WHY PATENTS

A HANDBOOK FOR EMPLOYEES
OF OTAC - DETROIT ARSENAL

FROM : Chief, Patent Branch, Legal Office

TO : Technical Staff, OTAC - Detroit Arsenal

SUBJECT: Why Patents

As a member of the OTAC - Detroit Arsenal research and engineering team you are engaged in vehicular technology. One of the most important products of our Installation is knowledge.

Under the laws of the United States, a right of ownership may exist in such intellectual property. We in Government have a positive duty to insure that rights resulting from our efforts are used for the public good.

One of the forms in which these rights are manifested is the patent grant. Therefore, to a research and engineering organization, some knowledge of inventions and the patent laws is essential. When our theoretical discoveries find tangible expression in a new device, method or composition, we must consider the steps necessary to protect our rights. Alternatively we may find ourselves paying someone else for the privilege of using our own developments.

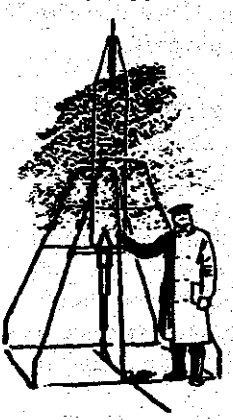
I hope that this booklet will serve to point out to each of you some of the measures we at OTAC - Detroit Arsenal must take to insure that the results of our efforts are not used by others in a manner contrary to the best interests of Ordnance and out Government.

R M Lyon

R.M. Lyon
Ch, ORDMC - LP

patenting its discoveries, we may find that others will obtain patents on inventions which rightfully belong to us and will then be able to force the Government to pay royalties for the use of the ideas of its own people. Therefore, in addition to the enhancement of our reputation resulting from patents issuing to OTAC - Detroit Arsenal employees, it is essential that we protect the Government from possible future damage suits.

In addition to the duty you owe Army Ordnance as a Government employee to assist in protecting Government rights, patents are very important to you as an individual member of our team. When you make an invention under certain conditions, which will be explained later, you may be in a position to collect royalty payments from any commercial manufacturer who uses your invention for nongovernmental purposes. The patent grant that may result will also enhance your scientific and professional reputation. Who among us has ever filled out an employment application that did not ask for a list of issued patents? We need only look to Dr. Goddard, to see a perfect example of a brilliant scientist who realized the importance of patenting his ideas. The many patents (over 200) that were held by Dr. Goddard encompassed the entire field of early developments in rocketry.



WHY PATENTS

"Why bother with patents anyway? We all know that the Government can use a patented invention."

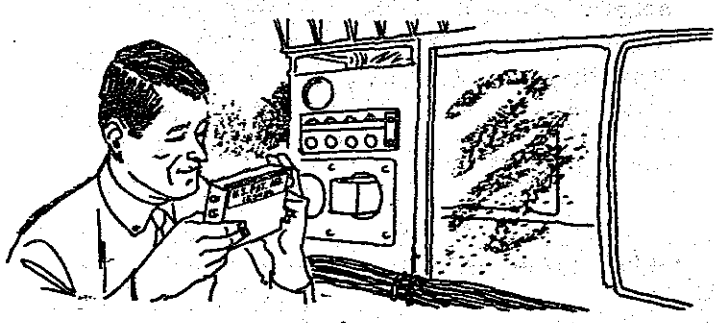
If that is your feeling, this booklet is intended for you because the Government has as much need for patents and for patent protection as does private industry. Although the Government can't be prevented from using a patented invention, it can be and often is sued for damages if it or any of its contractors infringe a patent. Therefore, we still need protection even though the reasons may be slightly different from those of commercial organizations.

Over three million patents have been issued to date by the United States Patent Office. Many of these have expired and the information they contain is public property to be used by anyone, but there are still about seven hundred thousand unexpired patents in effect. Only a very small percentage of these are owned by or licensed to the Government. Therefore, we have about seven hundred thousand potential infringement suits for money damages if we use the inventions covered by these existing patents.



As a member of the research and engineering team in a Government installation that is pushing forward in vehicular technology, you are aware of the new developments we perfect every day. Many others are also working in these areas. If the Government does not protect itself by documenting and

electric light, the cotton gin, the airplane or the transistor. These very important inventions resulted in the establishment of entirely new industries, but are not typical of the many patents granted to American industry. You should not deprecate your idea because you do not feel like an Edison or a Marconi, but rather you should appreciate that what may seem like a relatively minor improvement could be a major contribution to the over-all OTAC-Detroit Arsenal development picture. Many inventions, which when first made seemed unimportant, later became recognized as truly significant contributions to technology. Therefore, when you dream up a new electronic circuit, a new mechanical structure or a different method of accomplishing a desired result, you should stop for a moment to consider the desirability of attempting to obtain patent protection. Many times a new use has been found for a device which itself is old and this new use has resulted in the issuance of a patent. While only a few of us will be fortunate enough to establish the basis for a new industry, a great many of our people make patentable inventions in the course of their day to day research efforts. Certainly it is a part of your job to take a few moments to submit these ideas to your employer so that OTAC can



Last but not least is the immediate monetary award that will result from a patent application being being filed in your name by Ordnance. AR 672-301 specifies that Ordnance employees whose invention disclosures result in patent applications will be eligible for an initial award of $50 and will be eligible for an additional award of $100 when a patent covering the invention disclosure is issued. These awards may be supplemented by additional awards if it is found that the invention results in money savings to Ordnance.

WHAT IS A PATENT

Patents are specifically authorized by the U.S. Constitution to promote the progress of science and the useful arts. As an incentive to invent or to invest money in inventive development, the Government grants the inventor or his assignee the right to exclude others from making, using and selling his invention for seventeen years. As a consideration for this grant, the inventor is required to disclose his invention in full detail. This will permit others to use it after his patent expires and, more important, may stimulate other inventions along similar lines.

The patent is an excellent way to disseminate technical information, because this is where many corporations and research groups look to find the latest technical developments. By the very nature of the patent grant a full and complete disclosure of how the invention is made and practiced is required in order that a patent may issue.

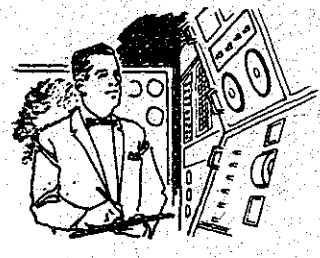
Many of our people, when thinking in terms of what is patentable, consider only things like the

Thus when we realize that our efforts have resulted in something new and valuable, we are able to look back and prove exactly when each stage occurred.

Aside from the importance of your notebook entry as a legal document to the patent attorney who will handle your case, it provides a convenient place to maintain a personal record of your scientific achievement.

After carefully recording the content of your invention and the important dates, it is necessary that you show diligence. We can think of diligence as meaning that once an invention is made we can't sit on it for several years and then expect to have a patent issued. We must go ahead and file the patent application as soon as practical after the invention has been conceived and preferably reduced to a workable form.

Finally, when considering how you protect your idea, you should be careful that you don't broadcast to the world all of the details of your invention as this may result in some other person filing a patent application and claiming to be the inventor of your idea.



protect you and the Government. Furthermore, remember that this is a step which can only inure to your benefit.

HOW TO PROTECT YOUR IDEA

There are many pitfalls between your conception of an invention and the issuance of a valid United States Patent. As the inventor you are the only person that can protect your idea in its initial stages. Later on, your OTAC patent attorney will help you take the necessary steps to insure that the rights in your idea are not lost. However, most of his efforts will be based on your ground work. The most important step is to clearly record the details of your invention, being very careful to document dates and to secure signatures of witnesses to your description. Each scientist, engineer and technician should maintain a laboratory notebook as a convenient and available place to maintain such records. Paragraph 18, ORDP 20-135 (Inventions, patents, and Related Matters) provides brief instructions on keeping a laboratory notebook which, if complied with, should insure that you have taken every step necessary to initially protect your idea.

Since most of us don't make "flash of genius" inventions but rather make the kind referred to as "five per cent inspiration and ninety-five per cent perspiration," our inventions result from weeks or sometimes months of continuous effort. For this reason, we don't know which of our ideas may be important at a later date so we should try to record each stage of our investigation as we go along.

ORDNANCE CORPS

MILITARY INVENTION RECORD

Government-Employee or Contractor-Employee

TO: Dept. of the Army; Office, Chief of Ordnance; Washington 25, D. C., ATTN: ORDGL-PT

See Reverse Side For Instructions

1. NAME OF INVENTOR(s)	2. RANK or GRADE & JOB TITLE	3. P.O. ADDRESS OF LEGAL RESIDENCE

4. SHORT TITLE OF INVENTION	5. SECURITY CLASSIFICATION	
	a. INVENTION	b. INVENTION TITLE

6. BRIEF DESCRIPTION OF INVENTION *(Attach Detailed Description - Also, Drawings if Applicable)*

7. STAGE OF DEVELOPMENT	DATE	LOCATION	9. NAMES OF PERSONS HAVING KNOWLEDGE OF INVENTION AND FACTS STATED IN ITEMS 7 AND 8
a. Conception of invention			
b. Disclosure to others			
c. First sketch or drawing			
d. First written description			
e. Completion of model or full-sized device			
f. First test of operation of invention			

8. RESULTS OF TEST

10. RECORDS, REPORTS AND/OR PUBLICATION RELATING TO THE INVENTION

11. PATENTS AND PATENT APPLICATIONS RELATING TO THE INVENTION

12. LICENSES OR ASSIGNMENTS RELATING TO THE INVENTION

13a. CONTRACTOR *(If Involved)*	b. CONTRACT NUMBER

14a. INVENTOR(s)	b. WITNESSES
DATE _____ SIGNATURE _____	DATE _____ SIGNATURE _____
DATE _____ SIGNATURE _____	DATE _____ SIGNATURE _____
DATE _____ SIGNATURE _____	

15. FORWARDING OFFICER STATE PROBABLE UTILITY OF INVENTION TO ORDNANCE CORPS OR OTHER GOVERNMENT AGENCY

16. FORWARDING OFFICER

DATE _____ NAME _____

OFFICIAL TITLE _____ SIGNATURE _____

REVERSE SIDE OF THIS SHEET MAY BE USED FOR ADDITIONAL INFORMATION

FORM
OD 1 DEC 58 325 REPLACES DD FORM 325, 1 APR 53, WHICH MAY BE USED.

HOW WE GET INVENTIONS

When you, as an OTAC - Detroit Arsenal employee, make an invention the patent people don't know about it until you tell them. There are probably many ways that you can bring your invention to the attention of the Patent Branch of the Legal Office and if you have any questions you should either call or drop in to his office and discuss your problem. However, like most things, there is a preferred way to submit your invention. Reproduced on page 8 you will find a copy of the standard Ordnance Corps " A Military Invention Record." This has been designed to provide you with a convenient method for submitting the necessary information to enable your OTAC patent attorney to get to work to protect your idea. Copies of this form may be secured from your supervisor or from the Patent Branch of the Legal Office, located in the Administration Building.

You will find that this form includes spaces for the title of your invention, your name and home address, and other information relating to the times and places at which important events occurred. This information, in addition to a technical description of your invention, will provide the patent attorney with enough facts to begin working on your case. By now you have provided him with the details of the conception of your idea and have generally indicated possible areas where OTAC - Detroit Arsenal or Ordnance will use your invention. Also, and this is very important, you have told him about any publications you know of that describe your idea.

Number. The issuance of a Case Number and the preparation of an invention case file is not the same as filing a patent application. This file is not the same as filing a patent application. This file is merely the Patent Branch numbered file in which your invention disclosure is placed for ready reference.

As soon as he can, the patent attorney to whom your invention is assigned completes what is referred to as an "evaluation of the invention." A copy of the invention is sent the cognizant technical supervisor with a request that he evaluate the invention from the standpoint of Ordnance interest. His report considers such questions as the technical importance of the invention, the amount of money that Ordnance has invested in its development, and the extent to which our present or future programs may utilize the invention. This information provides a basis for the attorney to make a decision as to the advisability of making a novelty search. This search is conducted prior to the preparation of an application in an attempt to determine if someone else has already published the same invention.

Next the attorney considers the patentability of the invention. Under the law only certain classes of things such as a mechanical or electrical device for accomplishing a useful purpose, a method of producing a useful article, a manufactured device or a physical composition of matter are protectable by patents. Of course to be patentable, any of the above must be new, useful and not an obvious mechanical expedient. Some

This last point is very important because the patent laws of the United States provide that no patent shall issue for any invention which has been described in a printed publication more than one year prior to the filing of a patent application. This rule may present an absolute bar to your getting a patent and nothing your attorney can do will get around it. Therefore, it is important that he know if you have presented any scientific papers or have published your idea in a technical journal. Thus, he will know if he should take your case out of the normal order to insure that an application is filed in time.

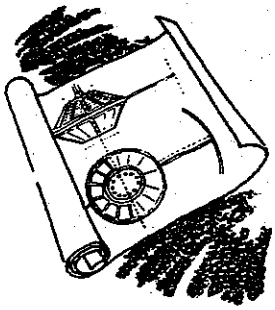
WHAT THE PATENT COUNSEL DOES WITH YOUR INVENTION

You will have a number of contacts with your OTAC patent attorney, so it might be well at this time to tell you something of his work and explain why he will ask some of the questions he does. Briefly, the Patent Branch's office prepares a case file on each idea submitted, investigates its utility to Ordnance, attempts to determine if the idea is patentable, makes a determination of your rights as an inventor, prepares a patent application and prosecutes it to maturity as a patent—or at any of these stages makes a determination for cause not to continue with the application.

First let us point out what the patent case file is. When a description of your invention is received by the OTAC Patent Branch, it is assigned a Case

1. PREPARES A DRAFT OF THE APPLICATION

The draft is accompanied by a drawing having one or more figures which illustrate the invention and includes a specification which gives the title of the invention, tells the subject to which the invention relates, makes as convincing as possible an explanation to show that an invention has been made, states the object or objects of the invention, and describes in detail one or more examples of the invention. The specification ends with a number of claims which define exactly what it is proposed to patent—that is, exactly what it is proposed to exclude others from making, using or selling. If the attorney were absolutely sure he knew precisely what the invention was and exactly what was old, one claim would be sufficient. But inventions are elusive and appear differently under different conditions and at different times, hence it is prudent to draw a number of claims in varying form and scope.



2. SENDS THE DRAFT TO THE INVENTOR FOR REVIEW

After the draft has been completed, it is sent to the inventor for his review. At this time the inventor should check very carefully to insure that the attorney has understood the invention and not omitted any important features. When the draft is returned by the inventor, it is corrected if the inventor has noted errors, or added to if he has called attention to omissions.

examples of patentable subject matter are electrical devices, machine elements, metal alloys, plastics, coatings, methods of manufacture, drugs or the method of using a mechanical device. After determining that the invention relates to patentable subject matter, the attorney considers the novelty of the invention, usually by comparing it with the most closely related patents or literature that he knows of or which it is possible to find by means of a search. The most relevant patents found in such a search are usually sent by the attorney to the inventor for his comments. In some cases the patents may show it impossible to obtain a new patent on the submitted idea.

If it appears to the Patent Branch, that a patent cannot be obtained or that a patent would not be of sufficient value to justify its costs, the attorney informs the inventor of the situation and states that he proposes to place the disclosure in the inactive files. If the inventor points out some important feature of the invention which has been overlooked then the matter will be reconsidered. If it should later develop that there are important reasons for reconsidering the invention then the disclosure can easily be restored to the active files.



When it has been decided that a patent application should be filed, the attorney usually proceeds in the following manner:

The application, after filing, is assigned to one of the numerous examining divisions in the Patent Office where it awaits its turn before being considered. When it is reached in the regular course of business, the examiner reads it and then makes a search of the most closely related patents. The examiner's search is conducted with only the claims of the application in mind; that is, he uses the specification merely to gain an understanding of what the claims mean. After making his search, the examiner writes a letter(Office Action) in which he either rejects or allows each of the claims. The patent attorney then considers this letter and responds, usually after consulting with the inventor, making changes in the application and presenting arguments rebutting the examiner's position. The examiner may write another letter which is responded to and the exchange continues until all the claims are either allowed or rejected. This process of rejection and response usually takes at least two years. If all the claims are allowed, then the patent is issued in due course. If some of the claims are allowed and the rejection of other presented claims is sustained on appeal, the rejected claims are cancelled and the patent is issued with the allowed claims. If no claim is allowed, the application is abandoned as unpatentable.

YOUR INVENTION RIGHTS AS AN ORDNANCE EMPLOYEE

The rights to which the Government is entitled in inventions made by you as an employee depends upon the circumstances in each case. Where the Government retains the entire right, title and interest in your invention, such right is evidenced by an "Assignment"

3. PREPARES A DETERMINATION OF RIGHTS

Prior to completing the application, a determination of the inventor's rights is made. In other words, a decision as to whether the Government takes title or the inventor retains title and grants to the Government only a royalty-free license, is prepared for the Secretary of the Army, for Review by the Commissioner of Patents. This report is submitted making recommendations in accordance with the established government employee patent policies. The method in which this determination is made is considered in further detail below.

4. PREPARES AN INVENTION SUMMARY FOR THE INCENTIVE AWARDS REVIEW COMMITTEE

At the time the application is forwarded for filing in the Patent Office, a summary of the invention is prepared and submitted to the Incentive Awards Review Committee in Washington, D.C. along with a recommendation that the inventor be considered for a cash award in accordance with AR 672-301.



5. ARRANGES FOR FILING AN APPLICATION

After the draft has been revised and put in final form, it is executed by the inventor and filed in the United States Patent Office.

6. PROSECUTES THE APPLICATION TO ALLOWANCE AS A PATENT

(a) Assigned duties of the inventor.

(b) Subject matter of the invention.

(c) Whether Government funds, material, time, or information were used in making the invention.

(d) Whether the Government intends to file a patent application on the invention.

Most commercial concerns employing engineers and scientists require by separate contract that all inventions made by such employees be completely assigned to the employer. However, the Government patent policy is more advantageous to you as a Government employee than the policy generally used by commercial firms.

According to established regulations, if you are assigned to do research work and make an invention on Government time, using Government materials, and the invention relates to your official duties, the invention will belong to the Government. However if you make an invention at home, or do a major portion of the work away from your job, or if you make an invention unrelated to your assigned duties, or if for any reason it is equitably fair that you should retain some rights in your invention, the Government may take only a royalty-free license to use the invention. In the latter case you will retain the commercial rights for nongovernmental purposes. In such instances, if the invention is of interest to Ordnance, your patent application will be prepared and prosecuted by the Government at no cost to you.

which you execute. This means that you as the inventor have transferred to the Government, much as is done by employees in private industry, all of your rights in the invention.

In some cases, the Government retains only a "License" under inventions which it patents for its employees. This license may be viewed as a permission to use the invention and to permit others to use it for the Government without the payment of any royalty fee. When only a license is taken by the Government, you as owner of the patent retain the right to exclude others (except those making it for the Government) from using the patented device. Of course, this means that you may license others to use the invention or may sell the patent subject to the previous license which the Government retains. You are said to retain the commercial rights when you grant only a royalty-free license to the Government.



The rights of Ordnance employees in their inventions are determined by Executive Order 10096, dated January 23, 1950, and AR 825-20. This was promulgated to insure a uniform policy throughout the Government with respect to employee's rights to their inventions. The Commissioner of Patents reviews all decisions of the executive agencies to insure uniformity.

The following are some of the elements considered in determining rights:



of work under the contract, is required to submit to OTAC - Detroit Arsenal a report of any inventions made in the performance of the contract. The Patent Branch's office is able to maintain records which show whether or not the contractor has submitted the required reports. However, we are unable to keep technically aware of the many diverse developments contracted out by OTAC - Detroit Arsenal, which would be necessary if we were to be able to evaluate the correctness of each contractor's report.

Therefore, by means of an OTAC Instruction, 715-39, this responsibility has been assigned to the Technical Supervisor having responsibility for any given R & D contract. At the time a contractor submits his interim or final invention report, it is sent to the responsible engineer or scientist with a request that he concur or suggest possible areas of invention where the Patent Counsel should investigate further to insure contractor compliance.

In this manner, the man most familiar with the work being performed can advise the Patent Branch as to whether or not inventions may have been made under any contract assigned to him.

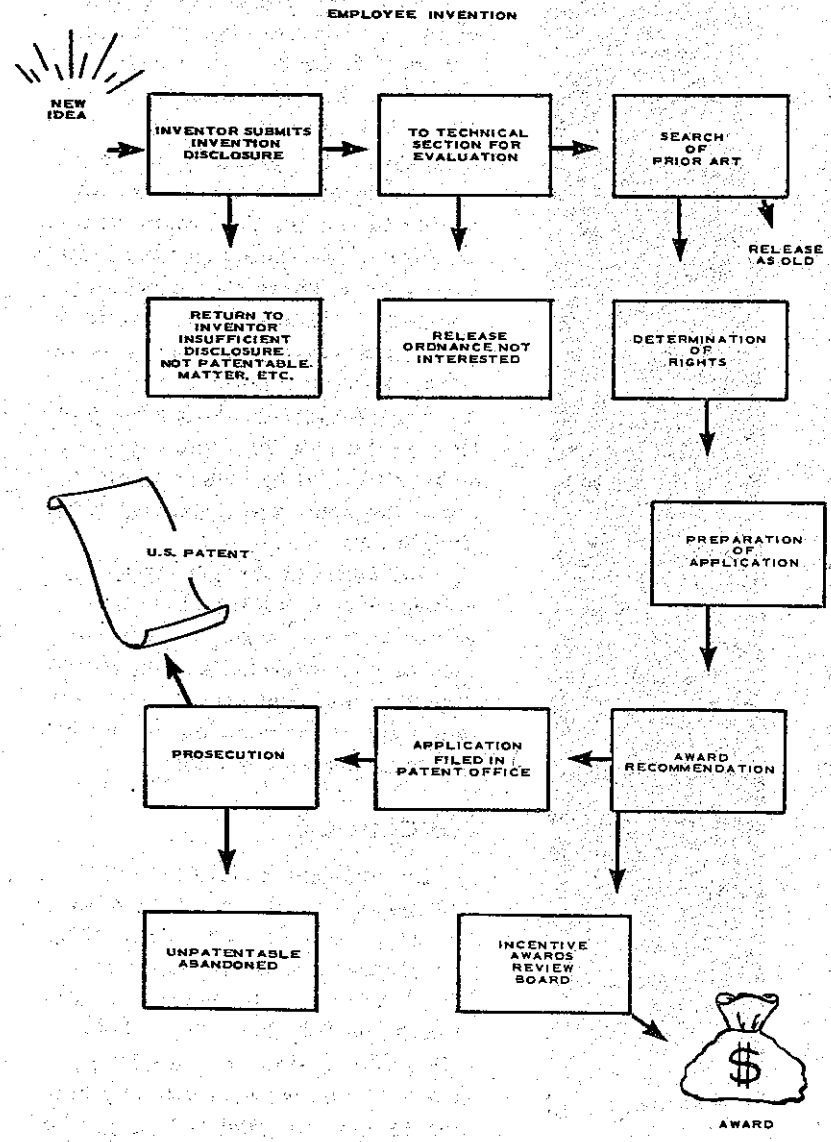
In the past we have found that contractors, due to a shortage of patent personnel or a lack of interest in reporting patentable inventions to the Government, have reported very few inventions, considering the

HOW YOU HELP PROTECT GOVERNMENT'S RIGHTS IN CONTRACTOR IDEAS

While we are on the subject of patents, we should consider the other source from which Ordnance obtains patentable inventions. In addition to those ideas submitted by our OTAC-Detroit Arsenal employees, we are entitled to valuable patent rights in inventions made by our contractors in the course of Ordnance financed research and developments efforts.

In each of our R & D contracts we include a Patent Rights Clause, which is required by Section 9-107 of the Armed Services Procurement Regulations. This clause requires that the contractor report to Ordnance all inventions made in the performance of work under any Ordnance contract. The term "made" means an invention that is either conceived or actually reduced to practice in the course of work required by a contract. The conception of an invention occurs at the time the inventor first develops in his own mind the complete idea for the subject matter of the invention. A reduction to practice takes place when the inventor or his associates construct a working model of the invention and demonstrate its practical feasibility in the environment in which it is intended to operate.

The Patent Branch of the Legal Office maintains a file system covering all contracts let by OTAC-Detroit Arsenal which include the Patent Rights Clause, so that we may check on the contractor's compliance with the provisions of his contract. Each contractor, at certain intervals and at the completion


EMPLOYEE INVENTION
NEW IDEA
INVENTOR SUBMITS INVENTION DISCLOSURE
TO TECHNICAL SECTION FOR EVALUATION
SEARCH OF PRIOR ART
RELEASE AS OLD
RETURN TO INVENTOR INSUFFICIENT DISCLOSURE NOT PATENTABLE MATTER, ETC.
RELEASE ORDNANCE NOT INTERESTED
DETERMINATION OF RIGHTS
PREPARATION OF APPLICATION
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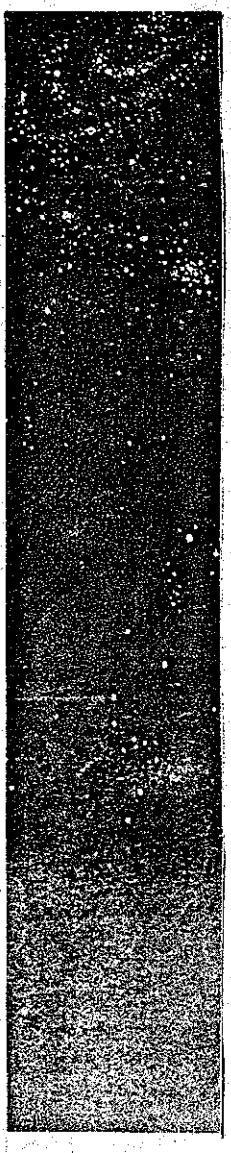

money we invest in research and development. One way that you can help insure that the results of research conducted at the expense of Ordnance are not subverted to the individual business aims of its contractors, is to insure that all apparently new developments are brought to the attention of the OTAC Patent Branch at the earliest possible date. This is one area where our efforts are doomed to failure unless the technical man having knowledge of the work performed under a contract conscientiously performs his portion of the plan for insuring that what is paid for by Ordnance will inure to the benefit of Ordnance and the Government.

Although, as the Technical Supervisor of a contract, you are not expected to devote a major portion of your time to enforcing the patent provisions in our contracts, this is certainly one of the many duties to which we must address ourselves.

CONCLUSION

Our business at OTAC-Detroit Arsenal is the advance of the state of the art in vehicular technology. If the advances you make are more than trivial and are developed to the point of being useful, they are probably patentable. If they are patentable, then it is also our business to protect them for our own good and the good of our country.

U. S. CONSTITUTION, ART. 1, SECTION 8

"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."

This booklet has been prepared to answer in nonlegal and sometimes general language some of the questions which occur frequently among the OTAC - Detroit Arsenal engineers, scientists and technicians about patents.

Many questions are necessarily highly technical and cannot be answered within the scope of this small publication. When a specific problem arises you should refer the matter to the Patent Branch of the Legal Office. Their job is to help you help ORDNANCE.