular service; opposes fees that effect an overall recovery of a predetermined percentage of PTO operations cost; and also opposes any requirement for the PTO to be completely self-sustaining through user fees.

It is very important to keep small U.S. entities in the innovative and creative loop. Warnings exist — to which Congress should be sensitive — that the proposed elimination of the small entity subsidy fee in the Administration's authorization legislation risks loss of this very important source of American innovativeness. Congress must not permit fees to increase to such a point as to cause small entity inventors to simply drop out — by being forced out — of the patent system. The public policy implications of this are grave.

Another critical situation is being created by placing the cost of large PTO capital expenditures on the backs of PTO user applicants only. The PTO search automation project is a good example of this. It began as a Congressional initiative funded by the public. Later, after substantial public input and debate, Congress specified that the PTO could fund 30% of the automation expenses from user fees, but that Government appropriations would continue to fund the remaining 70%. This was changed last year to 100% user fee funding without any public input or Congressional debate.

Even though long-term benefits are anticipated from the automation project, and other Government agencies also expect to benefit from this project, its cost is being carried on a pay-as-you-go basis. Therefore, today's applicants are paying for tomorrow's users in both the PTO and elsewhere. This is neither fair nor right. The public has a responsibility to share in the overall cost. Congress should also consider authorizing the PTO or other designated Governmental unit to spread out automation costs by floating a 20+ year bond not unlike comparable action frequently taken by a State or municipal agency?

Another issue worthy of consideration would keep only those nonprofit businesses and institutes of higher education within the small entity definition so long as the entity does not realize a net of more than $200K in an immediately preceding calendar year through the sale and licensing of technology covered by issued U.S. patents.

In the event that Congress insists on full fee reimbursement for PTO appropriations, including the elimination of subsidies for small inventors, one area worth considering includes the concept of a tax credit for American tax paying small entities. A foreign independent inventor, who does not file a U.S. Income Tax return, would not receive such tax credit. This at least would represent a small contribution from future general appropriations.

Furthermore, such a tax credit to an American taxpayer is also obviously justified for large entities, in an amount corresponding to a small portion of taxable corporate revenues generated by patent licenses and related technology transfer transactions.

Still another matter worth addressing is the creation of a separate and independent PTO Government corporation. The ABA Section of Patent, Trademark & Copyright Law will continue to study such potential solutions.

STATEMENT ON LEGISLATION TO AUTHORIZE APPROPRIATIONS

FOR UNITED STATES PATENT & TRADEMARK OFFICE

BY

THOMAS F. SMEGAL, JR.

I am Thomas F. Smegal, Jr., Chair of the American Bar Association's Section of Patent, Trademark and Copyright Law (PTC Section). I am appearing at the request of John Curtin our ABA President. Thank you for the invitation to participate in today's hearing and for the opportunity to testify on funding authorization for the U.S. Patent and Trademark Office (PTO).

I am pleased to have been invited to testify. While my comments are based on long standing positions of the ABA House of Delegates, I do want to note that the ABA policies were adopted prior to development of the PTO's proposed authorizing legislation.

It seems appropriate at the outset to point out that my statement is not intended to be critical of the Administration's budget package relevant to PTO processing of patent and trademark applications, nor of PTO Commissioner Harry Manbeck who admittedly has a difficult task. I understand the constraints under which he must operate.

On the other hand, it will appear at times that I may be criticizing the budget package for the PTO when questioning whether the PTO's stated mission to (a) promote industrial and technological progress in the United States, and (b) strengthen the national economy, can be accomplished through the Administration's authorizing legislation that has been introduced in the House as HR 1613 by Chairman Hughes. It will also be clear at times that I will be questioning public policy implications of the budget package.

The following pertinent long-term ABA policies that effectively provide the groundwork for our testimony regarding PTO fees include:

1) ABA approval in principle of reasonable fee increases.

2) ABA support of fee charges that are reasonably apportioned in accordance with the cost of providing a particular service.

3) ABA opposition to fees that effect an overall recovery of a particular predetermined percentage of PTO operations cost.

4) ABA further opposition to requiring that the PTO be completely self-sustaining from user fees.

Studies by Committees from within our PTC Section recommend that fees should not be the vehicle to recover a major portion of PTO costs. Most significantly fees should not be at a level to discourage inventors — especially individuals and small businesses. We also

believe that any provision for the recovery of a percentage of costs tends to promote inefficiency in operations. Fees should improve the quality of PTO operations and per se should not govern such operations.

We ask the following rhetorical but realistic question -- why must large few-time capital expenditures be made to appear as huge blips in the PTO's expenditure graph? Why cannot these "mountains" of expenditure be leveled off over a longer amortization-like period of time? Wouldn't such a leveling off practice go a long way towards maintaining a consistency year after year in prescribed PTO fee amounts? Doesn't this simply conform to good business practice which is in the public interest?

These questions all apply to the situation in which we now find ourselves through the extremely large automation costs to be entirely funded by user fees in the relatively near-term period. These costs represent the expenditure blips to which I referred earlier. These particular costs are especially egregious in light of last November's budget compromise that revoked the 1986 Congressional mandate requiring recovery of only 30% of automation costs from user fees and replaced that publicly accepted agreement, with an automation project supported entirely by user fees. The oversight hearings in this Session of the 102nd Congress provide the first opportunity for private sector input and Congressional debate.

Mr. Chairman, we believe that there should be an amortization-like

mechanism within the Government to provide a financial correction of the type being discussed. Such a mechanism could significantly level out PTO fees over a meaningful period of years. We are prepared to work with you and others to seek a creative solution.

The PTO automation project not only is intended to provide long-term benefits for the PTO, but also other Government agencies who will benefit from this automation research and development project. The public has a responsibility to share in the overall cost. This also makes it reasonable to ask why the PTO, Department of Commerce, or other designated Government unit cannot spread the costs, by floating a bond issue over say a 20-year period, not unlike comparable action that can be taken by a State or municipal agency.

I might mention at this juncture that during the inaugural meeting on March 26, 1991, of the Secretary of Commerce's PTO Advisory Commission on Patent Law Reform, a subcommittee #4 was organized from its members to study, among other things, PTO funding including fee structure. A copy of my statement as well as a step taken to cooperate with that subcommittee has been provided to the Chair of that subcommittee.

Should the PTO proposal to eliminate the small entity subsidy be enacted, we urge you to consider the appropriateness of a tax credit for American tax paying small entities. For example, and to put this concept across in principle, assume that an American independent inventor will be required to pay a FY'92 PTO fee cost of $500.00 — precisely the same fee cost to be paid by a large entity. However, and

for the purpose of this example, even though the FY'91 50% subsidy to the independent inventor were to be eliminated, we propose that this American inventor be provided with a $250.00 U.S. income tax credit in the year that the fee cost was incurred -- actually to first occur in the 1993 tax year. This relatively minor contribution from general revenues may encourage the American independent inventors to remain in our patent system.

As an aside and with respect to large entities -- U.S. corporations that pay corporate income taxes -- Congress should consider encouraging such entities by allowing a minor tax credit against patent licenses and technology transfer transactions which generate tax monies because of our patent system.

At present, all small entities pay reduced fees, Yet were a foreign independent inventor to be required to pay an additional PTO fee of $250.00 fee, the foreign inventor who does not pay taxes in this country would not receive such tax credit.

Would this represent a significant amount of money? A look at United States filing statistics that were provided by the PTO for Fiscal Year '90, reveals the following:

A) 44% of the total cases filed were foreign origin.

1) 36% of the total were filed by large entities.
2) 8% of the total were filed by small entities.

a) 5% of the total were filed by individuals.

b) 3% of the total were filed by small businesses.

c) Less than 1/2% were filed by non-profits.

B) 56% of the total number of cases filed were US origin.

1) 31% of the total were filed by large entities.

2) 25% of the total were filed by small entities.

a) 18% of the total were filed by individuals.

b) 6% of the total were filed by small businesses.

c) 1% of the total were filed by non-profits.

From the foregoing FY'90 statistics, it will be seen that 8% of all of the patent applicants in FY'90 would not have received the $250.00 tax credit in my earlier example on the strength of not being American taxpayers. According to statistics provided by the PTO, actual subsidies to foreign small entities, under present law, entail a cost of $12,555,000.00. On the other hand, some 25% of all of patent applicants that year would have received such tax credit because they were American small entity inventor taxpayers.

The statistics also show that there is only a 6% differential in the filing of U.S. patent applications between large and small U.S. inventor entities. This appears to go a long way in support of those who advocate that American small entity inventors are very creative and innovatively productive.

Mr. Chairman, we must not create an environment where the U.S. could lose this cradle of inventiveness from the American scene — we must not impose PTO patent fees that will chill the initiative of individuals and small entities to invent.

A return to the FY'90 statistics suggests more — for example, that more foreign origin large entity cases than domestic origin large entity cases were filed in the U.S. PTO. But many fewer foreign origin small entity cases were filed in the U.S. during FY'90 than domestic origin small entity cases. The absence of small entity subsidy encouragement abroad may simply mean that small entities don't even get started in their respective countries — and, accordingly, don't have a foreign patent application that can be the basis for a corresponding U.S. application.

In closing on the point about the importance of keeping small entities including U.S. independent inventors, in the innovative loop, the following publicly shared views are provided for added information:

1) Several PTO Advisory Commission members expressed their respective concerns at the March 26th meeting about the possible negative aspects on independent inventors due to the recent PTO subsidy fee revision recommendations.

2) The Commission, in its collective wisdom as indicated earlier, decided to study PTO funding and fee structure.

3) A Judge of the U.S. Court of Appeals for the Federal Circuit, only recently, is reported to have voiced a concern about the possibility of high user-fees realistically foreclosing access to the patent system by small entity applicants.

4) Former Representative Kastenmeier pointed out last year in his remarks on complying with the budget reconciliation process, that he approached the mandate to raise user fees to make the PTO self-sufficient, "with some trepidation because our decision could adversely affect the public". Mr. Kastenmeier noted a reliable intellectual property system and an effective PTO to administer that system, "provide cornerstones for stimulation of the creative genius of this country, contributing to a better life style for all Americans, promoting competitiveness and improving the balance of trade".

These represent warnings to which we must be sensitive. It appears to us that we will need Congressional help to provide a fix which will not require large entities to carry an unfair and discriminatory high fee load, but will ask the American public to encourage continuation of small entity creativity and inventiveness through public support by way of direct public subsidies as before, or tax credits, or possibly some other imaginative and fair way. Again, we cannot risk losing this very important small entity source of American innovativeness.

The following comments and inquiries on the Administration's proposed

authorizing legislation are grouped for convenient reference:

1) Overall the proposed PTO fee income increase includes large amounts for automation projects. Yet those of us in the private sector, and this may well include the Congress, do not really know where these monies will be spent. In view of previous criticisms about the automation projects and management thereof, it may well be time to conduct a further independent review as to the current status of the automation effort. Shouldn't a policy exist in the Government to mandate the practice of an independent automation budgetary and planning review study at least once a year?

2) Subsection 4a of the proposed legislation would permit the Commissioner to establish so-called profit centers within the PTO. The example cited in the legislation to explain this concept concerns one service cost of $0.75 per unit, another at $1.25 per unit, and the number of requests for both services roughly equal. The Commissioner could charge $1.00 for both services or could charge $2.00 for one service and nothing for the other. ABA policy opposes such concept in principle because fees charged should be reasonably apportioned in accordance with the cost of providing a particular service. The concept smacks of a tax on those persons whose fee payments exceed cost.

3) We support the PTO's initiative in Subsection 4b to address the adjustment of fees with Congress and the public every second year. PTO's projects and activities are complex and costly; a two-year

review cycle is clearly appropriate.

4) On the other hand, we are concerned about the shortening of the current 60 day notice period to 30 days after Federal Register publication (see Subsection 4c in the proposed legislation). The reason given for the shorter response period is not convincing —i.e., that there is unlikely to be sufficient time to permit a sixty-day period. Since most Patent and Trademark practitioners do not read the Federal Register on a regular basis, but do read the PTO Official Gazette in which pertinent Federal Register notices are published 30 days after actual publication in the Federal Register, 60 days after publication in the Federal Register is actually only about 30 days notice for many PTO practitioners. The present practice should continue. There is no reason not to do so.

5) Subsection 4d of the proposed authorizing legislation raises the small entity subsidy issue that is addressed throughout this statement in terms of existing concern with the possibility of forcing small entity and independent inventors out of the patent system. We simply must find a solution to such possibility before it is too late.

6) We concur with the provision in Subsection 4e about the Commissioner not imposing fees for public use of paper or microform collections so as to permit search for, and retrieval of, information. We also favor the establishment of free access by the public to automated search systems in the PTO and at remote locations supported by the PTO. Public policy dictates that such free access to prior art

technology continue whether on paper, microform, or other media including computer stored documents.

7) We oppose Subsection 4f in the proposed legislation because trademark fees should only be paid for the processing of trademark applications and services. If such fees are reprogrammed for non-trademark activities, they become a tax on trademark users which, if not illegal, is unfair and an improper use of trademark fees.

8) Section 5 of the proposed legislation is unclear as to the distinction between "machine readable data" and "data for automation programs". This pending statutory language should be clarified.

We trust that you will find the foregoing comments useful with respect to the proposed legislation.

Moving ahead to another area, you may be interested in learning about fee related measures being considered -- and still being studied -- by the Committee structure within our ABA's PTC Section. They include the following:

1) The possibility of matching small entities with a real need for subsidy benefits. This study is being carried out in the interest of leaving no stone unturned, even though we understand that such study has been made previously by the PTO without success.

2) The definition of a small business entity? Should it be an organization of less than the currently prescribed 500 employees? Would it make any realistic difference, for example, to set the ceiling at 200 or fewer employees?

3) What about keeping only those nonprofit businesses and institutes of higher education within the small entity definition so long as such businesses and institutes do not realize a net of more than $200,000.00, for example, in a preceding calendar year from the sale and licensing of technology covered by issued United States patents? This would provide subsidy on the basis of need which realistically should exclude entities receiving such large technology transfer amounts.

4) What about providing subsidies to small entities for inventions made in the United States? There is a danger that this approach might be counterproductive from the standpoint of other nations taking a reciprocal approach relative to inventions not made in those nations. However, this matter is believed to merit additional review.

5) A related issue asks about providing subsidies to only those foreign small entities from countries which offer corresponding subsidies to American small entities who file patent applications in such countries. An impetus for this particular study exists in the U.S. Semiconductor Chip Protection Act where the U.S. reciprocity requirement has not been an impediment to foreign mask work bilateral arrangements. It is not clear whether the concept has merit when

applied to fees.

6) What about a Public Advisory Board devoted entirely to fee related issues? We may be witnessing a beginning here through the PTO Advisory Commission's subcommittee study on funding and fee structure. Evaluation of this concept is believed to be necessary, particularly with respect to such costly and complex projects as automation.

7) Maintaining the existing statutory prohibition in 35 USC 42(c) against using trademark fees to support non-trademark operations that otherwise take on the appearance of a tax on trademark users which, if not illegal, is an unfair use of trademark fees.

8) The danger to American innovation through the proposed legislation to eliminate the availability of the 50% subsidy to small entities with respect to all, but initial filing, fees. Consideration will also be given to adding a provision in the proposed legislation to prohibit the use of fee income to support any backlog reduction or catch-up work.

Other contemplated studies are too detailed at this time for identification even though believed to be important. Again, we intend to cooperate with other Government and private sector organizations into similar studies.

You should also know, Mr. Chairman, that a small, select Committee

within our ABA'S PTC Section is addressing the highly intriguing and potentially significant question about the PTO as an independent Government corporation. The ABA recognizes that strong patent and trademark systems are vital to the economy of the United States -- and, accordingly, the ABA favors in principle legislation to remove the United States Patent & Trademark Office from the Department of Commerce and make it a separate and independent agency. On-going consideration of this concept is justified by, and must be carried out to explore, the following areas:

1) Increased user involvement in the management of the PTO including program priorities and management as well as fiscal priorities and planning to assure responsiveness to user needs and priorities.

2) The large and costly automation effort which raises priority management and policy issues with a major impact on fees and services.

3) A need for further improvements in the quality and timeliness of administration and services.

4) Establishment of a business-like operation to assure an efficiently and effectively run operation that is responsive to user needs.

5) A fiscally independent operation.

6) Retention of a qualified staff as changing needs dictate.

Mr. Chairman, it is likely that you will hear more about this matter in the future from a constituency of entities that is already on record in support of an independent PTO Government corporation.

This completes my testimony. On behalf of the ABA, I thank you again for the opportunity to participate in the hearing. I am prepared to address questions raised by you, Mr. Chairman, and other members of the Subcommittee.

Thomas F. Smegal, Jr.

May 8, 1991

Mr. HUGHES. Mr. Banner, welcome.

STATEMENT OF DONALD BANNER, PRESIDENT, INTELLECTUAL PROPERTY OWNERS, INC.

Mr. BANNER. Thank you, Mr. Chairman.

I think I can be short. There are lots of things we agree on. We went to see General Schwarzkopf today, which reminded me that we were all thrilled when we saw the Patriot missiles streak off. It was Yankee ingenuity that did that. That's what we're talking about here. We're trying to promote the strength of our arms and products in America, and promote jobs in America. That's what this is all about.

We have an interesting and fascinating situation here. We have a proposal that the staff of the Patent and Trademark Office goes up 20 percent next year; rent goes up 63 percent; the total spending goes up 25 percent. The small entity fee, in addition to the 67 or 69 percent last year, is going to go up another 91 percent. Automation is going up 27 percent; it's going to go up 69 percent, compared to this year, by 2 years from now.

Mr. Chairman, I've known these people in the Patent and Trademark Office for a great many years. I was honored to be the commissioner at one time, and I worked with them before and afterwards. I was the head of a large corporation, in the patent department, for many years. I am internationally operating in private practice now. I've seen these people work. I know the good job they do. They're good people, sound people.

But where do they get these big numbers? What would you do in most places if you went to the boss and said, "I need a 20-percent increase in staff?" In an ongoing operation, they would put you off to the happy farm. I think we have to look for different kinds of solutions and they've been mentioned today.

One of the difficulties with Patent and Trademark Office automation—let me stop for a second—I don't think we can afford the kinds of money we're talking about. I don't think we can afford increasing maintenance fees. I don't buy that. It's negative.

One of the problems with the expression "Patent and Trademark Office automation" is that it's a very poorly named activity. Yes, they are putting this information coming from issued patents into the electronic world, into the computers; that's true. But I don't see Patent and Trademark Office automation as the reason why we're doing it. I don't see the purpose being to make patent examiners happy, or to make people who are doing searches happy.

I think the reason was touched upon by Mr. Rabinow and others. We want this technology which is now in the greatest technological library in the world—our Patent and Trademark Office right over there in Crystal City, the best classified technology in the world—in New Jersey and California. We want it to be available to universities and to businesses in those places. I said I was the head of an internationally operating corporation. We had plants all over the United States. I wanted that technology available.

What we used to do in those days was to take engineers, scientific people, and fly them to Washington, DC, to spend a couple of weeks looking at material. That's an awkward way to do it, but it worked very well.

So, in the first place, Patent and Trademark Office automation ought to be looked at with a different view. It's really for the benefit of the United States of America.

There's another point which my good friend, Mr. Smegal, was just talking about. If the object of these large fees is to charge fees to users, then I would like someone to tell me what benefit the present patent applicant gets from this automation program? I've had a lot of experience in this business and I don't know what is the answer to this question. What is he using? As far as I know, he's not using anything. As far as I know, that is absolutely unfair, improper, and nothing but a tax on ingenuity. Let's face it. That's what it is.

Now how do we get out of this box? I think we must get out of this box. Obviously, we could do it by having the Government recognize the value of this library we're talking about and pay for its creation.

The second thing is, if that isn't possible, then we should give serious thought to going to a government corporation which could issue bonds and pay for automation over a long period of time. We could finance buildings over a long period of time so that this constant increase in rent is no longer necessary. Those buildings don't even have to be in Crystal City, by the way, but that's another story.

And on your point, sir, about oversight, I don't really see any grave problem, if we were to create a government corporation, in having a provision for congressional oversight. Congress should be very much involved. Let me say this: My long years of experience in this field have indicated that most of us who are involved with the patent system and looking at the patent system have always found Congress to be the friend of the patent system. We don't have any problem with congressional oversight. I think that's an easy way to do it.

There are all kinds of other things we've talked about in our paper, sir. I would be glad to answer any questions. Thank you for letting us be here.

Mr. HUGHES. Thank you very much, Mr. Banner.

[The prepared statement of Mr. Banner follows:]

IPO INTELLECTUAL PROPERTY OWNERS, INC.

TESTIMONY OF DONALD W. BANNER, PRESIDENT
INTELLECTUAL PROPERTY OWNERS, INC.

PATENT AND TRADEMARK OFFICE
OVERSIGHT AND REAUTHORIZATION

May 8, 1991

SUMMARY OF STATEMENT

- The 69 percent increase in patent fees in November 1990 was extremely ill-advised and may already be discouraging filings.
- IPO opposes the Administration's proposal for an additional increase of 91 percent in the fees for a small inventor to file for, issue, and maintain a patent. A critically important 45 percent of Americans who file patent applicants are small inventors.
- At the same time, IPO opposes taxing large inventors in order to subsidize small inventors. Appropriations should be used to support the subsidy.
- IPO believes current patent and trademark applicants should not be expected to bear the burden of paying for long term capital improvements such as automation.
- IPO opposes giving the Administration open-ended authority to increase fees for processing, services, or materials under 35 U.S.C. 41(d).
- IPO opposes removing the "fence" around trademark fees and opposes shortening the 60 day period of advance notice of increases in fees.
- The Administration's proposal would add over 1,000 employees in 1992 and increase spending by 25 percent in 1992 and 51 percent by 1993. IPO urges an independent review of this unprecendented spending proposal.
- The review should include study of (1) whether the PTO should be moved to government-owned buildings when its leases expire in 1996; (2) whether spending for automation should be reoriented; and (3) other possibilities for major cost savings.
- IPO recommends giving consideration to establishing the PTO as a government corporation. A government corporation with borrowing authority is the only option besides public funding of $100 to $200 million a year that might keep fees and patent pendency at reasonable levels while allowing automation and other quality improvements to proceed.

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IPO INTELLECTUAL PROPERTY OWNERS, INC.

STATEMENT OF DONALD W. BANNER, PRESIDENT

INTELLECTUAL PROPERTY OWNERS, INC.

BEFORE THE

HOUSE JUDICIARY SUBCOMMITTEE ON

INTELLECTUAL PROPERTY AND JUDICIAL ADMINISTRATION

ON

PATENT AND TRADEMARK OFFICE

OVERSIGHT AND REAUTHORIZATION

May 8, 1991

10:00 a.m.

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INTELLECTUAL PROPERTY OWNERS, INC.

Mr. Chairman and Members of the Subcommittee:

I am appearing here today on behalf of Intellectual Property Owners, Inc. (IPO). IPO is a non-profit association whose members own patents, trademarks, copyrights and trade secrets.

IPO's members are responsible for a substantial portion of the research and development conducted in the United States, and they pay large amounts of fees to the Patent and Trademark Office (PTO). They are therefore interested in having the office operate as effectively as possible.

I personally have had a long-time interest in the operations of the Patent and Trademark Office. I had the privilege to serve as Commissioner of Patents and Trademarks in 1978 and 1979.

IPO witnesses have testified in the past on several bills to authorize appropriations for the Patent and Trademark Office. Our views on the importance of having a viable patent system and on the need for high quality patent examining work and adequate funding for the office have not changed.

We have prepared our comments based on our study of the text of the Administration's authorization bill, H.R. 1613, and our review of the office's 1992 budget submission to the Congress. We have not yet seen the draft regulations that would implement the Administration's recommendations for higher PTO fees effective October 1.

ROLE OF THE PATENT AND TRADEMARK OFFICE

An effective system for protecting inventions and other intellectual property is very important for encouraging R&D, commercialization of new technology, and business investment in America. The Patent and Trademark Office, of course, is a cornerstone of the patent and trademark systems.

We are generally in agreement with the main Patent and Trademark Office goals as stated in the office's 1992 budget submission to the Congress, which are:

- To maintain patent pendency at 18 months and continue to improve patent quality
- To maintain trademark pendency
- To automate the patent and trademark processes in the 1990's
- To strengthen worldwide protection of intellectual property

In order for patent and trademark protection to be relied upon by industry, the office must perform high quality examining work. We continue to believe, therefore, that a top priority of the Patent and Trademark Office must be to ensure high quality patents and trademarks.

We are also generally in favor of short pendency, but it would be a mistake to make a fetish of maintaining patent pendency at precisely 18 months at the expense of quality. In an IPO survey we reported in Congressional testimony a few years ago, patent owners ranked shortening the average pendency time of patent applications as sixth in importance of seven objectives of the office. High quality patent examination and automating the search files were ranked much higher. Although we have not conducted a formal survey of patent owners recently, we believe their attitudes have not changed significantly.

Short patent application pendency is important for certain industries and certain patent owners. The biotechnology industry currently is very concerned about the large backlog of unexamined biotechnology applications. We urge doing everything possible consistent with maintaining high quality examination to reduce the biotechnology backlog.

The backlog of unexamined applications for design patents also continues to be significant. Design patent applicants are generally interested in obtaining patent protection more quickly than other patent applicants. Styles in the appearance of articles can change quickly.

While we support legislation along the lines of H.R. 1790 to establish a new system of copyright-like protection for industrial designs, that legislation will not be a complete substitute for design patents. The office should plan to reduce the design patent application backlog to the lowest possible level. We suggest that the office announce a goal substantially shorter than 18 months-- perhaps 12 months-- for design patent application pendency.

IPO strongly supports automating the office's operations. We believe automating the PTO search files is one of the keys to improving the quality and reliability of the patents and trademark registrations issued by the PTO over the long term.

Nonetheless, not all of the eggs should be put in the automation basket. A major factor adversely affecting the quality of patent examination is poor integrity of the paper patent search files. Testimony has been presented over the years that large numbers of documents are missing or misfiled in the paper search files. We believe this situation continues to deteriorate. The paper files must be maintained in adequate condition until full automation can be achieved.

CURRENT PATENT FEE LEVELS

The levels of fees for filing for and issuing a patent and maintaining it in force throughout its life have risen dramatically. In 1982 the office's fee collections totaled less than $29 million. For 1992 they are estimated at $459 million.

Before 1980 the office was chronically underfunded. Important changes in fees were made by Congress in 1980 and 1982. When the 1980 and 1982 patent fee laws were passed, which introduced the concept of fees for maintaining patents in force and raised other patent fees substantially, all parties concerned agreed that higher fees would be used to make improvements in the office's operations. Industry and the patent bar expected improvements in the office would be made in the years following 1982, and some improvements were made.

From 1982 until 1990 there was general agreement that certain operations of the office should continue to be supported by appropriated funds. The thinking was that certain costs of operating the office confer no direct benefit on patent or trademark applicants, but go to the benefit of the national economy and should be paid for by the taxpayers at large. Among others, costs that IPO believes are of special benefit to the public at large and important in maintaining the nation's technological leadership include those costs relating to public information, legislation and international affairs, and the operation of the public search rooms.

Other significant PTO activities that benefit the national economy more than individual applicants include printing patent documents, at a cost of over $30 million a year, and automating the search files, projected to cost $87 million in 1992 and over $115 million a year in fiscal years 1993 and 1994. Before last year's fee increase, the patent statute required that automation should be at least 70 percent publicly funded. Automation will help future patent and trademark applicants as well as improve dissemination of information, but it does nothing for current patent and trademark applicants. It is unfair to ask them to pay for it.

In the omnibus budget reconciliation law passed on November 5, 1990, patent fees were raised precipitously by 69 percent, to make the office essentially self-sustaining. This change was made as a result of secret budget negotiations between the Executive Branch and the Congressional leadership with no opportunity for input by members of the public concerned with patents, nor any meaningful input, we understand, by members of the House or Senate Judiciary Committees.

We continue to believe the November 1990 fee increase was extremely ill-advised. We believe the 1990 increase has already raised fees to a level that is discouraging patent filings by both large companies and the so-called "small entities"--independent inventors, universities, and businesses with fewer than 500 employees.

Patent fees for filing for, obtaining and maintaining a patent throughout its term are currently a minimum of $6680 for a large entity and $3340 for a small entity. For some of the largest filers, the 69 percent increase last year meant about $1 million per year in additional government fees. In at least some companies, this cost is being absorbed by filing fewer patent applications. This reduces the effectiveness of the patent system.

The present level of fees obviously is a significant burden for the smaller entities. It must be kept in mind that creative inventors often have several patentable inventions in various stages of patenting and commercialization. It often takes years for an invention to be developed to the point that it generates any income. The result of the higher fees is that such inventors will drop the patenting and commercialization of their higher risk inventions, and the public will be deprived of the benefit of valuable technology.

We understand that patent filings this year are running below the levels projected in the 1992 budget submission to the Congress. In our opinion, the sharply higher levels of patent fees are a contributing factor. Although we do not have data on which filings are down, we suspect filings by U.S. companies and inventors may be down more than

filings by foreign applicants. Such a slowdown in patenting of technology, if we are correct, will have adverse implications for the country's economic and technological competitiveness.

We suggest that the subcommittee analyze the month-to-month patent filing patterns since last November for large and small U.S.-origin applicants and large and small foreign-origin applicants.

THE ADMINISTRATION'S AUTHORIZATION BILL, H.R. 1613

The Administration is now proposing that the fees for small entities be increased by another 91 percent on top of last year's 69 percent increase. Ninety-one percent is the amount of the increase for a small entity applicant who pays the minimum fees for filing and issuing a patent and maintaining it throughout its life. The burden on the small entity applicants of a fee increase of this magnitude is so apparent that we believe it does not bear discussion.

Table 1 shows that 45 percent of U.S.-origin patent applications filed in the PTO come from small entity applicants. Table 2 shows that the corresponding figure for foreign applications is 18 percent.

TABLE 1

APPLICATIONS FILED IN U.S. PATENT AND TRADEMARK OFFICE BY U.S. NATIONALS IN 1990

Large Entities:	**55 percent**
Small Entities:	
Independent Inventors (34%*)	
Small Businesses (11%*)	
Universities (1%*)	
Total Small Entities	**45 percent**
Total U.S.-Origin Applications	100 percent**

* Because of rounding, percentages do not add exactly.
** U.S.-origin applications were 56 percent of all applications filed in U.S. PTO in 1990.

Source: U.S. Patent and Trademark Office

TABLE 2

APPLICATIONS FILED IN U.S. PATENT AND TRADEMARK OFFICE BY FOREIGN NATIONALS IN 1990

Large Entities	**82 percent**
Small Entities	
Independent Inventors (11%)	
Small Businesses (7%)	
Universities (0%)	
Total Small Entities	**18 percent**
Total Foreign-Origin Applications	100 percent*

* Foreign-origin applications were 44 percent of all applications filed in U.S. PTO in 1990.

Source: U.S. Patent and Trademark Office

Contrary to popular opinion, the small inventor is by no means extinct. On the other hand, with the Patent and Trademark Office being essentially 100 percent self-supporting from fee income since last November, the result has been that large entity applicants are being taxed to subsidize small entity applicants. This is unfair.

One solution is for Congress to reinstate a level of appropriations from general taxpayer revenue to cover the subsidy for small entity applicants. In our opinion this would be an effective step that Congress could take to help maintain America's technological competitiveness. Another approach to alleviating the fee burden for both large and small applicants is to avoid charging current applicants for expenses such as automation that are long term capital improvement expenditures. Capital improvements could be paid for with taxpayer funds or, as I will explain, with borrowed money.

Another suggestion is an amendment to the Internal Revenue Code to provide individual inventors who apply for patents with a tax credit for a substantial portion of the amount paid in PTO fees. We would support this approach.

We urge the subcommittee to reject the Administration's proposal for increasing small inventor fees, and also to reject any scheme for supporting small inventors that unjustly taxes large companies to support them.

We also object to a number of other features in the Administration's bill. The amendment to 35 U.S.C. 41(d) made by section 4 a. of the bill, authorizing the PTO to increase miscellaneous fees for processing, services, or materials related to patents, is open-ended. The section

41(d) fees, which are for copies of patents and documents and various services, currently generate about $13 million in revenue. According to a recent statement by a PTO official, the Administration's forthcoming rule proposal will raise these fees by about 175 percent.

We disagree with the Administration's statement in the materials accompanying the bill to the effect that section 4 a. is merely a clarification of the PTO's authority under existing law. The existing text of 35 U.S.C. 41(d) makes clear that section 41(d) fees may not be higher than the level necessary "to recover the estimated average cost of the Office of such processing, services, or materials." The Administration is proposing to remove this limitation.

Since the section 41(d) fees are not subject to the Consumer Price Index limitation that applies to other fees, the Administration's proposal is to allow the section 41(d) fees to be increased as often and as much as the Administration chooses, without any approval from Congress. We disapprove of this high-handed approach. We recommend that the section 41(d) fees be kept at a level that recovers the cost of the "processing, services, or materials" that are provided, perhaps with latitude for these fees to also recover a pro rata share of general overhead expenses of the PTO, but only in categories identified by Congress that should be paid for by user fees rather than by taxpayer appropriations. Expenses such as automation that do not benefit current users should not be supported by patent processing fees, trademark processing fees, or section 41(d) fees.

We also object to section 4 f. of the bill, which proposes to repeal the "fence" that Congress erected around trademark fees to prohibit the

use of trademark fee revenues for purposes other than administering the trademark act. The language of section 4 f. seems to sanction the use of trademark fee revenues even for federal government programs outside the Patent and Trademark Office. We recommend not only retaining the prohibition against using trademark fees for purposes other than administering the trademark law, but also adding language prohibiting using patent fees for purposes other than for administering the patent law.

We are opposed to section 4 c. of the bill, which would shorten to 30 days the 60 day advance notice in the Federal Register that is given to the public concerning new fees. A minimum of 60 days notice of new fees is still needed. Patent practitioners and inventors ordinarily do not subscribe to or read the Federal Register on a regular basis. Industry and the patent bar have complained on a number of occasions about insufficient notice given by the PTO in announcements published in the Federal Register. We suggest amending the statute to guarantee the public 60 days notice after the date of announcement of new fees in the PTO's Official Gazette.

An additional issue that the subcommittee should deal with in the authorization bill is whether the Patent and Trademark Office should be exempt from confiscation of funds in the event of a future government-wide reduction in spending mandated by deficit control legislation. We have not studied the amendments made last year to the legislation formerly known as the "Gramm-Rudman-Hollings Act", but it is our understanding that the potential still exists for PTO user fees to be confiscated in a government-wide spending reduction. If that is true, the law should be changed.

Under the Gramm-Rudman-Hollings legislation, PTO user fees were confiscated as a part of government-wide "sequestrations." User fees should not be subject to the same deficit control legislation that applies to government agencies relying on appropriated funds. We urge the Subcommittee to take whatever action is needed to insure that no PTO user fees are confiscated in the future for the purpose of reducing budget deficits.

CONTROLLING PATENT AND TRADEMARK OFFICE SPENDING

In this first year after the PTO has become essentially fully self-sustaining from user fee income, the Administration has proposed a budget to Congress of $462 million for 1992 and is projecting a budget of $555 million for 1993. The PTO budget is $369 million in 1991. Therefore, the Administration is asking for a 25 percent increase in 1992 over 1991 and a 51 percent increase in 1993 over 1991.

Office space rent for the PTO is rising to $47.7 million in 1992, compared with $29.3 million in 1991. This is a request by the Administration for a 63 percent increase in one year.

Automation spending is $87.4 million in 1992 and $115.8 million in 1993. Automation spending is estimated at $68.7 million in 1991. Thus the Administration is requesting a 27 percent increase in 1992 over 1991 and a 69 percent increase in 1993 over 1991.

The Administration's budget request is summarized in Table 3 and the rapidly escalating number of employees in the PTO is shown in Table 4.

TABLE 3

PATENT AND TRADEMARK OFFICE BUDGET

	1990	1991	1992	1993
Total Spending	$328	$369	$462	$555
Automation	$51.4	$68.1	$87.4	$115.8
Office Space	$22.7	$29.3	$47.7	-

Dollars are in millions.
Sources: 1992 PTO Budget Submission to the Congress and March 5, 1991 Statement by Commissioner Manbeck to House Appropriations Subcommittee.

TABLE 4

PATENT AND TRADEMARK OFFICE EMPLOYEES

	1990	1991	1992	1993
Employees	3,898	4,765	5,852	-

Source: 1992 PTO Budget Submission to the Congress.

In light of the burdensome levels of users fees being charged and the additional increases being proposed, it must be asked whether PTO spending is being controlled adequately. We wonder whether the Administration is reviewing budgets based on user fees the same way it reviews budgets requesting appropriations.

We want to stress that we believe the PTO's employees are hard-working, dedicated individuals who deserve fair compensation and benefits and reasonable working hours. In the face of the burdensome fees facing the users of the PTO, we are merely raising the same questions that are raised constantly in every private sector business concerning possible improvements in efficiency and effectiveness of operations.

Based on our analysis of the complex 139 page document explaining the 1992 PTO budget, we offer the suggestions below for topics that should be covered in any review of PTO spending. We urge the subcommittee to conduct or arrange for an independent analysis of PTO spending plans. IPO's suggestions for controlling spending:

I. Study the feasibility of building government-owned buildings to house the PTO when the PTO's leases expire in 1996.

With government-owned buildings, it may be possible not only to reduce office space costs, but also to improve efficiency of the PTO by having space designed especially for PTO needs. PTO buildings could either be built with taxpayer revenues or with borrowed money. Some observers say PTO-owned buildings would pay for themselves in about eight years.

Any study of government-owned buildings for the PTO brings up the question of the location or locations for the buildings. The PTO would have to be situated reasonably close to a major airport. There would be advantages, however, to having the PTO located in a less congested and expensive area than Crystal City. According to a recent column by Mike

Causey in the Washington Post, federal salaries in the Washington, DC area beginning in 1994 will go up by about 25 percent in addition to adjustments for inflation, as a result of legislation that was enacted recently to raise federal salaries in high living cost areas. We assume this will add about $100 million a year to PTO salary costs if the PTO remains in Crystal City.

II. Reorient spending for automation to utilize inexpensive equipment and make automated records available to examiners and the public at an early date.

Since 1983 the Patent and Trademark Office has spent around $300 million attempting to automate the patent search files, with very little to show for it so far. The office's planned "Automated Patent System" contemplates that patents in all fields of technology would be available on-line to all examiners. Examiners searching in a particular technology, however, do not need access to all 5 million patents.

Many observers in industry and the patent bar believe that over the near term the PTO needs to concentrate on utilizing inexpensive, off-the-shelf equipment--such as personal computers and CD-ROM's--that can be put into use by the office's examiners immediately. Patent information on CD-ROM's also could be made available to members of the public right away. A bill has been introduced in the Senate to require that patent information be made available by the PTO on CD-ROM's. We believe this bill deserves careful consideration.

III. Consider whether money can be saved by contracting out PTO functions, including functions performed by professional-level employees.

The PTO has traditionally contracted only for limited categories of services such as printing and certain relatively simple clerical functions. State and local governments have begun successfully contracting out virtually every kind of government function that exists, according to Privatization 1991, a report by the Reason Foundation in Santa Monica, California.

We suggest a reappraisal of the conventional wisdom that most PTO functions are not susceptible to contracting out. We can see no inherent reason why many jobs requiring specialized knowledge of patent and trademark laws or procedures cannot be contracted out. For example, the professional work of reclassifying the patent search files by subject matter could be performed by a private company or university under contract. Even some of the professional work of patent examining--for instance, patent re-examination--could be contracted.

IV. Analyze the hiring and compensation policies of the PTO to determine whether some categories of employees are being paid at rates higher than necessary.

The Patent and Trademark Office clearly needs authority to pay higher salaries for certain positions such as biotechnology patent examiners. On the other hand, it seems fair to ask whether salaries may

already be higher than necessary in some areas, particularly for positions not requiring a science or engineering background or law degree, taking into account all factors including the high level of job security and other benefits of government employment.

V. **Study whether work rules in labor-management agreements at the Patent and Trademark Office, including the patent examiner production quota and bonus system, are impeding the ability to reduce spending and increase productivity.**

We have mentioned the patent examiner production quota system in past testimony. Observers in industry and the patent bar have long questioned whether the production quotas as they are applied in the PTO are a barrier to having a professional work environment that is conductive to the highest possible quality and quantity of patent examining work. It is our understanding that the production quota system, including the so-called "gainsharing" program (see 1992 budget at page 29), currently gives almost automatic bonuses to nearly all patent examiners. A quota system that permits nearly everyone to substantially exceed the quotas needs to be reexamined. Given the rapidly escalating costs of operating the patent examining system, we believe it is timely to have an independent look taken at this system by some organization not associated with PTO management or PTO labor unions.

VI. **Study whether the extra management and support staff proposed for patent examining and other operations in the 1992 budget will yield any benefits to users.**

The 1992 budget proposes an unprecedented staff buildup in the PTO, adding 1,087 employees in 1992 to the 1991 total of 4,765. In 1992 the PTO would have 5,852 employees. The bulk of the new employees are for programs other than automation.

For example, the budget proposes an increase of 702 employees in the patent examining corps, not counting employees working on automation, a 22.6 percent increase in personnel to cope with an estimated increase in patent filings of 10.7 percent. At pages 35 and 43 of the budget, for example, the PTO proposes large numbers of extra deputies, secretaries and other staff support for existing examiners and supervisors. While these employees may well be needed, it seems fair to ask whether an increase in productivity will result, and why these positions cannot be paid for out of savings from productivity increases. While we probably would support hiring a larger staff if it can be demonstrated that the larger staff will improve the quality of patent examination, the Administration should have the burden of showing that the enormous expenditures proposed will yield significant improvements in quality.

VII. Investigate whether the PTO's liberal flexible working hours program for employees--under which large numbers of rather highly compensated full-time professional employees work only 4 days a week or work during hours that do not mesh with accepted business hours in the private sector--is impairing the ability of the PTO to serve the public most effectively at the lowest cost to users.

IPO's members from time to time have commented unfavorably about the effects of the office's flexi-time program on service to the public. There are two issues. One is whether the working schedules cause undue inconvenience to members of the public who wish to contact PTO employees The other is whether 4-day work weeks are as productive as 5-day work weeks for PTO employees. An independent analysis of these issues would be timely.

PTO AS A GOVERNMENT CORPORATION

In 1989 IPO commissioned a report by the National Academy of Public Administration entitled "Considerations in Establishing the Patent & Trademark Office as a Government Corporation".

That report recommended making the PTO a government corporation with more operating and financial flexibility than regular government agencies. According to the report, the PTO is well-suited for government corporation status because its expenses are supported primarily by user fee income.

A PTO government corporation might be able to operate more like a private business. The result could be more efficient and effective operations and better service to the public. A government corporation structure might also give the users of the PTO a voice in how the PTO is operated, which we believe is a legitimate objective.

A government corporation might have authority, for example, to borrow money. This could be the only practical way to obtain funds for a government-owned building for the PTO in the near future. Money also

could be borrowed to finance other large, one-time capital improvements such as automating the search files. As noted, automation of search files provides no benefits to current patent and trademark applicants, and it is unfair to assess them the huge costs of the automation program.

Other possible benefits of government corporation status include: (1) greater authority to provide competitive salaries for certain specialized PTO employees who are in short supply, such as patent examiners in the field of biotechnology; (2) ability to hire additional employees quickly when patent or trademark filings increase; (3) an exemption from government-wide personnel ceilings and hiring freezes; and (4) an exemption from deficit reduction legislation such as the Gramm-Rudman-Hollings law.

Formulating legislation to make the PTO a government corporation would be a highly complex and time-consuming undertaking. Nevertheless, in light of the difficult fee and funding issues now facing the PTO, we believe it is an option that deserves serious consideration by the subcommittee.

Indeed, it is the only option we can see besides public funding of $100 to $200 million a year that might keep fees and patent pendency at reasonable levels while permitting automation and other quality improvement programs to proceed.

* * *

We appreciate the opportunity to present these views. I will be pleased to answer any questions.

Mr. HUGHES. Let me start with you.

One of the things you adopt in your statement is the recommendation of the American Intellectual Property Law Association for shelving the present automated patent system and going back to the drawing board. Can you give us a little more information on that?

Mr. BANNER. I don't think we should shelve the system.

Mr. HUGHES. Oh, Mr. Wegner was the one. Let me go to Mr. Wegner.

Mr. WEGNER. I think you have to distinguish between automation in the sense that we understand it, having a PC on the desk with a modem and a CD ROM so you can use existing data bases. Except in certain areas, they don't have that, by and large, at the Patent and Trademark Office.

My basis for knowledge on the APS, or automated patent system, is based upon the collective work of many experts. I think the most revealing and damning report is what I would call the Noe report, which is apparently still a confidential report within the AIPLA. I see no socially redeeming value in the APS system whatsoever.

I would rather, if I were an examiner, have an off-the-shelf Zeos from Minnesota or a Texas Instruments or some good American-made computer hooked up to commercial data bases. Today, examiners hand write search requests for the library.

Mr. HUGHES. You would go back to the drawing board. You would scrap the system even though we've put a couple of hundred million dollars into it and start over again?

Mr. WEGNER. I would like to have a fire sale, frankly. I think Professor Banner has pointed out the option of the Government corporation—well, why don't we cut the Patent Office back to examining cases and sell off the search area?

In the old days, until very recently you needed to have a Patent Office to search. You don't need that any more. If you follow what Mr. Love said about putting the Patent Office data bases in every high school and every junior high school, people would learn to search their own cases. We could cut back the Patent Office to a lean, mean fighting machine, a nice examination corps with professionalism. Get your government oversight, get some funding for that, and we don't need to have a single source of searching from a government corporation. Maybe their "Amtrak" would work fine; maybe it wouldn't. But the European patent office at The Hague offers an excellent state-of-the-art searching service which many Americans choose to use today. Let Americans shop the world market for the best search.

Let's get the post office out of the business of searching and disseminating information. Let private industry take care of it. Maybe have some government subsidy, but let's not make an Amtrak out of the Patent Office. Let's keep the U.S. Patent and Trademark Office.

Mr. HUGHES. How do you feel about that, Mr. Smegal?

Mr. SMEGAL. There's a lot of money that's been spent, Mr. Congressman. I'm not suggesting, at least the ABA view is not suggesting, that we should dump all that.

What we would like to have happen, if these fees are going to continue to be user-fee funded, is for that program to be slowed

down, not put on the shelf but to be studied a little more carefully. We've seen a lot of information that's hard to disseminate. It's hard to wade through. But we need a more informative study of where they're going and how they are going to get there. If we wait 6 months, maybe we'll have some of this equipment that Mr. Wegner is talking about at half price.

Mr. HUGHES. That's how we shelve things around here. We study it.

[Laughter.]

Mr. HUGHES. Isn't that what we do? I thought we did.

Well, if the long-term cost of automation of the PTO can only be funded by user fees, is it the position of the ABA that such costs should be postponed or delayed?

Mr. SMEGAL. That's correct, Mr. Congressman. That's exactly what the ABA's position is. Those fees should not be placed upon the backs of present users.

Mr. HUGHES. Do you think we ought to study it some more, Mr. Banner?

Mr. BANNER. You know, sir, I'm always in favor of studying.

Mr. HUGHES. Well, there's something that is academic and intelligent about studying something.

Mr. BANNER. It makes us feel good to study it. But in the meantime, we have to do something. That's the main thing. We can't just stop and throw into the trashcan all the money we've already spent. Sure, it probably can be done better, but most things can.

Mr. HUGHES. For the panel, briefly, how important do you think it is to have a uniform international patent system? Mr. Smegal.

Mr. SMEGAL. Well, I think it's very important for several reasons. One is that it certainly would reduce the cost, as Dr. Rabinow pointed out, of maintaining patent protection across the world. From my point of view, as a private practitioner, it would certainly simplify our lives. It would reduce the costs that we have to pass on to clients in obtaining protection for them across the world. I don't think we should do it at the sacrifice of our system, however. I think the U.S. patent system has a uniqueness to it that should be maintained, and certainly as part of the U.S. delegation to The Hague next month, I intend to continue to encourage our administration to maintain those standards that we have developed over 200 years.

Mr. HUGHES. Mr. Wegner, briefly.

Mr. WEGNER. I think it's absolutely vital that we have harmonization for the small inventor. The small inventor simply can't understand the myriad of foreign practices. Unless we harmonize, they are forfeiting their rights.

Mr. HUGHES. Mr. Banner.

Mr. BANNER. Well, like Mr. Smegal, I think harmonization would be a good idea. We don't want to lose, however, the benefits of our present system. It is necessary to define what you mean by harmonization. For example, one of the features of patent law in other countries is that there is compulsory licensing. Under no circumstances, should I be interpreted as being in favor of that.

Mr. HUGHES. I understand. Assuming that taxpayer support for the Patent Office stays at the fiscal year 1991 level, which is, as you know, about $3 million, would you recommend that the com-

mittee authorize the administration's full funding request for fiscal year 1992? Mr. Banner.

Mr. BANNER. Well, where would you get the money?

Mr. HUGHES. I can think of a few alternatives.

Mr. BANNER. You've got to remember 45 percent of the people are in that small entity group. So, when you say let's increase those fees, you'd better know the consequences.

One of the things we've talked about today, too, is how important an aspect attorney's fees are. They can be important; no question about that. But let's not forget that a lot of patent applications are filed by attorneys who are in corporations. There are no attorney fees in that circumstance. That's a red herring that shouldn't be considered.

The fact of the matter is, unless the laws of economics have changed recently, that when you increase the price of something, the demand for that service goes down. I don't think anybody has changed that, as far as I know.

Mr. HUGHES. Does anybody disagree with that on the panel?

Mr. BANNER. Do we want to cut back on ingenuity in the United States? That's what we are going to do if we adopt the administration's proposal.

Mr. HUGHES. I, frankly, have some concerns about the tremendous increase in the process, including the maintenance fees. I'm looking at some numbers here in the rapid rise in patent fees by small entities over an 11-year period. A filing fee of $185 in November 1990, after basically 11.5 years, ends up as an $1,975 fee, including the two maintenance fees, one at 3.5 years and one at 7.5 years—by October of this year, you're up to $6,365. You're talking about a threefold increase over the total fee costs; a filing fee of $185, issuance fee of $310, maintenance fees of $245 and $495, respectively, and a third maintenance fee of $740 and you're up to $1,975.

Mr. SMEGAL. Mr. Chairman, if you go back just a few more years, it's even more dramatic than that. In 1981, those total fees were less than $200. You asked the question of a prior panel—maybe I can answer it—with respect to attorney fee increases during that same period of time.

I looked back and in 1981, when the Government fees were $200, we were charging for a simple, mechanical case with what's called a couple of sheets of drawings probably in the neighborhood of $2,000 to $3,000 in attorney fees. In the 10-year period since 1981, the fees have now gone from $200 to $6,000-something, but our fees have not increased anywhere near even 100 percent. We are now at the point where when an inventor comes in, we have to tell him the Government fees are going to be greater than our fees.

Mr. HUGHES. Yes, sir, Professor Wegner.

Mr. WEGNER. Well, it's even more dramatic when you compare what we do in the United States with what the Japanese and the Europeans do. Whether we have our current system of first inventor or first-to-file, in each case it's important to get the earliest date in the Patent Office. This is very significant. If a Japanese inventor can pay a $100 filing fee and have no further fee required for 7 years, he can punch these cases in quickly so that the inventor in Kyoto, who may be a step behind in the research, if he gets

to the patent office in Tokyo before our inventor gets to the Patent Office in Washington, DC, he wins by this fee hindrance, the Kyoto inventor wins everywhere outside of the United States and is presumptively the first inventor in this country. That's against American trade policies.

Mr. HUGHES. There's no question that's unacceptable. Any further comment that you would have?

[No response.]

Mr. HUGHES. Well, you've been very helpful. There are some other questions that I have not asked but I have burdened you enough and that's a vote, so I will have to leave you anyway.

Thank you for your contributions. I have some serious misgivings about what we're doing to ourselves with this so-called user fee. My daddy used to say, "If it walks like a duck and quacks like a duck, it's probably a duck."

This is probably a tax that we call a user fee. It's a tax and I'm not so sure that it is promoting, as you suggest, science and the useful arts.

Thank you very much, We appreciate your contributions today.

The record will remain open for about 10 days, and we will get some questions to you, those that we didn't reach today, and we ask you to respond to them.

That concludes the hearing for today and the subcommittee stands adjourned.

[Whereupon, at 1 p.m., the subcommittee adjourned, to reconvene subject to the call of the Chair.]

REAUTHORIZATION OF THE PATENT AND TRADEMARK OFFICE, U.S. DEPARTMENT OF COMMERCE

THURSDAY, MAY 9, 1991

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON INTELLECTUAL PROPERTY
AND JUDICIAL ADMINISTRATION,
COMMITTEE ON THE JUDICIARY,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:10 a.m., in room 2237, Rayburn House Office Building, Hon. William J. Hughes (chairman of the subcommittee) presiding.

Present: Representatives William J. Hughes, Mike Synar, Carlos J. Moorhead, Howard Coble, F. James Sensenbrenner, Jr., and Craig T. James.

Also present: Hayden W. Gregory, counsel; Elizabeth R. Fine, assistant counsel; Veronica Eligan, staff assistant; Thomas E. Mooney, minority counsel; and James Quirk, intern.

Mr. HUGHES. The Subcommittee on Intellectual Property and Judicial Administration will come to order. Good morning.

Today the subcommittee is conducting the second day of oversight and reauthorization hearings on the Patent and Trademark Office in the U.S. Department of Commerce. Yesterday's hearing afforded the subcommittee the opportunity to hear testimony from a number of groups and individuals in the private sector. These witnesses expressed uniform admiration for the Patent and Trademark Office and its commitment to providing quality service to inventors and to the American public. I share the regard for the Patent and Trademark Office and for the dedicated public servants who are working so hard to promote the progress of science and the useful arts.

Yet, the witnesses yesterday also expressed concerns and frustrations with the administration's proposal for reauthorization and, more particularly, with regard to the dramatic increase in user fees and the almost complete elimination of taxpayer support for the Patent and Trademark Office. I must tell you I share that concern.

We will make certain that the Patent and Trademark Office has the resource and authority it needs to function effectively. We will, nevertheless, address concerns raised by small entities and other users of the Patent and Trademark Office about the proposed fee structure. In addition, we plan to explore the reinstatement of a higher level of taxpayer support for the Office and to take such

steps as may be necessary to assure PTO's continued accountability to Congress and to the American public.

The Chair recognizes the distinguished gentleman from North Carolina who is the acting ranking minority member.

I am told that we have a very distinguished group with us this morning from Congressman Dickerson's district, the Air War College International Officers from Montgomery, AL, and we welcome our visitors. We are delighted to have you with us. We hope you will enjoy the hearing this morning. It is a very important hearing. It concerns the reauthorization of the Patent and Trademark Office, which I don't have to tell you is a very important endeavor for us, and I am sure it is of great interest to your country.

We have with us this morning some distinguished guests. We are taking the testimony of the Commissioner of Patent and Trademark, and I would like to welcome once again the Assistant Secretary of the U.S. Department of Commerce and Commissioner of Patents and Trademarks, Mr. Harry F. Manbeck.

He recently completed his first year of distinguished service as Commissioner. While the Government and the Patent and Trademark Office in particular struggle with the problems of losing talented and experienced employees to the private sector, Commissioner Manbeck offers an example for the contrary progression. He brings many years of experience practicing intellectual property law on behalf of the General Electric Co., to the Patent and Trademark Office.

Commissioner Manbeck, thank you for appearing before the subcommittee this morning. We have your written statement which, without objection, will be made a part of the record. You are joined this morning by Brad. I wonder if you could introduce your colleague who heads up finance.

STATEMENT OF HARRY F. MANBECK, JR., ASSISTANT SECRETARY AND COMMISSIONER OF PATENTS AND TRADEMARKS, U.S. DEPARTMENT OF COMMERCE, ACCOMPANIED BY BRADFORD R. HUTHER, ASSISTANT COMMISSIONER FOR FINANCE AND PLANNING, AND PEGGY REHDER, DEPUTY DIRECTOR, CONGRESSIONAL AFFAIRS

Mr. MANBECK. Thank you, Mr. Chairman. I have here with me at the table Mr. Bradford Huther who is the Assistant Commissioner for Finance and Planning of the U.S. Patent and Trademark Office.

Mr. HUGHES. Glad to have you with us this morning also. You may proceed as you see fit.

Mr. MANBECK. Thank you, Mr. Chairman.

Mr. Chairman, I would like to start out by correcting what I believe is a misapprehension which seems to be in a number of people's minds. At least we keep hearing this. Since it is totally not so, I would like to speak to that for just 1 minute in starting—that is the oversight of the U.S. Patent and Trademark Office as it would occur under the authorization bill which you have in front of you.

We have heard it said that with this authorization bill, the Patent and Trademark Office would be placed almost like a government corporation so it would not have oversight. Nothing could be

further from the truth. This bill actually tightens up the oversight, in fact, because we would need to come back every 2 years to the Congress for authorization, not every 3 years as has been the rule under the present authorization arrangement. That is the first thing.

Second, the bill has in it a requirement that we must report to the Congress every year on at least five important things. If you will forgive me for a bit of a wry humor, however, one of the things on which we would report would be any proposed disposition of surplus fees. That would not be any problem for us at the present time. But we would have to give you, this committee, a detailed report every year.

Besides the authorization cycle now being 2 rather than 3 years, there is also the point that under the present arrangement the surcharge, without which we could not live, will run out in 4 years. So the Patent and Trademark Office will be back on a regular basis to this committee for oversight; no question about it.

The next point I would like to touch on very briefly, although we will hit it some more as we go along, is the question of small entity fees. We have heard questions from some members of the private sector, and understandably so, about fee levels in the United States. But I would like to point out, and we will show you by these charts, that we are running the most efficient, most cost effective Patent Office and Trademark Office in the world. Our fees are substantially lower than any other major office, and we are the only major office that has any kind of a small entity subsidy.

So I think you have to have these things in mind as you look at and consider our proposed budget for the next year—next 2 years.

Now, if I may turn to other matters, we have some charts which we hope will help the committee understand our circumstance. Ms. Peggy Rehder from our Congressional Affairs Office will handle putting them up.

Mr. HUGHES. While she is doing that—and I am going to do something I very seldom ever do and that is—since that is the top of your agenda—let me tell you, I have been in Congress now 17 years; I have been around a long time. I understand basically because of my dealings with agencies where we have oversight, but that we do not provide their authorization. Now, they can report to us from now until hell freezes over; but attempting to shape policy becomes much more difficult. I learned that in my freshman term around here.

As I said yesterday, I was broken in particularly with the postal service. So I understand that. Aside from that, I have some grave misgivings about converting the Patent and Trademark Office to a user fee financed office. I do not think that that is what the Constitution intended. I think the ABA's points yesterday were well taken in that I do not know how you could promote science and the useful arts if you make it very difficult for small inventors who are often frustrated because they cannot secure a commercial application. I do not know you promote; if anything, you might chill.

So it might be that in the time that you specify today you can address some of those concerns I have because that is at the heart of some of my major concerns about the present reauthorization,

aside from the fact that it does not comply in my judgment with the Budget Reconciliation Act.

Mr. MANBECK. Well, sir, I will be glad to try to explain and deal with those points as best I can. I do have to say in our view it does comply with the budget reconciliation act.

In any case, we will certainly go into those very points. If we miss any, please remind me and we will try to come back and pick them up.

May I proceed, sir?

Mr. HUGHES. Please, please proceed.

Mr. MANBECK. Our first chart here is intended to show a little bit of history. One bit of history it does not show, however, is that for the first 40 years of this century the Patent Office was fully fee funded. It was only when inflation started up in the forties that we saw the Patent Office go to a mix of public funding and user fees.

So historically I am not at all sure that supporting the Office totally from user fees stifles creativity at all, and it certainly has not done so in Japan or in Europe where the patent offices are fully fee funded and at much higher levels, incidentally—that is, fee levels—than ours.

In any case, just before the budget reconciliation summit of last year, we were approximately 60 percent fee funded and 40 percent public money, taxpayer moneys. Further, we were on a curve where ultimately as maintenance fees continued to come in, we were supposed to get to about 83 percent user fee funded and 17 percent public money.

What happened with the budget reconciliation bill is we were taken so that we were essentially fully fee funded. We had in 1991 only about $3 million of taxpayer money and propose the same for 1992.

As the Congress enacted the budget reconciliation bill, it was done necessarily with quite a bit of speed, and a lot of the long-range programs of the Patent and Trademark Office could not possibly be considered. So we are now at the point, sort of at a crossroads where we really have to consider the effect of those long-range programs.

Now, if I could have the next chart please, Peggy. Again, to show you a little bit of the history and also a little bit of where we are going, here we see what the levels of the funding of the Office have been over the last decade. Now, our work has gone up steadily throughout the eighties. As the work went up and as the need for more prompt processing in the Office was recognized, so also have the expenditures of the Office gone up.

At the time user fee funding was increased in 1983, it was recognized that if this was not done, soon we would be up to a pendency of 40 some months. It was then decided that the pendency should be brought down and maintained at 18 months average pendency; and as the Office geared up to do that, it necessarily caused program levels to go up.

But you will notice that the program level in 1990 was about $338 million. This year, we were budgeted to spend about $351 million. Now, this $351 million level depended upon a certain number of patent and trademark applications coming into the Office. Well, what has happened probably for a variety of reasons—probably be-

cause of recession, because of the Gulf War, possibly because of higher fees, we do not have as great an increase in the filings this year as we had expected. We are still up over last year, but not as much as we had expected. As a result, we do not have as much money as we thought we would have this year, and our program level this year will actually be less than it was in 1990. We think we are going to come in now about 338.

We are cutting programs in the office right now. We have cut out overtime. We are not going to hire any more people, examiners, other than outstanding offers. We are cutting back on our automation program somewhat. We are not into the muscle in the automation program yet, but we will be if we have to take much more out. We are contemplating and probably will slow up the printing of patents in the last quarter. We will probably print only 800 patents a week instead of 200 patents a week—sorry, instead of 1,000 patents a week, roughly, so that we do not overspend this year. So, we are not in an overfunded circumstance at all.

Now, as we go into next year—if I may have the next chart, please, Peggy—we see that what we are requesting is a substantial increase, no question about it, over the 1991 level. But let's now look at where these changes come from.

Mr. HUGHES. Excuse me. I wonder if we could change that a little bit so we could see it, but move it to the side so that those in the audience could also see it. Could we do that?

Mr. MANBECK. Of course.

Mr. HUGHES. That's better. Now we can all see it. Thank you.

Mr. MANBECK. The two biggest amounts in the increase requested for next year are those of workload and inflation. Now, the workload item is $45.5 million, and that comes from a projection that our workload will be 190,000 applications next year—that is, new applications, rather than about 170,000 perhaps this year, maybe 168,000.

Now, that projection is probably high I will say to you. We made that when it looked like we were going to receive more applications this year than we are getting. But that is a self-correcting number. If we do not get the applications, we do not get the money, and we change our programs to correspond just as we are doing this year.

Next is the inflation number. There is not much I can do about it. One big item in that inflation number is $12 million more that GSA is going to charge us for the space we already have. We protested GSA's increase this year with no success, so we have no reason to believe that although we will probably protest next year, that we will get anywhere. There are other inflation items which we can give your staff if you would like to see the breakdown in them.

The program levels—the only program levels where we are going up are automation, $18 million, and priorities of $17 million. Quality is the biggest part of the priorities, and another part is the biotech pendency. Now, you undoubtedly have or will hear that we ought to do more to bring down biotech pendency. Those who say let pendency rise, certainly are not in the biotech area because they complain that we do not have it where they want it. Believe me, if we had the money, we would work at it. We had a very ambitious hiring plan and a very ambitious overtime plan for the biotech area

this year, but we have just had to scrub it at this point. We are looking now to see if we can find a little money someplace in the agency to put back in biotech and we will if we can, but we have not found it yet is all I will say.

As for automation, a big reason for that increase is that we are now ready to deploy the automation system that has been worked on for years. That is, we are now ready to deploy it across the Office. Now, why do we want this automation system? I am talking particularly about what is known as APS, the automated patent system. This is the searching system. When we get it deployed, it will give us for the first time a totally reliable data base. There will never be a patent missing from the data base. It will be there for every examiner. Also, all the English language abstracts of Japanese patents will be on that system. We will also have on it the English language cover sheets from the European applications. So we will be to do a higher quality search job than ever before, and we are working on to see if we cannot introduce time efficiencies, too. In other words, do searching faster and take the cost out.

Also, sir, without that automated system in due course, the Patent and Trademark Office is going to drown in paper. We have a search room today—the public search room with 15 million documents in it. We have 140 search rooms up in the patent examining core with over 30 million documents in them. Not only do we have to pay for space, we have to pay to file and refile and file and refile patents, paper copies, all sorts of things so that in due course we will get expense reductions out of the system, too. We really need this automation system to bring the Office into the next century in a viable vital, state.

Every other major office in the world is doing the same thing. The Japanese are ahead of us. They have already spent $1 billion on their system and, frankly, we have a better system. We had an industry review panel in before my time in the office which looked at it and gave it good marks and the go ahead. Mr. Boyd Alexander, who is our acting automation chief, received a prize last year for the job that he and others are doing in the system—not a government prize—one from outside people.

So we think we are on the right track. Our system is a better searching tool than the Japanese system which is already up and running and it is good enough that the Europeans who are now working on theirs had people in just the last week looking for help as they bring their system along. I have—and perhaps you would like to have—a letter from the President of the European Patent Office which goes into their funding for their system and what they are trying to do. You will find that the dollars they have proposed to spend over the next 5 years are just about the same as ours, what we propose to spend. Believe me, we did not make the letter up. This came in response to our questions.

Could I have the next chart please, Peggy. I spoke before about how the workload has gone up over the years and how this has caused office expenses to go up, that and inflation. This chart shows you what has happened and what we project.

Now, we were right on that patent projection curve until this year. As I said, we have a somewhat flattening this year; we have not gone up as much, and it is indeed possible we will not go up

as much next year as we anticipate. But if we do, that will be self-correcting because being fee funded, we can spend only that which we get.

OK, may I have the next one please. Oh, that big blip I should mention in the trademark applications is the result of the intent-to-use legislation which gave us about a 50-percent rise in volume.

Now, here is a comparison of the patent fees. These are the application filing issue and maintenance fees in the U.S. Patent and Trademark Office and the fees in the rest of the world. Our fees are currently about $6,700 to take out and maintain a U.S. patent for its life. The red part of the bar is the filing and issue fees; the blue part is the maintenance fees which are paid in three increments over the life of the patent.

I think the most significant ones to compare it to are the Japanese Patent Office and the European Patent Office. The Japanese Patent Office, you will note there, you will pay today over $18,000 to take out and maintain a patent for its life. In Europe to cover a trading base equivalent to that in the United States—actually somewhat smaller—you have to process a patent through the European Patent Office. You will note their red bar is a lot bigger than our red bar; that is the portion at the bottom. It will cost you, I believe, $48,000 to maintain the patent in those countries, in those five countries.

Now, if you say, well, that is unfair, compare us with the bar in the Federal Republic of Germany at $15,000. Now, let's compare us in speed with the Japanese and the European Patent Offices. Our average pendency is 18 months; in Japan, 6 or 7 years; in the European Patent Office, 4 years.

So I think by any measure, my associates—I claim no credit; I have not been there that long—by any measure, my associates are doing a great job.

May I have the next chart please.

Now, as you have already indicated, Mr. Chairman—Peggy, I would just like the chairman please to see that chart below. I have already mentioned it and just so he will understand—I am sure he understands it if I have been articulate. But here is the recovery, and you will note how for the first 40 years of this century the Patent and Trademark Office was fully fee funded. So we are not—we really are not out of line with all history today. Thank you, Peggy.

Now, we come to the question of small entity funding. Small entity funding came into our patent system when the fees were revised in 1983. At that time it was decided that the small entities should receive a 50-percent diminution in the fees they pay. In other words, they pay half fees. The small entities as we think of them are, of course, universities, businesses with less than 500 employees, and private individuals.

Now, at the time the small entity subsidy was placed into effect, it was contemplated that the small entity subsidy would be supported with taxpayer money, and it was so supported either wholly or in part until last year. But now, the only source of funds we have to support the subsidy is from the large entities. Now, this has resulted in 1991 that the large entities who have about 65 percent of the filings are paying 82 percent of the fees. In truth—I think it was agreed when we testified before the—authorizing sub-

committee in the Senate, that this is, in fact, a tax on the large entities. Now, is this an equitable way to finance the system?

Recognizing our need for money and what seemed to us to be somewhat of an inequity in the system, we are proposing that in 1992 and thereon that the small entity subsidy be revised, incidentally—not revised as to getting into the system. We propose to keep the same low filing fee; 50 percent of filing fee paid by the large organizations to let them into the system.

Then when their patent is ready for issuance, and only then, would we require them to pay the same full fees as everybody else. At that point, they would know whether they have a valuable asset or whether they do not. Presumably if they feel it is a valuable asset, they would be willing to pay the fees. If it is, perhaps, only a minor unimportant improvement, they could let the patent application lapse.

The result of this would be that the large entities—still 65 percent of the system—would be paying about 75 percent of the fees, and the small entities—35 percent of the system—would be paying about 25 percent of the fees. In the thought it might be helpful in your thinking, I would like to add that the change in fees this year have had absolutely no effect in the percentage of applications filed by small entities as contrasted to those filed by large entities, at least as far as we have data to date. In fact the percentage of applications filed by small entities has gone up by about eight-tenths of 1 percent.

Thank you, sir. If there are any questions, I will be glad to try to answer them.

Mr. HUGHES. All right. Thank you, Commissioner.

[The prepared statement of Mr. Manbeck follows:]

Summary of the Statement of Harry F. Manbeck, Jr.
Assistant Secretary and Commissioner of Patents and Trademarks

The President requested a program level of $461,990,000 in fiscal year 1992, and $555,000,000 in fiscal year 1993 for the U.S. Patent and Trademark Office. These funds are necessary to achieve the Office's goals of issuing patents in an average of 18 months, registering trademarks in an average of 13 months, and automating the Office fully in the 1990s.

To accomplish this, the Secretary of Commerce has requested that the Committees on the Judiciary authorize for appropriation $98,300,000 and $102,300,000 in fiscal years 1992 and 1993, respectively. These amounts represent the amount requested to be appropriated from taxpayer revenues -- $3,300,000 in fiscal year 1992 -- and the amounts to be appropriated from the Fee Surcharge Account established under the Omnibus Budget Reconciliation Act of 1990 (Omnibus Act). Section 1 of the Secretary's proposal would ensure that the proper amounts are "scored" as deficit reductions under the Act. The remainder of the funding for the Office's program will come from user fees provided for in the patent and trademark laws, authorizing legislation, and the Omnibus Act.

Furthermore, the Secretary has proposed to modify the current fee structure to obtain the financial resources that the Office needs to carry out its program in a manner that is acceptable to industry and the Congress. The major patent fee amounts increased by the Omnibus Act -- filing, issue, and maintenance fees -- would not be changed. Patent service fees and Patent Cooperation Treaty fees, however, would be increased so that in the aggregate with the major patent fees -- including revenues from the Fee Surcharge Account and revenues directly available to the Office from the surcharge, patent operations would be fully fee-funded.

Although the Office would remain essentially fee funded under the Secretary's proposal, the Congress would retain effective oversight over the programs of the U.S. Patent and Trademark Office. The Office would still submit a detailed budget proposal to the Congress each year for approval. The Secretary's proposal retains the requirement to report income and expenditures to the Committees on the Judiciary, and retains other oversight provisions.

The small entity subsidy for individual inventors, small businesses, and nonprofit organizations would be retained but would be limited to certain fees relating to the filing of patent applications. Under this proposal, small entities would still be encouraged to use the patent system but large entities would not be required to bear the entire subsidy previously funded by taxpayer revenue.

Trademark fees would be increased and the limitation regarding the use of these fees solely for trademark purposes would be modified. This would allow trademark fees to be used to pay for related activities such as administrative, legislative, international, and outreach programs.

Statement of

HARRY F. MANBECK, JR.

ASSISTANT SECRETARY AND COMMISSIONER

OF PATENTS AND TRADEMARKS

Before the

SUBCOMMITTEE ON INTELLECTUAL PROPERTY

AND JUDICIAL ADMINISTRATION

COMMITTEE ON THE JUDICIARY

U.S. HOUSE OF REPRESENTATIVES

MAY 9, 1991

Mr. Chairman and Members of the Subcommittee:

Thank you for this opportunity to summarize our accomplishments over the last two years and to discuss our plans for the next several years, highlighting our authorization proposal for fiscal years 1992 and 1993.

Since our last oversight hearing, there have been several historic events for the U.S. Patent and Trademark Office. On March 19, 1991, we issued patent number 5,000,000. This patent, covering an invention relating to the manufacture of ethanol using man-made bacteria, was issued to Lonnie O. Ingram, Tyrrell Conway, and Flavio Alterthum, scientists working at the University of Florida. On this occasion, the Secretary of Commerce, Robert A. Mosbacher, stated "Patent No. 5,000,000 is an important milestone for the Patent and Trademark Office, and for the Nation. It comes at a time when the technological innovation encouraged by patent rights is critical to our international competitiveness. All Americans should make a renewed commitment to creativity in order to ensure that our country continues to grow and prosper."

Almost one year ago during the opening ceremonies of the bicentennial of the U.S. patent and copyright systems, Secretary Mosbacher announced the establishment of an Advisory Commission on Patent Law Reform. The purpose of the Commission is to advise the Secretary of Commerce on what, if any, changes are needed in the U.S. patent system. The Commission's membership includes executives of corporations which rely heavily on patents, members of the patent bar, academia, and the general public. I am pleased to report that the Commission held its first meeting on March 26, 1991. At this meeting, a range of issues was identified for consideration, such as first-to-file versus first-to-invent, automatic publication, and the term of protection which includes our practice with respect to continuation applications. The final report and recommendations of the Commission are due to the Secretary in August 1992.

Goals of the U.S. Patent and Trademark Office

The programs of the U.S. Patent and Trademark Office, in the past and in fiscal years 1992 and 1993, are based on a four-point plan. These points are:

1. To maintain the average time it takes to get a patent at 18 months, and to continue to improve the quality of issued patents;

2. To maintain the average time it takes to register a trademark at 13 months and to give the first opinion on registrability in three months;

3. To take aggressive steps toward automation of the Office in the 1990s; and

4. To strengthen the worldwide protection of intellectual property.

We have been successful in meeting the goals in the plan. In 1989, we achieved the 18-month pendency period for patent applications and maintained that period through fiscal year 1990. In 1985, we achieved the 13-month pendency period in trademarks and maintained it until the explosion of trademark application filings that followed the implementation of the legislation that permits trademark applications to be filed on the basis of intent-to-use. In the 1990s, we are benefiting from the efforts that began in the 1980s to automate the Office. Also, we have supported legislation, considered by this Subcommittee, that was enacted and significantly improved our intellectual property laws. Finally, the U.S. Patent and Trademark Office worked diligently with the agencies responsible for trade and foreign relations on improving the level of intellectual property protection provided by other countries.

These successes have been made possible, in large part, by the stable funding base provided by our user fee system. This system was created by Public Law 97-247 and was modified by successive authorization Acts and the Omnibus Budget Reconciliation Act of 1990.

Funding

In 1980 and 1982, the Congress and the Executive Branch recognized that the U.S. Patent and Trademark Office did not have the stable funding base it needed to provide the service necessary to maintain effective patent and trademark systems in the United States. Working together, they created a new funding regime, based on a mixture of user fees and taxpayer funds, that would be used to reduce the pendency periods for patent and trademark applications and to modernize the operations of the Office, particularly through automation.

This worked well through fiscal year 1990. However, the situation changed in fiscal year 1991. The Federal Government faced a fiscal crisis. Among other proposals, the participants in the Budget Summit recommended that the user fees charged by a number of Federal agencies, including the U.S. Patent and Trademark Office, be raised and that their taxpayer support be reduced. As a result, the Congress instructed the Committees on the Judiciary to reduce outlays of agencies for which they had oversight jurisdiction by $495,000,000 during fiscal years 1991 through 1995. To accomplish this, the Committees recommended that a 69 percent surcharge be applied to all patent fees established by subsections 41(a) and (b) of title 35. These fees include the application filing fees, issue fees, the fees for maintaining a patent in force, and several other fees. The revenues from this surcharge were to be placed in a Fee Surcharge Fund in the Treasury. These fee revenues, rather than taxpayer revenues, would be appropriated back to the U.S. Patent and Trademark Office. These recommendations were adopted and incorporated in the Omnibus Budget Reconciliation Act of 1990 (Pub. L. No. 101-508).

In the first year -- fiscal year 1991 -- under this Act, our program level is $351,427,000 and 4,765 positions. Of that amount $3,000,000 was appropriated from taxpayer revenues for core public functions and $88,000,000 was appropriated from the Fee Surcharge Fund. Congress made an additional $18,807,000 available without appropriation from the Fund. The remainder of the program, $241,620,000, will be financed through other user fees as has been the practice since fiscal year 1983.

For fiscal year 1992, the President requested a program level of $461,990,000 and 5,852 positions. To finance this program, he requested the appropriation of $3,300,000 from taxpayer revenues

and $91,000,000 from the Fee Surcharge Fund. The remainder of our program, $367,690,000, will be funded through fee income and the revenues from the surcharge that exceed $95,000,000, the deficit reduction target.

For fiscal year 1992, we have requested an increase of $110,563,000. Of this amount, $29,533,000 (roughly 26 percent of the increase) is to cover inflation -- that is, the increased costs of providing the same volume of services, including increased rent and pay raises. To be able to process the projected increases in the number of applications filed, we have requested an additional $45,428,000 (roughly 41 percent of the increase). If applications are not received at the expected level, our fee income will decrease and we will, of course, adjust our spending plans to reflect the income and filing level. This is not over-budgeting. If we do not have plans in place to process increased workload, we cannot meet the demand in a timely fashion. If we do have the plans in place and filings are less than expected, we can adjust our plans downward.

The remainder of the increase will be used to fund increases in the automation program and quality improvements. Only 17 percent of the total increase, or $18,403,000, is for automation and, of that, 10 percent, or $11,409,000, is for patent automation and the seven percent, or $6,994,000, is for trademark automation and information dissemination.

A total of $17,199,000 is requested for quality improvements, including $3,560,000 to reduce the pendency periods in the biotechnology area. A more detailed breakdown of the increase is presented in Attachment A.

Patents

We achieved our patent pendency goal in 1989, when we reduced the pendency period for utility, plant, and reissue patents to 18.4 months.

In fiscal year 1990, we received a record 163,571 utility, plant, and reissue applications and 11,140 design patent applications. Even with an increase over fiscal year 1989, we maintained an average pendency time of 18.3 months, and we issued a record 89,551 utility, plant, and reissue patents and 7,176 design patents in fiscal year 1990.

This year we estimated that we would receive 179,000 utility, plant, and reissue patent applications. To date, we have received fewer applications than expected. We currently estimate that we will receive 165,000 to 170,000 applications. Because we are now substantially fully fee funded, we have taken steps to adjust our spending in response to this lower-than-estimated

workload. Our goal, however, is still to maintain the 18-month pendency period this year and next year.

To maintain our 18-month pendency period with increased patent application filings, the Office hired 503 patent examiners during fiscal year 1990. With examiner attritions, the number of examiner professionals (including design examiners and immediate supervisors) totaled 1,745 staff years at the end of the fiscal year. We now plan to hire 310 professionals and the necessary clerical staff to enable us to maintain our pendency goals in 1991.

Although our efforts have proven successful in the continued reduction of the average pendency time for utility patents, applications in the field of biotechnology have not fared as well. In fiscal year 1984, 3,756 applications were filed and the backlog was 6,557 applications. In contrast, 9,289 applications were filed in fiscal year 1990, and the backlog was 17,146 applications. The pendency period for biotechnology applications was 25.8 months at the end of fiscal year 1990, which is down from 27.0 months at the end of June 1988.

To reduce the pendency period, we implemented a 13-point biotechnology catch-up plan under which we created a patent examining group with responsibility for biotechnology to increase efficiency. We increased the number of biotechnology examiners to 138 by adding 52 new examiners in fiscal year 1990. Current plans for the next two fiscal years call for recruiting about 60 new biotechnology examiners each year to increase the size of the group examining staff to nearly 200 examiners.

In fiscal year 1992, in addition to increasing the number of examiners, we are attempting to use other methods to reduce the backlog and to increase quality. We are trying to improve our retention rate by improving opportunities for higher pay including special pay rates for those in highly complex biotechnology areas. We plan to hire technologically trained staff to assist examiners by collecting information having a bearing on patentability prior to examination. We will be improving the examiners' ability to retrieve biotechnology literature by providing them with improved search tools and assistance from the National Institutes of Health and the National Library of Medicine. We have provided personal computers to all biotechnology examiners, and will increase their access to on-line technical and patent data bases.

Trademarks

We met our trademark pendency goal -- to give a first opinion on registrability in three months and to register a mark in 13 months -- in 1985 and maintained it through fiscal year 1989. In

fiscal year 1990, however, the Trademark Law Revision Act took effect. On the date of implementation of the new law, November 16, 1989, the trademark operation received more than 3,000 applications. Many of these were "intent-to-use" applications filed under the provisions of the new law. Though the initial increase in filing that occurred that day quickly subsided, filing rates remained high through the fiscal year and, by the year's end, we received a record 127,294 trademark applications. This was an increase of 53 percent over the prior year. The Trademark Examining Operation sent first actions on 92,612 applications in fiscal year 1990, compared to 79,382 in the prior fiscal year, and disposed of 93,565 applications, compared to 80,275 in fiscal year 1989. Even with these increases in production, the average time between the filing of an application and the Office's mailing of the trademark examining attorney's initial action on the application rose to 4.8 months, and the pendency period rose to 15.3 months at the end of fiscal year 1990.

This fiscal year, we expected to receive 132,000 trademark applications, given the filing rate in fiscal year 1990. Similar to our experience with patent application filing rates, the filing rate is lower than expected. We now estimate that we will receive between 115,000 and 120,000 applications. It should be noted, however, that this is still approximately 50 percent more applications than we received in fiscal year 1989.

To meet these increased demands, we plan to add 124 additional staff in 1991 and 96 positions in 1992 to reduce the pendency period and improve the quality of trademark services. With these additional resources, we expect to reach our pendency goals in fiscal year 1993.

Automation

In response to a requirement in Public Law 96-517, the Office prepared a study on automating all of its operations to increase efficiency and quality. In 1982, the Office committed itself to implementing the automation plan that resulted from the study.

After the Office developed an implementation plan for the Automated Patent System (APS), one aspect of our automation program, the Department of Commerce convened an Industry Review Panel to evaluate our progress, in response to concerns about the feasibility of our approach. In 1988, they concluded that APS was needed and that it offers "the potential for real benefits to the PTO and its development should be continued." They also identified significant implementation problems and recommended changes in the areas of APS design, defining requirements and testing, and program management.

We adopted their recommendations and, since then, we have made dramatic improvements. In their January 1990 report, the Panel noted that "The PTO has aggressively taken the key steps that can be done quickly and that bring the largest improvements; top management has acted more swiftly than is usual in such cases and is to be commended."

We have now gone beyond the "theoretical" and planning stages. The Automated Patent System is being put to work and is working. Current applicants receive benefits of the System, as will applicants in fiscal years 1992 and 1993.

One part of this system, the full-text capability, allows examiners to search U.S. patent documents from 1971 to the present electronically using "word" searches. This system is now available to the public in our search facilities.

Another aspect of the Automated Patent System is the "image" data base. This system contains images of all U.S. patent documents including the patent drawings that are often necessary to understand the invention. The image data base was first approved for routine searching in one examining group in 1989. Its availability was extended to a second examining group in 1990. We continue to add drawings to the image data base to make it more useful and comprehensive. By the end of this year, we will have over 800,000 U.S. patents in the image data base -- one of the largest on-line image data bases in the world.

At first, many envisioned that electronic searching using the full-text and image data bases would be primarily limited to "classified" searches similar to those done with the paper files -- looking only at patents assigned to a specific technological category. It was thought that the greatest advantage of this data base would be its high level of file integrity -- something that could not be realistically achieved with the paper file. The full-text search capabilities were originally only considered to be a valuable adjunct to the "classified" search. Continued experience, however, has shown that the full-text search systems may provide more capability than we originally anticipated. New search techniques using both the full-text and image search provide more pertinent information than the classified paper search or the electronic full-text and classified image searches used alone. And, we are exploring the possibilities for using artificial intelligence techniques -- such as "fuzzy logic" searches -- to enhance the examiners' ability to sort through large masses of data for patents that match conceptual criteria articulated by the examiner.

We have decided that it is advantageous to make this system available to more examiners. We plan to deploy the image system fully in a third examining group and to confirm the positive results obtained during deployment in the other two groups. We

then plan to provide the APS image data base back to 1971 to all of the other examining groups and to the public.

Some have stated that less costly alternatives exist and that the European Patent Office (EPO) is already relying on such alternatives. We do not believe that this is true. First, it is our understanding that the EPO is spending roughly the same amount of money on automation per year. Second, it appears that the less expensive alternative referred to is the use of CD-ROM products. To the best of our knowledge, the EPO has never considered CD-ROM products to be a substitute for a text and image search system such as APS. In fact, they are now developing a system similar to APS.

The trademark search system, "T-Search", has been used by examiners since 1986 and has been available to the public in our search facilities since 1989. While it has been an extremely useful tool, trademark examiners and the public have expressed the desire for a better system -- one that is faster, has more powerful search techniques, and has more information available for retrieval. We have begun defining the features and performance needs for a new search system -- one that is faster, displays more usable data, and again incorporates artificial intelligence search tools. Also, we have recently moved the T-Search system to a more powerful mainframe, thereby achieving faster performance.

Disseminating the information in patent documents and providing a public register of trademark registrations have long been functions of the U.S. Patent and Trademark Office. Technological developments in the automation area have now provided new and improved methods of performing these functions and they have created a greater demand upon the Office to provide information.

To meet these demands, we will begin to provide on-line access, on a pilot basis, to the full-text search capability of the Automated Patent System to fourteen of our 70 Patent and Trademark Depository Libraries located throughout the Nation. If the pilot program is successful, this access will be expanded to all of these Libraries. As improvements to the full-text search system become available, we plan to provide them to these Libraries and to the public in the Public Search Room.

Compact disk technology (CD-ROM) has also expanded the possibilities for dissemination. Trademark information is now supplied to our Libraries in CD-ROM format. Some information on foreign patent documents is also being supplied to them. Later this year, we will begin to release new patent issues on CD-ROMs to the Libraries and the public. As the demands for patent and trademark information grow, we believe that CD-ROM technology offers the potential to disseminate the information we publish more quickly and less expensively.

International Activities

During the last several years, the United States Government conducted an unprecedented number of international activities designed to establish adequate international standards for intellectual property rights and to facilitate obtaining protection abroad. The U.S. Patent and Trademark Office participated in many of these activities at the request of the agencies responsible for foreign affairs and trade matters, including the Office of the United States Trade Representative, the Department of State, and the International Trade Administration of the Department of Commerce.

Perhaps the most well-known of these activities has been the Uruguay Round Multilateral Trade Negotiations held under the auspices of the General Agreement on Tariffs and Trade (GATT). We assisted the Office of the United States Trade Representative in the effort to reach an agreement on intellectual property, as part of the Negotiating Group on Trade-Related Aspects of Intellectual Property Rights, Including Trade in Counterfeit Goods (TRIPs Group).

The negotiations on all issues in the Uruguay Round were to be concluded at a meeting of trade ministers in Brussels, Belgium, during the week of December 3, 1990. Unfortunately, this meeting was adjourned without an agreement being reached, primarily due to the inability of the ministers to reach an agreement on agricultural issues. The Director General of the GATT, Mr. Arthur Dunkel, announced on February 26, 1991, that his consultations led him to believe that the Uruguay Round negotiations could be continued. As a result, the Trade Negotiating Committee adopted his proposal to continue the negotiations. The TRIPs Group met on March 18, 1991, but there was agreement that the pace of future meetings would depend on progress in other parts of the negotiations.

In addition to the negotiations in the Uruguay Round, and perhaps of more immediate concern to the Subcommittee, negotiations are taking place within the World Intellectual Property Organization to harmonize the patent laws of its member states. The effort to harmonize patent laws began in 1984 with several meetings on the desirability of a grace period. These meetings were followed by meetings of a committee of experts to develop a patent law harmonization treaty, with the eighth and last being held in two parts in 1990.

The draft patent law harmonization treaty now under consideration consists of some 39 articles and some 13 rules. These articles and rules cover matters ranging from the details for naming an inventor in a patent application, to fundamental questions such

as what types of inventions should be patentable and what should be the term and scope of protection provided by a patent.

Two proposals in the draft treaty are particularly controversial in the United States. The first would require that where two or more inventors apply for a patent for the same invention that the patent be granted to the first to file a patent application. The second would require that all patent applications be published 18 months after their earliest effective filing dates. As you know, the United States awards patents on a first-to-invent principle and has no mandatory publication prior to the grant of a patent. To avoid the conclusion of a treaty that may not be acceptable to the United States, we proposed that countries be given the option of granting patents on a first-to-file or first-to-invent basis, and be given the option to publish applications at 24 months instead of 18 months.

The draft treaty was to be concluded at a Diplomatic Conference in The Hague from June 3 to 28, 1991. Last month, however, a majority of the members of the European Patent Convention declared themselves to be in favor of a postponement of the Diplomatic Conference and asked the Director General of the World Intellectual Property Organization (WIPO) to convene an Extraordinary Session of the Paris Union Assembly to consider the dates of the Conference. France, speaking for the European Patent Organization, outlined three reasons for postponing the Conference: 1) negotiations in the General Agreement on Tariffs and Trade had not concluded as expected; 2) there were continuing discussions regarding the question of first-to-file versus first-to-invent and the question of grace period; and 3) concern over the risk that the Conference might fail and the impact this would have on WIPO. The developing countries were not persuaded to postpone the Conference; however, they did agree to divide the Conference into two parts and shorten the first part to three weeks. The Assembly took this decision with the understanding that final decisions would only be made in the second part of the Diplomatic Conference. The date of the second part will be considered at the September 1991 meeting of the Paris Union Assembly.

Legislation

This Session we plan to forward a number of legislative proposals and look forward to working with this Subcommittee on them. The Secretary of Commerce forwarded draft legislation on March 8, 1991, to extend his authority to provide interim protection under the Semiconductor Chip Protection Act to nationals of foreign countries that he finds extend or are working to extend similar protection to U.S. nationals. The current authority is scheduled to expire on July 1, 1991. We appreciate the prompt review of this proposal by the Subcommittee and the opportunity to testify on this matter last week.

We are also considering submission of a "house-keeping" bill for the U.S. Patent and Trademark Office. Under consideration are amendments in the patent and trademark laws to make minor adjustments and to improve the administration of these laws. These amendments include clarifying the term of renewal for expiring trademarks and correcting sections 18, 21(a)(4), 21(b)(1), and 24 of the Trademark Act of 1946. In addition, the amendments would clarify the conditions under which the Commissioner could revive abandoned patent and trademark applications, reinstate terminated reexamination proceedings, and accept the late payment of patent maintenance fees.

Authorization Legislation

The current authorization Act for the U.S. Patent and Trademark Office expires on September 30, 1991. During the consideration of the Omnibus Budget Reconciliation Act of 1990, the Committees on the Judiciary recognized that a new authorization bill would be considered this year, and added a provision to the Act that requires the Commissioner to study the fee structure of the U.S. Patent and Trademark Office and to submit a report with suggestions for changing the fee structure.

On March 4, 1991, the Secretary of Commerce forwarded draft authorization legislation to the Congress in response to the stated intent of the Congress to reauthorize the Office and to comply with the requirement for the submission of a report of the fee structure. This proposal would authorize the U.S. Patent and Trademark Office for fiscal years 1992 and 1993 in a manner that is consistent with the intent of the relevant provisions of the Omnibus Budget Reconciliation Act of 1990.

A "Statement of Purpose and Need" and a "Section-by-Section Analysis" were forwarded to the Subcommittee along with the Secretary's proposal. Instead of repeating the information in these documents, I will summarize the major components of the legislation.

Section 1 of the proposal would establish a two-year authorization and fee program, unlike the equivalent subsections of the prior authorization acts that created a three-year authorization and fee program. The proposed two-year program has several advantages. Most importantly, it would provide each Congress with the opportunity to review the authorization proposal of the U.S. Patent and Trademark Office. In addition, a two-year program would provide the Office with a greater level of precision in estimating its annual workload and budget needs than is possible with a three-year or longer authorization program.

For fiscal year 1992, section 1 authorizes appropriations of $98,300,000; and for fiscal year 1993, $102,300,000. Except for

$3,300,000 in fiscal years 1992 and 1993, these amounts are not to be allocated from taxpayer revenues available to the Treasury. Rather, they are to be derived through appropriations from the Patent and Trademark Office Fee Surcharge Fund that receives revenues generated by the 69 percent surcharge placed on fees established by subsections 41(a) and (b) of title 35. Authorizations at this level are consistent with the deficit-reducing provisions of the Omnibus Budget Reconciliation Act. Additional revenues generated by the surcharge will be made available to the Office in the same manner as other fee revenues have been made available since fiscal year 1983.

During the coming two years, the patent-related fees enumerated in subsections 41(a) and (b) of title 35, United States Code, would remain at the present level. That is, the surcharge will not be increased and the fees subject to the surcharge will not be adjusted to reflect fluctuations in the Consumer Price Index. However, the proposal would give the Commissioner the authority to adjust other patent-related fees so that these fees, coupled with the fees established under subsections 41(a) and (b) of title 35 and section 31 of the Trademark Act of 1946, will recover in the aggregate the operating costs of the Office. While the use of trademark fees would still be used primarily to underwrite the cost of the trademark operations, the proposal would also permit trademark fees to be used to fund related activities in the administrative, legislative, international, and outreach program areas. These areas were previously funded from taxpayer revenues that are no longer available. Furthermore, the proposal specifies that trademark fee revenues may only be used for other authorized activities of the Office if the conditions for reprogramming of funds specified in the annual Department of Commerce appropriation act are satisfied.

No direct fees would be established for the use of the paper files. The costs of maintaining these files will be underwritten by other fee income, and we will continue to charge reasonable fees for public access to the automated search systems.

Subsection 4(d) would amend subsection 41(h)(1) of title 35 to strike a more appropriate balance between the fees paid by large entities and the fees paid by small entities. Under the Omnibus Budget Reconciliation Act of 1990, the Patent and Trademark Office will be supported almost exclusively by the fees paid by users of the patent and trademark systems. The Office will not receive taxpayer revenues to fund the 50 percent subsidy, $50,351,000 in fiscal year 1991, currently enjoyed by small entities for all fees established by subsections 41(a) and (b). In the absence of any taxpayer revenues, the funds for underwriting any continued subsidy must be obtained by charging higher fees to other users of the patent system. Since more than one-third of the total number of patent applicants presently qualify for such small entity status, both fairness and the need

to preserve the incentives of the patent system dictate a redistribution of the responsibility large and small entities bear for supporting the cost of the system. Thus, the subsidy for small entities is limited under this subsection to the fees paid for filing patent applications for original patents, design patents, plant patents, and reissue patents, but the subsidy would remain at the 50 percent level. Small entities would also enjoy the 50 percent subsidy for fees paid on filing for excess claims and multiple dependent claims. This will enable small entities to enter the patent system with the same relative advantage they enjoy today and to decide whether to pay full fees for obtaining patent issuance only when they are in a position to make an informed judgment about the scope of protection and the commercial value they are likely to receive.

This proposal, if enacted, will take effect on October 1, 1991. The new fees established under the provisions of section 4 of this proposal would apply to all payments made on or after October 1, 1991. Fees that are paid before October 1, 1991, will be accepted if they satisfy the requirements of law prior to that date.

Several organizations have opposed enactment of our proposal and have alleged that the fee increases implemented last November and the proposed increases will deter many large corporations and small enterprises from seeking patent protection. These organizations also opposed the fee increases in 1982 on the same grounds. They were wrong. This year we still expect to receive between 165,000 and 170,000 patent applications. This represents an increase of 51 percent since 1982 when Public Law 97-247 was enacted. This means that since those fees took effect, the number of patent applications has increased more in less than a decade, than the period between the turn of the century and the enactment of Public Law 97-247. Furthermore, the number of patent applications by small entities has increased from 32,018 in 1983, to almost 58,000 in 1990.

These organizations also state, without the benefit of any supporting data, that the fee increase last November has caused a decline in filing patent applications, particularly by small entities. These statements are also incorrect. We are receiving more patent applications this year than we did last year -- although we are not receiving as many as we predicted. Furthermore, there are no discernible changes in the composition of our users -- we are still receiving approximately the same percentage of applications from small entities and from U.S. residents.

One organization, the Industrial Biotechnology Association, states that its members will be unable to afford our proposed fees -- less than $7,000 over an average 13-year period per invention. Yet, this is an industry that invests $100,000,000 to

$200,000,000 per invention. In addition, the industry expects to receive revenues of $2,900,000,000 in 1991 and expects to receive $50,000,000,000 in the year 2000. One could certainly question how companies that can make such investments and receive such returns cannot afford $7,000 in fees -- half of which are paid after the patent grant -- to protect an invention in the world's wealthiest market.

Opposition has also been registered to adjusting the patent service fees to recover more than the cost of a particular service. For example, the American Intellectual Property Law Association "opposes the principle that any member of the public should be required to pay fees for government services which are higher than the costs of providing the service." This position, taken literally, would preclude the Office from deferring the cost of patent examination through maintenance fees, and would preclude the Office from deferring the costs of trademark application examination through use of higher renewal fees. These methods of deferring payments are widely recognized to be beneficial to the applicants.

We urge the Subcommittee to act upon this proposal as soon as possible. The President's appropriation request and this authorization proposal are inextricably linked. The appropriations request is scheduled to be acted upon by the House of Representatives by June 30, 1991. Furthermore, we must publish final rules implementing the provisions of any authorization legislation no later than August 1, 1991. Finally, we would like to be able to notify our users as soon as possible about any changes in our fee structure.

FISCAL YEAR 1992 BUDGET CHANGES TO FISCAL YEAR 1991
(Dollars in Thousands)

Category	Description	Amount
Inflation*	Space Rent	$12,170
	Pay Raises (1991 and 1992)	8,481
	Annualization of prior year increases	5,118
	Other inflationary adjustments	3,764
	Sub-Total	*29,533*
Workload	Patent Examination	26,978
	Trademark Examination	10,549
	Services	1,750
	New Space	6,151
	Sub-Total	*45.428*
Automation	Patent Automation	11,409
	Trademark Automation	5,079
	Information Dissemination	1,915
	Sub-Total	*18,403*
Priorities	Quality Examination	10,231
	Biotechnology Pendency	3,560
	Quality Services	1,000
	Other	2,408
	Sub-Total	*17,199*
	Total	*$110,563*

* Refer to PTO's fiscal year 1992 budget, pages PTO 14 - PTO 19.

Summary of the Statement of Harry F. Manbeck, Jr.
Assistant Secretary and Commissioner of Patents and Trademarks

The President requested a program level of $461,990,000 in fiscal year 1992, and $555,000,000 in fiscal year 1993 for the U.S. Patent and Trademark Office. These funds are necessary to achieve the Office's goals of issuing patents in an average of 18 months, registering trademarks in an average of 13 months, and automating the Office fully in the 1990s.

To accomplish this, the Secretary of Commerce has requested that the Committees on the Judiciary authorize for appropriation $98,300,000 and $102,300,000 in fiscal years 1992 and 1993, respectively. These amounts represent the amount requested to be appropriated from taxpayer revenues -- $3,300,000 in fiscal year 1992 -- and the amounts to be appropriated from the Fee Surcharge Account established under the Omnibus Budget Reconciliation Act of 1990 (Omnibus Act). Section 1 of the Secretary's proposal would ensure that the proper amounts are "scored" as deficit reductions under the Act. The remainder of the funding for the Office's program will come from user fees provided for in the patent and trademark laws, authorizing legislation, and the Omnibus Act.

Furthermore, the Secretary has proposed to modify the current fee structure to obtain the financial resources that the Office needs to carry out its program in a manner that is acceptable to industry and the Congress. The major patent fee amounts increased by the Omnibus Act -- filing, issue, and maintenance fees -- would not be changed. Patent service fees and Patent Cooperation Treaty fees, however, would be increased so that in the aggregate with the major patent fees -- including revenues from the Fee Surcharge Account and revenues directly available to the Office from the surcharge, patent operations would be fully fee-funded.

Although the Office would remain essentially fee funded under the Secretary's proposal, the Congress would retain effective oversight over the programs of the U.S. Patent and Trademark Office. The Office would still submit a detailed budget proposal to the Congress each year for approval. The Secretary's proposal retains the requirement to report income and expenditures to the Committees on the Judiciary, and retains other oversight provisions.

The small entity subsidy for individual inventors, small businesses, and nonprofit organizations would be retained but would be limited to certain fees relating to the filing of patent applications. Under this proposal, small entities would still be encouraged to use the patent system but large entities would not be required to bear the entire subsidy previously funded by taxpayer revenue.

Trademark fees would be increased and the limitation regarding the use of these fees solely for trademark purposes would be modified. This would allow trademark fees to be used to pay for related activities such as administrative, legislative, international, and outreach programs.

Mr. HUGHES. Let me just pick up, if I might, first with regard to your point that in essence what we are doing is taxing the larger entities. I think that was one of the last points you made.

One of the concerns expressed yesterday was that the automation program really is a tax on present-day users because they are not benefiting the automated system. My question is do you agree with that premise; and if not, how do they benefit from the present expenditures for automation?

Mr. MANBECK. All right. I certainly agree, sir, that as we go forward with the automation program, it is a charge on today's users of the system. But they and everybody else will benefit from the automation program in that we will be able to do a higher quality of examination and reexamination than before.

Mr. HUGHES. But if you are talking about an inventor perhaps that might file one patent in his lifetime, how would he benefit?

Mr. MANBECK. By a higher quality of examination of his application.

Mr. HUGHES. We all benefit from that, don't we?

Mr. MANBECK. Yes, sir, we do.

Mr. HUGHES. All taxpayers, all citizens benefit.

Mr. MANBECK. We do.

Mr. HUGHES. Your point is that we are singling out small entities and large entities and we are taxing larger entities who are subsidizing the smaller entities, and your point is that is in essence a tax.

What is the difference between that tax and a tax we are imposing upon present-day users who are asked to finance the automation system? That is my point, that is the issue. Why is there any difference?

Mr. MANBECK. It is a tax on both to support the system; there is no question about it. About the only answer I can give you, sir, is that nobody takes out a patent for eleemosynary reasons. Everybody takes out a patent in the hopes of personal gain. At least in 40 years, I have never seen any taken out for any other reason. Everybody benefits from an efficient system, everybody who files a patent application.

Mr. HUGHES. Well, then the question is: If everybody benefits, shouldn't we be financing that through public funds? A user fee is a fee for a particular use. My Daddy used to say if it quacks like a duck and walks like a duck, it is probably a duck. A tax is a tax. User fee is for a particular use. If, in fact, what we are doing is benefiting the population at large, isn't that the proper realm of using public taxing authorities as opposed to specific use where somebody is benefiting individually from a particular service?

Mr. MANBECK. Well, sir, each patent application—excuse me—each patent applicant does benefit from our service. He benefits or will benefit from the automation system.

Mr. HUGHES. So do the taxpayers, don't they? Don't we benefit from the work of our scientists and our songwriters? Don't we all benefit? Doesn't our Treasury benefit? Don't we benefit from the work product of our inventors? Don't we all?

In essence, what is the difference basically in benefit? It may be that the inventor will individually benefit, but we all benefit from

the efficient operation of the Patent and Trademark Office. By the promotion of science and the useful arts, we all benefit, don't we?

Mr. MANBECK. Sir, I agree with you. I think the patent system is of great benefit to this country. I do not think the country would be where it is today were it not for the patent system.

Mr. HUGHES. Well, I don't want to dance around the maypole about this, but I have a feeling that we are once again attempting to use user fees as a way of raising revenues that should be raised through public funds. That is aside from all the other issues we have here. In my judgment, that is not a proper use of user fees. Insofar as the advent of special entities are concerned, we heard testimony yesterday from a professor who stated that the universities have very limited discretionary funds. As you know, they engage primarily in generic, basic science and research. His point to us yesterday—and I thought it was a fairly good one—was that they are going to have to reduce the number of patent applications that they apply for and prioritize. Anytime you increase the user fees for their filing or the maintenance fees, that is going to mean that they are going to be able to file fewer patents.

We also had testimony from a scientist, Dr. Rabinow. In his testimony he indicated that scientists are like everybody else. They have high hopes when they file; they have limited resources often, the small scientists, people that are basically not in the business always of just filing for patents. Then if they cannot find anybody to market that in 3 years, 3½ years when the maintenance fee falls due and they are frustrated, they are more often than not going to let it lapse and not going to worry, not going to find the resources.

So anytime you increase the fees, the likelihood is that you are going to have more lapsed patents because they are not going to pursue it. I would be interested in hearing what your response would be to that testimony.

Mr. MANBECK. All right. I will give you one response. That is in 1983, if you will examine the testimony back then, there were predictions by many at least of the same organizations—I do not say from the universities because I do not know—that the sky was going to fall in because the fees were raised. The skies did not fall in. As a result of the increased user fee money, we had a more efficient, better Patent and Trademark Office. Instead of the small entities filing less cases, the filings went up every year. It just did not happen.

Everybody wants their applications paid for by somebody else. If I were a patent applicant, I would feel the same way. But historically, I do not think those predictions can be supported. Now, I do not know. I am sure whoever testified for the universities testified truthfully as to what he or she believed. But my own experience is that the Patent and Trademark Office fees, the initial fees going up do not stop the filing of patent applications.

As far as the maintenance fees causing patents to be dropped, in fact, that is true. I have participated in the dropping of many patents in my time. But the ones that get dropped are the ones that there is no market for, and maybe it is better to have those patents not there as an exclusive right any longer. They may get in the

way of research that will prove something—will prove out to be a viable commercial product.

Mr. HUGHES. I suppose it is a balance you have to maintain. I suspect that while your projections for patent filings are down this year, reduction is caused by many factors. I would be surprised if increase in cost was not a factor.

Mr. MANBECK. It could be, sir.

Mr. HUGHES. I do not know how much of a factor. I also just have a feeling—and this is something that I would like to know a little more about—that we benefit as a country from having a well balanced patent and trademark system in place, that attempts to balance those fees in such a fashion, that we do not discourage, do not deter—in fact, we attempt to encourage, particularly for the first maintenance fee, to continue. I mean, it may very well be that as a matter of policy we get to the point where we say, well, if they have not marketed a patent in perhaps 5 to 7 years, perhaps as a matter of policy, they should not have a monopoly on that.

But I do not know enough about that at this point to suggest where I would draw the line. But I am persuaded as a matter of policy that it is not very good policy to use a user fee as a device to raise resource for endeavors that are more public in nature; and, second, I think that it is important to strike a proper balance so that we, in fact, do not damage the system. What may have been relevant 40 years ago or even 100 years ago may not necessarily be relevant today insofar as what is in our interests. Times have changed, demands have changed, our global competition changes by the day, and there is no country that has been as innovative as we have been. No country has basically benefited from America's ingenuity, innovation as we have, and it is important that we stay on the cutting edge. I think your shop has a lot to do with that.

Mr. MANBECK. Well, I do, too, sir, and I think we do not want to discourage the small user from coming into the system. But I would suggest, though, what we forget about is the need for the funds to carry out its mission because if the Office is not strong, the whole system deteriorates.

Mr. HUGHES. I understand. I have a lot of other questions, but I am going to recognize the gentleman from California.

Mr. MOORHEAD. Thank you, Mr. Chairman. Really, the big problem, is it not, is that last year the Congress adopted the budget reconciliation package which really directed the Patent Office to be user funded, and they made that decision so that you are short of $150 million approximately if you do not raise fees. Isn't that what happened?

Mr. MANBECK. Well, that is right, sir.

Mr. MOORHEAD. And if you do not get the $150 million from fees, you are going to have to cut your services dramatically or you bust the budget that was passed last year with such great fanfare; is that correct?

Mr. MANBECK. Well, sir, I would just like to say one thing. It is not quite $150 million, but it is well over $100 million; and, yes, unless we have an opportunity to adjust the fees somewhat, we cannot carry out our mission. No question about it.

You know, Mr. Moorhead, it is a crime. Mr. Huther and I could go to jail literally if we overspend the budget, so I assure you we are not going to overspend the budget.

Mr. MOORHEAD. Well, as one that did not support that budget reconciliation bill last year, certainly those people who voted for it voted to have a total user funded program this year.

Mr. HUGHES. I did not vote for it either.

Mr. MANBECK. Yes, sir.

Mr. MOORHEAD. People who used good judgment there.

[Laughter.]

Mr. MOORHEAD. Where would you get the $100?

Mr. MANBECK. One hundred twenty million dollars.

Mr. MOORHEAD. One hundred twenty million dollars if you—what would you cut?

Mr. MANBECK. Well, there are a number of things we would have to cut. There is no question that we would have to seriously delay the automation program. We would not put in the so-called quality initiatives that we are talking about, and also we would let pendency rise.

Mr. MOORHEAD. The progress that the PTO has made in the last decade has been based on doubling the number of hearing examiners—the overtime and hard work that they have put in—and the development of an automation program. Now I understand that all of that has stopped. To me, this is the worst news that we could have had. What effect is this going to have on the examiners and the quality of examination?

Mr. MANBECK. Well, it is going to be very bad for examiner morale. We are not going to have enough examiners in certain critical areas over the next couple of years unless we resume hiring. As I have said, we will have to delay automation with, I think, ultimately more money being spent than if we go forward. Excuse me just 1 minute.

We have already cut as I mentioned before about $10 million out of automation this year; pendency and automation. We will have to take very big cuts next year unless we have the authority to adjust the fees.

Mr. MOORHEAD. One other thing that concerned me somewhat, examiners are very important to the overall operation and effectiveness of your office. Over the past couple of years we have had difficulty retaining examiners who want to go out and they can make more money in the private sector.

One problem that helps attract and retain examiners is the partial payment by the PTO of their further education including law school. The IRS has put a damper on this by requiring examiners now to pay taxes on whatever that cost be of their education. It makes it tough to do a better job.

We introduced legislation last Congress to correct this and had a lot of support from this subcommittee and the Senate, but we ran out of time. This problem had a direct effect on the examiners.

Mr. MANBECK. Well, yes, we have had meetings with the examiners where they are very unhappy about it and feel it is unfair, what went on and they did not know about it until they received W–2 forms. The thing that troubles us the most is the law firms come in and hire the people away and give them hiring bonuses.

As these people have a big tax bill in front of them, it makes them that much more vulnerable—or I should say, more likely to accept these law firm offers. It might even cause some to go out of the Office who would not otherwise go.

Mr. Moorhead, this is not in answer to this particular question, but I would like to point out that in order to keep people in addition to hopefully getting relief on this tax question, we had planned to raise salaries, special salary rates in certain key areas by technology in particular some biotech and some chemical arts.

We now have approval from the Office of Personnel Management to do this, but we do not have the money; we cannot raise it.

Mr. MOORHEAD. Well, you know, one of the other problems I hear. What common sense could cause the General Services to raise your rent from $42 million a year to $54 million, especially when you are in this kind of a crunch. I just cannot see that kind of a raise in rent. That is 27 percent in one year which is a tremendous raise when you are having such a struggle.

These are supposed to be government agencies.

Mr. MANBECK. Well, I am very unhappy about it, sir. In particular, I do not believe that the rent charged by the building owners actually went up. We are charged on an overall government rate, and that caused it to go up.

May I ask Mr. Huther to supplement my answer, sir?

Mr. MOORHEAD. Sure.

Mr. MANBECK. I think he might be able to help.

Mr. HUTHER. Yes, Mr. Moorhead, the adjustment that you see reflected in the 1992 budget request for us was not a number that we created; it was a number that we were, in effect, given by the General Services Administration. There are two major parts. One is an adjustment in the basic rental charge as the Commissioner was just testifying because the leases that we have came up for renewal. There is a second category—it is an unfortunate acronym. It is SLUC—S-L-U-C—which stands for standard level user charge. That is a euphemism the GSA uses to put a surcharge on the basic rent. It is about 15 percent of the overall increase.

So what you are seeing happening is that the cost of the space that we occupy today. Your numbers are a little bit different from mine, but according to the budget anyway, it is a 41-percent increase in the rental cost of space that we now occupy.

Mr. MOORHEAD. Forty-one percent increase?

Mr. HUTHER. Yes. Now, on top of that, of course, in our budget request we have space that we would hope to expand into as a result of the workload assumptions that you see.

So if you look at our budget, our total space request is for $18 million, $12 million of which is for inflation, $6 million of which is for workload expansion purposes.

Mr. MOORHEAD. I was going to move into a government-owned building in Pasadena, and they wanted twice as much money to rent there as I pay in the best building in town. It does not pay to rent from the Government.

Mr. MANBECK. Well, Mr. Moorhead, we are right now in the midst of a space planning cycle. Our space rental agreements in general run out in 1996. We are trying to determine now what

might be the best course for the Patent and Trademark Office to take in 1996.

Now, when you look at the amount of money that we pay for rent, you would have to say that a building could be put up and amortized probably at quite a bit less than we pay in rent. But, you know, if we are going to get charged this SLUC rate, the Government would benefit, but the Patent and Trademark Office would not necessarily benefit from a new building. Now, I believe it is possible to authorize the Office to do it directly.

Mr. MOORHEAD. What about a new building? A building that you could build to take care of your need? Would the amortized cost be less or greater than what you are having to pay?

Mr. MANBECK. Well, my understanding—I mean, we are still in the planning cycle, but my understanding is if we could do it directly, it would be less cost.

Mr. MOORHEAD. Thank you.

Mr. HUGHES. Gentleman from Florida.

Mr. JAMES. Yes. Hasn't GSA heard that we have rent controls in Washington? What is the square footage you occupy and what is the rent?

Mr. MANBECK. Pardon me, sir?

Mr. JAMES. What is the square footage and what is your rent?

Mr. HUTHER. We occupy approximately 1.2 million square feet of office space, virtually all of which is in the Crystal City/Arlington region. The amount that we are paying this year for rent is approximately $29 million.

Mr. JAMES. Twenty-nine million dollars?

Mr. HUTHER. This year.

Mr. JAMES. OK; 1.2 million square feet and you are paying $29 million on rent?

Mr. HUTHER. Yes.

Mr. JAMES. So how much is that a square foot?

Mr. HUTHER. It varies depending upon the location of the building, but it averages around $27 or $28 per square foot.

Mr. JAMES. On an annualized basis, how does that compare with the Washington, DC, area or Crystal City area as far as private leasing?

Mr. HUTHER. Well, GSA and my office have a dispute. I do not think it compares favorably and I appealed based on some data that we supplied to GSA. They, unfortunately, disagreed with my analysis and said that it does constitute a fair and equitable charge for the Washington metropolitan area.

At this point I have no further avenue of appeal, and that is why you see it requested in the budget as GSA——

Mr. JAMES. Well, for some of the apartments you pay as much as $15 a foot, but that is still in that quantity of rental and a guaranteed tenant so to speak; you think that is high? OK.

What percentage of the patents—what is it, 190,000 patents—what percentage are foreign?

Mr. MANBECK. At this point our patent applications coming in are about 45 percent foreign based and about 55 percent U.S. based.

Mr. JAMES. So 45 percent of them are paid by foreign companies then?

Mr. MANBECK. That is right.

Mr. JAMES. Then why on earth should we subsidize foreign countries when we have a much more favorable rate than they do?

Mr. MANBECK. I do not disagree with you, sir. I do not see why we should subsidize.

Mr. JAMES. So I am not too much concerned about whether or not it is technically a tax which, I agree, it is, in regard to that 45 percent at least. Foreign, 45 percent. Goodness gracious.

Mr. MANBECK. The foreign large corporations are about 35 percent. There are some small foreign entities, too.

Mr. JAMES. Do we subsidize the foreign small entities?

Mr. MANBECK. Yes, we have to.

Mr. JAMES. Constitutionally we have to?

Mr. MANBECK. Well, not constitutionally, but under the Paris Convention, the international treaty relating to patents. We have to treat foreign applicants the same as we treat our own applicants, and we do that so our applicants will be treated the same as their applicants when we go overseas.

Mr. JAMES. I am not too excited about the way we are treated based on that chart.

Mr. MANBECK. You have a point, sir. But I would point out that those fees do not stop our corporations from going overseas. I know. I used to work in a big one, and we used to file overseas to beat the band to protect our inventions and so do other industries.

Mr. JAMES. OK. You made a point earlier, I think, that nobody files a patent for eleemosynary reasons. Obviously, you want the patent to protect the patent, and the reason you want the patent protected is because you want to make a buck on it. There is no other reason unless you assume there is some kind of artistic appreciation in regard to the patents. I think copyrights serve the same purpose myself, quite frankly.

Has any country ever shifted to an economic percentage fee situation like the attorneys do in a patent case? We heard testimony yesterday where one attorney took 50 percent. He rolled the dice with the client, and he made $600,000. That was one of the lines of the testimony. So do any of the countries use a percentage of the profits generated by the patent or is that too clumsy?

Mr. MANBECK. I have never heard of such a system. No, I think something like that would bring the patent system to its knees to tell you the truth. I think you have to watch out whenever you talk about saying well, we are going to get so much of the license fees because some of the most valuable patents are never licensed. One reason—our businessmen particularly in the pharmaceutical and chemical industries really want patents for the exclusivity—that is, the right to market the product themselves rather than making licensing revenues.

Mr. JAMES. In other words, they keep it secret?

Mr. MANBECK. Not secret; they keep it to themselves. In other words, they have a patent——

Mr. JAMES. I am sorry; I do not see the distinction.

Mr. MANBECK. Here is the difference. Suppose you have a patent on a chemical, a chemical formulation—let's say a particular plastic. The patent discloses what that plastic is; in other words, the chemical composition of it.

Mr. JAMES. They do not want to disclose it?

Mr. MANBECK. No, no. They want to disclose it because if they disclose it, they then get a 17-year exclusive right in this country that only they—only the patent owner can make that plastic for 17 years.

Mr. JAMES. And they do not have to patent it?

Mr. MANBECK. No, they do have to patent it.

Mr. JAMES. Well, that is my point. You said, I thought, that some people did not want a patent——

Mr. MANBECK. No. What I said is they do not want to license—they do not want to license the patents to others.

Mr. JAMES. Oh, I see. A license to sell to others. I see what you mean. Oh, I understand that.

So I would be concerned if it is not fee producing, that the Patent Office if, in fact, were servicing so efficiently all the foreign countries that apparently are not servicing us with the same degree of efficiency likewise, I would be concerned to subsidize foreign countries.

For example, Japan; what kind of tradeoff do we get there? Do I see Japan there? Let's see—yes, Japan is on the chart. So Japan, for example, is right at $19,800 or right at $20,000 over the life of the patent——

Mr. MANBECK. Yes; $18,000.

Mr. JAMES. As opposed to our 6.7, and they are much slower in responding.

Mr. MANBECK. That is right. It is also much more difficult to enforce a patent in Japan than in the United States, although we, of course, are not responsible for enforcement.

Mr. JAMES. What percentage of that 35 percent are Japanese patents, or of the 190,000 or the 168 of last year are Japanese?

Mr. MANBECK. We think about 20 percent.

Mr. JAMES. Well, they are getting quite a deal there.

Mr. MANBECK. Oh, they certainly are, sir. I have to admit it does not bother me one bit to tax the larger foreign corporations to pay for fees for our small entity people.

Mr. JAMES. Would it be reasonable then to say that we charge other countries the same thing they charge us on patents?

Mr. MANBECK. It would be reasonable, but I cannot do it under the Paris Convention. I have to charge—I should not say I. We, the Patent and Trademark Office, have to charge the foreign applicants at the same rate we charge our own applicants.

Mr. JAMES. I realize that and this is rather a neophyte question, but I just would like for their office to be as efficient as ours and for us to have the same access to the capacity and ability to record and the same rights of enforceability—which concerns me more perhaps than the patent fees.

Now, my final question, I think, because I am running out of time is how do the fees, the $6,800 we charge, compare with the subsidiary or collateral charges for attorney's fees in regard to proportion? What percentage of a patent's cost statistically is related to attorney's fees and how much the fees——

Mr. MANBECK. It will vary. I would pick out of the air—now, this is picking out of the air because a complex patent will cost more in attorney's fees than a simple patent. A simple patent might be

a couple thousand, $3,000 in attorney's fees. A complex patent could be $12,000 or $15,000.

But as you look at attorney's fees relative to Patent Office fees, I think you should remember that the $6,700 we are talking about is spread over the life of the patent. Two-thirds of it are paid after the patent issues. Our fees for filing and issuance will be much less than the attorney's fees in almost every case.

Mr. JAMES. If you take the present value of the life of the patent of $6,700, you are, in effect, talking the present value of a couple of thousand dollars, are you not? I mean, if you apply any reasonable interest rate, you are not talking about $6,700 in present-day dollars; you are talking about $6,700 projected over the life of the patent.

So at present value, it would probably be 25 to 30 percent if you compound the interest in any reasonable way, as any actuarial expert would. So you are not talking $6,700 in present money, and then that is only if you make a business decision to continue to maintain your patent after a certain period of time.

So I think your testimony should be taken in consideration of present value issues. Certainly you are not going to maintain a patent that does not appear to have any economic viability, so I think that is reasonable to say.

I said that was my last question. There is one other point. Universities, the ones that testified—I think this might be of some significant value to us. If they do complain about the patent fees, my question is, how many of those universities are making money off of the patents they have? I know several that are making very large sums of money. In other words, universities generally are rather big institutions; they may lose on some patents but make extraordinary amounts on others. So how their patent business is doing would be of interesting assessment value in a given department, to see if it is a handicap to our institutions of higher learning, or if they are realistically functioning as business does and filing patents in such a way as to make a pretty extraordinary profit if they are in the right kind of filing.

Mr. MANBECK. Yes, sir, there are some universities—I cannot say all or even most—who certainly have very revenue-productive patent programs. There is just no question about it. MIT, Stanford, WI. I happen to have dealt with those particular ones and know so, and I am sure there are others.

Mr. JAMES. I know, or have heard of, several patents that universities have, that make extraordinary amounts of money, so it would be interesting to see how many of them have a loser in that department and what percentage it represents.

I think fee charges—if you filed everyone's for free, you could not handle the filings; let's put it that way perhaps.

Thank you so much, and thank you for your patience, Mr. Chairman. Thank you.

Mr. HUGHES. Thank you. I have some additional questions; and if the gentleman from Florida has any additional questions, we will have another round.

If efforts are made in the Congress to increase the appropriations from the general treasury for the Patent and Trademark Office above the level of $3.3 million as recommended in your budget sub-

mission, what will be the position of the administration; do you know offhand, Commissioner?

Mr. MANBECK. Sir, I honestly do not know because we have not raised that possibility in the administration because we did not even realize it was a possibility.

Mr. HUGHES. Before I get into some other questions, I would like to ask something that has occurred to me.

We have had basically 9 years' experience roughly with maintenance fees. What has been the experience? How many patents are dropped after 3½ years? I guess we have had experience with the 7½-year maintenance fee. Do we have a breakout of how many are dropped?

Mr. MANBECK. I think we do, and I would like Mr. Huther to answer if I may.

Mr. HUGHES. Would you submit that for the record? Oh, I am sorry.

Mr. HUTHER. I can answer you right now if you would like, Mr. Chairman; and that is at the end of the 3½-year maintenance period, roughly one out of five patents cease to be maintained. While we had originally estimated that at the time of the second stage it may be that about 50 percent drop out, it is actually hovering slightly higher than that, around 58, 59 percent.

Mr. HUGHES. What is your projection as a result of increasing maintenance fees? What is your projection as to how many additional will be dropped; 3½, 7½?

Mr. HUTHER. Actually, our projections are that a very small percentage, if any, would decline, and that has been based on the last 10 years of experience with all fees, not just with maintenance fees.

When we increased fees in 1983, it was by 360 percent. There was no drop in filings whatsoever. In fact, as the Commissioner's testimony pointed out, the filings continued to go up. There is almost a direct correlation between patent filings and all the other categories of fee decisions that are made including——

Mr. HUGHES. But we had no maintenance fees prior——

Mr. HUTHER. That's correct.

Mr. HUGHES. One of the points that was made yesterday by one of our witnesses was that scientists get very frustrated when they cannot market at 3½ years. When a fee comes due, that is going to be a decision time for them as to whether or not to come up with the additional money; whether as a frustration of their frustration and demand for additional money, whether they are going to move ahead and attempt to maintain that license, that fee.

Your answer is you do not think there would be any dropoff?

Mr. HUTHER. None based on any experience that we have seen to date.

Mr. HUGHES. I see. Mr. Manbeck, you note that the Patent and Trademark Office, has as one of its primary goals, a maintenance of the 18-month pendency for patent applications. According to a survey conducted several years ago by the Intellectual Property Owners, Inc., patent owners ranked the shortening of the pendency time for patent applications six in importance out of seven considerations.

I believe Dr. Rabinow yesterday and Mr. Banner both testified that they would not be concerned if the time it took to process a patent pendency slipped to as long as 24 months.

Why does the Patent Office make the 18-month pendency so crucial? I understand about the biotechnology folks and their concern. That is a different problem.

Mr. MANBECK. Sir, this was a goal which was established some years ago—in consultation, as I understand it, with a lot of people—that this would be the best goal for this system as a whole. There are two reasons I think for an 18-month goal. First of all, one of the constitutional bases of the system is that the inventor gets his patent in return for the disclosure to the public, and the public then gets to use the invention for free after the patent grant has ended. The faster we get the patent out, the sooner the public can use the invention for nothing.

A second point is, I used to be a director of Intellectual Property Owners—it is a fine organization—but at least when I was a director, everybody on the board was from a big corporation. Many big corporations, particularly those in the pharmaceutical and chemical industries, may have regulatory reviews they must go through. They are not in a hurry to get their patents out. They do not need a patent grant to raise money.

The individual who needs the patent grant to make money or who wants an immediate exclusive right to protect his maybe short-cycle product, he wants his patent out quickly. I think that is another reason why the 18-month goal is important.

Mr. HUGHES. Well, let me just as a followup then ask you this. If you had to cut the Patent and Trademark Office's proposed budget by 15 percent, where would you make the cuts?

Mr. MANBECK. I would make some cuts across the board. Now, if we remember we are planning, sir, for a worst or best case basis, depending on how you want to view it, of a lot more fee money coming in because the applications go up in a very significant—by a very significant number. If they do not go up, that is going to be self-correcting. We are going to have to cut anyway.

Where would I cut? Well, first of all, we will have to take automation back; there is simply no question about it. We will delay the automation program.

Second, we would have to let pendency rise. Third, we could not put in our quality initiatives that we hoped—we do a good job now in issuing valid patents, but we are always checking and we can always make quality better. So we would have to take the quality initiatives out.

Excuse me, sir.

I think Mr. Huther should make a point to you. I would like to make one more point, too, on letting pendency rise. This would only be a temporary stopgap, too, in letting pendency rise because you let it rise for a while but then you get right back to the same level you have to maintain that we are trying to maintain now.

Mr. HUTHER. The other point is—you are aware of our maintenance fee and the issue fee payments. It is a very sensitive balance between the assumptions we make when we plan our patent application filing as well as the patent issuance.

So if you take a short-term cut, for example, in the 18-month pendency goal allowing it to rise to any number that you might select, while it has the beneficial effect apparently in the short term, I can convince you, I believe, with some data that over the next 4 or 5 years it would, in fact, result in revenue decreases greater than would be the result because there are fewer patents in the pipeline, fewer issue fees to be paid, fewer maintenance fees, and so on. So any short-term decision that is made to adjust spending this year does really have a very significant revenue stream in the subsequent years.

Mr. HUGHES. Let me ask you, the Patent and Trademark Office is asking for a 25-percent increase in its budget for fiscal year 1992, and the Office of Management and Budget apparently has approved that increase. Are you aware of any other agency of government that is operating with taxpayers' funds that has had a similar increase approved this year?

Mr. MANBECK. I personally am not. Mr. Huther, are you?

Mr. HUTHER. I can cite you some indications from the President's budget where they are, in fact, even higher than 25 percent. But you again have to base the percentage in relation to the base funding. Some of them are in very small programs, so it might be 40 percent on a $100 million base.

If I could add one additional comment. The budget level that we are seeking for 1992 was actually submitted to the Secretary of Commerce and the Office of Management and Budget last summer long before the budget summit reached an agreement. We have been given some indications that people think that now because we are under this user fee funding, that we are getting preferential consideration because of that. I just would like to reassure the committee that the amount of money being sought in 1992 was virtually identical with the amount of money that we have sought when we did not know that there was going to be a budget reconciliation.

Mr. HUGHES. How did Japan finance its automation?

Mr. HUTHER. Totally from the user fees that they had.

Mr. HUGHES. How about Germany?

Mr. HUTHER. The same. At this moment we are the only industrialized country in the world we know of that has taxpayer money in its base, even the small amount that exists today, $3 million——

Mr. HUGHES. And their system, of course, is automated?

Mr. HUTHER. The Japanese are ahead of us, yes, clearly.

Mr. HUGHES. So their users are using the automation; they are benefiting from it?

Mr. HUTHER. Well, yes in larger amounts of benefits perhaps than we are.

Mr. HUGHES. Any public funds go into the development of that automated system?

Mr. HUTHER. In Japan?

Mr. HUGHES. Yes.

Mr. HUTHER. No, sir.

Mr. HUGHES. How about in the European Community?

Mr. HUTHER. No, sir.

Mr. HUGHES. U.K.?

Mr. HUTHER. No. For any countries, my answer will be the same.

Mr. HUGHES. I see. How does the Patent and Trademark Office propose to spend moneys on automation the next 2 fiscal years? That is, how much would it cost for expansion of the Patent and Trademark automation system as opposed to the cost of operating the existing system? Do you have that breakout?

Mr. MANBECK. Yes, sir, we do. Just a moment.

Mr. Huther will answer, sir.

Mr. HUTHER. Mr. Chairman, in 1992 to give you a frame of reference, we break out our automated patent system costs separately from trademark automation and separately from our administrative systems. But if I can give you an example. The automated patent system—of the $57 million that would comprise its share of the automation budget, $25 million of it would go to support what we call baseline operations. That is, what is in place today. No system enhancements, no further systems improvement.

Roughly $17 million of it would go to support enhanced operations which are principally in the area of hardware distribution; that is, putting more powerful mainframe computers into the network down to the personal computer attached to the mainframe. Then another $15 million would go into fundamentally what is software development. To take what we have learned over the last several years and begin refining the software to do more and more functional things than had been done before and also to do new things, such as providing public access to the computer system so that the public can use it for whatever purposes they have.

Going back to your earlier question if I may just for a moment about the benefits——

Mr. HUGHES. I am interested in finding out what percentage of the expenditures for automation present users benefit from.

Mr. HUTHER. There are a number of features of the system that I think we could identify for you specifically.

Mr. MANBECK. May I interrupt just 1 minute to answer this, sir? I will ask Mr. Huther to correct me if I make a mistake.

The present system and the system we want to implement all across the Office consists of two parts, one of which is known as a text search system. This is a system where with key words you can go in and search the text of patents. We have that system up and running today for all U.S. patents back, I believe, to 1971. That system is available to our examiners. It is available in the public search room today for anyone who wishes to use it.

Mr. HUGHES. So that is a benefit.

Mr. MANBECK. We are also this year going out with a pilot program to take that text search system to 14 of our patent deposit libraries around the country. If that test is a success, we will then take the text search system to all 70 patent deposit libraries.

Now, whether we can take it beyond that under an administration policy, I do not know; but we want to have success there before we move on.

Now, besides the text search system, there is also the system of bringing up the images; in other words, the drawings. Now, this is what is being worked on today. We have it up and running in two of our examining groups so that they can do their total searching on the computer. They still have to search some paper, but not a great portion of it.

We are going to, I believe, this year and next get it up and running in a third system. Now, when I say up and running, the data base that these groups use will be totally automated.

Our next move—and this is the one we are soliciting the money for—will be to take this image searching system with the text all the way across the Patent and Trademark Office; make it available to all the examiners.

Now, as we do that, at the same time we will put terminals in the public search room so that the public can come in and search that same total data base. To the extent that that image data base is up and running today for the two groups, it is available——

Mr. HUGHES. Mr. Commissioner, is the answer that the users—present-day users are advantaged by all the expenditure for automation? Is that your answer?

Mr. MANBECK. Yes. They are advantaged and they are going to be advantaged even more.

Mr. HUGHES. I see. I have a number of other questions, but Ron Wyden has been waiting very patiently; Congressman Wyden of Oregon. With the exception of one additional question which I am interested in, I am going to see if my colleague from Florida has anything else and then we will take Mr. Wyden's testimony.

Mr. JAMES. I have a couple of questions, but I will submit them in writing if I decide I cannot find the answer otherwise, because the Congressman is waiting to testify.

Mr. HUGHES. I will do the same thing about all of my questions including the question of backloading of fees which was suggested yesterday as one possibility to deal with the present concern over the cost of fees up front. We will submit those in writing.

[The information appears in the appendixes.]

Mr. JAMES. I want to thank you so much for your testimony. I, for one, do not see how we can vary our system from our user system simply because of the international scenario or situation. I can empathize with the business policy or perhaps the overall policy of considering giving encouragement to business for patents, and I understand that. I would otherwise have a tendency to agree to some extent with the chairman's concern about discouraging the recording of patents. What really bothers me, though, is the international scene of how they file and can take advantage of any subsidy we give.

Mr. HUGHES. I share that concern. He has a concern I think a lot of us share.

We thank you very much, Commissioner, and look forward to working with you to deal with what obviously is quite a dilemma upon yourselves, a straitjacket more to the point; and it puts us perhaps working at cross purposes with the Appropriations Committee, but I am sure we will find a way to deal with some of the mine fields that lie ahead.

Anyway, thank you very much for your testimony, and we appreciate your contributions and look forward to working with you.

Mr. MANBECK. Thank you, sir.

Mr. HUGHES. I welcome Congressman Wyden who has been very patiently waiting in the wings for us. Mr. Wyden is our distinguished colleague from Oregon. He Chairs the Small Business Subcommittee on Regulation Business Opportunities and Energy. Mr.

Wyden has devoted time and energy to improving the patent application for high technology innovations.

He commissioned a General Accounting Office study on the backlog and biotechnology patents which we will make part of the record of today's hearings, and he has made many, many suggested improvements to the Patent and Trademark Office.

Ron, we are delighted to have you with us. Your statement will be made a part of the record without objection, and we appreciate your patience.

STATEMENT OF HON. RON WYDEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OREGON

Mr. WYDEN. Thank you very much, Mr. Chairman. I would in the interest of time make just a few comments and leave some time for questions. I would appreciate my statement and the GAO report going into the record.

My subcommittee on regulation, for more than 3 years, has focused on the question of biotechnology and the question of how the Patent Office processes biotechnology applications. The reason we have done so, Mr. Chairman and colleagues, is that I think we all agree that biotechnology is our future. This is on the cutting edge of some of the most exciting work that is being done in America—health care, agriculture, environment, a cross-section of the most important scientific fields. Unfortunately, I think it is quite clear that the Patent Office is still holding back this innovative sector. We still are not making the kind of progress that I think the American people want.

I very much admire you and Mr. James for spending all this time at it. Let's face it, questions of patents are not exactly the world's sexiest issues. They are not going to be on the front page of every paper or People magazine or something like that. But the fact of the matter is is that this is essential if you are going to protect particularly small investors in these new high-tech businesses against what we call technothieves and those who would basically take away their innovation.

What I thought I might do, Mr. Chairman, is just summarize a couple of the key concerns that the General Accounting Office has made, and then a point or two about some of the possibilities in terms of where we go from here. I very much share your view about this matter of more Appropriations Committee funding, because it is going to take considerable wrestling to try to address the issue financially.

With respect to this General Accounting Office report, this was a report that was done in September 1990. The highlight of it is that not only are we not making the progress that we need, but in some respects we are actually stepping backwards in the biotechnology area. I did not think it was possible to step backwards because I could tell you when my investigators started more than 3 years ago and they went down to the biotech office, they actually saw shopping carts filled with applications where the checks were on the applications and had not even been opened. So I did not think it was possible to go backwards in some respects, but here are some of the summarized conclusions that the General Accounting Office made.

During the calendar year 1989 and through the first half of 1990 according to GAO, the inventory of unexamined biotechnology patent applications increased by 33 percent—from 6,200 to 8,200. The Patent Office efforts to accelerate the award of biotechnology patents has been less effective than anticipated. The average processing time for the application, 36 months. In some of the most important subgroups it was even longer. For example, to process biochemicals it took 38 months, 44 months to do immunological invention, and more than 47 months for the especially important area of genetic engineering.

The other point that I am concerned about is that I think that the Patent Office is to some extent fudging this question of the actual pendency period. This use of the so-called continuation by the Patent Office tends to cloud and shorten what is the actual pendency period. The Office has—heard a bit of the testimony today that the average pendency length is only about 26 months. But according to the GAO, this figure results from essentially resetting the clock on almost one-third of all biotech applications through this process of continuation.

I would very much like to work with you, Mr. Chairman and our colleague Mr. James, to really get at the bottom of exactly what this pendency period is because certainly the GAO report suggests that they really are to some extent fudging the length of time involved in the pendency period trying to make it look shorter than the General Accounting Office warrants.

So it seems to me the name of the game is to hire good examiners, train them, and then keep them. That is really what the agenda is really all about. Particularly we have to have some system for increasing salary ranges for the highest skilled people because if you do not, just as sure as the night follows the day, they are going to be lured off to the private sector. The Office of Personnel Management has approved some increases, but I am not aware that the Patent Office hasn't exercised the authority to actually grant the increase.

Finally, I would say that I think it is especially important to try to keep this discounted patent application fee for small business. To eliminate this 50-percent differential would generate a very small amount of revenue overall; but basically what you are saying to the really small biotech companies, not only are you not very interested in them, but that would really come close to smothering some of these folks that are just trying to get off the ground.

Let me break my filibustering off right at this point, Mr. Chairman. I appreciate the chance to come, and you and I have had a chance to team up on career criminals and lots of other good causes. I would like to pursue this with you as well.

Mr. HUGHES. Thank you.

[The GAO study appears in the appendixes.]

[The prepared statement of Mr. Wyden follows:]

HEARING STATEMENT
PATENT OFFICE REAUTHORIZATION HEARING

BIOTECH BACKLOGS AT THE U.S. PATENT AND TRADEMARK OFFICE

BEFORE THE SUBCOMMITTEE ON INTELLECTUAL PROPERTY
AND JUDICIAL ADMINISTRATION

MAY 9, 1991

REP. RON WYDEN

Mr. Chairman, I want to thank you and the subcommittee staff for inviting me to testify on the subject of high technology patent application processing problems, and backlogs, at the U.S. Patent and Trademark Office. This is an issue of shared concern between this subcommittee and the Small Business Subcommittee on Regulation and Business Opportunities, which I chair.

This crucial management problem facing the patent office. It has a broad reach. This agency has an extraordinary impact on the competitiveness of technology-driven, U.S. industries. Patent protection is absolutely necessary for companies to capitalize on technological breakthroughs. Moving patent applications with speed and quality, and protecting inventions against theft, separate the winners and losers in the global marketplace.

I think our domestic companies and employers ought to be among the winners.

My interest arises from the clear and present danger now facing one of our most promising, domestic high-tech industries: biotechnology. In short, it is the continuing and in some ways worsening backlog in processing the thousands of biotechnology applications flooding the patent office.

Before I came up here, today, I looked at testimony I submitted to this subcommittee, on this very same issue, in July 1988. In the intervening years, and despite all the best efforts of my colleagues, I have to say that the problems at the patent office have not improved. And in some cases, they are worse.

The logjam in processing biotech applications still exists. In too many cases, patent protection takes years to achieve. Turnover in trained examiners remains high. And the resulting delays are hamstringing small U.S. biotech firms who rely on patent protection to discourage the techno-thieves and encourage their investors.

I'm also concerned about the effect of these problems on people who could benefit from biotechnology advances. The Tuft's Center for the Study of Drug Development now estimates that it costs $231 million and takes 12 years to bring a new drug to the market. That's too many dollars, too much time and probably too much paperwork, and we've got to reduce all three to speed much-needed, life-saving drugs to the consumer.

But until we streamline this process, we've also got to fine-tune all of our other systems to encourage sufficient capitalization for new, debt-laden biotech companies. A key is the efficient and sure processing of biotech patent applications.

As some of you know, my small business subcommittee has been looking into these problems since 1987. I'd like to submit for the record, today, our latest U.S. General Accounting Office audit on this issue: Processing Delays Continue for Growing Backlog of Patent Applications.

These are its conclusions in brief:

-- During the calendar year 1989 and through the first half of 1990, the inventory of unexamined biotechnology patent applications increased by about 33 percent, from 6,200 to about 8,200.

-- This increase reflects about a 15-percent average annual increase in the number of filings during the past six years. That's well above the 12 percent average increase that was being postulated by the patent office three years ago.

-- In the words of the GAO, the patent office's efforts to accelerate the award of biotechnology patents have been less effective than anticipated. The average processing time for biotech applications was 36 months. In some sub-groups, it was even longer. From the date of original submission, it took the office an average of 38 months to process biochemicals, 44 months to do immunonological inventions and more than 47 months for genetically engineered submissions.

-- The use of so-called "continuations" by the patent office tends to cloud and shorten the actual pendency period. The patent office may argue, today, that the average pendency length is only 26.3 months. however, according to the GAO this figure results from resetting the clock on almost one-third of all biotech applications through these continuations.

Mr. Chairman, three years ago I testified that the U.S. Patent and Trademark Office was seriously understaffed and illequipped to deal with this problem. I said this was an agency on the verge of a bureaucratic breakdown, attempting to deal with 20th century demands through quill-pen solutions.

Well, in the interim a few of the quill pens have been replaced by personal computers. The agency also has increased examiners in the biotech area from around 90 to almost 120 staffers. With industry, they've created the Biotechnology Institute which provides scientific journals, seminar-type training and other kinds of continuing education on biotech issues for patent office examiners.

These were needed reforms and improvements, and I very much support them.

But from my perspective -- and the GAO's -- they are not enough.

This is a problem which can only be solved through the training and retention of high-skilled patent examiners. It's the PTO's plan to increase examiners in this area to 200 by the end of the current fiscal year, and Congress must do what it can to support this increase.

Salary ranges must also be increased for the highest skilled examiners, staffers who usually have a combination of legal and scientific degrees, and who are highly prized in the private sector. The Office of Personnel Management has approved this increase, but apparently the patent commissioner has not exercised his authority to grant the increase.

Whatever the reason, the last roadblock to this needed salary improvement must be removed. We must stop the hemorrhaging of the patent office's best and brightest -- its intellectual seedcorn -- to better paying jobs in industry.

Finally, and on a different note, I would hope that this subcommittee will support continuation of a discounted patent application fee for small businesses. Elimination of this 50 percent differential would generate a comparably small revenue increase overall. And for the smallest of the biotech companies, it could have a smothering impact.

Thank you, Mr. Chairman.

Mr. HUGHES. You are not suggesting there is any parallel between the career criminal and the small entity——

[Laughter.]

Mr. WYDEN. I have been critical of many activities in the Patent Office, but there are no career criminals there.

Mr. HUGHES. Let me ask you. You have listened and you are aware of the dilemma we find ourselves in and just how to finance the Patent Office with very little public support. What is your own view of the direction we are taking?

Mr. WYDEN. Well, my own sense, Mr. Chairman, we know that we are in a fiscal vise—budget agreement and resources are constrained, but darn it, this country finds money for what is important. I mean, we went through close to $1 billion a day in the Persian Gulf, and it seems to me that if we think that this is really what our economic future is about, then on a bipartisan basis the Congress and the President will find additional funds.

When we talked to experts in the field, $20 million to $30 million they tell us would make a significant difference. I know that resources are tough. I am part of the small minority around here who would be willing to support a variety of different tax changes that have been proposed, but the question ultimately in this area of biotechnology is, I think, is it a priority issue. If it is, we are going to find the resources.

Up to this point, both political parties have not moved as aggressively as they should, and what is so ironic is that all of us in politics are constantly giving speeches about jobs programs. Every time you hear somebody in politics—jobs program and this is going to create *x* number of jobs. Well, biotechnology is one sure-fire way to employ the citizens of this country in areas that will really pay off. I think that we have to find the money and I am willing to support tax increases and a variety of things on a bipartisan basis to get this revenue to do it.

Mr. HUGHES. Let me ask you. You have made some very good points, I think, telling points about the pendency problem with biotechnology patents. How do you find the quality of the patent examinations in the biotech area?

Mr. WYDEN. Well, the experts tell us that they are also concerned about the quality issue as well. Quality concerns go right to the heart of the patenting process, and whether or not a new invention really turns out to be unique and novel and deserving of protection is going to essentially be determined by whether or not good quality work is being done.

So while we have been at one sector of the PTO universe, biotechnology experts in the field tell us that not only are they concerned about the pendency period, the people in the industry told us that they thought a bunch of them got rushed through that were not very good quality to try to get the numbers.

Mr. HUGHES. Well, the problem with retaining good people is a problem throughout, unfortunately, our Government. I am not sure I know what the answer is. We have had a very difficult time with the Department of Justice retaining seasoned personnel and that has been a problem in every department and agency unfortunately. Hopefully, we are moving to rectify that. Better salaries in one area. I think the Patent and Trademark Office has done a good job

in attempting to encourage their personnel to further their education. There are other things we can do and should do.

So I thank you for your testimony. You once again have contributed to our public record, and I appreciate that.

Mr. WYDEN. Just if I might on that point, Mr. Chairman. I very much share your view in terms of trying to get that salary up, and I think that there are other things. Tuition assistance is one that we keep hearing about in terms of something that allows us to not only get better and more highly trained examiners, but that is something that you are hearing coming up always in private industry. When they are trying to lure people away, they will use as an inducement that they are willing to put some bucks in their tuition to go to the private sector.

Mr. HUGHES. I agree. And it is not only that, it is also in the area of fringe benefits. It seems every year we are looking for ways to try to save moneys there, pension plans once again being reexamined in some sectors. It does not send a very good signal to the Federal work force. There are a lot of things we can and should do to make Federal service more attractive.

The gentleman from Florida.

Mr. JAMES. Thank you so much. Thank you so much for your testimony. Maybe you know these figures or have some idea. Do you know what percentage of the patents in this field are foreign? We have 35 percent of overall patents are foreign.

Mr. WYDEN. No.

Mr. JAMES. Do you know what percentage of the——

Mr. WYDEN. Are you asking in terms of biotech?

Mr. JAMES. Biotech, yes. Do you have any idea?

Mr. WYDEN. No. The only number I have been aware of is that general 30 percent plus overall. If you want, maybe I could see if my staff has anything.

Mr. JAMES. Very few foreign?

Mr. WYDEN. We do not have anything on it.

Mr. JAMES. You don't have anything on it? I think the figure is 35 percent overall or 45. There was another 35 percent figure you testified to after the——

Mr. MANBECK. Thirty-five from large entities.

Mr. JAMES. OK. Got you. Do you know what percentage of them are large entities that file the patents? Does anyone have any figures on that? Like pharmaceutical companies?

Mr. WYDEN. Maybe half. A significant portion. The irony is that most of the complaints that we are hearing about, are from the large people as well as the small people because they are both concerned about things like pendency. The small people say they are just not going to be able to get any additional financing if it drags on any longer. Eventually the large people say exactly the same thing.

Mr. JAMES. OK. If you had to sacrifice one or the other, a pendency issue or a fee issue, which one would you sacrifice? Would you rather have a higher fee and a shorter period of time for pendency or vice versa?

Mr. WYDEN. Well, I do not want us to get into a situation where we are making choices that still hold us back in this kind of——

Mr. JAMES. None of us do, but as Congressmen, we all do that on a daily basis. I was just curious as to which was the greater concern.

Mr. WYDEN. Let me put it this way. You raise the fees on small risk-takers in America, and I think you are going to put them on the sidelines. I am one of the Democrats who voted for the capital gains differential because I want to see those risk-takers get some help. You raise the fees on them and you are hitting them right at the same kind of concern that was at issue with the capital gains.

The same is true of pendency. Maybe the compromise here on your question—I am not denying that we have to make those choices. At the very least, let's keep that differential for the small people so that we are not putting them into a Hobson's choice where they really just lose either way.

Mr. JAMES. I think my question was really phrased rather poorly. Perhaps I should have asked which is more important at this time if we could only solve one of the problems as opposed to the other, does one take priority over the other. Not that we want to sacrifice either or make either worse.

Mr. WYDEN. I would like to pursue it with the gentleman and the associations and small companies. I can tell you, both of them go to the same concern that made people like you and I vote for the capital gains differential. It is going to raise——

Mr. JAMES. You took note on my vote on that.

Mr. WYDEN. The point is is that these are issues that raise the cost of capital for small risk-takers who may be sitting in Florida or Portland working on a possible cure for AIDS or something else.

Mr. JAMES. One last area I am a bit concerned about is, or for information purposes—see, we have a chart here for fees charged and apparently we are pretty low in relationship to the quality of our service. Second or third to the lowest or whatever, but it is very low compared to some of the other major countries.

How do we compare on pendency in this area in relationship to other countries? Does anyone know that? I know that is a very technical question.

Mr. WYDEN. Yes, I think if you look at the two areas that we are most concerned about, EC and Japan, we are significantly higher; and I do recall some testimony——

Mr. JAMES. Higher—you mean, it takes longer?

Mr. WYDEN. Takes longer, yes.

Mr. HUGHES. I think Japan is about 7 years.

Mr. JAMES. Mr. Chairman, he was just saying we were way ahead of them as far as efficiency. I will ask that question because it would seem to me that that would show to what extent we can expect a major improvement if the other countries are having a greater problem than we are. In other words, surely not everybody is bumbling about the issue; that there are certain time constraints that are built in of necessity as opposed to whatever efforts we may artificially try to force a timeframe. I am not an expert and have no idea, but I am just looking at our competitors.

Mr. WYDEN. My understanding is, and, Chairman Hughes, you correct me if I am off on this. On the 7-year point, that is the overall patent issue for Japan, for example. But I do recall—and I

would like to furnish for the records if I can get you the exact testimony that we had. I do recall that in Japan and the EC countries, they were processing their biotechnology applications at a significantly faster rate than we were, and that was one of the concerns.

Mr. HUGHES. Well, the record will remain open.

Mr. WYDEN. We will get you that.

[The information was not furnished.]

Mr. JAMES. I am through with my questions. I want to thank you so much for testifying. I would like to make one comment. I am for anything we can do, any reasonable effort whatsoever to speed up all processing if possible. I would be like-minded in your thinking perhaps in the same way you are about capital gains because we are all talking about economic endeavors, except for the 45-percent figure with the foreign countries. I find myself caught in a dilemma there between those two desires. But I think pendency—in speeding it up—is not that same inherent conflict. I think anything we can do to automate, to speed up the process in this department—both in yours and all patents—will be very good for business and very good for our economy. The better we look in relationship to foreign countries, the more likely we are to attract businesses that would utilize the patents within these United States.

So I think, businesswise, the more efficient the Patent Office can be is very important. And the quality of their examination cuts down lawsuits because just getting a patent, does not mean the game is over if the Patent Office has done a lousy job of research. All that does is get you into lawsuits that will cost you hundreds of thousands of dollars if you are fighting over a significant patent that will last for years with many, many litigants. So an improper filing of a patent based on improper research can cause lawsuits in the millions for significant patents, and it is all because the proper research mirror may not have been available at the time of the filing of a simple patent and you could have changed the particularities or the specifications on that patent and avoid in a very simple way with that knowledge a subsequent challenge. So that is why I think it is——

Mr. WYDEN. I very much share your view with respect to the quality issue, and Chairman Hughes asked about that as well. We have heard concerns about the quality in the biotechnology area.

The only point I want to make with respect to this pendency issue is to make clear how critical the financing for these small companies is. What the small companies tell us is that with this pendency period being so long, they basically get starved for capital because they cannot tell investors that they are going to get that special protection.

If you are one of the large companies, you can hang on a bit longer during the pendency period; but if you are small, you have nowhere to turn for capital.

Mr. JAMES. Thank you so much.

Mr. HUGHES. Thank you very much, Ron. We appreciate your contributions.

That completes our testimony, and the subcommittee stands adjourned.

[Whereupon, at 11:55 a.m., the subcommittee adjourned, to reconvene subject to the call of the Chair.]

APPENDIXES

APPENDIX 1.—A STUDY CONDUCTED BY THE U.S. GENERAL ACCOUNTING OFFICE, "BIOTECHNOLOGY: PROCESSING DELAYS CONTINUE FOR GROWING BACKLOG OF PATENT APPLICATIONS," SEPTEMBER 1990

United States General Accounting Office

GAO

Report to the Chairman, Subcommittee on Regulation, Business Opportunities, and Energy, Committee on Small Business, House of Representatives

September 1990

BIOTECHNOLOGY

Processing Delays Continue for Growing Backlog of Patent Applications

GAO/RCED-90-231

GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-234556

September 28, 1990

The Honorable Ron Wyden
Chairman, Subcommittee on Regulation,
Business Opportunities, and Energy
Committee on Small Business
House of Representatives

Dear Mr. Chairman:

As requested in your April 4, 1990, letter, and subsequently agreed with your office, we updated our report on the large backlog of unprocessed biotechnology patent applications at the U.S. Patent and Trademark Office (PTO), an agency of the Department of Commerce.[1] That report dealt with several issues, including: the level of scrutiny required to process these applications compared to others; actions taken to streamline the process for these applications; and the ability of PTO to attract and retain qualified examiners.

In this update, we determined (1) the extent of the current backlog, (2) the current impact of PTO actions to accelerate decisions on biotechnology patents, and (3) the impact of continuations on reported patent pendency time in 1989. We briefed your staff on the results of our work on July 13, 1990, and, as requested, have summarized the information in this report.

Results in Brief

The swift granting of a patent encourages both investment in biotechnology research and the commercialization of related inventions. Unfortunately, despite PTO actions designed to accelerate decisions on biotechnology patents, processing delays continue for a growing backlog of biotechnology patent applications.

During calendar year 1989 and the first half of 1990, the inventory of unexamined biotechnology patent applications increased by about 33 percent, from about 6,200 to about 8,200. This increase reflects about a 15-percent average annual increase in the number of filings during the past 6 years. Over 40 percent of the about 8,200 backlogged patent applications were over 12 months old.

[1] Biotechnology: Backlog of Patent Applications (GAO/RCED-89-120BR, Apr. 12, 1989).

PTO's efforts to accelerate the award of biotechnology patents have been less effective than anticipated. The average waiting time for processing biotechnology patent applications was about 26 months in 1989 compared with the about 19-month average for all other technologies. Because of the large growth in filings and the shortage of experienced senior biotechnology patent examiners, PTO is no longer projecting that by 1992 it will reduce the pendency period for biotechnology patents from its current 26-month average to the targeted 18-month average goal for all patent applications. As of August 1990, PTO had not established a new date to replace the 1992 target date.

The actual time required to process inventions contained in patent applications is longer than the pendency reported by the PTO because the PTO measures pendency of applications, not inventions. A patent granted on an invention may be the result of a chain of replacement applications, or continuing applications. For example, during 1989, about one-third of the 25,615 inventory of unexamined (backlogged) and in process biotechnology patent applications resulted from chains of continuing applications. Factoring in the original application date for the 7,079 patent applications issued or abandoned in 1989 would add 9.0 months to PTO's reported average patent pendency of 26.3 months.

Background

Patent applications are assigned to the appropriate examining group—1 of 16 such groups. Each group includes a number of suborganizations, art units, responsible for a specific area of technology. Examiners in the art units review patent applications to decide whether the inventions described are entitled to patent protection.

The examination process includes a search through United States patents, prior foreign patent documents that are available in PTO, and available nonpatent literature, to see if the invention is new, useful and nonobvious (significantly different from prior inventions). The examiner decides whether to grant a patent based on a review of the application and search results.

An Office "action" notifies the applicant of the examiner's decision. It states reasons for any adverse decision or any objection or requirement and provides information that may assist the applicant in judging whether to pursue the application. If the invention is not considered patentable subject matter, the claims will be rejected. Some or all of the claims may be rejected on the first action by the examiner; relatively few applications result in patents as originally filed.

If the application is rejected or objected to, the applicant must request reconsideration in writing, responding to every rejection in the Office action. The application is then reconsidered, and the applicant is again notified of the Office's decision. If the applicant elects not to further pursue the issuance of a patent under the existing application, PTO considers the application as no longer pending and classifies it as abandoned. In order to control the time frame of patent applications, PTO normally makes the second Office action final. The applicant is then limited to: (1) appeal to the PTO Board of Patent Appeals and Interferences and to the courts in the case of rejection of any claim; (2) presentation of a further amendment for consideration by the examiner (although the applicant does not have a right to have the amendment entered by the examiner); or (3) filing a continuing application.

As an alternative to appeal, when applicants desire consideration of different claims or of further evidence, continuation applications are often filed. Each continuing application also needs to include the claims and evidence for which consideration is desired. If the continuing application is filed before expiration of the appeal period and it refers specifically to an earlier application, the applicant is entitled under 35 U.S.C. 120 to the date of the earliest filed application for subject matter common to both applications.

An earlier filing date is important because occasionally two or more applications are filed by different inventors claiming substantially the same patentable invention. The earlier filing date determines patent rights, absent any other evidence. Furthermore, in the examining group, applications are examined in the order in which they have been filed. Thus, continuing applications are scheduled for examination based on the date of an earlier filed application on which they rely for common subject matter.

Backlog Continues to Grow

The number of unexamined biotechnology patent applications continues to increase. Between January 8, 1989, and July 3, 1990, the number of biotechnology patent applications not yet acted upon increased from 6,163 to 8,213 (41.3 percent of which were over 12 months old). One contributing factor is that the filing of biotechnology applications has grown at a significantly higher average annual rate—14.9 percent—than have all patent applications—7.5 percent—during fiscal years 1984 through 1989.

Long Delays Continue Despite New Efforts

As we reported in April 1989, PTO instituted a 13-point plan in 1988 to accelerate the award of biotechnology patents. The plan includes hiring 100 new biotechnology patent examiners over 5 years, consolidating all biotechnology examining responsibilities into a new group (called "Group 180"), which currently contains eight art units, enhancing search tools by using personal computers to access PTO and commercial data bases, improving training for examiners by joining with the biotechnology industry to create the Biotechnology Institute, and liberalizing the procedure for requesting accelerated examination.

Through June 30, 1990, the number of biotechnology patent examiners assigned to Group 180 increased by 23 percent (from 91 to 112) from October 1, 1988. According to the PTO, more biotechnology patent examiners would have been hired, but it had an insufficient number of experienced senior staff to train them. Only 16 of the current 112 biotechnology examiners (14 percent) have more than the 6 years' experience required to become a senior examiner.

The large number of patent applications not yet acted upon, along with the relatively small number of experienced senior examiners, have continued to cause long waiting periods for PTO first actions. During calendar year 1989 and the first half of 1990, first actions in the biotechnology area were made an average of 13.1 months after the filing date of the application, whereas first actions in all technologies averaged 7.1 months after the filing date of the application.

To avoid the wait created by the backlog, PTO has developed accelerated examination procedures, which allow applicants who can justify their need for expedited processing to have their applications reviewed before others, regardless of the filing date. However, very few biotechnology patent applicants have taken advantage of this special status. Our analysis of Patent Application, Location, and Monitoring (PALM) computerized data showed that of 25,615 biotechnology patent applications pending during 1989, only 144 had petitions for accelerated examination. (See table I.9.) In April 1989, we reported that applicants are reluctant to use the accelerated procedures because of perceived legal risks.

Because of the size and age of the backlog created by the large growth in filings and the shortage of experienced senior biotechnology patent examiners, PTO no longer believes it can meet its goal of reducing the average biotechnology patent processing time from its 26-month average to 18 months by 1992, bringing the pendency for these patents in line with the PTO average for all technologies. No new target date had been established as of August 1990.

Extensive Use of Continuations Masks Actual Pendency Time

As we previously reported, PTO measures pendency of each application in a chain of replacement applications, or continuing applications. PTO officials believe that measuring pendency of applications rather than of inventions is a better management control over patent processing efficiency because patent examiners cannot control the use of continuations. Only the patent applicant decides whether and when to file a continuing application, so long as it is filed during the pendency of the prior application.

A continuing application is often filed in situations where an applicant desires consideration of different claims or of further evidence related to an application for an invention considered unpatentable and rejected by a PTO examiner. With a continuing application that meets the conditions of 35 U.S.C. 120, the applicant is entitled to the benefits of the earlier filing date of the prior application. This earlier date may be important in determining patentability or who owns an invention, although pendency is measured from the latest filing.

Using PALM data, we determined that about 32 percent of the 25,615 biotechnology patent applications pending during 1989 resulted from continuations. (See tables I.1 through I.4.) We did not examine the extent of the use of continuations by applicants in other technologies, but PTO officials told us that continuations for all technologies is 24 percent.

We used the date of the original application rather than the date of the most recent continuation application for the 7,079 patents issued or abandoned in 1989 and calculated pendency of 35.3 months—9.0 months more than the PTO-reported average patent pendency of 26.3 months. (See tables I.5 and I.6.) Using this same approach, we calculated that the 18,534 applications pending at the end of 1989 had, on average, been in process for 26.7 months since their original application date.

These 18,534 applications included 7,529 unexamined (backlogged) applications (examiners had not yet made a first Office action). (See table I.7.) A total of 1,627 of the patent applications pending at the end of 1989 had been in process for more than 5 years since the date of the original application.

The PTO pendency goal for patent applications is 18 months. Thus, if the original application date was considered, the 18,534 patent applications pending at year-end had already been in process, on average, about 50 percent more than the pendency goal. However, according to PTO officials, the pendency goal would be more than 18 months if PTO measured pendency of inventions rather than of applications.

Our analysis of the recorded processing steps for 926 biotechnology patent applications (with a first Office action) abandoned and refiled as continuation applications in calendar year 1989 showed that an average of 2.5 Office actions and 31.2 months elapsed during the life of the original application. About 25 percent were abandoned after the first Office action, and an additional 50 percent received a final rejection after the initial response from the applicant. A final rejection after the applicant's first response is counted as the second Office action by PTO. About three-quarters of the 595 final rejections were second Office actions. This rejection rate is consistent with PTO's policy of normally making the second Office action final. Only about a fifth of the 926 applications had more than 2 Office actions. (See table I.8.)

Our audit work was performed between April and July 1990 in accordance with generally accepted government auditing standards. Our review included an analysis of PALM data contained in PTO computer tapes for all biotechnology patent applications on hand during 1989. We also examined work load reports generated during 1989 and the first 6 months of 1990 by PTO. Appendix I contains tables of data generated from our analysis of PALM computer tapes.

We discussed this report's contents with PTO officials, who concurred with the facts, and their comments have been included where appropriate. As agreed with your office, however, we did not obtain official agency comments on this report. As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 14 days from the date of this letter. At that time, we will provide copies of this report to the Department of Commerce and to others upon request. If you have any further questions on these

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matters, please contact me at (202) 275-5525. Major contributors to this report are listed in appendix II.

Sincerely yours,

John M. Ols, Jr.

John M. Ols, Jr.
Director, Housing and
Community Development Issues

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Abbreviations

FAOM	First Action on the Merits of the Case
PALM	Patent Application, Location, and Monitoring
PTO	Patent and Trademark Office

Appendix I

GAO Analysis of PALM Computer Tapes

Table I.1: Percent of Continuations Included in All Biotechnology Patents Issued During 1989

Art unit/description	Total patents issued	Total continuations	Percent
181/equipment	723	219	30
182/immunology	417	134	32
183/biochemicals	665	230	35
184/plants and animals	754	84	11
185/genetic engineering	307	124	40
186/biochemicals	268	106	40
187/equipment and immunology	1	0	0
188/microbiology	0	0	0
Biotechnology total	**3,135**	**897**	**29**

Table I.2: Percent of Continuations Included in All Biotechnology Patent Applications Abandoned During 1989

Art unit/description	Total abandonments	Total continuations	Percent
181/equipment	510	187	37
182/immunology	646	213	33
183/biochemicals	647	206	32
184/plants and animals	653	218	33
185/genetic engineering	684	228	33
186/biochemicals	580	195	34
187/equipment and immunology	119	36	30
188/microbiology	106	44	42
Biotechnology total	**3,945**	**1,327**	**34**

Table I.3: Percent of Biotechnology Patent Applications Abandoned and Simultaneously Refiled as Continuations During 1989

Art unit/description	Total abandonments	Refiled continuations	Percent
181/equipment	510	189	37
182/immunology	646	255	39
183/biochemicals	647	234	36
184/plants and animals	653	272	42
185/genetic engineering	684	311	45
186/biochemicals	580	247	43
187/equipment and immunology	119	35	29
188/microbiology	106	33	31
Biotechnology total	**3,945**	**1,576**	**40**

Table I.4: Percent of Continuations Included in All Biotechnology Patent Applications Pending at the End of 1989

Art unit/description	Total applications	Total continuations	Percent
181/equipment	2,318	660	28
182/immunology	2,496	815	33
183/biochemicals	2,946	915	31
184/plants and animals	2,268	650	29
185/genetic engineering	2,334	907	39
186/biochemicals	2,655	944	36
187/equipment and immunology	1,702	547	32
188/microbiology	1,816	652	36
Biotechnology total	**18,535**	**6,090**	**33**

Table I.5: Average Waiting Period From Date of Original Application for All Biotechnology Patents Issued in 1989

Art unit/description	Total patents issued	Average months
181/equipment	723	37.2
182/immunology	417	44.1
183/biochemicals	665	36.7
184/plants and animals	754	24.9
185/genetic engineering	307	47.4
186/biochemicals	268	37.7
187/equipment and immunology	1	33.4
188/microbiology	0	0.0
Biotechnology total	**3,135**	**36.1[a]**

[a]Patent Office reported average was 27.4.

Table I.6: Average Waiting Period From Date of Original Application for All Biotechnology Patent Applications Abandoned During 1989

Art unit/description	Total abandonments	Average months
181/equipment	510	33.1
182/immunology	646	37.3
183/biochemicals	647	29.2
184/plants and animals	653	37.0
185/genetic engineering	684	40.0
186/biochemicals	579	30.8
187/equipment and immunology	119	33.5
188/microbiology	106	35.8
Biotechnology total	**3,944**	**34.7[a]**

[a]Patent Office reported average was 25.4.

Table I.7: Average Waiting Period From Date of Original Application for All Biotechnology Patent Applications Pending at the End of 1989

Art unit/description	Total applications	Average months
181/equipment	2,318	23.4
182/immunology	2,496	27.7
183/biochemicals	2,946	23.2
184/plants and animals	2,268	25.7
185/genetic engineering	2,333	33.0
186/biochemicals	2,655	26.9
187/equipment and immunology	1,702	25.8
188/microbiology	1,816	28.6
Biotechnology total	**18,534**	**26.7[a]**

[a]Includes elapsed months for 1,576 applications abandoned and simultaneously refiled as continuations in 1989.

Table I.8: Average Processing Time for Selected Steps for All Original Applications With a First Office Action and Abandoned and Refiled as Continuation Applications in 1989

Processing step	Total time (months)	Total number	Average time (months)
Filing to docketing	4,579	923	5.0
Docketing to first action on the merits of the case (FAOM)	10,489	907	11.6
FAOM to first response	3,606	680	5.3
Abandonment after first action	1,226	226	5.4
First response to final rejection	1,040	446	2.3
First response to second action	600	228	2.6
Second action to second response	883	165	5.4
Abandonment after second action	344	63	5.5
Second response to final rejection	290	108	2.7
Second response to third action	168	57	3.0
Third action to third response	216	43	5.0
Third action to abandonment	121	20	6.0
Third response to final rejection	165	39	4.2
Final rejection to abandonment	4,940	595	8.3
Filing to abandonment	28,856	925	31.2

Table I.9: Percent of Accelerated Examinations Included in All Biotechnology Patent Applications Pending During 1989

Art unit/description	Total applications	Total accelerations	Percent
181/equipment	3,551	35	1.0
182/immunology	3,559	13	0.4
183/biochemicals	4,258	18	0.4
184/plants and animals	3,675	24	0.7
185/genetic engineering	3,325	23	0.7
186/biochemicals	3,503	7	0.2
187/equipment and immunology	1,822	16	0.9
188/microbiology	1,922	8	0.4
Biotechnology total	**25,615**	**144**	**0.6**

Appendix II

Major Contributors to This Report

Resources, Community, and Economic Development Division, Washington, D.C.	Paul J. O'Neill, Assistant Director James E. Gwinn, Evaluator-in-Charge Sara-Ann W. Moessbauer, Operations Research Analyst

APPENDIX 2.—LETTER FROM CHAIRMAN WILLIAM J. HUGHES, TO HARRY F. MANBECK, JR., COMMISSIONER, U.S. PATENT AND TRADEMARK OFFICE, U.S. DEPARTMENT OF COMMERCE, DATED April 8, 1991

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ONE HUNDRED SECOND CONGRESS

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MAJORITY—225-3951
MINORITY—225-6906

April 8, 1991

The Honorable Harry F. Manbeck, Jr.
Commissioner
U.S. Patent & Trademark Office
U.S. Department of Commerce
2121 Crystal Drive
Suite 906
Washington, DC 20231

Dear Commissioner Manbeck:

Enclosed is H.R. 1613, which Representative Carlos Moorhead and I introduced by request of the Administration on March 22, 1991 to authorize appropriations for the Patent and Trademark Office for Fiscal Years 1992 and 1993. I am writing to you at this time to ask for certain information that would be useful to me and to other members of the Subcommittee in our consideration of the proposed legislation.

First, it is my understanding that the Patent and Trademark Office is soon to publish a new proposed fee schedule in the Federal Register. I would like to review this proposal as soon as it is ready. To the extent that this proposed fee schedule would depend on the enactment of particular authorizing legislation, I would ask you to be mindful, and to advise those who would be affected by the proposed fee revisions to be cognizant, that Congress has yet to consider the Administration's proposed reauthorization legislation and may or may not enact H.R. 1613 in its present form.

Second, I understand that the Administration's proposed reauthorization of the Patent and Trademark Office departs from current law with respect to the Commissioner's authority to collect fees and the fee structure itself. While I will consider this proposal carefully, I also plan to review alternative fee arrangements, including that provided for under current law. Accordingly, I would ask you to prepare 1) a fee structure that would, consistent with the Omnibus Budget Reconciliation Act of 1991 (Pub. L. No. 101-508), assure that no more than $95 million is raised through surcharge fees in Fiscal Year 1992 and no more than $99 million is raised through surcharge fees in Fiscal Year 1993; 2) a fee structure that would distribute the surcharges provided in

section 10101(a) of the Omnibus Budget Reconciliation Act among all fees collected by the Office as required by section 10101(d) of that Act; and 3) a fee proposal that would assume the continuation of the present small entity subsidy as provided in 35 U.S.C. section 41(h).

Thank you for your assistance in this matter. I look forward to working with you to develop authorization legislation that assures a fair and efficient patent and trademark operation.

Sincerely,

William J. Hughes
Chairman
Subcommittee on Intellectual Property
and Judicial Administration

Enclosure

APPENDIX 3.—LETTER FROM HARRY F. MANBECK, JR., TO HON. WILLIAM J. HUGHES, DATED MAY 8, 1991

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
ASSISTANT SECRETARY AND COMMISSIONER
OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

May 8, 1991

Honorable William J. Hughes
Chairman
Subcommittee on Intellectual Property
and Judicial Administration
Committee on the Judiciary
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

In response to your request, we generated fee schedules to implement the options outlined in your letter of April 8, 1991. A summary of the results is presented in Enclosure 1. For ease of presentation, we list only the most significant fees that we charge, instead of listing all of the nearly 200 separate fees that are associated with the patent examining process and patent-related services. The first two columns on the left list fees charged before and after the enactment of the Omnibus Budget Reconciliation Act (Omnibus Act). The third column depicts fees that would be charged if the Administration proposal, H.R. 1613, is enacted. The last five columns set out the fees that implement the three options you enumerated and two variations of your options.

Enclosures 2.1 through 2.6 list assumptions that we made to calculate the fees that would arise under H.R. 1613 and the five options arising from your request. In addition, these Enclosures include the total projected income from these fee schedules and a comparison of the projected income and the program level for the U.S. Patent and Trademark Office as presented in the fiscal year 1992 budget request. Enclosure 3 summarizes this information for all of the options presented.

While some of the consequences of implementing each of these options are apparent, we would like to take this opportunity to point out some of the most important problems associated with these options. Under Option 1, the surcharge on the statutory fees in subsections 41(a) and (b) of title 35 set by the Omnibus Act is decreased so that only the stated deficit reduction target is collected. None of the patent-related service fees are increased to offset this reduction. With this Option, our collections would be $112,000,000 short of our requested program for fiscal year 1992. We would have to cut back on our existing programs because we could not afford to pay the cost of these programs. We would not be able to hire additional staff to handle any increases in workload. Therefore, the pendency periods for applications would increase. We would be forced to abandon for this authorization cycle all of the planned

improvements in automation, biotechnology pendency, dissemination of information including new CD-ROM products, and other areas.

In Option 1A, the surcharge is again decreased to collect only the stated deficit reduction target as in Option 1. To avoid the massive shortfall created by Option 1, however, we would increase the patent-related service fees to raise the $112,000,000 difference. While implementation of Option 1A would enable us to meet our planned program in theory, service fees would have to be increased to levels that we believe are unreasonable. For example, patent copies would be $6 instead of $3 as under our proposal. The reexamination fee would be over $8000 instead of $3,000 as under our proposal. We do not believe it likely that our customers would actually pay these amounts and, for that reason, a revenue shortfall would be the result.

In Option 2, a surcharge to meet the deficit reduction target of $95,000,000 in fiscal year 1992 is spread out over all fees related to the patent examining process instead of limiting the surcharge to subsection 41(a) and (b) fees as is mandated by the Omnibus Act. While the filing, issue, and maintenance fees are lower, we still have the massive shortfall of $112,000,000, and would have to cut our programs as described in the discussion of Option 1.

In Option 2A, we begin by spreading the surcharge over all patent fees related to examining and then raise the patent service fees to make up the $112,000,000 shortfall. This creates slightly more unreasonable service fees than is the case in Option 1A.

Finally, in Option 3, all subsection 41(a) and (b) fees would be raised 11.2 percent, but the relative advantage of the 50 percent small entity subsidy is retained. This meets the program needs of the Office, but it still requires large entities to pay 50 percent of the costs incurred by small entities. We believe that our proposal, H.R. 1613, strikes a more appropriate balance between the fees paid by large entites and the fees paid by small entities. The continued subsidy for the filing fees would enable small entities to enter the patent system with the same relative advantage they enjoy today, but they would have to pay more of their share of the cost of processing their applications.

It should also be noted that it is not possible to establish a two-year fee cycle under Options 1, 1A, 2, and 2A, A new fee schedule would have to be implemented again on October 1, 1992 to ensure that the specified deficit reduction target, and no more, is collected in fiscal year 1993. Our proposal and Option 3, however, could be implemented by a two-year fee cycle, making a fee adjustment for fiscal year 1993 unnecessary. To accomplish this, we would have to set fees in fiscal year 1992 to recover a portion of the inflationary costs in fiscal year 1993. As a result, the fee schedule under these Options would recover an

estimated $24,063,000 above costs in fiscal year 1992, which would be applied to cover a shortfall of approximately the same amount in fiscal year 1993. If our estimates are correct, income for the two-year period would match expenses for the two-year period.

Finally, some members of the public have noted our proposed program for fiscal year 1992 is $110,563,000 more than our proposed program for fiscal year 1991. There appears to be some confusion as to the nature of the proposed increase. Patent automation is not solely responsible for the increase. In fact, two-thirds of the increase responds to factors beyond our control.

For fiscal year 1992, $29,533,000 (roughly 26 percent of the increase) is to cover inflation -- that is, the increased costs of providing the same volume of services, including increased rent and pay raises. To be able to process the projected increases in the number of applications filed, we have requested an additional $45,428,000 (roughly 41 percent of the increase). If applications are not received at the expected level, our fee income will decrease and we will, of course, adjust our spending plans to reflect the income and filing level. This is not over-budgeting. If we do not have plans in place to process increased workload, we cannot meet the demand in a timely fashion. If we do have the plans in place and filings are less than expected, we can adjust our plans downward.

The remainder of the increase will be used to fund increases in the automation program and quality improvements. Only 17 percent of the total increase or $18,403,000 is for automation and, of that, 10 percent, or $11,409,000, is for patent automation and the seven percent or $6,994,000 is for trademark automation and information dissemination.

A total of $17,199,000 is requested for quality improvements including $3,560,000 to reduce the pendency periods in the biotechnology area. A more detailed breakdown of the increase is presented in Enclosure 4.

Sincerely,

Harry F. Manbeck, Jr.
Assistant Secretary and Commissioner
of Patents and Trademarks

1992 SMALL ENTITY ALTERNATIVES - HUGHES LETTER 4/8/91

		Effective 4/27/89	Effective 11/5/90	PTO Proposal	Hughes Option 1	Hughes Option 1A	Hughes Option 2	Hughes Option 2A	Hughes Option 3
		1990	1991	1992	1992	1992	1992	1992	1992
	Fee Amounts								
1	Filing - Large	370.00	630.00	630.00	557.00	557.00	507.00	507.00	700.00
2	Filing - Small	185.00	315.00	315.00	278.50	278.50	253.50	253.50	350.00
3									
4	Issue - Large	620.00	1,050.00	1,050.00	928.00	928.00	850.00	850.00	1,180.00
5	Issue - Small	310.00	525.00	1,050.00	464.00	464.00	425.00	425.00	580.00
6									
7	1st Maintenance - Large	490.00	830.00	830.00	734.00	734.00	672.00	672.00	920.00
8	1st Maintenance - Small	245.00	415.00	830.00	367.00	367.00	336.00	336.00	460.00
9									
10	2nd Maintenance - Large	990.00	1,670.00	1,670.00	1,477.00	1,477.00	1,358.00	1,358.00	1,860.00
11	2nd Maintenance - Small	495.00	835.00	1,670.00	738.50	738.50	679.00	679.00	930.00
12									
13	3rd Maintenance - Large	1,480.00	2,500.00	2,500.00	2,210.00	2,210.00	2,030.00	2,030.00	2,780.00
14	3rd Maintenance - Small	740.00	1,250.00	2,500.00	1,105.00	1,105.00	1,015.00	1,015.00	1,390.00
15									
16	Total - Large	3,350.00	5,680.00	5,680.00	5,906.00	5,906.00	5,417.00	5,417.00	7,420.00
17	Total - Small	1,675.00	2,340.00	5,365.00	2,953.00	2,953.00	2,708.50	2,708.50	3,710.00
18									
19	Three month extension - Large	430.00	730.00	730.00	646.00	646.00	590.00	590.00	810.00
20	Three month extension - Small	215.00	365.00	730.00	323.00	323.00	295.00	295.00	405.00
21									
22	Re-examination	2,000.00	2,000.00	3,000.00	2,000.00	8,019.00	2,000.00	9,543.00	3,000.00
23	PCT Search Fee	380.00	380.00	720.00	380.00	1,624.00	380.00	1,813.00	720.00
24	Assignment Fee	8.00	8.00	40.00	8.00	32.00	8.00	38.00	40.00
25	Patent Copy	1.50	1.50	3.00	1.50	6.00	1.50	7.00	3.00
26	Copy of Patent File	170.00	170.00	150.00	170.00	682.00	170.00	811.00	150.00
27	Copy Charge - Per Page	0.15	0.15	0.25	0.15	0.60	0.15	0.72	0.25
28	Attorney Fee - Registration to Practice	90.00	90.00	100.00	90.00	360.00	90.00	429.00	100.00
29									
30	Trademark Application Fee	175.00	175.00	250.00	175.00	250.00	175.00	250.00	250.00

Attachment 1

Attachment 2.1

PTO PROPOSAL

- No change to patent statutory fees
  - Excess revenues from 69% surcharge would be treated as offsetting collections.
  - $95,000,000 would be deposited in surcharge fund in 1992.
- Small entity subsidy limited to application and claims fees.
  - Small entity fees paid at 50 percent rate - $22,248,610
  - Small entity fees paid at 100 percent rate - $67,769,906
- All other fees set, in the aggregate with patent statutory fees, to recover program budget level for 1992.
  - Maintenance fees established under Public Law 96-517 set comparable to maintenance fees established under Public Law 97-247.
  - PCT fees for filing a national stage application set comparable to fees for filing domestic applications.

	(Dollars in Thousands) PTO Proposal 1992
Large Entity Fee Payments	267,264
Small Entity Fee Payments	90,019
Sub-Total - Patent Statutory	**357,283**
Non-Statutory Patent Fees	64,713
Patent Cooperation Treaty Fees	14,673
Total Patent Fees	436,669
Trademark Fees	49,884
Total Patent and Trademark Fees	**486,553**
Total PTO Program Requirements	462,490
Surplus/Deficit(-)**	24,063
% Total of Large Entity Payments	74.80%
% Total of Small Entity Payments	25.20%

** $24 million surplus in 1992 is offset by $24 million deficit in 1993.

Attachment 2.2

HUGHES OPTION 1
A Fee Structure to Assure That No More Than $95 Million is Raised Through Surcharge Fees in Fiscal Year 1992
Assumption: Reduce Proposed Program Level

- Reduces the November 5, 1990 patent statutory fee amounts by 11.58 percent in 1992 in order to generate only $95,000,000* in surcharge income.

  *Note: This is dependent on workload.

- Abandons the PTO program request of $462,490,000.
- Retains the current fee schedule for all other fees, and applies them to 1992 projected workloads.
- Results in a shortfall of $111,752,000.

(Dollars in Thousands)

	PTO Proposal 1992	Hughes Option 1 1992
Large Entity Fee Payments	267,264	236,327
Small Entity Fee Payments	90,019	49,636
Sub-Total - Patent Statutory	**357,283**	**285,963**
Non-Statutory Patent Fees	64,713	23,638
Patent Cooperation Treaty Fees	14,673	7,947
Total Patent Fees	436,669	317,548
Trademark Fees	49,884	33,190
Total Patent and Trademark Fees	**486,553**	**350,738**
Total PTO Program Requirements	462,490	462,490
Surplus/Deficit(-)	24,063	-111,752
% Total of Large Entity Payments	74.80%	82.64%
% Total of Small Entity Payments	25.20%	17.36%

Attachment 2.3

HUGHES OPTION 1A
A Fee Structure To Assure That No More Than $95 Million Is Raised Through Surcharge Fees In Fiscal Year 1992
Assumption: Adjust Other Fees to Maintain Proposed Program Level

- Reduces the November 5, 1990 patent statutory fee amounts by 11.58 percent in 1992 in order to generate only $95,000,000* in surcharge income.

  *Note: This is dependent on workload.

- Retains the PTO program request of $462,490,000 by applying an across-the-board adjustment to all other PTO fee amounts.
  - Non-statutory patent fee amounts are adjusted by 300.96 percent.
  - Trademark fee amounts are adjusted by 50.3 percent.

(Dollars in Thousands)

	PTO Proposal 1992	Hughes Option 1A 1992
Large Entity Fee Payments	267,264	236,327
Small Entity Fee Payments	90,019	49,636
Sub-Total - Patent Statutory	**357,283**	**285,963**
Non-Statutory Patent Fees	64,713	94,781
Patent Cooperation Treaty Fees	14,673	31,862
Total Patent Fees	436,669	412,606
Trademark Fees	49,884	49,884
Total Patent and Trademark Fees	**486,553**	**462,490**
Total PTO Program Requirements	462,490	462,490
Surplus/Deficit(-)	24,063	0
% Total of Large Entity Payments	74.80%	82.64%
% Total of Small Entity Payments	25.20%	17.36%

Attachment 2.4

HUGHES OPTION 2
A Fee Structure That Would Distribute the Surcharges Among All Fees Collected by the Office
Assumption: Reduce Proposed Program Level

- Applies a surcharge of 37.15 percent to the pre-November 5, 1990 patent statutory fees and to all other patent and trademark fees to generate only $95,000,000* in 1992.

  *Note: This is dependent on workload.

- Abandons the PTO program request of $462,490,000.
- Results in a shortfall of $111,752,000.

(Dollars in Thousands)

	PTO Proposal 1992	Hughes Option 2 1992
Large Entity Fee Payments	267,264	216,432
Small Entity Fee Payments	90,019	45,468
Sub-Total - Patent Statutory	**357,283**	**261,900**
Non-Statutory Patent Fees	64,713	32,420
Patent Cooperation Treaty Fees	14,673	10,899
Total Patent Fees	436,669	305,219
Trademark Fees	49,884	45,519
Total Patent and Trademark Fees	**486,553**	**350,738**
Total PTO Program Requirements	462,490	462,490
Surplus/Deficit(-)	24,063	-111,752
% Total of Large Entity Payments	74.80%	82.64%
% Total of Small Entity Payments	25.20%	17.36%

Attachment 2.5

HUGHES OPTION 2A
A Fee Structure That Would Distribute the Surcharges Among All Fees Collected by the Office
Assumption: Adjust Other Fees to Maintain Proposed Program Level

- Applies a surcharge of 37.15 percent to the pre-November 5, 1990 patent statutory fees and to all other patent and trademark fees to generate only $95,000,000* in 1992.

  *Note: This is dependent on workload.

- Retains the PTO program request of $462,490,000 by applying an across-the-board adjustment to all other PTO fee amounts.
  - Non-statutory patent fee amounts are adjusted by 247.9 percent.
  - Trademark fee amounts are adjusted by 9.59 percent.

(Dollars in Thousands)

	PTO Proposal 1992	Hughes Option 2A 1992
Large Entity Fee Payments	267,264	216,432
Small Entity Fee Payments	90,019	45,468
Sub-Total - Patent Statutory	**357,283**	**261,900**
Non-Statutory Patent Fees	64,713	112,790
Patent Cooperation Treaty Fees	14,673	37,916
Total Patent Fees	436,669	412,606
Trademark Fees	49,884	49,884
Total Patent and Trademark Fees	**486,553**	**462,490**
Total PTO Program Requirements	462,490	462,490
Surplus/Deficit(-)	24,063	0
% Total of Large Entity Payments	74.80%	82.64%
% Total of Small Entity Payments	25.20%	17.36%

Attachment 2.6

HUGHES OPTION 3
A Fee Proposal That Would Assume the Continuation of the Present Small Entity Subsidy

- PTO proposal, except that small entity subsidy would be applied to all patent statutory fees.
  - Small entity fees paid at 50 percent rate - $62,235,129
  - Small entity fees paid at 100 percent rate - N/A
  - Impact on all patent statutory fees - +11.2 percent

(Dollars in Thousands)

	PTO Proposal 1992	Hughes Option 3 1992
Large Entity Fee Payments	267,264	296,308
Small Entity Fee Payments	90,019	62,235
Sub-Total - Patent Statutory	**357,283**	**358,543**
Non-Statutory Patent Fees	64,713	62,973
Patent Cooperation Treaty Fees	14,673	15,153
Total Patent Fees	436,669	436,669
Trademark Fees	49,884	49,884
Total Patent and Trademark Fees	**486,553**	**486,553**
Total PTO Program Requirements	462,490	462,490
Surplus/Deficit(-)**	24,063	24,063
% Total of Large Entity Payments	74.80%	82.64%
% Total of Small Entity Payments	25.20%	17.36%

** $24 million surplus in 1992 is offset by $24 million deficit in 1993.

1992 SMALL ENTITY ALTERNATIVES - HUGHES LETTER 4/5/91

(Dollars in Thousands)

		Actual 1990	Projected 1991	PTO Proposal 1992	Hughes Option 1 1992	Hughes Option 1A 1992	Hughes Option 2 1992	Hughes Option 2A 1992	Hughes Option 3 1992
1	Large Entity Fee Payments	132,329	237,346	267,264	236,327	236,327	216,432	216,432	296,306
2									
3	Small Entity Fee Payments	29,183	50,351	90,019	49,836	49,836	45,468	45,468	62,235
4									
5	Sub-Total - Patent Statutory	160,512	287,698	357,283	286,063	286,063	261,900	261,900	358,543
6									
7	Non-Statutory Patent Fees	22,570	29,326	64,713	23,638	94,761	32,420	118,700	62,873
8									
9	Patent Cooperation Treaty Fees	8,319	7,273	14,673	7,947	31,862	10,899	37,019	15,153
10									
11	Total Patent Fees	191,401	323,296	436,669	317,648	412,686	305,219	412,686	436,569
12									
13	Trademark Fees	32,428	27,929	49,884	33,190	49,884	45,519	49,884	49,884
14									
15	Total Patent and Trademark Fees	223,829	351,227	486,553	350,738	462,490	350,738	462,490	486,553
16									
17	Total PTO Program Requirements	327,494	351,227	462,490	462,490	462,490	462,490	462,490	462,490
18									
19	Surplus/Deficit(-)*	-103,665	0	24,063	-111,752	0	-111,752	0	24,063
20									
21	% Total of Large Entity Payments (Line 1)	82.64%	82.50%	74.69%	82.64%	82.64%	82.64%	82.64%	82.64%
22	% Total of Small Entity Payments (Line 3)	17.56%	17.50%	25.29%	17.36%	17.36%	17.36%	17.36%	17.36%

*Note: $24 million surplus in PTO Proposal and Hughes Option 3 would be offset by $24 million deficit in 1993.

Attachment 4

FISCAL YEAR 1992 BUDGET CHANGES TO FISCAL YEAR 1991
(Dollars in Thousands)

Category	Description	Amount
Inflation*	Space Rent	$12,170
	Pay Raises (1991 and 1992)	8,481
	Annualization of prior year increases	5,118
	Other inflationary adjustments	3,764
	Sub-Total	*29,533*
Workload	Patent Examination	26,978
	Trademark Examination	10,549
	Services	1,750
	New Space	6,151
	Sub-Total	*45,428*
Automation	Patent Automation	11,409
	Trademark Automation	5,079
	Information Dissemination	1,915
	Sub-Total	*18,403*
Priorities	Quality Examination	10,231
	Biotechnology Pendency	3,560
	Quality Services	1,000
	Other	2,408
	Sub-Total	*17,199*
	Total	*$110,563*

* Refer to PTO's fiscal year 1992 budget, pages PTO 14 - PTO 19.

APPENDIX 4.—LETTER FROM WENDELL L. WILLKIE II, GENERAL COUNSEL, U.S. DEPARTMENT OF COMMERCE, TO HON. WILLIAM J. HUGHES, DATED JULY 15, 1991

GENERAL COUNSEL OF THE
UNITED STATES DEPARTMENT OF COMMERCE
Washington, D.C. 20230

RECEIVED
JUL 15 1991
JUL 18 1991
Sub on Courts

Honorable William J. Hughes
Chairman, Subcommittee on Intellectual
Property and Judicial Administration
Committee on the Judiciary
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Enclosed are responses to your questions submitted to the U.S. Patent and Trademark Office for inclusion in the record of the authorization hearing held on May 9, 1991. We welcome this opportunity to augment the record to support ensuring an adequate funding base for the U.S. Patent and Trademark Office.

Sincerely,

Wendell L. Willkie, II

Enclosure

RESPONSES TO

QUESTIONS FROM CHAIRMAN HUGHES

Question 1: We heard testimony during the Subcommittee's hearings from a number of private sector witnesses, representing a myriad of viewpoints, all of whom opposed the contents of the reauthorization proposal. I would be interested to know who, outside of the Administration, supports your reauthorization proposal?

Answer: To date, we are not aware of any group that supports the proposal in its entirety. This, however, is not surprising. It is rare that users support proposals to increase fees for services that they use, even if the increases are in their best interests over the long-term.

Question 2: What legislative proposals relating to patents and trademarks, in addition to the reauthorization of the Patent and Trademark Office, do you believe this Subcommittee should consider this Congress?

Answer: In addition to the authorization proposal, we would encourage the Subcommittee to consider proposals that clarify that states are liable for patent and trademark infringement. Also, the subject matter addressed by H.R. 1417, relating to process patents, merits attention. Later in this Congress, we hope to forward a draft "house-keeping" bill that we hope will be considered favorably.

Question 3: Are you satisfied with the trademark automation system -- or the "T Search" system as it is often referred to?

Answer: While the current "T-Search" has been an extremely useful tool, trademark examiners and the public have expressed the desire for a better system -- one that is faster, has more powerful search techniques, and has more information available for retrieval. We have begun defining the features and performance needs for a new search system that will accommodate the needs of the examiners and the public and will allow replacement of old system components that are no longer supported by the manufacturer. The 1992 budget request to the Congress contains a proposed increase of $5 million for T-Search enhancements.

While we are developing the new system, we are attempting to improve the present T-Search system. We have moved the system to a larger computer and installed improved communications software. As a result, we are now able to serve more users more promptly.

Also, we are continuing to improve the quality of the information in this data base.

Question 4: How would you rate the patent and trademark automation systems respectively as tools for examiners?

Answer: On the trademark side, T-Search has been an extremely useful tool for examiners. Given our experience with automated searching since this system was deployed and advances in this area of technology, we believe a better system could be developed and deployed. We have begun the process necessary to procure a replacement search system.

On the patent side, the text-search capability of the Automated Patent System (APS) has been deployed to all examiners, and the public in our facility in Arlington, Virginia. We believe that this portion of APS works very well and has contributed to the increased quality of issued patents. Given the demand in our public search facility, we have added an additional terminal to access this system. This, in our view, indicates that this system is a very useful search tool to the public.

To date, the image-search capability of APS has only been fully deployed to two patent examining groups. Our experience indicates, however, that the combination of the text- and image-search capabilities offered by APS enables the examiners to use new and powerful search techniques that will prove to be superior to techniques used in the paper files. Coupled with the high integrity of these computerized records, the APS system has the potential of significantly increasing the quality of the patents we issue.

While one image and text terminal has been available for testing in our public search facilities, it has only recently been made available on a "production" basis. Only the portions of the image data base available to the examiners are also available to the public in our search facilities. We expect, however, that the public will also consider this a superior searching system.

Question 5: How would you rate the two systems as tools for dissemination of information to the public?

Answer: Although both the APS and the trademark search systems were designed initially for examiner use, they have both proven to be very effective in meeting the information needs of the public. The APS system is very flexible and will be even more useful to the public when foreign patents are available on the

system. The new trademark system will provide a number of additional features that have been requested by the public.

The work we have completed at this point in the APS has laid the foundation for all future activities for dissemination of patent information to the public. We have "captured" all (over 5,000,000) U.S. patents as an electronic database, although not all of these patents are available for searching yet. Future dissemination of this information, including CD-ROMs, is almost unlimited. The trademark database is also captured in electronic form and its dissemination potential is equal to that of patents.

Question 6: When do you anticipate that the automated patent and trademark systems will be put on line at patent depository libraries?

Answer: The text-search capability of the Automated Patent System will be placed on-line in fourteen Patent and Trademark Office Depository Libraries this year as part of a pilot project. If the pilot project is successful, we hope to expand on-line access to the remaining Libraries. While we plan to increase access in these Libraries to CD-ROM products during the next several years, we have no immediate plans to deploy additional on-line systems to these Libraries.

Question 7: Will the automated search systems be accessible to the public through modems or by some other mechanism?

Answer: Yes. T-Search and the text-search capability of the Automated Patent System are available to the public via terminals in our public search facilities. Portions of the image-search capability of the Automated Patent System are also available in the Public Search Room to the extent they have been deployed to examiners. As additions to the image-search capability are made available to the examiners, they will be made available to the public in our search facilities. The text-search capability of the Automated Patent System will be deployed this year to some Patent and Trademark Depository Libraries on a pilot basis. Other than at all the 70 Patent and Trademark Depository Libraries, we have no immediate plans to make these search systems available at additional remote locations, through modems or other means.

Question 8: If you were to begin again with the design of the patent automation system, what changes would you make?

Answer: If we knew in the early 1980s what we know now, we probably would have adopted, earlier than we did, an automation program more in line with the recommendations made by the

Industry Review Panel in 1988. Particularly, we would have adopted their suggestion earlier than we did to plan the program in increments instead of planning for one integrated system for patents. We believe, however, that despite the fact that the changes recommended by the Panel were not adopted until 1988, that we have developed a system that will prove to be an extremely useful and effective tool for patent examiners and the public.

Question 9: A number of witnesses at the Subcommittee's first day of hearings, May 8th, suggested that the Patent and Trademark Office equip every examiner with a personal computer. Professor Wegner suggested, in fact, that this could be a cost-saving approach for PTO in that attorney and secretarial time would be saved. What is your view on this proposal?

Answer: We agree. The budget for fiscal year 1992 includes resources to begin to provide every patent and trademark examiner with a personal computer. We have recommended, however, that this effort be spread over several years to avoid loading all the costs in one fiscal year. In the longer term, we believe that this will save the Office money, particularly for clerical expenses associated with the patent and trademark examining processes.

Question 10: A number of witnesses testifying on May 8, 1991 suggested that the Patent and Trademark Office pay for certain one-time or few-time capital expenditures over a long period of time instead of paying up front. An obvious example would be capital expenditures for automation. It is my understanding that the European Patent Office has authority to borrow money. Does the U.S. Patent and Trademark Office have any mechanism to amortize capital expenditures?

Answer: The U.S. Patent and Trademark Office does not have any mechanism to amortize expenses except to elect, when possible, to use lease-to-purchase acquisitions instead of outright purchases.

To the best of our knowledge, the European Patent Office only has authority to borrow money to fund building construction projects. It does not have authority to borrow money to underwrite automation efforts.

Question 11: In your view, should the factors we use to review your proposed budget vary depending on whether funds come from user fees as opposed to taxpayer revenues?

Answer: When the Office prepares a budget, we carefully review all of the proposals contained in it to determine if they are

necessary to meet the goals proposed by the Administration or the Congress. We believe that the Congress, when reviewing the budget, should use this criterion as well regardless of whether the funds requested are from user fees or taxpayer revenues.

It should be noted, however, that some factors apply only if taxpayer revenues are used. For example, Congress in the past has reduced the Office's program, regardless of its merits, as a result of across-the-board reductions to limit the outlay of taxpayer revenues, or as a result of the desire to fund other programs with the limited taxpayer revenues available. These factors need not be considered when the Office is funded solely through fee revenues.

Question 12: What potential exists under current law for the Patent and Trademark Office's appropriated and non-appropriated funds to be confiscated under Gramm-Rudman-Hollings sequestration?

Answer: Appropriated and non-appropriated funds available to the Office have and may be sequestered under the Gramm-Rudman-Hollings provisions.

Question 13: According to the testimony of the Intellectual Property Owners, Inc., the fees for small entities would increase by 91% under your proposed reauthorization plan. This is on top of the 69% increase last year. What do you believe the consequences of such a dramatic increase would be for small entities?

Answer: Some individual inventors or small companies may elect not to file patent applications in light of the fee increases that became effective last November or our proposed increases. We believe, however, that overall individuals and businesses will continue to use the patent system if our proposal is enacted.

While we have not received the number of patent applications that we expected to receive so far this fiscal year, we are still receiving applications at a slightly higher rate than last year. This lower-than-expected rate of filing may be due to general economic conditions, the Gulf War, a simultaneous increase in the fees of the European Patent Office, and other factors as well as the increase in our fees. Furthermore, there is no indication that the mixture between large entities and small entities and the mixture between U.S. and foreign nations has changed significantly since the November fee increase. In fact, the participation by small entities has increased almost one percent so far this fiscal year. Therefore, we do not believe that this is a basis for concluding that the number of applications filed by small entities will decrease or that their participation

compared to large entities will decrease if our proposal is enacted.

Question 14: Your proposal would eliminate the current "fence" that exists between patent and trademark fees. Why would it not be sufficient to simply state that a certain percentage of the administrative costs of running the patent and trademark office could be recouped from trademark fees?

Answer: First, it is more equitable for trademark fees to be used to pay the portion of administrative expenses related to trademarks rather than an arbitrary percentage of the overall administrative expenses. The share related to trademarks will vary from year to year depending on services used and workload.

Second, the reasons for amending the trademark "fence" is to clarify that trademark fees should be used to pay for trademark-related administrative expenses and to give the Commissioner some flexibility, subject to the normal Congressional committee review for reprogramming, to use trademark revenues in emergencies. Assessing a percentage of trademark fees to cover administrative expenses will not accomplish the latter purpose. Also, it should be noted that other income has been used to fund the trademark operations in the past. Thus, we see no reason why trademark fees could not be used to fund other operations in emergencies.

APPENDIX 5.—PATENT AND TRADEMARK OFFICE'S BUDGET PROPOSAL FOR FISCAL YEARS 1992 AND 1993

PTO'S BUDGET PROPOSAL FOR FY 1992 AND 1993

Millions of dollars

	Fiscal year			
	1990	1991	1992	1993
Patent process	$157	$240	$295	$369
Trademark process	16	24	42	40
Information dissemination	44	39	53	60
Executive direction & administration	59	48	72	85
Total	$276[a]	$351	$462	$554

[a]PTO had $344.7 million available in fiscal year 1990 because of advanced fee payments for workloads above budgeted levels. PTO actually obligated $327.5 million in fiscal year 1990.

PTO'S BUDGET PROPOSAL FOR FY 1992 AND 1993

-- PTO is proposing to double the size of its fiscal year 1990 budget in fiscal year 1993. From $276 million in fiscal year 1990, PTO's budget increased to $351 million in fiscal year 1991. PTO is proposing that the Congress authorize a budget of $462 million in fiscal year 1992 and a budget of $554 million in fiscal year 1993.

-- Of PTO's $276 million budget in fiscal year 1990, $86 million, or 31 percent, was funded through appropriations and $190 million, or 69 percent, from PTO's fee revenue.

-- Section 10101 of the Omnibus Reconciliation Act of 1990 (P.L. 101-508) reduced PTO's appropriations to about $3 million annually with the additional funding needed to come through a 69 percent surcharge on PTO's patent fees.

-- PTO is proposing to eliminate small entity subsidy for 16 of its 25 patent fees, including fees for patent issuance, the first maintenance fee paid 3-1/2 years after issuance, the second maintenance fee paid 7-1/2 years after issuance, and the third maintenance fee paid 11-1/2 years after issuance.

-- PTO's objectives in eliminating the small entity subsidy for 16 fees are to:

(1) Make its revenue from large and small entities more closely reflect the application filings by each group. Previously, PTO's appropriations subsidized the small entities' fees. Beginning in fiscal year 1991, large entities' fees are subsidizing the small entities' fees.

(2) Increase its revenues by $34 million in fiscal year 1992 and $41 million in fiscal year 1993; revenues from the higher small entity fees will not be used to reduce the fees paid by large entities. PTO projects that it will need 2-year revenues of $778 million from its patent fees to support its planned activities.

PATENT APPLICATIONS PENDING IN 1990 BY APPLICANT CATEGORY

Category	U.S. origin	Percent	Foreign origin	Percent	Total	Percent
Large entities	51,839	30.6	60,804	35.8	112,643	66.4
Small entities	43,040	25.4	13,950	8.2	56,990	33.6
Total	94,879	56	74,754	44	169,633	100

PATENT APPLICATIONS PENDING IN 1990 BY CATEGORY OF SMALL ENTITY

Category	U.S. origin	Percent	Foreign origin	Percent	Total	Percent
Independent inventor	31,852	18.8	9,143	5.4	40,995	24.2
Nonprofit organization	1,534	0.9	365	0.2	1,899	1.1
Small business	9,654	5.7	4,451	2.6	14,105	8.3
Total	43,040	25.4	13,950	8.2	56,990	33.6

Source: PTO's patent tracking system.

PATENT APPLICATIONS PENDING IN 1990 BY APPLICANT CATEGORY

-- Of the 169,633 patent applications pending in 1990, 112,643, or 66 percent, were from large entities and 56,990 applications, or 34 percent, were from small entities. Specifically, independent inventors accounted for 24 percent, universities and other nonprofit organizations accounted for 1 percent, and businesses with less than 500 employees accounted for 8 percent of all applications.

-- Foreign applicants accounted for 24 percent of small entity applications in 1990, including 22 percent of the independent inventor applications, 19 percent of the nonprofit applications, and 31 percent of the small business applications in 1990.

-- The small entity subsidy currently amounts to $50 million per year, including $12 million for foreign small entities.

RAPID RISE IN PATENT FEES PAID BY SMALL ENTITIES OVER AN 11-MONTH PERIOD

Fee	11/4/90	Current	10/1/91
Filing fee	$185	$315	$315
Issuance fee	310	525	1,050
First maintenance fee (paid 3-1/2 years after patent issues)	245	415	830
Second maintenance fee (paid 7-1/2 years after patent issues)	495	835	1,670
Third maintenance fee (paid 11-1/2 years after patent issues)	740	1,250	2,500
Total	$1,975	$3,340	$6,365

RAPID RISE IN PATENT FEES PAID BY SMALL ENTITIES OVER AN 11-MONTH PERIOD

-- All patent users are experiencing sticker shock with the 69 percent increase in November 1990. PTO estimates that about 10,000 fewer patent applications will be filed in 1991 than the 179,000 it projected before the 69 percent fee increase became effective. This total still represents an increase over the 163,571 patent applications filed in 1990.

-- It should be noted, however, that

(1) A patent attorney's fees for filing and prosecuting a patent application remain the primary expense incurred in obtaining patent protection.

(2) The Patent and Trademark Amendments of 1980 (P.L. 96-517) instituted maintenance fees for applications filed after December 12, 1980. PTO began to collect the second maintenance fee 2 years ago. PTO will not begin to collect the third maintenance fee until April 1993.

-- If PTO's proposal to reduce the small entity subsidy goes into effect on October 1, 1991, the cost of PTO's filing, issuance, and maintenance fees for small entities will increase by 91 percent. Over an 11-month period from November 1990 to October 1991, the base fees for a small entity to protect an invention through its 17-year term would more than triple from $1,975 to $6,365.

-- It is unclear what effect the 69 percent increase and the reduced small entity subsidy will have on (1) patent filings particularly by independent inventors and (2) owners' willingness to pay the second maintenance fee. PTO might have to raise its fees further or reduce its activities if fewer applications are filed or fewer maintenance fees are paid than it has anticipated.

(1) IPO and AIPLA believe that reducing the small entity subsidy will most adversely affect independent inventors, who filed 24 percent of the patent applications in 1990, followed by universities and other nonprofit organizations and businesses with less than 50/100 employees.

(2) PTO assumes that the second maintenance fee will be paid for about 64,000 patents of the 117,291 patents issued in 1984. However, in response to the 69 percent fee increase, most of the 10 federal patent attorneys we interviewed anticipate tightening the criteria for paying the second maintenance fee.

TOTAL FEES PAID IN FISCAL YEARS 1992 AND 1993
FOR SMALL ENTITY SUBSIDY ALTERNATIVES

Millions of dollars

Applicant category	PTO proposal	50% subsidy	25% subsidy	Independent inventors & nonprofits[a]	50% subsidy for small entities & federal agencies[b]
Small entities	$195	$134	$184	$ 99	$138
Large entities					
Direct	536	512	533	554	501
Small entity subsidy	46	134	61	99	134
Small businesses	[c]	[c]	[c]	28	[c]
Subtotal	582	646	594	681	639
Total	777	780	778	780	777

[a]Excludes all small businesses. PTO cannot provide a breakdown of small business applicants by number of employees because it does not collect this data.

[b]Federal agencies filed about 1,500 patent applications in fiscal year 1990.

[c]Not applicable.

TOTAL FEES PAID IN FISCAL YEARS 1992 AND 1993
FOR SMALL ENTITY SUBSIDY ALTERNATIVES

-- PTO projects that its proposal to limit the small entity subsidy will raise the $778 million it needs from patent fees to support its activities in fiscal years 1992 and 1993. If no change is made to the 50 percent subsidy or the fee structure, PTO projects that it will experience a $75 million shortfall in funding for the 2 years. If the small entity subsidy were reduced to 25 percent, PTO would experience a shortfall of $15 million. If the small entity subsidy were limited to independent inventors and nonprofit organizations, the shortfall would be $43 million.

-- IPO and AIPLA believe the small entity subsidy should be re-examined now that PTO obtains its revenues almost exclusively from user fees. Options might include

(1) Redefining "small entity" to exclude businesses with more than 50/100 employees. These companies generally have funds available and PTO fees can be written off as a business expense on their taxes. PTO cannot provide a break down of the 14,105 patent applications filed by small businesses in 1990 between those filed by companies with less than 50/100 employees and those filed by companies with more than 50/100 employees.

(2) Reducing the small entity subsidy from 50 percent to a 40-percent or a 25-percent level instead of PTO's proposed smaller subsidy to ease the burden on small entities.

-- Considering PTO's proposal and alternative small entity subsidy approaches:

(1) PTO's proposal would reduce the subsidy that large entities pay in fiscal years 1992 and 1993 from $134 million under the current 50 percent subsidy to $46 million.

(2) A 25-percent subsidy would reduce the subsidy that large entities pay in fiscal years 1992 and 1993 from $134 million to $61 million.

(3) A 50-percent subsidy limited only to independent inventors and nonprofit organizations would reduce the subsidy in fiscal years 1992 and 1993 from $134 million to $99 million. Based on 1990 data, independent inventors and nonprofit organizations would file about 25 percent of the patent applications and contribute about 13 percent of PTO's revenues.

(4) A 50-percent subsidy extended to include small entities and federal agencies would increase the subsidy in fiscal years 1992 and 1993 from $134 million to $138 million. Based on 1990 data, small entities and federal agencies would file about 35 percent of the patent applications and contribute about 17 percent of PTO's revenues.

ALTERNATIVE SMALL ENTITY FEE STRUCTURES

Fee	PTO's proposal	50% subsidy	25% subsidy	Independent inventors & nonprofits	Small entities federal agenci
Filing					
Large entities	$ 630	$ 700	$ 640	$ 710	$ 700
Small entities	315	350	480	355	350
Issuance					
Large entities	1,050	1,150	1,070	1,170	1,150
Small entities	1,050	575	800	585	575
First maintenance					
Large entities	830	920	850	930	920
Small entities	830	460	630	465	460
Subtotal					
Large entities	2,510	2,770	2,560	2,810	2,770
Small entities	2,195	1,385	1,910	1,405	1,385
% of large entity fee	87.5%	50%	75%	50%	50%
Second maintenance					
Large entities	1,670	1,860	1,710	1,880	1,860
Small entities	1,670	930	1,280	940	930
Third maintenance[a]					
Large entities	2,500	2,780	2,550	2,800	2,780
Small entities	2,500	1,390	1,920	1,400	1,390
Total					
Large entities	$6,680	$7,410	$6,820	$7,490	$7,410
Small entities	$6,365	$3,705	$3,410	$3,745	$3,705
% of large entity fees	95%	50%	75%	50%	50%

[a]Patent holders will begin to pay the third maintenance fee in 1993.

ALTERNATIVE SMALL ENTITY FEE STRUCTURES

-- Under the PTO proposal, small entities would pay $2,195 instead of $1,255 for the filing, issuance, and first maintenance fees. Overall, small entities would file about 34 percent of the patent applications and contribute about 25 percent of PTO's revenues. PTO's proposal provides small entities a 12.5 percent subsidy for the application, issuance, and first maintenance fees. It provides only a 5 percent subsidy for the basic application, issuance, and three maintenance fees.

-- Assuming a 40-percent subsidy, small entities would pay $1,510 for the filing, issuance, and first maintenance fees. The base cost for protecting an invention through its 17-year term would be $4,010. Under this alternative, small entities would file about 34 percent of the patent applications and contribute about 20 percent of PTO's revenues.

-- Assuming a 25 percent subsidy, small entities would pay $1,885 for the filing, issuance, and first maintenance fees. The base cost for protecting an invention through its 17-year term would be $5,010. Under this alternative, small entities would file about 34 percent of the patent applications and contribute about 25 percent of PTO's revenues.

FEDERAL TECHNOLOGY TRANSFER

-- Patent attorneys we contacted at 10 federal agencies believe that PTO's 69 percent fee increase in November 1990 will have a slight to moderate impact on their patent activities. In general, the agencies have found additional funds needed to pay the higher fees for this year.

-- The Navy is experiencing the greatest adverse impact because the higher fees have come at a time when the Navy's budget is being cut. Navy budgeted $500,000 for its PTO account, but will need an additional $400,000 to continue its current level of PTO activities. If the Navy maintains its PTO activities, it will have to take additional funds from research personnel and equipment to pay higher PTO fees.

-- The federal agencies generally have not changed their criteria or procedures for deciding whether to file a patent application on an invention in response to the higher PTO fees. However, several agencies are trying to hold down extension and related PTO fees.

-- The federal patent attorneys stated that they routinely pay PTO's first maintenance fee. Air Force, for example, pays the first maintenance fees for about 90 percent of its patents. However, federal agencies generally are tightening the criteria for paying PTO's second maintenance fee by, for example, requiring concrete evidence that a company is interested in licensing the patent.

-- Several federal patent attorneys stated that the higher PTO fees may constrain their agencies' technology transfer efforts because:

(1) invention disclosures by their agencies' researchers have been increasing while the higher PTO fees are likely to limit the number of patent applications that the agencies will file.

(2) tighter criteria for paying the second maintenance fee would limit the time available for licensing many patents to 7-1/2 years. Instances are likely to occur in which commercial applications for a federal invention become viable after an agency has allowed the patent to lapse.

-- Patent attorneys from 8 of the 10 federal agencies surveyed supported allowing federal agencies to pay a subsidized fee because:

(1) Federal agencies are comparable with universities, which are treated as small entities. During the past 10 years, legislation has been enacted to encourage both universities and federal agencies to license inventions resulting from their research programs.

(2) Particularly in the past 4 years, federal agencies have given priority to establishing technology transfer programs and encouraging their scientists to file invention disclosures. The higher fees are a disincentive to these technology transfer efforts.

(3) Army and Air Force patent attorneys mentioned that in some cases they patent an invention to ensure their access to use the invention while assigning title to an employee inventor to enable the inventor to pursue commercial applications. The Army and Air Force will be less willing to pursue this approach in the future because of the high PTO fees.

(4) Army and Navy patent attorneys suggested that federal agencies pay no maintenance fees unless a patent is licensed. This approach would encourage federal patent licensing.

-- Commerce and Interior patent attorneys have not found any evidence to indicate that federal patent licensing or technology transfer would suffer unduly as a result of the higher PTO fees. They suggested that by being more selective, federal agencies could improve the quality of their patent portfolios.

ALTERNATIVE SMALL ENTITY FEE STRUCTURES

Fee	Large entities	Small entities			
		PTO's proposal	50% subsidy	40% subsidy	25% subsidy
Filing fee	$ 630	$ 315	$ 315	$ 380	$ 475
Issuance fee	1,050	1,050	525	630	785
First maintenance fee	830	830	415	500	625
Subtotal	2,510	2,195	1,255	1,510	1,885
% of large entity fee	100%	87.5%	50%	60%	75%
Second maintenance fee	1,670	1,670	835	1,000	1,250
Third maintenance fee[a]	2,500	2,500	1,250	1,500	1,875
Total	$6,680	$6,365	$3,340	$4,010	$5,010
% of large entity fees	100%	95%	50%	60%	75%

[a]Patent holders will begin to pay the third maintenance fee in 1993.

Enclosure #4

Small Entity Fees Set
To Recover 50 Percent of Direct Costs

Estimated Fiscal Year 1992 Costs	Patent Costs	Trademark Costs	Total Costs
Program level	412,606	49,884	462,490
Less Indirect Costs			
Automation	-77,192	-10,420	-87,612
Administrative Overhead	-14,278	-1,955	-16,233
Space	-44,262	-3,486	-47,748
Total, Direct Costs	276,874	34,023	310,897
Percent Distribution			
Program level	100.0	100.0	100.0
Less Indirect Costs			
Automation	18.7	20.9	18.9
Administrative Overhead	3.5	3.9	3.5
Space	10.7	7.0	10.3
Subtotal, Indirect Costs	32.9	31.8	32.8
Total, Indirect Costs	67.1	68.2	67.2

If small entities pay only 50 percent of the directs costs of processing a patent application and large entities make up the difference, following are the projected fee amounts:

	Large Entity	Small Entity
Application filing fee	820.00	185.00
Patent issue fee	1,370.00	310.00
1st Stage maintenance fee	1,080.00	245.00
2nd Stage maintenance fee	2,180.00	495.00
3rd Stage maintenance fee	3,260.00	740.00

Enclosure #5

Patent Automation

Budget Information ($ in thousands):

The fiscal year 1992 budget request for patent automation is $69,642 or an increase from the adjusted 1991 level of $11,409.

Fiscal Year 1991	FY 1991 with ATB*	Fiscal Year 1992
$57,439	$58,053	$69,462

* Adjustments to base.

The increase of $11,409 is divided into two information systems, (1) the Automated Patent System (APS), $7,526 and, (2) Management and Administrative Systems (MAS), $3,883.

The APS increase is primarily for integration and technical analysis contractor support to:

- prepare for broad "horizontal" deployment of APS to all examining groups,
- acquire, integrate, and test the necessary local-area network (PTOnet),
- load all U.S. patent image data,
- deploy "vertically" to a third examining group,
- hire additional personnel to support increased APS computer operations.

The MAS increase reflects the Office's strategy to provide more of the current computer center operations in-house instead of relying solely on contractors.

APS-workstation Costs:

Currently the PTO has installed 80 APS-workstations with a five-year Lease-to-Purchase (LTOP/5) cost of $99,211 each. As a result of a reprocurement of the workstation with a less expensive and more reliable vendor, the 450 workstations to be installed between now

and early 1995 will be at a reduced cost of $54,000 LTOP/5 each. The long-range APS deployment plan, which calls for a computer on each patent examiner's desk, utilizes an even less expensive machine. The cost of this new desk-top computer is estimated to be $8,500 LTOP/5 each, with installation beginning in mid-1995.

Studies Conducted on Alternatives:

The PTO has conducted several reviews of the current APS program and approach. In addition to PTO-conducted studies, two independent panels were assembled for the same purpose. The reviewers looked at issues such as the APS goals and objectives, possible technical alternatives, management of the automation project, and the benefits of patent automation compared to the costs.

Copies of the following studies and reports were sent to the Office of Information Resources Management at the Department of Commerce. The May 1989 study listed below, specifically describes four alternatives for automating the patent system.

- "Findings and Recommendations of the Automated Patent System Industry Review Panel" - March 31, 1988.
- "Patent Information Systems Discussion Paper" - May 11, 1989.
- "Report of the: Automated Patent System Industry Review Advisory Committee" - January 22, 1990.
- "Decision Paper: Shall we proceed with the APS Program?" - April 1990.

PATENT STATUTORY FEES

35 U.S.C. § 41(a) and § 41(b)

FEE CODE LG / SM	37 CFR	DESCRIPTION	LARGE ENTITY FEE AS OF 4/17/89	LARGE ENTITY FEE REVISED 11/5/90	SMALL ENTITY FEE AS OF 4/17/89	SMALL ENTITY FEE REVISED 11/5/90
101 / 201	1.16(a)	Basic fee for filing an application for an original patent, except design or plant case	$370	$630	$185	$315
102 / 202	1.16(b)	In addition to the basic filing fee, for filing or later presentation of each indep. claim in excess of 3	$36	$60	$18	$30
103 / 203	1.16(c)	For filing or later presentation of each claim (whether dependent or independent) in excess of 20	$12	$20	$6	$10
104 / 204	1.16(d)	If the application contains, or is amended to contain, a multiple dependent claim(s), per application	$120	$200	$60	$100
106 / 206	1.16(f)	For filing each design application	$150	$250	$75	$125
107 / 207	1.16(g)	Basic fee for filing an application for a plant patent	$250	$420	$125	$210
108 / 208	1.16(h)	Basic fee for filing an application for a reissue patent	$370	$630	$185	$315
109 / 209	1.16(i)	In a reissue application, for filing or later presentation of each independent claim in excess of independent claims in the original patent	$36	$60	$18	$30
110 / 210	1.16(j)	In a reissue application, for filing or later presentation of each claim (whether dependent or independent) in excess of 20 and also in excess of the number of claims in the original patent	$12	$20	$6	$10
115 / 215	1.17(a)	Extension fee for response within first month	$62	$100	$31	$50
116 / 216	1.17(b)	Extension fee for response within second month	$180	$300	$90	$150
117 / 217	1.17(c)	Extension fee for response within third month	$430	$730	$215	$365
118 / 218	1.17(d)	Extension fee for response within fourth month	$680	$1,150	$340	$575
119 / 219	1.17(e)	For filing a notice of appeal from the examiner to the Board of Patent Appeals and Interfer.	$140	$240	$70	$120
120 / 220	1.17(f)	In addition to the fee for filing a notice of appeal, for filing a brief in support of an appeal	$140	$240	$70	$120
121 / 221	1.17(g)	For filing a request for an oral hearing in an appeal under 35USC 134 before the BOPAI	$120	$200	$60	$100
140 / 240	1.17(l)	For filing a petition to the Commissioner (1) for revival of an abandoned application under 35 USC 133, or 371 or (2) for the delayed payment of the issue fee under 35 USC 151	$62	$100	$31	$50
141 / 241	1.17(m)	For filing a petition to the Commissioner (1) for revival of an unintentionally abandoned application or (2) for the unintentionally delayed payment of the fee for issuing a patent	$620	$1,050	$310	$525
142 / 242	1.18(a)	Issue fee for each original or reissue patent, except a design or plant patent	$620	$1,050	$310	$525
143 / 243	1.18(b)	Issue fee for a design patent	$220	$370	$110	$185
144 / 244	1.18(c)	Issue fee for a plant patent	$310	$520	$155	$260
148 / 248	1.20(d)	For filing each statutory disclaimer (§1.321)	$62	$100	$31	$50
173 / 273	1.20(h)	Maintaining original or reissue patent, except design or plant patent, in force beyond 4 years based on application filed on or after 8/27/82, due by 3.5 years after grant (P.L.97-247)	$490	$830	$245	$415
174 / 274	1.20(i)	Maintaining original or reissue patent, except design or plant patent, in force beyond 8 years based on application filed on or after 8/27/82, due by 7.5 years after grant (P.L.97-247)	$990	$1,670	$495	$835
175 / 275	1.20(j)	Maintaining original or reissue patent, except design or plant patent, in force beyond 12 years based on application filed on or after 8/27/82, due by 11.5 years after grant (P.L.97-247)	$1,480	$2,500	$740	$1,250

11/5/90

APPENDIX 6.—LETTER FROM THOMAS F. SMEGAL, JR., CHAIRMAN, SECTION OF PATENT, TRADEMARK AND COPYRIGHT LAW, AMERICAN BAR ASSOCIATION, TO HON. WILLIAM J. HUGHES, DATED MARCH 29, 1991

RECEIVED

APR 10 1991

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March 29, 1991

The Honorable William J. Hughes
Chairman, Subcommittee on Intellectual Property
and Judicial Administration
Judiciary Committee
U.S. House of Representatives
Room 207 Canon House Office Building
Washington, DC 20515

Dear Representative Hughes:

The purpose of this letter is to bring to your attention the support of the American Bar Association's Section of Patent, Trademark and Copyright Law for public access, without charge, to the automated files of the U.S. Patent and Trademark Office at the Office's search facilities and at remote locations supported by the U.S. PTO.

These views are being presented only on behalf of the Section of Patent, Trademark and Copyright Law. They have not been submitted to nor approved by the House of Delegates or the Board of Governors of the American Bar Association and, accordingly, should not be construed as representing the position of the ABA.

At its 1990 Annual Meeting in Chicago, the membership of the Section adopted the following resolution:

> RESOLUTION 407-1
> RESOLVED, that the Section of Patent, Trademark and Copyright Law favors in principle that there be no delay in providing access by the general public to the automated files of the USPTO without charge at the USPTO search facilities and at remote locations supported by the USPTO, and Specifically, the Section opposes those provisions of OMB Circular A-130 (50 Fed. Reg.52730, 1985) which would apply charges to the public for utilization of such automated files.

This resolution opposes the application of A-130 to the Automated Patent System because it appears inconsistent with Constitutional mandate and Congressional intent in regard to the Patent Laws.

The Section's position is founded on the belief that providing access to the general public will further the constitutional mandate to promote the progress of science and useful arts and as a result promote the competitiveness of the United States. In fact, the House Judiciary Report, accompanying the 1985 authorization bill for the U.S. Patent and Trademark Office, stated "Having patent records freely available to the public and widely disseminated gives a valuable benefit to the public at large...[S]uch access stimulates scientific inquiry and research by providing access to inventive materials" (H. Rept. 99-104, 99th Cong., 1st Sess. p. 7).

An earlier report stated the view of Congress that "maintaining the public search room confers a general public benefit, as does the maintenance of the patent files in the (remote) depository libraries." (H. Rept. 96-1307, Part 1, 96th Cong., 2nd Sess., 1980, p. 6).

Notice should be taken that historically the access to documents stored in the public search room as well as depository libraries has been free to the public. It is the Section's position that such free access be maintained.

The Section of Patent, Trademark and Copyright Law appreciates the opportunity to express its views on this important subject. If additional information is needed, or we can be of assistance in any way, please contact me.

Sincerely,

Thomas F. Smegal

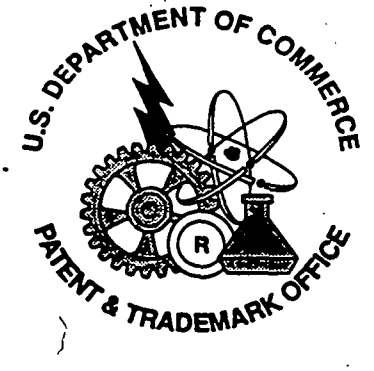
Thomas F. Smegal, Jr.
Chair

TFS:mab

APPENDIX 7.—APS DECISION PAPER—"COST BENEFIT ANALYSIS," AN EVALUATION PREPARED BY THE PATENT AND TRADEMARK OFFICE, U.S. DEPARTMENT OF COMMERCE

APS Decision Paper

"Cost Benefit Analysis"



U.S. Department of Commerce
Patent and Trademark Office
April 1990

Decision Paper Table of Contents

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Decision Paper Appendices

Appendix A	*Current Patent Operations*
Appendix B	*Detailed Descriptions of the APS and Non-APS Alternatives*
Appendix C	*APS Components and Dependencies*
Appendix D	*Model of Costs and Offsets*
Appendix E	*Cost and Workload Estimates*
Appendix F	*Managing the Evolutionary Development of the APS*

Part I. Executive Summary

The Patent and Trademark Office (PTO) has completed an analysis and evaluation of the costs and benefits associated with the Automated Patent System (APS) to provide the basis for a decision regarding the future of its APS program.

Background

At the direction of Congress in 1983, the PTO began an ambitious program to automate by the year 2002 the patent examination, issuance, and dissemination process. The accomplishments to date are significant: full text searching has been fully deployed throughout the patent examining corps, and Classified Search and Image Retrieval (CSIR) capabilities, which have been operational in one examining group since October 1988, will be deployed to a second examining group by the end of the current fiscal year.

Much, however, remains to be accomplished: full deployment of CSIR throughout the corps of examiners and to the public; the automation of the application processing and patent printing operations; the restructuring of various internal operations such as patent classification, copy sales, etc.; and the institution of electronic information dissemination. The APS program comes to a critical juncture in Fiscal Year 1992. In that year, major investments must be made to support the full deployment of CSIR and long-term commitments must be established to undertake the development of the remaining modules.

Methodology

A generally conservative approach was taken in developing the analysis. The PTO constructed two alternate models of the evolution of the patent processing operations of the PTO: one based on the premise that the APS program would be continued and the other on the premise that the current systems in place would be extended, essentially unchanged in nature, to accommodate the increased demands for support. Essentially identical requirements were laid upon each of the alternatives in terms of keeping abreast of the expected growth in applications, making foreign patents available, etc. In the cases where

different assumptions regarding requirements were made, the less demanding requirement was placed on the non-APS alternative. Furthermore, the non-APS alternative included continuation of the elements of the APS system that had already been deployed, i.e., the APS Text Search system.

Differential costs between the two alternatives were estimated at the detailed level. No attempt was made to develop cost estimates for those elements that were common to both alternatives. To facilitate the analysis of options involving partial deployment, four distinct functional area models and one separate model for common infrastructure were developed.

- ***File Management*** includes the processes and systems associated with maintenance of patent and related files.
- ***Examiner Searching*** addresses the elements associated with the actual examination process.
- ***Application Process Management*** encompasses pre- and post-examination processes including formality determination, amendment entry, photocomposition, and patent printing.
- ***Dissemination*** covers the activities and processes needed to provide public access to patent information.
- ***Information Systems Infrastructure*** includes those hardware and related elements not specifically associated with any of the above areas.

Principal Results

The analysis shows that the alternative of continuing with APS development and deployment has significant advantages:

- ***APS will significantly enhance the U.S. research and development community's timely access to advances in foreign and domestic technology.***

  U.S. research and development must be grounded in an awareness of the discoveries being made elsewhere in this country and abroad. The Patent and Trademark Office is uniquely positioned to deliver this information. More than seventy percent of the technical information contained in U.S. patents is available nowhere else, and foreign patent

information is available to the PTO through effective international agreements.

Until now, the PTO's programs to disseminate this information have been limited primarily to paper and microfilm formats. Access to this information has been inconvenient and effective search tools have been lacking.

The file of digitized patent images maintained as part of the APS opens the door to a broad variety of techniques for effective, timely dissemination of patent information. The same techniques to be used for more effective searching by examiners can be readily made available for use by others who wish to locate and develop new ideas with commercial promise.

- ***APS will result in significant improvements in the effectiveness of the PTO's internal patent processing that will permit patent quality to be maintained or improved in the face of the rapidly growing number of applications.***

The analysis assumes that the future workload could be processed effectively under either alternative. In fact, the paper-based approach would be hard-pressed just to survive under the projected increases in workload and search file size. The APS is far better suited to accommodate these projected increases. It will offer simultaneous access to the same patent by any number of searchers and will achieve file integrity well beyond the limits of paper-based systems. It will also enhance foreign patent search capability, and will permit multiple indexing and search techniques, each tailored to particular types of patents. The state-of-the-art search tools incorporated in the APS will also contribute to the strength of the examining corps by increasing the PTO's ability to attract and recruit highly qualified candidates.

- ***APS can be expected to greatly facilitate the preparation and defense of valid patents by the U.S. intellectual property community, both in the U.S. and in foreign countries.***

The intellectual property community will greatly benefit from the increased accessibility of both U.S.

and foreign patents, saving considerable effort that might otherwise be invested in an already patented invention. Similarly, they will also benefit from the increase in patent quality associated with improvements in the patent examiner's files, search methods, and related improvements.

- ***APS will enable the PTO to avoid certain costs associated with keeping pace with the rapidly growing number of applications using a paper-based approach.***

  Equipment and techniques for storing and retrieving digitized patent images can greatly reduce the costs of maintaining and searching the PTO's files of U.S. and foreign patents. First, the electronic equipment and space necessary to store patent images will soon be cheaper, page for page, than the equipment and space to hold the same information in paper form. In addition, the APS need only store about one-eighth as much information as the paper files, because cross-references are accomplished without storing redundant documents. All the labor for filing, removing, copying, refiling, surveying, and replacing paper documents is simply eliminated, often with no counterpart, under the APS. (Electronic documents never leave the file, and cannot get lost or damaged in normal usage.) Duplicate files for examiners and public searchers need no longer be maintained. Millions of dollars will be saved annually by eliminating the data-entry contract that captures the text for issuing patents.

  The combined net savings from these and other factors will reach approximately $610 million in constant Fiscal Year 1990 dollars over the next twenty years.

- ***APS will lay the foundation for future change to apply improvements in such areas as information technology and patent examination techniques.***

  The PTO's requirements both for patent processing and for dissemination will change significantly over the next twenty years. The current paper-based system has evolved over the past two hundred years. The limits of paper technology have been reached and its

potential for further evolution is insufficient for the tasks that lie ahead.

While paper filing and retrieval schemes are not flexible enough to evolve to cope with increased workloads and file size, the APS is an extremely adaptive mechanism. The system will permit precise statistics on patterns of use to be gathered so that the process can be analyzed and improved. Other productive filing and search techniques are certain to be developed when the APS is in full use.

The ability of the APS to catalyze and accommodate change is one of its principal strengths.

Conclusions

The analysis concludes by addressing the critical decision issues.

Is it advantageous to go on with the development and deployment of the APS program as opposed to relying on expansions of the current systems?

The case for continuing on with APS development and deployment is well documented by the analysis. As one might expect, the APS offers both significant benefits and substantial cost savings/avoidances as compared to the alternative of extending the current systems. Even if one were to totally ignore those key advantages that make the strongest case for the APS but whose importance is difficult to quantify (e.g., litigation avoidance, impact on U.S. research and development, etc.), the case for the APS would be overwhelming solely on the basis of the very conservatively estimated $610,000,000[1] in cost savings/avoidances achieved over twenty years by converting the current paper-bound processes to their electronic equivalents.

Would a significantly scaled down APS be preferable, in the sense that the omission of one or more major modules would still capture most of the benefits at significantly less expense?

No. The conversion of the files to electronic form, which is a prerequisite of most of the other modules, is justified

[1] All cost projections contained in the narrative portion of this report are expressed in constant 1990 dollars, with no adjustment for present value or inflation.

on its own by the significant cost savings in labor, space, etc. The analysis shows that once the files are converted to electronic form, the omission of any individual module makes no sense from a cost/benefit point of view.

Does a delay in the development or deployment of one or more of the major APS modules have any significant advantages?

The same logic basically applies to this issue as the one above. Over the twenty year span considered, there is no advantage from a cost point of view in delaying development and deployment of any of the modules. The effect of delaying the realization of cost savings/avoidances more than counterbalances the short-term impact of deferring the investment. More importantly, the delay slows the PTO in achieving the significant advantages outlined above.

Part II. Introduction

The PTO has reached a point where it must decide to make a long-term commitment to proceed with its automation program. Since the program's inception in 1983, considerable effort and funding has been expended in developing and implementing electronic full text search capabilities and in the development and testing of techniques for the retrieval of images of patents as a substitute for the paper-bound search techniques which have been used by patent examiners since 1790. Full deployment of these electronic search capabilities and the development of additional capabilities are needed to achieve the benefits of this investment but will require expenditure of significant moneys for hardware and continued developmental efforts.

This document develops the probable additional costs of full implementation of the APS as compared to the estimated costs of maintaining a corresponding paper search file and paper processing environment. The document describes the PTO's governing strategy for the implementation of this automated system and assesses the impact of the system upon the operations of the office and upon the public users of the technology disclosed in patents.

On the basis of this comparison, the PTO believes the APS will achieve significant improvements in its internal processes which will lead to improved patent quality and facilitate public access to patent information, with the associated benefits to industry and the nation. In addition, the PTO is expected to realize savings and cost avoidances of approximately $610 million during the period 1990 through 2009 if it proceeds with the development and deployment of the APS.

Summary of Benefits and Methodology

To evaluate the tangible costs and benefits of the APS, the PTO developed cost projections for two alternative strategies:

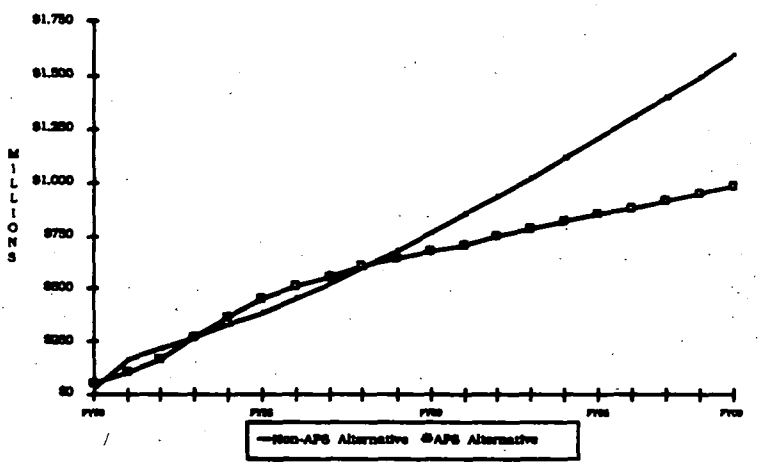
- A process which utilizes the automated capabilities of the APS to process patent applications and search U.S. and foreign patent literature; and
- A second approach which would provide the same capabilities though based upon maintenance and expansion of the present paper-oriented processes and search files.

Costs which are common to both approaches have been disregarded for purposes of the analysis. As a result, the

projections provided in this analysis represent the *differential* between the two approaches. In neither alternative are the total costs of the approach expressed. For a more complete discussion of the methodology employed to project the cost differentials, see Part IV, Defining the Alternatives, and Appendix D, Model of Costs and Offsets.

The following table depicts the comparison of the accumulated tangible cost differentials between the APS and the non-APS alternatives. For a complete explanation of the method of calculating the differentials, see Appendices D, Model of Costs and Offsets, and E, Cost and Workload Estimates.

Cumulative Comparison of APS and Non-APS Alternative Cost Differentials ($ Millions)



As a result of its analysis, the PTO proposes to proceed to deploy APS image search capabilities, and to continue with the design, development and deployment of additional capabilities anticipated in earlier versions of its automation plan.[1] To deploy automated image search capabilities and continue the development of the APS will require the investment of

[1] See Automation Master Plan (3rd Edition), 1987; and Patent Information Systems Discussion Paper, June 1989.

substantial funds for system hardware components needed by patent examiners and the public to avail themselves of the information stored in the APS. Additional funds will be needed to develop the automated capabilities to process patent applications in electronic form.

Document Organization

The remainder of this Decision Paper is divided into four sections. There are six appendices to the document.

Part III, Background describes the current status of the PTO's Automated Patent System.

Part IV, Defining the Alternatives explains our approach for developing the cost differential model and presents the key operating assumptions for both the APS and non-APS environments over the twenty-year period of the analysis. Assumptions are developed for patent operations in four functional areas--File Management, Examiner Searching, Application Process Management, and Information Dissemination--plus an underlying Information Systems Infrastructure.

Part V, Cost and Benefit Overview presents the principle advantages of the APS based on the findings of this analysis. It contains a summary of overall costs and discusses benefits, both tangible and intangible, at some length.

Part VI, Decisions: The Bottom Line draws conclusions based on the analysis. A series of questions about the future of the APS program are formulated; their answers help to develop long-term decisions affecting the program.

Appendix A, Current Patent Operations describes the processes and systems currently in use in four functional areas and discusses the future requirements projected for these areas. The functional areas are file management, examiner searching, application process management, and dissemination. The appendix also describes the common underlying infrastructure of hardware and networking systems that supports these functions. The descriptions focus on the operations where the APS will have a significant impact to provide the basis for understanding the two alternatives for future operations summarized in Appendix B.

Appendix B, Detailed Descriptions of the APS and Non-APS Alternatives presents the operative assumptions used to develop a differential comparison of benefits and costs between the APS

and non-APS alternatives. The first alternative represents the development, implementation, use, and maintenance of the APS as defined in Alternative B of the June 1989 Patent Information Systems Discussion Paper. The second alternative for the future describes a non-APS approach for comparison purposes that is a continuation of the current mixture of paper based and electronic systems. This alternative eliminates all APS components that are based upon the use of digital images of patents or the electronic processing of patent applications. It does retain those APS facilities already in full production such as the deployed text search system. To simplify the analysis, only those aspects of the PTO operations which would differ significantly between the two alternatives are considered.

Appendix C, APS Components and Dependencies defines the two alternatives analyzed in the Decision Paper, identifies and describes the principal components of these alternatives, and discusses the dependency relationships among the components.

Appendix D, Model of Costs and Offsets contains the cost differential model. It includes a summary of costs and their offsets, detailed costs, and planning values for the assumptions used in the two alternatives.

Appendix E, Cost and Workload Estimates describes all data items containing values used to calculate costs in Appendix D. Line item descriptions showing how the data items were applied are also included.

Appendix F, Managing the Evolutionary Development of the APS describes the "spiral model," the managed evolutionary approach to systems development now being applied by the Patent and Trademark Office to plan for and manage its information systems program, including the APS.

Part III. Background

Patent Workload

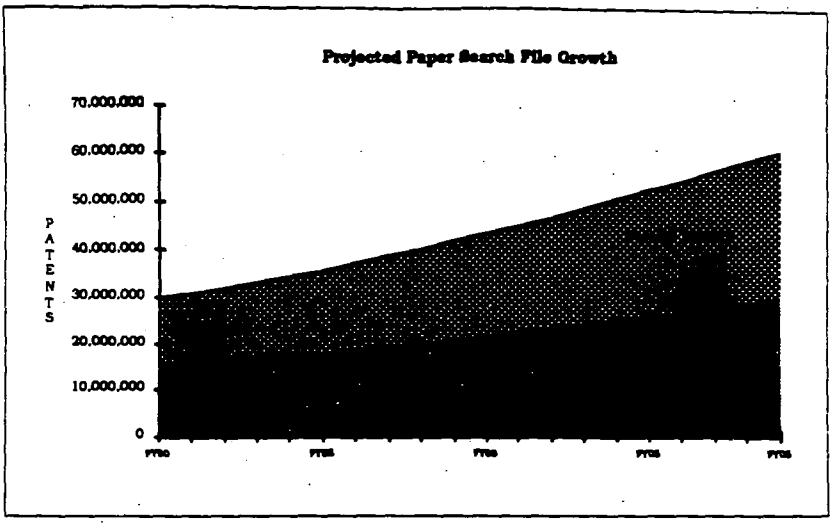
In large measure, the need for an alternative to the present paper-based application processing and technology searching practices is dictated by the anticipation of steadily increasing patent application filings. We estimate that by 2009, the PTO can expect to receive over 385,000 applications each year, while issuing nearly 250,000 patents. This represents more than a doubling of the present workload for both applications filed and patents issued. During the same period of time, the PTO expects the number of patent examiners to more than double from the present day level of 1,500 to 4,000.

Search File Size

Even more compelling is the problem associated with the search file of documents which patent examiners must review to make a determination of patentability. The present search file suffers from well publicized deficiencies associated with a lack of integrity, and physical dispersion which requires patent examiners to spend a significant amount of their time conducting searches in locations other than their 'home' examining group. While some foreign patents have been incorporated into the examiners' paper search files, the collection is largely incomplete. The file of patent documents made available to the public in the Public Search Room contains only U.S. patents, and members of the public must use examiner search rooms if they desire to review what foreign art has been incorporated into the U.S. classification system.

The PTO recognizes the seriousness of these deficiencies. It is imperative that file integrity be established and maintained in both the examiner search rooms and the public search areas. It is equally important that foreign patents be systematically incorporated into the search file to enable examiners and the public to review technology being developed outside of the United States.

The growth of the search files becomes a primary factor in projecting the costs associated with the APS and non-APS alternatives.



Automated Solutions

Public Law 96-517 set the PTO on the path to an all electronic office. In the intervening years the PTO has made significant progress toward the goal of establishing an electronic environment for the processing of patent and trademark applications.

Automated Full Text Patent Search

In June 1986, the PTO published its analysis of the use of the full text search capabilities of the Automated Patent System.[1] The analysis demonstrated the effectiveness of full text searching as an adjunct to conventional classified searching techniques, and projected what has proven to be a conservative estimate of cost benefits and avoidances of $5.9 million in the first three years of full deployment of the text search capability. Full text searching capabilities were fully deployed throughout the patent examining corps by the end of 1987 through the installation of more than one hundred text search terminals. In 1989, public access to the APS text search capability was provided as a result of the installation of text search terminals in the patent Public Search Room.

[1] "APS Full Text Search Capability, Messenger 5.5," Patent and Trademark Office, June 20, 1986.

At the present time, the text of more than 1.2 million U.S. patents issued since 1975 have been entered into the APS text data base and the use of text search has become a vital complement to other examiner search techniques. Within the next year, the text of an additional 300,000 patents issued between 1970 and 1975 will be added to this data base.

Classified Search and Image Retrieval

More technically difficult and technologically demanding, the Classified Search and Image Retrieval (CSIR) capabilities of the APS have been under continuous development since 1983. CSIR, at present, enables a patent examiner to review, in electronic form, patent documents according to their technological classification in much the same fashion as is used in reviewing paper files which are filed by technological classification.

Recognizing the risks associated with the need to rely upon rapidly evolving technologies in such areas as data communications, high density optical storage, and in the patent examiners' workstations, the PTO initially implemented a CSIR testbed with this capability in a single examining group in 1988. Digital images relating to the approximately 180,000 U.S. patents contained in the Group 220 paper search file were written to optical disk storage devices for the initial test. Based upon the success of the initial testbed implementation, the PTO will extend image search capabilities to a second examining group in 1990. To deploy CSIR to a second examining group, an additional 450,000 U.S. patents will be loaded onto the image data base, bringing the total number of documents to approximately 750,000 which can be searched and retrieved by U.S. patent classification.

Image Data Acquisition

In parallel with the development of the software and acquisition of the hardware necessary to provide examiners with image search and retrieval capabilities, the PTO pursued the acquisition of image data which will replace the paper search files used by patent examiners since the founding of the Patent Office two hundred years ago.

By the end of 1989, the PTO had converted more than five million U.S. patent documents, nearly 40 million pages, into digital image form. These images are now available for loading onto the APS as additional optical storage devices are acquired and CSIR capabilities are deployed throughout the patent examining corps.

Foreign Patent Images

In addition, the PTO entered into agreements with the European and Japanese Patent Offices whereby it has already begun to receive digital images of patents issued since 1920 from the following countries and offices: Great Britain, West Germany, France, Switzerland, the European Patent Office, and Japan. When these image data are added to the on-line CSIR data base, patent examiners and other users of the APS will be provided with an unprecedented ability to search the patent literature of the world.

Industry Review Panel

The initial implementation of the CSIR capabilities in the Group 220 testbed was marred by a number of problems. The data base was incomplete, the CSIR system was not stable, and examiners were frustrated by its unreliability. Retrieval of images from the central optical storage devices was undependable, and workstation performance was unacceptably slow. Furniture and other ergonomic characteristics of the cluster of workstations used by Group 220 examiners were deficient. While patent examiners generally preferred electronic searching to searching paper files, the flaws of the system rendered it unacceptable for production use.

Recognizing the seriousness of the problems encountered in the CSIR testbed, the Secretary of Commerce convened an Industry Review Panel in 1987. Comprised of representatives from private industry with experience in the development and implementation of large-scale automated systems, the Panel issued a report which was sharply critical of many aspects of the PTO's management of the APS program and which found serious flaws in the technical approach and solutions which were being pursued by the PTO in its efforts to implement CSIR. Despite these criticisms, the Panel endorsed the development of automated searching capabilities as critical to the continued ability of the PTO to meet its objectives.

In response to the Panel's recommendations, the Department of Commerce and the PTO took immediate corrective action. A position of Assistant Commissioner for Information Systems was established reporting directly to the Commissioner of Patents and Trademarks. The technical capabilities of the PTO were greatly strengthened by hiring new personnel. The systems development and integration contract was renegotiated to make the contractor more responsive to the needs of the PTO, which is now able to exercise greater control.

A concerted effort to stabilize the APS was made which culminated in a convincing demonstration of stability in late 1988, after which the testbed in Group 220 was declared to be fully operational. Alternative system architectures and technical solutions began to be examined, and actions were initiated to improve the performance of the workstation, critical to acceptance by patent examiners and the usability of the system. Perhaps most important, the PTO shifted to an incremental approach to the development and implementation of the APS, abandoning the traditional life cycle approach which the Panel found to be ineffective in this situation.

The Industry Review Panel, now formally chartered as an Industry Review Advisory Committee (IRAC), was reconvened in 1989 and briefed on the progress which had been made since its initial meeting. The IRAC report, issued in January 1990, was markedly different from the first report, finding that:

> Dramatic improvements have been made in the APS over the last 18 months. The U.S. Patent and Trademark Office (PTO) has aggressively taken the key steps that can be done quickly and that bring the largest improvements; top management has acted more swiftly than is usual in such cases and is to be commended.[1]

Current Status of CSIR

At this writing, the PTO is satisfied that the CSIR capabilities provided by the APS offer a cost-effective alternative to the paper-oriented search process. Experience in Group 220 has convincingly demonstrated that CSIR can be used in an operational patent examining environment. Current funding levels will support the extension of CSIR to a second examining group in 1990, with the attendant expansion of the image data base, further enhancing its usability by the examiners of Groups 210 and 220.

Other Image Processing Capabilities

Other capabilities have been determined to be potentially cost-effective, but at the present time only preliminary work has been done in these areas. Specifically, utilization of the APS with its image retrieval capabilities to support reclassification of U.S. patents will have a significant impact upon the resources

[1] Report of the: Automated Patent System Industry Review Advisory Committee, January 22, 1990, p 1.

required in the future to perform such activities. In addition, the use of the APS image data base to produce printed copies of U.S. and foreign patents in support of the PTO's patent copy sales function, will enable the office to continue to provide these services without incurring the substantial costs which are expected if the current microform-based system must be replaced.

Patent Application Management System

The Patent Application Management (PAM) System is in its initial stages of development. When implemented, PAM will accept electronically filed patent applications, enable the updating of the application through applicant or examiner's amendments, and provide a basis for the creation of a photocomposed document if the application is determined to be patentable.

Information Dissemination

In recent years the primary means of disseminating information contained in patents has been through the Patent Copy Sales function, the Public Search Room, the Classification and Search Support Information System (CASSIS) at the Patent Depository Libraries, and through a small-scale electronic product dissemination program. Until the recent availability of an image file, most electronic products contained the full text of issuing patents or bibliographic data only. The paper-based method of dissemination has limited its use almost exclusively to the Public Search Room, effectively denying the public access to vast technological holdings available only through the PTO.

Deployment Status

The PTO has arrived at a critical juncture in the development and deployment of the CSIR capabilities. The PTO has satisfied itself of the technical feasibility of providing patent examiners with a full complement of electronic search tools. CSIR software development has reached the point where it meets the needs of the patent examiners, but continued evolution will further enhance its value, and permit the development of new searching techniques which would be impossible or impractical in a paper environment. The addition of foreign patents to the image data base will require still more investment in data storage devices, but is critical to the ability of the PTO to maintain effective patent examination procedures.

Part IV. Defining the Alternatives

The PTO has taken a generally conservative approach in developing the analysis reflected in this document. To analyze the costs and benefits of the APS, the PTO has constructed two alternate models of the evolution of the patent processing operations of the PTO; one based on the premise that the APS program would be continued and the other on the premise that the current systems in place would be extended, essentially unchanged in nature, to accommodate the increased demands for support. Essentially identical requirements were laid upon each of the alternatives in terms of keeping abreast of the expected growth in applications, making foreign patents available, etc. In the cases where different assumptions regarding requirements were made, the less demanding requirement was placed on the non-APS alternative. Furthermore, the non-APS alternative includes continuation of the APS Text Search system that has already been deployed.

Differential costs between the two alternatives were estimated at the detailed level. No attempt was made to develop cost estimates for those elements that were common to both alternatives.

Common Cost Elements (Excluded)
Continuation of automated full text search services including development and operational support
Desktop computers for patent examiners, software, etc.
Mainframe costs (Note: mainframe costs are driven almost entirely by text search services common to both alternatives)
PTO Network - that portion required to support text search
Technical support- that portion of contractor assistance required to support systems common to both alternatives
Classification/reclassification staff resource requirements
Pre-examination processing costs are assumed to be the same under both alternatives
Examiner search time is assumed to be the same under both alternatives

This was done both on the theoretical basis that a decision between alternatives is only influenced by these differential costs and on the more pragmatic basis that much detailed cost estimation could be legitimately avoided. In addition, detailed cost estimates were not attempted where such estimates would be difficult to develop but where we could conservatively pair the APS with the non-APS costs and eliminate both without advantaging the APS alternative. An example of this pairing occurs in the consideration of the costs of entering a document into the respective alternative's systems. The analysis simply assumes that the cost of entering an electronic submission into the APS PAM system is at worst no more expensive than current clerical and data entry operations without

attempting to develop details of either.

The table below summarizes the major cost elements for each of the alternatives.

Non-APS Cost Elements	*APS Cost Elements*
Create two foreign patent search files: one for examiners, one for the public	Provide images of foreign patents through CSIR
Maintain paper files	Costs incurred until paper files are phased out
Filing cabinets (shoe cases), space rent for search rooms	Filing cabinets and space requirements are phased out
Foreign patent acquisition and classification processing	Foreign patent acquisition costs through limited Trilateral image data exchanges
Document filing	File maintenance costs are phased out
File integrity maintenance	File integrity maintenance costs are phased out
(No comparative element)	CSIR deployment hardware included
(No comparative element)	Image data load costs are included
One time cost to improve current file integrity in examiner and public search rooms	Paper file is surveyed at current level of effort until the paper files are phased out
Maintain secure search files in examiner and public search rooms	Current level of effort maintained until conversion to electronic
Photocopy services for examiner review	Group printers provide study copies until desktop examining reduces copy needs to a residual quantity
(No comparative element)	Software development for Classification Data Systems and Patent Copy Sales included
Patent printing including data base creation, camera copy preparation and Government Printing Office printing services	Software development for PAM included; labor costs included; costs to prepare the photocomposition tape are phased out.
Order fulfillment from inventory, by photocopying from microform documents, and self-help photocopying	Order fulfillment from high-capacity printers and group printers, using the high resolution image data base

In each of the approaches, detailed analyses were made of the functions performed in the component processes as workloads increased, new technology introduced, etc. Resources needed to provide required support were identified and costs were

developed in each case. In general, care was taken not to make conservative assumptions that would unduly favor the APS approach (e.g., the currently deployed text search capability was assumed to continue in the non-APS model).

In developing the details of these individual functions, the PTO divided patent operations into four main functional areas:

- Management of the patent files that support patent examination and dissemination of patent information;
- Examiner searching;
- Management of the patent application process; and
- Disseminating patent information to the public.

Parallel analyses were conducted in each of these areas for each of the two models. This was done to facilitate comparisons and to permit subsequent analyses of mix-and-match options.

In addition, the costs of an underlying infrastructure were developed for the APS alternative. In this area the costs for hardware components and other activities that support multiple functions within the APS were collected. The similar infrastructure needed to support the non-APS alternative was not developed in detail since these components were common to both alternatives and thus are properly excluded from both.

Specific Modelling Approach

The details of the operational assumptions underlying each model are given in Appendix B, Detailed Descriptions of the APS and Non-APS Alternatives. Additional detailed assumptions regarding costs are described in Appendix D, Model of Costs and Offsets, as part of the differential cost analysis. The specific basis for these assumptions are catalogued in Appendix E, Cost and Workload Estimates. The following is a summary of the main elements of each of the models.

Significant assumptions which underlie the models of each alternative and have an impact on the results are:

- The Patent and Trademark Office (PTO) will remain in Crystal City (Arlington, Virginia) for the full period of the analysis. Additional space will be acquired as necessary within Crystal City at the rates prevailing at the time.

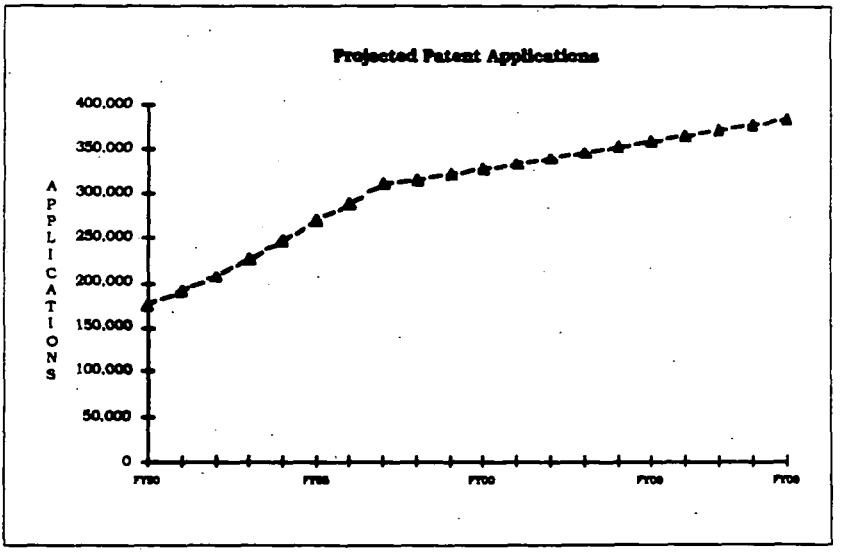
- The PTO will obtain whatever minor changes are necessary in legislation, international agreements, and regulations to permit electronic-based operations.

- No significant changes in the external environment, e.g., patent law harmonization, privatization, etc. will occur.

- The patent examining corps requires access to a complete collection of U.S. and foreign patents to determine patentability of the inventions described in patent applications.

- The public is to be provided with search files and electronic tools essentially identical to those provided to examiners.

- The growth in applications and related workloads will continue over the next twenty years, albeit at a pace slower than experienced in the previous ten years--resulting in approximately 385,000 applications in the year 2009.



File Management

The functional area of File Management includes the processes and systems associated with management of the principal patent-related files that support public access and searching by patent examiners. Operational assumptions underlying File Management are as follows.

Non-APS Alternative	*APS Alternative*
Foreign patents are provided to examiners and to public searchers in separate files maintained under the International Patent Classification (IPC) system. These files are constructed in Fiscal Year 1991.	Current foreign files are maintained in paper until their electronic counterparts are available, but the complete European variation of the International Patent Classification sets are not constructed.
A comprehensive initial survey of both examiner and public searcher paper files is undertaken in Fiscal Year 1991. Missing and misfiled patents are replaced to bring the files to full integrity. Thereafter, a fraction of the file are surveyed annually to maintain file integrity.	The paper file continues to be surveyed at the current level, but the comprehensive Fiscal Year 1991 survey contained in the non-APS alternative is not conducted.
A copying service is initiated to make study copies of patents for examiners. The costs for making the copies is shown in the examiner searching projections. The cost for refiling documents after making the copies is shown in the file management spreadsheet. (See the complete explanation of how this is handled in the "examiner searching" summary below.)	The study-copy operation is not initiated. (See the complete explanation of how this is handled in the "examiner searching" summary below.)
File space and equipment (shoe cases, shelving, etc.) is expanded as required to hold projected new U.S. and foreign issues. Space is rented as required for all paper files.	After Classified Search and Image Retrieval is deployed in an examining group, that group's owned art is removed from the paper files in approximately three years. This is modeled by a straight line phaseout of all paper file activities. Optical storage (High Density and Rapid Access Devices) is acquired as necessary to store patent images. These costs are reflected in the Infrastructure spreadsheet. Development and support costs are shown for Classification Data Systems. Costs through Fiscal Year 1996 agree with the June 1989 Discussion Paper and are projected thereafter at a level to permit ongoing maintenance and enhancement.

Examiner Searching

The principal operational assumptions underlying the functional area of Examiner Searching, the process in which the patent examiner searches prior art relevant to an application to determine its patentability, are:

Non-APS Alternative	*APS Alternative*
To ensure that documents are available when required, the current practice of examiners removing documents for study at their desks is stopped. If an examiner wishes to take a document to his or her desk for study, it is copied by a copy service in each file room. The document is refiled as soon as possible after copying. The number of copies needed is projected at a constant number of U.S., foreign and non-patent literature documents per application searched. Photocopy costs are shown in this portion of the model. Refile costs are shown in the File Management spreadsheet.	The copying service is not instituted. Instead, the group printers fill this need, and copy materials are projected initially at the same level as for the non-APS alternative. Once deployment to the desktop examining environment is complete, the need for individual study copies is shown phasing down over a period of three years to a residual fraction of the original need.
	Many Classified Search and Image Retrieval development costs have already been incurred. These are considered unrecoverable costs and are not shown in the model. The remaining development and deployment costs are shown. Following full deployment, contractor costs for continued maintenance and enhancement are shown for the full 20-year period.
	Differential costs for examining cluster construction are developed for each cluster needed in the year in which it would be built. Space is rented for the clusters for as long as they are needed. Costs for demolition are not developed.

Application Process Management

The functional area of Application Process Management includes those processes and systems required to handle the application document from its receipt, through examination and post-examination processing, and to prepare it for publication. This section of the model assumes that the operational offsets provided by the Patent Application Management (PAM) system are sufficient to pay for the capture in electronic form of the original application and all amendments. This in turn allows the PTO to eliminate the costs of the data capture contract for preparing the photocomposition tape for issued patents. The model includes the costs to develop and implement PAM and the costs for the data capture contract, but does not develop in detail the other offsets to operating expenses in the application management area.

Non-APS Alternative	*APS Alternative*
Projects data entry contract costs to prepare the Government Printing Office photocomposition tape, and other associated costs, for the full 20-year period.	Phases out the current means of data capture and associated costs beginning in Fiscal Year 1995. Costs are substantially eliminated beginning in Fiscal Year 1996. PAM development, implementation and maintenance costs are projected for the full 20-year period.

Dissemination

The model projects demand only for patent copy sales, self-help photocopying, and deployment of image workstations in the Public Search Room. The more significant benefits of dissemination beyond these means, however, are not developed in detail and costs are not estimated. They are discussed in general terms in the conclusions of this report as potential benefits of the APS alternative.

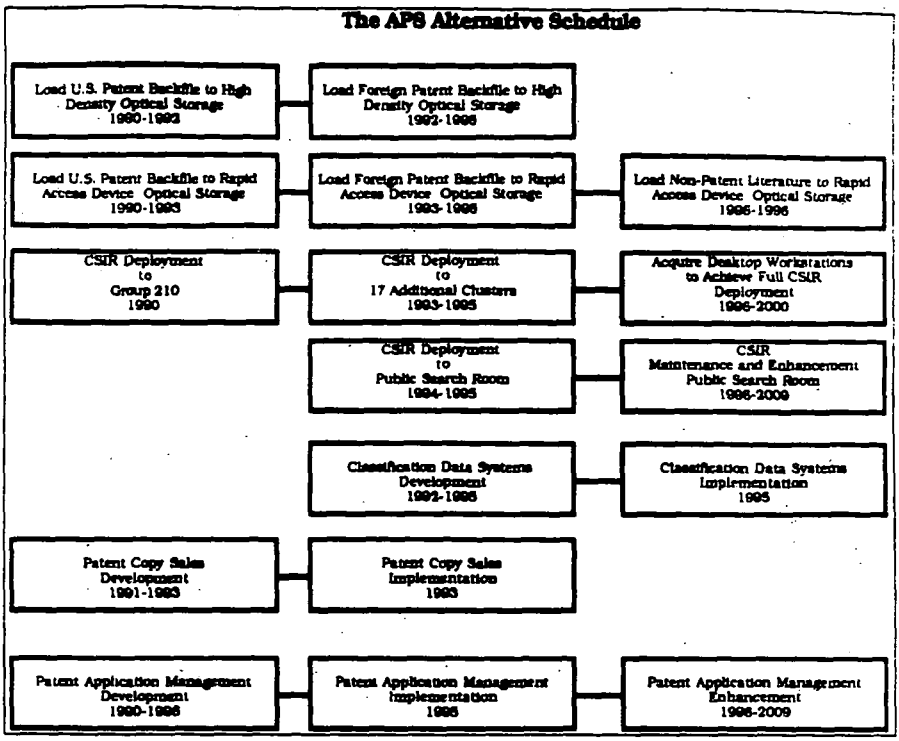
The motivation for not explicitly including them in the detailed analysis is the almost complete dependence on highly variable factors that cannot be estimated easily--e.g., volume of public demand for specific products, availability of adequate private sector products and services, etc. This omission is conservative in that (a) it disfavors the APS alternative which has the far greater potential to meet the PTO mission requirements in this area and (b) any information dissemination product must be individually cost/beneficial in the large since, because its marginal costs are required to be fully funded by user fees.

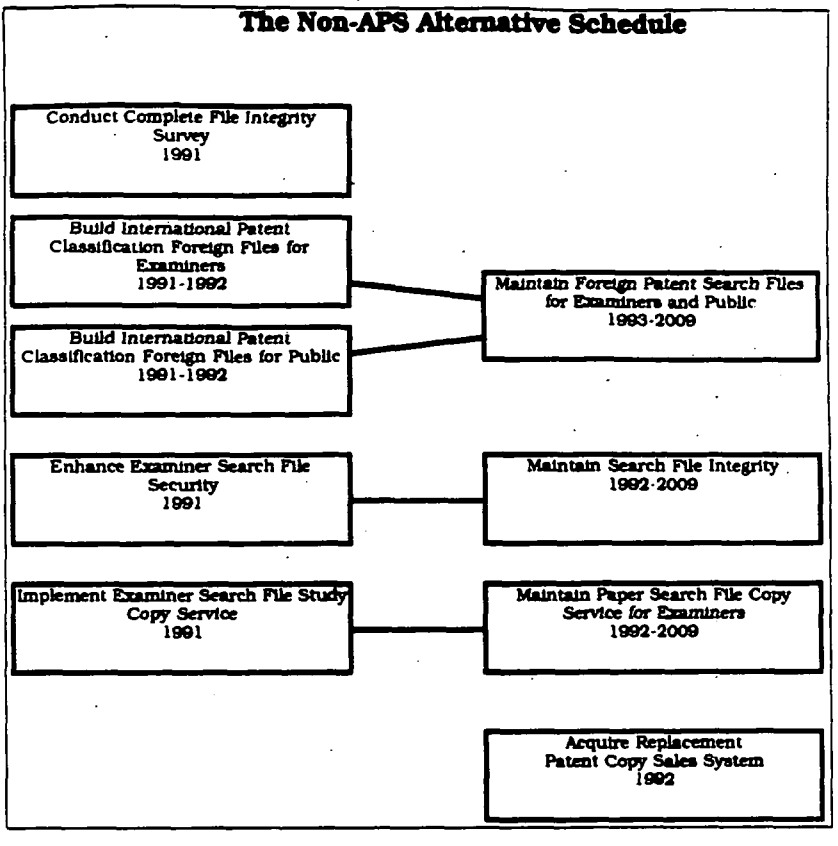
Non-APS Alternative	*APS Alternative*
Separate projections are developed for the three methods of sales: order fulfillment from inventory; order fulfillment by photocopy from microform documents; self-help photocopying. Projected volumes for patent copy sales are divided equally between the first two modalities and are driven by the projected number of new issues, the best metric by which to project these volumes. Unit costing is projected and applied for all three mechanisms.	The Patent Copy Sales application high capacity printers replace order fulfillment from inventory and microform. Group printers in the Public Search Room replace the self-help photocopy operation. Unit costs are multiplied by projected volumes for the 20-year period.

Information Systems Infrastructure

In addition to the four functional areas just discussed, the model gathers together those expenses relating to the automated components and effort that are required for multiple components of the APS, e.g., the Mainframe Data Center, the hardware data storage components, the special space required, etc. Hardware is shown in a specific functional area if it contributes primarily or exclusively to that area. For example, examiner workstations and cluster rooms are shown in examiner searching. Hardware that supports multiple areas, e.g., storage units, are grouped here in Infrastructure. These are the principal aspects of the Infrastructure model:

Non-APS Alternative	*APS Alternative*
No costs are developed for the non-APS alternative. Any infrastructure cost elements of the non-APS alternative are also required in the APS alternative and would therefore contribute equally to both alternatives.	Costs for acquisition, maintenance and replacement of image network components are estimated on a per-connection basis tied to the number of patent examiners. Rapid Access and High Density Devices (RADs and HDDs) are acquired, maintained and replaced based on the number of gigabytes needed each year. A maximum is applied to acquisition and loading rates to prevent too-rapid ramp-up during the initial years. The cost of acquiring a gigabyte of RAD and HDD storage is expected to fall rapidly during the first decade of the implementation and then to hold constant as physical limits are reached in the technology. These costs projections are presented in the "planning values" spreadsheet. *Technical Support* represents projected staffing for contractor assistance currently derived from "management assistance" and "technical advice and assistance" contracts (present incumbents are McDonnell Douglas Space Systems Company and The MITRE Corporation). Roughly three-eighths of the full projected contract amount is seen as the level it would be appropriate to maintain even under the non-APS alternative. The remaining five-eighths are taken as a differential expense for the APS alternative.


The APS Alternative Schedule
Load U.S. Patent Backfile to High Density Optical Storage 1990-1993
Load Foreign Patent Backfile to High Density Optical Storage 1992-1996
Load U.S. Patent Backfile to Rapid Access Device Optical Storage 1990-1993
Load Foreign Patent Backfile to Rapid Access Device Optical Storage 1993-1996
Load Non-Patent Literature to Rapid Access Device Optical Storage 1996-1996
CSIR Deployment to Group 210 1990
CSIR Deployment to 17 Additional Clusters 1993-1995
Acquire Desktop Workstations to Achieve Full CSIR Deployment 1996-2000
CSIR Deployment to Public Search Room 1994-1995
CSIR Maintenance and Enhancement Public Search Room 1996-2009
Classification Data Systems Development 1992-1995
Classification Data Systems Implementation 1995
Patent Copy Sales Development 1991-1993
Patent Copy Sales Implementation 1993
Patent Application Management Development 1990-1996
Patent Application Management Implementation 1996
Patent Application Management Enhancement 1996-2009


The Non-APS Alternative Schedule
Conduct Complete File Integrity Survey 1991
Build International Patent Classification Foreign Files for Examiners 1991-1992
Build International Patent Classification Foreign Files for Public 1991-1992
Maintain Foreign Patent Search Files for Examiners and Public 1993-2009
Enhance Examiner Search File Security 1991
Maintain Search File Integrity 1992-2009
Implement Examiner Search File Study Copy Service 1991
Maintain Paper Search File Copy Service for Examiners 1992-2009
Acquire Replacement Patent Copy Sales System 1992

Part V. Cost and Benefit Overview

An analysis of the alternative models overwhelmingly supports the belief that substantial advantages will certainly result from the continued development and deployment of the APS. These advantages can be grouped into the following categories:

- ***APS will significantly enhance the U.S. research and development community's timely access to advances in foreign and domestic technology.***
- ***APS will result in significant improvements in the effectiveness of the PTO's internal patent processing that will permit patent quality to be maintained or improved in the face of the rapidly growing number of applications.***
- ***APS can be expected to greatly facilitate the preparation and defense of valid patents by the U.S. intellectual property community, both in the U.S. and in foreign countries.***
- ***APS will enable the PTO to avoid certain costs associated with keeping pace with the rapidly growing number of applications using a paper-based approach.***
- ***APS will lay the foundation for future change to apply improvements in such areas as information technology and patent examination techniques.***

Each of these areas is discussed in more detail below.

The APS will significantly enhance the U.S. R&D community's timely access to advances in foreign and domestic technology.

One of the principal missions of the Patent and Trademark Office is to bring about the disclosure of invention. Discovery and use of the information contained in patents is critical to improving U.S. productivity and international competitiveness. In an October 1989 article in *Scientific American*,[1] Harvard economist Robert Reich examines how the Japanese have come to dominate industries even though the initial discoveries were made elsewhere. Reich advocates emulating the Japanese success at developing and bringing to market the latest technological advances. He lists six steps in the process.

[1] Robert B. Reich, "The Quiet Path to Technological Preeminence," Scientific American, 261, No. 4 (October 1989), pp. 41-47.

beginning with a global search for ideas with commercial promise.

The Patent and Trademark Office is uniquely positioned to facilitate this search. More than seventy percent of the information found in United States patents exists nowhere else. In a December 1989 meeting at the PTO Judy Hale, Goodyear Tire and Rubber Company's Manager of Technical Information Services and its representative to the Industrial Technology Information Management Group (ITIMG) explained, "we don't publish in journals, we publish only in patents." The PTO also has unique working relationships with foreign patent offices by which it obtains copies of all foreign patents in exchange for those of the United States. Finally, the PTO's mission calls for it to develop effective and efficient ways to determine whether claims for new inventions are patentable. The same files and search techniques the PTO develops and uses for this purpose can be used directly for, or are easily adapted for, the dissemination of patent information.

The electronic data bases that underlie the APS approach offer extensive possibilities for remote and rapid access of both patent text and images through a variety of techniques to the U.S. research and development community. Remote connections to the APS and its text and image data bases are entirely plausible. The APS will also allow the PTO to make available to researchers patent information in a variety of formats contained on such media as CD-ROM. We are actively planning the effort which will make full text search available throughout the country in the Patent Depository Libraries. With the full availability of the APS image capability, in particular, electronic product dissemination is expected to flourish and dissemination operations through Patent Copy Sales and in the Public Search Room and Patent Depository Libraries will be vastly improved. The most significant improvements, however, are expected to be associated with public on-line access to and CD-ROM distribution of the APS data bases.

The immediate promise offered by more effective dissemination is faster, easier access to the recent discoveries of other researchers and inventors throughout the world. This is even more significant for foreign patents than for U.S. patents because the general practice in Europe and Japan is to publish proposed patents before examination, thereby disclosing new technology sooner than is the practice in the United States. This will lead to a shortened cycle for technological evolution and a reduction in duplicative research. It will ultimately lead to stimulated economic growth, to an increase in national productivity and competitiveness, and to all the benefits these bring.

The Japanese have recognized the importance of this approach and have expended hundreds of millions of dollars to make it a reality for Japanese researchers and manufacturers. As a result of their effort, the Japanese public and firms can now search U.S. patents electronically with access to U.S. patent images produced by the PTO. This capability has not yet been made available in the United States.

In the United States, patent documents represent a treasure house of information but they are disseminated only by crude methods. Today, public searchers search through classified paper files in the Public Search Room or use the Classification and Search Support System (CASSIS) in the Public Search Room and at the Patent Depository Libraries to determine the identifying numbers of patents meeting selected criteria. These documents are then viewed on microfilm. Once the desired patents are identified, copies may be obtained by photocopying them in the Public Search Room, by ordering them through the PTO's Patent Copy Sales operation or by photocopying them from microfilm at the Patent Depository Libraries. These processes are hit-or-miss and time-consuming.

New techniques now available can make it far more convenient for prospective clients to explore and use this source of information. With the availability of electronic images and nationwide electronic communications the entire process of dissemination will be transformed. The two basic functions--finding relevant documents and getting copies--will continue to be served, but by entirely different techniques: remote interactive searching and display of the text and/or images of relevant patents; remote printing while connected to the system; remote faxing of images; requesting copies interactively that are later faxed or sent in paper form; and selective dissemination of information--the automatic dissemination to individual clients of a subset of new patent issues based on the clients' stated profiles of interest.

Even with current dissemination techniques patents are among the most valuable information sources for American industry. A recent letter from Karen Flynn, the 3M Corporation's Manager of Patent and Technical Communications Services gives a good picture of the use her company makes of patent information. Her letter is typical of the comments we have received from other members of the Industrial Technology Information Management Group, a working group of technical information officers from major U.S. industrial firms.

Industrial Support of Increased Patent Information Dissemination

"It might be helpful at the outset for me to give you some statistics resulting from the patent services that our organization provides. These services include retrospective searches of the patent literature upon demand, weekly current awareness searches, and supplying copies of U.S. and foreign patents. In 1989, my staff performed almost 2,000 retrospective searches of patents; supplied 65,000 weekly current awareness searches; and provided nearly 50,000 patent copies. The demand, incidentally, for all these services is growing at a rate of 5-10% per year. 3M spends in excess of $1.5 million per year to provide these services--and that figure includes none of the costs for building and maintaining 3M's own patent portfolio.

"The usage that 3M makes of patent services testifies to the value of patents to an industrial organization. This value has two aspects: first as a legal document, second as a technical document. I will comment only on patents' value as technical literature.

"First, the information contained in patents is, by definition, new. A company like 3M lives and dies by the novelty of its products. Our scientists must know what advancements have been made in the art outside 3M.

"Second, the information contained in patents is often never published in any other form, such as a journal or conference paper. Familiarity with patent literature is therefore not an option; it is a necessity.

"Third, analysis of granted patents - not just U.S. but globally - can yield very valuable information about our competitors, including the areas in which they are currently patenting and also, by extrapolation, the changes in their technology strategies. We presume that our competitors are making the same analyses about us. The companies that can gather information most effectively and analyze it most accurately will have inestimable competitive advantage in the global marketplace. Patents are an absolutely critical aspect of gaining that competitive advantage."[1]

[1]Karen L. Flynn, Manager, Patent & Technical Communications Services, 3M Corporation, Letter to Thomas P. Giammo, Assistant Commissioner for Information Systems, Patent and Trademark Office, February 12, 1990.

An Approach to Quantifying the Benefits of Improved Dissemination

The research and development process is notoriously inefficient. This reflects the reality that much time and effort is wasted on duplicative research and development because it is often difficult to find out what has already been done.

When patent search methods and delivery techniques are enhanced through the use of electronic techniques, it will profoundly impact the conduct of research and development in the United States. The APS could provide to every researcher and product engineer in the United States complete, easy to use access to everything of importance that has ever been patented in the world, including (by definition) sufficient information to make the invention.

If ready access to this information can improve the efficiency of current U.S. research and development by even one percent, it will generate savings approaching $1 billion *per year*. We offer no support for this figure, but given the room for improvement, it is more likely to be low than high. Bearing in mind that at least 70 percent of this information is available nowhere else,[1] it is difficult to think of another source with the same potential.

This estimate reflects only an efficiency improvement--achieving the same result at less cost. It is a lower bound on the dollar benefit. It is far more appropriate to view the potential of new dissemination techniques for changing the nature of R&D and corporate strategic planning rather than merely improving R&D efficiency. For example, if active patent rights exist for a promising invention, the researcher can learn who holds the rights and from this information can discover whether the invention can be licensed, or if subassemblies incorporating it can be obtained. Similarly, easy, quick access to information on competitors' activities provides intelligence that can significantly affect corporate strategic planning in many areas: new product development, marketing strategies, joint ventures, etc. The information resource proposed could revolutionize industry's approach to finding ideas on new products to develop and how to bring them to market. This dovetails with the strategy offered by Mr. Reich in his article.

Since these are benefits to the nation at large it is appropriate to consider the corresponding costs. They are surprisingly small. The infrastructure to support the inquiries we discuss--workstations and high-speed communication networks--is

[1] A Technology Assessment & Forecast report (Patent and Trademark Office) dated December 1977 found that 70.7 percent of patented technology was undisclosed in non-patent literature.

already being built by corporations throughout the country. Workstations capable of connecting to the necessary services will soon be commonplace equipment in engineering design laboratories. According to Steve Noe, Chairman of the American Intellectual Property Law Association (AIPLA) Information Retrieval Committee, "Major U.S. industries, almost without exception, would subscribe to CSIR in the plants."[1]

The APS makes significant improvements in the effectiveness of the PTO's internal patent processing that in turn will permit patent quality to be maintained or improved in the face of the rapidly growing number of applications.

Comprehensive files of images of U.S. and foreign patents are cornerstones both for internal PTO operations and for dissemination. Now that automated systems are able to store and retrieve images as well as numeric and textual information, their efficiency in dealing with large quantities of information can be applied at the PTO. Automated files will offer a far more reliable and useful vehicle for search and dissemination. They will also create the ability to experiment with and introduce entirely new methods for searching and disseminating information.

As automated methods for file maintenance and searching are put to use, the PTO will eventually be able to dismantle the paper files that now support searching by the patent examiners and the dissemination of patent information. The resulting savings and cost avoidances will begin to accrue in Fiscal Yea: 1993 and grow steadily larger thereafter.

Electronic files offer important advantages over their paper counterparts. Where possible, savings from these effects have been represented in the costing model in Appendix D. This has been done by estimating the costs of achieving as nearly as possible the same results in a paper-based environment.

- In paper filing schemes a document may only be referred to by one person at a time. In the APS many examiners can view the same document simultaneously without interference. Electronic storage and retrieval therefore offers relative independence from increased search activity. The costing model addresses this issue with the initiation of a copying service for the examiners. If an examiner wishes to remove a document from the files for study, the document is copied for that

[1] From remarks delivered at the December meeting of the AIPLA.

purpose and the original is immediately returned to the files to make it available for other examiners.

- Paper files have an inherent disintegrity because the physical documents must be removed for consultation and later refiled. On the other hand, an electronic document never leaves the file. Studies have shown that patent quality is high despite the number of missing and misfiled patents in the current search files. The internal redundancy of the files--multiple copies of patents are filed for cross-referencing--helps to account for this. But there is a limit to this effect which may be reached as more and more examiners contend for the same documents and withdraw them for further study.

- Reclassifying paper files is a disruptive activity that requires manual labor to remove, reorganize, and refile the documents. In an electronic environment, reclassification involves no physical movement of documents, only the preparation of a new index/classification file. The actual changeover to the new set of subclasses can happen instantaneously once the new subclass indices are prepared.

- Paper files are inherently insecure, or can be secured only through expensive and repressive measures that interfere with easy access. Electronic techniques such as flexible access control and the automatic creation of an audit trail of accesses, will increase file security and integrity to a level impossible to achieve in paper files.

- Paper files and their accompanying search techniques are inherently limited to a single classification scheme. A document has a primary location in the file and there may be additional copies for cross-referencing. Classification schemes for electronic files are independent of document storage; documents are stored only once and can be referred to by as many separate classification schemes as are cost-effective.

The advantage of permitting multiple classification schemes has not been quantified in the costing model. In order to duplicate this property in a paper environment, entire separate filing systems would have to be constructed. We have not developed costs for this approach because it is not realistic. This benefit, however, is of extreme importance to the PTO in allowing the

examining process to evolve to handle future workloads more effectively.

Enhancing Foreign Search Capability

Foreign art is increasingly important to the searching of U.S. patent applications for a number of reasons. Product markets, and therefore requirements for patent protection, have become increasingly international. Twice as many foreign patents have issued since 1920 as there are United States patents in the entire file, and the number of distinct new foreign patents issuing annually is four times the number of new U.S. patents. Under the Patent Cooperation Treaty, the United States has agreed to search these files diligently before awarding a patent. As a result, the number of foreign citations in each action by U.S. examiners has doubled in the past few years and continues to increase. In many areas of high activity, foreign art is clearly the best art, and must be searched thoroughly if U.S. patents are to retain the presumption of validity they currently enjoy in the courts.

Giving foreign art less than its proper emphasis places American industry at risk. Foreign art is frequently the best, most relevant art in today's global economy. An American company could unknowingly infringe on a foreign patent and be liable for enormous damages.

Unfortunately, foreign art is difficult for the examiners to use effectively and it is not now searched as heavily as it should be. There are problems beyond the language difficulties and the sheer volume of the files. The International Patent Classification scheme (IPC) differs substantially from the United States Patent Classification system. The basis of filing differs between the two systems: foreign patents are filed by discovery, not by claims as is the case in the U.S. system, and most examiners are not familiar with the IPC. The IPC has about triple the average number of patents per subclass and this makes searching more time-consuming and difficult.

In an attempt to circumvent these problems the PTO has filed foreign patents under the United States Patent Classification system. This approach has presented formidable problems in reclassification and refiling, and the Office has now concluded that it is not practical. Finally, not all the art that should be available in the files is actually there. The Public Search Room has no classified foreign files; public searchers do their foreign searching in the examiner files.

Unless search techniques suited to the unique problems posed by foreign art are developed, examiners will not be able to handle the future workload without a severe impact on productivity. Promising ideas exist, but they are impossible to implement in a paper environment. Techniques such as "concept searching"--indexing on key terms or concepts--can identify documents that are likely to be relevant, but these documents must then be located in the paper file or on microfilm to be studied. This is too time-consuming for the technique to be helpful. Only an automated system has the flexibility to allow the different examining groups and art units to develop and use the search techniques they need to cope with this task.

Enhancing the PTO's Posture for Recruiting Qualified Applicants

The availability of modern tools for search and display will increase the PTO's ability to recruit highly qualified candidates for the examining corps. Today's best engineering graduates are well acquainted with automated systems through use at the graduate and undergraduate levels. A leading edge system like the APS will be a powerful attraction for the strongest candidates. Conversely, the prospect of extensive searching through paper files would encourage many promising candidates to seek employment elsewhere.

The APS should greatly facilitate the preparation and defense of valid patents by the U.S. intellectual property community, both in the U.S. and in foreign countries.

The intellectual property community will greatly benefit from the increased accessibility of both U.S. and foreign patents, saving considerable effort that might otherwise be invested in behalf of an already patented invention. Similarly, they will also benefit from the increase in patent quality associated with improvements in the patent examiner's files and related processes.

Patents are valuable property. A 1984 study of patents obtained under the National Science Foundation's (NSF) Chemistry Program estimated the potential economic value of those patents and compared it to chemical patents obtained by Research Corporation, a private foundation. The total estimated economic potential of the 52 NSF patents licensed and licensable over the life of the patented products or processes is over $26 million. For the 13 Research Corporation patents, the estimated value is over $5 million. The assurance of quality of patents is crucial to industry in being able to realize the economic potential of patents they own or have licensed.

Litigation Cost and Cost Avoidance

Improvements in the quality of patents have far-reaching effects. Stronger patents will result in greater acceptance and recognition of the patents by industry. That recognition will reduce the volume of patent litigation. Currently the American public supports a patent judiciary system processing over 600 infringement and invalidity suits a year. The proceedings are expensive. The U.S. Supreme Court in the Blonder Tongue Laboratory v. University of Illinois Foundation case acknowledged "...Patent litigation is a very costly process..." A 1973 Utah Law Review article estimates that ordinary patent cases cost each party $125,000 just to reach the first day of trial. Today that cost would be significantly higher. Full court costs and unusual cases would result in enormously higher costs. The judicial and advocate costs of litigating these applications are borne by the American public, both directly for the court system to try the cases and indirectly for the legal fees, through higher consumer product prices.

Some of the factors influencing the cost of patent litigation are not unique to patents but rather reflect American judicial procedure. Nonetheless, reducing or avoiding patent litigation through issuing valid patents based on a complete and reliable automated search file at the Patent and Trademark Office has the potential to save large amounts of money.

In the legislative history of P.L. 96-517, which established patent reexamination procedures, the House Judiciary Committee noted that the costs incurred in patent litigation can sometimes reach $250,000 for each party, a cost the Committee labels as "an impossible burden for many smaller firms." Further, "the result is a chilling effect on those businesses and independent inventors who have repeatedly demonstrated their ability to successfully innovate and develop new products." Actually, the cost of litigation for each party is often much higher than that figure.

A 1986 economic survey by the Committee on Economics of Legal Practice, American Intellectual Property Law Association (AIPLA), indicated that the median cost for a litigation suit was $352,000 per party. The magnitude of the cost is provided by the estimate of litigation costs for a fiscal year. Assuming that there are only two parties to a suit, the estimated cost per suit was $704,000 in Fiscal Year 1986. To calculate the costs of patent litigation in 1988, the assumption was made that the costs were incurred in the same fiscal year as the filings. In Fiscal Year 1988, almost 600 cases were filed in United States

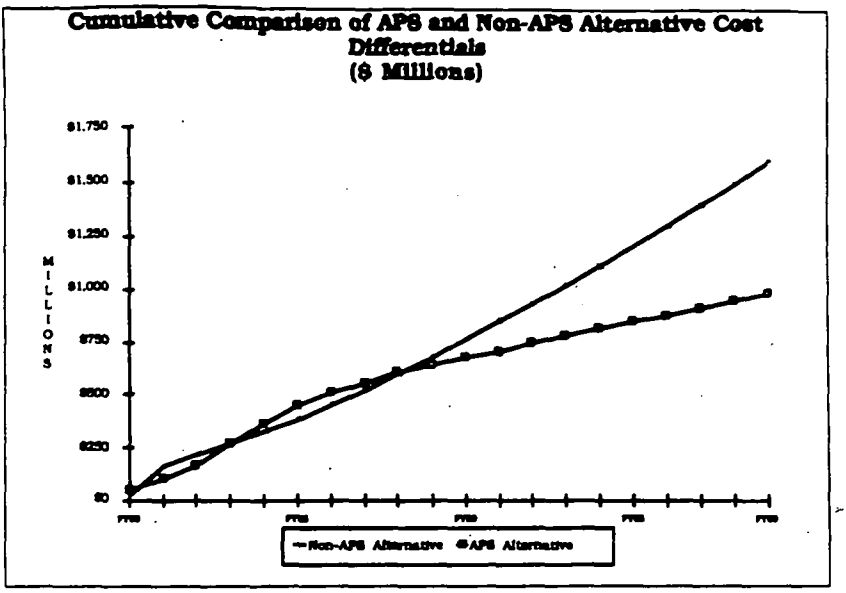
General District Courts, which equates to over $400 million in litigation costs.

The members of the Industrial Subcommittee on Patent and Information Policy, the Advisory Committee on Industrial Innovation (1979), "advise(d) clients to be prepared to spend *at least* $250,000 for patent litigation." Actually, even in the late 1970's the litigation cost for each party was often higher. This Committee proposed that the PTO initiate a system of reexamination of U.S. patents.

Estimates of litigation avoidance attributable to the APS are necessarily highly speculative. Given the difficulties shown in the models in keeping pace with the growing number of applications and the increasing importance of foreign patents, it is not unreasonable to assume that the APS may well make a difference of from five to ten percent in the number of patent suit filings. Using historical data as a basis, the benefits of litigation cost avoidance, due to improved patent quality resulting from the APS, could easily be in the range of one to two billion dollars through the year 2009.

The APS will enable the PTO to avoid certain costs associated with keeping pace with the rapidly growing number of applications using a paper-based approach.

The comparison of the two alternative approaches to meeting the PTO's needs yields a projected cost avoidance of approximately $610 million over a twenty year period. As shown in the following graph, APS deployment will reach the break-even point in 1998.



The calculated cost differentials between the APS and non-APS approaches were divided into five categories. As noted earlier, costs associated with activities which are common to both alternatives have been ignored. For a detailed statement of the activities and cost elements considered in each of the categories, see Part IV, Defining the Alternatives. For a full discussion of the methodology and detailed comparison of costs and their derivation, see Appendices D and E.

Over a twenty year period (1990-2009), the cost analysis reflects the following differentials.

Comparison of APS and Non-APS Costs ($ Millions, 1990 Constant Dollars)		
Functional Area	APS	Non-APS
File Management	124.99	473.52
Examiner Searching	215.92	147.39
Application Process Management	282.61	791.26
Dissemination	138.47	181.13
Information Systems Infrastructure	221.47	0.00
Total	983.46	1,593.30

Looking beyond these summary figures provides us with the ability to identify specific factors which contribute to

the superiority of the APS approach. Principally, these reductions stem from reduced manual labor requirements, lower filing and file maintenance costs, and anticipated price/performance ratios of hardware.

File Management Costs

Over the twenty year analytic period, eliminating the paper files accounts for gross savings of $348.5 million, exclusive of Infrastructure costs. These savings stem from several sources.

A basic principal of automation economics is that unit costs decrease over time while non-automated unit costs increase over time. For example, the cost of storing a single document on a Rapid Access Device (RAD) is dropping dramatically each year. As storage density increases in the electronic environment, the amount of floor space needed is reduced.

On the other hand, the costs of paper storage are inexorably rising. The cost elements of storing paper patents (shoe cases and space rental) are increasing, and there is no corresponding increase in storage density to offset it. By the year 2004 it will be cheaper to hold a single document for a year on a RAD than it will be to hold it in its paper form in a show case, counting only the costs of the respective storage equipment and the rental for the space occupied.

In fact, because of the nature of its patent search files, the PTO will reach the breakeven point much earlier than 2004. Paper filing requires multiple copies of each document to be filed in multiple patent subclasses. A new U.S. patent causes 7.8 paper copies to be added (3.9 in the examiner files and 3.9 in the Public Search Room files). With electronic filing, only a single copy of the document must be stored, and it can be a member of as many subclasses as desired. As a result, we believe that holding an electronic patent document will be cheaper than a paper document by 1992.

Further savings result from eliminating the labor involved in handling paper documents:

- Paper documents must be physically placed in the file using manual labor. When paper patents are removed for study they must be refiled. This happens to about 20 percent of the file each year. With electronic filing the initial placement of the patent in the files is an efficient, automated function, and because the electronic documents are never removed, refiling costs are eliminated..

- Paper filing systems suffer from deficiencies resulting from misfiling, loss, and damage. An annual survey must be undertaken to determine which patents are not where they belong. These must then be re-acquired and refiled. This labor, too, is eliminated with electronic files.

- Obtaining examiner study copies of a paper document is expensive and time-consuming. It requires removing the document; removing the staple; photocopying the document; restapling; and refiling. The unstapling and restapling damages the patent. Obtaining study copies is far more efficient with electronic techniques, and the need for this operation will shrink substantially once desktop examining workstations are provided to each examiner.

- A portion of the patent search file is reclassified each year. In addition to the intellectual activity of reclassification which has been disregarded as a common cost to both APS and non-APS alternatives, the processing is labor-intensive, adding substantial clerical costs. The physical handling of documents will not occur in electronic files; reclassification only requires the preparation of a new index.

In short, an electronic document is never withdrawn from the file for study, duplication, or any other reason. It cannot get lost in normal usage. Back-up copies, low in cost, replace all the labor and document costs associated with paper documents.

Eliminating all this labor is a major source of the savings accruing to the APS. The APS components that must be implemented to achieve these savings are Classified Search and Image Retrieval (CSIR) for the examiners and public searchers and Classification Data Systems (CDS). These have prerequisites (principally images on Rapid Access Devices and clustered workstations) as discussed in Appendix C, APS Components and Dependencies.

Application Process Management

The cost model indicates that, again exclusive of infrastructure costs, the APS alternative will require $282.6 million for clerical application processing as compared to an estimated $791.3 million required by the non-APS alternative. The majority of the APS alternative costs are connected with maintaining the

current systems development and integration contract until it can be phased out beginning in Fiscal Year 1995.

The APS will achieve these savings and cost avoidances in operations associated with the processing of applications and in the printing of patents through lower clerical preprocessing costs, lower microfilming costs, lower examining costs, and the elimination of the PTO's current data entry contract to prepare for the Government Printing Office a photocomposition tape containing the new patent. The design of this subsystem is not sufficiently complete to allow these offsets to be identified and quantified precisely in this analysis. We have therefore taken a simplified approach to estimating them. A conservative assessment is that the operational savings from the Patent Application Management (PAM) system will be sufficient to offset the cost of capturing in electronic form the complete application-as-filed and all amendments generated during its processing.

The savings that result from eliminating this contract and associated activities are developed in the costing model. The model projects saving 30 percent of the costs projected for Fiscal Year 1995, the year targeted for implementing PAM, saving 60 percent of the projected costs from Fiscal Year 1996, and saving 90 percent from Fiscal Year 1997 onward. The model includes development and maintenance costs for PAM and associated workstation equipment for the full period of analysis

Dissemination

The differential between APS and non-APS approaches to dissemination stems entirely from the Patent Copy Sales module. By utilizing the APS image data base to produce copies of patents for sale, the PTO will avoid the necessity of acquiring a system to replace its current antiquated microform based reproduction system. In addition, it will no longer be necessary to store paper copies of recently issued patents, resulting in reduced space rental requirements.

The APS lays the foundation for future change to apply improvements in such areas as information technology and patent examination techniques.

The APS provides an environment for developing new search techniques that were previously not available at all. For example, design patent examiners have found that a word search on the title of their application serves as an excellent cross-check for their fields of search, presenting unfamiliar or obscure areas of

technology in which the device in question has been used. It is expected that many new ways to use these tools will be discovered by the users as the APS evolves.

As the PTO gains experience in the use of automated searching tools, new applications will be identified. Among the many promising possibilities are the use of keyword terms for searching foreign patents, variant classification schemes more closely tailored to the characteristics of a particular technology, and concept searching.

VI. *Decisions: The Bottom Line*

Is it advantageous to go on with the development and deployment of the APS program as opposed to relying on expansions of the current systems?

The foregoing analysis offers compelling evidence on three levels that building and implementing the complete Automated Patent System is preferable to continuing to rely entirely on the current level of automation:

- **Cost savings and avoidances** of approximately $610 million over the next twenty years are projected to result from implementing the entire system, compared to the alternative of continuing the current mixture of electronic and paper-based systems. This estimate results from conservative projections and accepted capital budgeting techniques.

- There are additional **benefits to PTO operations** which could not be quantified with sufficient precision to include them in the analysis of tangible costs and benefits. These include, for example, file integrity and security at higher levels than can be achieved in paper; the ability to support multiple classification schemes and innovative search techniques; the flexibility and adaptability to respond to changing requirements and increased workload; and many others vital to the continued ability of the PTO to process applications in a timely manner and to issue high quality patents. In fact, the APS offers far less risk for meeting future PTO needs for application management and patent searching than does the continued use of current methods. Although we have specified and developed costs for the paper-based alternative as though it would be viable for the next twenty years, in all likelihood the paper system would fail entirely under the projected workload and search file volumes.

- There are further **benefits to the national economy** that can only be realized in the APS environment. These include the benefits to American productivity and international competitiveness to result from more timely and effective dissemination of the technical contents of patents to industry; the avoidance of costly litigation that will stem from

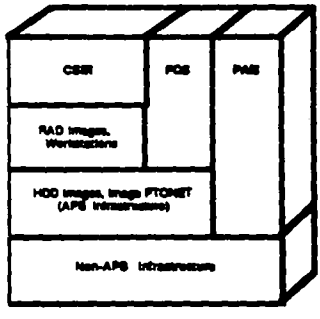
continued issuance of high-quality patents; and others.

All of these benefits have been thoroughly discussed in the preceding sections. In evaluating the benefits which will be associated with the continued development and deployment of the APS, the PTO can only conclude that no global alternative to APS exists. The arguments leave no doubt that if the choice were between doing all of APS or none of it, the APS path should be pursued.

We will now address several "second tier" issues concerning the inclusion of the various APS components and the speed of deployment and development of APS capabilities.

Would a significantly scaled down APS be preferable, in the sense that the omission of one or more major modules would still capture most of the benefits at significantly less expense?

The following diagram represents the major modules of the APS to which this question applies. In the diagram, the components of APS are represented by building blocks. Each "block" requires the presence of the blocks it stands on in the diagram. (These dependency relationships are discussed more fully in Appendix C, APS Components and Dependencies.)



The three major systems, shown in **bold**, are the principal modules of the APS about which relatively independent deployment decisions can be made: Classified Search and Image Retrieval (**CSIR**), Patent Copy Sales (**PCS**), and Patent Application Management (**PAM**).

- **CSIR**, deployed to examiners, classifiers, and public searchers permits the eventual dismantling of the paper files.
- **PCS** greatly reduces unit operating costs compared to current sales from inventory and microfilm.
- **PAM** generates substantial savings by eliminating the data entry contract and associated activities that

prepare photocomposed input for the printing of new U.S. patents.

The diagram also illustrates the internal "building blocks" (shown in normal type) that are required for each of these systems. Again, each component requires those blocks that it stands on in the diagram. With these dependencies in mind, we can discuss the consequences of omitting any of the three major independent modules of the APS.

First we consider PAM--the strongest candidate in terms of projected tangible benefits. As seen in the diagram, PAM has no significant prerequisites, and so the decision on whether or not to implement it does not involve the other independent modules.

Although this system is not yet fully designed, the PTO projects that over the next twenty years PAM will generate savings in excess of $500 million dollars over present processes by eliminating the expensive patent keying contract which is currently needed to prepare allowed applications for publications as patents. As anticipated by the PAM concept, applicants will file their applications in electronic form, and amendments and other changes will be captured electronically during the normal examination process. Once an application is allowed, some intervention will be necessary to format the documents for publication, but it is anticipated that this effort will be minimal in comparison to today's manual keyboarding operation. This system must clearly be allowed to proceed through design and development so that its potential savings and other benefits can be more clearly identified.

The remaining APS application modules--CSIR and PCS--share a common prerequisite, the block referred to in the diagram as "APS Infrastructure." This component includes images of U.S. and foreign patents on High Density Devices; a PTONET capable of handling the heavy traffic associated with digitized images; and so forth. The costs of building this infrastructure and maintaining it over the next twenty years are substantial, approximately $220 million, as shown in Appendix D, Model of Costs and Offsets.

These costs can be avoided only if both PCS and CSIR are eliminated, consequently losing all the benefits of these modules:

- The substantial savings that result from eliminating the labor costs and other expenses of maintaining the paper files.

- The other benefits to internal operations, for example, the potential to develop and use innovative search techniques to help cope with the growing volume of applications and number of documents in the search files.

- The reduced costs of sales of copies of U.S. patents.

- The benefits to the Nation resulting from more effective methods of disseminating patent information to the American public, continued issuance of high-quality patents, etc..

Taken together, these two modules are overwhelmingly cost-effective. The combined savings that will result from CSIR and PCS over the next twenty years is projected to be approximately $110 million. (These are net savings over and above all costs of implementing and maintaining these systems and their required internal building blocks.) Considering both the quantified savings and the other benefits which do not appear in the costing model, it is clear that the combination of the two systems should not be excised from the APS.

Since this is true, it follows *a fortiori* that neither CSIR nor PCS should be eliminated by itself. In each case, the effect would be to eliminate the entire benefit associated with the application, but only the differential cost, since the entire APS infrastructure would still be required by the other component.

In conclusion, the development, implementation, and support costs associated with Classified Search and Image Retrieval, Patent Application Management, and Patent Copy Sales are substantially outweighed by the benefits and cost avoidances which will result from their implementation. Assuming that the PTO has the resources to devote to oversee the development of these capabilities, there is no reason to delay work in any of these areas.

Does a delay in the development or deployment of one or more of the major APS modules have any significant advantages?

The benefits analysis demonstrates the cost-effectiveness of implementing CSIR capabilities throughout the patent examining corps. The cost efficiencies result from the projected decline in the cost of components of the automated system yielding lower costs per document stored, etc., and the corresponding inevitable increase in the cost of components for

the paper-based systems such as file cabinets, labor for maintenance, etc.

Should CSIR deployment be delayed, for example until desktop workstations are available in 1997, certain APS-related costs would be reduced as a result of the elimination of the cycle of acquiring expensive custom designed workstations for the patent examiners. Similar cost reductions would result from delaying the acquisition of rapid access optical storage devices which would enable the PTO to take advantage of the decrease in the cost of storage which will assuredly occur in the next five to seven years.

Regardless, delaying CSIR deployment will correspondingly delay savings. While waiting for the cost of hardware components to fall, the PTO would incur additional years of maintenance costs of the paper file, and would be forced to undertake extraordinary, labor-intensive efforts to incorporate foreign patents into the search files. Less quantifiable, but equally important, a delay would deny the PTO the much needed experience which it will gain through the evolutionary development of APS capabilities through the deployment process. The lessons to be learned about the power and flexibility of CSIR can only be learned through broad operational experience.

The entire analysis argues convincingly that once the expenses of development and implementation are over, the savings begin and grow larger year by year. The clear conclusion is that the work should proceed as quickly as possible.

APPENDIX 8.—LETTER FROM JAMES L. MESSERSMITH, PAST PRESIDENT OF THE NEW JERSEY SCIENCE TEACHERS ASSOCIATION, INC., TO HON. WILLIAM J. HUGHES



NEW JERSEY SCIENCE TEACHERS ASSOCIATION, Inc.

552 Mercer Road
Princeton, New Jersey 08540
May 18, 1991

Honorable William J. Hughes
Chairman, Subcommittee on Courts, Intellectual
Property, and the administration of Justice
Committee on the Judiciary
U.S. House of Representatives
Washington, DC 20515

Dear Sir,

This letter concerns the House Judiciary's Subcommittee on Courts, Intellectual Property, and the Administration of justice hearings on the Patent and Trademark office ("PTO") hearings on the "APS" system.

Based on my experience, I certainly feel the public, specifically school systems, should have ready access to patent data through the APS.

Teachers need access to real data because students respond to real data. This real data, if available to the public, would allow high school students and others to determine some of the ideas people have had in solving the problems these students feel are important. Student examination of ideas tends to generate other ideas.

We talk about improving our schools and then the schools are not given access to the very information that would help students realize the practical application of the science they are studying.

Science organizations are recommending the implementation of technologies and the technological applications of science to science classrooms. Inventions are the technology that results from the application of knowledge and thus patent information would be useful to students. Following are some examples of what various organizations are doing to improve the application of knowledge to solve particular questions or problems.

- The New Jersey Science Teachers Association held its first S/T/S (Science/Technology/Society on March 6, 1991. The conference emphasizing science and technology was oversubscribed with people from several foreign countries. By a vote at the March 13, 1991, Executive

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NEW JERSEY SCIENCE TEACHERS ASSOCIATION, Inc.

Board Meeting, NJSTA will now make the conference an annual program.

- THE NEW JERSEY SCIENCE TEACHERS ASSOCIATION, INC. RECOMMENDATIONS FOR THE IMPROVEMENT OF SCIENCE EDUCATION IN NEW JERSEY, states that the State Department of Education should "establish regional science education resource centers --- to disseminate research --- and to encourage the implementation of Technologies in the classrooms of New Jersey." (1)

- "The same document states the State Department of Education should, "encourage all school systems in New jersey to have local teachers develop inquiry based science units" (1)

- A local school system has a science curriculum goal, "To demonstrate the role and application of science on everyday life" (2)

- Project 2061 which is influencing a restructuring of schools in the United States has a statement about technology: "Every design or system has constraints that must be identified and taken into account" (3) when referring to how schools should incorporate technology into classrooms.

- Project 2061 also states, "Some degree of computer literacy --- will be required of all adults as computers become part of daily life." (4)

These statements suggest the Patent and Trademarks Office should make patent information available to schools through an informational service to which schools can have access. Therefore I suggest the PTO APS system should be made available to schools.

Help teachers to make use of the data that is available.

Sincerely,

James L. Messersmith

James L. Messersmith
President of the New Jersey science Teachers Association during 1988-1989, a present trustee of the organization, Exhibits Chairperson for the New Jersey Science Convention, Chairperson of the General Science Section of the committee that wrote the Science Proficiencies for the State of New Jersey under the organization of the New Jersey Department of Education and K-12 Science Curriculum Facilitator and staff member of Princeton Regional Schools.

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NEW JERSEY SCIENCE TEACHERS ASSOCIATION, Inc.

(1) DRAFT 5, 1991.
(2) **SCIENCE CURRICULUM GOALS**, Princeton Regional Schools, 1990.
(3) **A PROJECT 2061 PANEL REPORT, Physical and Informations Sciences and Engineering**, AAAS, 1989, page 37. This is just one of many recommendations on the practical use of science contained in the report. Project 2061 has four reports, all of which contain recommendations of what the schools of the united States should be teaching.
(4) **A 2061 PANEL REPORT, Technology**, AAAS, Page 27.

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APPENDIX 9.—STATEMENT OF NATHAN EDELSON, INVENTOR (WITH ATTACHMENTS)

Nathan Edelson™

Statement of Nathan Edelson, Inventor

I am full-time inventor of innovative furniture products. After ten years of work, I just sold the licensing rights of my first patented invention to a U.S. firm based in California which not only manufactures and sells throughout the United States, but exports to Japan.

To increase the small entity patent maintenance fees at this time would make it prohibitively expensive for me to conduct my business and I would probably revert from being a state-of-the-art mass-market job-creating innovator to being a small-time low-tech craftsman, perhaps serving the personal whims of a few transplanted Japanese factory managers who could afford custom work.

To front-load large patent maintenance fees will deal a death-blow to small full-time innovators like me, who are already reeling over the 69% increase in patent application and issuance fees. To finance the computerization of the patent office on the backs of the independent inventor is to show contempt for the spirit of the patent laws, which are supposed to guarantee ready access to all U.S. citizens into the system. Under this new proposal, the only ones who are going to have ready access to the system are IBM and Japan, Inc.

Rather than eliminate the small entity patent maintenance fees, the Government should immediately and retroactively roll back the onerous 69% increase in application and issuance fees for independent inventors and other very-small entities. When you consider that only one in ten patents ever pays for itself, let alone makes its inventor a profit, you get some idea of the incredible burden this new fee structure imposes on the full-time inventor, who on average is going to have to apply for ten patents before he even has a statistical chance of breaking even. Yet the Government has actually proposed slapping an *additional* 10% across-the-board increase on top of its already onerous "tax" on innovation!

If the United States Government wants to discourage innovation, job-creation, exports, free-enterprise, and fundamental national security, let it go on snubbing the independent inventor. Otherwise, it's time for the Government to recognize the contribution the independent inventor has made, is making, and can continue to make to the well-being of our Nation, and reward, rather than penalize him, for these efforts.

50-921 (225)

526 Hickory Street Missoula, Montana 59801 USA (406) 721-5997

Nathan Edelson™

February 20, 1991

Senator Conrad Burns
United States Senate
Washington, D.C. 20510

Senator Burns

This letter is to follow up our December meeting in your Missoula field office concerning the rise in U.S. Patent fees and my request that you introduce legislation to roll back the increase for small inventors like me.

To review briefly, as part of the 1990 Budget Package, the fees on all U.S. Patent related business went up by 69%. The purpose of the increase was to make the Patent Office self-sustaining, rather than having to rely on about $110 million of public funds as it does now. Admirable in principle as this plan may be, it makes getting and keeping a patent so expensive that it effectively prices out small inventors like me from the benefits of patent protection, and thereby, in my view, constitutes an oppressive tax on the free enterprise spirit and its fruits of innovation.

At present, the Patent Office recognizes two categories of applicants: "large entities," which are firms employing more than 500 persons, and "small entities;" everyone else. About 65% of patents are issued to large entities, whose fees are twice as much as those of small entities.

However, to define "small entity" as anyone from an independent inventor to a company employing 499 persons hardly makes a meaningful differentiation in ability to pay. Therefore, perhaps the most equitable way to roll back the patent fee increase would be to establish a third category of applicant, say, individuals or firms having fewer than 10 employees and grossing less than $10 million a year, who would be charged for patent services at the previous, and not inconsiderable rates.

526 Hickory Street Missoula, Montana 59801 USA (406) 721-5997

An additional benefit of the above differentiation would be that the number of "very small entities" would not be so great as to significantly violate the "revenue neutral" provision of the Budget Act, particularly in view of the fact that the percentage of taxpayer-supplied funds to the Patent Office will continue to decrease as the new "patent maintenance fees" kick in and more non-taxpayer revenue is raised by this means.

But if an immediate monetary offset for lower "very small entity" patent fees is demanded, I see nothing wrong with raising fees for "large entities" slightly to cover the reduced fees for the "very small entities." Whether a company with more than 500 employees pays $100 more or less for a patent is hardly an issue for such a firm; but whether a small independent inventor pays $600 for a basic patent (as was formerly the case) or $1,100 (as is now the case with the fee increase) is highly significant -- and this does not even consider the added burden of patent maintenance fees, which, with the 69% increase, will add thousands of dollars of cost to the very small inventor over the life of his patent.

To make a new bill even more politically palatable, Senator Burns, one might even consider retaining the two classifications of "small" and "large" entity as they are now, and simply raising the "large" fees enough to cover returning the "small" fees to their previous level. Considering the high percentage of "large" entities who are Japanese firms, and the fact that the Japanese make it so expensive to obtain a patent in their country that small inventors like me are effectively denied protection, it would be a kind of rough justice.

In any case, Senator Burns, I believe I am engaged in research and development efforts which have the potential to pay significant dividends in employment opportunities, tax revenue, and human happiness and well-being to the State of Montana and the Country, and, therefore, I believe that my Government should afford me every reasonable

opportunity to protect my investment in this work. Since, like many full-time inventors and entrepreneurs, I apply for many patents each year, the 69% fee increase will actually eat up about half my entire research budget, and this budget is already strained to the point where I must defer many projects which growth demands I should pursue.

I therefore request that in your capacity as a member of the Small Business Committee, you introduce legislation at the earliest possible date to roll back the fee increase for small inventors like me, including retroactive provisions to the date of the enactment of the fee increase, if possible.

For your possible interest I am enclosing a copy of a patent for an ergonomic furniture device I was just issued (and had to pay for at the higher fee rate), along with newspaper and catalog clippings showing the commercial realization of the patent to date.

I will be most grateful if you will keep me informed of your thinking on this matter. I would also like to let you know that I appreciate you staffing your Missoula field office with a professional manager of Julia's calibre.

THE WALL STREET JOURNAL.
MARKETPLACE
MONDAY, DECEMBER 31, 1990

one of my patented products

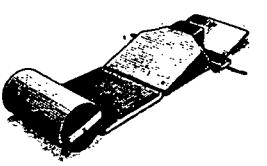
FORM + FUNCTION

BY JOHN PIERSON

Cushioning the Impact Of Desk Workers' Stress

IF NATHAN Edelson has his way, man will return not to the sea but to the floor.

Mr. Edelson, a designer in Missoula, Mont., has put together a three-piece set—two foam cushions and a little wooden desk—that he hopes home office workers will use instead of chairs and big desks. With his Wedge System, people can sit or lie on the floor,



The Wedge System

in various positions, while using a laptop computer or doing other tasks.

Mr. Edelson says the Wedge would allow the nation's five million laptop users to keep their backs in "mild to moderate extension" for some of the working day, counteracting what he calls the harmful effects of conventional seating. It would also encourage them to change their position frequently, avoiding postural strains.

Ergonomic chairs, he says, don't work, because people don't sit the way the designers wish they would, back pressed flat against the protruding lumbar surfaces.

Today's office workers are subject to bodily restraint, social isolation and mental monotony for eight hours daily, says Mr. Edelson. The Wedge office is more in keeping with the "leisure-oriented, high-excitement environment" that people have come to expect when not on the job, he adds.

works, including a forest of telephone poles and giant earthen chevrons that line up with a runway at the city airport.

Mountain View's 700-acre Shoreline Park, which includes a golf course, amphitheater and sailing pond, has been built on 13 years of San Francisco's garbage, for which Mountain View received $17 million. Revenues from golf, sailing and sales of methane to utilities pay for the park's operation.

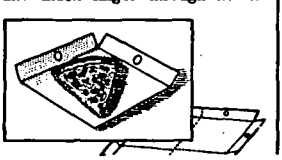
Turning garbage into parks needn't be expensive. Lexington, Mass., spent $385,000 of public and private money converting an 18-acre dump and adjacent wetlands into a 60-acre park, which includes playing fields, paths, a wildflower meadow, fitness stations and ponds.

Landscape designer Nell Walker says the park's low budget was possible because the dump had been closed 20 years. The land had subsided, most of the methane had dissipated and the household chemicals of 20 years ago were less toxic than today's, says Ms. Walker.

Like the Pie Itself, This Box Goes to Pieces

THE PIZZA BOX is undergoing change to make it more convenient and environment-friendly.

Eric Crockett of Toledo, Ohio, has redesigned the top of the box, adding perforations that allow the top to be separated into four "plates." The flaps form sides, which can be grasped with thumb and index finger through holes.



APPENDIX 10.—LETTER FROM MICHAEL W. BLOMMER, EXECUTIVE DIRECTOR, AMERICAN INTELLECTUAL PROPERTY LAW ASSOCIATION, TO HON. WILLIAM J. HUGHES, DATED JULY 31, 1991

AMERICAN INTELLECTUAL PROPERTY LAW ASSOCIATION
2001 JEFFERSON DAVIS HIGHWAY, SUITE 203, ARLINGTON, VA 22202

Telephone (703) 415-0780
Facsimile (703) 415-0786

July 31, 1991

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Counsellors to NCIPLA
DAVID A. ROSE

Executive Director
MICHAEL W. BLOMMER

Honorable William J. Hughes
Subcommittee on Courts, Intellectual Property
and the Administration of Justice
Committee on Judiciary
Room 341
Cannon House Office Building
United States House of Representatives
Washington, DC 20515-3002

Re: USPTO Authorization

Dear Rep. Hughes:

The American Intellectual Property Law Association (AIPLA) believes that Congress should exercise caution and restraint in authorizing Patent and Trademark Office budget requests for fiscal year 1992. We urge you to hold down PTO spending to the maximum extent prudent to minimize increasing fees which have been so significantly increased over the past nine years.

Increased PTO spending and increased patent fees now present such a serious problem for the patent system, the AIPLA surveyed its membership on the issue in April, 1991. 6,043 lawyers received the survey and 988 responded. The participation rate was 16%. Of the response population, 60% are in private practice and 40% are employed by corporations. Considering that only approximately 11,000 lawyers practice patent law, the survey is a statistically valid opinion of not only the AIPLA members but all lawyers who deal with the PTO. The survey results are enclosed.

As you well know, patent fees were raised from $190 million in FY 1990 to recover $320 million this year. The enormous further increases in fee levels proposed by the PTO for FY 1992 and 1993 apparently reflect the belief that the patent system will not be damaged by three successive years of $100 million fee increases. The answer to survey question VI-F shows that the overwhelming majority of lawyers who represent the inventors who must pay the fees disagree.

statistics are relevant. From 1983 through 1990, patent user fee payments to the PTO increased at a yearly average of 26% from the 1983 base. In 1991, patent fees increased 69% over the previous year. From 1982 through 1991, the PTO budget increased at a yearly average rate of 21% from the 1982 base.

These statistics show that the PTO has been very generously funded in recent years, and that the burden on users to pay for that has been significantly increasing each year. In contradistinction, the number of patent applications filed has only increased 8% each year on average since 1983.

The AIPLA survey is most revealing as to what the respondents think of the performance of the PTO, or stated another way, how the PTO sees fit to spend its funds. Both the PTO and the members of the AIPLA serve the same group of individuals; inventors who file patent applications. Yet there are significant disagreements between the PTO and the respondents to the survey on what inventors want and need from the PTO. As a general principle, the respondents by an overwhelming consensus believe that users of PTO services should have a greater role in advising the PTO on its expenditures. (See Question VI-E).

The survey questions are categorized in groups headed USPTO Physical Facilities, Searching By Examiners, APS, Patent Examining Corp., PTO Financing, and PTO Management. Following is a brief synopsis of significant opinions elicited by the survey.

PTO Management/Current Performance

Relevant Questions: VII-A through C

The PTO has significant problems with the quality of the work of patent examiners. The quality of the work is not improved over 5 or 10 years ago. The answers to the subparts of question C show a strong consensus on the specifics of what needs improvement: quality enhancement programs, administration, searching capabilities, and the training and supervision of examiners.

18-Month Pendency Goal

Relevant Questions: V-G, H, I and J

The survey shows that the production quotas imposed in the current environment on the examiners has a negative impact on the quality of their work product. A closely related question is VII-C, 5. The overwhelming consensus is that examiners need better training and supervision. A second closely related

question is V-K, 3. The examiners need better training in the principles of patent law.

The answers to these questions do not mean that managing by quotas should be abandoned. The answers mean that the examiners lack legal skills and training, as well as supervision, to effectively do their jobs under the current time quotas.

A final related question is V-A. The strong consensus is that the high examiner turnover rate hurts quality. Patent examiners are highly educated and rightly consider themselves to be professionals. The heavy emphasis on the quantity of work produced i.e. meeting production quotas, as opposed to the quality of the work performed leads to relatively low morale and low motivation. See question V-K, 1 and 2. This situation contributes to the turnover rate.

Quality of Examiner Work

Relevant Questions: V-L; VI-A and B

Perhaps the most discouraging answer in the survey is to question V-L. Only 28% of the respondents believe that the patent examiner corp today is as least as effective as it was 10 years ago. 44% affirmatively believe it was more effective 10 years ago. The AIPLA believed that the significant increase in PTO funding provided by applicants through high fees since 1982 would lead to improved examiner corps effectiveness.

The answers to questions VI-A and B shows the strong conviction that effective quality enhancement programs are very badly needed. The respondents would support significant user fee increases i.e. 10%-25% to support such a commitment.

Automated Patent System

Relevant Questions: VI-A through G; VII-C, 4

The respondents support the APS program for searching, primarily as a mechanism to give the examiners and the public effective access to foreign art. However, the answers to questions VI-C, F, and G indicate a significant lack of confidence that the APS search system as currently planned will be effective.

In closing, the AIPLA strongly supports having a cost efficient and

effective PTO. However, the very purpose of the patent system are frustrated when PTO fees prevent patent application filings or force premature abandonment of patent rights. Achieving an appropriate balance of these competing interests in the near and long-term is difficult but must be done. We hope the enclosed survey results provides useful information to assist you meet this challenge.

Regards,

Sincerely,

Michael W. Blommer
Executive Director

MB/jac
Enclosure

cc: Hayden W. Gregory, Esq.

AIPLA 1991 USPTO QUALITY SURVEY
PATENTS

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
II. USPTO Physical Facilities:					
A. Examiners' offices are adequately sized and furnished.	8%	34%	26%	26%	6%
B. The patent examining areas of the PTO are well-maintained.	2%	25%	33%	35%	5%
C. Patent examiners express satisfaction with the quality of the physical facilities at the PTO.	1%	8%	45%	34%	12%
D. The PTO facilities are as functional in meeting PTO's needs as they were:					
1. one year ago	11%	43%	33%	9%	4%
2. five years ago	5%	35%	36%	20%	5%
3. ten years ago	8%	27%	33%	20%	13%
E. The PTO facilities make an overall contribution to the quality of PTO operations.	15%	30%	25%	25%	5%
F. Improvements in PTO facilities could make a significant contribution to the overall quality of PTO operations.	22%	41%	21%	13%	3%
III. Searching By Examiners:					
A. The integrity of PTO classified search files with respect to U.S. patents is satisfactory.	1%	26%	21%	38%	12%

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
B. The integrity of PTO classified search files with respect to U.S. patents is at least as satisfactory now than it was:					
1. one year ago	7%	43%	37%	11%	3%
2. five years ago	4%	36%	36%	20%	4%
3. ten years ago	6%	27%	34%	23%	10%
C. My own use of the PTO classified search files indicates that they provide a reasonably complete evaluation of the state of the art in my area of principal technical practice.	5%	39%	23%	27%	7%
D. I typically resort to use of additional searching resources, outside the contents of the PTO classified search files, in order to make a reasonably complete evaluation of the state of the art in my areas of principle technical practice.	27%	40%	9%	19%	5%
E. I make more use of additional searching resources in order to make a reasonably complete evaluation of the state of the art now than I did:					
1. one year ago	11%	27%	33%	23%	6%
2. five years ago	13%	35%	29%	18%	5%
3. ten years ago	21%	27%	27%	19%	6%

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
F. The PTO system of subject matter classification represents an efficient means for accessing relevant prior art.	8%	44%	21%	19%	8%
G. The PTO system of subject matter classification represents at least as efficient a means for accessing relevant prior art today as it did:					
1. one year ago	10%	54%	28%	7%	2%
2. five years ago	8%	48%	30%	11%	3%
3. ten years ago	9%	43%	27%	14%	7%
H. In order for the PTO classified search files to contain enough information to permit a reasonably complete evaluation of the state of the art in my area of principal technical practice, additional (or more complete) materials would be needed in the following categories:					
1. none.	4%	6%	12%	28%	50%
2. foreign patent info. generally.	31%	56%	9%	3%	1%
3. Japanese patent information particularly.	26%	49%	20%	4%	2%
4. European patent information particularly.	26%	55%	14%	4%	1%
5. Non-patent publications of technical/scientific information.	38%	43%	13%	4%	2%

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I. Patent examiners on average are able to devote adequate time to the searching element of patent examination.	2%	18%	21%	39%	21%
J. The time which patent examiners are able to devote on average to the searching element of patent examination appears at least as adequate today as it was:					
1. one year ago	5%	39%	35%	16%	5%
2. five years ago	3%	26%	36%	29%	6%
3. ten years ago	3%	23%	31%	28%	15%
K. Patent examiners use PTO searching capabilities to provide reasonably complete assessments of the scope and content of the prior art.	3%	30%	28%	31%	7%
L. Patent examiners provide better assessments of the scope and contents of the prior art than was the case:					
1. one year ago.	2%	12%	47%	34%	6%
2. five years ago.	2%	14%	38%	39%	8%
3. ten years ago.	4%	14%	30%	36%	15%

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
IV. APS - Automated Patent System is a main-frame-based system providing examiners with full-text searching capabilities of all issued U.S. patents, together with the capability of displaying at workstations high-resolution digitized (facsimile) images of U.S. patent specifications in a variety of ways (e.g., including by class/subclass).					
A. Because the APS will not have the problem of "missing patents" from papercopy search files, it will *meaningfully* improve the quality of searches undertaken by patent examiners.	22%	50%	17%	9%	2%
B. In order for the APS to significantly improve the quality of patent examiners' searches, it must include facsimile images of:					
1. foreign patent information generally.	30%	54%	10%	5%	1%
2. Japanese patent information particularly.	24%	50%	18%	6%	2%
3. European patent information particularly.	26%	53%	15%	5%	1%
4. European patent information particularly.	30%	48%	14%	7%	1%
C. If APS workstations are made available to the public at the PTO, the PTO should phase-out the existing paper search files.	5%	16%	14%	25%	40%

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
D. The APS--even if limited to U.S. patents--should be worthwhile to the patent system, even if the cost to users per year of APS operation is					
1. $15 million($100 per appl).	32%	42%	11%	6%	9%
2. $30 million($200 per appl).	12%	35%	23%	16%	13%
3. $50 million($300 per appl).	6%	15%	24%	33%	23%
4. $90 million($600 per appl).	4%	6%	12%	32%	47%
E. The APS--if fully inclusive of U.S. and foreign patent information--should be worthwhile to the patent system, even if the cost per year of operating APS to users is					
1. $15 million ($100 per appl).	43%	39%	8%	5%	6%
2. $30 million ($200 per appl).	25%	41%	17%	8%	9%
3. $50 million ($300 per appl).	14%	25%	23%	22%	15%
4. $90 million ($600 per appl).	8%	11%	19%	30%	32%
F. Before additional money is expended on APS, a cost-benefit analysis should be completed.	44%	29%	13%	8%	6%
G. The PTO should not proceed with further deployment of the APS if it cannot demonstrate the productivity gains and/or quality gains will cost-justify the expense.	36%	29%	13%	15%	7%

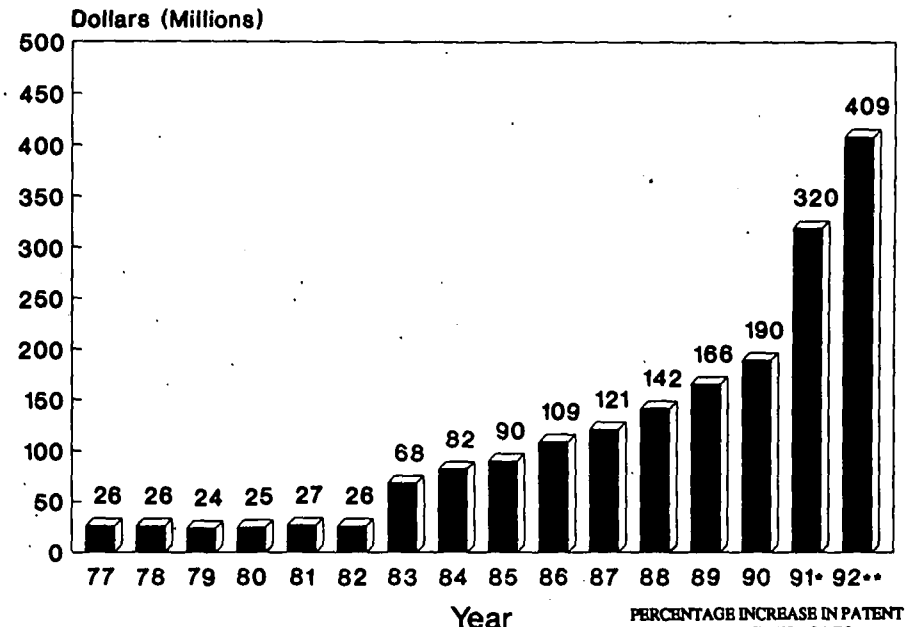
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
V. Patent Examining Corp.					
A. The turnover in the patent examining corp has an overall negative impact on the quality of search and examination activities	34%	43%	14%	7%	2%
B. The turnover in the patent examining corp is a more significant factor today impacting on the quality of PTO activities than					
1. one year ago.	8%	21%	46%	22%	3%
2. five years ago.	9%	31%	39%	19%	2%
3. ten years ago.	16%	23%	36%	21%	4%
C. Patent examiners appear to receive adequate training and supervision.	2%	28%	23%	33%	14%
D. The training and supervision of patent examiners today is at least as adequate as it was:					
1. one year ago.	4%	38%	46%	8%	4%
2. five years ago.	3%	28%	41%	22%	6%
3. ten years ago.	3%	27%	36%	20%	14%
E. The PTO appears to have an adequate number of experienced supervisory examiners for training and quality assurance purposes.	3%	26%	28%	31%	13%

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
F. The quantity and quality of experienced supervisory examiners appears as satisfactory today as it did:					
1. one year ago.	4%	38%	43%	11%	4%
2. five years ago.	2%	29%	36%	27%	6%
3. ten years ago.	3%	26%	32%	25%	14%
G. Patent examiners are able on average to devote adequate time to individual patent applications to conduct an effective search and produce well-reasoned official actions.	2%	21%	17%	40%	19%
H. The time devoted to examining individual patent applications is at least as adequate today as it was					
1. one year ago.	3%	35%	44%	15%	4%
2. five years ago.	2%	22%	38%	32%	5%
3. ten years ago.	4%	19%	33%	30%	14%
I. Patent examiners operate under "production quotas" which adversely impact on quality.	29%	39%	19%	11%	2%
J. The achievement of the PTO's 18 month pendency goas has had an impact on quality of examination which has been:					

1. seriously adverse.	13%	21%	22%	30%	14%
2. somewhat adverse.	9%	40%	25%	19%	7%
3. inconsequential.	3%	17%	28%	36%	17%
4. positive.	3%	15%	23%	28%	31%
K. Patent examiners appear in general to:					
1. evidence high morale.	2%	20%	39%	31%	8%
2. be highly motivated.	2%	16%	38%	36%	8%
3. be well versed in substantive patent law principles.	1%	21%	28%	38%	11%
4. technically proficient in areas in which they examine.	4%	41%	30%	20%	6%
L. Overall, the patent examining corp is today at least as effective in searching and examining patent applications as it was					
1. one year ago	5%	47%	36%	9%	3%
2. five years ago	3%	29%	36%	27%	5%
3. ten years ago	4%	24%	27%	30%	14%
VI. PTO Financing.					
A. The PTO should have additional funding devoted to improving the quality of its operations.	33%	45%	14%	6%	3%

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
B. If inventors could be assured of high quality search and examination, the patent system would be well served by increasing user fees to accomplish this objective by as much as					
1. 10%	34%	34%	10%	10%	12%
2. 25%	12%	32%	16%	20%	19%
3. 50%	6%	10%	16%	33%	34%
4. 100%	4%	5%	9%	27%	56%
C. The "small entity" fee structure is beneficial to the patent system, even if:					
1. Higher fees must be collected from "large entities" in order to subsidize lower fees for "small entities".	24%	36%	10%	17%	13%
2. "Small entity" fees were available only for filing fees, not issue and maintenance fees.	14%	33%	13%	21%	19%
D. The "small entity" subsidy (extra fees charged to large entities to make up the difference in fees between large entities and small entities), regardless of other factors, should be solely financed by Congress from appropriations.	30%	23%	21%	18%	8%

Patent Fee Income

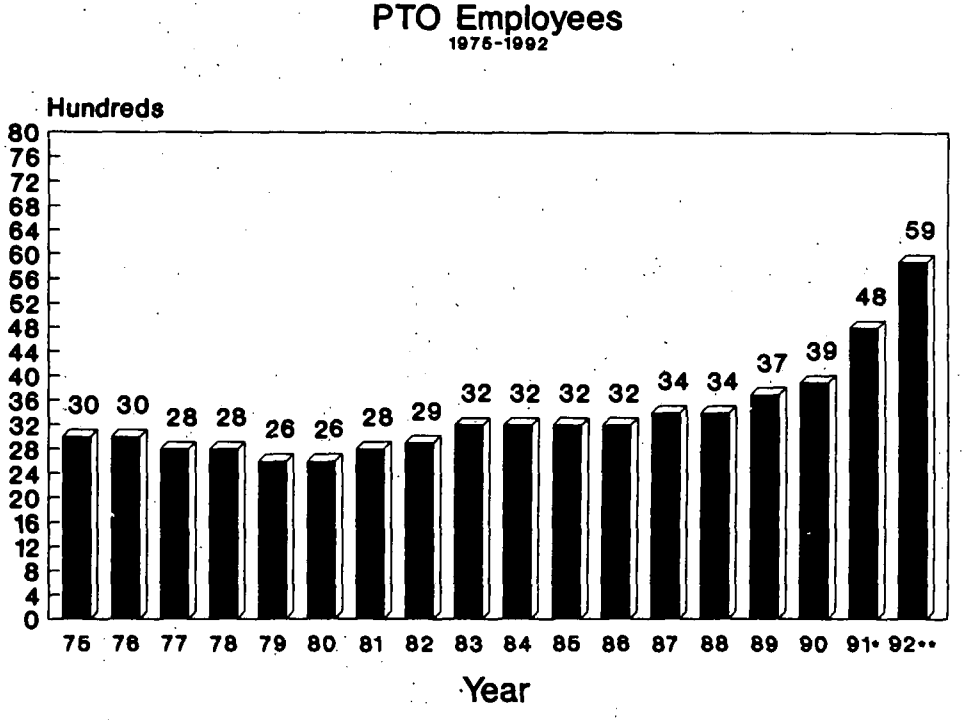


* USPTO Estimate
** USPTO Authorization Proposal

PERCENTAGE INCREASE IN PATENT USER FEE PAYMENTS TO PTO

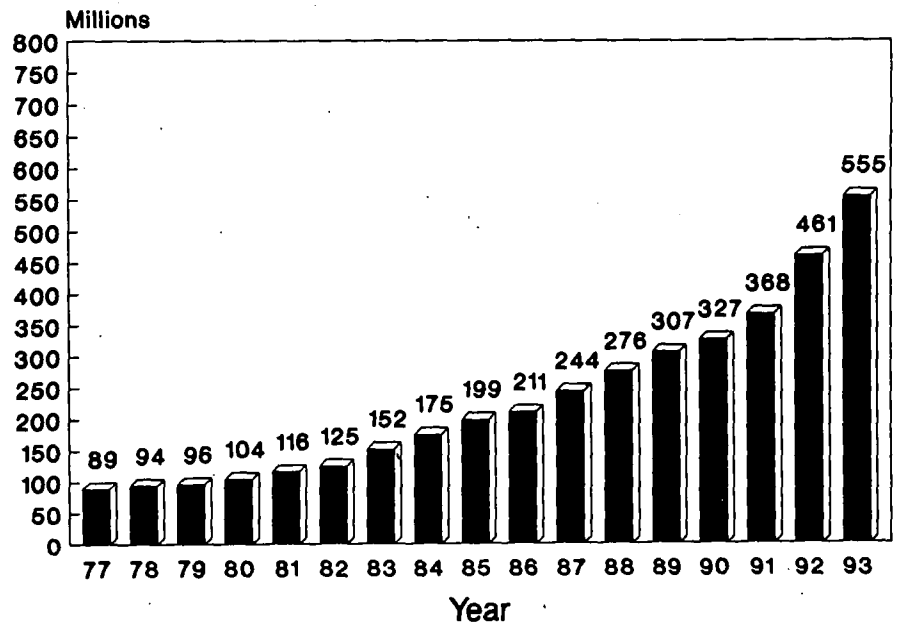
1977 - 1982	0%
1982 - 1983	162%
1983 - 1990	26%*
1990 - 1991	69%
1991 - 1992	28%**

*Average yearly increase in users fees paid from 1983 base.
**Proposed


PTO Employees
1975-1992
Hundreds
80
76
72
68
64
60
56
52
48
44
40
36
32
28
24
20
16
12
8
4
0
30 30 28 28 26 26 28 29 32 32 32 32 34 34 37 39 48 59
75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91• 92••
Year
• Budget authority
•• Request

PTO BUDGET

(1977 - 1991 Obligations)
(1992 - 1993 Budget Authority



YEARLY AVERAGE INCREASE

1977 - 1982	8%	Majority funded by appropriations
1982 - 1991	21%	Majority funded by User Fees
1991 - 1993	25%	Totally funded by User Fees

APPENDIX 11.—LETTER FROM JOE B. PATE, JR., PRESIDENT, COTTON UNLIMITED, INC., TO COMMISSIONER OF PATENTS AND TRADEMARKS, DATED JUNE 10, 1991

COTTON UNLIMITED, INC.

June 10, 1991

Honorable Commissioner of
Patents and Trademarks
Washington, D. C. 20231

Attn: Frances Michalkewicz
Suite No. 507
Crystal Park One
Fax No. 703-557-8864

Re: OPPOSED TO PROPOSED PATENT FEE INCREASE

Dear Sir:

Only last November, most Patent Office fees were, amazingly enough, increased by 69%.

The Patent Office now, in the middle of a recession, proposes that Issue and Maintenance fees, along with various other fees, for a "small entity" be increased by 100%!

Small business creates a large portion of the technology necessary for the United States to compete in the world marketplace. If the Patent Office has as it's goal giving a technological edge to Japanese and other large foreign companies, it surely will succeed with the proposed fee increases.

Stripping U. S. industry of the ability to protect the technology under patent law will cause much greater long-term damage to the U. S. economy than can possibly be caused by not making the U. S. Patent Office financially self-sufficient.

COTTON UNLIMITED, INC. is a leader in developing environmentally safe oil spill containment material, insulation, and other products. These products utilize cotton and other natural fibers and are marketed internationally. COTTON UNLIMITED, INC. needs to patent its technology.

Phone: (806) 495-3501 • Old Mill Road • Post, Texas 79356 • Fax: (806) 495-3502

The Patent Office is pricing patent protection out of the market.

COTTON UNLIMITED, INC. STRONGLY OPPOSES ANY INCREASE IN PATENT OFFICE FEES.

Sincerely,

Joe B. Pate, Jr.
President

JBP/sp

cc: Senator Dennis DeConcini
Senator Orrin G. Hatch
Senator Ernest F. Hollings
Representative William Hughes

APPENDIX 12.—LETTER FROM WAYNE R. GLASS, DIRECTOR, WASHBURN UNIVERSITY OF TOPEKA, TO HON. WILLIAM J. HUGHES, DATED JUNE 10, 1991

WASHBURN UNIVERSITY OF TOPEKA

Small Business Development Center
Topeka, Kansas 66621
Phone 913-295-6305

RECEIVED
JUN 18 1991
Sub on Courts

June 10, 1991

The Honorable William J. Hughes, Chairman
Subcommittee on Intellectual Property and Judicial Administration
House of Representatives
Washington, D.C. 20515

Dear Representative Hughes:

In November of 1990, fees charged by the U. S. Patent and Trademark Office were increased 69 percent, essentially without the opportunity for public comment as to the impact of such increases. It is my understanding that another increase in fees of 91% is planned within Administration Authorization Bill H.R. 1613. Fees that were at one time $1,975 for registration and maintenance of a patent will rise to over $6,000!

While the dollar amount of these increases is staggering enough, the impact on the small, individual inventor is immeasurable. Throughout history, it has been the independent inventor and small business which has brought us some of our most important innovations. For example, air conditioning, the airplane, pacemakers, the helicopter and much of our micro-electronics technology were developed by either independent inventors or small businesses. In either case, the ability to obtain a patent has been a key to encouraging innovation, as the patent provides the inventor exclusivity to his or her invention.

Many of the inventors we work with will be priced out of the patent market by the increases in the patenting fees. On top of the patent office fees, the inventor also has to pay attorney's fees in a system that is prohibitive for "self-patenting." Effectively prevented from patenting, their innovations will languish on the shelf, out of fear that any market introduction will result in the invention being stolen.

I would encourage you to oppose any increases to the patent office fees. The necessity of having the patent process open to those needing it demands that the system be designed (and priced) so as not to exclude them.

Sincerely,

Wayne R. Glass, Director

APPENDIX 13.—LETTER FROM MICHAEL J. WHITELAW, VICE PRESIDENT, PROFESSIONAL ACTIVITIES, INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC., TO HAYDEN GREGORY, COUNSEL, DATED JUNE 6, 1991



IEEE **UNITED STATES ACTIVITIES**

RECEI...

Promoting Career and Technology Policy Interests of Electrical, Electronics & Computer Engineers

United States Activities Board

Technology Policy Council
Aerospace R&D Policy
Communications & Information Policy
Defense R&D Policy
Energy Policy
Engineering R&D Policy
Health Care Engineering Policy
Man & Radiation

Government Activities Council
Congressional Fellows
Washington Internship for Students of Engineering
Legislative Report
National Government Activities
State Government Activities
Technology Policy Conference
Technology Transfer
U.S. Competitiveness

Member Activities Council
Awards & Recognition
Communications
Continuing Engineering Education
Employment Assistance
IMPACT
Opinion Survey
Precollege Education
Professional Perspective
Salary Survey

Professional Activities Council for Engineers (PACE)
PACE Regional & Divisional Activities
PACE Information/Workshop
Student Professional Awareness

Career Activities Council
Anti-Discrimination
Career Maintenance & Development
Ethics
Intellectual Property
Licensure & Registration
Manpower
Pensions

IEEE-USA Office
(202) 785-0017

"Information Line" Recording
(202) 785-2180

Facsimile
(202) 785-0835

June 6, 1991

Hayden W. Gregory
Majority Counsel
House Subcommittee Intellectual Property
and Judicial Administration
207 Cannon House Office Building
Washington, DC 20515

Dear Hayden:

The Institute of Electrical and Electronics Engineers, Inc. (IEEE) is a transnational professional/technical society whose membership currently includes more than 320,000 electrical, electronics and computer engineers worldwide. The United States Activities unit of IEEE (IEEE-USA) represents close to 250,000 of these engineers who live and work in the United States.

Our U.S. members oppose the "Revision of Patent and Trademark Fees; Proposed Rule." We believe that the rule goes far beyond the intent of the bill that authorizes appropriations to the Patent and Tradmark Office (H.R. 1613).

The proposed rule would do away with a two-tier fee system, which presently entitles small entities (500 employees or less) to pay 50% less than large entities for the administration of their patent. Under the new rule there would be no distinction between small and large entities except for patent application filing fees associated with claim fees. This exception, however, is only a small percentage of the total fees that an applicant must pay when prosecuting a patent application. Therefore the small entity would incur over a 91% increase in patent prosecution, issue fees and post-issuance fees since November 1990.

IEEE-USA feels that an additional increase to the small entity fee imposes an undue financial burden on small inventors who are vital to U.S. competitiveness and technological innovation.

Before the Patent and Trademark Office is permitted to combine the two-tier fee system into one, Congress should require the Patent and Trademark Office to prepare a report that would quantitatively outline the effect that this would have on domestic filing by small entities. The report should also include the concurrent effect that this would have on competitiveness and technological innovation.

250
50-921

In conjunction with efforts to determine the justification for combining the two-tier fee system into one, IEEE-USA, urges Congress to request that the Patent and Trademark Office thoroughly investigate all measures for decreasing cost and increasing efficiency, e.g;

- o Determine whether or not private contractors could operate specific functions of the Patent and Trademark Office.

- o Identify specific technologies that are considered to be a high priority for U.S. competitiveness and train additional examiners to react quickly to applications in these areas.

- o Cooperate with industry and professional societies to determine which "fast moving" technologies are no longer appropriate for patents. In doing so, a new form of intellectual property might be developed, e.g. "quick registration of useful articles." This type of intellectual property could reduce costs to the Patent Office and would respond to the changing needs of fast moving technology.

If you plan to hold any additional hearings on the U.S. Patent and Trademark Office's fee system, IEEE-USA would like the opportunity to testify. For additional information please contact Scott D. Grayson, Administrator of Professional Programs at IEEE-USA (202) 785-0017.

Sincerely,

M.J. Whitelaw

Michael J. Whitelaw
Vice President
IEEE Professional Activities

APPENDIX 14.—LETTER FROM ROBERT P. MERGES, ASSOCIATE PROFESSOR OF LAW, BOSTON UNIVERSITY SCHOOL OF LAW, TO HON. WILLIAM J. HUGHES, DATED MAY 7, 1991

Boston University

School of Law
765 Commonwealth Avenue
Boston, Massachusetts 02215

Faculty Services
Tel: 617/353-3110
Fax: 617/353-3077



RECEIVED
MAY 14 1991
Sub on Courts

May 7, 1991

U.S. Representative William Hughes
Chairman, Subcommittee on Courts,
Intellectual Property and the
Administration of Justice
2137B Rayburn House Office Building
Washington, D.C. 20515

Dear Representative Hughes:

I have read over the proposed budget for the Patent Office. I find it in general a troubling document, and I thought you might find my views useful as you evaluate legislative responses to it.

The general concern with "breaking even" at the Patent Office runs afoul of the Office's recent tradition, and raises some serious questions for the future. The contributions that inventors make to society have long been thought to more than compensate for the costs of running the Patent Office. If every little service provided by the Office comes with a fee, this will not only cause problems for inventors in the future, but it also sends a message to other inventors: it says that their inventions might have some intrinsic merit, but they are going to have to pay to receive any recognition. This strikes me as a bad signal to send, especially in an era when we should be encouraging invention, not discouraging it by "nickel-and-diming" inventors at every turn.

I understand the impetus behind the bill, but am troubled by certain specific provisions. For instance, it is clear that the public search room must be subsidized by other income sources available to the Office, but it is somewhat misleading to support this subsidy, when it will simply be paid for out of the application fees and other administrative costs which will be born by inventors who, when they have completed their use of the search room, eventually apply for a patent. In other words, this is a "subsidy" only in a very narrow sense, since many of these inventors will be subsidizing themselves ultimately.

I also understand the legislation's concern with the difficult distinction between small business entities and large businesses. However, any attempt to reduce or eliminate the "discount" for small entities will, I think, cause real problems. I say this for two reasons. First, individual inventors will always need some kind of break at the Patent Office; they simply

cannot afford to pay the full fee required by the Office. This is in keeping with a very long-standing Patent Office tradition of favoring the "little guy" -- one of the very few such institutions in Washington which still does more than pay lip service to this goal. The second point is that for a small inventor, like any small business person, there are strong incentives to utilize the corporate form to do business. The limited liability and enhanced capitalization possibilities are two of the best reasons. What this means is that retaining a discount only for individuals will discourage inventors from using the corporate form, which will no doubt put them to a difficult choice. Especially with respect to products liability, I can see this becoming a major disincentive to invent, which would be a disaster for the patent system.

To the extent that the legislation you sent me tends toward a "privatization" of the Patent Office, I think it is a mistake. Among small inventors, it is often said that although the Patent Office is far from perfect, it is one of the few institutions which will give the small person some kind of justice. During World War II, there was a special program run by the Department of Defense to encourage small inventors to contribute useful inventions to the war effort. Several inventors have identified this as a promising model for society to use to tap into the talents of small inventors. See, e.g., R. Brown, Inventors at Work (1989). This legislation goes exactly in the opposite direction, since it will have the effect of discouraging small inventors rather than paying special attention to them.

Many economic studies in the 1930's and 40's predicted that the small inventor would become increasingly irrelevant given the growing sophistication of technology and concomitant need for large research teams. While today the vast majority of patents are produced by large research groups, small inventors continue to make important contributions. Inventors such as Robert Kearns, inventor of the intermittent windshield wiper come to mind. Many other examples could be named. The point is simply that small inventors continue to provide our economy with a rich stream of inventions. It is often important that they are not experts and members of large organizations; it is often people like this who come up with major insights. At a time when we need their inventions badly, this legislation sends a bad message; your legal protection depends on your ability to pay.

Although even large corporations can make some complaints based on the proposals in this legislation, it is really the small inventor who would suffer the most. As I have tried to make clear, I think this is a mistake in the current environment.

I would be happy to comment on any other specific legislation or provisions in this legislation. Thank you for considering my comments.

Sincerely,

Robert P. Merges
Associate Professor of Law

RPM:mcg

APPENDIX 15.—LETTER FROM DR. S. ALLEN HEININGER, PRESIDENT, AMERICAN CHEMICAL SOCIETY, TO HON. WILLIAM J. HUGHES, DATED MAY 7, 1991



American Chemical Society

OFFICE OF THE PRESIDENT

S. Allen Heininger
President-Elect, 1990
President, 1991
Immediate Past President, 1992

1155 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20036
Phone (202) 872-4600
Fax (202) 872-6338

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MAY 9 1991
Sub on Courts

May 7, 1991

The Honorable William J. Hughes
Chairman
Subcommittee on Intellectual Property
and Judicial Administration
Committee on the Judiciary
U. S. House of Representatives
Washington, D.C. 20515-6216

Dear Chairman Hughes:

In your April 8, 1991 letter, you requested comments on the Patent and Trademark Office reauthorization bill, H.R.1613. This bill is being studied by the ACS Committee on Patents and Related Matters, and we hope to have more detailed comments to you soon, especially on the matter of the small entity category.

The American Chemical Society has a long history of involvement in the congressional debate on PTO user fees, dating back to the mid-seventies. The Society's well-established positions, outlined below, are certainly applicable to the current debate.

- While the Society recognizes the need for increased patent fees at a time when efforts are being made to reduce government expenditures, the issuance of patents benefits the general public as well as patent holders. Therefore, the general public (through government appropriations) should bear some portion of the cost of operating the PTO.

- Fees should be fixed at modest levels in order to comply with the constitutional mandate of the patent system--"to promote the progress of science and useful arts." Fees for obtaining a patent have increased substantially over the last five years, currently totally over $6,000.

- The ACS considers it extremely important to technology development that individual inventors, who include some of this Nation's most creative persons, not be excluded from the patent system because of high fees. Limiting the 50% discount to the application fee, as called for in H.R.1613, would substantially increase the fees for small entities and individual inventors. During the 1982 debate on this issue, the Society called for an alternative to the two-tiered small entity discount. This alternative would be a system under which payments of half of the fees would be deferred until five years after the patent is granted to a small entity. This would enable those for whom immediate payment of the entire fee would represent too great a financial burden to defer payment of the remaining portion of the fees until there has been an

opportunity to arrange for commercialization of the invention. Such a program would meet the goal of encouraging innovation, without depriving the PTO of necessary funds or requiring larger entities to subsidize these groups. If such a system is not adopted, the ACS strongly believes that subsidization of patent fees of individual inventors and small businesses should be derived from general funds, rather than from other patent applicants.

- The Society believes that the Congress should set the fees, rather than leave this function to the chance distribution between large and small applicants or to an arbitrary administrative decision. As such, Congress should keep a close eye on PTO activities in this area.

The American Chemical Society appreciates this opportunity to comment on this legislation and stands ready to provide additional comment or further discussion on these issues.

Sincerely yours,

S. Allen Heininger

Dr. S. Allen Heininger
President

cc: Members, Subcommittee on Intellectual Property
and Judicial Administration

APPENDIX 16.—LETTER FROM CLAYTON WILLIAMSON, PRESIDENT, KANSAS ASSOCIATION OF INVENTORS, TO HON. WILLIAM J. HUGHES, DATED MAY 28, 1991

RECEIVED
JUN 10 1991
Courts

Kansas Association of Inventors
2015 Lakin • Great Bend, KS 67530 • (316) 792-1375 • FAX (316) 792-3406

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Leo Russell
Wichita, KS
Northeast Region
Dale Russell
Bonneville, KS
Southeast Region
David Boyt
Pittsburg, KS
Out of State Region
Chester E. Marotte, Jr.
Denver, CO

May 28, 1991

The Honorable William J. Hughes
Chairman
Subcommittee on Intellectual Property
and Judicial Administration
House of Representatives
Washington, D.C. 20515

Dear Representative Hughes:

I am concerned about the repercussions the Administration's Authorization Bill, H.R. 1613 will have on the future of the patent system of the United States.

The 69 percent increase in patent fees last November 5th had a demoralizing, devastating effect on our more than 1200 member inventors.

Many have ceased patent process simply because they cannot afford the larger fees. If there is an additional burden of a 91 percent fee increase on top of the existing 69 percent, (which really ends up a total increase of 223 percent) I fear that technology will cease in several areas important to the Nation's future.

What would have been the outcome of Operation Desert Storm if not for people like Jack Kilby and Robert Noyce who invented the monolithic integrated circuit (silicon chip). That invention alone made computer tracking and destruction of Scud missiles and other pinpoint target identification possible?

Many of our inventors feel they are now unfairly supporting other persons of the Nation that are benefiting from the inventors technical and non-technical inventions. Sure, the inventor will benefit from their inventions, but mankind as a whole also benefits. The cost of operations of the Patent and Trademarks Office should be born by all of us through public funding.

I urge you to consider the restoration of public funding for automation of the PTO. Also to revert to the policy of partial public funding as it was prior to the November 5th increase of fees. I feel that the 69 percent increase has already had a dramatic impact on number of patents applied for.

Sincerely,

Clayton Williamson
President

APPENDIX 17.—LETTER FROM GORDON B. NASH, JR., PRESIDENT, CHICAGO BAR ASSOCIATION, TO HON. WILLIAM J. HUGHES, DATED MAY 13, 1991 (WITH ATTACHMENTS)

THE CHICAGO BAR ASSOCIATION
321 South Plymouth Court
Chicago, Illinois 60604-3997
(312) 554-2000
FAX (312) 554-2054

OFFICERS
GORDON B. NASH, JR.
PRESIDENT
LAUREL G. BELLOWS
FIRST VICE PRESIDENT
THOMAS A. DEMETRIO
SECOND VICE PRESIDENT
DIXIE LEE LASWELL
SECRETARY
JOHN B. SIMON
TREASURER

May 13, 1991

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MAY 28 1991
Sub on Courts

The Honorable William Hughes
Chair, House Judiciary Subcommittee
on Intellectual Property and
Judicial Administration
Washington, DC 20510

Re: Opposition to Elimination of
Small Entity Patent Fee Subsidy

Dear Representative Hughes:

This letter is being written to advise you that The Chicago Bar Association opposes the provisions of the U.S. Patent and Trademark Office Authorization Bill (HR 1613 and S 793) which would eliminate the small entity subsidy for all patent fees except for filing fees.

The small entity fee structure benefits individual inventors, small businesses and universities and provides a critical practical benefit of making the patent system accessible to these entities.

The public benefits in two primary respects from encouraging patent issuance: first, technological innovation is encouraged because it will be rewarded, and second, public disclosure of inventions promotes increased knowledge and public teaching of innovations, resulting in dedication of the invention to the public on expiration of the patent.

These considerations have been a cornerstone of our society since ratification of the Constitution including Art. I, Sec. 8, clause 8, empowering Congress to "promote the progress of ... the Useful Arts ...."

Historically, many important innovations have come from individual inventors and other small entities.

Adopting a policy of discouragement of innovation could not come at a worse time economically. The last thing the economy needs is to deal with a recession by adopting a shortsighted governmental fix which will discourage innovation by small entities, most of whom are domestic, and leave patents only to large entities, many of whom are foreign.

BOARD OF MANAGERS CHESTER L. BLAIR • THOMAS D. ALLEN • HON. THOMAS R. FITZGERALD • JACQUELINE STANLEY LUSTIG • DONALD HUBERT • PATRICK W. O'BRIEN
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TERRENCE M. MURPHY, Executive Director
JACK E. SWANSON, Controller • SHIRLEY L. DUTTON, Executive Secretary

A more detailed position paper is enclosed. Please consider these views in determining your position at the time you are called upon to vote on this legislation.

Very truly yours,

Gordon B. Nash Jr.

GORDON B. NASH, JR.
President

GBN/ss
Enc.

CHICAGO BAR ASSOCIATION
POSITION PAPER IN OPPOSITION
TO PATENT SMALL ENTITY FEE INCREASES

David C. Brezina, Chair,
Chicago Bar Association
Patents Subcommittee

May 8, 1991

I THE PROPOSED EFFECTIVE DOUBLING OF SMALL ENTITY FEES IS STRONGLY OBJECTED TO

The Chicago Bar Association opposes the provisions of the Patent and Trademark Office Authorization Bill (HR 1613, S 793) which would eliminate the small entity subsidy for all patent fees except for filing fees.

The House authorization bills was introduced March 22, 1991. The principles were supported by the Hon. Harry Manbeck during House appropriations testimony on Tuesday, March 5, 1991[1], which would eliminate the small entity subsidy for all patent fees except for filing fees.

The definition of a "small entity" is either (a) an individual inventor, (b) a university or non-profit organization or (c) a business that employs fewer than 500 people. The latter definition is that determined by the Small Business Administration.[2]

It is the author's understanding that testimony in opposition has been presented by Intellectual Property Owners, Inc. (IPO); the American Intellectual Property Law Association (AIPLA) and others.

The small entity fee structure was adopted as a compromise at the time patent fees were increased from a uniform $65.00 to a cost based structure. The quantum of increases (from 65.00 to about 170.00 for small entities, and to 340.00 for large entities) reflected the fact that historically fee increases did reflect close to a cost recovery measure when adopted. This went into effect September 30, 1982.[3] At the time, reservations were expressed because shifting to a cost based structure indicated an objectionable "user fee" mentality which ignored the public benefit of the patent system in both promoting innovation and dissemination of information.

---

[1] The Intellectual Property Owners (IPO) Washington Brief, Vol 12, No. 16; March 6, 1991,

[2] 37 CFR 1.9 (d) (citing 13 CFR 121.12)

[3] 35 USC 41 (f); 37 CFR 1.16; MPEP 607

Brezina, Opposition to Small
Entity Patent Fee Increase
HR 1913, S 793
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II OVERVIEW OF THE SMALL ENTITY FEE STRUCTURE

The small entity fee structure benefits individual inventors, small businesses and universities and provides a critical practical benefit of making the patent system accessible to these entities.

During the passage of the fee authorization legislation in 1982, a compromise was reached in which fees were greatly increased but the impact on individual inventors, small businesses and non-profit institutions -- "small entities" -- was tempered by cutting the filing, prosecution, issuance and maintenance fees in half.

Using Chicago fees as a guide, in 1988, according to the AIPLA 1988 Economic Survey, attorney's fees for preparing and filing a patent application were a median $2119.00 (25th percentile: 1707, 75th percentile: 2779) The filing fee for a small entity was $170. Patent prosecution attorney's fees were a median $1551.00 (25th %: 1016; 75th % 2194). The small entity issue fee was $310.00. November, 1990 fees increased by a "69% surcharge" to 315 and 525.

COMPARISON, CHICAGO ATTORNEY FEES AND GOVERNMENT FEES

	1988	1990	Proposed 1991
Med. Att'y: Filing	2119	2336.20[4]	2453.01
Filing Fee	170	315	315
Median Prosecution	1551	1709.98	1792.33
Issue Fee	310	525	1050
Total	4140	4886.18	5610.34
Fees as % of whole	12%	17%	24%
Increase over '88 (total)		746.18	1470
% Increase over '88		18%	36%
Increase over '88 (gov't fees)		360.00	885
% Increase due to fees		48%	60%

[4] Assuming 5% per year increase

Brezina, Opposition to Small
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The proposed government fee increase would account for 60% of the increase in costs to the inventor over three years. There is no justification for this increase. The governmental fees are becoming a major cost component and may in and of themselves serve to discourage the innovation and public disclosure the patent system has been designed to promote for two centuries.

III AS A MATTER OF PUBLIC POLICY, FILING PATENTS SHOULD BE ENCOURAGED, NOT DISCOURAGED

> The public benefits in two primary respects from encouraging patent issuance: first, technological innovation is encouraged because it will be rewarded and second, public disclosure of inventions promotes increased knowledge and public teaching of innovations, resulting in dedication of the invention to the public on expiration of the patent.

These considerations have been a cornerstone of our society since ratification of the Constitution empowering Congress to "promote the progress of . . . the useful Arts . . ." The public benefit in protecting intellectual property is not a recently constructed rationale. Authorities such as Locke, Blackstone, and Hamilton, Jay and Madison (The Federalist) thought rewarding creators was a valuable societal interest.

In order to understand the policies behind the patent laws one must evaluate the origins of those laws. The Constitution provides:

> The Congress shall have power *** to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.[5]

In The Federalist this provision was viewed to be virtually beyond debate:

> The fourth class comprises the following miscellaneous powers: 1. A power to "promote the progress of science and useful arts, by securing for a limited time, to authorize and inventors, the exclusive right to their respective writings and discoveries."

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[5] Art. I, Sec. 8, Cl. 8

> The utility of this power will scarcely be questioned. The copy right of authors has been solemnly adjudged in Great Britain, to be a right at common law. The right to useful inventions, seems with equal reason to belong to the inventors. The public good fully coincides in both cases, with the claims of individuals. The states cannot separately make effectual provision for either of the cases, and most of them have anticipated the decision of this point, by laws passed at the instance of Congress.[6]

After two hundred years, the advisability of encouraging patent protection is now being called to question. Fee increases effectively impose a tax on protecting innovation, which is of course also the "power to destroy."[7]

The Framers may well have intended a Constitutional property right to patents:

> It should be noted that the Constitutional clause which established the basis for a Federal Patent Law in America did not direct that the government grant inventors rights to their inventions, but rather to 'secure' them their rights. This tacit recognition of the fact that inventors inherently owned all rights to their inventions, and that the government was only furnishing them with a means of protecting those rights by law, is consistent with similar language in the Declaration of Independence that "all men are endowed with their creator with certain unalienable rights" and that governments exist to secure them those rights.[8]

This is eminently consistent with the theories of philosopher John Locke -- as was recognized by Blackstone.

Ten years prior to the Declaration of Independence of the United States, in Commentaries On The Laws Of England, Blackstone

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[6] Hamilton, The Federalist No. XLIII (Vol. II, p. 57, Legal Classics Lib. Ed., Gryphon, Birmingham, AL, 1983) (emphasis added)

[7] McCullogh v. Maryland 4 Wheat. 316

[8] 200 Years of English and American Patent, Trademark and Copyright Law, ABA Sec. of Pat., Tm. and Copr. Law, August 9, 1976 at 27, 28

stated:

> There is still another species of property, which, being grounded on labour and invention, is properly reducible to the head of occupancy than any other; since the right of occupancy itself is supposed by Mr. Locke, and many others, to be founded on the personal labour of the occupant. And this is the right, which an author may be supposed to have in his own original literary compositions: so that no other person without his leave may publish or make profit of the copies. When a man by the exertion of his rational powers has produced an original work, he has clearly a right to dispose of that identical as he pleases, and any attempt to take it from him, or vary the disposition he has made of it, is an invasion of his right of property.[9]

Prior to the Constitution's copyright and patent clause, the property right in patents was not inherently recognized and they were wholly creatures of the state.

In the Constitution the Framers recognized the natural right to property. This natural right vested whether it be in the occupant of Locke's "state of nature" picking fruit and converting it to personal property or the mechanic in the infant Industrial Revolution[10] creating an item of technology through intellectual labors.

Inventor and first patent administrator, Thomas Jefferson, espoused the reward to the inventor as an important mechanism in the Constitutional underpinnings in the patent system. A philosophical position contrary to "natural rights" is attributed to him. The Supreme Court stated:

> [Jefferson] rejected the natural-rights theory in intellectual property rights and clearly recognized the social and economic rationale of the patent system. The patent monopoly was not designed to secure to the inventor his natural right in his discoveries. Rather, it was a reward, an inducement, to bring

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[9] Vol. 2, Ch. 26, "The Rights of Things", Sec. 8, at 405 (Legal Classics Lib. Ed., Gryphon, Birmingham, AL, 1983)

[10] Adam Smith's The Wealth of Nations was published in 1776

forth new knowledge.[11]

Whether one adopts the position there is a natural right to a patent, or that a patent is a reward for making the public disclosure of the invention, long established public policy supports promotion of patents as a benefit to the public.

IV SMALL ENTITIES AND INDIVIDUAL INVENTORS HISTORICALLY HAVE MADE GREAT CONTRIBUTIONS

Historically, many important innovations have come from individual inventors and other small entities.

Examples of the historical contributions to technology made by individual or small entity inventors indicate the importance of preserving the complete and practical availability of patent protection to inventors and technology other than "sophisticated technologies and powerful corporations."[12] The telegraph was invented by artist and inventor Samuel E. B. Morse's in 1836, on his own and prior to his obtaining financing.[13] Alexander Graham Bell's telephone was invented in tutor Bell's attic workshop, his only backing being that of friends and his future father in law.[14] Henry Ford's first automobile, the Quadricycle, was built by him in his garage in 1896.[15] Charles Goodyear developed the rubber industry experimenting on his kitchen stove[16] a similar "laboratory" to that used by George Eastman founder of Kodak[17] and John Wesley

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[11] Graham v. John Deere 383 US 1 (1966)

[12] Panduit Corp. v. Dennison Mfg. Co. 810 F 2d 1561, 1 USPQ 2d 1593, 1600 (Fed. Cir., 1987)

[13] Inventors and Discoverers (National Geographic Soc., Washington, 1988) at 53; O'Reilly v. Morse, 56 US (15 How) 62 (1853); US Patent Re 117

[14] Inventors and Discovers, supra, at 68-9 The Telephone Cases 126 US 1, 531 (1888); US Patent 164,465

[15] Inventors and Discoverers, supra at 92

[16] Id at 122

[17] Id at 160-161

Hyatt, who discovered Celluloid, the first modern plastic.[18]

A famous competition for development of controllable manned flight occurred between two Dayton bicycle mechanics and the eminent Professor Langley, the latter having the financial support of the Federal government under the auspices of the Smithsonian Institution. The Wright brothers, the independent bicycle mechanics, were the first to succeed.[19]

This is not merely a nineteenth and early twentieth century phenomenon. The myth that inventions are now confined to the powerful was one the Federal Circuit was forced to dispel in Panduit v. Dennison[20] In a prior opinion the Federal Circuit observed:

> Jack E. Caveney founded Panduit in the basement of his home in 1955, making first a plastic wiring duct. In 1958, he developed and began selling a two-piece plastic cable tie. In 1961 he began a research program to develop a one-piece plastic cable tie. That program lasted nine years and cost several million dollars. The end result of that program is the tie of the '538 patent, ...
>
> First sold in 1970, the tie of the '538 patent had by 1984 achieved annual sales of $50 million, and was accounting for half of Panduits's total profits and 80 percent of its cable tie sales.[21]

While perhaps not as revolutionary as the telephone or airplane, this last example points out that the small inventor should be encouraged, not penalized. Yet another recent example is the development of the now ubiquitous personal computer. Hobbyists Stephen Wozniak and Steve Jobs developed a functional personal computer in a garage. The computer was developed to be user friendly and acceptable to the non-technical computer operator, which was a motivation behind the non-threatening name

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[18] Id at 129 - 130

[19] Id at 100, 105; Williams, The Triumph of Invention (Facts on File Pub., New York, 1987) at 217

[20] supra

[21] Panduit Corp. v. Dennison Mfg. Co. 774 F2d 1082, 227 USPQ 337, 338 (Fed. Cir., 1985)

"Apple." This product was another success story.[22]

Aviation yields another more recent example of two brothers advancing the limits of technology. Not until 1986 did an aircraft circle the globe non-stop, without refueling. Voyager was designed and built by homebuilt aircraft innovator Burt Rutan, and flown by his brother Dick, with co-pilot Jeana Yeager.[23] This was a feat achieved by a team of individuals not by Boeing, Lockheed, McDonnell-Douglas, Aerospatiale or the other giants of aerospace.

V THE CURRENT ECONOMIC CLIMATE MAKES THIS SHORT SIGHTED EFFORT ILL ADVISED

> Adopting a policy of discouragement of innovation could not come at a worse time economically. The last thing the economy needs is to deal with a recession by adopting a short sighted governmental fix which will discourage innovation by small entities, most of whom are domestic, and leave patents only to large entities, many of whom are foreign.

It strains credulity to believe that a 339% increase in the patent issue fee for a small entity in one year could have anything other than a devastating effect on innovation by the individual or small business. With manufacturing jobs continuing to disappear at an alarming rate, and a recession of yet unknown time and severity upon us, it is an unwise decision for the Patent and Trademark Office to impose this detriment on innovation for the short sighted goal of bringing in a few dollars in the short term.

A total of 96,727 patents issued in FYE 1990.[24] US citizens were inventors in 53% of US patents issued last year.[25] Of these, 45% were for small entities. Thus, a total of 24% of all patents, or approximately 23,000 patents, were to US small entities. The fee increase, assuming the same number of issued patents, would bring in revenues of approximately $12,000,000.00. Yet as

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[22] Inventors and Discoverers, supra at 272

[23] Inventors and Discoverers, at 116

[24] PTCJ, supra Incidentally, this is down 6% from the previous year, FYE 1989, when issue fees increased from $270 to $310.

[25] 41 PTCJ (BNA) 350, Feb. 21, 1991

indicated in e.g. the case of Jack Caveney, a single successful patented product could bring four times that amount into the economy in a year. No one can seriously believe that the risk of losing even a single small entity justifies the proposed increase. By governmental standards, $ 12 million is paltry. This is a sure way for this country to shoot itself in the foot, to save half the cost of a single jet fighter we would willingly give to someone we hope may be a potential ally in the future.

Eliminating the small entity fee structure will not adversely affect patent filings by Hitachi, Toshiba, Canon or Mitsubishi -- the top four US patent owners in 1990.[26] US industry did an excellent job in the 1960s teaching the Japanese how to make color television.[27] We should not exercise the same short sightedness at the governmental level by penalizing innovation.

CONCLUSION

Elimination of the small entity fee structure would reduce accessibility to the Patent system. The public interest would be harmed due to both decreased incentive to innovate and reduced public disclosure of technology. This action is contrary to long recognized policy principles. The risk of negative economic repercussions far outweighs the potential revenue benefits to be gained. The proposed elimination of the small entity fee structure should be rejected.

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[26] IPO Washington Brief, Vol. 13, No. 4, March 22, 1991; rounding out the top ten were (5) General Electric (US); (6) Fuji Photo (Japan); (7) Eastman Kodak (US); (8) US Philips (US subsidiary of Netherlands Philips); (9) IBM (US) and (10) Siemens (Germany)

[27] compare Tokyo Shibaura Electric Co. v. Zenith Radio Corp., 188 USPQ 55 (D Del, 1975) to Matsushita Electric Ind. Corp. v. Zenith Radio Corp. 106 S Ct 1348, 1986-1 Trade Cas 67,004 (1986)

APPENDIX 18.—LETTER FROM GARO A. PARTOYAN, PRESIDENT, U.S. TRADEMARK ASSOCIATION, TO HON. WILLIAM J. HUGHES, DATED MAY 13, 1991 (WITH ATTACHMENTS)

U.S. Trademark Association

USTA

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May 3, 1991

The Honorable William Hughes
Chairman
Subcommittee on Intellectual Property
and Judicial Administration
U.S. House of Representatives
207 Cannon House Office Building
Washington, D.C. 20515

MAY 07 1991

Dear Chairman Hughes:

The United States Trademark Association (USTA) appreciates your invitation to comment on H.R. 1613, the U.S. Patent and Trademark Office (USPTO) reauthorization bill, and to identify other USPTO administrative and operational issues that this Association believes should be considered by your committee.

The currently proposed U.S. Patent and Trademark Office reauthorization legislation contains language authorizing the USPTO Commissioner to reprogram monies from the annual Trademark Office fiscal year budget, as well as incoming and reserve revenues, to non-trademark activities. USTA strongly opposes any legislation which would permit the reprogramming of any portion of the annual federal trademark budget, as well as any existing or reserve monies accrued from these fees, that are designated exclusively for trademark activities.

USTA is a 113 year-old not-for-profit organization with a membership that has grown to 2300 members from across the U.S. and approximately 80 countries. Its members span a broad range of corporations, retail and service operations, advertising agencies, professional and trade associations and law firms. Among the Association's goals are the support and advancement of trademarks as an essential element of effective commerce and the protection of the interests of the public in their use.

Because Trademark Office operations have been 100% user-fee funded since 1982, USTA realizes that reliance on user-fees presents a number of substantive issues which not only call for careful deliberation but continuing scrutiny to ensure that the USPTO satisfactorily meets the needs of its constituent communities.

Any legislative and regulatory review of those needs must rest on the fundamental recognition that trademarks and patents are two wholly different forms of intellectual property. Trademarks are brand names and logos that permit consumers to distinguish the goods or services of one merchant from another, e.g., marks of

trade. Patents concern functional and design limited term rights. Trademark rights basically arise from usage in commerce; registration at both state and federal levels provides formal recognition of those rights and some additional protection of those rights. In contrast, patents are limited term monopolies that are granted only by the federal government.

Synopsis of Trademark Fee System Legislation

The first trademark fee system operated from the turn of the century until 1982 when the Trademark Office's current fee system was implemented. During this time, trademark fees like general federal tax payments went directly to the Treasury with no reflection as to either the source or amount. However, the USPTO generally received adequate funding until the 1960's and the 1970's when appropriations failed to keep pace with the Office's needs and, as a result, trademark operations began to deteriorate. Efforts to increase trademark fees as a way of supplementing the USPTO's funding were unsuccessful because trademark fee increase legislation was routinely coupled with controversial patent law proposals. Eventually, the failure to provide adequate funding had both obvious and disastrous consequences, and in the late 1970's trademark operations was labeled a "national disgrace."

In 1980, recognizing the different needs and responsibilities of the Patent and Trademark Offices, Congress approved a new fee system (P.L. 96-517). This system, which was to become effective in 1982, departed from the previous system in several respects. Among the most notable, it provided that trademark fee income would supplement General Treasury appropriations on a "50/50" basis; that is, trademark operations expenses would be shared equally by the Treasury and Trademark Office users because trademark operations benefited both the general public and trademark registrants.

While USTA was opposed to P.L. 96-517's allocation of the costs and benefits of processing trademark applications on a percentage basis, the Association did not contest its higher fees. Nevertheless, this fee system suffered from two major deficiencies: it contained no assurances that fee income would not be diverted to other government activities or that the government would live up to its side of the "50/50" bargain.*

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* In fact, within six months of the law being passed, an effort was made to move up the effective date of the new fee system so that the income could be used to fund juvenile justice and drug enforcement programs at the Department of Justice.

Before this fee system could be implemented, reauthorization legislation was introduced which included a provision to double, from 50% to 100%, trademark registrants' portion of the cost that were to be shared. USTA argued that this change would undermine the purposes of the Lanham Act. Congress agreed and it rejected the proposal, instead stipulating that the Lanham Act simply provide that the Commissioner be given the authority to set trademark fees (15 USC 1113). At that time, Congress also created a "fence" around trademark user fees to specifically prohibit the use of trademark fee income for anything but federal PTO trademark-related activities (35 USC 42(c)).

Unfortunately, the Administration interpreted this new law (P.L. 97-247) as authority to recoup, through fees, all of the USPTO's trademark-related costs. Thus, it began transferring various expenses, including all capital costs and costs associated with automating more than one hundred years of trademark records, into the trademark applications processing line item of the USPTO's budget (while the Patent Office continued to pay for much of its automation costs from appropriated funds). Today, and since 1982, (except for a small portion of automation expenses prior to 1985) Trademark Office activities and operations are, and have been, totally funded by trademark user-fees.

Public Policy Implications of a User-Fee Funded USPTO

As is evident from the above, USTA has consistently and successfully argued that user-fees and user-fee increases should be reasonably and directly related to the type and quality of service or benefit offered to the trademark community.* Thus, this Association has no general objection to either implementing or raising user-fees for the purpose of improving Trademark Office operations (the legislative intent of P.L. 96-517), covering the necessary costs of trademark operations or paying for the Trademark Office's share of common USPTO overhead and administrative functions. However, we take strong exception to

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* In response to a written inquiry by Senator Birch Bayh resulting from 1980 USTA testimony before a joint Senate Governmental Affairs and Judiciary Committee hearing, USTA stated:

> "...Under no circumstances could we ask anyone to support an [user-fee] increase where the operation has no hope of providing the services that are required. The USTA will only support an increase in fees if the fees are credited to the operation of the Trademark Office."

the funneling of trademark user-fees to other federal programs no matter their particular urgency or merit. Not only would such a practice compromise the financial integrity of the Trademark Office, the diversion of user-fees to non-trademark activities effectively would impose a tax that discriminates unfairly against one segment of the public (i.e., trademark owners).

User-Fees and the Public Interest

USTA strongly believes that an agency whose activities are funded in any significant way by user-fees should become more, not less, responsive to the needs of the public it serves most directly. Although the appropriate USPTO advisory committees play critical roles in communicating a knowledgeable public's perceptions and suggestions regarding agency operations, only congressional oversight ensures that the USPTO does not allow either immediate or long-term financial pressures to overwhelm its statutory purposes, and prevents circumventing meaningful budgetary supervision and control.

Under H.R. 1613, the Commissioner's Office need not obtain congressional approval for reprogramming Trademark Office revenues under one-half million dollars (or 10% of the project's cost, whichever is less). Thus, an opportunity would exist for the routine taking of up to $500,000 or at least 10% of a project costing less than $5,000,000 without the approval of Congress. Even should congressional approval be necessary, the procedure is essentially pro forma, allowing a reprogramming request to become effective automatically fifteen days from when Congress receives notice of the request unless an objection is raised by an appropriate member of Congress. Additionally, the bill language does not limit the frequency of reprogramming requests. Such a practice would make trademark user-fees a substitute for taxpayer funds for the Patent Office. Moreover, Patent Office access to trademark user-fees would create a disincentive for controlling its costs and maintaining reasonable trademark fees.

Passage of the seemingly innocuous language of Section 4(f) of H.R. 1613 is one step toward the elimination of Congress' role in maintaining the USPTO's adherence to the Lanham Act. The reprogramming of trademark user-fees would neither make the agency more responsive to the trademark community's needs nor maintain a reasonable relationship between fees and services. Indeed, the contrary is likely to occur. Furthermore, user-fees not only fund 100% of federal trademark operations but perform a crucial function in expanding the capabilities and efficiencies of the Office. Thus, adoption and use of the reprogramming authority would delay indefinitely or even quash long-term trademark operations upgrades scheduled to use a portion of trademark revenues should the Commissioner's Office decide that

trademark funds are necessary to cover patent operations shortfalls.

Long-Term Administrative and Operational Issues

USTA's sole concern with H.R. 1613 focuses on the proposed reprogramming authority of trademark user-fees. Nevertheless, in acknowledging the marked improvement in Trademark Office operations, there are a number of related issues which, if successfully resolved, would assist in increasing the capability of the Trademark Office in responding to the public.

Among the more frequently mentioned long-term matters are USPTO automation, the continuing ability of the Trademark Office to serve its constituency and the general public, and Trademark Office quality review procedures.

1. The question of who (the registrant or the general public) and how much should be paid for implementing, increasing or enhancing USPTO automation capabilities continues to be raised by both the trademark and patent communities. USPTO automation was necessitated by a decayed and incompetent paper system but now has become an invaluable resource in fostering U.S. commerce and reducing unlawful competitive practices to a minimum. Unlike the Patent Office, the Trademark Office has paid 100% of its share of automation costs solely from user-fees since 1985. Now that patent user-fees ostensibly will be used in the same manner, Congress might do well to review the use of user-fees for funding automation upgrades.

2. From time to time, Congress has considered freeing the USPTO from the Department of Commerce by making it a government corporation. The new reliance of the entire USPTO on user-fees is likely to bring this proposal before your Committee. USTA, which wishes to ensure that the Trademark Office will retain its ability to respond to the needs of the trademark community, has an active interest in this matter.

3. Consideration of Trademark Office quality review policies centers on whether the quality improvement process should be a component of the Office of the Assistant Commissioner for Trademark's or merely one arm of an independent USPTO inspection unit. At the heart of this issue is the question of whether combining the audit and quality improvement functions into one unit would allow both to work without undue interference with each other's responsibilities.

Since USTA is not directly concerned with patents, it expresses no view on the elimination of the small entity category for patent fees charged after the initial application fee.

USTA applauds the efforts of you and your office in examining those matters which have a direct bearing on federal trademark operations. We are grateful for the opportunity to be of service and look forward to a continuing dialogue with you and the Committee.

Very truly yours,

Garo A. Partoyan
President

GAP/py

U.S. Trademark Association

THE USE AND PROTECTION OF FEDERAL TRADEMARK USER-FEES FOR FEDERAL TRADEMARK ACTIVITIES

The United States Trademark Association ("USTA") appreciates and welcomes the opportunity to testify on H.R. 1613, Patent and Trademark Office ("PTO") reauthorization legislation. USTA looks forward to maintaining its excellent relationship with the Committee and hopes that the Committee will continue to use the Association as a resource on those legislative issues relating to preservation and advancement of trademarks throughout the nation and the world.

My name is Garo A. Partoyan and I presently serve as USTA President. I am also the General Counsel for Marketing and Technology of Mars, Inc., a USTA member company. Like all the officers, Board members, Committee Chairpersons and Committee members of the Association, I serve on a voluntary basis.

USTA is a 113 year-old not-for-profit membership organization. Since its founding in 1878, its membership has grown from twelve New York-based manufacturers to approximately 2300 members that are drawn from across the United States and about 80 countries.

Membership in USTA is open to trademark owners and to those who serve trademark owners. Our members are corporations, non-profit institutions, advertising agencies, professional and trade associations, and law firms. USTA membership crosses all industry lines, spanning a broad range of manufacturing, retail and service operations. Members include both small and large businesses and all sizes of general practice and intellectual property law firms. What this diverse group has in common is a shared interest in trademarks and a recognition of the importance of trademarks to their owners and to consumers.

USTA has five principal goals:

- To support and advance trademarks as an essential element of effective commerce throughout the world;
- To protect the interests of the public in the use of trademarks;
- To educate business, the media and the public to the importance of trademarks in our international economy;
- To play an active leadership role in matters of public policy concerning trademarks; and
- To provide a comprehensive range of services to its members that includes keeping them informed of current trademark developments and in touch with professional colleagues.

USTA POSITION ON PATENT AND TRADEMARK OFFICE REAUTHORIZATION LEGISLATION

The currently proposed U.S. Patent and Trademark Office reauthorization legislation contains language authorizing the PTO Commissioner to reprogram monies from the annual Trademark Office fiscal year budget, as well as incoming and reserve revenues, to non-trademark activities. USTA strongly opposes any legislation which would permit the reprogramming of any portion of the annual federal trademark budget, as well as any existing or reserve monies accrued from these fees, that are designated exclusively for trademark activities.

LEGISLATIVE HISTORY OVERVIEW OF THE TRADEMARK FEE SYSTEM

The first trademark fee system operated from the turn of the century until 1982 when the PTO's current fee system was implemented. Under the original system, fees were specifically set in the Trademark Statute. Income generated by those fees was deposited in the General Treasury. Fees were seldom increased but their relative stability had minimal effect on PTO resources because the fee income generated was not considered in the appropriations process and the PTO generally received adequate funding.

The situation changed in the 1960's and 1970's when appropriations failed to keep pace with the Office's needs and, as a result, trademark operations began to deteriorate. Ironically, despite private sector support, efforts to increase trademark fees as a way of supplementing the PTO's funding were unsuccessful because trademark fee increase legislation was routinely coupled with controversial substantive proposals to amend patent laws. The failure to provide adequate funding had both obvious and disastrous consequences, and in the late 1970's the Trademark Office was labeled a "national disgrace."

In 1980, a new fee system, to become effective in 1982, was approved by Congress (P.L. 96-517). This system departed from the previous system in several respects: (i) it removed the fee-setting mechanism from Congress and gave the PTO Commissioner the authority to set fees; (ii) it implemented the concept of cost recovery; and (iii) it provided that fee income would supplement General Fund appropriations. Under this system, costs incurred by the PTO were divided into three categories identified in the House Judiciary Committee Report (House Report 96-1307, Part 1) as:

1. Costs which should be paid entirely from appropriated funds because they "go to meet the responsibility of the Federal Government to have a PTO in order to execute the law." (House Report 96-1307, Part I). Specifically included among them were the costs of operating the public search rooms and costs of capital improvements such as the automation program the PTO was planning.

2. Costs which should be paid partly from appropriated funds and partly by user-fees because they go to support activities that benefit both the general public and applicants. These were the costs that could be attributed to the actual processing of applications and would be shared "50/50" by the Federal government and those registering trademarks (or seeking patents).

3. Costs which should be paid for 100% by user-fees because they provide services to private parties and confer no direct benefit to the general public (for example, photocopies, certification services).

While USTA expressed some concern for example, with allocating, on a percentage basis, the costs and benefits of the PTO's processing of applications to register trademarks, it found the underlying principles of this system equitable. However, the system suffered from two major deficiencies. First, although it was intended to give the PTO the resources it needed to meet its obligations and to provide improved service to those registering trademarks through a system whereby the government and the private sector (registrants) shared costs, it contained no assurance that fee income could not be diverted to other government activities. In fact, within six months of the law being passed, an effort was made to move up the effective date of this new system so that the income could be used to fund juvenile justice and drug enforcement programs at the Department of Justice. Second, those who had agreed to pay higher fees received no assurance that the government would live up to its side of the bargain; while they had agreed to pay a share of the costs of maintaining the patent and trademark systems, there was no guarantee that the government would fund its share. And it never did.

Before the then current fee system enacted under P.L. 96-517 could be implemented, PTO reauthorization legislation was introduced which included a provision to double, from 50% to 100%, trademark registrants' portion of the costs that were to be shared. This proposal, by merging the second and third categories of costs identified above, suggested that trademark owners who register their marks were the only beneficiaries of the Federal Trademark Statute (the Lanham Act). It also meant that current trademark registrants would be "footing the bill" for clearing the immense backlogs that had resulted from years of appropriations and budgetary neglect by Congress and the Department of Commerce.

USTA argued that this change would undermine the purposes of the Lanham Act. Congress agreed. It rejected the proposal for a statutory requirement that trademark fees recover 100% of the PTO's costs, adopting instead a proposal that the Lanham Act provide simply that the Commissioner be given the authority to set trademark fees (15 USC 1113). USTA also argued that the law should create a "fence" around trademark user fees, that is, specifically prohibit the use of trademark fee income for

anything but federal PTO trademark-related activities and a provision to this effect was enacted in 1982 (35 USC 42(c)).

What USTA failed to anticipate at the time, however, was that the Administration would interpret this new law (P.L. 97-247) as authority to recoup, through fees, all of the PTO's trademark-related costs -- including those previously identified as necessary to meeting the Federal government's responsibility. To achieve this, it began transferring expenses, most notably those associated with automation, into the trademark processing line item of the PTO's budget and shifting others, for example, the public search room into the customer services line item. In sum, it successfully pursued every possible means to eliminate, through the assessment of fees, the General Fund support necessary to execute the Federal Trademark Statute.

When the 99th Congress reauthorized the PTO (P.L. 99-607), it reacted to public criticisms that the PTO was abusing its fee-setting authority and placed limitations on it. Stating that "the Office's public mandate is more important than cost recovery" (Senate Report 99-305):

- It reiterated its intent that the PTO's costs be divided into three categories, commenting that fee income was not to be used to reduce the level of public support for the Office;
- It strictly prohibited the imposition of fees for use of the PTO's search rooms saying "[t]he public patent and trademark search rooms and libraries are to be wholly supported by appropriated funds;"
- It tied trademark fee increases to changes in the Consumer Price Index;
- And, it stipulated that a certain portion of the PTO's costs of automation must be paid for out of General Fund revenues -- a requirement that the PTO has, to a great extent, ignored and now, because of its general user-fee structure, must forego.

Today, Trademark Office activities and operations are totally funded by trademark user-fees.

REASONS FOR OPPOSITION TO THE PROPOSED REPROGRAMMING AUTHORITY

It is against this background and the recently enacted sixty-nine percent surcharge on certain patent-related fees which makes the PTO fully user-fee funded (with the exception of a $3,000,000 appropriation from the General Treasury) that USTA opposes the PTO reauthorization measure, and specifically, the reprogramming provision found in subsection 4(f).

It is important to recall that patent and trademark fees have been treated and funded separately since Fiscal Year 1983 thus,

the new user-fee funding issues currently confronting the Patent Office have nothing to do with trademark user-fees except as a possible alternative to increased Patent user-fees (a "pocket to pick"). Consequently the Association finds that the proposed reauthorization legislation is inadequate to protect the interests of the trademark community and provide for the assurance of continued resources of the Trademark Office in meeting both its immediate needs and long-term interest in serving the public for the following reasons:

- Present trademark budget procedures and the consequent reserve fund were established during a period (Fiscal Years 1983 - 1990) when the Trademark Office was the sole PTO component which was 100% user-fee funded. Since the Trademark Office's budget and reserve monies do not use taxpayer subsidies but come from private fees, trademark monies allocated solely to meet common Trademark Office functions or that Office's share of common administrative support and informational overhead activities should not be used by other PTO divisions;

- Both user-fees collected and reserve fund monies budgeted by the Trademark Office continue to play a crucial role in increasing the capabilities and efficiencies of the Trademark Office in responding to applicant and registrant needs. If the proposed reprogramming legislation is adopted, long-term trademark operations upgrades scheduled to use a portion of trademark revenues may be placed on hold indefinitely should the Commissioner's Office decide that trademark funds are necessary to cover another PTO division;

- The Commissioner need not obtain congressional approval for reprogramming Trademark Office revenues under one-half million dollars (or 10% of the project's cost, whichever is less). Thus, an opportunity exists for the routine taking of at least 10% of a project costing less than $5,000,000. Additionally, proposed language does not limit the frequency of reprogramming requests. Even should congressional approval be necessary, the procedure is essentially pro forma allowing the reprogramming request to become effective automatically fifteen days from when Congress receives notice of the request unless an objection is raised by an appropriate member of Congress;

- Many Association members also may have patent interests requiring them to use the Patent Office. Nevertheless, the patent and trademark communities are two different constituencies with varying intellectual property perspectives. Consequently, wherever feasible, budgets for patent and trademark operations should remain segregated. The ability of one office, however

infrequently, to take funds accepted for another purpose serves as a disincentive to control costs as well as maintain reasonable fees.

- The Trademark Office has shown marked improvement under its current user-fee structure in effect for nearly a decade. Tinkering with an office that now serves as a model of efficiency, economy and service through the proposed reprogramming authority is to risk compromising the Trademark Office's effectiveness.

ALTERNATIVE LANGUAGE

USTA recommends that subsection 4(f) of the Patent and Trademark reauthorization bill be amended as follows:

f. Subsection 42(c) of title 35, United States Code is amended as follows:

"(c) Revenue from fees will be available to the Commissioner of Patents and Trademarks to carry out, to the extent provided for in appropriations Acts, the activities of the Patent and Trademark Office. Fees available to the Commissioner under Section 31 of the Trademark Act of 1946, as amended (15 U.S.C. 1113), shall be used exclusively for the processing of trademark registrations and for other activities, services, materials and support functions related to trademarks.

The appropriate provision in the "Section-by-Section Analysis" should be revised to read as follows:

Subsection (f) would amend subsection 42(c) of Title 35 by amending the last sentence that presently precludes the use of trademark fees for any activity or support function except "the processing of trademark registrations and for other services and materials related to trademarks." When this provision was enacted, other activities and support functions of the Office that were necessary to support the operations of Trademarks were to be funded with appropriated taxpayer monies, not trademark fee revenues. Particularly, the Congress recommended that certain other "activities," including legislative, international, and outreach programs and similar governmental support functions were expected to be funded from taxpayer support. Now that all PTO operations must be funded essentially out of fee revenues, it is reasonable to provide for the limited extension of the use of trademark fees to support the actual cost of the portion of other activities and support functions in the PTO related to trademarks.

While omitting reprogramming language, these changes acknowledge the necessity of modifying the limitation regarding the use of trademark fees solely for trademark purposes to be used to pay actual costs for certain activities, such as legislative, international and outreach programs, and for certain direct and

indirect support functions, such as personnel, procurement, and similar functions that previously were paid from appropriated monies.

CONCLUSION

In the long-term, the proposed reprogramming authority would not just provide potential support for Patent Office shortfalls; it would bring the Trademark Office closer to the pre-1982 period when trademark operations, then frequently described as a "national disgrace," had to plead for adequate funding and the PTO Commissioner's favor. Moreover, since the premise of 100% user-fees is that users should pay their own way, the reprogramming of trademark user-fees would constitute nothing less than a tax without benefit to the trademark community.

APPENDIX 19.—LETTER AND ATTACHED STATEMENT FROM RICHARD D. GODOWN, PRESIDENT, INDUSTRIAL BIOTECHNOLOGY ASSOCIATION, TO HON. WILLIAM J. HUGHES, DATED APRIL 23, 1991

IBA

Industrial Biotechnology Association

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Sub on Courts

April 23, 1991

The Honorable William J. Hughes
Chairman
Subcommittee on Intellectual Property
and Judicial Administration
Committee on the Judiciary
2138 Rayburn House Office Building
Washington, DC 20515-6216

Subject: PTO Reauthorization

Dear Chairman Hughes:

I am writing in response to your letter of April 8, 1991 asking the Industrial Biotechnology Association to submit a written statement to the Subcommittee with respect to the operation and administration of the Patent and Trademark Office.

As you know, the U.S. is currently the world leader in research, development, and manufacture of biotechnology products, and the industry is grateful to the Chairman and the Subcommittee for their past support.

The function of the PTO is of critical importance to the biotechnology industry. Patent protection fuels biotechnology and enables our industry to translate cutting-edge science into economic growth.

We would be happy to provide additional copies of the enclosed statement or testify at the Subcommittee's PTO oversight and reauthorization hearings on May 8th and 9th.

IBA appreciates your interest in our views. Your staff is invited to contact Lisa Raines, IBA's Director of Government Relations, if we can be of any further assistance to you. Her number is (202) 857-0244.

Very truly yours,

RDG:RB
enclosure

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STATEMENT

OF

RICHARD D. GODOWN,

PRESIDENT,

INDUSTRIAL BIOTECHNOLOGY ASSOCIATION

REGARDING

OVERSIGHT AND REAUTHORIZATION OF THE

PATENT AND TRADEMARK OFFICE

SUBMITTED TO THE SUBCOMMITTEE

ON

INTELLECTUAL PROPERTY AND JUDICIAL ADMINISTRATION

OF THE

HOUSE COMMITTEE ON THE JUDICIARY

MAY 8, 1991

STATEMENT

This statement on the reauthorization of the U. S. Patent and Trademark Office (PTO) is made on behalf of the Industrial Biotechnology Association (IBA), a trade association that represents over 100 companies engaged in biotechnology research and development in the fields of health care, agriculture, food and industrial enzymes, and toxic waste degradation. Collectively, IBA members represent more than 80% of all biotechnology R&D investment in the United States.

The protection of intellectual property rights is of critical importance to the biotechnology industry. Biotechnology is an important new source of economic vitality for America. American scientists invented genetic engineering and American investors have funded the research and development that is enabling our industry to translate cutting-edge science into economic growth. Patents are a necessary, but not sufficient, condition of earning a return on this investment.

The U.S. is currently the world leader in the research, development, and manufacture of biotechnology products, producing 1990 sales estimated at $2.9 billion, including export sales of $600 million. Both of these figures are almost ten times those for 1986 and are expected to more than double in the next two

years.[1] The recently-released report from the President's Council on Competitiveness projects the domestic biotechnology industry's revenue to increase to $50 billion by the year 2000, and many believe this to be a conservative estimate.[2]

On October 22, 1987, while addressing the Industrial Biotechnology Association, then-Assistant Secretary and Commissioner of Patents and Trademarks Donald J. Quigg spoke of the importance of patents to biotechnology and the importance of biotechnology to us all:

> Of all the technologies encompassed by practice before the Patent and Trademark Office, none is faster-growing, none is more exciting, and none holds a greater promise of benefit to mankind than biotechnology. My job as commissioner is to see that the patent system continues to encourage new technology and that it does not get in its way.
>
> Along the pathway between inventive conception and commercialization, the patent system has the potential for being either a bridge or a roadblock...[3]

For biotechnology, most of the bridges and most of the

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[1] G. Burrill & K. Lee/Ernst & Young, Biotech 91: A Changing Environment, Fifth annual survey of business and financial issues in America's most promising industry, 29-35 (October 1990).

[2] The President's Council on Competitiveness, Report on National Biotechnology Policy, Cover Memorandum To the President from Vice President Dan Quayle, Chairman (February 1991).

[3] See also Backlog of Patent Applications at the U.S. Patent and Trademark Office and its effect on Small High-Technology Firms: Hearing Before the House Subcomm. on Regulation and Business Opportunities of the Comm. on Small Business, 100th Cong. 2nd Sess. 100-59 (March 28, 1988).

roadblocks run through the U.S. Patent and Trademark Office (PTO). For this very reason we are very pleased to submit this statement concerning the reauthorization of PTO.

Three issues concerning PTO are of great importance to the biotechnology community and will be addressed in this statement. First, IBA is concerned with the backlog of biotech patent applications. PTO takes too much time before beginning a first office action and issuing a biotech patent. Second, we are concerned by the Administration's reauthorization proposal, both because more frequent adjustments of PTO user fees will result in these fees going up faster and because we object to the elimination of the maintenance fee differential for small start-up firms, individuals and non-profits. Third, we are concerned that some biotechnology processes are not being protected by the patent system. Unfortunately, the U.S. Court of Appeals for the Federal Circuit's decision in In re Durden, 763 F. 2d 1406, 266 USPQ 359 (Fed. Cir. 1985), is often a barrier to obtaining these patents.

Investment in Biotechnology Research and Development (R&D)

One of the distinguishing characteristics of our industry is the extraordinarily high level of investment made in research and development (R&D). Since our industry's inception in the late 1970s, biotech companies have ploughed billions of dollars into

long-term R&D programs. There is no better way to concretely illustrate the magnitude of this investment than by citing the findings of a recent survey of our industry published by the Ernst & Young High Technology Group.[4]

R&D as a percentage of product sales is a measure routinely used in established industries to gauge the proportion of today's product sales being reinvested in research towards tomorrow's products. The pharmaceutical industry, which is one of the most innovative industries in the country, averages 16% reinvestment. By comparison, the Ernst & Young survey found that the biotechnology industry reinvests an average of 63%.

Even though biotechnology product sales are rising, R&D expense as a percentage of product sales is rising faster. Between 1988 and 1989, medical diagnostic firms moved from 35% of sales to 54%, biopharmaceutical firms rose form 104% to 125%, and agricultural biotechnology firms moved from 116% to 146%.

Another way of measuring investment in innovation is to examine R&D expense per employee. In 1989, biotechnology industry R&D averaged $30,000 per employee, with agbiotech companies averaging $39,000 and biopharmaceutical companies averaging $47,000. This compares with an average of $26,000 in the traditional pharmaceutical industry.

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[4] G. Burrill & K. Lee/Ernst & Young, supra note 1.

In fact, BusinessWeek's special issue on Innovation in America (July 1990) published a list of the top companies in R&D spending in dollars per employee. The top four companies -- Chiron, Centocor, Genentech, and Genetics Institute -- are all biotechnology companies.

Yet another way financial analysts examine commitment to innovation is to measure R&D as a percentage of expenditures and see whether that percentage is rising or falling. Ernst & Young found that R&D accounts for 40% of all costs incurred by biotechnology companies and that 71% of all biotech companies have increased their R&D expenditures in the past year. The average increase was 30%.

The biotechnology industry is one of this country's most R&D intensive industries, perhaps even the most R&D intensive industry.

Delays in Examining Biotechnology Patent Applications

IBA believes that the long patent backlog for biotechnology patent applications continues to have a negative impact on research and development. Timely issuance of patents is needed to attract investors and thereby fund science and technology research. This is particularly true for the small start-up firms that often have no assets other than their proprietary

technology. A firm may have conducted favorable research and developed products that show great promise, but if it has no patents it will have a very difficult time attracting the investment necessary to continue its research and development.

IBA believes that PTO is seriously and diligently addressing itself to this problem. We urge this Committee to support PTO's efforts to increase the number of persons examining patent applications, increase the retention rate for examiners, and increase the efficiency of their work.

This past year, 9385 new biotech applications were filed with PTO, a 60% increase from just five years ago. Troubling is the fact that the number of backlogged biotechnology patents is one-third more than the previous year, despite the fact that staffing has nearly doubled.[5] For 1989 and the first half of 1990, first actions on biotechnology applications were made an average of 13.1 months after the filing, whereas first actions in all technologies averaged 7.1 months.[6] It averages 26.7 months for a biotech patent to be issued, compared to 18 months for other patents.[7]

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[5] S. Derra, Patents Bury Biotech, 22 R&D Magazine (12/90).

[6] Biotechnology: Processing Delays Continue for Growing Backlog of Patent Applications, (GAO/RCED-90-231BR, Sept. 28, 1990).

[7] Id.

Contributing to the problem is that for the last five years, the filing of biotechnology applications has grown at an annual rate of 14.9%, double that of all patent applications (7.5%). With each day, another flood of biotech patents arrives at the PTO to begin the long and arduous journey through the patent process. The patent office is swimming as hard as it can, but it's staying in the same place.

Perhaps no single federal agency has a stronger effect on technology-based industries than PTO. Patent protection is absolutely necessary before technological breakthroughs will be pursued. This backlog, combined with impediments to protecting biotechnological processes, threatens this Nation's most promising new industry.

PTO has made serious efforts to correct this imbalance and Congress must encourage and insist PTO continue to direct resources to the biotech area. We applaud PTO efforts to expand the biotech examining corps (Group 180) to 200 persons. Group 180 has grown from 80 examiners in 1988 to 136 at the end of 1990, a 70% increase. Two hundred examiners will represent a welcome and needed step to address the backlog problem.

In addition to adding examiners, Group 180 needs other resource help, such as computer terminals for each of its biotech examiners and help with retaining its staff. PTO staff

frequently refer to the difficulty in recruiting, training, and retaining the highly skilled biotechnology examining staff. The biotechnology examining corps annually suffers from a 20% to 30% turnover rate. As a result, to increase Group 180 from 110 examiners to 136, PTO had to recruit 52 examiners and transfer three senior examiners from elsewhere in the PTO. To reach the goal of 200, PTO intends to recruit 60 examiners in 1991 and 1992 -- a ratio of about two recruits for each additional position.[8]

A means to help the retention rate is to raise the pay rates of the senior examiners to compete with industry. PTO efforts to accomplish this have reportedly been thwarted by the Office of Personnel Management.

IBA strongly believes that timely approval of new biotechnology patents is in the public interest. Science and technology progress will lead to economic growth and development for the United States both here and in international markets. We believe the government must encourage the pioneer spirit of entrepreneurialism that plays so prominent a role in the development of science and technology.

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[8] See, e.g., Charles Warren, Deputy Director of PTO Group 180, Remarks at the "Patent and Trademark Office Day" Conference in Washington, D.C., 12/05/90, (P-D-C Reports 12/10/90).

Patent and Trademark Fees

In October 1990, PTO raised user fees by 69%. We do not yet know the impact this drastic increase has had on our industry and, in particular, on small start-up firms. It may have resulted in a reduction in patent filings. We are concerned that cost constraints may force small companies and universities to leave unprotected technologies that can be scooped up by our foreign competitors.

IBA would encourage the Subcommittee to ask PTO for data comparing the number of patent applications filed in the first quarter of 1991 to those filed in the first quarter of 1990 to determine whether the number of patent applications has been affected by the 69% application fee increase.

IBA Opposes Elimination of Two-Tier Maintenance Fee Schedule For Small Firms, Individual Inventors and Universities

IBA opposes any action to remove or reduce the two-tier fee schedule that presently allows small firms, individuals and universities to pay one-half of the fees assessed to large companies. Therefore, we oppose the Administration proposal to eliminate the existing small company differential for maintaining a patent in force.

Of special concern to the biotechnology industry is the effect on small companies, for which user fees are most likely to be truly burdensome. Congress and this Administration have sought to encourage the development of small businesses and the Administration has identified biotechnology as one of the three most exciting frontiers now being explored to unlock the secrets of life for the benefit of all; removal of all or a part of the small firm fee advantage could stifle that.

Elimination of the two-tier maintenance fee schedule would have a major financial impact on small biotechnology firms. While 3,135 biotechnology patents were issued in 1989, 18,534 biotechnology patent applications were pending and 9,385 new applications were filed during 1990. If half of the latest patent applications were filed by small firms and half of these result in an issued patent, 2,346 patents could be impacted by the elimination of the two-tier fee schedule. Assuming these figures are correct, small biotech firms could be forced to pay an additional $6 million over the life of their 1990 patents alone.

IBA supports Equitable Distribution of Other Fees

At present, PTO is required to set fees for non-specified processing, services, and materials at estimated cost. The Administration proposes to do away with this restriction. While

IBA does not object to the rounding of odd numbers for PTO's administrative convenience (such as charging $1.00 for services that either cost $0.75 or $1.25), we are concerned with PTO's proposal for authority to raise fees for certain services so as to provide other services free.

For example, since October 1990, most biotechnology patent applications must be submitted using a special computer program available from the PTO.[9] The IBA supported this application change as a means to speed up the patent examination process and raise patent quality. PTO originally estimated the cost of purchasing the computer program at $50 but its final cost is $400.

We do not know if the PTO underestimated the cost of this computer program or if the price was calculated so as to subsidize services used elsewhere in the PTO. We would object to the latter.

Operating costs for processing, services, or materials that are not specified elsewhere should be either appropriated by the federal government or collected equitably from those who benefit by its use or existence. Therefore, IBA is troubled by the Administration proposal for authority to force these costs upon

[9] DOC/PTO Requirement for Patent Applications Containing Nucleotide Sequence and/or Amino Acid Sequence Disclosures, 37 C.F.R. Part 1 (May 1, 1990).

the users of the system through higher fees for other services. This is particularly true for revenue needed to fund the public search room and library.

Two Year Reauthorization Schedule

IBA questions the necessity of mandating biennial reauthorization of PTO. This Subcommittee may conduct oversight hearings as often as it deems necessary during the current three year reauthorization cycle. All that is accomplished by a two year reauthorization schedule is it permits PTO user fees to be raised a year sooner than presently permitted.

IBA does support close Congressional monitoring of the biotech patent backlog problem, and we would welcome more frequent adjustments to the allocation of resources especially to address this problem. However, as Congress already has the power and authority to exercise frequent oversight, IBA opposes PTO user fee increases every two rather than three years.

Where the Administration proposes to provide Congress every two years with "such other information as the Committees consider necessary", we would encourage you to ask the PTO to provide the Subcommittee with relevant data and a status report concerning the biotechnology patent backlog problem and the action the PTO is instituting to solve this problem.

Inadequacy of Patent Protection

In deciding whether to fund an R&D program, biotech companies must determine whether the expected product life, market potential, and competitive situation warrant the investment. Clearly, if a pioneer company is to invest $100 to $200 million to develop a new biopharmaceutical, it must be assured that a competing company cannot pirate the pioneer's intellectual achievements.

The great cost of developing a new biotechnology product stands in stark contrast to the ease with which the product can be copied. Under these circumstances, the only incentive to make such investments is the availability of clear and meaningful patent protection. Without such protection, there is simply no incentive to invest, and without investment, there can be no new products, no new jobs, no new exports, and no new economic growth.

While modern biotechnology is generally considered to have begun with the first recombinant DNA experiment in 1973, it was not until 1980 -- when the U.S. Supreme Court held that a genetically engineered microorganism was patentable -- that biotechnology companies began forming to commercialize recombinant DNA technology. This decision, Diamond v. Chakrabarty, 447 U.S. 303 (1980), suggested that "everything

under the sun made by man," including biotechnological inventions, is patentable. Consistent with this principle, genetically engineered plants became patentable in 1985 and genetically engineered animals became patentable in 1987. To most observers (including the investment community), it appeared that patent protection had become as fully available to biotechnology as to other technologies, and the apparent availability of meaningful patent protection has been an important factor in continued growth in biotechnology R&D.

Unfortunately, U.S. patent law does not offer adequate protection for this new technology. This is because the U.S. Patent and Trademark Office has refused to issue process patents for many biotechnology inventions, based on its interpretation of In re Durden, 763 F. 2d 1406, 266 USPQ 359 (Fed. Cir. 1985), a heavily criticized case decided by the U.S. Court of Appeals for the Federal Circuit.

Since 1985, it has become increasingly difficult to obtain process patent protection in the United States for genetic engineering inventions. The reason is that the PTO has often rejected claims to these processes as "obvious" in light of the prior art describing very general biotechnological processes. This reasoning is derived from the analysis contained in In re Durden.

Basically, Durden's reasoning, as interpreted by the Patent and Trademark Office, is as follows: The basic process of recombinant DNA is known. It consists of inserting a molecule of deoxyribonucleic acid (DNA) into a living cell so that the cellular machinery produces whatever protein that particular DNA molecule codes for. If the inventive process is divided into small steps, each step is obvious. So, if you invent a new DNA molecule and use it in a recombinant process, you cannot patent the process for using that new molecule. Why? Because, once you have invented a DNA molecule, it is obvious that it can and should be used in a recombinant DNA process.

Virtually all legal commentators and practitioners have concluded that Durden was wrongly decided and is applied in a fashion that wrongly denies process patent protection. (See, e.g., Wegner, "Much Ado About Durden," 71 Jour. Pat. & Trademark Off. Soc'y. 785 (1989); Murashige, "Section 102/103 Issues in Biotechnology Patent Prosecution," 16 AIPLA Quart. Jour. 294 (1988-89)).

Durden says, in effect, that it is obvious how to use an invention that never existed before. As a result, in many cases, one can only obtain a process patent in biotechnology if one can demonstrate that "unexpected results" occurred during the use of the otherwise "obvious" process. When "unexpected results" cannot be shown, process patent protection cannot be

obtained.

Even when "unexpected results" can be demonstrated, some applications are still rejected as "obvious." (A recent case, Ex parte Orser, 14 USPQ 2d 1987 (Bd. of Pat. App. and Inter. 1990), illustrates how the Patent and Trademark Office rejects biotechnology process claims based upon Durden even when the applicant shows unexpected and superior results based upon how the biological materials affected the claimed process.)

In the best case scenario, Durden rejections can sometimes be overcome if the applicant is prepared to persevere and incur added expense. This means that inventors with limited budgets, such as small companies and universities, are placed at a distinct disadvantage, and that even those who overcome Durden rejections may have issuance of their patents needlessly delayed for six or eight months. This delay can jeopardize a company's ability to raise the capital necessary, for example, to conduct animal and human studies of a new drug's safety and effectiveness.

Furthermore, our members report that whether a Durden rejection is made varies from patent examiner to patent examiner, so that the luck of the draw -- that is, which patent examiner is assigned their case -- is a significant factor in determining whether they will obtain process patent protection.

After repeatedly hearing anecdotes about the inconsistency with which Durden is applied, one of IBA's member companies commissioned a search of Patent and Trademark Office biotechnology file histories to examine the use of Durden rejections. They found that, anticipating a Durden rejection, inventors and their attorneys have often avoided, or at least delayed, the Durden problem by electing to first prosecute claims to products per se or to methods of use. This often results in (1) actual or apparent abandonment of process patent protection; or (2) a substantial delay in issuance of process claims. Both of these results were evaluated.

Abandonment of process protection was evaluated by looking at patents which lacked process claims. Of these, at least 60% were directly linked to a Durden rejection. In the other 40%, the process claims were dropped following an interview, quite possibly due to discussions of an actual or implied Durden rejection. This finding is consistent with our belief that Durden has had a damaging effect on process patent protection for the U.S. biotechnology industry.

The issue of delay was evaluated by searching for patents which contained process claims, then evaluating the file histories to determine whether a Durden rejection had been made but later overcome. In two-thirds of the patents containing process claims, a Durden rejection was made and overcome during

prosecution. In one-third of the cases, no Durden rejection was made, supporting more casual observations that the Durden rejection is being used in an arbitrary and inconsistent manner.

Perhaps the most accurate measure of the negative effects of Durden rejections was found in those patents lacking process claims. The damaging effect of a Durden rejection falls most heavily on those who lack the resources to pursue process patents. It appears that the effort and costs associated with the prosecution problems created by an actual or anticipated Durden rejection resulted in the abandonment of process protection. All four universities in the study -- Wisconsin, Johns Hopkins, California, and Columbia -- forfeited the process patent protection to which they appear to be entitled.

We should note that there is no such limitation on obtaining process patents in Europe or Japan. Both of these legal systems have a strong tradition of protecting process patents. The Congress should not overlook the fact that our competitors are already providing their inventors with the kind of process patent protection that we seek.

H.R. 1417 would remedy this problem. Section 2 of the bill codifies the holding of In re Mancy, 182 USPQ 203 (C.C.P.A. 1974), and other cases, and provides that the reasoning of the Durden case does not apply. In Mancy, a process for preparing a

daunorubicin using a new strain of Streptomyces, different from those strains which were already known to produce daunorubicin but using basically the same culture techniques, was upheld. The facts in Mancy are analogous to the preparation of antibodies by culturing a previously unknown hybridoma or other immortalized cell. We believe the same reasoning should apply to these cases as applied in Mancy.

IBA believes that the legislation corrects an unintended effect of an inconsistently applied patent office approach derived from a poorly decided Federal Circuit case that denies biotechnology the advantages of the Process Patent Amendments Act of 1988. This is legislation that was intended to benefit this industry, as demonstrated by the House and Senate Judiciary Committee reports.

We note that an earlier version of this legislation was aimed at overruling Durden only in the context of biotechnology. This approach was rejected by IBA's Patent Committee largely based on representations from our major pharmaceutical and chemical member companies who argued that Durden was wrongly decided and damaging to their industries as well, and therefore should be addressed in a comprehensive manner.

Critics have claimed that the legislation, if enacted, would give automatic patent protection for processes regardless of

whether they offer major or minor contributions. We believe this objection is unfounded. It overlooks the fact that the scope of the patent would be limited to, or defined by, the particular material utilized in the process. As is the case for all patents, the breadth of the patent would vary in proportion to what the inventor has taught.

For example, if the novel material is an invention of major importance that allows the process to be used to produce a product that could never be produced in commercial quantities before -- as is usually the case with biological materials -- then the process patent would be correspondingly broad. However, if a company invents a trivial material that differs little from other materials used in similar processes, the company would obtain a patent limited to the use of that trivial material in the process. Such a patent would have little value, since infringement could be easily avoided by substituting a different material for the one utilized in the patented process or using other procedures in the literature.

Legislatively overruling Durden is imperative to protect the creative and scientific genius of inventors who use biotechnology to produce important new health care, agricultural, and waste cleanup products. Although continued U.S. preeminence in biotechnology is vital to our economy and our quality of life, it is unlikely that U.S. leadership can be preserved in the absence

of adequate patent protection to prevent piracy of our companies' inventions.

The Biotechnology Patent Protection Act (H.R. 1417), introduced last month by Representative Boucher and Moorhead, will overrule Durden, thereby making it easier for biotech companies to obtain process patents. PTO itself recognizes that Durden is poorly reasoned and inconsistently applied by its examining corps, and at a hearing on September 25, 1990, Commissioner Manbeck testified in favor of the bill. In addition to Administration support, the bill has broad bipartisan support in the House and Senate.

IBA's Board of Directors has enthusiastically and unanimously endorsed this bill subject to certain amendments we feel are necessary to make the bill work.

Conclusion

In conclusion, we in the biotechnology industry believe that PTO must be encouraged to continue to focus attention and resources on Group 180 and all efforts must be made to reduce the biotechnology patent backlog and application processing time.

PTO user fees must be kept as low as possible and small firms, individuals, and non-profits should retain the 50% fee

differential for their patent application, issuance and maintenance. IBA strongly supports federal funding for the PTO public library and search room.

Congressional action is needed to ensure that new high tech processes are eligible for patent protection. We in the biotechnology industry believe that Congressmen Boucher and Moorhead have shown great foresight in introducing the Biotechnology Patent Protection Act. The Industrial Biotechnology Association, with minor mechanical amendments, strongly supports the bill and urges its enactment at the earliest opportunity.

APPENDIX 20.—LETTER FROM DAVID BEIER, VICE PRESIDENT, GOVERNMENT AFFAIRS, GENENTECH, INC., TO HON. WILLIAM J. HUGHES, DATED APRIL 19, 1991

Genentech, Inc.

1747 Pennsylvania Avenue NW
Suite 1223
Washington, DC 20006
(202) 296-7272
FAX: (202) 296-7290

April 19, 1991

The Honorable William J. Hughes
Chairman of the Subcommittee on Intellectual
Property and Judicial Administration
2138 Rayburn House Office Building
Washington D.C. 20515

Dear Mr. Chairman:

Thank you for your letter of April 8, 1991 soliciting our views on the Patent and Trademark Office (PTO) Authorization. I am pleased to respond on behalf of Genentech, Inc., a leading biotechnology company.

As you know, we are very dependent on a strong intellectual property system for the effective protection of our innovative activities, especially in the creation of new biotechnology-derived pharmaceutical products. During the past five years our research and development spending has averaged about 40% of our sales. This R&D to sales ratio is uncommon in American business. The corporate average is generally about 3-4%. With such an intensive R&D commitment, we absolutely need to be able to quickly obtain strong patents for our inventions.

There are several general comments in order with respect to the PTO. First, we generally agree with the comments of the Industrial Biotechnology Association with respect to the issues of backlog and fee differentials. Thus, we urge you to assist the PTO in securing the funds and authorities to effectively implement its program for removing the biotechnology backlog. We also urge you to reject the suggested alteration in fees for small businesses and universities.

The second general comment relates to a broad issue within the PTO. Under current law there are statutorily or judicially created requirements that impose significant burdens on the PTO in the examination and issuance process that appear to be unwise or unnecessary. One example that could be addressed legislatively would be to clarify the Tower of Babel state of the law with respect to the rules under which applicants can obtain the issuance of process patents. As you know, H.R. 1417 -- which

is pending in the Subcommittee -- would squarely address the anomalies that exist in this area of the law. As the PTO testified last September, resolution of these issues legislatively should go a long ways to making the examination process more rational and more efficient. In addition, to prompt consideration of H.R. 1417 it could be beneficial to request that the PTO provide you with a list of similar impediments that could be altered legislatively.

The final area of comment relates to international patent protection. Without doubt the operation of the Office of Legislative and International Affairs within the PTO is a model of governmental competence. Their work over the past decade has been singular in its contribution to the improvement of America's ability to obtain improved intellectual property protection. They have been in the forefront -- with their capable colleagues at the United States Trade Representatives Office -- of both bilateral and multilateral efforts to secure adequate and effective intellectual property protection.

The international work of the PTO could be improved materially, however, by two small steps. First, a greater degree of Congressional involvement earlier in the deliberative process that leads into various diplomatic conferences could improve the confidence that other governments could have in the resulting work product. Second, this office could be in a much stronger position to encourage the development of stronger intellectual property regimes in the developing world if they could offer substantial technical and monetary assistance to these countries as part of the implementation of bilateral or multilateral agreements. If these negotiators could offer expanded training opportunities and/or assistance in development of a corps of patent examiners, there may be less reluctance to act on the part of some foreign governments. This latter idea could also be funded through the use of non-governmental funds, but only if there were such a fund authorized by law.

Thank you in advance for your willingness to consider these views. Please know that I remain available for further consultation if you wish.

Sincerely,

David Beier
Vice President, Government Affairs

DB/saw

APPENDIX 21.—A SAMPLING OF PETITIONERS OPPOSED TO H.R. 1613

A Non-Profit Association to Assist Independent Inventors

PETITION

KANSAS ASSOCIATION OF INVENTORS
2015 LAKIN
GREAT BEND, KS 67530
(316) 792-1375

OPPOSITION TO THE ADMINISTRATION'S AUTHORIZATION BILL H.R. 1613

WE, THE UNDERSIGNED CONCERNED CITIZENS OF THE UNITED STATES, SOME BEING MEMBER INVENTORS OF THE KANSAS ASSOCIATION OF INVENTORS OPPOSE ENACTMENT OF H.R. 1613 (PROPOSAL TO RAISE PATENT OFFICE FEES IN ADDITION TO THE NOVEMBRR 5 1990, 69 PERCENT, AN ADDITIONAL 91 PERCENT, *A TOTAL OF 223 PERCENT IN A PERIOD OF 6 MONTHS.*)

WE ALSO OPPOSE GIVING THE ADMINISTRATION OPEN-ENDED AUTHORITY TO INCREASE FEES FOR PROCESSING, SERVICES, OR MATERIALS UNDER 35 U.S.C. 41(d).

WE ALSO ASK THAT CONSIDERATION BE GIVEN TO REVERTING TO PARTIAL PUBLIC FUNDING AS IT WAS BEFORE THE NOVEMBER 5, 1990, 69 PERCENT FEE INCREASE.

WE ALSO ASK THAT FUNDING FOR AUTOMATION COME NOT FROM THE INVENTORS, BUT FROM PUBLIC FUNDING. THIS IS AN IMPROVEMENT THAT WILL BENEFIT ALL THE CITIZENS OF THE NATION FOR MANY GENERATIONS TO COME.

IN VIEW OF THE ABOVE, WE HEREBY AFFIX OUR SIGNATURES.

SIGNATURE	ADDRESS (PLEASE PRINT)
John L Nelson	6600 Edyth Derby KS 67037
James J Parker	6600 Edyth Derby, Ks 67037
Kelly [illegible]	418 Timberridge Cir Derby, Ks
[illegible]	828 NELSON DR. DERBY, KS 67037
Norma Quirk	823 Armstrong, Derby, Ks 67037
David Woodhurst	2102 S. St. Francis Wichita KS 67211
M Jacobs	900 N DERBY KS 670[illegible]

A Non-Profit Association to Assist Independent Inventors

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WE ALSO OPPOSE GIVING THE ADMINISTRATION OPEN-ENDED AUTHORITY TO INCREASE FEES FOR PROCESSING, SERVICES, OR MATERIALS UNDER 35 U.S.C. 41(d).

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IN VIEW OF THE ABOVE, WE HEREBY AFFIX OUR SIGNATURES.

SIGNATURE	ADDRESS (PLEASE PRINT)
John G Bulow	6600 Edyth Derby KS 67037
[illegible]	6600 Edyth Derby, Ks 67037
[illegible]	418 Timber Lg Cir Derby, Ks
[illegible]	828 NELSON DR. DERBY, KS 67037
Norma Quirk	823 Armstrong, Derby, Ks 67037
[illegible]	2103 S. St. Francis Wichita KS 67211
M Jacobs	900 N Derby KS 6703

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IN VIEW OF THE ABOVE, WE HEREBY AFFIX OUR SIGNATURES.

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Bernard Bliss	RR#3 Box 73 Great Bend Ks 67530
SHERMAN BARRETT Barrett	1316 30th Place, Parsons, KS 6735-
Evelyn Meeks	Hoisington, Ks 67544
Karla J Meeks	" "
Mary Jo Bay	

P.03

PETITION

KANSAS ASSOCIATION OF INVENTORS
2015 LAKIN
GREAT BEND, KS 67530
(316) 792-1375

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IN VIEW OF THE ABOVE, WE HEREBY AFFIX OUR SIGNATURES.

SIGNATURE	ADDRESS (PLEASE PRINT)
Franklin D. Johnson	Rt 2- Box 22 T-Bone Rd Wichita Falls 76301
Mary E Johnson	RR 2- Box 22 T-Bone Rd. Wichita Falls Tx 76301
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Della Wright	565 FM 369 N Iowa Park Tx 76367
Daisie Mims	206 W. Emerald Iowa Park Tx 76367
Margaret A. Robertson	4200 Nunn, Wichita Falls, Tx 76308
Patricia A. Pendleton	1807 Harvey Dr. Wichita Falls, Tx. 76302
Russell S Shain	324 Rockwood Wichita Falls, TX 76301
Jeffrey D Longacre	2012 Irving Place Wichita Falls TX 76308
Linda McCoy	5115 Cadzfills Wichita Falls TX 76310
Nora Silva	3117 Grant Wichita Falls TX 76308
Paul Poor	#89 Town Country WFTX 76306
Joe L Cooper	1501 Hampton Dr WFTX 76303
Joy Lawson	1710 Brandview W. Falls, Tx 76305
Olivia Vij	4047 Normandy WFTX 76306

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IN VIEW OF THE ABOVE, WE HEREBY AFFIX OUR SIGNATURES.

SIGNATURE	ADDRESS (PLEASE PRINT)
D. Jason King	281 Holiday Osage City
Billy Prescott	Rt #2 Box 160 Osage C.C. Ks.
Daniel K. Mills	534 5TH Osage City, KS, 66523
Jamie L. Wells	512 W. Hall Burlingame KS. 66413
Timothy V. Wells	R2, Osage City, KS 66523
Darryl D. Thompson	R.R.1 Box 217 Reading, KS 66868
Karl E. Hornbaugh	415 East 1st St Osage C. Ty, Kan 66523
David R. Lyon	RR 1 Osage City - Kan 66523
Lee Peterson	247 Lakin Osage City, Ks.
Leroy Strongman	4 Martin Wood Dr Osage City KS
Margaret R. Henry	604 S. 9th Osage City, KS 66523
James E. Henry	604 S. 9th Osage City, KS. 66523
Glenda L. Stricker	Rt. 2 Box 262 Osage City, KS 66523
Michael Long	Rt 2 Box 36 Osage City Ks 66523
Annabelle Long	Rt 2 Box 36 Osage City, Ks 66523

PETITION

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IN VIEW OF THE ABOVE, WE HEREBY AFFIX OUR SIGNATURES.

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Bonnie Cutrano	1600 Holland, Great Bend KS 675
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Larry E. Loy	1014 Roosevelt, Great Bend, KS. 675
Ray Hoffman	659 W 3rd, Hoisington, KS 67544
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Clayton Williamson	272 W 6th HOISINGTON, KS 67544
Ronald Curry Potter	1401 McKinley, Great Bend, Ks 67530
Richard L. Miller	Rt 1 Box 338C Great Bend, KS 67530
Richard L. Miller	821 Morphy Great Bend, KS 67530
Ron Rowe	P.O Box 11 Ellinwood, ks.
Dennis G. Loyd	RR 1, Box 97, Downs, Ks. 67437

APPENDIX 22.—TOP 200 CORPORATIONS RECEIVING U.S. PATENTS IN 1990, SUBMITTED BY THE INTELLECTUAL PROPERTY OWNERS, INC.

IPO INTELLECTUAL PROPERTY OWNERS, INC.

TOP 200 CORPORATIONS RECEIVING U.S. PATENTS IN 1990

Rank	Company	No.	Rank	Company	No.
1.	Hitachi, Ltd.	908	51.	Toyota Jidosha K.K.	149
2.	Toshiba Corp.	891	52.	Konica Corp.	147
3.	Canon K.K.	868	53.	Eaton Corp.	143
4.	Mitsubishi Denki K.K.	862	54.	American Cyanamid Co.	136
5.	General Electric Co.	785	55.	Merck & Co., Inc.	134
6.	Fuji Photo Film Co., Ltd.	767	56.	Mazda Motor Corp.	132
7.	Eastman Kodak Co.	720	57.	Aisin Seiki K.K.	131
8.	U.S. Philips Corp.	637		Phillips Petroleum Co.	131
9.	IBM Corp.	608	59.	Procter & Gamble Co.	127
10.	Siemens A.G.	506	60.	Exxon Research & Engineering Co.	126
11.	Bayer A.G.	499	61.	Digital Equipment Corp.	124
12.	E.I. du Pont de Nemours & Co.	481	62.	Fanuc Ltd.	123
13.	NEC Corp.	436		Sumitomo Electric Industries	123
14.	Westinghouse Electric Corp.	435	64.	Dow Corning Corp.	122
15.	AT&T Co.	429		GTE Products Corp.	122
16.	Ciba-Geigy Corp.	409	66.	Henkel KGAA	117
17.	Dow Chemical Co.	400	67.	Fuji Jukogyo K.K.	116
18.	BASF A.G.	394	68.	Rockwell International Corp.	115
	Motorola Inc.	394	69.	Sumitomo Chemical Co., Ltd.	114
20.	General Motors Corp.	379		Texaco Inc.	114
21.	Minolta Camera Co., Ltd.	376		Thomson-CSF	114
22.	Nissan Motor Co., Ltd.	372	72.	Chrysler Motors Corp.	112
23.	Honda Motor Co., Ltd.	365	73.	Sanyo Electric Co., Ltd.	111
24.	Mobil Oil Corp.	353	74.	Massachusetts Inst. of Tech.	110
25.	Sharp Corp.	349	75.	Ethyl Corp.	108
26.	Matsushita Electric Industrial Co.	340		Warner-Lambert Co.	108
27.	3M Co.	323	77.	W.R. Grace & Co.	105
28.	Ricoh Co., Ltd.	292	78.	Yamaha Corp.	104
29.	Texas Instruments, Inc.	284	79.	Asahi Kogaku Kogyo K.K.	103
30.	Hoechst A.G.	278		Daimler-Benz A.G.	103
31.	Shell Oil Co.	263	81.	PPG Industries Inc.	100
32.	Fujitsu Ltd.	260	82.	Yazaki Corp.	99
33.	Xerox Corp.	252	83.	Air Products & Chemicals, Inc.	98
34.	Hughes Aircraft Co.	248	84.	Mitsui Toatsu Chemicals Inc.	94
35.	Allied-Signal Inc.	243	85.	Tektronix Inc.	90
36.	Sony Corp.	238	86.	Alps Electric Co., Ltd.	89
37.	AMP Inc.	223		Deere & Co.	89
38.	Hewlett-Packard Co.	218	88.	Agency of Indus. Science & Tech.	87
39.	Robert Bosch GmbH	204	89.	North American Philips Corp.	86
40.	Boeing Co.	192		Pitney-Bowes, Inc.	86
41.	Amoco Corp.	187	91.	Takeda Chemical Industries Ltd.	85
42.	Hoechst Celanese Corp.	182		UOP	85
43.	Olympus Optical Co., Ltd.	179	93.	Brunswick Corp.	84
44.	Brother Kogyo K.K.	178		Mitsui Petrochemical Indus. Ltd.	84
45.	Imperial Chemical Industries PLC	176		Monsanto Co.	84
46.	Honeywell Inc.	167		NCR Corp.	84
47.	Sundstrand Corp.	155		Union Carbide Chem.& Plastics Co.	84
48.	Ford Motor Co.	154	98.	Corning Inc.	83
49.	Pioneer Electronic Corp.	154		Goodyear Tire & Rubber Co.	83
50.	United Technologies Corp.	151		NGK Insulators, Ltd.	83

(over)

1255 TWENTY-THIRD STREET, N.W., SUITE 850, WASHINGTON, DC 20037 (202) 466-2396
TELECOPIER (202) 833-3836 • TELEX 248959 NSPA UR

TOP 200 CORPORATIONS (continued)

Rank	Company	No.
101.	Advanced Micro Devices, Inc.	82
	Bridgestone Corp.	82
	OKI Electric Industry Co., Ltd.	82
	Pfizer Inc.	82
	Unisys Corp.	82
106.	Raytheon Co.	80
107.	Hoffmann-La Roche Inc.	78
108.	Nippondenso Co., Ltd.	76
109.	FMC Corp.	75
	Northern Telecom, Ltd.	75
	Rhone-Poulenc Chimie De Base	75
	Schering A.G.	75
113.	Olin Corp.	74
114.	Eli Lilly & Co.	73
	Exxon Chemicals Patents Inc.	73
	Harris Corp.	73
117.	Institut Francais De Petrole	72
	Nikon Corp.	72
119.	Sanshin Kogyo K.K.	71
120.	Fuji Electric Co., Ltd.	70
	Grumman Aerospace Corp.	70
122.	Commissariat A L'Energie Atomique	69
123.	Kimberly-Clark Corp.	68
	Murata Manufacturing Co., Ltd.	68
	Spectra-Physics, Inc.	68
126.	Cooper Industries Inc.	67
	Mitsubishi Kasei Corp.	67
	Salomon S.A.	67
129.	American Home Products Corp.	66
130.	Lucas Industries Public Ltd. Co.	65
	Mead Corp.	65
	Mitsubishi Jukogyo K.K.	65
133.	Abbott Laboratories	64
	Atlantic Richfield Co.	64
	ICI Americas Inc.	64
	Yamaha Motor Co., Ltd.	64
137.	Konishiroku Photo Industry Co., Ltd.	63
	Omron Tateisi Electronics Co.	63
139.	Schlumberger Technology Corp.	62
	Shin Etsu Chemical Co., Ltd.	62
	University of California	62
142.	E.R. Squibb & Sons, Inc.	61
	Messerschmitt-Bolkow-Blohm GmbH	61
	Nippon Seiko K.K.	61
	Samsung Electronics Co., Ltd.	61
146.	Colgate-Palmolive Co.	60
147.	Aluminum Co. of America	59
	Baxter International Inc.	59
	RCA Licensing Corp.	59
150.	Lever Brothers Co.	58
	National Research Development Corp.	58
	Sulzer Brothers, Ltd.	58
153.	B.F. Goodrich Co.	57
	Casio Computer Co., Ltd.	57
	Chevron Research Co.	57
	ITT Corp.	57
	National Semiconductor Corp.	57
	Nippon Steel Corp.	57
	Raychem Corp.	57
160.	British Telecommunications	56
	Diesel Kiki Co., Ltd.	56
	Emerson Electric Co.	56
	Fuji Xerox Co., Ltd.	56
	Leybold A.G.	56
	Yoshida Kogyo K.K.	56
166.	Union Oil Co. of California	55
	Zenith Electronics Corp.	55
168.	Becton, Dickinson & Co.	54
	Nalco Chemical Co.	54
	Seiko Epson Corp.	54
171.	Fujisawa Pharmaceutical Co.,Ltd.	53
	GTE Laboratories, Inc.	53
	Kanegafuchi Chemical Indus. Co.	53
	Sanden Corp.	53
	Victor Co. of Japan, Ltd.	53
176.	Caterpillar Inc.	52
	Conoco, Inc.	52
	Degussa A.G.	52
	KAO Corp.	52
	Mitsubishi Rayon Co., Ltd.	52
	Semiconductor Energy Lab. Co.	52
	Square D Co.	52
	TRW Inc.	52
	University of Texas	52
185.	Boehringer Mannheim GmbH	51
	Emhart Industries, Inc.	51
	Halliburton Co.	51
	Hamamatsu Photonics K.K.	51
	Polaroid Corp.	51
	Toyoda Gosei K.K.	51
191.	Alfred Teves GmbH	50
	Daikin Kogyo Co., Ltd.	50
	Kawasaki Steel Corp.	50
	Kureha Chemical Industry Co.	50
	Nestec, S.A.	50
196.	AGFA-Gevaert, A.G.	49
	Akzo N.V.	49
	Dainippon Screen Mfg. Co., Ltd.	49
	Ford New Holland, Inc.	49
	Hoechst-Roussel Pharm. Inc.	49
	Hoechst A.G.	49
	Mita Industrial Co., Ltd.	49
	SGS-Thomson Microelectronics	49
	Societe Nationale Indus. Aerosp.	49

NOTE: IPO compiled this list from data provided by the U.S. Patent & Trademark Office. The numbers are patents issued during 1990 for which an assignment of title was of record in the Office when the patent was issued. Patents in the names of subsidiaries, other related companies, or divisions are not combined with patents in the name of the parent

APPENDIX 23.—GROSS BUDGET AUTHORITY AND NON-FEDERAL OFFSETTING FUNDS

Table 1

Gross Budget Authority and Non-Federal Offsetting Funds*
(thousands of dollars)

	fy 1991, estimate			fy 1992, request		
Agency	gross budget authority	non-federal off-setting funds	%	gross budget authority	non-federal off-setting funds	%
Patent and Trademark Office	351,427	241,620	68.8	461,990	367,690	79.6
Copyright Office	22,901	12,860	56.2	26,576	15,992	60.2
Nuclear Regulatory Commission	463,320	0	0.0	510,310	0	0.0
Food and Drug Administration	690,944	0	0.0	779,029	197,500	25.4
Consumer Product Safety Administration	37,319	10	0.0	39,440	10	0.0
Equal Employment Opportunity Commission	198,300	0	0.0	210,271	0	0.0
Federal Communications Commission	116,294	65	0.1	113,429	65,065	57.4
Occupational Health and Safety Administration	286,358	130	0.0	303,172	130	0.0
Federal Aviation Administration	4,083,291	15,999	0.4	4,507,000	18,318	0.4
Coast Guard	2,444,893	5,327	0.2	2,651,658	3,364	0.1
National Oceanic and Atmosphere Administration	1,855,913	31,832	1.7	1,949,392	41,703	2.1

* Source: *Budget of the United States, fiscal year 1992*

APPENDIX 24.—NEWS ARTICLE FROM NEW TECHNOLOGY WEEK, "MASSIVE PROTEST ERUPTS IN PATENT COMMUNITY," JUNE 3, 1991

NEW TECHNOLOGY Week
KING COMMUNICATIONS GROUP, INC.
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From the Editors of The Energy Daily and Defense Week

Monday, June 3, 1991 Volume 5, Number 23

Massive Protest Erupts In Patent Community

The Patent and Trademark Office is entering probably the most controversial period in its 200-year history.

A proposal to raise fees to small companies and individual inventors by 91 percent this year on top of a 69 percent increase that took effect eight months ago is causing a contentious, heated debate within the normally quiet patent community.

BY RICHARD McCORMACK

The proposed fee increase is also leading to a debate over the constitutionality of an individual's right to obtain patents. Patenting and invention is becoming only a rich man's pursuit, say those opposed to the increase. The debate will come to a head on June 12, when the Patent and Trademark Office (PTO) plans to hold an open hearing addressing the issue.

Sparking the controversy is the PTO's desire to increase its budget by $110 million next year, a 25 percent increase. But the five-year budget resolution agreed to last year by President Bush and Congress requires the Patent and Trademark Office (PTO) be a fully user-supported entity, a concept that flies in the face of the Patent Office's 200-year history, says those opposed to the increase.

"The individual inventor is being crushed," says B. Edward Shlesinger, a noted patent attorney and prolific inventor.

"The fee schedule is horrendous and is bad news for the small entrepreneur and inventor and not necessarily good news for the larger inventor," says patent attorney Warren Low of Arlington, Va.

"Government fees shouldn't keep people from using the patent system and we're at that point now," says Michael Blommer, executive director of the American Intellectual Property Law Association.

Prior to 1982, the patent system was considered to be an essential government service set up to encourage people to disclose their ideas to the public in return for a patent so as to foster a multiplier effect of invention. In the Constitution of the United States of America, Article One, Section 8, Congress was mandated to "secure for limited times to authors and inventors the exclusive right to their respective writings and discoveries."

Those opposed to the user-supported system say that Congress is not "securing" anything for inventors. By relinquishing financial funding of the PTO to its users, Congress is said to be giving up its statutory oversight of the system. Those who are paying for the system rightfully want to control how their money is being spent.

"An agency that isn't publicly funded isn't accountable to Congress," says one House Judiciary Committee staff member. "We don't want to oversee another Post Office."

For most people, though, the bigger issue is the terrible signal it sends on how the administration feels about assuring America's technological strength into the future. The $351 million needed to run the PTO this year "is peanuts compared to what we spend for one aircraft carrier," says Shlesinger. "It was invention that built this great country and if we don't continue to give incentives, we won't reap the rewards."



Patent Commissioner Harry Manbeck: Those who oppose the fees "[are] wrong."

Most major U.S. corporations were started by individuals who had no financial resources whatsoever, but were able to easily get a patent for their idea. McCormick, Deere, Land and Xerox, all fall into that category, and the list goes on. That may no longer be the case. "Plain and simple, the $6,000 [required to get and maintain a patent] which doesn't include the attorney's fee is far too much money" for the aver-

(Continued on next page)

Patent Unrest...

(Continued from page one)

age American to afford, says Shlesinger.

"We've got people who don't understand that the benefits of our patent system are the tax dollars coming from new industries which are more than covering the operation of the Patent Office," says Shlesinger. "They've gotten away from the theory of the system."

The Patent Commissioner doesn't see it this way, though. "Several organizations have opposed enactment of our proposal and have alleged that the fee increase implemented last November and the proposed increases will deter many large corporations and small enterprises from seeking patent protection...They [are]wrong," says PTO Commissioner Harry Manbeck. The PTO is still receiving an increasing number of applications this year, despite the 69 percent increase in fees. This was also true after a major fee increase went into effect 10 years ago. Since then, the number of patent applications has risen 51 percent, and patent applications by small entities have increased from 32,000 to 58,000.

"Anybody can play with statistics," counters Blommer of the American Intellectual Property Law Association. "The fact is, that in 1974, U.S. applicants filed as many patent applications as they did in 1988. We've got a real bad record here in the U.S. in terms of filing applications." Wealthy foreign firms are more apt to pay increases. Moreover, it's impossible to measure patent applications that didn't come in as a result of the higher fees.

One of the big problems is that the people who are most affected by the increased "tax" on inventors are not organized and have no political clout. "There are no real inventor organizations in this country," says Blommer. "There is just nobody who is in charge of innovation in this country. Nobody sees the patent office as part of the larger picture." The Technology Administration at the U.S. Department of Commerce is not at all versed on the issue, said a spokesman. And the President's Office of Science and Technology Policy was unable to answer any questions due to a lack of knowledge of the issue.

The appropriate subcommittees in Congress are beginning to wrestle with the problem, however. "Frankly, I really have some serious concerns about the impact that would have on our inventors," says Rep. William Hughes (D-N.J.), chairman of the Judiciary Committee's intellectual property subcommittee.

This is particularly true for the proposed increase in patent maintenance fees. "It will force scientists and inventors to think twice before they renew" their patents, Hughes told *New Technology Week*. Hughes says that he has "serious questions" about the policy implications of financing the PTO solely with user fees. But there is no clear pool of public funds to tap. "I intend to work with my counterpart in the Senate to see if we can identify funding through public means," says Hughes. "I think it is important to continue to fund this operation with some public funds."

Unfortunately, because of the budget reconciliation bill of last year, Hughes finds himself in a financial straightjacket. "We're going to have to be as innovative as we can to try to locate money," he says. So where is the extra money in the system? "At this point, I have no idea," he responds.

QUOTABLE

"One organization, the Industrial Biotechnology Association, states that its members will be unable to afford our proposed fees—less than $7,000 over an average 13-year period per patent. Yet this is an industry that invests $100 million to $200 million per invention. In addition, the industry expects to receive revenues of $2.9 billion in 1991 and expects to receive $50 billion in the year 2000. One could certainly question how companies that can make such investments and receive such returns cannot afford $7,000 in fees—half of which are paid after the patent grant—to protect an invention in the world's wealthiest market."

—HARRY MANBECK, Current Commissioner of Patents and Trademarks.

"For nearly two centuries a [patent] grant for from 14 to 17 years has suddenly been cut down to four years. Nearly 40 percent of the patents granted to individuals in the past nine years have expired for failure to pay the extension fees required before the end of the four-year term. Many inventors become discouraged when they have been unsuccessful initially in marketing their inventions. Four years is insufficient time to find out if they have something worthwhile.

"Prior to the establishment of these four-year grants in 1982, inventors had 17 years to market their ideas without payment of any extension fees.

"Fallout from the impact of these new fees has carried over to the U.S. government patents. Over 50 percent of these patents issuing in the last nine years have been allowed to expire even though the potential value of these inventions by the government could have been maintained for the full 17 years, had the extension fees been paid."

—R. EDWARD SHLESINGER, of Shlesinger, Arkwright & Garvey in a March 28, 1991 letter to President Bush.

"The time scale of invention is a long one. Results do not come quickly. Inventive developments have to be measured in decades rather than years. It takes patience to stay with an idea through such a long period. In my case, I am sure I would not have done so if it were not for the hope of the eventual reward through the incentives offered by the patent system."

—CHESTER CARLSON, Inventor of Xerography.

"I find it very strange that while the Department of Commerce through the National Institute of Standards and Technology, has earmarked some $35 million to be granted to large and small industrial organizations to develop new technologies, while the Department of Energy gives grants to inventors to help them develop their energy-related inventions, and while other agencies of the Federal and State governments are doing everything possible to improve the competitive position of our industries, the Patent Office, the base of our technology, has to raise the price the inventor has to pay for the protection he needs from the patent system."

—JACOB RABINOW, Previous Vice President of Control Data Corp. and Currently a Consultant to the National Institute of Standards and Technology.

APPENDIX 25.—NEWS ARTICLE FROM DESIGN NEWS, "AN INVENTOR GOES TO WASHINGTON," NOVEMBER 5, 1990

PATENT OFFICE

AN INVENTOR GOES TO WASHINGTON

Want to patent that great idea? Here's a first-hand look at what you'll encounter at the Patent office

Nathan Edelson

Arlington, VA—You won't find it on the "must see" list of tourists visiting the nation's capital, and its four cavernous buildings certainly won't win any architectural awards. Yet the United States Patent and Trademark Office (PTO) has got to be one of the most beautiful and exciting places in the entire world—if, like me, you are a professional inventor.



TROY THOMAS

You can reach the PTO easily from Washington's National Airport. Take a short ride on the metro to the Crystal City stop, where you'll pass through a huge underground maze of shops before emerging to face Patent and Trademark Building No. 3.

Inside, in the lobby area, you'll find "The Inventor's Hall of Fame," a modest collection of plaques, patent models, and memorabilia of those genius inventors who helped change the way we live. There's Eli Whitney's cotton gin, John Deere's plow, Elisha Otis's elevator, Rudolf Diesel's engine, Willis Carrier's air conditioner, Chester Carlson's xerographic copier, just to name a few. Hardly a Smithsonian-class display, yet enough to set any inventor dreaming that some day one of his creations might sit alongside this remarkable lineup of useful achievements. So with renewed determination, I push on through the next set of swinging doors and enter the reception area of the Public Search Room of the U.S. Patent Office.

Search time. I have come to Washington from Missoula, MT, where I operate a small firm that develops new kinds of ergonomic furniture so people can actually exercise while they work. I have recently perfected an "active" desk along these lines that I now want to patent. Then, I can line up a manufacturer to produce it and thereby finance further research. I am here in Washington to conduct a patent search on this new invention.

In a patent search, you try to determine whether the item you think you have invented has already been invented and patented by someone else. The search also is an opportunity to study old and new developments in your field, since the patent record tells the story of the pertinent technology in minute detail from the beginning of the 19th century up to the present.

There is a popular misconception that if you have a patent on a product, it is automatically protected from being made or sold by anyone else. Actually, a patent only gives you the right to sue an infringer who is knocking you off, but there is no guarantee that you will win your case. Even if you do win, you still might not recover enough damages to pay your legal expenses.

So why patent your invention? Although it is not



Montana inventor Nathan Edelson. His current work involves design of new computing environments.

an absolute protection, it is at least a form of insurance, and for successful products, a patent can be extremely valuable. Only one patent in ten, however, ever pays for its own filing costs, which now run $185 for an individual and double that for a corporate entity. Then, once the patent is issued, the individual must pay another $280—$560 for a company—plus yearly maintenance fees of from $50 to $100.

I have determined that my "Edelson Desk" is worth the effort to patent, so I apply for a user's pass from the Search Room receptionist and proceed into the football-field-sized main public hall.

On several of the room's large mahogany tables are the three major patent classification manuals, which break down the various areas of invention into several hundred main categories and about 70,000 subcategories. Because I have invented a type of desk, my subcategories have names like "Tiltable Surfaces: Biased, Sectional, About plural axes, and oppositely tiltable with respect to the horizontal plane." You really don't know which categories are appropriate until you start plowing through the scores of patents they contain.

I grab a library cart and start wheeling it up and down the aisles of patent document stacks, looking for the wooden fileboxes that contain the likely "prior art" about adjustable computer desks.

Professional searchers. But I'm a bit unusual. Inventors usually don't come to Crystal City to conduct their own patent searches. Normally, this task is performed by a Washington-based patent search agent, hired by the patent attorney whom the inventor retains to advise him on whether he has a potentially patentable product, and to help him file an application on it if he does.

At $135 per day for a "Super Saver" single at the Crystal City Marriott, plus airfare, meals, and about three days of valuable work time, it's understandable why most inventors stay home and pay their lawyers a few hundred dollars to order a commercial search. Yet, if I can come up with one valuable new inspiration based on something I see in a patent file, I have more than paid for my trip.

Another benefit of doing your own search is the chance to talk with the examiners, the government workers who actually review your application and decide whether or not to grant you a patent. Generally, these examiners, who each specialize in a particular technical area, will only recommend which subclasses to search. But this information can be helpful,

Coming: Patents by computer

The work required to research a patent seems exceedingly tedious in a computer age, but help is on the way. Starting in January, you should be able to download to your PC the text of new patents moments after they are issued.

A computer bulletin board for the public is just one of many steps in a massive effort by the U.S. Patent and Trademark Office (PTO) to streamline its services. That effort is benefiting design engineers in two big ways, says Thomas P. Giammo, PTO's assistant commissioner for information systems.

First, the time the agency takes to process your patent application is getting shorter. Second, you will find it easier to tap PTO's vast data base to examine the technology used in patents.

Giammo expects the Commerce Department will charge users of the new patent bulletin around $25 a year, plus $6 an hour. PTO hopes to tie the electronic bulletin board into a system for ordering printed or faxed copies of patents.

The bulletin board at first will offer four types of information: notices on such items as rules and fees; bibliographic information on the origin of each patent; text abstracts of patents; and full text of patents.

You will be able to dial in by computer modem on Tuesday morning just after the week's patents are issued and use an on-line search to scan bibliographic and abstract texts for patents of interest. You will not be able to search automatically the full text of patents before you download them.

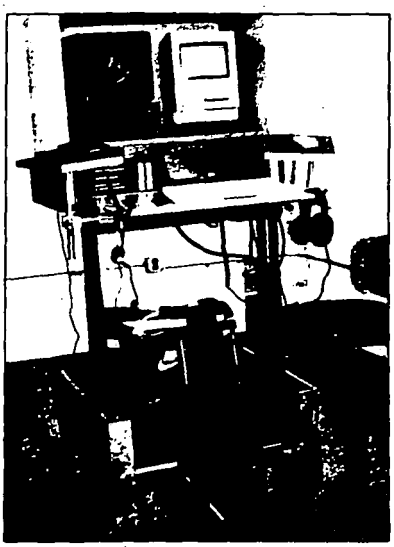
Exploring the text. If you want to do full-text searches of a group of patents, you must use PTO's text retrieval system. At present, that means going to PTO headquarters in Arlington, VA, and using one of four special terminals in the public search room.

You type in key words describing a particular device, using any kind of Boolean expression. Within seconds, you find the text of patents with related technology. It is the same text retrieval system patent examiners use. PTO plans to put more text-search terminals in Arlington as demand grows and to supply them to all patent depository libraries by 1992.

The agency has fully indexed a text file for all patents since 1971. Graphics are not included. To examine drawings in patents, you must either get a paper copy of the patent or use PTO's high-resolution terminals. PTO expects to have about a dozen high resolution terminals in the public search room in Arlington by 1992.

PTO has digitized in compressed format the images of each of the pages of every U.S. patent ever issued. It has started loading the images onto optical disks. The expensive, rapid-speed image terminals can flick up a page a second of whatever patent you pick.

But putting page-a-second image



Edelson is working on new designs that combine computer work areas with exercise equipment.

of your invention are recognized as legitimate, but that the means for achieving them need significant refinement or rethinking.

Anatomy of a patent. A patent on a functional article or process is divided into three main parts. The first part, the specification, describes the background of the invention, including its potential benefits and what prior patents exist over which the inventor believes his new device or process offers real and distinct advantages. The specification then goes on to relate in minute detail the exact construction and operation of the new invention.

Accompanying the specification is a set of illustrations that show all pertinent aspects of the new invention. Professionally rendered patent drawings are remarkably clear and easy to understand. However, patent illustrators seem incapable of accurately rendering the human form.

The third section of a mechanical patent is, for the inventor, its true heart and soul, and consists of a series of "claims" that define the exact limits of the invention's protected status. These claims are often compared to fences that delineate a property; the more ground the fences enclose, the more valuable the property. Yet under patent law, the Government limits the scope of an inventor's coverage to what is "novel" and "unobvious."

Composing claims that are at once both comprehensive and acceptable is the essence of preparing an effective patent application.

Strive for simplicity. It turns out the simpler the claims are, the better. The best wording for my desk claim would simply be: an article of furniture comprising (a) a work surface and (b) one or more support means attached thereto.

My task, then, in reviewing former patents about adjustable desks is to determine whether any of the claims which they contain can be applied to my new invention. If so, I am potentially an infringer, if the patent is still within its 17-year period of protected use. If it has already expired, I am free to make and sell the device described by the claims of the old patent, but I can not re-patent the invention myself.

Patents of this sort were first introduced in the late 15th century in Florence, and helped fuel the Renaissance. By the time the U.S. Constitution was written, their value for advancing the practical arts was well recognized.

It follows that the patents with time still ticking on their 17-year protected-status meters are the ones of greatest interest and concern to inventors like myself. But all patents in subclasses pertinent to my invention must be searched, right back to those cracked and faded ones that inveterate inventor Thomas Jefferson himself may have approved in his capacity as the first head of the patent office.

A new patent? In the case of my active desk search, I am fortunate. One of the chief "objects" of my invention is to permit users to reposition the desk height quickly and easily so they can avoid postural fixity, which causes musculoskeletal stress. The patents I review indicate that many other inventors have developed adjustable desks, but in every case the movement mechanisms they employ are slow, complicated, or expensive. My desk has an adjustment mechanism that suffers from none of these deficiencies. It also offers other novel and useful features. As a result, I believe I have a good chance to obtain a valuable new patent.

I wheel my stack of patents over to the photocopy area and duplicate the ones that seem the most germane. I will need to refer to these in my patent application, and am even required to send along copies to help speed up the examiner's review, although she will conduct her own independent search.

On the advice of a patent attor-

since with 70,000 separate categories, it is easy to go wrong.

Coming to Washington is also an opportunity for the inventor to find competent and cost-effective legal help. Even if you plan to do as much of the patent work yourself as possible, it is generally prudent to have your patent application reviewed by an experienced patent attorney, and there are more of them within a stone's throw of the Patent Office than any place else in the country.

Finally, among the thousands of patents you will probably encounter if you do your own search, a certain number are virtually guaranteed to crack you up. Among my favorites are an 1892 patent for an "Arm Rest for Corpses," a 1905 Patent for an "Iron Dumb Bell Convertible into an Indian Club," a 1977 patent for a "Hot Water Bottle With Ear Warming Projections," and a 1988 patent for a "Pillow for Ritual Circumcisions."

Returning to my cart full of patent files, my next step in the review process is to take the boxes of documents into the main reading room and flop down at a long table to scrutinize them. As someone specializing in ergonomics, or the art and science of adapting work devices to human needs, I find the arrangements provided for this task particularly intriguing.



Most researchers still must wander among long stacks of "wooden shoes" to retrieve paper records of patents.

Screwed down to the top of each desk space is a metal bin that houses your patent documents as you flip through them. The system works fairly well for the first few minutes, but sitting impassively for the hours it is going to take to complete this chore seems utterly inappropriate for one who has just invented an "active" desk to alleviate postural strain through physical movement.

Ideally in a patent search, you hope to find "prior art" that attempts to accomplish the same "objects" as your invention, but which, for one reason or another, fails to do so adequately. This generally indicates that the potential benefits

terminals in satellite libraries is unlikely any time soon. The transmission bandwidth is too high to be economical. PTO is experimenting with lower-speed terminals for use in the field. "Our intention is—as far as is economically and technically feasible —to make this information available to the public," Giammo pledges.



Patent examiners will be able to research patents faster and with greater accuracy, thanks to installation of powerful, high-resolution workstations.

One problem is that the needs of patent examiners and the public are not the same. Examiners need optical disks that are sectioned narrowly according to technologies involved. The public is less concerned with the history of specific technologies than it is with what is new in the most recent patents.

Tracking the Japanese. PTO also is putting some data on compact disk read-only memory (CD-ROM). For example, it is in the early stages of producing English language abstracts of all patents issued in Japan during the 1980s. The abstracts, which will comprise about nine CD-ROM disks, will go to all PTO depository libraries. A data exchange arrangement with Japan forbids PTO from distributing the disks outside its facilities.

Giammo admits he is "a footdragger on CD-ROM" for most patent uses. He considers CD-ROM "extremely good" for relatively small-sized data bases. But it takes two disks to capture the images of a single week of U.S. patent issues. He figures it would take about 1,000 disks to hold a single subclass of U.S. patents.

Through 1995, PTO will concentrate most of its energies on installing the internal Automated Patent System, which involves the massive task of putting all existing patents on optical disks. When this process is completed, patent examiners will be able to call up any patent on the high-resolution computers, which should improve the speed and accuracy of patent searches. □

—Walter S. Wingo,
Washington Editor

ney, I also decide to apply for a design patent, which has to do with a device's outward appearance, not its mechanical function. While I have determined that no existing desk has the same movement mechanism as the one I've invented, it could be that a desk without such a mechanism looks exceedingly like my design, in which case I could be charged as an infringer if the look-alike patent is still in force.

Design patents consist of illustrations only; they have no elaborate explanations or claims. I look at perhaps 2,500 different pictures of desks before concluding that I am on safe ground. However, I decide that in addition to a mechanical patent, I will also apply for a design patent, lest a knock-off imitator attempt to fool the public by offering a desk that looks identical to mine but does not have its mechanical advantages.

My last stop is across the plaza at Building 2, the Trademark Office. I want to see whether anyone else has used the name "Edelson Desk," because if so, I will need to call my invention something else. I discover that the name "Edelson" and also "Walking Desk," another trademark possibility, have never been used, and that I am therefore free to use and register them.

These days, the value of a well-known and respected trademark can be enormous. Some products that cannot be otherwise patented nonetheless achieve huge commercial success in large part because of their catchy and protected brand names. Hula Hoop and Wonder Bread are stars in this class.

It's about eight at night when I descend into the Crystal City Underground looking for a friendly spot to relax. This has been a great trip. I've done the groundwork for writing my patent, dug up a lot of new ideas that I can explore in my studio, met some interesting people, and got so much exercise walking through the document stacks that I'll sleep like an athlete.

Despite its banal veneer and functional deficiencies, I've come to regard our Patent Office as the modern equivalent of the great Library of Alexandria. It is unquestionably one of the world's largest repositories of useful information, and I feel privileged to have toiled to fathom even a minute part of this abundant knowledge. □

Did you find this article useful? If so, let us know. Circle No. 843