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TRADE SECRETS: AN UPDATE ON THE IMPACT OF STATE AND FEDERAL EFFORTS TO BROADEN THE PUBLIC RIGHT OF ACCESS TO COURT RECORDS

Thomas H. Adolph
David Hricik
Jayme Partridge[*]

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I. THE MOVEMENT TO EXPAND THE PUBLIC RIGHT OF ACCESS TO COURT RECORDS

Trade secret owners have a compelling need to seek protective orders. Disclosure in lawsuits may reveal their trade secrets to the world.[1] Once a trade secret is publicly available, the competitive advantage that the secret provides is forever lost and trade secret law will not protect the secret from further dissemination through legitimate means.[2]

Protective orders serve valuable purposes, allowing "access to facts, protection of proprietary interests of the manufacturer, and permit[ing] discovery to move forward without increased expense or delay."[3] Despite the benefits of protective orders, many critics claim that protective orders deprive the public of vital information relating to safety and health, especially if a protective order is used to suppress information and admissions concerning dangers relating to products.[4] Critics premise their attacks on the historic right of public access to court proceedings.[5] Lobbyists

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[1] *See generally* Note, *Trade Secrets in Discovery: From First Amendment Disclosure to Fifth Amendment Protection*, 104 HARV. L. REV. 1330 (1991).

[2] *See* RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 (1993); RESTATEMENT OF TORTS § 757 cmt. b (1939).

[3] James R. Jarrow, *Industrial Espionage? Discovery Within the Rules of Civil Procedure and the Battle for Protective Orders Governing Trade Secrets and Confidential Information*, 32 WASHBURN L.J. 318, 319-20 (1993). Recognizing these benefits, courts routinely approve protective orders. *E.g.*, Speller v. United States, 14 Cl. Ct. 170, 176 (1988); Advanced Nuclear Fuels Corp. v. General Elec. Co., 15 U.S.P.Q.2d (BNA) 1304, 1305-07 (W.D. Wash. 1990).

[4] *See, e.g.*, Henry J. Reske, *Secrecy Orders at Issue*, A.B.A. J., Aug. 1994, at 32.

[5] In the past, courts have not extended the right of public access to discovery or settlement. *See, e.g.*, Seattle Times Co. v. Rhinehart, 467 U.S. 20, 33 (1984); Arthur R. Miller, *Private Lives or Public Access?*, A.B.A. J., Aug. 1991, at 65. Public right of access to litigation information generally attaches only when information is filed with the court. *See Seattle Times Co.*, 467 U.S. at 31 (rejecting petitioner's assertion of a "right . . . to disseminate any information gained through discovery"); Poliquin v. Garden Way, Inc., 989 F.2d 527, 533 (1st Cir. 1993) (greater right of public access to trial materials than discovery information). *But see* Avirgan v. Hull, 118 F.R.D. 257, 261 (D.D.C. 1987) (deposition should take place in public unless good cause exists for denying access). Documents actually used in court are

settlement processes.[10] They contend that if the trend toward greater public access continues, it may threaten legitimate property rights of both litigants and third parties, especially trade secret rights.[11] Opponents of the movement include many in the defense bar as well as industrial and commercial interests.

This Article is not intended as support for or criticism of the public access movement. Instead, it is intended both to warn intellectual property owners that their trade secrets are at risk and to inform those who seek to expose dangerous secrets of tools which may help that endeavor. This Article accomplishes these goals by describing the very recent changes in, and efforts to change, federal and state statutes and rules which protect trade secrets. Because a trade secret is like wine in a wineskin—if there is a hole anywhere, the wine will be lost—only by knowing all of the possible avenues of attack may the trade secret be properly protected.

II. FEDERAL EFFORTS RELATING TO THE RIGHT OF PUBLIC ACCESS

Both the judicial and legislative branches of the federal government have examined proposals which would affect the scope of protective orders in federal court. As next shown, none of these proposals has yet been adopted.

A. *Proposed Changes To Federal Rule Of Civil Procedure 26(c)*

The Judicial Conference Advisory Committee is considering proposed changes to Rule 26(c), which would explicitly authorize a federal judge to dissolve or modify a protective order.[12] Proposed Rule 26(c)(3) states in pertinent part:

> (A) The court may modify or dissolve a protective order on motion made . . . . (B) In ruling, . . . the court must consider,

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[10] *See* Miller, *supra* note 5, at 66.

[11] *See id.*

[12] Judicial Conference of the United States, Advisory Committee on Civil Rules, Minutes 8 (Apr. 28-29, 1994) [hereinafter Judicial Conference Minutes] (available from the Administrative Office of the U.S. Courts, Rule Committee Support Office).

motion, not by stipulation of the parties;"[16] "half of motions for protective order are opposed;"[17] and "[o]f the motions which were ruled upon by a judge, approximately equal numbers were denied, or granted in whole or in part."[18]

The Committee analyzed three changes to Rule 26(c). First, the Committee incorporated a provision authorizing the "common practice" of entering protective orders by stipulation of the parties.[19]

Second, the Committee debated whether to allow the court, a party, or any intervenor, to move to modify or dissolve the protective order. The draft amendments provide that in ruling on a motion to dissolve or modify a protective order, the court must consider the following factors, among others:

(i) The extent of reliance on the order;
(ii) The public and private interests affected by the order, including any risks to public health or safety;
(iii) The movant's consent to submit to the terms of the order;
(iv) The reasons for entering the order, and any new information that bears on the order; and
(v) The burden that the order imposes on persons seeking information relevant to other litigation.[20]

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[16] *Id.* The highest figure for agreement to protective orders was 26%. The Committee believed that the figure was probably higher in "complex" litigation.

[17] *Id.*

[18] *Id.* "By some chance, in all three districts 41% of the motions were granted in whole or in part." *Id.*

[19] *Id.*

[20] *Id.* attachment 2, at 4-5.

permitted parties to stipulate to protective orders.[24] The Conference voted to resubmit the proposed amendment to the Committee for further consideration.

The Committee met again in June 1995, reconsidered the proposed rule, and decided to republish the rule for public comment in a form that confirms the "common practice of entering a protective order on stipulation of the parties."[25] The Advisory Committee note states that only compelling reasons, *if any*, could justify a protective order that suppresses "information that might help protect against injury to person or property" and "mere commercial embarrassment deserves little concern."[26] The proposed rule was published on September 9, 1995 and is expected to take effect no earlier than December 1, 1997.[27]

B. *Proposed New Federal Rule Of Civil Procedure 77.1*

In April 1994, the Committee considered a "sketch" for a possible new Rule 77.1 to address protective orders limiting access to judicial records or proceedings. The sketch generally proposed detailing different standards for determining whether to seal various categories of materials and the procedure for resolving such issues.[28] The Committee recognized that the distinction between discovery protective orders and all other sealing orders is important, as the Committee minutes report:

> Discovery protective orders reflect the broad scope that has permitted discovery to range well beyond matters admissible in evidence, and have been an important counterbalance guarding against unnecessary invasions of privacy that could

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[24] News Release of the Administrative Office of the U.S. Courts 3 (March 14, 1995) (on file with the authors).

[25] Memorandum, *supra* note 22, at 4.

[26] *Id.* at 6.

[27] *Id.*

[28] Judicial Conference Minutes, *supra* note 12, at 28-29.

version.[36] Senator Kohl's bill would require a court to make "particularized findings of fact" that a protective order would "not restrict the disclosure of information which is relevant to the protection of public health or safety."[37] These "particularized findings of fact" would be necessary for an order to be effective after final judgment.[38] The burden of proving that the information is not relevant to the protection of public health or safety would be on the party seeking to prevent disclosure.[39] Finally, the bill would void any agreement that "restricts a party from disclosing any information . . . to any Federal or State agency with authority to enforce laws regulating an activity relating to such information."[40]

The bill has been referred to the Senate Committee on the Judiciary and has one co-sponsor. Given Congress' interest in litigation reform, the bill may receive interest.

D. *Proposed Product Liability Fairness Act*

Another bill, the Product Liability Fairness Act ("S. 687"), was introduced in March 1993.[41] The bill was amended on June 27, 1994 to incorporate the provisions of S. 1404, requiring courts to balance the public interest in health and safety against any need for privacy before issuing a protective order. "The bill was [defeated] on the Floor of the Senate on June 29, 1994, when supporters failed to invoke cloture (for the second time) to end a filibuster. . . . No further action is expected."[42]

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[36] 141 CONG. REC. S2339 (daily ed. Feb. 8, 1995) (remarks of Senator Kohl).

[37] S. 374, *supra* note 35, § 2.

[38] *Id.*

[39] *Id.*

[40] *Id.*

[41] S. 687, 103d Cong., 1st Sess. (1993). *See Product Liability Bill Called Moderate by Supporters, Unnecessary by Opponents*, 8 Toxics L. Rep. (BNA) No. 17, at 493 (Sept. 22, 1993).

[42] Legi-Slate Report for the 103d Congress, Status Report for S. 687, S. 1494, Sept. 15, 1994, *available in* Legi-Slate; *see also* 140 CONG. REC. S7855 (daily ed. June 29, 1994) (recording failure of the cloture motion).

As next shown, Texas and Florida have passed the strongest "anti-secrecy" legislation, "expressly premised on the proposition that information regarding public hazards should be open to the public."[46] Many bills in other states have been modeled on the Texas and Florida approaches.[47]

A. *Florida—Trade Secrets Pertinent To Public Hazards*

1. The Language Of The Statute

The Florida Sunshine in Litigation Act is probably the broadest public access statute.[48] The Florida legislature enacted the Sunshine in Litigation Act in 1990[49] and amended the Act in 1991.[50] The Act is set forth below in full:

> (1) This section may be cited as the "Sunshine in Litigation Act."
>
> (2) As used in this section, "public hazard" means an instrumentality, including but not limited to any device, instrument, person, procedure, product, or a condition of a device, instrument, person, procedure or product, that has caused and is likely to cause injury.
>
> (3) Except pursuant to this section, no court shall enter an order or judgment which has the purpose or effect of concealing a public hazard or any information concerning a public hazard, nor shall the court enter an order or judgment which has the purpose or effect of concealing any information which may be useful to members of the public

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[46] *Id.* at 321.

[47] *See* Bob Gibbins, *Secrecy Versus Safety: Restoring the Balance*, A.B.A. J., Dec. 1991, at 74, 77; *BNA's 50 State Survey*, *supra* note 43, at 27.

[48] Robert C. Nissen, *Open Court Records in Products Liability Litigation Under Texas Rule 76a*, 72 TEX. L. REV. 931, 957 (1994).

[49] Sunshine in Litigation Act, ch. 90-20, 1990 Fla. Laws 49 (1990) (codified as amended at FLA. STAT. ch. 69.081 (1994)).

[50] Act effective Oct. 1, 1991, ch. 91-85, sec. 1, § 69.081(8)-(9), 1991 Fla. Laws 631, 632 (1991) (codified at FLA. STAT. ch. 69.081(8)-(9) (1994)).

Any person has standing to contest an order, judgment, agreement, or contract that violates this section. A person may contest an order, judgment, agreement, or contract that violates this subsection by motion in the court that entered such order or judgment, or by bringing a declaratory judgment action pursuant to chapter 86.

(b) Any person having custody of any document, record, contract, or agreement relating to any settlement as set forth in this section shall maintain said public records in compliance with chapter 119.

(c) Failure of any custodian to disclose and provide any document, record, contract, or agreement as set forth in this section shall be subject to the sanctions as set forth in chapter 119.

This subsection does not apply to trade secrets protected pursuant to chapter 688, proprietary confidential business information, or other information that is confidential under state or federal law.

(9) A governmental entity which settles a claim in tort which requires the expenditure of public funds in excess of $5,000, shall provide notice, in accordance with the provisions of chapter 50, of such settlement, in the county in which the claim arose, within 60 days of entering into such settlement; provided that no notice shall be required if the settlement has been approved by a court of competent jurisdiction.[51]

[51] FLA. STAT. ch. 69.081 (1994); *see generally* Nissen, *supra* note 48, at 957.

the protective order.[57] The appellate court held that the Sunshine in Litigation Act requires notice and an opportunity to present evidence.[58]

In November 1992, the National Association of Manufacturers and other business groups filed a lawsuit attempting to challenge the Florida Act, alleging that "the law violates the manufacturers' privacy rights, substantially impairs pre-existing contractual obligations, and constitutes an erroneous deprivation of property without due process of law."[59] The court dismissed the case for lack of standing.[60]

b. *Trade Secrets*

The Florida Act inconsistently addresses trade secrets in subsection (4), enacted in the original Act, and subsection (8), a part of the 1991 amendment. Under the original Act,

> any portion of an agreement or contract [which would conceal] a public hazard, any information concerning a public hazard, or any information which may be useful to members of the public in protecting themselves from injury which may result from the public hazard is void, contrary to public policy, and may not be enforced.[61]

The Act permits protection of trade secrets only if the trade secrets "are not pertinent to public hazards."[62] Thus, the original Act eliminates any trade secret protection for information which is "pertinent to public hazards." There is no case law yet to answer the question of whether information

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[57] *E.I. DuPont Nemours & Co.*, 654 So. 2d at 227-28.

[58] *Id.* at 228.

[59] *Dismissal of Challenge to Sunshine Act Could Shift Debate in Suit Over Benlate*, State Env't Daily (BNA) (Apr. 28, 1993) (discussing National Ass'n of Mfrs. v. Florida, No. 4868 (Fla. Cir. Ct. filed Nov. 19, 1992)).

[60] *Id.*

[61] FLA. STAT. ch. 69.081(4) (1994).

[62] *Id.* ch. 69.081(5).

information or materials in camera."[67] There is inconsistency in the Florida statute as to what exactly a protective order may protect. On the one hand, the Florida statute prohibits any order which would conceal a public hazard, or "any information concerning a public hazard."[68] Yet "the court shall allow disclosure of only that portion of the information or materials necessary or useful to the public regarding the public hazard."[69] No court has yet addressed these inconsistencies, and it is not clear how the Florida courts will resolve them.

3. Conclusion

The Florida statute is controversial. First, it does not allow courts to balance competing interests if the information sought to be protected concerns a public hazard.[70] Thus, if the information is pertinent to a public hazard, a protective order cannot be used to shield the information from disclosure, even if the information constitutes a trade secret.[71] In addition, the statute favors early public disclosure. The statute appears to contemplate the public disclosure of the information at the outset of the litigation, well before liability has been established.[72] One commentator has argued that the statute places a "potent weapon in the hands of plaintiffs, since even a defendant who is confident that the suit is meritless faces the risk that its genuine trade secrets will be disclosed."[73]

When opposing parties can agree to a protective order, it may be a helpful practice to stipulate that the protective order will not conceal a

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[67] *Id.* ch. 69.081(7).

[68] *Id.* ch. 69.081(3). Similarly, the court shall allow disclosure of "information which may be useful to members of the public in protecting themselves from injury which may result from the public hazard." *Id.*

[69] *Id.* ch. 69.081(7).

[70] *See Id.* ch. 69.081; Rogers & Kennedy, *supra* note 9, at 321.

[71] FLA. STAT. ch. 69.081(4)-(5) (1994). *See* Rogers & Kennedy, *supra* note 9, at 321; ACandS, Inc. v. Askew, 597 So. 2d 895, 899 (Fla. Cir. Ct. App. 1992).

[72] Rogers & Kennedy, *supra* note 9, at 321.

[73] *Id.*

(3) documents filed in an action originally arising under the Family Code.

(b) settlement agreements not filed of record, excluding all reference to any monetary consideration, that seek to restrict disclosure of information concerning matters that have a probable adverse effect upon the general public health or safety, or the administration of public office, or the operation of government.

(c) discovery, not filed of record, concerning matters that have a probable adverse effect upon the general public health or safety, or the administration of public office, or the operation of government, except discovery in cases originally initiated to preserve bona fide trade secrets or other intangible property rights.

76a(3) Notice. Court records may be sealed only upon a party's written motion, which shall be open to public inspection. The movant shall post a public notice at the place where notices for meetings of county governmental bodies are required to be posted, stating: that a hearing will be held in open court on a motion to seal court records in the specific case; that any person may intervene and be heard concerning the sealing of court records; the specific time and place of the hearing; the style and number of the case; a brief but specific description of both the nature of the case and the records which are sought to be sealed; and the identity of the movant. Immediately after posting such notice, the movant shall file a verified copy of the posted notice with the clerk of the court in which the case is pending and with the Clerk of the Supreme Court of Texas.

76a(4) Hearing. A hearing, open to the public, on a motion to seal court records shall be held in open court as soon as practicable, but not less than fourteen days after the motion is filed and notice is posted. Any party may participate in the hearing. Non-parties may intervene as a matter of right for the limited purpose of participating in the

preceding issuance of the order, without first showing changed circumstances materially affecting the order. Such circumstances need not be related to the case in which the order was issued. However, the burden of making the showing required by paragraph 1 shall always be on the party seeking to seal records.

76a(8) Appeal. Any order (or portion of any order or judgment) relating to sealing or unsealing court records shall be deemed to be severed from the case and a final judgment which may be appealed by any party or intervenor who participated in the hearing preceding issuance of such order. The appellate court may abate the appeal and order the trial court to direct that further public notice be given, or to hold further hearings, or to make additional findings.

76a(9) Application. Access to documents in court files not defined as court records by this rule remains governed by existing law. This rule does not apply to any court records sealed in an action in which a final judgment has been entered before its effective date. This rule applies to cases already pending on its effective date only with regard to:

(a) all court records filed or exchanged after the effective date;

(b) any motion to alter or vacate an order restricting access to court records, issued before the effective date.[74]

2. Analysis

In essence, under Rule 76a of the Texas Rules of Civil Procedure, a court may not issue a protective order to seal unfiled discovery if the discovery concerns matters having a probable adverse effect upon the general public health or safety unless, after a public hearing, the court determines that there is "a specific, serious, and substantial interest which clearly outweighs" the public interests and that there are no other adequate, less restrictive means to protect the asserted interest.[75] Thus, any company or person owning trade secrets that might be characterized as "concerning

[74] TEX. R. CIV. P. ANN. r. 76a (West 1995).

[75] TEX. R. CIV. P. ANN. r. 76a(1)(a)-(b) (West 1995).

legitimate trade secrets was sufficient to establish good cause.[80] With the promulgation of Rule 76a, it has been argued that a Texas court now may grant a protective order only upon the showing of "good cause" after the court has determined that Rule 76a does not apply[81] (i.e., after the court has determined that the discovery at issue does not concern matters having a probable adverse effect upon the health and safety of the general public, and after the court has fulfilled the procedural requirements of making such a determination).

On the other hand, if the court determines that the discovery does concern matters having a probable adverse effect upon the general public health or safety, then the discovery is presumed to be open to the general public unless two requirements are met. First, a court must find that "a specific, serious and substantial interest" in having the discovery sealed outweighs a "presumption of openness" and "any probable adverse effect that sealing will have upon the general public health or safety."[82] Second, the court must find that "no less restrictive means than sealing records will adequately and effectively protect the specific interest asserted."[83] If both requirements are met, the court may seal the records.

b. *Court Records*

The unique and controversial aspect of Rule 76a is its definition of "court records,"[84] which includes documents that were *never* filed, including

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[80] *See* Garcia v. Peeples, 734 S.W.2d 343, 346 (Tex. 1987).

[81] The Texas Supreme Court has not resolved whether Rule 76a must be met if the opposing party does not allege that the documents at issue are "court records." In the Texas Supreme Court proceedings arising from Ford Motor Co. v. Benson, 846 S.W.2d 487 (Tex. Ct. App. 1993), the Texas Supreme Court might have resolved this issue, but at oral argument before that court the parties announced that the dispute had been resolved and that the issue had become moot.

[82] TEX. R. CIV. P. ANN. r 76a(1)(a)(1)-(2) (West 1995).

[83] *Id.* r. 76a(1)(b).

[84] *See* Nissen, *supra* note 48, at 937; *see also* Jennifer S. Sickler & Michael F. Heim, *The Impact of Rule 76a: Trade Secrets Crash and Burn in Texas*, 1 TEX. INTELL. PROP. L.J. 95, 96-97 (1993).

c. *Procedure*

To seal "court records," Rule 76a requires the movant to: (1) file a written motion requesting sealing; (2) post public notice; and (3) file a verified copy of the notice with the trial court and with the Texas Supreme Court. Then, the court must hold a public hearing in which parties and nonparties may participate in open court on the motion to seal, not less than fourteen days after the date that the motion is filed and the notice is posted.[92] Upon payment of the fee required for filing a plea in intervention, nonparties may participate.[93]

The court must issue a written order open to the public.[94] "The order must include 'specific reasons for finding and concluding whether the showing required by paragraph 1 [of Rule 76a] has been made; the specific portions of the court records which are to be sealed; and the time period for which the sealed portions of the court records are to be sealed.'"[95] The order must be a separate document in the case.[96] Temporary sealing orders are also available under Rule 76a(5).

Rule 76a does not address who bears the burden to show that documents are "court records." Two Texas appellate courts have placed the burden upon the party opposing the protective order,[97] but there is criticism of this rule. In particular, critics ask how a challenger can meet the burden if the challenger (especially a nonparty) has no access to the documents?[98] The Texas Supreme Court has not yet decided this issue.

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[92] Sickler & Heim, *supra* note 84, at 103.

[93] *Id.*

[94] *Id.*

[95] Id. (quoting TEX. R. CIV. P. ANN. r. 76a(b) (West 1995)).

[96] Sickler & Heim, *supra* note 84, at 103.

[97] Eli Lilly & Co. v. Biffle, 868 S.W.2d 806 (Tex. Ct. App. 1993) (Dallas); Ford Motor Co. v. Benson, 846 S.W.2d 487 (Tex. Ct. App. 1993) (Houston).

[98] *See generally* Nissen, *supra* note 48, at 939-40 (discussing difficulties created by placing the burden of proving a document to be a "court record" on the party challenging the sealing order).

Furthermore, twenty-two appellate cases had dealt with Rule 76a as of March 26, 1994."[105]

Issues concerning intervention by third parties remain to be addressed. For example, Rule 76a provides that "[a]ny person may intervene as a matter of right at any time before or after judgment to seal or unseal court records," and "a court that issues a sealing order retains continuing jurisdiction to enforce, alter, or vacate that order."[106] However, the court in *Texans United Education Fund v. Texaco, Inc.*[107] held that a court loses jurisdiction over unfiled discovery thirty days after judgment is rendered.[108] The decision has been criticized as making third-party intervention to view discovery virtually impossible.[109]

3. Conclusion

There are many open questions under Texas Rule 76a. For example, because "court records" include unfiled discovery, a party may have a duty to maintain these "court records"—for how long, no one yet knows.[110] Also, as noted above, may litigants agree to protective orders? Finally, and most important, sufficient time has not passed to allow authoritative case law to define the limits of discovery "concerning matters having a probable adverse effect upon the general public health or safety."

These issues and the constitutionality of the Texas rule are under appeal at this time.[111] Only time and consistent decisions by the Texas courts will clarify the uncertainties surrounding Texas Rule 76a.

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[105] Nissen, *supra* note 48, at 940.

[106] TEX. R. CIV. P. ANN. r. 76a(7) (West 1995).

[107] 858 S.W.2d 38 (Tex. Ct. App. 1993), *cert. denied*, 116 S. Ct. 61 (1995).

[108] *Id.* at 40.

[109] Nissen, *supra* note 48, at 946.

[110] *See id.* at 938-39 (suggesting that one year of retention may be sufficient).

[111] George Flynn, *Tire Firm Squealing Over Judge's Ruling to Make Records Public*, HOUS. CHRON., Nov. 24, 1994, at A-50.

interest of an individual outweighs the public's interest in the terms of the settlement.[117] The Oregon legislature considered, but did not pass, a bill that would have allowed disclosure to another attorney representing the same client or related matters, of materials or information produced during discovery and related to a personal injury or wrongful death action, even though a protective order had been entered.[118]

G. *California*

In 1993, the California legislature considered, but did not pass, a bill that would have required a finding of "good cause" before the court could have entered a protective order.[119] In February 1993, the California judicial council adopted a rule of court that allows a court, only in certain circumstances, to issue a protective order prohibiting public disclosure of evidence of financial fraud, a defective product, or an environmental hazard.[120] One such circumstance is that the disclosure would reveal specified trade secret information.[121]

H. *Idaho*

Idaho Administrative Rule 32 lists categories of judicial records that are presumptively open to the public and categories of judicial records that are presumptively exempt from disclosure. For presumptively open records, the rule provides that courts may issue orders to limit or prohibit disclosure of such records on a case-by-case basis.[122] Before issuing the order, the court must "make a [written] finding of fact as to whether the interest in privacy

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[117] OR. REV. STAT. § 30.402 (1993).

[118] Ore. S. 340, 67th Leg., Reg. Sess. (1993) (not enacted).

[119] Cal. S. 1242, Reg. Sess. (1993-94) (not enacted).

[120] Cal. S. Con. Res. 10, Reg. Sess. (1993-94).

[121] *Id.*

[122] IDAHO CT. ADMIN. R. r. 32(f) (Michie 1995).

(c) there is no less restrictive means to adequately and effectively protect the specific interest asserted.[127]

Court records include all documents filed with the court.[128] In evaluating "good cause," the court must consider the interests of the public, as well as of the parties, and must provide any interested person the opportunity to be heard.[129] Any person may file a motion to set aside an order addressing the sealing of records.[130] The rule is not intended to limit the court's authority to issue protective orders as otherwise provided by Michigan procedural rules.[131]

IV. CONCLUSION

The authorities in both the state and federal government have been actively analyzing whether protective orders are serving useful purposes or are inhibiting the exchange of information necessary to preserve the health and safety of the public. The balance between these competing goals is not easily struck. In some cases, arguably, the pendulum has swung too far to one side. It remains to be seen whether the recent change in power in the federal government will lead to reforms allowing greater protection of trade secrets, or to no change in existing policies. Likewise, there is no doubt that lawsuit reform will be on the front burner in many state legislatures; the question is how those bodies will balance the need for legitimate protection of proprietary information with the public's right to know.

Consequently, many of the potential problems facing trade secret owners will be hard to discern for the foreseeable future. Thus, trade secret owners should approach litigation with the utmost care.

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[127] MICH. ADMIN. R. CT. r. 8.105(D)(1) (West 1995).

[128] *Id* at r. 8.105(D)(4).

[129] *Id.* at r. 8.105(D)(2).

[130] *Id.* at r. 8.105(D)(3).

[131] *Id.* at r. 8.105(D)(4).

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PROTECTING U.S. INTELLECTUAL PROPERTY RIGHTS ABROAD WITH SPECIAL 301

Timothy C. Bickham[*]

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protection for U.S. firms, and encourage the identified country to alter its offending practices.[6]

U.S. industries, associations, and private persons play a major role in the Special 301 process by providing first-hand information on foreign trade practices and assisting in the development of trade strategy.[7] Throughout the review process, the United States Trade Representative ("USTR")[8] solicits and accepts submissions from interested parties.[9] Participating in the Special 301 review allows counsel to advocate a client's position to the USTR in a unique forum that addresses current international trade issues and gives the client a chance to influence economic policy in line with its business interests. These opportunities are not available in a foreign court of law and may be more effective than a judgment of infringement in light of potential difficulties in enforcing the judgment.

The General Agreement on Tariffs and Trade ("GATT"),[10] as extended to the Agreement on Trade-Related Aspects of Intellectual Property Rights

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[6] 19 U.S.C. § 2242 (1994). The Office of the United States Trade Representative ("USTR") was created as the Office of the Special Representative for Trade Negotiations by Exec. Order No. 11075 (January 15, 1963). The Trade Act of 1972, 19 U.S.C. § 2171 established the Office as an agency of the Executive Office of the President charged with administering trade agreements and setting and implementing overall trade policy.

[7] Paul C.B. Liu, *U.S. Industry's Influence on Intellectual Property Negotiations and Special 301 Actions*, 13 UCLA PAC. BASIN L.J. 87 (1994).

[8] The Office of the United States Trade Representative was created as the Office of the Special Representative for Trade Negotiations by Executive Order 11075 of January 15, 1963. The Trade Act of 1974 (19 U.S.C. § 2171) established the Office as an agency of the Executive Office of the President charged with administering the trade agreements program under the Tariff Act of 1930 (19 U.S.C. § 1654), the Trade Expansion Act of 1962 (19 U.S.C. 1801), and the Trade Act of 1974 (19 U.S.C. § 2101). Other powers and responsibilities for coordinating trade policy were assigned to the Office by the Trade Act of 1974 and by the President in Executive Order 11846 of March 27, 1975, as amended.

[9] The notice for the 1995 review is found at 59 Fed. Reg. 66,981 (1994).

[10] General Agreement on Tariffs and Trade, *opened for signature* Oct. 30, 1947, 61 Stat. A3, 55 U.N.T.S. 187 [hereinafter GATT].

There are several subsections within Section 301 which are designed to reach specific areas of trade. These include "Special 301" for intellectual property; "Super 301,"[15] where the USTR is required to review U.S. trade expansion priorities and identify foreign country practices which, if eliminated, are likely to have the most significant potential to increase U.S. exports; and "Telecommunications 301"[16] which requires the USTR to review the operation and effectiveness of U.S. international telecommunications agreements.

Recognizing that the already limited life cycle of protected works could whither away during a regular Section 301 action, Congress created Special 301 to address the "growing problem of inadequate and ineffective intellectual property protection"[17] under the existing general framework of Section 301. Therefore, Special 301 has a strict time period for mandatory action.

An annual Special 301 review begins with the National Trade Estimates Report on Foreign Trade Barriers ("NTE"), the annual report to the President and Congress on significant foreign trade barriers.[18] The NTE inventories the most significant foreign barriers affecting U.S. exports of goods and services, foreign direct investment by U.S. persons, and protection of intellectual property rights.[19] The NTE is to be completed by the USTR on or before March 31 of each year.[20]

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[15] Omnibus Trade and Competitiveness Act of 1988, *supra* note 5, at 1176, § 1302 (codified at 19 U.S.C. § 2420 (1994)).

[16] *Id.* at 1222, § 1377 (codified at 19 U.S.C. § 3106 (1994)).

[17] S. REP. NO. 71, 100th Cong., 1st Sess. 74-75 (1987). The objective was to encourage a more active use of the President's power to self initiate Section 301 investigations. *Id.* at 75.

[18] Omnibus Trade and Competitiveness Act of 1988, *supra* note 5, at 1181, § 1304, *amending* § 181 of the Trade Act of 1974 (codified at 19 U.S.C. § 2241 (1994)).

[19] 19 U.S.C. § 2241(b) (1994).

[20] *Id.*

multilateral negotiations to remedy the inadequate protection situation.[28] Once a PFC is listed, the USTR has thirty days to initiate a 301 action[29] and request consultations[30] unless the USTR determines that initiation of the action would be detrimental to U.S. economic interests.[31]

A key factor to Special 301 is whether the action is based upon a violation of an international agreement. If the dispute does not arise under an international agreement (such as TRIPS) the USTR is required to make determinations as to what actions will be taken within six months of the PFC identification,[32] with a possible three month extension to this period should complicated issues arise.[33]

If an international agreement is at issue, then the dispute must be settled in accordance with the agreement's dispute settlement mechanisms.[34] For example, the Uruguay Round implementing legislation[35] amends the Special 301 process to include a consultation period of the shorter of the GATT consultation period or 150 days before initiating the GATT dispute settlement mechanism.[36] Actions to be taken under Special 301 are not allowed until the earlier of thirty days after the GATT dispute settlement procedure is concluded or eighteen months after the date of initiation.[37]

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[28] *Id.* § 2242(b)(1)(C).

[29] *Id.* § 2412(b)(2)(A).

[30] *Id.* § 2412(a)(2).

[31] *Id.* § 2412(b)(2)(B).

[32] *Id.* § 2412(b)(2)(A).

[33] *Id.* § 2414(a)(3)(B)(i).

[34] *Id.* § 2413(a)(2).

[35] Uruguay Round Agreements Act, Pub. L. 103-465, 108 Stat. 4809, 4814 (1994) (codified in scattered titles of U.S.C.) [hereinafter URAA].

[36] 19 U.S.C. § 2413(a)(2) (1994).

[37] *Id.* § 2414 (a)(2)(A).

a determination.[48] A determination that the PFC has acted inconsistently with TRIPS, without awaiting the DSU panel conclusion, would be a violation of the DSU and may subject the United States to a DSU action by the PFC. If the dispute does not involve TRIPS, neither the DSU nor Special 301 require the USTR to use the DSU.[49]

The European Union has a procedure that is similar to the general Section 301 action,[50] but there is no procedure specifically concerned with intellectual property.[51] Council Regulation 2641/84 was enacted to "defend vigorously the legitimate interests of the Community in the appropriate bodies—in particular GATT—and to make sure the Community . . . acts with as much speed and efficiency as its trading partners."[52] A motivating factor behind the regulation's adoption by the European Union was the United States' Special 301 procedure.[53]

Not expressly self-initiating, a Council Regulation 2641/84 petition can be filed by a Member[54] of the European Union or a private party.[55] Once

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[48] *Id.* § 2414(a)(2). *see also id.* § 2412(b)(2)(A).

[49] *See id.* § 2414(a)(3).

[50] Council Regulation 2641/84 of 17 September 1984 on the Strengthening of the Common Commercial Policy, 1984 O.J. (L 252) 1 [hereinafter Reg. 2641/84].

[51] *See generally,* Wolfgang W. Leirer, *Retaliatory Action in United States and European Union Trade Law: A Comparison of Section 301 of the Trade Act of 1974 and Council Regulation 2641/84,* 20 N.C. J. INT'L LAW & COM. REG. 41 (1994) [hereinafter *Retaliatory Action*].

[52] Reg. 2641/84, *supra* note 50.

[53] Michael B. Devine, *The Application of EEC Regulation 2641/84 on Illicit Commercial Practices with Special Reference to the U.S.A.,* 22 INT'L LAW 1091, 1094 (1988).

[54] Members can file petitions for actions concerning illicit foreign commercial practices or ensuring the full exercise of the Community's rights. Reg. 2641/84, *supra* note 50, arts. 1 and 4(1).

[55] A private party may only petition to address illicit foreign commercial practices. *Id.* art. 3(1).

There are two types of countries to be considered in the WTO-era Special 301 reviews. The first category is composed of Members of the WTO who are fully implementing TRIPS. This group includes a majority of the industrialized countries. The second category is composed of Members of the WTO that exercise the right to a transition period to implement TRIPS[64] and countries that are not Members of the WTO.

A. *Countries Fully Implementing TRIPS, e.g. Japan*

Japan is an example of a developed country that has been repeatedly considered for PFC. Japan is a member of the WTO and has the second largest gross domestic product in the world.[65] Despite the existence of a modern patent system, there have been several longstanding complaints of unfairness by U.S. firms.[66]

A perennial issue of contention is the scope of patent claim interpretation.[67] In the 1995 review, Japan's treatment of patent claim interpretation became an even more highly visible factor. The primary cause was the legal decision in *Genentech, Inc. v. Sumitomo Seiyaku K.K.*[68] Genentech, a United States corporation, holds a Japanese patent for tissue plasminogen activator ("TPA"). During patent prosecution, Genentech was forced to provide a specific sequence for TPA, and the patent issued on that 527 amino acid TPA sequence.[69]

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[64] TRIPS allows developed countries one year, and developing countries five years, to implement the measures laid out in the agreement. In the case of product patent protection, the transition period for developing countries is ten years. TRIPS, *supra* note 11, art. 65.

[65] SCIENCE AND ENGINEERING INDICATORS, *supra* note 2, figure 6-1, at 158.

[66] General Accounting Office, *Intellectual Property Rights: U.S. Companies' Experiences in Japan*, GAO/GGD-93-126; B253454 at 43-49 (July 1993).

[67] *Id.* at 48-49.

[68] No. Heisei-Gannen-wa-7961, (Osaka District Court, Oct. 27, 1994.)

[69] *Id.* at 158-59.

parts market.[77] The placement on the 1995 priority watch list specifically cited the limited scope of protection for patentable biotechnology.[78]

B. *Countries Not Fully Implementing TRIPS, e.g. Costa Rica*

The second type of potential Special 301 targets are the lesser developed nations who either are not WTO Members or are Members who use the TRIPS transition period. Special 301 can be used to encourage accelerated adoption of TRIPS and better enforcement of intellectual property rights under existing frameworks.

Costa Rica is a WTO Member that has stated its intention to utilize the transition period to implement TRIPS. Costa Rican patent law is severely deficient by international standards. For instance, the term of protection for pharmaceuticals and other products deemed to be in the "public interest," is only one year from the date of grant.[79] The term for all other patents is a non-extendable twelve years from the date the patent issues.[80] There are also oppressive compulsory licensing and working requirements.[81] Despite substandard protection for patents as well as problems with copyright and trademark enforcement, Costa Rica's first and only appearance in the Special 301 review is on the 1995 Watch List.[82]

Uniform compliance with TRIPS is in the best interest of the United States. The USTR will seek not only to accelerate compliance during the transition period but also to go beyond TRIPS standards. It is important to note that changes in intellectual property laws often require systemic changes in the government that can be impossible to achieve in a short time.

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[77] Office of the United States Trade Representative, *Results of Special 301 Review* (Apr. 29, 1995) (on file with author).

[78] *Id.* at 11.

[79] Costa Rica Law No. 6867, art. 17, § 1.

[80] *Id.* § 2.

[81] *Id.* art. 2, § 7 (use); arts. 19, 20 (license).

[82] *See* Appendix A.

to be more effective at opening markets than U.S. foreign policy sanctions.[87] Nevertheless, sanctions have been used more than seventy times since the end of World War II,[88] and will become increasingly important even in the face of a shrinking U.S. percentage of the global market.[89] One day before the Special 301 press conference, "a senior Clinton Administration official . . . defended the use of economic sanctions as an instrument of U.S. foreign policy, calling them perhaps the 'optimal policy tool' short of military action."[90] A recent example of the successful use of Special 301 is the Agreement between the United States and China.[91]

When fully implemented, TRIPS will provide a base level of protection for intellectual property. This will enable the focus of Special 301 to shift from ensuring the existence of a legal framework of protection towards enforcing these rights. TRIPS will also ease the burden of obtaining better protection from least developed countries because the changes advocated by the United States are consistent with TRIPS.

The United States is well positioned to take advantage of the global shift to market-based economies. Special 301 will continue to be a useful tool in U.S. foreign policy and, in conjunction with efforts such as TRIPS, will ensure effective global patent protection. In light of the internationalization of intellectual property management, Special 301 will play an increasing role in the effective representation of a rightholder's interests.

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[87] Thomas O. Bayard and Kimberly Ann Elliott, *Reciprocity and Retaliation in U.S. Trade Policy*, 1994 INSTITUTE FOR INT'L ECON. 331.

[88] *U.S. Official Says Economic Sanctions May Be 'Optimal' Foreign Policy Tool*, B.N.A. WASHINGTON INSIDER, May 1, 1995.

[89] *Id.*

[90] *Id.*

[91] Office of the United States Trade Representative, Agreement of Feb. 26, 1995 (on file with author).

Italy	WL	WL	WL	WL	WL	WL	WL
Japan	PWL	PWL	WL	WL	WL	WL	WL
Korea	PWL	PWL	PWL	PWL	WL	WL	PWL
Pakistan	WL	WL	WL	WL	WL	WL	WL
Panama		SM					
Paraguay		SM					
Peru	WL	WL	WL	WL			
Philippines	WL	WL	WL	PWL	PWL	WL	WL
Poland	WL	WL	PWL	PWL			
Romania	WL						
Russian Federation	WL	SM					
Saudi Arabia	PWL	PWL	PWL	WL	WL	WL	PWL
Singapore	WL	SM					
South Africa	WL						
Spain		WL	WL	WL	WL	WL	WL
Taiwan	WL	WL	PWL	PFC	WL	WL	PWL
Thailand	WL	*PWL	PFC	PFC	PFC	PWL	PWL
Turkey	PWL	PWL	PWL	PWL	WL	WL	WL
UAE	WL	*WL	WL	WL	WL		
Venezuela	WL	WL	WL	WL	WL	WL	WL

*GREECE was elevated to the Priority Watch List following an *out of cycle review* conducted in November, 1994; the announcement was made December 2, 1994. EGYPT and The UAE remained on the Watch List. THAILAND was lowered to the Watch List on November 16, 1994.

Source: Office of the United States Trade Representative

1992	India	Continued problems from previous year.	In April 1992, the President suspended duty-free entry privileges under GSP from India for $60 million in trade. This suspension applied principally to pharmaceuticals, chemicals, and related products. Benefits on certain chemicals added to GSP in June 1992 were also withheld from India, increasing the trade for which GSP is suspended to about $80 million.
1992	Taiwan	Inadequate and ineffective protection of intellectual property.	In June 1992, Taiwan agreed to improve levels of protection for patents, copyrights, trade secrets, layout designs of integrated circuits, and industrial designs. Taiwan was removed from the priority foreign country list following this agreement.
1992	Thailand	Continued problems from prior years.	See 1991.
1993	Brazil	Failure to adequately and effectively protect patents, copyrights, and trade secrets	In February 1994, the Section 301 investigation of Brazil was terminated, and Brazil was removed from the priority foreign country list due to Brazil's decision to amend its industrial property law and improve intellectual property protection.
1993	India	Failure to effectively protect intellectual property rights.	See 1992.

APPENDIX C

UNITED STATES CODE ANNOTATED TITLE 19. CUSTOMS DUTIES CHAPTER 12—TRADE ACT OF 1974 SUBCHAPTER I—NEGOTIATING AND OTHER AUTHORITY PART 8—IDENTIFICATION OF MARKET BARRIERS AND CERTAIN UNFAIR TRADE ACTIONS

§ 2242. Identification of countries that deny adequate protection, or market access, for intellectual property rights

(a) In general

By no later than the date that is 30 days after the date on which the annual report is submitted to Congressional committees under section 2241(b) of this title, the United States Trade Representative (hereafter in this section referred to as the "Trade Representative") shall identify—

(1) those foreign countries that—

(A) deny adequate and effective protection of intellectual property rights, or

(B) deny fair and equitable market access to United States persons that rely upon intellectual property protection, and

(2) those foreign countries identified under paragraph (1) that are determined by the Trade Representative to be priority foreign countries.

(b) Special rules for identifications

(1) In identifying priority foreign countries under subsection (a)(2) of this section, the Trade Representative shall only identify those foreign countries—

(A) that have the most onerous or egregious acts, policies, or practices that—

(i) deny adequate and effective intellectual property rights, or

(ii) deny fair and equitable market access to United States persons that rely upon intellectual property protection,

(c) Revocations and additional identifications

(1) The Trade Representative may at any time—

(A) revoke the identification of any foreign country as a priority foreign country under this section, or

(B) identify any foreign country as a priority foreign country under this section, if information available to the Trade Representative indicates that such action is appropriate.

(2) The Trade Representative shall include in the semi-annual report submitted to the Congress under section 2419(3) of this title a detailed explanation of the reasons for the revocation under paragraph (1) of the identification of any foreign country as a priority foreign country under this section.

(d) Definitions

For purposes of this section—

(1) The term "persons that rely upon intellectual property protection" means persons involved in—

(A) the creation, production or licensing of works of authorship (within the meaning of sections 102 and 103 of Title 17) that are copyrighted, or

(B) the manufacture of products that are patented or for which there are process patents.

(2) A foreign country denied adequate and effective protection of intellectual property rights if the foreign country denied adequate and effective means under the laws of the foreign country for persons who are not citizens or nationals of such foreign country to secure, exercise, and enforce rights relating to patents, process patents, registered trademarks, copyrights and mask works.

(3) A foreign country denies fair and equitable market access if the foreign country effectively denies access to a market for a product protected by a copyright or related right, patent, trademark, mask work, trade secret, or plant breeder's right, through the use of laws, procedures, practices, or regulations which—

section, unless the United States has already taken action pursuant to article 2106 of the North American Free Trade Agreement in response to such act, policy, or practice. In deciding whether to identify an act, policy, or practice under paragraph (1), the Trade Representative shall—

(A) consult with and take into account the views of representatives of the relevant domestic industries, appropriate committees established pursuant to section 2155 of this title, and appropriate officers of the Federal Government, and

(B) take into account the information from such sources as may be available to the Trade Representative and such information as may be submitted to the Trade Representative by interested persons, including information contained in reports submitted under section 2241(b) of this title.

(3) Cultural industries

For purposes of this subsection, the term "cultural industries" means persons engaged in any of the following activities:

(A) The publication, distribution, or sale of books, magazines, periodicals, or newspapers in print or machine readable form but not including the sole activity of printing or typesetting any of the foregoing.

(B) The production, distribution, sale, or exhibition of film or video recordings.

(C) The production, distribution, sale, or exhibition of audio or video music recordings.

(D) The publication, distribution, or sale of music in print or machine readable form.

(E) Radio communications in which the transmissions are intended for direct reception by the general public, and all radio, television, and cable broadcasting undertakings and all satellite programming and broadcast network services.

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PATENTING SOFTWARE OBJECTS AND OTHER ASPECTS OF OBJECT-ORIENTED PROGRAMS UNDER THE NEW PTO GUIDELINES

Keith Stephens
John P. Sumner[*]

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I. INTRODUCTION

This Article discusses recent developments in patent protection for software, and more specifically, patent protection for object-oriented software. The purpose of this Article is to inform the software industry of the availability and advantages of patenting object-oriented software, not only generally but with respect to software objects. In addition, this Article reviews how the courts have addressed the patentability of software objects, and predicts how courts will address the issue in the future.

Currently, software patents are generally classified as falling within four categories of patentable subject matter: process, machine, manufacture, and design.[1] Process patents are written to claim what the software does, such as the process of "pinning" a menu onto a computer screen using a mouse selected tool.[2] Machine patents (usually referred to as patents

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[1] Patentable subject matter is defined under 35 U.S.C. § 101 (1994) in the following manner: "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." Patentable subject matter is also defined in 35 U.S.C. § 171 (1994) as follows: "[w]hoever invents any new, original and ornamental design for an article of manufacture may obtain a patent therefor, subject to the conditions and requirements of this title."

[2] The example of a process for "pinning" a menu to a screen is borrowed from U.S. Pat. No. 5,243,697. An example process claim taken from the patent is:

> 1. In a computer controlled system having a display coupled to a central processing unit (CPU) performing a plurality of display operations, a method for retaining on said display a menu corresponding to a button function while allowing other display operations, comprising the steps of:
>
> (a) generating and displaying said button function on said display;
>
> (b) positioning a pointer on said display using a pointer control device coupled to said CPU, said pointer being placed over a predetermined area of said display corresponding to said button function;
>
> (c) providing a first signal to said CPU to denote the selection of said button function, said first signal being generated by a user placing a

trash can.[4] Patents covering object-oriented software, either generally or with respect to software objects themselves, can take on all of these forms.

There are advantages to claiming software as an apparatus,[5] and in some cases the Patent and Trademark Office ("PTO") will only allow claims drawn to specific implementations because the generic idea itself is old in the art. In the example above, if the method of pinning a menu to a computer screen was old in the art, it would not be patentable. However, a specific implementation, claimed as either an apparatus or otherwise (such as an object-oriented design), may be novel and nonobvious.[6] In the above example, the PTO would reject either a method claim or an apparatus claim to the generic invention based on the prior art, but would allow a claim drawn to the particular implementation; fortunately, it is often easier to add implementation details to apparatus claims, particularly if the implementation is based on the use of particular hardware.

Object-oriented patents (i.e., patents covering object-oriented software systems) satisfy all of the statutory requirements of the four categories of patents because object-oriented programming paradigms utilize structured programming techniques to architect software objects in a computer, which, in turn, control the memory, processor, display, and other peripheral devices to perform new and innovative operations. A

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[4] Design patents for software icons are currently being held by the PTO until certain policy issues are resolved, available on the World Wide Web at http://www.uspto.gov/text/pto/hearings/va-kluth.html (a general policy statement); available on the Internet at ftp://ftp.uspto.gov/pub/software-patents.notice (topic C lists cases study pending guidelines which will be promulgated soon).

[5] For example, apparatus claims specifically recite the hardware elements included within the invention and, as such, can provide a better base for license royalties. Each hardware element has readily ascertainable sales dollars per item that can provide an overall value from which to calculate a reasonable per item royalty.

[6] Unless the subject matter itself is nonstatutory subject matter under 35 U.S.C. § 101 (1994), the test for patentability is whether the invention is novel under 35 U.S.C. § 102 (1994) and nonobvious under 35 U.S.C. § 103 (1994). A specific object-oriented design could depend, for example, on an instance variable used to store the state of the pin (pinned or unpinned), and instance methods for pinning or unpinning the menu, depending on the pin's state, when selected with the mouse.

definitions of frameworks came from Ralph E. Johnson of the University of Illinois and Vincent F. Russo of Purdue University. Specifically, Johnson and Russo explain frameworks in the following manner: "[a]n abstract class is a design of a set of objects that collaborate to carry out a set of responsibilities. Thus, a framework is a set of object classes that collaborate to execute defined sets of computing responsibilities."[8] From a programming standpoint, frameworks are essentially groups of interconnected object classes that provide a pre-fabricated structure of a working application. For example, a user interface framework might provide the support and "default" behavior of drawing windows, scrollbars, or menus. Since frameworks are based on object technology, this behavior can be inherited and overridden to allow developers to extend the framework and create customized solutions in a particular area of expertise. This is a major advantage over traditional programming since the programmer is not changing the original code, but is rather extending the software. In addition, developers are not blindly working through layers of code because the framework provides not only architectural guidance and modeling but also frees them to supply the specific actions unique to the problem domain.

From a business perspective, frameworks can be viewed as a way to encapsulate or embody expertise in a particular knowledge area. Corporate development organizations, independent software vendors, and systems' integrators have acquired expertise in particular areas such as manufacturing, accounting, or currency transactions. This expertise is embodied in their code. Frameworks allow organizations to capture and package the common characteristics of that expertise by embodying it in the organization's software objects. This allows developers to create or extend applications utilizing the expertise. Thus, any particular problem need only be solved once. Future projects using the framework are constrained by the framework to consistently use the business rules and design embodied within the framework. Also, frameworks and the embodied expertise behind the frameworks have a strategic asset implication for those organizations who have acquired expertise in vertical markets such as manufacturing, accounting, or biotechnology, and provide a distribution mechanism for packaging, reselling, and deploying their expertise, thus furthering the progress and dissemination of technology.

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[8] Ralph E. Johnson & Vincent F. Russo, *Reusing Object-Oriented Designs*, University of Illinois Tech Report UIUCDCS91-1696 (1991).

that could provide the foundation for supporting new and diverse devices such as audio, video, MIDI, and animation. The developer who needs to support a new kind of device would have to write a device driver. To do this with a framework, the developer only needs to supply the characteristics and behaviors that are specific to that new device. In this case, the developer supplies an implementation for certain member functions that will be called by the multimedia framework. An immediate benefit to the developer is that the generic code needed for each category of device is already provided by the multimedia framework. This means less code for the device driver developer to write, test, and debug. Another example of using system frameworks would be to have separate I/O frameworks for SCSI devices, NuBus cards, and graphics devices. Because there is inherited functionality, each framework provides support for common functionality found in its device category. Other developers could then depend on these consistent interfaces for implementing other kinds of devices.

Recent innovations in operating system technology take the concept of frameworks and apply them throughout the entire system. For the commercial or corporate developer, systems integrator, or OEM, this approach leverages all the advantages that have been illustrated for a framework not only at the application level, but also at the system level. Application creation in this architecture consists of writing domain-specific objects that adhere to the framework protocol. In this manner, the whole concept of programming changes. Instead of writing line after line of code that calls multiple API hierarchies, software is developed by deriving classes from pre-existing frameworks within the system environment, and then adding new behavior and/or overriding inherited behavior as desired. Thus, the developer's application becomes the collection of code that is written and shared with other framework applications. This is a powerful concept because developers will be able to build on each other's work. This concept also provides developers with the flexibility to customize as much or as little as they need. Some frameworks will be used just as they are. In other cases, the amount of customization will be minimal, so that the objects the developer creates will be small. In other cases, the developer may make very extensive modifications and create something completely new. This framework system architecture provides flexibility and facilitates increased extensions as functionality is added.

Further, software objects claimed as operational in a computer or stored on a computer readable medium, are very likely to be upheld by the courts since they fit under the statutory definition of patentable subject matter as a process, an apparatus,[12] or an article of manufacture.[13]

B. *Software Objects And Case Law*

Before the advent of object-oriented programming, software was thought of as a means to implement algorithms and other processes rather than as objects having structure, function, and relationships. The courts have refused to enforce software patents that merely claim mathematical algorithms, asserting that such algorithms are merely scientific principles and are therefore non-patentable subject matter under 35 U.S.C. § 101 ("section 101").[14] Software inventors have avoided section 101 rejections by including elements other than pure scientific principles in the claim.[15] For instance, in *In re Iwahashi*,[16] a patent that claimed a method for computing a correlation coefficient used in pattern recognition was upheld by the Federal Circuit because it included the use of a ROM device. In that case, the invention was directed to an improved auto-correlation unit for a pattern recognition device implemented using digital circuitry. One of the mathematical requirements for the circuit was to generate the square of (Xn + Xn - Z). This calculation usually would have required digital multiplier circuitry.

The inventive concept was to store all the possible results of the multiplication step in the ROM. The values to be multiplied were supplied

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[12] Apparatus is synonymous with "machine" as used in 35 U.S.C. § 101 (1994).

[13] An "article of manufacture" is one category of patentable subject matter under 35 U.S.C. § 101 (1994). Examples of an article of manufacture in computer-related cases include a disk, ROM, or other memory.

[14] *See* Parker v. Flook, 437 U.S. 584, 198 U.S.P.Q. (BNA) 193 (1978); Gottschalk v. Benson, 409 U.S. 63, 175 U.S.P.Q. (BNA) 673 (1972); *In re* Grams, 888 F.2d 835, 12 U.S.P.Q.2d (BNA) 1824 (Fed. Cir. 1989).

[15] *See In re* Iwahashi, 888 F.2d 1370, 12 U.S.P.Q.2d (BNA) 1908 (Fed. Cir. 1989); *In re* Bradley, 202 U.S.P.Q. (BNA) 480 (C.C.P.A. 1979).

[16] 888 F.2d 1370, 12 U.S.P.Q.2d (BNA) 1908 (Fed. Cir. 1989).

form display in a digital oscilloscope."[23] Of the many issues before the court, one concerned whether a "general purpose digital computer 'means' to perform the various steps under program control" was statutory subject matter under section 101.[24] The ruling was controversial in that five judges comprised the majority on the section 101 ruling, finding that the invention was patentable subject matter. Three judges did not take an expressed position, and two were opposed. Because the court was sitting en banc, its holding is authoritative unless the Supreme Court or Congress should decide to overrule it.

In reaching its finding, the *Alappat* court analyzed the *Diehr*,[25] *Flook*,[26] and *Benson*[27] decisions and determined that:

> the Supreme Court never intended to create an overly broad, fourth category of subject matter excluded from § 101. Rather, at the core of the Court's analysis in each of these cases, lies an attempt by the Court to explain a rather straight forward concept, namely, that certain types of mathematical subject matter, standing alone, represent nothing more than abstract ideas until reduced to some type of practical application, and thus that subject matter is not, in and of itself, entitled to patent protection.[28]

The court declared that the proper inquiry regarding the mathematical subject matter exception is whether the claimed subject matter, as a whole, is a disembodied mathematical concept that essentially represents nothing more than a law of nature, natural phenomenon, or

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[23] *Id.* at 1537, 31 U.S.P.Q.2d (BNA) at 1551.

[24] *Id.* at 1544-45, 31 U.S.P.Q.2d (BNA) at 1558.

[25] Diamond v. Diehr, 450 U.S. 175, 209 U.S.P.Q. (BNA) 1 (1981).

[26] Parker v. Flook, 437 U.S. 584, 198 U.S.P.Q. (BNA) 193 (1978).

[27] Gottschalk v. Benson, 409 U.S. 63, 175 U.S.P.Q. (BNA) 673 (1972).

[28] *In re Alappat*, 33 F.3d at 1543, 31 U.S.P.Q.2d (BNA) at 1556-57.

information, as a whole, recited an article of manufacture.[36] The main issue before the panel of judges was related to section 103.

The court could have reversed the Board and agreed with the examiner that the subject matter was non-statutory. However, the court stated in dicta that the "stored data [that makes up the data structures] adopt no physical 'structure' *per se*. Rather, the stored data exist as a collection of bits having information about relationships between the [structures.]"[37] The court found this to be the essence of electronic structure and that the data structures, being specific electrical or magnetic structures in memory, are more than mere abstraction.[38] The court classified these data structures as "physical entities that provide increased efficiency in computer operations."[39]

In summary, any computer program or structure that causes a computer to execute a process that is new, useful, and nonobvious is patentable. Software objects are patentable under *In re Iwahashi*,[40] *In re Alappat*, [41] and *In re Lowry*[42] because what is claimed is a practical implementation of the software rather than a pure mathematical or scientific principle. Even if a mathematical algorithm or other scientific principle is used in the implementation of an object, the object remains patentable subject matter as long as there is a sufficient practical, real-world application recited in the claims as a whole. Thus there is no need to include non-software elements in a software object claim, such as the ROM in *In re Iwahashi*, because software objects already have sufficient structure to be patentable subject matter under section 101.

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[36] *Id.* at 1582, 32 U.S.P.Q.2d (BNA) at 1033.

[37] *Id.* at 1583, 32 U.S.P.Q.2d (BNA) at 1034.

[38] *Id.* at 1583-84, 32 U.S.P.Q.2d (BNA) at 1035.

[39] *Id.* at 1584, 32 U.S.P.Q.2d (BNA) at 1035.

[40] 888 F.2d 1370, 12 U.S.P.Q.2d (BNA) 1908 (Fed. Cir. 1989).

[41] 33 F.3d 1526, 31 U.S.P.Q.2d (BNA) 1545 (Fed. Cir. 1994).

[42] 32 F.3d 1579, 32 U.S.P.Q.2d (BNA) 1031 (Fed. Cir. 1994).

new object will be added to the patent library. This step-by-step advancement in the technology is similar to the way that more traditional technologies advance.[44] This proliferation of software through software objects will result in significant progress in the industry.[45]

Before the software industry commits the time and money to obtain a patent portfolio of software objects, it is important to understand how the courts will react to these patents. Part III provides a brief history of past cases concerning software patents and a review of the current procedure used by the courts and the PTO for determining software patentability.

III. PATENTABLE SUBJECT MATTER

The Constitution of the United States provides that "Congress shall have Power [t]o 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."[46] In accordance with this clause, Congress passed Title 35 of the United States Code to codify the law with respect to patents,[47] and established the PTO to administer the prosecution of patent applications. The PTO has established additional rules as codified in Chapter 37 of the Code of Federal Regulations which set forth the procedural requirements for obtaining a valid patent. In addition to applicable statutes and regulations, the courts have provided guidance by interpreting these laws as applied to specific cases.

Although the Supreme Court is the ultimate authority on interpreting Title 35 and the Constitution,[48] since the creation of the Court

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[44] For example, by proverbially standing on the shoulders of giants.

[45] *See Testimony from United States Patent and Trademark Office Hearings on Software Patents*, United States Patent and Trademark Office Internet Home Page at http://www.uspto.gov/text/pto/hearings/va_kluth.html (1995).

[46] U.S. Const. art. 1, § 8, cl. 8.

[47] 35 U.S.C. §§ 1-375 (1994).

[48] *See* Marbury v. Madison, 5 U.S. (1 Cranch) 137 (1803).

In *Diamond v. Diehr*, the Supreme Court further admonished that "a claim drawn to subject matter otherwise statutory does not become non-statutory simply because it uses a mathematical formula, computer program, or digital computer."[54] The invention in *Diehr* involved a method for molding precision synthetic rubber, and the process was controlled by a computer.[55] The Court held that a "process for molding precision synthetic rubber products falls within the § 101 categories of possibly patentable subject matter. [The] conclusion . . . is not altered by the fact that in several steps of the process a mathematical equation and a programmed digital computer are used."[56] Therefore a process or apparatus that includes the use of a mathematical algorithm is patentable subject matter as long as the invention transforms physical material, or data representing physical phenomena, into a different state or thing to achieve a practical application.[57] Note that software objects satisfy these statutory subject matter requirements because they cause a computer to become a new, structured computer "apparatus," "article of manufacture," or "computer implemented process" under section 101.

B. *Court Of Appeals For The Federal Circuit*

In line with Supreme Court jurisprudence, the method adopted by the Federal Circuit for analyzing mathematical algorithm statutory subject matter comprises a two-part test called the *Freeman-Walter-Abele* test.[58] Under this test, the claim is first analyzed to determine whether a mathematical algorithm is directly or indirectly recited.[59] Next, if a mathematical algorithm is found, the claim as a whole is further analyzed to determine whether the algorithm is applied in any manner to physical elements (in apparatus

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[54] *Diehr*, 450 U.S. at 176, 209 U.S.P.Q. (BNA) at 1.

[55] *Id.*

[56] *Id.* at 184-85, 209 U.S.P.Q. (BNA) at 5.

[57] Examination Guidelines, *supra* note 3, at 7,484.

[58] *Ex parte* Akamatsu, 22 U.S.P.Q.2d (BNA) 1915, 1917 (B.P.A.I. 1992).

[59] *In re* Freeman, 573 F.2d 1237, 1245, 197 U.S.P.Q. 464, 471 (C.C.P.A. 1978).

focused on the significant points of law from the *Diamond v. Diehr*[67] decision, which may be the most relevant with regard to object-oriented software. That case stated that "[w]hen a claim containing a mathematical formula implements or applies that formula in a structure or process that, when considered as a whole, is performing a function that the patent laws were designed to protect . . . , then the claim satisfies the requirements of § 101."[68] The PTO also refers to the *Freeman-Walter-Abele*[69] two-part test as applied in *In re Iwahashi*[70] for determining patentability of software claims.

Recently, the PTO has issued guidelines for examination of computer-implemented inventions and legal analysis in support of these guidelines.[71] The new guidelines and the accompanying legal analysis are designed to provide guidance for examiners and applicants as they attempt to navigate the hazardous trail through the PTO en route to obtaining an issued patent for a software-related invention.

One of the most important characteristics of the new guidelines is that they encourage examiners to raise any issue that may affect patentability in the first office action. Currently, some examiners come to the first actionable flaw in a pending application, issue an office action that documents the flaw, and wait for the applicant to respond to that issue before issuing another office action, often a "final" office action, raising the next issue that is apparent to the examiner. This iterative processing lengthens the examination process and is often quite expensive for an applicant. The new guidelines require the examiner to review each claim for compliance with every statutory requirement in the initial review before issuing a first office action, even if one or more claims is found to be deficient with respect to one or more requirements.

Moreover, the new guidelines facilitate a pragmatic approach to examination which encourages the use of prior art as the basis for rejections,

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[67] 450 U.S. 175, 209 U.S.P.Q. (BNA) 1 (1981).

[68] *Id.* at 192, 209 U.S.P.Q. (BNA) at 17.

[69] *Ex parte* Akamatsu, 22 U.S.P.Q.2d (BNA) 1915, 1917 (B.P.A.I. 1992).

[70] 888 F.2d 1370, 1374, 12 U.S.P.Q.2d (BNA) 1908, 1911 (Fed. Cir. 1989).

[71] Examination Guidelines, *supra* note 3, at 7,478.

which held that a memory with practical application is statutory subject matter. Such classification is new and provides a new mechanism for protecting software as a separate product in a manner similar to that approved in the *In re Beauregard*[74] decision. In either case, this mechanism also allows an applicant to assert direct infringement against a party that may sell only software embodied in a storage medium.

Each claim must be analyzed under the guidelines to determine if it complies with 35 U.S.C. § 112 ¶ 2 (1994) ("section 112, paragraph 2"). This step requires an examiner to determine if the claims accurately describe the invention—a procedure which requires comparing the invention as claimed with the invention as described in the specification. If the claims use means-plus-function language, but it remains unclear which structure, materials, or acts correspond to which means, then rejection under section 112, paragraph 2 is to be issued in an office action, and the burden shifts to the applicant to describe the structure, materials, or acts that correspond to the unclear means element claimed. The applicant is then required to identify the portions of the description where each of the unclear elements is disclosed.

The guidelines further require increased diligence by the applicants in drafting the application in order to carefully disclose in the description of each element claimed, and to flesh out the disclosure with as many embodiments of the invention as are possible to ensure proper claim coverage. One of the most important proposals in the guidelines allows program-related elements of a computer-implemented invention to serve as the specific structure, material, or acts that correspond to an element of an invention defined by using a means-plus-function limitation. Accordingly, a series of operations performed by a computer under the direction of a computer program may serve as "specific acts" that correspond to a means element. Similarly, a memory, encoded with data representing a computer program enabling a computer to function in a particular fashion, can serve as the "specific structure" corresponding to a means element, or a component of a computer, which has been reconfigured with a computer program to operate in a particular fashion, can serve as the "specific structure" corresponding to a means element. This is a welcome clarification which deserves strong support since it acknowledges the contribution of software to the increasing complexity of computer-implemented inventions.

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[74] No. 95-1054 (Fed. Cir. May 12, 1995) (remand ordered).

scenario), and definitions of actions that can be performed on the data. Thus, the very nature of software objects facilitates statutory claims directed to them.

In order to substantiate object-oriented software as patentable subject matter under section 101 as interpreted by the courts and the PTO, a brief tutorial on the basic concepts involved in object-oriented technology follows. The concepts are further illustrated by describing the design of a menu in a graphical user interface using object-oriented techniques. Finally, example claims to the object-oriented implementation of the menu are presented, and an analysis is given as to their patentability under section 101.

IV. OBJECT-ORIENTED PROGRAMMING

A. *Overview Of Object-Oriented Programming Concepts*

As mentioned above, the primary benefits of object-oriented programming techniques arise out of three basic principles: encapsulation, polymorphism, and inheritance. Objects hide, or encapsulate, their data's internal structure and the algorithms that implement their actions. Instead of exposing these implementation details, objects present interfaces that represent their abstractions cleanly with no extraneous implementation information. Objects interact by sending messages to each other. These messages stimulate the receiving object to take some action, that is, perform one or more operations.

Polymorphism takes encapsulation a step further: to put it simply—many shapes, one interface. A software component can make a request of another component without knowing exactly what encompasses that component. The component that receives the request interprets it and determines, according to its variables and data, how to execute the request. Thus, sending a draw request to a square object would result in a displayed square. The same identical request sent to a round object would result in a displayed circle.

The third principle that underlies object-oriented programming is inheritance. Inheritance allows program developers to easily reuse pre-existing programs and to avoid creating software from scratch. The principle of inheritance allows a software developer to declare classes (and the objects that are later created from them) as related. Specifically, classes may be

operations that it can perform on its information or information passed to it. For example, an object could be named PERSON. The information contained in the object PERSON (i.e., its attributes) might be age, address, and occupation. These attributes describe the object PERSON. The object also contains a set of operations that it can perform on the information it contains. Thus, PERSON might be able to perform an operation to change occupations from a doctor to a lawyer.

Polymorphism is a concept that allows objects and functions that have the same overall format, but work with different data, to function differently in order to produce consistent results. For example, an addition function may be defined as variable A plus variable B (A+B), and this same format can be used whether the A and B are numbers, characters, or "dollars and cents." However, the actual program code that performs the addition may differ widely depending on the type of variables that comprise A and B. Polymorphism allows three separate function definitions to be written, one for each type of variable (numbers, characters, and dollars). After the functions have been defined, a program can later refer to the addition function by its common format (A+B) and, during compilation, the C++ compiler will determine which of the three functions is actually being used by examining the variable types. The compiler will then substitute the proper function code. Polymorphism allows similar functions that produce analogous results to be "grouped" in the program source code to produce a more logical and clear program flow.

Because objects are encapsulated, thus hiding their internal data and functions from each other, objects interact by sending messages. These messages stimulate the receiving object to take some action, that is, perform one or more operations. In an object-oriented program, there are many communicating objects. Some of the objects have common characteristics and are grouped together into a class. A class is a template that enables the creation of new objects that contain the same information and operations as other members of the same class. An object created from a certain class is called an instance of that class. The class defines the operations and information initially contained in an instance, while the current state of the instance is defined by the operations performed on the instance. Thus, while all instances of a given class are created identically, subsequent operations make each instance a unique object.

For example, an application framework for a user interface might provide a set of pre-defined graphic interface objects that create windows, scroll bars, menus, and other user interface elements and provide the support and "default" behavior for these graphic interface objects. Because application frameworks are based on object-oriented techniques, the pre-defined classes can be used as base classes, and the built-in default behavior can be inherited by developer-defined subclasses. These can be either modified or overridden to allow developers to extend the framework and create customized solutions in a particular area of expertise.

This object-oriented approach provides a major advantage over traditional programming since the programmer is not changing the original program, but rather extending the capabilities of the original program. In addition, developers are not blindly working through layers of codes because the framework provides architectural guidance and modeling. At the same time, the object-oriented approach frees the developers to supply specific actions unique to the problem domain, thus extending the structure inherent in the framework to cover the problem domain.

B. *Menu Example*

To illustrate the technology of object-oriented programming, an example of a menu in a graphical user interface is provided. A set of claims drawn toward the design is also provided to illustrate the form of an object-oriented patent. These claims are analyzed with respect to patentability as defined by the courts' interpretation of section 101 and the PTO's guidelines for obtaining software patents.

In a graphical user interface, a menu bar containing a set of menu commands, for performing certain tasks, such as editing operations, is displayed to the user. Each menu command displays a set of related sub-menu commands when selected by the user. A sub-menu command might perform a certain action, display a user dialog with further options, or display a hierarchical menu of further sub-menu commands. An example menu displayed by the ClarisWorks[78] application running on an Apple Macintosh computer is shown in Figure 1.

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[78] ClarisWorks is an "Integrated Application" combining word processing, drawing, paint, and spreadsheet programs into a single application. ClarisWorks was created by Claris Corporation.

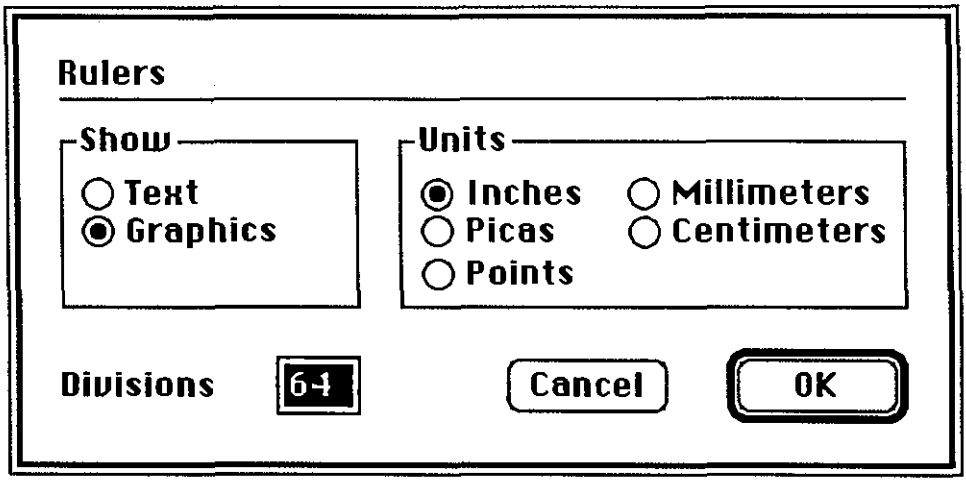

Fig. 2

The general process of displaying commands in a menu for selecting with a mouse is not patentable because the idea is not novel.[79] Almost every

[79] U.S. Pat. No. 32,632 was awarded to William D. Atkinson claiming a method (couched in an apparatus format) for the example menu system. A claim from that patent is:

> 9. A computer controlled display system having a display wherein a plurality of command options are displayed along a menu bar and sub-command items corresponding to each option are displayed once said option has been selected, comprising:
>
> first display means coupled to said computer for generating and displaying said menu bar comprising said plurality of command options;
>
> cursor control means coupled to said display system for selectively positioning a cursor on said display, said cursor control means including a cursor control device for movement over a surface, the movement of said cursor control device over said surface by a user resulting in a corresponding movement of said cursor on said display;

objects such as an action command, hierarchical command, or dialog command. A class diagram of the identified objects is provided in Figure 3.[83]

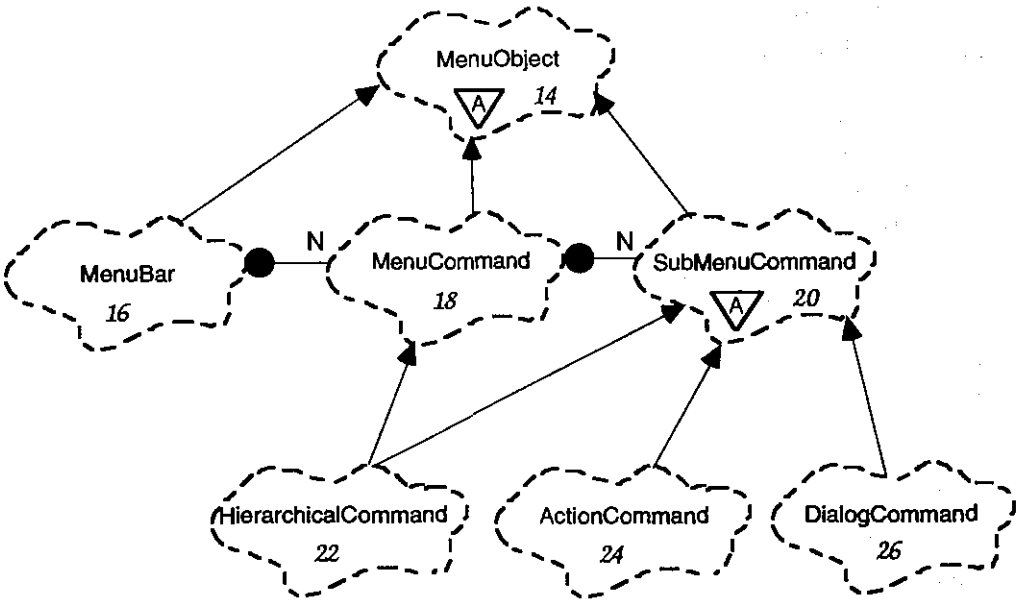

Fig. 3

Figure 3 shows a MenuObject (item 14) as the base class from which all other menu classes are derived. The MenuBar (item 16) is a direct subclass of the MenuObject; therefore, it inherits the instance variables and methods of the MenuObject as well as providing further instance variables and methods specific to a MenuBar. The MenuCommand (item 18) and the SubMenuCommand (item 20) are also derived from the MenuObject, and the SubMenuCommand is further subclassed into an HierarchicalCommand (item 22), an ActionCommand (item 24), and a DialogCommand (item 26). The HierarchicalCommand is also subclassed through multiple inheritance

[83] For a description of the notation used in the class diagram, see OBJECT-ORIENTED ANALYSIS AND DESIGN 176 (Grady Booch ed. 1994).

method of the MenuCommand and display a further list of SubMenuCommands.

The SubMenuCommand class has a pure virtual method for executing the action associated with the command. When the user selects a SubMenuCommand, such as the Rulers DialogCommand, the MenuCommand sends an execute message to the SubMenuCommand class. Since the selected SubMenuCommand is a DialogCommand the execute method of the DialogCommand class is called and the Rulers dialog is displayed. Similarly, the execute methods of the other SubMenuCommands are called when selected.

The benefit of this design is that once it is implemented and debugged, it can be re-used in other programs with minimal effort by other programmers. Further, if a new type of SubMenuCommand class is desired, such as a pop-up menu, it can be implemented and integrated into the current design without modifying the basic operation as just described.

C. *Example Claims*

Claims that could be drawn toward the menu bar invention would depend on the state of the prior art. For instance, if there were no prior art on the subject of object-oriented menu bars, a claim might be drafted as broad as:

1. An object-oriented menu bar for implementation by a computer in an object-oriented framework, comprising:
   (a) a set of menu command objects;
   (b) a display method for displaying the menu command objects; and
   (c) a select method for selecting one of the menu command objects.

In the event the above claim is anticipated or obvious in light of the prior art, the claim can be narrowed by reciting more structure as in the next claim example:

1. An object-oriented menu for implementation on a computer in an object-oriented framework, comprising:
   (a) an abstract menu object comprising:

method of the dialog command object being called from the menu command object, and wherein the select method of the action command object and the select method of the dialog command object enable highlighting the command name when called from the menu command.

In the first dependent claim 2, the independent claim 1 was further limited by adding the ActionCommand and DialogCommand SubMenuCommand objects. Claim 2 is further limited in claim 3 by modifying the select methods to display the command name in a highlighted state when selected from the menu command.

D. *Patentability Of Example Claims*

The object-oriented menu is patentable subject matter as defined by the courts and the PTO because the claims do not merely cover a mathematical algorithm or other purely scientific principle. The object-oriented menu claims presented above are patentable because, as indicated in Part III.A, the claimed invention transforms physical material in the computer apparatus, or articles of manufacture for processing into a different state or thing to achieve a practical application. Thus, what is patentable is the practical application, claimed theory, properties, function, and relationship of the objects, as implemented on a computer or stored on a computer-readable medium. Even if an object used a mathematical algorithm in one of its instance methods, the object is still patentable subject matter because "[w]hen a claim containing a mathematical formula implements or applies that formula in a *structure* or process which, when considered as a *whole*, is performing a function which the patent laws were designed to protect . . . , then the claim satisfies the requirements of § 101."[87] The fact that a software object incorporates a mathematical algorithm does not make it nonstatutory.[88]

When the PTO applies the two-part *Freeman-Walter-Abele* test to patents claiming software objects, the analysis normally does not need to go

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[87] Diamond v. Diehr, 450 U.S. 175, 191, 209 U.S.P.Q. (BNA) 1, 10 (1981) (emphasis added).

[88] *In re* Iwahashi, 888 F.2d 1370, 1374, 12 U.S.P.Q. 2d (BNA) 1908, 1911 (Fed. Cir. 1989).

serves as nothing more than a red herring that needlessly obscures the underlying invention. Normally, the hardware elements of an object-oriented design are merely incidental and should not be included in the claim.

For instance, in the menu object example described above, incorporating a storage device and processor into the preamble or body of the claim would be irrelevant. The claim preamble recitation "for implementation on a computer" should suffice. Such preamble language demonstrates that the claimed invention will cause a computer to become a new, structured computer apparatus, article of manufacture, or computer-implemented process under section 101 and that the invention transforms physical material, or data representing physical phenomena, into a different state or thing to achieve a practical application. Accordingly, every software object runs on a computer with a storage device; therefore, any claim drawn to a software object implicitly includes these prior art hardware elements. If it is desired to have a claim particularly cover a machine, or storage devices, those limitations can be added as dependent claims; for example, by incorporating hardware elements into a software object claim, while further differentiating the invention in any way from the prior art. In fact, omitting hardware elements from a software object claim more appropriately points out and distinctly claims the subject matter of the invention as required by section 112, paragrah 2.[90]

It is suggested that the preamble of software object claims should begin with the language "an object-oriented." Preambles written in this fashion will serve the purpose of putting the public on notice of the nature of the invention and placing the claimed invention in the correct category (i.e., software objects). Anyone reading the claim will immediately understand that the invention is related to object-oriented software. The body of the claim should simply state the instance variables and methods necessary to define the function and structure of the object(s) and the relationship between the objects in the invention. Drafting claims in this manner will make searching for prior art more efficient because query searches can be on "object-oriented." For the above example, for instance, a search on "object-oriented menu" will return all the prior art patents

[90] 35 U.S.C. § 112 ¶ 2 (1994) provides that "[t]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."

the software representation of that same device is not. Further, the PTO guidelines and accompanying legal analysis make it clear that software objects implemented on a computer or stored on a computer-readable medium are statutory subject matter under section 101.

The fact that software is statutory subject matter is shown by the Supreme Court decision in *Diamond v. Diehr* which held that "a claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a mathematical formula, computer program, or digital computer."[92] Since a software object, when implemented by a computer or stored on a computer-readable medium, is statutory subject matter as an apparatus, process, or article of manufacture, it does not become nonstatutory simply because it is a computer program. Similarly, the Federal Circuit's prerequisite of citing structure in an apparatus claim, as admonished in *In re Iwahashi*,[93] is satisfied for claims to software objects implemented on a computer or stored on a computer-readable medium because of the inherent structure provided by the object's instance variables and methods. Finally, software objects pass muster under the PTO's *Freeman-Walter-Abele* two-part test[94] even if a mathematical algorithm is incorporated into the claim, provided that the claim as a whole is drawn to the structure of the object rather than to the algorithm in the abstract. The PTO considers software objects to be patentable as shown by the number of software object patents that have already been allowed.[95]

Software objects are patentable and they advance the constitutional goal to promote the progress of science by creating an incentive for software developers to disclose their inventions. Broadening the patent protection afforded to software by allowing software objects to be claimed as stored on a disk or other computer-readable medium as a *per se* article of manufacture will further enhance software companies' ability to recoup their investment and continue to develop new and innovative products. This improved

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[92] *Diehr*, 450 U.S. 175, 187, 209 U.S.P.Q. (BNA) 1, 5-6 (1981).

[93] 888 F.2d 1370, 12 U.S.P.Q.2d (BNA) 1908 (Fed. Cir. 1989).

[94] *Ex parte* Akamatsu, 22 U.S.P.Q.2d (BNA) 1915 (B.P.I.A. 1992).

[95] Some 196 patents were found while searching the claims of all patents for the terms "object oriented." Search of LEXIS, Lexpat Library, Util file (May 29, 1996).

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PRIORITY OF INVENTION: HOW THE UNITED STATES CAME TO HAVE A "FIRST-TO-INVENT" PATENT SYSTEM

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came into being, what its effects were, how it was judicially interpreted, and how it was modified into its current form.

II. THE ENGLISH PRACTICE

In 1790, the Senate committee considering the patent bill which had been passed by the House of Representatives and which would ultimately result in the Patent Act of 1790 noted that "[t]he Bill depending before the House of Representatives for the Promotion of useful Arts is framed according to the Course of Practice in the English Patent Office."[3] It is thus relevant to ascertain what the English practice in 1790 was with respect to determining priority of invention. Remarkable as it may seem, considering the fact that there had been an English patent practice for more than 200 years, that practice did not provide any clear-cut mechanism for determining priority of invention.

The Statute of Monopolies enacted in 1623 provided the statutory basis for the English patent law.[4] It set forth a general prohibition on monopolies but then provided a number of exemptions to this general prohibition. The one of interest here stated:

> [A]ny Declaration before-mentioned shall not extend to any Letters Patent and Grants of Privilege for the Term of fourteen Years or under, hereafter to be made, of the sole Working or Making of any manner of new Manufacturers within this Realm, to the true and first Inventor and Inventors of such Manufactures, which others at the Time of Making such Letters Patent and Grants shall not use, so as also they be not contrary to the Law, nor mischievous to the State . . . . The said fourteen Years to be accounted from the Date of the first Letters Patents, or Grant of such Privilege hereafter to be made, but that the same shall be of such Force

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[3] *Proceedings in Congress During the Years 1789 and 1790, Relating to the First Patent and Copyright Laws*, 22 J. PAT. OFF. SOC'Y 243, 363 (1940) [hereinafter *Proceedings in Congress*].

[4] An Act Concerning Monopolies And Dispensations With Penal Laws, And The Forfeitures Thereof, 1623, 21 Jac., ch. 3 (Eng.).

England in 1790 and remained so until the middle of the nineteenth century.[9]

In 1790 the common law of patents provided no guidance whatsoever on how to determine priority of invention,[10] nor was the administrative practice any more helpful. That administrative practice was determined by the Law Officers, i.e. the Attorney General and the Solicitor General. In the eighteenth century, a Law Officer report in favor of granting a petition for patent was essential before the crown would act, and a Law Officer determined not only the form of the final instrument but set forth its terms and conditions.

Early on, the Law Officers began to authorize caveats, i.e., the filing of a request that notice be given of the filing of any patent application covering the subject matter described in the caveat. The purpose of filing caveats was almost always to oppose the issuance of the patent. Whenever a petition for patent was presented, the caveat book would be routinely

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[9] In 1826 an American judge stated that this interpretation had its origin in the policy of the English government and went on to say:

> Expediency and the policy of the state have, no doubt, contributed to uphold it. It has been uniformly adhered to, and is everywhere laid down as established law; but I have nowhere seen it supported, as the true and grammatical construction of the language of the act. The policy may be good. It is not that I mean to condemn. But it ought to have been authorized and supported by a legislative provision, and not founded on a judicial perversion of the language of the law.

Thompson v. Haight, 23 F. Cas. 1040, 1044 (C.C.S.D.N.Y. 1826) (No. 13,957). In alleging that this interpretation was not "the true and grammatical construction of the language of the act," the learned judge was falling into the not uncommon judicial practice of seeking to interpret language in the context of his time rather than the context of the time in which it was written, i.e., two centuries earlier.

[10] The exact number of patent cases tried at common law in England prior to 1790 is unknown, but only sixteen are actually reported in some manner or another. This includes fourteen reported after 1750. *See* HAROLD I. DUTTON, THE PATENT SYSTEM AND INVENTIVE ACTIVITY DURING THE INDUSTRIAL REVOLUTION, 1750-1852 at 71 (1984). None of these cases concerns priority of invention.

> have discovered the same thing, it is held not to be *new* within the meaning of the Statute.[13]

This result followed from a peculiarity in the language of the Statute of Monopolies, wherein novelty was determined not at the time an invention was made or even at the time that the petition was filed, but rather at the time the patent was enrolled, i.e., formally issued and made of record. It followed, almost by definition, that if two or more individuals alleged that they were independent inventors of the same subject matter, that subject matter could not be considered as new or novel at the time that a patent would issue. Hence, no patent could or should be permitted to issue.[14]

Therefore, nothing in the contemporaneous English common law of patents or the administrative practice dealt in any real sense with priority of invention, much less with determining such priority by awarding it to the first to invent. The United States law in this regard was not derived from the contemporaneous English patent law and practice.

III. STATE PRACTICE

Although nothing in the contemporaneous English practice suggests how the United States came to have a first-to-invent patent system, there are suggestions in the state patent practice under the Articles of Confederation that are indicative of the earliest drivers toward such a system. During the 1780s, a number of states issued what would now be called patents. No state had a general patent law, so that in each instance these patents were private

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[13] *Proceedings in Congress*, *supra* note 3, at 363.

[14] This result was derived from the phrase "which others at the time of making such letters patent and grants shall not use." A contemporaneous exposition of the meaning to be attributed to the Statute of Monopolies was provided by Lord Coke in his Institutes of the Laws of England, first published in 1628. Therein, he states that for a patent to be valid, it must, among other things, "be of such manufactures, which any other at the making of such letters patents did not use." 3 SIR EDWARD COKE, INSTITUTES OF THE LAWS OF ENGLAND 184 (Clarke 1809) (1648). He thereby interpreted "shall not use" to mean "did not use." He then went on to state "albeit it were newly invented, yet if any other did use it at the making of the letters patents, or grant of the privilege, it is declared and enacted to be void by this act." *Id.* This interpretation was that uniformly used at the end of the eighteenth century.

upstream."[16] Rumsey later claimed that this boat was designed to be actuated by steam, making it literally a steamboat stream boat. But the state patents that he obtained for it in 1785, Washington's certificate, and the notices issued concerning it at the time "were all silent in this respect."[17] In 1787, however, Washington apparently made clear that Rumsey had disclosed to him in November 1784 the concept of using steam to propel a boat, but without any details as to how it was to be accomplished.[18]

It simply was not clear whether Rumsey's "stream boat" was intended to be steam powered, and he provided no description or specification of any sort with respect to his boat. This minor detail, however, did not preclude him from obtaining state patents in Virginia, Pennsylvania, and Maryland in 1785.

Fitch, who was not far behind, pursued a patenting strategy that ultimately would be quite successful in his long-term competition with Rumsey.[19] Whereas Rumsey banked on secrecy above all,[20] Fitch adopted the opposite tactic, namely, public disclosure of his steamboat ideas combined with a constant public criticism of Rumsey for failing to disclose his ideas. Fitch apparently started working seriously on his ideas in the spring of 1785, and in September 1785 he presented a memorandum to the

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[16] Frank D. Prager, *The Steamboat Pioneers Before the Founding Fathers*, 37 J. PAT. OFF. SOC'Y 486, 493-94 (1955).

[17] P.J. Federico, *State Patents*, 13 J. PAT. OFF. SOC'Y 166, 170 (1931).

[18] Frank D. Prager, *The Steamboat Interference* 1787-1793, 40 J. PAT. OFF. SOC'Y 611, 614 (1958). Extracts of Washington's letter indicating this to be the case are reproduced in ELLA MAY TURNER, JAMES RUMSEY: PIONEER IN STEAM NAVIGATION 110-11 (1930).

[19] Prager, *supra* note 16, at 502-08; II EDMUND B. O'CALLAGHAN, THE DOCUMENTARY HISTORY OF THE STATE OF NEW YORK 1041-42 (Albany, Weed, Parsons & Co. 1849). O'Callaghan reproduces in its entirety a pamphlet published by Fitch in May 1788 wherein he defends and sets forth the basis of his claim of priority in inventing the steamboat.

[20] In a letter to Washington in 1785, he stated: "[T]he princeples [sic] of this Last kind of Boat [presumably meaning a steamboat], I am Very Cautious not to Explain to any person, as it is Easy performed and the method would come very nateral [sic] to a Rittenhouse, or an Eliot." This letter is reprinted in TURNER, *supra* note 18, at 66.

was an eminently logical choice because Franklin was widely recognized as the foremost natural philosopher (what today would be termed a scientist) in America, but it had unforeseen consequences.

Franklin apparently received Fitch's ideas on steam navigation at the end of September 1785 but did not respond directly to them.[24] Instead, he wrote an open letter to a young European in which he discussed what he called maritime ideas of his own. This letter was read before the Philosophical Society on December 2, 1785 and published in its *Transactions* the next year. In it Franklin disparaged the use of paddle wheels, and instead argued in favor of the use of a backwardly discharging jet tube operated by a piston pump as a better means of propulsion.[25] He noted that "[a] fire [i.e., steam] engine might possibly in some cases be applied in this operation with advantage."[26] He made references to the work of a number of Europeans but said not a word about that of Fitch.

Because of his reputation, Franklin's views were taken with the utmost seriousness by all concerned with steamboat development. Even Fitch was impressed; like everyone else he abandoned the idea of using paddle wheels for propulsion, although there is no evidence that he actually accepted the jet idea. Arthur Donaldson, however, did promptly announce that he would build a steamboat using the jet principles proposed by Franklin. This spurred Fitch's quest for state patents because he needed them to stop Donaldson, who suddenly appeared to be at least as serious a competitor as Rumsey.[27]

Donaldson filed a petition for patent only in Pennsylvania on March 13, 1786, only to discover that Fitch had preceded him by three days. The result was the legislative equivalent of an interference proceeding, certainly

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[24] *Id.* at 506.

[25] *Id.*

[26] *Id.*

[27] Prager states that it was this announcement by Donaldson which for the first time caused Fitch to seek steamboat patents. *See id.* at 509. This was not literally true, because Fitch had unsuccessfully sought a steamboat patent in Virginia in November 1785. *See* BUGBEE, *supra* note 15, at 97; O'CALLAGHAN, *supra* note 19, at 1043-44.

assumed that the steamboat concept was novel.[31] They correctly determined that Fitch had proposed steam propulsion for boats before Donaldson.

There remained, however, the issues of the scope of the basic invention as well as the status of subsequent improvement inventions. Phrased somewhat differently, what was to be the scope of the patent grant to Fitch? Recall that because of Franklin's very recent disparagement of the use of paddlewheels, no steamboat advocate or inventor in Pennsylvania in early 1786 was prepared to endorse their use. Accordingly, Fitch's latest models and constructions had involved steamboats propelled by steam-actuated oars or the like, whereas Donaldson had apparently adopted Franklin's approach of steam-powered jet propulsion. Apparently realizing that he was unlikely to receive a patent for steamboats in general, Donaldson requested that Fitch's patent, if any, be limited to the actual embodiment he disclosed, i.e., one involving the use of steam-actuated oars or the like. This limitation would permit Donaldson to pursue a jet propulsion scheme without legal restrictions or claims arising out of a Fitch patent.

Fitch persuasively contended that the scope of an invention depends on what has been added to the public domain. That is to say, since he was the first to disclose to the public the basic principles of a steamboat, he should have the right to a broad patent. Insofar as Fitch wanted what in modern terminology would be termed a dominating patent whereby he would have broad and generic rights to exclude others, his views were not inconsistent with the federal patent law that would ultimately develop. However, he went a step further and sought rights not only to any improvement inventions he might subsequently make, but also the right to use any improvement inventions that might be made by others during the term of his patent.

In essence, this was exactly what the Pennsylvania legislature gave him. Not only did it refuse to grant Donaldson a patent, but on March 28, 1787, it granted Fitch the exclusive right for fourteen years of constructing

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[31] Prager states that in the 1780s it was unknown in America that prior speculation in England and France had produced pamphlets and patents proposing steamboats. *See* Prager, *supra* note 18, at 612.

chairman of the legislative committee looking into Fitch's petition asked both Fitch and Rumsey to state what would now be called their dates of conception. Fitch claimed April 1785, whereas Rumsey claimed September 1784. Letters were sent to various Rumsey supporters wherein inquiry was made as to the dates of Rumsey's confidential disclosure of his steamboat idea.

An answer came back from George Washington indicating that Rumsey was being most "uncandid" in suggesting that the stream boat disclosed to him by Rumsey in September 1784 had contemplated the use of steam. Nonetheless, he went on to state that Rumsey had in fact in November 1784 "spoke of the effect of steam and the conviction he was under of the usefulness of its application for inland navigation."[38] He further stated that sometime after this he had informed Fitch that the idea of using steam for driving a boat had earlier been mentioned to him by Rumsey.[39]

There was no indication whatever that Rumsey had given Washington the slightest hint as to *how* steam might be used to actuate his stream boat,[40] but Washington's statement was sufficient for Maryland to refuse to grant a steamboat patent to Fitch.

In 1788, Rumsey and Fitch both published pamphlets, which they sought to use to establish the basis of their respective claims of priority to the invention of the steamboat.[41] These documents are of substantial interest,

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[38] TURNER, *supra* note 18, at 110-11 (quoting GEORGE WASHINGTON LETTER BOOK (Library of Congress)).

[39] *Id.*

[40] In a letter to Washington dated December 17, 1787, Rumsey admitted as much, saying "nor did I ever conceive that I had gave you any information respecting it, only that I had such a thing in idea." *Id.* at 103-04.

[41] Rumsey's original pamphlet entitled A PLAN WHEREIN THE POWER OF STEAM IS FULLY SHOWN BY A NEW CONSTRUCTED MACHINE FOR PROPELLING BOATS OR VESSELS OF ANY BURTHEN AGAINST THE MOST RAPID STREAMS OR RIVERS WITH GREAT VELOCITY (Virginia 1788) was published January 1, 1788. A May 1788 revision was titled A SHORT TREATISE ON THE APPLICATION OF STEAM, WHEREBY IS CLEARLY SHEWN FROM ACTUAL EXPERIMENTS, THAT STEAM MAY BE APPLIED TO PROPEL BOATS OR VESSELS OF

unimpaired.[43] After hearing further argument, the full Assembly accepted this view.

This did not preclude Rumsey's supporters from once again launching an attack on Fitch's patent early in 1789. This in turn led to a report from a new committee of the Assembly, dated March 10, 1789. The report, while not making any specific recommendations on the issue of Fitch's patent, did propose, apparently for the first time, that Pennsylvania have "a body better possessed than the legislature can be of the means of inquiring and examining into [the] originality and merits [of inventions]."[44] The full Assembly again refused to repeal the patent.

These state actions are important because they set the domestic background against which the first federal patent law was established. Clearly, in the event of a priority contest there was a predisposition within the states to seek to grant patent rights to the first inventor; however, the determination might be made as to who was in fact the first inventor. No

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[43] The actual language of the committee report was:

> That having examined the said petitions and with great attention heard the Parties in support of their Respective claims [the committee] are unanimously of opinion that the law which grants to John Fitch an exclusive Right to all Boats propelled by Fire and Steam, hath not only secured unto him his Heirs &c. the exclusive right to the method he had then invented for the purpose of applying the powers of Fire or Steam in order to propel Boats, but also whatsoever improvements he may make himself or obtain from others during the time limited by said Law. And however improper so extensive a Law may be in its principles yet considering that upon a faith of the said Law several Citizens have spent much labour and money for which they are not yet reimbursed—and not withstanding the Legislature may have a right to Repeal Laws which convey grants that are highly injurious to the General Welfare yet the resuming such Legislative grants ought never to be done unless upon the most pressing necessity.

Id. at 1083-84.

[44] *Id.*

of the actual language of the intellectual property clause,[47] neither he nor any other delegate to the Convention provided any interpretation of its language.[48]

It is unfortunate that no delegate left any record as to what the Convention intended "inventors" and "discoveries" to mean. However, there was sufficient contemporaneous interpretation of these words to suggest that there was nothing in their use that obligated United States patents to be issued only to the original or first inventor.

There is no reason to believe that the Framers were not conversant with the fact that the common law had interpreted "true and first inventor" to include the first importer. Moreover, they had chosen not to use the words "true and first" to modify "inventor." Thus, on its face the constitutional language seemed to suggest that an exclusive right could be granted to someone who fell within the definition of "inventor," but who was not the literal "true and first" inventor.

Nor was there anything in the contemporaneous grammatical interpretations given to "inventor" and "discovery" that literally required an inventor to be the uniquely original discoverer of an invention. The 1818

> rights for a certain time [; and] To establish public institutions, rewards and immunities for the promotion of agriculture, commerce, trades and manufactures . . .

See JAMES MADISON, NOTES OF DEBATES IN THE FEDERAL CONVENTION OF 1787 at 477-78 (1966).

[47] Both Madison and Pinckney had made the initial proposals for what ultimately became the intellectual property clause, but only Madison was on the Committee of Detail which had the responsibility for acting on those issues raised but not yet disposed of as of August 31, 1787. *See* II THE RECORDS OF THE FEDERAL CONVENTION OF 1787 at 473, 481 (Max Farrand ed., 1937).

[48] Seidel notes that "[n]o historical writings or events have been found analyzing the [clause]." *See* Arthur H. Seidel, *The Constitution and a Standard of Patentability*, 48 J. PAT. OFF. SOC'Y 1, 10 (1966). Madison's views expressed in *The Federalist No. 43* are occasionally argued as providing an interpretation of the clause but they are not so much an explanation of the clause as an argument in favor of its inclusion in the Constitution.

Alexander Hamilton, while suggesting that there was in fact a constitutional impediment to patents of importation,[53] never took the view that patents could only issue to those who were literally the first to invent. Rather, he seems to have believed that the constitutional language limited patents to those who were in fact independent inventors.

While the intent of the constitutional language is not clear, it does not preclude the granting of patent rights to one who is not the literal first inventor, and some members of the first constitutional government supported this interpretation. We turn now to the efforts of the Congress to enact a patent law under that constitutional grant of authority.

V. ENACTING THE PATENT ACT OF 1790

On April 20, 1789, the House of Representatives appointed a committee to bring in a bill or bills "making general provision for securing to authors and inventors the exclusive right of their respective writings and discoveries."[54] On June 23, 1789, the committee presented for a first reading "a bill to promote the progress of science and the useful arts, by securing to authors and inventors the exclusive right to their respective writings and discoveries."[55] It was designated H.R. 10, contained eleven printed pages, and was directed primarily to patents.[56]

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with Pennsylvania Historical Society). Two weeks later, Coxe in a letter to James Madison indicated that Madison had argued that patents of importation were unconstitutional. *See* Letter from Tench Coxe to James Madison (Mar. 21, 1790), *in* 13 THE PAPERS OF JAMES MADISON 111-14 (Charles F. Hobson et al. eds., 1981).

[53] That he believed this to be the case is evidenced in the third draft of what ultimately became his famous Report on the Subject of Manufactures communicated to the House on December 5, 1791. *See* 10 THE PAPERS OF ALEXANDER HAMILTON 114 (Harold C. Syrett ed., 1966).

[54] House of Representatives Journal (Monday, April 20, 1789), *in* III DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS, *supra* note 51, at 28, 29; *see also Proceedings in Congress*, *supra* note 3, at 246.

[55] House of Representatives Journal (Tuesday, June 23, 1789), *in* III DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS, *supra* note 51, at 94; *Proceedings in Congress*, *supra* note 3, at 249.

[56] *Proceedings in Congress*, *supra* note 3, at 249 n.11.

Congress" in a brief he filed with the Pennsylvania Assembly on September 11, 1789 as a part of his continuing priority contest with Rumsey.[61]

The language quoted by Fitch is:

> And if, upon such specification, the inventions or discoveries aforesaid, claimed by two or more parties, shall appear to be substantially the same, both in principle and execution, then the said _____ shall enquire into the priority of said inventions or discoveries, and if either of the said parties shall so request, they shall issue their precept to the sheriff of _____ directed, commanding him to cause to come before them twelve good and lawful men of _____ who shall be indifferent and unconnected with the parties or either of them, as well as the subject matter in dispute, in which for the determination thereof, they shall have no immediate interest, and upon oath or affirmation of the said twelve men, shall enquire which of the said parties claiming the said inventions or discoveries, was the first and true inventor or discoverer thereof, and shall take their verdict and certify the same, together with the names of the jurors; and the said petition or petitions, and the specifications to the said _____, who (is or are) hereby required to cause a patent to him or them who shall be so found to be the first true inventor or inventors, discoverer or discoverers, to be made out, proceeded upon and perfected in manner aforesaid.[62]

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[61] Prager states that "[i]t is not entirely clear whether Fitch's quotation stems from the original House Bill 10 or from a draft of the later House Bill 41" which became the Patent Act of 1790. *Id.* at 163. It is highly unlikely that a draft of H.R. 41 even existed in September 1789 for the Congress did not decide to defer action on H.R. 10 into its second session until August 17, 1789, and the second session did not commence until January 4, 1790. Even then the bill initially under discussion was presumably still H.R. 10. In any case, an informal copy of H.R. 10 found in the Library of Congress in 1955 tracks verbatim with the language quoted by Fitch. *See also* Copyright (and Patents) Bill [HR-10] (June 23, 1789), *in* IV DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS, *supra* note 51, at 513-19 (containing what is now believed to be the language of H.R. 10).

[62] Prager, *supra* note 58, at 162-63.

anew. He then went on to say that "[h]e wished to determine this point absolutely" and accordingly would move to have H.R. 10 taken up since it "was intended to have passed" in the last session.[64]

Neither the Senate nor the House were entirely certain as to the effect of the adjournment between sessions on business left pending before the Congress. Committees of the two bodies met and recommended that "the business unfinished between the two Houses at the late adjournment, ought to be regarded as if it had not been passed upon by either."[65] On January 25th, the House concurred in a Senate resolution to this effect.[66] The net result was that H.R. 10 was effectively killed and a new bill or bills covering patents and copyrights would now be required to be introduced.

A new patent bill, H.R. 41, was introduced in the House on February 16, 1790.[67] This bill contained a number of changes from the content of H.R. 10. For example, the entity responsible for issuing patents was now identified as the Secretary of State and the caveat proceedings were now to be handled by "three indifferent persons," termed referees. Each party was to elect one referee, and the Secretary of State was to elect the third. A majority of the referees could decide the issue of whether issuance of a patent should be stayed.

As introduced, H.R. 41 retained the right of a party, as originally set forth in H.R. 10, to request that a priority determination be made by a jury[68]

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[64] *Proceedings in Congress, supra* note 3, at 257 (citing 1 ANNALS OF CONG. 1058 (Joseph Gales ed., 1789)).

[65] House of Representatives Journal (Friday, Jan. 22, 1790), *in* III DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS, *supra* note 51, at 270.

[66] House of Representatives Journal (Monday, Jan. 25, 1790), *in* III DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS, *supra* note 51, at 273.

[67] House of Representatives Journal (Tuesday, Feb. 16, 1790), *in* III DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS, *supra* note 51, at 299; *Proceedings in Congress, supra* note 3, at 264.

[68] It was now expressly stated, however, that this would be in a district court.

then proceeded to plead for retention of an optional trial by jury in priority determinations, saying:

> That Matters of Fact respecting Property are rightfully and constitutionally the Objects for Juries to decide on, your Petitioner hath always been taught to believe, and every Deviation from this general Rule must excite in the public Mind uneasy Suspicions of a gradual Deprivation of this valuable Privilege. It hath been said that it was alledged in the House that the Bill having Reference merely to Inventions they would more properly and fitly be determined on by three Referrees than by a Jury; but your Petitioner would wish to draw the Attention of your honorable House to that Part of the third Section which defines the Duties of the Office of Referrees; it directs that if two or more Discoveries "shall appear to be substantially the Same both in Principle and Execution then the said Referrees shall enquire into and determine the Priority of the said Inventions or Discoveries." Here it is evident that not only the Merits of Similarity of Invention, but the *substantiating of Facts* shall be Part of their Duty: this your Petitioner conceives is properly the Business of a Jury; for admitting that the Thing discovered or invented is a separate and rightful Part of a Mans Property the Owner is as much entitled to the usual Mode of Jury Trial as in any other Kind of Estate whatever, and that Trial too in the State where he resides and where the Facts are best known.[71]

Fitch's reference to "both in Principle and Execution" in his quotation from the bill indicates that he was working from a copy of the bill as introduced rather than as passed by the House, for this phrase was deleted from the version sent to the Senate.

As passed by the House, H.R. 41 contemplated a registration system closely modelled after the English practice. It contained a caveat procedure predicated on advertising at several localities a general description of the invention for which patent protection was sought. Any interested member

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[71] Petition of John Fitch (Mar. 22, 1790), *in* VI DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS, *supra* note 51, at 1638 (emphasis in original).

whatever concerning how priority of invention should be established or even if it could or should be established.[75]

VI. PRACTICE UNDER THE ACT OF 1790

The new patent board found itself almost immediately having to deal with a situation that, while not unique to the United States patent system, nonetheless caused it a great deal of difficulty. At issue was the appropriate means of establishing priority of invention between conflicting claimants, when the Act of 1790 was silent as to how this should be done. The same problem existed under the British system and had not yet been satisfactorily resolved.[76] The British would ultimately adopt a standard procedure where, if separate individuals contended that they had independently made the same invention, it was not the first to invent, but rather the first to *petition* for letters patent who would be granted the patent, assuming always that the requisite formalities were met. This "first to file" system had the decided advantage of simplicity. However, though there was nothing that literally seemed to preclude the board from adopting this system, the board did not adopt it.

The patent board seemed to actually consider adopting a "first to file" approach, but rejected it.[77] Unfortunately, it left no clear record of why it did so. It is possible the board may have been uncomfortable with the circumstances in which it found itself, having effectively "inherited" a number of petitions for patent which had originally been filed with Congress.[78] In a priority determination, therefore, the board would have to determine whether the date of filing with the Congress or the date of refiling under the Act of 1790 would be controlling in a "first to file" system. Moreover, the board may have considered it unfair to adopt a "first to file" system when it was generally known that the bills that had been pending

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[75] Patent Act of 1790, ch. 7, 1 Stat. 109 (repealed 1793).

[76] *See supra* text accompanying notes 3-14.

[77] P.J. Federico, *Operation of the Patent Act of 1790*, 18 J. PAT. OFF. SOC'Y 237, 248 (1936).

[78] In anticipation of the passage of a federal patent act, inventors started filing petitions with the first federal Congress soon after it convened on March 4, 1789.

described in Read's patent petition[83] or to James Macomb for "the wheel to supply the place of the running gear of grist or other mills"[84] described in Macomb's patent petition of May 8, 1790. Rumsey alleged that he was the "original inventor" of each invention.[85] It is uncertain how Barnes became aware of the existence of these two patent petitions, but it may well have been that patent petitions filed with the State Department during this period were available to anyone who cared to come in and read them. The board promptly ordered "that information be given to the several petitioners previous to the day to be appointed for a hearing on the premises."[86] On June 5th, Macomb "was informed of the *caveat* by the agent of James Rumsey."[87]

To further complicate matters, Fitch filed a petition on July 7, 1790, "praying that a patent may be refused to any other person than himself for propelling boats or vessels through the water by the force of steam under any designation or description whatever as he will prove that he was the first, true and original inventor."[88] Fitch's petition suggested that the board look to see if other competing patent petitions existed involving inventions pertaining to "the force of steam."[89] Clearly, the issue of priority of invention was not going away, and the board had to deal with it somehow. In the

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[83] Presumably this is the petition filed by Read with the Congress on February 8, 1791. *See* House Journal, *supra* note 54, at 288. On April 22, 1790, the patent board ordered that a patent be issued to Read for this invention. MEMORANDUM BOOK OF THE DEPARTMENT OF STATE, *supra* note 82, at 50. A patent did not actually issue, however, until August 26, 1791. *See infra* note 100.

[84] MEMORANDUM BOOK OF THE DEPARTMENT OF STATE, *supra* note 82, at 61.

[85] *Id.*

[86] *Id.*

[87] *Id.* at 63. It is apparent that Read was also notified, although there is no entry showing such notification.

[88] *Id.* at 75.

[89] *Id.*

the Act for the promotion of useful Arts, judging it most expedient not to proceed further in the Business thereby committed to them, until a Bill supplementary to the said Act, and which is now before Congress, passes, have directed me to inform you that the hearing of the Parties who have applied for Patents for the discovery of new applications of Steam to useful purposes" had been postponed.[94] This communication was somewhat misleading in that the bill referred to was not introduced in the House until February 7, 1791. Even then, it contained no provisions for determining priority of invention. Rather, it proposed a registration system whereby patents would routinely issue when the formalities were met.[95] Presumably the board wanted to defer to this approach because it would not have to address the issue of priority under a registration system. But Congress took no action on the bill and it died at the end of the session.

Accordingly, the hearing did not finally occur until April 22, 1791.[96] In the interim various discussions apparently took place in an attempt to resolve the problem without the board having to act directly on the issue of priority. Referees or arbitrators were proposed but were apparently initially objected to by Stevens and thereafter rejected because who would serve as such could not be agreed upon.

Fitch attended the hearing, as did Joseph Barnes on behalf of Rumsey. Fitch presented a detailed, written brief of his position to the board, and the others seem also to have presented certain written arguments, although the nature of these arguments is not known. It was during the hearing that the idea of using a "first to file" approach was discussed. Fitch was the one who actually raised it when he requested that the "oldest" patent be granted to him. In response, Attorney General Randolph appears to have suggested that the "oldest" patent—by that he seems to have meant that which would issue first and might well be considered dominant,

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[94] Letter from Henry Remsen to John Fitch (Jan. 25, 1791), *in* FITCH PAPERS (on file with the Library of Congress).

[95] For a discussion of this bill, H.R. 121, which was most likely authored by Thomas Jefferson, *see* Edward C. Walterscheid, *Patents and the Jeffersonian Mythology*, 29 JOHN MARSHALL L. REV. 267, 289-96 (1995).

[96] The subject matter of this paragraph is taken from Federico, *supra* note 77, at 248; Prager, *supra* note 18, at 636.

a priority dispute was recognized, the board made a conscious decision not to address it.[102] The extent to which the patents had any duplicative coverage is also a matter of speculation because the content of all of them is not known. Rather, the board seems to have sought to finesse the issue of priority by attempting to draft the patent descriptions in a manner so as to avoid duplicative coverage. As will be seen, it was not entirely successful in this endeavor.

Fitch had maintained, and indeed continued to argue, that he was the inventor of the broad genus of the application of "fire and steam" to purposes of navigation. In other words, he claimed that he had invented the concept of the steamboat and that his patent should cover whatever particular species of propulsion should actually be used.[103] Nonetheless, he seems to have recognized at least implicitly that a too broadly denominated claim to steam propulsion might be akin to claiming "principles," which was being looked at askance in England. Accordingly, in a late addendum to his brief to the patent board, he wrote:

> determine who should receive a patent and consequently had the power to decide between rival claimants.

Federico, *supra* note 77, at 249. *Cf.* the views of Prager: "The Board showed itself active in dealing with the ex parte aspects of the matter; it was on the other hand unwilling to decide the conflict inter partes." Prager, *supra* note 18, at 636. Or, as Lutz put it: "It appears that the board refused to adjudicate the 'interference,' giving to each applicant a patent covering by title the subject matter referred to in his petition, and leaving the courts to adjudicate the 'claims' of the contestants." Karl B. Lutz, *Evolution of U.S. Patent Documents*, 19 J. PAT. OFF. SOC'Y 390, 395 (1937).

[102] *See supra* text accompanying notes 82-90.

[103] For example, in his petition to the Senate on July 2, 1790, he stated that "he trusts no interference with him in *propelling boats by the power of steam, under any pretence of a different mode of application*, will be permitted." *See* I AMERICAN STATE PAPERS, *supra* note 81, at Miscellaneous 14 (emphasis in original). In addition, he prepared a draft of a petition dated February 10, 1791 in which he claimed "an exclusive Right for a Steam Boat." *See* Petition of John Fitch (Feb. 10, 1791), *in* VI DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS, *supra* note 51, at 1644. In his brief to the patent board, he argued in essence that with respect to steam vessels his patent right "ought to be limited to fire and steam." Prager, *supra* note 18, at 633.

> Fourteen years, agreeably to the act entitled 'an act to promote the progress of useful arts.'"[106]

So phrased, Fitch's patent was not totally generic to all forms of steamboat propulsion and, thus, did not automatically dominate other forms of propulsion than those enunciated in the certificate and later in the patent to Fitch.[107]

Thus, for example, Read's patent entitled "Improved Boiler for the Steam Engine" actually encompassed three inventions, one being for "an improvement of the boiler of the steam engine" (which is what the title suggested was the invention) and another being for "an improvement of the steam cylinder." The third, which potentially could have engendered a priority contest with Fitch (if he had been granted a broadly dominating patent) was for

> a practical mode of driving or impelling boats or vessels of any kind in the water or against the current, by means of the chain-wheel, or rowing machine, constructed and operating upon the general principles of the chain-pump, and moved by the force of steam or any other power in the same manner the chain-pump is moved.[108]

This species of steamboat propulsion was clearly distinct from those covered in the patent to Fitch and, thus, there was no interfering subject matter.

The same seems to have been true with respect to whatever specific mode of steamboat propulsion was granted to Stevens, and apparently both Stevens and Read acknowledged that Fitch was prior in his invention of a steamboat. The content of Rumsey's federal patent for "propelling boats or

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[106] Federico, *supra* note 77, at 249 (quoting WESTCOTT, *supra* note 93, at 327-28).

[107] Moreover, both this certificate and the patent, in their use of "allege," seem clearly intended to avoid (or at least limit) any prima facie presumption that Fitch was indeed the "first and true inventor" of these forms of steamboat propulsion.

[108] Federico, *supra* note 77, at 249-50; *see also* Lutz, *supra* note 101, at 393.

If anything can be said to have come of this, it is that both Rumsey and Fitch were enraged, frustrated, and ultimately defeated.[112] The patent board had demonstrated an extreme reluctance to accept the idea of what would today be called genus and species inventions, even though the Act of 1790 expressly authorized patents for improvement inventions, which most often can be characterized as species of an earlier known genus of invention. Because of this fact, it had refused to countenance a dominating generic patent for the steamboat to either Fitch or Rumsey, although both had argued that one or the other ought to dominate. It was clearly apparent, however, that such an approach was unsatisfactory, and that the issue of priority would not go away.[113]

VII. ENACTING THE PATENT ACT OF 1793

It quickly became evident that neither inventors nor the high government officials who comprised the patent board were happy with the Act of 1790. The members of the patent board, notably Jefferson, recognized that they simply had insufficient time to properly carry out the tasks assigned to them under the Act. More than anything else, that realization soon produced an understanding by Congress that new patent legislation was in order.

A new patent bill, H.R. 121, was introduced into the House on February 7, 1791. No specifically identified copy of H.R. 121 has been found, and there is some confusion as its contents and who caused it to be

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[112] This was the last hurrah for both Rumsey and Fitch in their battle to patent the steamboat in the United States and neither would do much further to build steamboats in the United States. Rumsey soon thereafter died in Europe, and Fitch became an alcoholic and ultimately committed suicide, bitterly convinced that the laws of the country had deprived him of what was rightfully his. But their epic struggle had a significant effect on the early development of the United States patent law, and for this they deserve to be remembered.

[113] Wallace and Jeremy suggest that one of the reasons for the 18-month delay in the issuance of William Pollard's patent under the Act of 1790 may have been because he was in interference with a petition for patent filed by Tench Coxe and George Parkinson. *See* Anthony F.C. Wallace and David J. Jeremy, *William Pollard and the Arkwright Patents*, 34 WM. & MARY Q. 404, 411 (1977). However, they provide no contemporaneous record to support such a suggestion and none has been found.

of State was to refer their claims to the circuit court for that district; if they lived in different districts, the Supreme Court was to hear the claims.[117]

The introduction of H.R. 166 provided an opportunity for Joseph Barnes to publish a pamphlet in which he launched a vigorous attack on both the bill and the patent system then in operation under the Act of 1790.[118] One of the points raised by Barnes involved the failure of the patent board to address priority of invention. As Barnes stated:

> [C]onsequent on a resolution of the existing patent board, patents are granted to *two* or more persons at the *same* time, purporting to secure to each the *sole* property in the *same thing*; and, of course, if any number of others were to apply, they would *all* obtain patents for the *same* object. In consequence of which, the *original* inventor is under the *unhappy* necessity of going throughout the Union to seek, [and] bring actions against such patentees, and make *void* their patents, or they will respectively enjoy, in his discovery, *equal* benefits with himself; which, however, they will do till such actions shall be determined.[119]

Barnes' scorn for the existing patent system did not mean that he was particularly happy with the changes proposed in March 1792. Among other things, he argued that the bill should be amended to include a proviso whereby an original inventor within one year of the issuance of a patent to a second inventor could not only invalidate it, but also be authorized to obtain a patent for the same thing.[120] He also objected to the manner in which the bill proposed to determine priority of invention. In this regard, it

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[117] Reliance on the Supreme Court to determine priority was a variation on the theme that had first been proposed in H.R. 10.

[118] JOSEPH BARNES, TREATISE ON THE JUSTICE, POLICY, AND UTILITY OF ESTABLISHING AN EFFECTUAL SYSTEM FOR PROMOTING THE PROGRESS OF USEFUL ARTS, BY ASSURING PROPERTY IN THE PRODUCTS OF GENIUS (Philadelphia, Francis Bailey 1792). Barnes was the brother-in-law of Rumsey and was representing his interests while he was in Europe.

[119] *Id.* at 27-28 (emphasis in original).

[120] *Id.* at 20.

during the debates on H.R. 41 in 1790, the House now refused to accept it again.[126]

Accordingly, a motion was made to strike all of Section 8 and substitute language providing "that all interfering claims for patents, should be determined at the option of the parties, either by the Secretary of State, or by arbitrators, &c."[127] This gave rise to considerable debate and a motion was made to strike "by arbitrators, &c." from the pending motion. This was not agreed to, and after various other amendments the pending motion was modified to read: "That interfering applications for patents shall be determined by the Secretary of State; or, if all parties require it, by arbitrators, &c."[128] This substitute language for Section 8 was agreed to.

The House passed H.R. 204 as amended on February 4, 1793.[129] The Senate in turn passed it on February 15, 1793, with certain additional amendments.[130] The exact nature of those amendments is unclear, but one of them involved what became Section 9 of the bill on interfering applications. Since the House acquiesced to the Senate language, Section 9 of the Patent Act of 1793[131] is the Senate's version. It read:

> That in case of interfering applications, the same shall be submitted to the arbitration of three persons, one of whom shall be chosen by each of the applicants, and the third person shall be appointed by the Secretary of State; and the decision or award of such arbitrators, delivered to the Secretary of State, in writing and subscribed by them, or any two of them, shall be final, as far as respects the granting of

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[126] Most probably this again was based on the argument that juries were not competent to determine the highly technical issues involved in priority contests.

[127] 3 ANNALS OF CONG. 858 (1791-93).

[128] *Id.*

[129] *Id.* at 860.

[130] *Id.* at 647.

[131] Act of Feb. 21, 1793, ch. 11, 1 Stat. 318 (repealed 1836).

Ten years later a Senate committee recommending a complete revision of the patent law because of the "evils" of the existing law, commented:

> A considerable portion of all the patents granted are worthless and void, *as conflicting with, and infringing upon one another*, or upon, public rights not subject to patent privileges. . . . *Out of this interference and collision of patents and privileges, a great number of lawsuits arise, which are daily increasing in an alarming degree, onerous to the courts, ruinous to the parties, and injurious to society.*[134]

How could there be a significant number of conflicting and interfering patents if the Patent Act of 1793 required patents to issue to the first to invent? The answer is that because of the peculiarities of its language, it was interpreted as not limiting patents only to those who were the first to invent.[135] In this regard, it is important to note that the Act of 1793 created a registration system. It did not expressly require the issuance of a patent if the ministerial requirements were met, but neither did it provide any express discretion to the Secretary of State to deny issuance of a patent even though those requirements were met.

In a pamphlet dated March 5, 1811, William Thornton, the first Superintendent of Patents,[136] wrote that "there is at present no discretionary power to refuse a patent, even where no just claim exists."[137] However,

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[134] *See 1836 Senate Committee Report*, 18 J. PAT. OFF. SOC'Y 853, 857 (1936) (emphasis added).

[135] Yet an occasional modern commentator still implies that under the Act of 1793 the existence of a patent for the same invention precluded issuance of a patent to a later applicant. *See, e.g.*, Daniel Preston, *The Administration and Reform of the U.S. Patent Office, 1790-1836*, 5 J. EARLY REP. 331, 332 (1985) ("If no patent covered the invention, then the applicant received one.").

[136] Thornton served as Superintendent of Patents from 1802 until his death in 1828. *Id.* at 334.

[137] The only exception noted by Thornton was the circumstance wherein there were interfering claims and the interference had been settled in accordance with the statutory process. However, as will be seen, the losing party could still demand and obtain a patent.

criteria for determining who should receive the patent if there were interfering applications. As a practical matter, it appears that arbitrators sought to determine who was the first to invent, but what criteria were used to make this determination are unknown. Unlike a jury trial, wherein a judge typically instructed the jury on the applicable law, no instructions were developed or provided to guide the arbitrators.[141]

Although there were a number of defects in the language of Section 9, a major one arose out of the fact that Section 9 literally applied only to cases of interfering applications. Thus, if a patent covering the same subject matter had already issued, there could be no interference. Rather, the practice under Thornton was to notify the later applicant that a patent covering the same subject matter had already issued. If the applicant was nonetheless adamant about having a patent issued, the Patent Office had no recourse but to issue the patent and leave it up to the courts to decide which patent took precedence. But even in the circumstance where Thornton thought that the subject matter of pending applications interfered, this did not automatically result in a call for arbitrators. The Secretary of State could—and on occasion did—ignore Thornton's request for the appointment of arbitrators.[142]

The peculiarities of the Act of 1793 resulted in some strange circumstances where interferences were involved. Thus, it was literally possible to have an interference between two applicants when there was already an issued patent covering the same subject matter.[143] Moreover, even if an applicant refused to engage in the interference process or lost during

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[141] It is quite likely that different arbitrators applied different criteria. Thus, for example, while one set might determine priority based on who first reduced to practice, others might rely on testimony as to who first had the idea of the invention. The modern concepts of conception and diligence to reduction to practice were at best only vaguely understood and it is doubtful that they were applied on any uniform basis.

[142] *See, e.g.*, Letter from Daniel Brent to William Thornton (Sept. 11, 1827), *microformed on* Papers Relating to the Administration of the U.S. Patent Office During the Superintendency of William Thornton, 1802-1828, Federal Documentary Microfilm Edition No. 1, Roll 3 (National Archives and Records Administration, Washington, D.C. 1987) [hereinafter THORNTON PAPERS].

[143] *See* P.J. Federico, *Early Interferences*, 19 J. PAT. OFF. SOC'Y 761, 763 (1937).

recommendations that interferences occur,[156] but does not provide any guide as to the actual number that occurred while he was Superintendent of Patents. Interestingly, one of his letters refers to an interference in which he was a party and won.[157]

In only one instance has the actual decision of the arbitrators in an interference been found. It is dated December 16, 1813 and awarded priority of invention for a steam towboat to one John L. Sullivan over Robert Fulton.[158] It says nothing about the criteria used or the basis for the determination. The patent to Sullivan issued April 1, 1814.

The informal caveat practice seems to have commenced as early as 1802. It consisted of an inventor filing a copy of a specification and drawings and not infrequently a model in the Patent Office but without either a petition for patent or the requisite thirty dollar fee. Nothing further would be done until someone else filed an application for a patent covering the same subject matter. If this occurred, the person filing the informal caveat would be notified as would the later applicant. If the person filing the caveat desired a priority contest, he or she would be given the opportunity to complete the ministerial requirements necessary for a patent and then an arbitration presumably would be declared.

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[156] *See, e.g.*, Letters from Thornton to: John Reid (Aug. 4 and 18, 1807); Richard Rush (Dec. 14, 1817); Francis Rotch (Dec. 24, 1817); John Quincy Adams (Feb. 16, 1818, July 9, 1818, Aug. 19, 1818, Aug. 26, 1818, Feb. 23, 1819, Feb. 20, 1820, Mar. 7, 1820, Mar. 18, 1820, and Nov. 27, 1822); and Joseph Hawkins (Mar. 27, 1823), *microformed on* THORNTON PAPERS, *supra* note 142, at Rolls 1-3. *See also* Letter from John L. Sullivan to Thornton (Dec. 1, 1813); Letter from Richard Rush to Thornton (Dec. 17, 1814); and Letter from William Elliot to John Quincy Adams (May 18, 1818), *microformed on* THORNTON PAPERS, *supra* note 142, at Rolls 1-3.

[157] Letter from Thornton to Joseph Hawkins (Mar. 27, 1823), *microformed on* THORNTON PAPERS, *supra* note 142, at Roll 3.

[158] The decision of the arbitrators is reproduced at Federico, *supra* note 143, at 765-66. For a discussion concerning this arbitration see Letter from John L. Sullivan to Thornton, (Dec. 1, 1813), *microformed on* THORNTON PAPERS, *supra* note 142, at Roll 1.

This put the stamp of approval of the Attorney General on a caveat practice initiated by Thornton himself in 1802. It also seemed to suggest that through the use of this caveat process, a patent could issue literally decades after the specification was originally filed in the Patent Office. Incidentally, there is no record of whether an arbitration was actually declared with respect to the salt manufacturing invention.

That this caveat practice was extensively used is evidenced by a note appended by Thornton to the list of patents issued in 1819 provided to Congress, to wit:

> This list of patents falls short of the actual number, one half; for the inventors find it useless to obtain patents for sale, while there is no money to purchase them, as their time would expire in vain: they therefore have only prepared their papers, and entered them as caveats; of which there are, on the list of the Patent Office, about three hundred; besides some hundred of papers not yet prepared for patents.[161]

The extent to which caveats actually resulted in interferences is unknown, but it occasionally did occur.[162] Consequently, as noted earlier, the existence of the informal caveat practice resulted in more interferences than would otherwise have occurred, adding perhaps ten to the total (although the number can only be speculated). But prior to 1824 when Thornton began to keep a Caveat Book listing the caveats that had actually been entered, whether a caveat would be brought to the attention of a later applicant depended almost entirely on the memories of those working in the Patent Office and thus must have been somewhat hit and miss.

One of the charges of dereliction of duty brought against Craig was that he failed to maintain this Caveat Book. When called upon to testify in this regard, Thomas Jones, who succeeded Thornton as Superintendent of Patents and was followed by Craig, stated:

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[161] Letter from John Quincy Adams to Henry Clay (Jan. 1, 1820), *microformed on* THORNTON PAPERS, *supra* note 142, at Roll 2.

[162] *See, e.g.*, Letters from Thornton to Peregrine Williamson (Mar. 14, 1820), and Thornton to John Quincy Adams (Mar. 18, 1820), *microformed on* THORNTON PAPERS, *supra* note 142, at Roll 2.

taking out patents for their inventions."[165] The fire which destroyed the Patent Office on December 15, 1836 rendered this a superfluous exercise, as all such records were destroyed.

IX. CLOSING OBSERVATIONS

Any assumption that the United States has always had a "first-to-invent" patent system is incorrect. There was nothing in the constitutional language authorizing Congress to secure to inventors for a limited time an exclusive right to their discoveries which obligated Congress to create a "first-to-invent" patent system. Nor was there anything in the contemporaneous English practice which in any way suggested a "first-to-invent" system. Indeed, because of the particular wording of the Statute of Monopolies and the interpretation that had been placed on the relevant language, it was only very rarely that the issue of priority of invention even arose in the English practice.

Nonetheless, the need for some form of determination of priority of invention had been demonstrated in the state patent practice by the priority contest with respect to the steamboat being waged by Rumsey and Fitch. This was occurring at the very time the Constitution was being drafted and ratified. As noted, state legislatures were not particularly well equipped or adapted to address priority issues. But to the extent they did, it was addressed on the basis of seeking to determine who was first to invent. They seem to have done this primarily because it was what both Rumsey and Fitch sought, but also because of an equitable sense that the grant of an exclusive right should go to the true and first inventor.

It is thus not surprising that the first federal patent bills contained provisions for determining who "the first and true" inventor was in the event of interfering applications for patent. Initially, the argument was not over the need to have a provision to determine who the first inventor was in such circumstance, but rather whether the issue should be decided by a jury or a panel of referees who would presumably be knowledgeable in the subject matter to which the invention pertained.

What is surprising is that the Senate, for unknown reasons, completely removed any provision dealing with either caveats or

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[165] *Id.* at 35.

To be sure, the validity of the later issued patent could be challenged in an infringement action, but this could occur only if an actual infringement action was brought. As long as the later patentee merely threatened such action and did not follow through, he or she could bully and threaten such action, thereby frequently obtaining royalties because the perceived high costs of engaging in litigation was usually more than sufficient to cause small businessmen and manufacturers to pay rather than risk ruin in litigation.

There is little question that to the extent that priority of invention was sought to be determined under the Act of 1793, it was done so on the basis of who was first to invent. But it simply did not happen very often, and the criteria for deciding who was first to invent were not spelled out. Moreover, the attempt was frequently meaningless because there was no mechanism for refusing to issue a patent to the loser or to an applicant who refused to participate in the process.

It is only with enactment of the Act of 1836[166] that the United States can truly be said to finally have had a "first-to-invent" patent system. For the first time, this Act required an applicant to sign an oath or affirmation that he "does verily believe that he is the *original and first* inventor." Moreover, it gave the Commissioner of Patents express authority to refuse to issue a patent, if upon examination it was found that the applicant was "not the original and first inventor." It also gave the Commissioner express authority to determine priority of invention between an application and another application or with an unexpired patent. Just as importantly, it provided for a judicial determination of priority with respect to interfering patents or between an application and a patent when the application had been refused because of an interfering patent and expressly provided that in such circumstance the applicant who lost could be refused a patent. Moreover, the patentee who lost in such circumstance could have his or her patent declared void. These were the necessary and essential attributes of a true "first-to-invent" system.

[166] Act of July 4, 1836, ch. 357, 5 Stat. 117.

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mechanisms for determining priority of invention so that the Patent Act of 1790 contained neither. Despite strong efforts by both Rumsey and Fitch, the patent board responsible for issuing patents under this Act effectively refused to address the issue of priority of invention even though it considered mechanisms by which this might be determined—including both "first to invent" and "first to file."

An attempt was made to remedy this problem in the Patent Act of 1793 by including a provision whereby, when there were interfering applications, priority of invention could be determined by a panel of arbitrators. There was nothing in this provision which provided how priority was to be determined or what criteria were to be used, but it seems to have been generally viewed as requiring a determination as to who had invented first. For a variety of reasons this provision was largely ineffectual. There was nothing that compelled a Secretary of State to declare an interference even though one was recommended by the Superintendent of Patents, and on occasion a Secretary refused to do so. Moreover, there was a long period when the Superintendent of Patents simply refused to declare an interference because of his view of when a patent was deemed to have "issued."

More strikingly, an applicant for patent could not be compelled to engage in an interference and a refusal to do so did not preclude the issuance of a patent to such an applicant when all the ministerial requirements had been met. Moreover, even if an applicant engaged in an interference and lost, he or she could still demand and receive a patent upon complying with the ministerial requirements. Finally, and most importantly, there was no mechanism for engaging in an interference between a patent and an application, so that patents routinely issued when there were already patents covering the same subject matter.

Thus, as has been shown, administrative practice under both the Patent Act of 1790 and the Patent Act of 1793 routinely resulted in the issuance of patents to those who were not the first to invent. To make matters worse, under the legal interpretation given to the Act of 1793 by Justice Story in *Stearns v. Barrett* in 1816, there was literally no judicial mechanism whereby a patentee could challenge the validity of a later issued patent for the same subject matter in the absence of a showing that the later patentee had derived the invention from the first patentee or from someone else.

> Before I came into the office, a book was kept . . . called the Caveat Book, which I afterwards continued to keep. In this book were entered the descriptions which were sent by persons who were not prepared to take out patents. They were designed for the purpose of informing other applicants when a thing was not new. I thought this book important as the means of giving such information; and it was with this view that I kept it, it not being a legal duty to keep it. * * * I understand by interfering applications for patents, when both parties applying have done all required of them towards the issuing of the patents; but neither of the patents have been issued. This is the only case in which I consider them as interfering.[163]

In Jones' view, a caveat could only result in an interference when the party entering the caveat had done all the ministerial actions necessary for a patent to issue.

The person responsible for investigating the charges against Craig concluded that:

> Although it is not made the duty of the Superintendent, by any express rule, to keep [the Caveat Book], yet I do not see how, without it, accurate information can be given to applicants of previous inventions which have not been patented: and if it be essential to this end, it appears to me to have been the obvious duty of Doctor Craig not to discontinue it without some substitute which would answer the same purpose.[164]

Thereafter, Secretary of State McLane instructed Craig that "you are to keep a book corresponding to that which was formerly kept in the office under the name of the 'Caveat Book,' in which are to be entered all such descriptions as are received from persons not desirous of immediately

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[163] Louis McLane, *Report of the Secretary of State* (May 24, 1834) at 14, *microformed on* THORNTON PAPERS, *supra* note 142, at Roll 4.

[164] *Id.* at 28.

There is nothing in the statute that expressly sanctioned such a practice, but in 1814 Thornton submitted the following scenario to Attorney General Richard Rush for an opinion:

> A imagines himself to be the author of a useful invention connected with the manufacture of salt. He in the year 1802 files his matter description in the Patent Office in conformity with the 3rd section of the Act of Congress of February 21, 1793. He takes no step beyond this to perfect his patent until the year 1814. In this year B without any knowledge of A's invention falls upon the invention and presents his petition to the Secretary of State according to the first section of the act aforesaid, filing also a written description of his invention as pointed out by the 3rd section. B as soon as A's description is placed on file, insists on his prior right and claims a decision in the manner prescribed by the ninth section of the act aforesaid as in case of interfering applications. Ought a patent to issue in favor of B? or does it present a case proper for arbitration as mentioned in the ninth section?[159]

This scenario fails to disclose the rather startling fact that Thornton himself is the party A, although Thornton did inform the Attorney General that this was the case.

Rush answered as follows:

> No part of the existing patent laws having fixed any limitation of time within which a patent must be taken out after the specification [is] filed, I do not see that the above statement can be otherwise considered than as presenting a case of interfering applications to be left in the first instance to arbitrators according to the ninth section of the act aforesaid.[160]

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[159] Letter from Thornton to Richard Rush (Dec. 14, 1814), *microformed on* THORNTON PAPERS, *supra* note 142, at Roll 1.

[160] Letter from Richard Rush to Thornton (Dec. 17, 1814), *microformed on* THORNTON PAPERS, *supra* note 142, at Roll 1.

matter, this approach made it virtually impossible for an interference to be declared.

After a detailed administrative review of this charge, Secretary of State McLane concurred in the view that the proceeding as to whether an interference should be declared "is entirely within the control of the department until the patent is actually issued; and, while the power continues, it should be exerted to carry into effect the wholesome provision which is made by the law for preventing future collision and litigation."[152] Accordingly, he directed Craig that: "The 9th section of the act of Congress of February 21st, 1793, is to be carefully observed, and no case is to be considered exempt from its application, until the patent is *actually* issued."[153]

Because of the lack of records, there is no good way of knowing how many interferences actually occurred under the Act of 1793, but the suggestion has been made that they were "very few, probably less than fifty."[154] The first occurred almost immediately but whether any more occurred prior to Thornton's administration is unknown.[155] Thornton's correspondence from time to time refers to interferences or

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[152] *Id.* at 27.

[153] *Id.* at 34-35.

[154] Federico, *supra* note 143, at 762.

[155] The existence of this first interference is revealed only by the following notation in a listing of patents submitted to the Congress in 1805 by Secretary of State James Madison: "Disputed claim for a machine to work in a current of water, etc., decided in favour of John Clarke." The interference was with an application by Daniel Stansbury and Apollos Kinsley. The patent issued December 31, 1793. *See* Letter from James Madison to the Speaker of the House (Feb. 18, 1805), *reproduced in* I AMERICAN STATE PAPERS, *supra* note 81, at Miscellaneous 193. Clarke actually filed his petition for patent in the fall of 1792 under the Act of 1790 but Jefferson, in an apparent effort to avoid a priority contest under the Act of 1790, engaged in a series of correspondence with him and permitted priority to be determined under the Act of 1793. *See* Letter from Clarke to Jefferson (Nov. 10, 1792); Letter from Jefferson to Clarke (Dec. 14, 1792); Letter from Clarke to Jefferson (June 15, 1793); Letter from Jefferson to Clark (June 28, 1793); and Letter from Clarke to Jefferson (July 17, 1793), *as noted at* 24 PAPERS OF THOMAS JEFFERSON, *supra* note 116, at 604-05.

the process, he or she could still obtain a patent if one was demanded. The former situation is exactly what occurred in the case of *Stearns v. Barrett*.[144] Stearns received his patent for "colouring and finishing silk stuffs" on March 22, 1809 after Barrett refused to appoint an arbitrator for the purposes of an interference. Thereafter Barrett demanded and received his patent for "dying and finishing silk" on June 27, 1809.[145]

The patents were commercially valuable, and Stearns sued to have Barrett's patent declared void because it issued surreptitiously or upon false suggestion.[146] He alleged, among other things, that Barrett's refusal to appoint an arbitrator for purposes of an interference was determinative of the matter. The district court declined to so hold, and Justice Story, sitting as circuit judge, affirmed this view on appeal, saying:

> The sole object of such an [arbitration] award is, to ascertain who is prima facie entitled to the patent. But when once obtained, the patent is liable to be repealed or destroyed by precisely the same process, as if it had issued without objection. If the award itself would not have been conclusive, a fortiori, a refusal to join in an arbitration under the statute cannot be so.[147]

If a refusal to enter into arbitration could not result in a patent being declared void, then it followed that neither could it serve as the basis for refusing a patent.

It is hard to ascertain the typical period between the filing of a petition for patent and the issuing of the patent, but it must usually have

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[144] Stearns v. Barrett, 22 F. Cas. 1175 (C.C.D. Mass. 1816) (No. 13,337).

[145] Letter from William Thornton to John Quincy Adams (Feb. 17, 1818), *microformed on* THORNTON PAPERS, *supra* note 142, at Roll 2.

[146] In other than an infringement action, this was the only basis for voiding a patent. *See* Patent Act of 1793, ch. 11, § 10, 1 Stat. 318 (repealed 1836).

[147] *Stearns*, 22 F. Cas. at 1182.

Thornton was not entirely certain on the point, and in March 1812 he queried the Attorney General, who replied that "[T]he Department of State has no discretion to decline to issue the patent as applied for, in case the allegation and oath prescribed by the Act of Congress have been made, a suitable specification has been filed, and a model (if required) has been deposited."[138] But the issue would arise again,[139] and several decades would pass before the Supreme Court would expressly indicate that once the ministerial requirements were met, the applicant was entitled to the patent as a matter of right.[140]

The administrative practice under the Act of 1793 of particular interest here involved the treatment of caveats and interferences. Although the Act made no reference to caveats, an informal practice was established in the Patent Office which effectively sanctioned them, presumably to some degree by analogy to the administrative practice concerning caveats in Great Britain. Because of the nature of the American law, this informal caveat or opposition procedure could not prevent the issuance of a U.S. patent, but it could be used to seek to provoke an interference to determine who was the prior inventor and hence entitled to a patent. For that reason, it is useful to look first to the practice relating to interferences.

Since neither the Patent Office nor the State Department appear to have maintained records pertaining to interferences, what little is known about interference practice during this period comes from indirect sources. Under the Act of 1793, interferences were known as arbitrations because of the language of Section 9 of the Act. As noted, the Act failed to set forth

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[138] *See* 1 OFFICIAL OPINIONS OF THE ATTORNEYS GENERAL OF THE UNITED STATES 170, 171 (R. Farnham ed., 1852) [hereinafter OPINIONS OF THE ATTORNEYS GENERAL].

[139] In 1831 the Attorney General informed the Secretary of State that the State Department "acts rather ministerially than judicially in granting patents for useful inventions" and that "[a] patent issues from the Patent Office upon the representation of the party, without entering into an examination of the question of right." 2 OPINIONS OF THE ATTORNEYS GENERAL, *supra* note 138, at 435.

[140] *See* Grant v. Raymond, 31 U.S. (2 Pet.) 218, 241 (1832) ("[T]he secretary of state may be considered, in issuing patents, as a ministerial officer. If the prerequisites of the law be complied with, he can exercise no judgment on the question whether the patent shall be issued.").

> the patent: And if either of the applicants shall refuse or fail to choose an arbitrator, the patent shall issue to the opposite party. And where there shall be more than two interfering applications, and the parties applying shall not all unite in appointing three arbitrators, it shall be in the power of the Secretary of State to appoint three arbitrators for the purpose.[132]

A perusal of this language will show that it was totally silent as to the criteria to be used to determine which applicant would receive the patent. Simply put, there was nothing in it which obligated the arbitrators to award the patent to the first to invent.

VIII. PRACTICE UNDER THE PATENT ACT OF 1793

Perhaps the most remarkable aspect of the Act of 1793 was that Congress permitted it to remain in effect for forty-three years. It was an open invitation to fraud and abuse, and such abuse quickly came to be. Nowhere was this more evident than in the issuance of conflicting patents for the same invention.

In 1826 Judge Van Ness wrote:

> [T]he privileges already obtained and daily acquired under this act will furnish fruitful sources of future litigation. The seeds of controversy are already sown in every quarter of the country. The very great and very alarming facility with which patents are procured is producing evils of great magnitude. It encourages the flagitious peculations of impostors, and the arrogant pretensions of vain and fraudulent projectors. *Interfering patents are constantly presented to our observation, and patentees are everywhere in conflict.* Amidst this strife and collision, the community suffers under the most diversified extortions.[133]

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[132] *Id.*

[133] Thompson v. Haight, 23 F. Cas. 1040, 1041 (C.C.S.D.N.Y. 1826) (No. 13,957) (emphasis added).

is interesting that Barnes viewed the bill as permitting anyone to present a caveat and thereby provoke an interference,[121] although there is no mention of a caveat process in the bill. What bothered him most, however, was the delay and expense of determining priority of invention through the courts. Instead of a priority determination by a jury as contemplated in the bill, Barnes favored a determination by referees chosen by the parties, with each party choosing one referee, and, in case of disagreement, the third being chosen by the other two referees.[122]

H.R. 204, introduced on December 10, 1792, eventually became the Patent Act of 1793.[123] Again, no specifically identified copy of it has been found, but it appears to have been quite similar to the bill introduced on March 1, 1792. It was debated in the House on January 30 and 31 and February 1, 1793.[124] Rep. Williamson, who introduced the bill, noted that "it was an imitation of the Patent System of Great Britain,"[125] meaning that it was a registration system like that in Great Britain.

One of the major topics of debate on January 31, 1793 centered around Section 8, which involved treatment of interfering applications. As recent experience with the patent board had indicated, this continued to be a most vexing problem, and the Act of 1790 provided no means of addressing it. It appears that H.R. 204 simply repeated the language of Section 8 of H.R. 166, which required the Secretary of State to refer interfering applications to the courts for judicial resolution. Presumably for much the same reasons which had rendered such an approach unacceptable

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[121] *Id.* at 22.

[122] *Id.* at 24. He argued that juries were unlikely to understand the technicalities of the invention, whereas referees could be chosen from "philosophical mechanics . . . who would be *fully* competent to determine the most minute distinctions in the most involved principles which may occur." *Id.* (emphasis in original).

[123] 3 ANNALS OF CONG. 741 (1791-93).

[124] *Id.* at 853-60; *See also Outline of the History of the United States Patent Office*, 18 J. PAT. OFF. SOC'Y 1, 79-81 (*Centennial Number* of the *Journal* commemorating the centennial of the Patent Act of 1836 published July 1936).

[125] 3 ANNALS OF CONG. 855 (1791-93).

introduced. It probably was based on a draft written by Jefferson.[114] In any case, it is totally silent as to any mechanism for determining priority of invention.[115]

The first federal Congress took no action with respect to H.R. 121 and it died when the session adjourned. The second federal Congress was not presented with a new patent bill, H.R. 166, until March 1, 1792. The authorship is unknown, but it was not Jefferson. The problems inherent in the Act of 1790 with regard to interfering claims were explicitly recognized, presumably because of the difficulties in dealing with the steamboat patents, and a mechanism was included for judicial determination of interferences through jury trial.[116] If the parties resided in the same district, the Secretary

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[114] VI THE WORKS OF THOMAS JEFFERSON 189-93 (Paul Leicester Ford ed., 1904). Ford states unequivocally that "[t]his proposed bill was drafted by Jefferson, and introduced into the House of Representatives Feb. 7, 1791." *Id.* at 189 n.1. Federico also takes this view. *See* Federico, *supra* note 77, at 251. Fitch's petition of February 10, 1791 provides clear evidence in support of this view, referring as it does to the publication requirements found in the Jefferson draft. Petition of John Fitch (Feb. 10, 1791), *in* VI DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS, *supra* note 51, at 1644.

[115] Had Jefferson drafted it several months later, after having gone through the steamboat contest before the patent board, it is more than likely that he would have addressed the issue.

[116] The bill is found as Document E-23848 in CHARLES EVANS, AMERICAN BIBLIOGRAPHY: A CHRONOLOGICAL DICTIONARY OF ALL BOOKS, PAMPHLETS, AND PERIODICAL PUBLICATIONS PRINTED IN THE UNITED STATES OF AMERICA FROM THE GENESIS OF PRINTING IN 1639 DOWN TO AND INCLUDING THE YEAR 1820 (reprint 1941-59). Section 8 of this bill provided for judicial determination of priority of invention through jury trial "whenever two or more persons may apply to the Secretary of State, claiming patents for the same invention or discovery, as to its principle and operation, and when it may be questioned, which of the applicants was the proper and true inventor." In recent years several editors have suggested that E-23848 is H.R. 121, but I have shown that it cannot be H.R. 121. Rather, it is in fact H.R. 166. *See* House of Representatives Journal (Monday, Feb. 7, 1791), *in* III DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS, *supra* note 51, at 699, 700; 22 THE PAPERS OF THOMAS JEFFERSON 361 (Charles T. Cullen et al. eds., 1986) [hereinafter PAPERS OF THOMAS JEFFERSON]; *cf.* Walterscheid, *supra* note 95, at 284.

vessels" is not known. However, the suggestion has been made that if it was similar to his English patent, then it was restricted to one particular mode of propulsion which, however, overlapped and conflicted with the patent issued to Fitch.[109] Remsen is stated to have indicated in letters to Stevens and Read that a priority determination between Fitch and Rumsey had been considered but not conducted.

That this was indeed the case is evidenced by the recollection of Joseph Barnes, who represented Rumsey during the proceedings,[110] and who wrote that Jefferson had stated at the hearings that:

> [T]here are but two questions on which they can decide, viz. (1) whether the discovery be sufficiently useful and important, (2) the originality; and the latter notwithstanding their decision, being appealable to a court and jury, they therefore had determined not in any instance to go into the merits or determine the priority but to grant patents to all applicants.[111]

Jefferson's view that the loser in a priority determination could appeal the result to a court finds no support in the Patent Act of 1790, which provided no authority to appeal judicially a refusal to grant a patent.

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[109] Federico, *supra* note 77, at 250; *Cf.* William H. Richardson, *John Fitch: Patriot, Martyr, Pioneer Steamboat Inventor*, MECHANICAL ENGINEERING, June 1932, at 399, 403. ("The texts of the two patents are precisely alike, except for the changes in names and other formalities. Virtually three-quarters of the claims set up in the patents as granted were Rumsey's, and the other quarter was Fitch's.") Richardson writes as though he had access to both patents. If this is so, he had access to copies not found in any of the official files or archives in Washington, D.C. Moreover, if Remsen had indeed sought to draft the patents to make them "distinct" as Prager alleges, then it is difficult to see how the texts could be "precisely alike."

[110] Rumsey was in Europe during this entire period. *See* TURNER, *supra* note 18, at 141-200.

[111] Prager, *supra* note 18, at 638-39.

> If the Commissioners should judge that any man could have been injured or the original inventor not safe in his property, there most certainly ought to be a more clear, short and distinct designation given. . . . There are four different modes before them for propelling. . . . The four different agents which the steam acts upon is [sic], either wood or metal, such as paddles, water wheels etc., or else the element of water, or otherwise of air, or else air and water.[104]

In so doing, whether he realized it or not, Fitch gave the board the means to avoid any direct determination of priority.

Remsen apparently wrote that he edited or "drafted" the patents of Rumsey, Fitch, and Stevens to make them "distinct."[105] Pending the completion of formal matters, Fitch requested and was given a certificate indicating the nature of his patent grant. This certificate, signed by Remsen, is entitled "Extract from the proceedings of the Commissioners for the Promotion of useful arts. Philadelphia, April 23, 1791" and reads:

> "The Board proceeded to the consideration of the claim of John Fitch, of Philadelphia, for a patent for the following applications of steam, alledged by him to have been invented, viz:
>
> For applying the force of steam to trunk or trunks, for drawing water in at the Bow of a Boat or vessel, and forcing the same out at the stern, in order to propel a boat or vessel through the water. For forcing a column of air through a trunk or trunks, filled with water by the force of steam. For forcing a column of air thro a trunk or trunks, out at the stern, with the bow valves closed, by the force of steam; and for applying the force of steam to Cranks and Paddles for propelling a boat or vessel through the water.
>
> Whereupon, ordered, that letters Patent be granted to the said John Fitch, for his aforesaid inventions, for the term of

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[104] Prager, *supra* note 18, at 635.

[105] *Id.* at 638.

depending on its content—should go to the first applicant.[97] This resulted in a discussion as to what constituted the first application.[98] In a rather clear attempt to avoid any priority determination, Secretary of State Jefferson is stated to have declared that the board would make no distinction in the date of the patents but would issue all with the same date.[99]

The net result was that all four petitioners ultimately received patents.[100] There is a dispute as to whether the issue of priority was actually addressed and settled,[101] but contemporaneous evidence suggests that while

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[97] THE AUTOBIOGRAPHY OF JOHN FITCH 197-98 (Frank D. Prager ed., 1976).

[98] Rumsey had clearly been the first to petition for patent rights under the Patent Act of 1790, but Fitch had been the first to actually petition the Congress for such rights during the Confederation. He had also been the first to petition the new federal Congress for such rights.

[99] WESTCOTT, *supra* note 93, at 327. As Fitch put it: "Mr. Jefferson said that they could make no distinction in the Patents nor give one the prefference [sic] of another." THE AUTOBIOGRAPHY OF JOHN FITCH, *supra* note 97, at 198. This is consistent with Barnes' understanding of Jefferson's views. *See infra* text accompanying note 111.

[100] On August 26, 1791 patents issued to all four as follows:

Improvements of Dr. Barker's mill	Rumsey
Improved mode of working mills	Rumsey
Improvement of Savary's steam engine	Rumsey
Bellows	Rumsey
Generating steam	Rumsey
Propelling boats or vessels	Rumsey
Propelling boats, etc. by steam etc.	Fitch
Improved boiler of the steam engine	Read
Improvement in distilling	Read
Boiler for generating steam	Stevens
Improvement in Captain Savary's steam engine	Stevens
Application of steam to work bellows	Stevens

[101] According to Federico:

> It is very unlikely that duplicate patents were granted to the four steamboat claimants without deciding the question of priority and leaving the inventors to continue their contests in the courts, as has been alleged. The Patent Commissioners had full authority to

meantime, the board seems to have procrastinated, for no hearing was held during the remainder of 1790.[90]

While Fitch was not happy with the existence of the patent board, on November 22, 1790 he nonetheless set out to convince it to establish what seemed to him a basic rule of fairness, that all "'claims, arguments and proofs' be committed to writing and 'that either party may have free access to them.'"[91] Whether he got such a rule is unknown, but the next day the board required all parties "to transmit in writing to the Board a precise statement of their several inventions and the extent thereof."[92] The parties, in what appeared to be shaping up as an interference proceeding, ultimately seem to have been Fitch, Rumsey, Nathan Read, and John Stevens, all of whom were seeking patents covering some aspect of steam navigation and inventions relating to steam engines.[93]

A hearing was originally set for the first Monday of February 1791, but on January 25, 1791 Fitch, and presumably the others, was informed by State Department clerk Henry Remsen that "the Commissioners named in

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[90] In this it was at least partially successful because the determination of priority of invention between Rumsey and Macomb seems to have been resolved without a hearing.

[91] Prager, *supra* note 18, at 632.

[92] *Id.*

[93] Federico, *supra* note 77, at 248; *see also* Prager, *supra* note 18, at 636 n.128. Westcott, however, states that the intent "was to hear all the applicants for patents for inventions in which steam is used as a motive power." *See* THOMPSON WESTCOTT, LIFE OF JOHN FITCH, THE INVENTOR OF THE STEAM-BOAT 301 (Philadelphia, J.B. Lippincott & Co. 1878). Isaac Briggs, who similarly to Nathan Read, was asking for a patent for "steam wagons," was also included. *Id.* For reasons not shown in the extant documentation, both Briggs and Read withdrew their petitions respecting "steam wagons." Apparently Read asked that two of his earlier petitions be withdrawn and replaced by one or more new ones, for on February 5, 1791 State Department clerk Henry Remsen wrote him to say: "'You will receive, herewith enclosed, the petitions you presented to the Board on 16th and 23rd April last. * * * Your appreciation for a machine for moving and directing land carriages by steam, is not therein renewed, although it should have been if you still persist in it.'" GREVILLE BATHE, THREE ESSAYS ON MECHANICAL TRANSPORT IN AMERICA 22 (1960).

before the Congress prior to adoption of the Act of 1790 had contemplated a "first to invent" system.[79] It is also possible the board may have interpreted "inventor" to mean the true and first, i.e. original, inventor in a literal sense. In this case, the constitutional and statutory language would require a "first to invent" approach for determining priority.[80]

It is quite likely, however, that the real reason for not initiating a "first to file" system was that two rival claimants for exclusive rights to the steamboat, Rumsey and Fitch, had been contesting priority for six years in various states. Both viewed the new federal system as a means of finally resolving their priority contest. Simply put, they both wanted a priority determination and vigorously sought it.[81] What they wanted and what they got were not quite the same thing.

The issue first arose when Rumsey, through his agent Joseph Barnes, presented two petitions to the patent board on June 3, 1790, asking that a patent not issue to Nathan Read for "the several portable furnace boilers"[82]

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[79] *See supra* text accompanying notes 54-75.

[80] This arguably was the basis for the view that a constitutional impediment existed with regard to patents of importation. *See supra* note 52 and accompanying text.

[81] Fitch, however, sought to cover himself by also petitioning directly to the House on July 1, 1790 for exclusive rights with respect to the steamboat. *See* House of Representatives Journal (Thursday, July 1, 1790), *in* III DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS, supra note 51, at 484. The House never acted on this petition. He presented a similar petition to the Senate on July 2, 1790, "stating sundry improvements which he has made 'in applying steam to the purposes of propelling boats or vessels through the water,' and requesting 'a law in his favor, independant [sic.] of the general one now in force.'" *See* Senate Legislative Journal (Friday, July 2, 1790), *in* I DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS, *supra* note 51, at 397. His Senate petition is found at I AMERICAN STATE PAPERS, Miscellaneous 14 (Washington, Gales & Seaton, 1834).

[82] MEMORANDUM BOOK OF THE OFFICE OF THE SECRETARY OF CONGRESS, 1785-1788, AND OF THE DEPARTMENT OF STATE, 1789-1795, at 61, *microformed on* Papers of the Continental Congress, 1774-1779, Microcopy No. 247, Roll 198, Item 187 (National Archives Microfilm Publications) [hereinafter MEMORANDUM BOOK OF THE DEPARTMENT OF STATE].

of the public could appear and oppose the issuance of the patent.[72] In essence, the Secretary of State played one of the major roles of the English law officers. If no one appeared to oppose the petition for patent, he was required to proceed with the process of issuing the patent. If objections were presented, he determined the sufficiency thereof. If either the petitioner or an opposer was dissatisfied with the determination by the Secretary, he or she was authorized to have the matter referred to the three referees, who would then decide if the patent should be granted. The referees were also authorized to determine priority in an interference if the opposer also claimed to be the inventor of the invention in question.

Amendments in the Senate changed all that. Both the caveat process and the right of appeal to referees were deleted.[73] In their place, the Senate required the petition for patent to be presented to a three-member board consisting of the Secretary of State, the Secretary for the Department of War, and the Attorney General, any two of which were authorized "if they shall deem the Invention or Discovery sufficiently useful and important, to cause Letters patent to be made out in the name of the United States."[74] What this effectively did was create an examination system as opposed to a registration system, albeit one that placed a considerable degree of discretion in the board through the use of the phrase "sufficiently useful and important."

More importantly for the purposes of this Article, it completely removed the proposed mechanism for establishing priority of invention and substituted nothing in its place. When the House acquiesced in these Senate Amendments, the Patent Act of 1790 came into being with no provision

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[72] This was in contradistinction to the English practice of registering caveats from individuals and notifying them of the petitions that fell within the coverage of the particular caveat so that they might oppose issuance of a patent.

[73] Fitch must have been distraught. Not only had the Senate rejected his cherished right to a jury trial on the issue of priority of invention, it had also rejected appeal to even a three-member panel of referees.

[74] Senate Legislative Journal (Thursday, Mar. 30, 1790), *in* I DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS, *supra* note 51, at 270, 271 n.91; *see also Proceedings in Congress, supra* note 3, at 366. Flexner states that this "patent commission" was proposed at the urging of John Stevens of New Jersey. JAMES T. FLEXNER, STEAMBOATS COME TRUE 192 (1944).

if the referees determined that the invention sought to be patented was claimed by two or more parties. During debate on the bill on March 4, 1790, a motion was made to delete the right of a party to have a priority determination made by a jury. Thereafter:

> This motion was opposed, on the ground of depriving the citizen of a right to which he is entitled, as improper in itself, as causes of a very great magnitude may be depending, which it may be highly improper to submit to the decision of three men only, two of which may be so differently interested, as never to agree—so that the decision may finally result from the influence of the person nominated by the Secretary of State. On the other hand it was said, that it appears highly improper that juries should be called to judge upon matters that they may not be supposed to form a judgment of, these trials will always relate to matters of invention &c. of which three persons may be found with much greater ease who are competent to judge, than twelve, that the right of trial by juries is not universal; and in the present case, there will be a much greater probability of having justice done by arbitrators, who are men of science &c.[69]

The argument that juries were not competent to decide technical issues involving patentability was persuasive and the motion carried.

As passed by the House on March 10, 1790, H.R. 41 provided that priority of invention should be decided in a caveat proceeding before the Secretary of State with appeal to three referees. Fitch seems to have closely followed the progress of the bill, for in a petition to the Senate dated March 13, 1790 he stated "[t]hat conceiving himself interested in the Bill for promoting 'The Progress of useful Arts,' which is said to have passed the honorable House of Representatives," he has a few remarks on the bill.[70] He

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[69] *Proceedings in Congress*, *supra* note 3, at 269-70 (citing 2 ANNALS OF CONG. 1413 (1790)).

[70] Petition of John Fitch (Mar. 22, 1790), *in* VI DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS, *supra* note 51, at 1638; *Proceedings in Congress*, *supra* note 3, at 361.

Fitch's likely purpose in quoting this language was to seek to have Pennsylvania submit the issue of priority to a jury if it determined to conduct an interference proceeding between him and Rumsey.[63] Whatever his reason was, he provided at least indirect proof that the first patent bill envisaged priority contests between inventors, and that such contests would not be determined by the first to file but rather through a quasijudicial determination as to who was the "first and true" inventor.

In H.R. 10 the language quoted by Fitch had been engrafted onto a caveat proceeding similar to the English practice. However, the caveat proceeding contemplated that two Justices of the Supreme Court would hear oppositions to the issuance of patents and would determine if a patent should issue. If the Justices found that two or more parties were seeking patents for the same invention, they would so certify to the entity responsible for issuing patents (which was unspecified), that would then be obligated to inquire into the priority of invention. It was at this point that either party could request that the matter of priority of invention be submitted to a jury.

Why did this first patent bill propose a specific mechanism for determining the "first and true" inventor? It may have come about because the English practice in determining priority of invention was unclear and in any case deemed unsatisfactory. A more likely explanation is that whoever drafted this language was aware of the priority contest being waged between Rumsey and Fitch in the states and was further aware that the manner in which the states had sought to resolve it appeared to be more than a bit political. The idea of using a jury to determine priority of invention would have seemed quite natural for Americans, who were accustomed both to serving on juries and having their disputes resolved through the jury process.

The House of Representatives failed to act on H.R. 10 during the first legislative session of the first federal Congress. The second session commenced on January 4, 1790. Soon thereafter, the question of H.R. 10 was taken up again. In particular, Rep. Thomas Hartley of Pennsylvania raised the question of whether business left unfinished at the end of the first session should be resumed where it left off, or whether it should begin

[63] The issue did not arise in view of the manner in which Pennsylvania resolved the matter.

No copy specifically identified as H.R. 10 has been found, and what is known about it comes from indirect sources. It is highly unlikely that the committee that reported this bill actually wrote it.[57] Thus, its true authorship is unknown. The assertion has been made that it was based in no small measure on a "federal copyright bill" drafted by Noah Webster on April 16 and 17, 1789 (which was a combined patent and copyright bill).[58]

Nothing in the papers of Rumsey or Fitch indicate that they were directly involved in the drafting of this bill. Indeed, Fitch provides some evidence that he was not involved. By a letter dated June 18, 1789, a friend informed him that Congress had decided not to act on individual petitions from inventors but would instead enact a general patent statute.[59] He thereafter inquired of a Senator whom he knew slightly "[w]ho the committee are who are appointed to form a general system of exclusive rights."[60] Perhaps in response to this inquiry, Fitch obtained a copy of the proposed bill, for he quoted from what he called the "proposed law of

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[57] The members of the committee were Rep. Benjamin Huntington of Connecticut, Rep. Lambert Cadwalader of New Jersey, and Rep. Benjamin Contee of Maryland. *See id.* at 246 nn.4-6 (brief biographies of the members of the committee). There is nothing known about these three Congressmen which would in any way suggest that they had sufficient experience or knowledge of patent practice in England or elsewhere to draft the detailed content of H.R. 10.

[58] *See* Frank D. Prager, *Proposals for the Patent Act of 1790*, 36 J. PAT. OFF. SOC'Y 157, 157-61 (1954); *see also* Frank D. Prager, *Historic Background and Foundation of American Patent Law*, 5 AM. J. LEGAL HIST. 309, 320 (1961). The only basis for the assertion are entries on this subject in Webster's diary on these dates. However, Webster's own account of his efforts on behalf of copyright legislation makes no reference to any such draft. *See* NOAH WEBSTER, A COLLECTION OF PAPERS ON POLITICAL, LITERARY AND MORAL SUBJECTS 173-78 (New York 1843).

[59] Prager, *supra* note 58, at 161-62 (citing Letter from Caleb Riggs (a New York Lawyer), *in* FITCH PAPERS doc. 2197 (Library of Congress)).

[60] *Id.* at 162 (citing undated letter to Senator William Samuel Johnston, *in* FITCH PAPERS doc. 2175 (Library of Congress)).

edition of Samuel Johnson's *A Dictionary of the English Language*, which carries the meanings attached to words of the late eighteenth century and which was the most commonly used English language dictionary, defines "inventor" as "one who produces something new; a devisor of something not known before" and "discovery" as "the act of finding anything hidden; the act of revealing or disclosing any secret."[49]

In 1790, President Washington and the members of the House committee that drafted H.R. 41, the bill that ultimately became the Patent Act of 1790, clearly believed that there was nothing in the constitutional language that precluded patents of importation.[50] As introduced, H.R. 41 contained language expressly authorizing patents of importation.[51] If patents of importation could be permitted under the Constitution, then clearly there was nothing therein that required patents to issue only to the original inventor. During debate on the bill, however, the House removed this language from H.R. 41, apparently out of concern that there indeed was a constitutional impediment to patents of importation.[52]

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[49] *See* Seidel, *supra* note 48, at 10-15 (discussing various definitions given in SAMUEL JOHNSON, A DICTIONARY OF THE ENGLISH LANGUAGE (London 1818)).

[50] *See* Walterscheid, *supra* note 1, at 779-80.

[51] Section 6 of the bill stated:

> That any person, who shall after the passing of this act, first import into the United States from any foreign country, any art, machine, engine, device or invention, or any improvement thereon, not before used or known in the said States, such person, his executors, administrators and assigns, shall have the full benefit of this act, as if he were the original inventor or improver with the said States.

See Patents Bill [HR-41] (Feb. 16, 1790), *in* VI DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS OF THE UNITED STATES: LEGISLATIVE HISTORIES 1626-32 (Charlene Bangs Bickford & Helen E. Veit eds., 1986) [hereinafter DOCUMENTARY HISTORY OF THE FIRST FEDERAL CONGRESS].

[52] Representative Thomas Fitzsimmons informed Tench Coxe on March 5, 1790 that "the 6th Section, allowing to Importers, was left out, the Constitutional power being Questionable." Letter from Representative Thomas Fitzsimmons to Tench Coxe (Mar. 5, 1790), *in* COXE PAPERS (on file

consideration seems to have been given to any approach other than attempting to ascertain who was the first inventor. But as the Pennsylvania Assembly candidly admitted, legislative committees were not particularly well-equipped to establish originality of invention. Nor was there any clear understanding of what was required to establish who was first to invent. Finally, if a patent right had been granted, there was a strong reluctance to repeal that right, even if there might be good evidence that it was improperly or improvidently granted, as, for example, to one who was not in fact the first inventor.

With the ratification of the Constitution in 1788, it was apparent, however, that a national patent system would soon be established. Was there anything in the constitutional language that appeared to dictate the manner in which priority of invention would be required to be determined under any new federal patent law?

IV. THE CONSTITUTIONAL LANGUAGE

The United States patent law is derived from a constitutional grant of authority to the Congress "[t]o 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."[45] This so-called "intellectual property clause" derives from two proposals for certain additional congressional powers presented to the Constitutional Convention on August 18, 1787 by Virginia delegate James Madison and South Carolina delegate Charles Pinckney.[46] Although Madison was most likely the author

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[45] U.S. CONST. art. I, § 8, cl. 8.

[46] As published, Madison's Notes for Saturday, August 18, 1787 state:

> Mr. Madison submitted in order to be referred to the Committee of detail the following powers as proper to be added to those of the General Legislature . . . To secure to literary authors their copy rights for a limited time . . . To encourage by premiums & provisions, the advancement of useful knowledge and discoveries . . . . These propositions were referred to the Committee of detail which had prepared the Report, and at the same time the following which was moved by Mr. Pinkney [sic]: in both cases unanimously . . . . To grant patents for useful inventions [;] To secure to Authors exclusive

not only for what they say about the competition between Rumsey and Fitch, but also for the insight that they give into the contestants' understanding of what would now be termed rather fundamental issues of patent law. These issues, however, were then only in the first process of development and at best vaguely understood. As evidence in the context of what would come to be interference practice, the pamphlets are intriguing. Although they do not use interference terminology, they nonetheless seek to establish dates of conception, corroboration, diligence, and reduction to practice. They also make reference to derivation and what would today be termed "spurring on."

The patent rights struggle between Rumsey and Fitch came before a committee of the Pennsylvania Assembly in September and October of 1788, when Rumsey petitioned to have Fitch's patent withdrawn. For reasons that are unclear, the debate centered not so much on the issue of priority of invention, as on whether Fitch's patent gave him any "right to the benefit of any improvement," which Fitch argued it did. In the committee's view, the patent gave Fitch not only his own invention, "but also whatsoever improvements he may make himself or obtain from others."[42] It found in favor of Fitch, saying that his patent, "however improper," should be left

ANY BURTHEN AGAINST RAPID CURRENTS WITH GREAT VELOCITY (Philadelphia 1788). O'CALLAGHAN, *supra* note 19, at 1011. Fitch's pamphlet published in the spring of 1788 is entitled THE ORIGINAL STEAMBOAT SUPPORTED (Philadelphia 1788). *Id.* at 1039.

[42] O'CALLAGHAN, *supra* note 19, at 1084.

and using in Pennsylvania "every species or kinds of boats or watercraft which may be urged or impelled by the force of fire or steam."[32]

Rumsey then challenged Fitch for priority. He contested Fitch's renewed effort in October 1787 to obtain a steamboat patent in Virginia.[33] The argument used by Rumsey has not been found, but it appears that he contended that his Virginia stream boat patent was of sufficient breadth as to cover steam powered actuation and therefore should preclude the grant of any patent directed to steamboats per se.

Fitch provided a copy of his Pennsylvania patent as printed in a newspaper as well as a number of testimonials and an argument explicitly directed against Rumsey.[34] Virginia sided with Fitch and granted him a patent on October 15, 1787, which provided essentially the same coverage as his Pennsylvania patent. He later wrote that he showed that his approach "was different than Mr. Rumsey's,"[35] presumably meaning that Rumsey's 1785 Virginia patent was for a "stream boat" making no mention of steam, whereas he was expressly claiming a steamboat.[36]

The results, however, were very different in Maryland where Fitch filed a petition for patent on November 7, 1787, and a similar contest occurred.[37] Fitch presented the same sort of evidence that he had provided in Virginia, but once again he came up against a type of legislative interference proceeding. Rumsey, having learned from Virginia, vigorously contended that his stream boat was in fact a steamboat, even though his Maryland patent was silent on the point. He seems to have had political friends in Maryland who accepted this contention at face value. The

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[32] Prager, *supra* note 16, at 513; *see also* Bugbee, *supra* note 15, at 97 (citing Pennsylvania, *Statutes at Large*, XII, 441-42).

[33] Fitch had unsuccessfully sought a patent in 1785, whereas Rumsey had obtained a patent for his stream boat in that same year.

[34] Prager, *supra* note 18, at 613.

[35] *Id.*

[36] *Id.*

[37] *Id.* at 614-15.

one of the first, if not in fact the first, to occur in America.[28] An interference is for the purpose of determining priority of invention, but in this particular instance there were other issues raised as well. Specifically, four issues were debated: novelty, priority of invention, scope of the basic invention, and status of improvement inventions.

On the issue of novelty, Fitch accurately pointed out that he was the first to bring the steamboat idea to the attention of the American public. He also erroneously thought that no one else had brought it to public attention in Europe or anywhere else.[29] In addition, he seems to have argued that the kind and degree of novelty required to obtain an exclusive right in Pennsylvania was that which had been established under the Statute of Monopolies. This argument was predicated on the fact that in 1777 Pennsylvania had declared that the common law was in effect within its jurisdiction.

More importantly, he argued that the Statute of Monopolies obligated a patent to be issued only to "the true and first inventor," which he obviously thought he was.[30] As has been noted, the common law interpretation of this language was not a literal grammatical interpretation. Nonetheless, both he and the legislative committees involved in Pennsylvania seem to have taken the language literally and used it as the basis for a priority determination. In determining priority, the legislative committees limited their determination to events in the United States and

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[28] This discussion of what Prager calls "Fitch v. Donaldson," although it was certainly not so styled at the time, is taken from him. *See* Prager, *supra* note 16, at 508-13.

[29] As Prager points out, the idea was old in both France and England in 1786. Steamboat projects had been the subject of English patents and pamphlets starting about 1730, and in 1783 a steamboat demonstration had actually occurred in France. *See id.* at 490-92.

[30] Neither he nor anyone in the Pennsylvania legislature seems to have contemplated the possibility of awarding priority on the basis of the first person to present the petition for patent.

American Philosophical Society in Philadelphia that set forth those ideas in some detail. In particular, he discussed the use of paddle wheel propulsion, the concept of high pressure, light weight steam engines, and aspects of power transmission from the engines to the paddle wheels. The memorandum was accompanied by a model and a drawing. Shortly before, in a petition to Congress for financial support, he disclosed the concept of a high pressure version of a Watt steam engine (something that Watt never contemplated and indeed opposed) and an alternative propulsion means of horizontally moving endless paddle chains.[21] Congress, having neither the power nor the money to do so, declined any monetary guarantees to Fitch.

Undaunted, Fitch proceeded to seek state patents. He obtained his first from New Jersey in 1786, and the following year obtained patents in Delaware, New York, Pennsylvania, and Virginia. The scope of these patents was remarkable: basically each covered any boat or water craft driven through the water by the agency of fire or steam.[22]

Fitch's successful attempts to obtain patents in Pennsylvania and Virginia and unsuccessful attempts in Maryland are noteworthy for what they reveal about early attempts of the states to deal with issues of priority, i.e., the basis on which to award exclusive rights to a particular invention when more than one person sought such rights. Again, some background is necessary. Like Rumsey, Fitch sought to have the support of distinguished personages. One he turned to was Benjamin Franklin.[23] On the face of it, this

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[21] For specific information on Fitch's early disclosures, *see* Frank D. Prager, *An Early Steamboat Plan of John Fitch*, 79 PA. MAG. OF HIST. & BIOGRAPHY 63, 69 (1955).

[22] Thus, for example, the Delaware patent gave him the "sole and exclusive right" of building and operating "every species . . . of boat or water craft which may be impelled . . . or driven through the water by the application, force, or agency of steam or fire, applied *in any manner whatsoever*." BUGBEE, *supra* note 15, at 98 (emphasis in original). The Pennsylvania and New Jersey patents gave him the exclusive right of constructing and using "every species or kinds of boats or watercraft which may be urged or impelled by the force of fire or steam." Prager, *supra* note 16, at 513. The New York patent exclusively authorized him "to build and navigate within the state 'any boat or watercraft . . . driven through the water by the . . . agency of fire or steam.'" BUGBEE, *supra* note 15, at 97.

[23] *See* Prager, *supra* note 21, at 505.

acts of the legislatures. It was these state legislatures who first encountered the issue of priority of invention. This issue was thrust upon them as a result of the efforts of James Rumsey and John Fitch to obtain exclusive rights as the inventor of the steamboat in the United States.

Rumsey was first on the scene seeking state patents. Early in September 1784, he sought and obtained the aid of the most influential man in the United States, namely, George Washington. Rumsey demonstrated a model of his boat to Washington, who gave him a certificate stating:

> I have seen the model of Mr. Rumsey's Boats constructed to work against stream;—have examined the power upon which it acts;—have been an eye witness to an actual experiment in running water of some rapidity; & do give it as my opinion (altho' I had little faith before) that he has discovered the art of propelling Boats, by mechanism & small manual assistance, against rapid currents:—that the discovery is of vast importance—may be of the greatest usefulness in our inland navigation—&, if it succeeds, of which I have no doubt, that the value of it is greatly enhanced by the simplicity of the works; which when seen & explained to, might be executed by the most common Mechanic's.[15]

This certificate would have a powerful influence on those state legislatures presented with it.

The type of boat envisaged by Rumsey later came to be known as a "stream boat," terminology that would engender considerable confusion with "steamboat." As described some years later: "It involved the use of mechanized setting poles. The boat carried a water wheel, which was rotated by the stream. A pair of setting poles were eccentrically pivoted to the wheel. Their lower ends worked on the ground, walking the boat

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[15] BRUCE W. BUGBEE, THE GENESIS OF AMERICAN PATENT AND COPYRIGHT LAW 95-96 (1967) (citing 5 GEORGE WASHINGTON, PAPERS OF GEORGE WASHINGTON 262 (Philander D. Chase ed., 1985)). The certificate is dated September 7, 1784.

searched for relevant caveats. If any were found, a hearing would be held with the petitioner and the opposer each having the opportunity to be heard. The opposer was intended to state his understanding of the existing workings in the field of the invention (which today would be called the relevant art) and why these workings precluded the issuance of the patent. The petitioner, in turn, would state the exact nature of the invention and seek to distinguish it from these existing workings. Based on the information provided, a determination would be made by the Law Officer whether the petition should proceed or lapse.[11]

The purpose of an opposition proceeding was not to determine who should have priority of invention. Rather, it was merely to decide whether the petition of a particular applicant for patent should proceed. Undoubtedly, occasions arose when both the petitioner and the opposer argued that they were the original inventor or importer as the case might be and, in essence, sought to turn it into a priority determination.[12] If the decision was to permit the petition to lapse, however, this in no way was indicative that the opposer could then obtain a patent on the subject matter of the petition. Indeed, the more likely outcome was that neither would obtain a patent, on the ground that the invention could not be considered as new or novel in the manner that novelty was construed under the Statute of Monopolies.

The 1790 Senate committee report expressly commented on a variation on this theme, saying:

> If an Inventor discovers [i.e., discloses] his Secret to any second Person, it is in the Power of him [i.e., the second person] to prevent a Patent issuing by entering a Caveat in the Attorney General's Office, when if two Persons appear to

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[11] ALLAN A. GOMME, PATENT OF INVENTION, ORIGIN AND GROWTH OF THE PATENT SYSTEM IN BRITAIN 22-23 (1946).

[12] MacLeod, for example, points to one example in 1723 wherein the law officers in fact decided a priority dispute. *See* CHRISTINE MACLEOD; INVENTING THE INDUSTRIAL REVOLUTION, THE ENGLISH PATENT SYSTEM, 1660-1800 at 46 (1988).

> as they should be, if this Act had never been made, and of none other.[5]

The reference to "the true and first inventor" certainly seemed to suggest that the intent of this statutory language was that patents could only be granted to the one who was first to invent. But that was not the way the common law would interpret it.

> In *Edgeberry v. Stephens*,[6] decided in 1691, the court held that:
>
> if the invention be new in *England*, a patent may be granted, though the thing was practised beyond sea before; for the statute speaks of new manufactures within this realm; so that if they be new here, it is within the statute; for the act intended to encourage new devices useful to the kingdom, and whether learned by travel or by study, it is the same thing.[7]

In other words, the one who first imported an invention into England not in use or practice there could obtain a patent for it even though not the true and first inventor in any literal modern day sense.[8] This was the law in

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[5] *Id.* § 6.

[6] Edgeberry v. Stephens, 2 Salk. 447, 1 Abbott's P.C. 8 (K.B. 1691).

[7] *Id.*

[8] It is important to note, however, that this interpretation was entirely consonant both with the common law practice in existence when the Statute was enacted and with the definition of "to invent" then extant. As stated by Getz," '[i]nvention' in the modern sense of the word, as a result of special creative ingenuity was neither the ground nor a condition of the grant." L. Getz, *History of the Patentee's Obligations in Great Britain*, 46 J. PAT. OFF. SOC'Y 62, 75 (1964). Or, as Hulme put it, "the proper interpretation of 'the true and first inventor' of the statute in 1623 was the true and first founder or institutor of a manufacture. Invention, i.e. the exercise of the inventive faculty, was not an essential qualification—institution of the manufacture, from whatever source derived, was the valid consideration of the patent grant under the statute." E. Wyndham Hulme, *On the History of Patent Law in the Seventeenth and Eighteenth Centuries*, 18 L.Q. REV. 280, 281 (1902).

I. INTRODUCTION

Early in the development of patent systems, it came to be recognized that two or more persons could—and not infrequently did—independently invent the same thing. Since granting patent rights to each independent inventor would defeat the very purpose of a patent, i.e., the grant of a limited term exclusive right, some mechanism had to be developed to determine which inventor in such circumstance would be given the right to the patent—if indeed a patent were to be granted at all. If novelty, which is a *sine qua non* for patentability, is defined as a requirement that the invention be both new *and* original, then such determination should be predicated on who invented first (i.e., who was the original inventor). Novelty, however, has meant different things at different times and places in the development of the patent law, and at the time the United States patent law was coming into being, it was not at all obvious that priority of invention should be predicated on originality.[1]

Nonetheless, the United States, in contradistinction to almost all other nations, came to have a "first-to-invent" patent system.[2] It is commonly supposed that this has always been the case, but any such supposition is factually inaccurate. The purpose of this Article is to explore how, when, and, more importantly, why the United States adopted a "first-to-invent" patent system. As will be seen, the initial impetus came from the titanic struggle between John Fitch and James Rumsey for priority of invention with respect to the steamboat during the late eighteenth century, but the actual creation of a true first-to-invent system took almost fifty years.

Any discussion of how the United States came to develop a first-to-invent patent system must begin with an examination of the system's English background, as well as the individual state patent practices used prior to the establishment of the United States federal government by the Constitution. It must also look at the meaning of the federal Constitution's language. Finally, it must address in some detail how the statutory scheme

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[1] *See* Edward C. Walterscheid, *Novelty in Historical Perspective* (pts. 1 & 2), 75 J. PAT. & TRADEMARK OFF. SOC'Y 689, 777 (1993).

[2] In a "first-to-invent" system, priority of invention is determined by who actually invented first rather than by who first filed a patent application. At present, only the United States and the Philippines have "first-to-invent" patent systems.

financial return will help fund the companies' growth and thus create additional jobs. Further, the resulting repository of software objects will become an invaluable resource for future developers. The resulting proliferation of software objects will have a profound effect in promoting the progress of the software industry.

claiming object-oriented menu designs. Further, having a specific form for software object claims will aid the PTO in the prosecution of the application. An examiner more easily can determine the patentability of a software object claim over the prior art simply by comparing the instance variables and methods of the prior art objects to the objects of the invention. Rejecting claims based on equivalent instance variables and methods will clarify the issue and bring the prosecution to a speedy conclusion.

VI. CONCLUSION

Object-oriented programming dominates today's software development. Millions of dollars are spent each year on research and development to advance the technology.[91] The advantages of object-oriented technology have resulted in shorter development time, better reliability, and more complex software at a lower cost. Software engineers are no longer forced to reinvent the wheel every time a new program is developed; rather, they can "plug and play" with existing software objects. The development process is similar to electronic components being assembled to develop a new device. The distinction between software and hardware has eroded over the last several years as more and more inventions incorporate software. Object-oriented programming is another step toward unification of these technologies. As the distinction between software and hardware blurs and fades, any degradation of patent protection for software is untenable.

If an electronic device is statutory subject matter under section 101, then a software object implemented on a computer or stored on a computer-readable medium must also be included in this definition. A software object, when implemented on a computer, causes the computer to become a new apparatus with inherent structure as defined by the software object's instance variables and methods, as well as the software object's relationship to other objects in the system. The instance variables and methods enable software objects to model any real-world entity, including patentable devices. There is no valid reason why a device should be patentable, while

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[91] Taligent, the joint venture between IBM, Apple, and HP, was created for the sole purpose of creating an object-oriented operating system and related application frameworks. AT&T, the company that created C++, has a research and development budget of $3 billion, and 60 percent of that is devoted to software.

beyond the first step because such claims do not recite a mathematical algorithm. Even if an object incorporates a mathematical algorithm, it would still be allowed as long as the claim in its entirety does not wholly preempt the use of that algorithm. In other words, the claim will be allowed as long as there are sufficient structural limitations recited in the claims to become statutory subject matter as an apparatus, process, or article of manufacture under section 101. This essentially involves advocating that the claimed invention causes a computer to become a new, structured computer apparatus, article of manufacture, or computer- implemented process under section 101 and, therefore, that the invention transforms physical material, or data representing physical phenomena, into a different state or thing to achieve a practical application. For a software object, this typically means reciting the practical application in terms of the instance methods and variables that define the structure of the object and its relationship to other objects as implemented on a computer or stored on a computer-readable medium. A claim to an object with one method step where that method merely recites a mathematical algorithm will probably not be allowed.

V. PROPOSED FORMAT OF SOFTWARE OBJECT CLAIMS

In some recent patents covering software objects, the claims unnecessarily incorporate hardware elements, such as a data storage device and a data processor, in order to avoid a section 101 rejection under *In re Iwahashi*.[89] Incorporating hardware elements into the claim provides structural limitations that can improve the chances of having the claim allowed. However, reciting hardware elements in a software object claim is usually irrelevant and unnecessary to the invention because the invention is normally couched in the structure and function of the software object itself rather than the hardware elements. The crux of a software object invention is in the software structure. Including superfluous hardware elements often

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[89] *See* U.S. Pat. No. 5,202,981, claim 14:

> A process for manipulating a data stream comprising a second plurality of data objects in an object oriented database management system comprising a *data storage device*, a database of a first plurality of data objects stored in said data storage device in a predetermined sequence, a *data processor connected to said data storage device*, said data processor executing an object oriented database manager, for manipulating said first plurality of data objects; said process comprising the steps of . . . . (emphasis added).

(i) a command name object;
(ii) a method for drawing the command name object;
(iii) a pure virtual select method for selecting the menu object;

(b) a sub-menu command object derived from the abstract menu object, and comprising a pure virtual execute method;

(c) a menu command object derived from the abstract menu object, comprising:
(i) a plurality of the sub-menu command objects; and
(ii) a select method for selecting one of the sub-menu command objects; and

(d) a menu bar object derived from the abstract menu object, comprising:
(i) a plurality of the menu command objects; and
(ii) a select method for selecting one of the menu command objects.

Dependent claims could be drafted to further define the invention, and to provide protection in the event the independent claim is later held invalid. A dependent claim might, for instance, add or modify an instance variable or method. Example dependent claims are:

2. The object-oriented menu as recited in claim 1, further comprising:
(a) an action command object derived from the sub-menu command object comprising:
(i) a select method; and
(ii) an execute method for carrying out a specific function; and
(b) a dialog command object derived from the sub-menu command object, comprising:
(i) a select method; and
(ii) an execute method for displaying a user dialog.

3. The object-oriented menu as recited in claim 2, wherein the select method of the action command object and the select

from the MenuCommand in order to inherit the select method as described below.

The MenuObject is an abstract class that serves as a template for the classes derived from it, and the instance variables and methods common to all menu objects are defined at the MenuObject level. For instance, all menu objects encapsulate a name, a view coordinate to draw the name, a draw method, and a method for selecting the menu object when selected by the user. The name instance variable and method to draw the name can be implemented at the MenuObject level for every menu object. The name might be a string, and the draw method a function that simply draws the name using the current font at the name view coordinates. Further, the draw method could be a virtual function so that subclass menu objects could override and modify the method, for instance, to change the current font.[84] Since the method for selecting a menu object is different for every class, the MenuObject's select method would be a pure virtual function.[85]

Referring again to Figures 1 and 2, the MenuBar's select method would call the select method of the MenuCommand. The MenuCommands for a MenuBar are stored in an instance variable specific to the MenuBar class. The select method of the MenuCommand would highlight its name and display a list of its SubMenuCommands[86] until one of the SubMenuCommands is selected or the operation is canceled. The select method for a SubMenuCommand would be implemented at the subclass level. For instance, the select method for the ActionCommand and the DialogCommand would simply highlight the command name, whereas the select method for the HierarchicalCommand would inherit the select

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[84] Virtual methods are the mechanisms for implementing polymorphism. When a menu object's draw method is called, if the method has been overridden, the draw method for that menu object will be called.

[85] A pure virtual function is simply a template to define the interface to a method contained in every subclass. The actual implementation of the method must be at the subclass level since the method is different for every subclass.

[86] The SubMenuCommands (item 5) for a MenuCommand (item 4) are stored in an instance variable of the MenuCommand class (item 18). The MenuCommand (item 4) displays its SubMenuCommands (item 5) by calling the draw method for each SubMenuCommand.

graphical user interface provides the menu command capability.[80] However, there may not be a specific implementation of a menu as a software object. A novel[81] object-oriented implementation of a menu for displaying commands would be patentable as long as it is not suggested by the prior art.[82] With this in mind, and assuming novelty and nonobviousness, an object-oriented implementation is presented below.

The first step in designing an object-oriented program is to identify the objects in the system. Once the objects are identified, the properties and functions of each object are determined and the relationship and interaction with the other objects is defined. In this example, the identifiable objects include a menu bar, a menu command, a sub-menu command, and classes derived therefrom. The sub-menu command is subclassed into further

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> signal generation means including a switch having a first and second position coupled to said display system for signaling said computer of an option choice once said cursor is positioned over a first predetermined area on said display corresponding to an option to be selected, said user placing said switch in said second position while moving said cursor control device over said surface such that said cursor is over said first predetermined area;
>
> second display means coupled to said computer for generating and displaying said sub-command items corresponding to said selected option;
>
> said switch being placed in said first position by said user once said user has positioned said cursor over a second predetermined area corresponding to a sub-command item to be selected;
>
> whereby an option and a sub-command item is selected and executed by said computer.

[80] Graphical user interface operating systems including Apple Macintosh, Microsoft Windows, and IBM OS/2 provide a menu command capability.

[81] "Novelty" is defined in 35 U.S.C. § 102 (1994).

[82] "Obvious" is defined in 35 U.S.C. § 103 (1994) and has been interpreted to mean "suggested by the prior art." *In re* Stencel, 828 F.2d 751, 754, 4 U.S.P.Q.2d (BNA) 1071, 1073 (Fed. Cir. 1987).

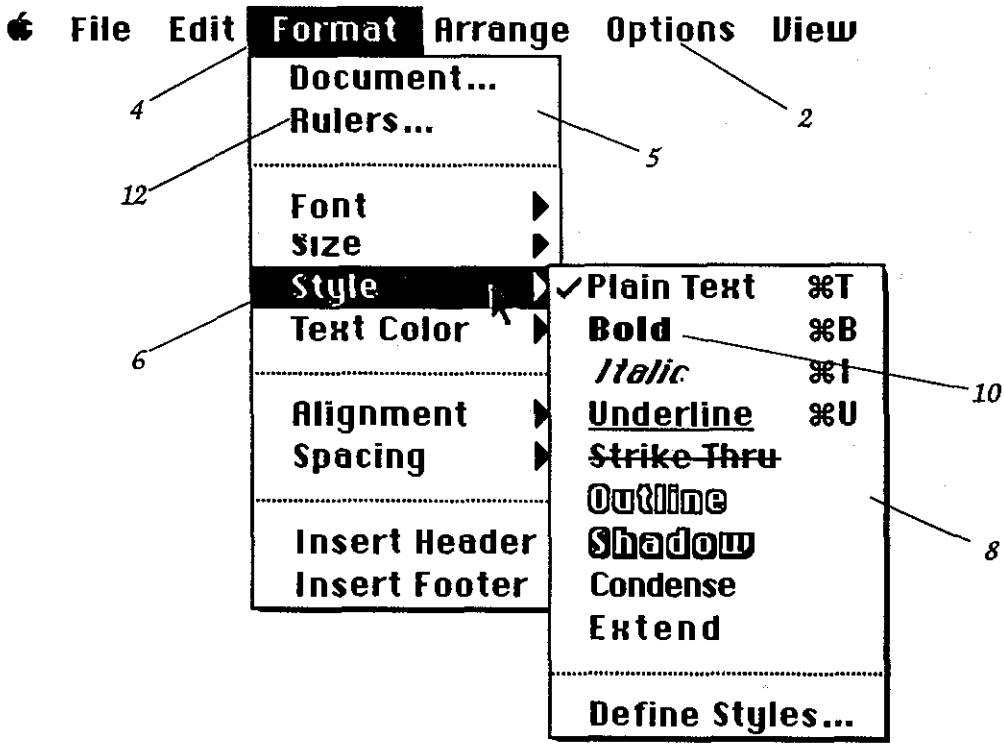

Fig. 1

Following the syntax used in patents, which refer to portions of figures utilizing reference numerals, the ClarisWorks menu bar (item 2) displays several menu commands including a "format" command (item 4). When the user selects the "format" command with a mouse, a set of sub-menu commands (item 5) is displayed for formatting the document, changing the rulers, formatting the text, and inserting a header or footer. The "style" sub-menu command (item 6) is a hierarchical menu that displays a further set of sub-menu commands (item 8) for formatting text. If the user selects one of the sub-menu commands under the style command, such as the "bold" action command (item 10), the selected text will be shown in bold face. The "rulers" sub-menu command (item 12) displays a dialog box as shown in Figure 2 with options for the user to set up the rulers.

Instances inherit the attributes of their class. Thus, by modifying the attribute of a parent class, the attributes of the various instances are modified as well, and the changes are inherited by the subclasses. New classes can be created by describing modifications to existing classes. The new class inherits the attributes of its parent class, and the user can add anything that is unique to the new class. Thus, one can define a class by simply stating how the new class or object differs from its parent class or object. Classes that fall below another class in the inheritance hierarchy are called descendants or children of the parent class from which they descend and inherit. In this polymorphic environment of object-oriented programming, the receiving object is responsible for determining which operation to perform upon receiving a stimulus message. An operation is a function or transformation that may be applied to or by objects in a class. The stimulating object needs to know very little about the receiving object which simplifies the execution of operations. Each particular object need only know how to perform its own operations and how to make the appropriate calls for performing those operations which the particular object itself cannot perform.

Although object-oriented programming offers significant improvements over other programming paradigms, program development still requires significant outlays of time and effort, especially if no pre-existing classes are available as a starting point for adaptation. Consequently, one approach has been to provide a program developer with a set of pre-defined, interconnected classes that create a set of objects. Included with these objects are additional miscellaneous routines. These routines and objects are all directed to performing commonly-encountered tasks in a particular environment. Such pre-defined classes and libraries are typically called "application frameworks,"[77] and essentially provide a pre-fabricated structure for a working application.

[77] There are many kinds of application frameworks available depending on the level of the system involved and the kind of problem to be solved. The types of frameworks range from high-level application frameworks that assist in developing a user interface, to lower-level frameworks that provide basic system software services such as communications, printing, file systems support, graphics, etc. Commercial examples of application frameworks include MacApp (Apple), Bedrock (Symantec), OWL (Borland), NeXT Step App Kit (NeXT), and Smalltalk-80 MVC (ParcPlace).

designated as subclasses of other base classes. A subclass "inherits" and has access to all of the public functions of its base classes just as if these functions appeared in the subclass. Alternatively, a subclass can override some or all of its inherited functions or may modify some or all of its inherited functions merely by defining a new function with the same form (overriding or modification does not alter the function in the base class, but merely modifies the use of the function in the subclass). The creation of a new subclass that has some of the functionality, with selective modification, of another class allows software developers to easily customize existing code to meet their particular needs.

Objects are defined by creating "classes" that are not objects themselves, but act as templates that instruct the compiler how to construct an actual object. A class may, for example, specify the number and type of data variables and the steps involved in the functions that manipulate the data. An object is actually created in the program by means of a special function called a "constructor." The constructor uses the corresponding class definition and additional information, such as arguments provided during object creation. Similarly, objects are destroyed by a special function called a "destructor." Objects may be used by manipulating their data and invoking their functions.

More specifically, an object can be designed to hide, or encapsulate all, or a portion of, its internal data structures and its internal functions. During program design, a program developer can define objects having all or some of the data variables and all or some of the related functions considered "private"—for use only by the object itself. Other data or functions can be declared "public" and made available for use by other objects or routines. Access to the private variables by other objects can be controlled by defining public functions for an object that access the object's private data. The public functions form a controlled and consistent interface between the object's private data and the "outside" world. Any attempt to write program code that directly accesses the object's private variables causes the compiler to generate an error during program compilation. This error stops the compilation process and prevents the program from being run.

For example, in an object-oriented graphic system, the system comprises a number of objects that are clearly delimited parts or functions of the system. Each object contains information about itself and a set of

Accordingly, the clarifications provided by the guidelines facilitate the work of both applicants and examiners.

When an examiner determines that a claim is non-statutory, rather than taking the approach currently utilized by most examiners today, the examiner is encouraged to "identify the features of the invention that would render the claimed subject matter statutory if recited in the claim."[75] This movement away from adversarial prosecution into the realm of cooperative critical review with suggestions for enhancement of the work product could be one of the most important developments resulting from the new guidelines.

D. *Software Objects: Statutory Subject Matter*

After reviewing the judicially determined exceptions to section 101, as well as the PTO's guidelines for determining patentability for claims to software, it should be apparent that if a claim includes a mathematical algorithm, that algorithm must be applied to physical elements (structure) or a process that performs a function that is patentable. Requiring patent applicants to recite structure in the claims is a recurring theme in the case law and PTO guidelines. For example, the Supreme Court has stated that, "a process patent must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing."[76]

As previously indicated, software objects satisfy the statutory subject matter requirements of the PTO because they cause a computer to become a new, structured computer "apparatus," "article of manufacture," or computer-implemented "process" under section 101. Allowable claims can be drafted toward software objects implemented by a computer or stored on a computer-readable medium by reciting in the apparatus, article of manufacture, or process claims the structure of the object as a whole as depicted by the instance variables, instance methods, and the relationship with other objects in the system. As a basic proposition, writing statutory claims to software objects is greatly facilitated because objects are software entities that are made of data (usually data depicting a practical, real-world

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[75] Examination Guidelines, *supra* note 3, at 7481.

[76] Gottschalk v. Benson, 409 U.S. 63, 71, 175 U.S.P.Q (BNA) 673, 676 (1972) (quoting Waxham v. Smith, 294 U.S. 20 (1972)).

instead of relying on statutory subject matter. This should result in more software patents being issued, which, in turn, will enhance searching for software features by creating a growing searchable body of software patents similar to the existing body of prior art upon which other technologies currently rely for identifying patentable subject matter. In addition, new emphasis is placed in the guidelines on compact prosecution, and examiners are encouraged to follow the lead of their European counterparts in suggesting ways to overcome rejections and resolve problems in order to avoid delays in prosecution.

The guidelines also require an examiner to review both the claims and the description. This review is accomplished via a three step analysis:

(1) identifying any specific embodiment of the invention in the description and noting the utility asserted for the invention;

(2) analyzing each claim and correlating it to the corresponding portion of the description, in particular in the case of claims presented in a means plus function format; and

(3) classifying the invention defined by the claims to its statutory category, relying on the following presumptions in making the classification:

> (a) a computer or other programmable apparatus whose actions are directed by a computer program or other form of software is a statutory "machine";
>
> (b) a computer-readable memory that can be used to direct a computer to function in a particular manner when used by the computer is a statutory "article of manufacture"; and
>
> (c) a series of specific operational steps to be performed on or with the aid of a computer is a statutory "process."[72]

Increased importance is placed on the description of the claimed invention, and a specific provision implements the *In re Lowry*[73] decision

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[72] Examination Guidelines, *supra* note 3, at 7,480, 7,481.

[73] 32 F.3d 1579, 32 U.S.P.Q.2d (BNA) 1908 (Fed. Cir. 1994).

claims) or to limit claim steps (in process claims).[60] If it is, it "passes muster under § 101."[61] "The goal [of the two part test] is to answer the question '[w]hat did applicants invent?' If the claimed invention is a mathematical algorithm, it is improper subject matter for patent protection, whereas if the claimed invention is an application of the algorithm, § 101 will not bar the grant of a patent."[62]

Applying the two-part test in a recent case, the Federal Circuit held that an apparatus to obtain auto-correlation coefficients for use in pattern recognition is statutory subject matter. "The fact that the apparatus operates according to an algorithm does not make it non-statutory."[63] The decision was based on a claim drawn to an "apparatus with specific structural limitations,"[64] where the structural limitations were provided by incorporation of a ROM.[65] Because there were sufficient structural limitations in the claim, the invention was held to be patentable subject matter as an apparatus (or machine) under section 101.

C. *Patent And Trademark Office*

The Patent and Trademark Office has in the past established guidelines for examiners prosecuting software patents[66] in response to the Supreme Court's and the Federal Circuit's interpretation of Title 35. In directing the examiners on the prosecution of software cases, the PTO

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[60] *In re* Walter, 618 F.2d 758, 767, 205 U.S.P.Q. (BNA) 397, 407 (C.C.P.A. 1980); *see also In re* Iwahashi, 888 F.2d 1370, 1374-75, 12 U.S.P.Q.2d (BNA) 1908, 1911 (Fed. Cir. 1989).

[61] *Iwahashi*, 888 F.2d at 1374-75, 12 U.S.P.Q.2d (BNA) at 1911.

[62] *In re* Abele, 684 F.2d 902, 907, 214 U.S.P.Q. (BNA) 682, 687 (C.C.P.A. 1982).

[63] *Iwahashi*, 888 F.2d at 1375, 12 U.S.P.Q.2d (BNA) at 1911 (1989).

[64] *Id.*

[65] The acronym ROM stands for "read only memory device."

[66] MANUAL OF PATENT EXAMINING PROCEDURES §§ 2106-2106.02 (1987).

of Appeals for the Federal Circuit in 1982,[49] the Supreme Court has refused to grant certiorari to any cases involving patentability. Thus, as a practical matter, the Federal Circuit's interpretation of patentability is considered controlling and will remain so unless overruled by the Supreme Court.

A. *Supreme Court*

Patentable subject matter is defined in section 101 in the following manner: "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."[50] Several Supreme Court cases, however, have carved exceptions to section 101 for patents involving software; in particular, patents drawn toward claiming pure mathematical algorithms or other pure scientific principles are excepted.

In *Diamond v. Diehr*, for example, the Supreme Court admonished that a mathematical algorithm is "a procedure for solving a given type of mathematical problem, and . . . an algorithm, or mathematical formula, is like a law of nature, which cannot be the subject matter of a patent."[51] This standard has been applied by the Supreme Court in software cases since *Gottschalk v. Benson* in which a patent was held invalid for claiming an algorithm for converting binary numbers to decimal numbers.[52] In another early case, the Supreme Court held a patent invalid for claiming an algorithm for the computation of an alarm limit.[53] Although an algorithm is not patentable subject matter, statutory subject matter is patentable even though implemented by a computer.

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[49] The U.S. Court of Appeals for the Federal Circuit, which replaced the Court of Customs and Patent Appeals, was created as part of the Federal Courts Improvement Act of 1982. *See* Pub. L. No. 97-164, 96 Stat. 25, 37 (1982) (codified at 28 U.S.C. § 1295 (1994)).

[50] 35 U.S.C. § 101 (1994).

[51] Diamond v. Diehr, 450 U.S. 175, 186, 209 U.S.P.Q. (BNA) 1, 8 (1981).

[52] Gottschalk v. Benson, 409 U.S. 63, 175 U.S.P.Q. (BNA) 673 (1972).

[53] Parker v. Flook, 437 U.S. 584, 198 U.S.P.Q. 193 (1978).

C. *Software Objects And The Constitution*

In addition to fitting within the definition of patentable subject matter, software objects are entitled to patent protection to the extent that they further the constitutional basis for allowing exclusive use of an invention in order to promote the progress of science.[43]

Before object-oriented programming, software was implemented in higher level languages using procedural programming. Procedural programming is not inherently modular, nor does it facilitate portability as does object-oriented programming. In object-oriented programming, software is designed by starting with objects already available in an application framework. If an available object is not completely suited to a task, it can be subclassed and extended into a new object with the necessary functionality. By inheriting all of the instance variables and methods, a subclassed object inherits all of the functionality provided by the parent class. Additional features can be designed into a subclass by adding a complementary new method or by overriding and changing a method of the parent class. Once the new object is designed and implemented, it becomes part of the application framework for other programmers to re-use and extend into further objects.

As software objects proliferate, it becomes easier to design and implement new programs. Development time decreases proportionally to the number of objects already available, and reliability increases because the re-used objects have already been debugged and tested. Unless there is an incentive to design and disclose new objects, however, the full benefit of object-oriented programming can never be realized.

Allowing inventors to obtain patents on new objects or on improvements to old objects will further the constitutional objective of promoting the progress of the software industry. Programmers will file for patents on new and improved objects in order to derive the benefits of royalty and licensing fees, and these objects will be collected into a software library that will become an invaluable resource. Other programmers will draw from the patent library rather than design and implement the objects from scratch. Any new, useful, or nonobvious object that is subclassed into a new and improved object will also be entitled to patent protection, and the

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[43] U.S. Const. art. I, § 8, cl. 8.

abstract idea. If so, the court held that *Diehr* precludes the patenting of that subject matter.[29]

The court found that *Alappat's* invention, when looked at as a whole, was "directed to a combination of interrelated elements which combine to form a machine for converting discrete wave-form data samples into anti-aliased pixel illumination intensity data to be displayed on a display means."[30] This was not an abstract idea, but a machine that produced a "useful, concrete, and tangible result."[31] The court also reaffirmed its prior holding by finding that when a general purpose computer is programmed to perform a particular function, it in effect becomes a special purpose computer. Thus, a programmed computer is a different machine from a computer that is programmed with a different program. Finally, the court held that a "computer operating pursuant to software may represent patentable subject matter, provided . . . the claimed subject matter meets all of the other requirements of Title 35. In any case, a computer . . . is apparatus not mathematics."[32] In effect, by this holding, the Supreme Court has affirmed the classification of computers executing programs as patentable subject matter.[33]

In *In re Lowry*,[34] Lowry's subject matter was a "memory containing a stored data structure."[35] The examiner rejected this claim under section 101, and the Board of Patent Appeals and Interferences (the "Board") reversed the examiner finding that the claims directed to a memory containing stored

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[29] *Id.* at 1543, 31 U.S.P.Q.2d (BNA) at 1557.

[30] *Id.* at 1544, 31 U.S.P.Q.2d (BNA) at 1557.

[31] *Id.*

[32] *Id.* at 1545, 31 U.S.P.Q.2d (BNA) at 1558.

[33] Notice that both a computer and a program considered separately are completely useless and should fail § 101 because to be useful the computer and program must work together.

[34] 32 F.3d 1579, 32 U.S.P.Q.2d (BNA) 1031 (Fed. Cir. 1994).

[35] *Id.* at 1581, 32 U.S.P.Q.2d (BNA) at 1033.

to the address lines of the ROM, and the ROM location, thus accessed, contained the appropriate pre-calculated value. In sum, this circuitry provided a very fast multiplier for a limited range of possible values. The invention could have been implemented as a look-up table in a computer using random access memory.

The court distinguished between "algorithm" and "mathematical algorithm" and pointed out that algorithms are patentable as processes, whereas mathematical algorithms are not.[17] The court applied the *Freeman–Walter–Abele* test (discussed in Part III.B) and found that the claim indirectly included a mathematical algorithm; accordingly, the second step of *Walter* required that the claim as a whole be further analyzed. Specifically, "[i]f it appears that the mathematical algorithm is implemented in a specific manner to define structural relationships between the physical elements of the claim (in apparatus claims) or to refine or limit claim steps (in process claims), the claim being otherwise statutory," the claim is allowed under section 101.[18] The court found that the apparatus was statutory and further stated that "[t]he fact that the apparatus operates according to an algorithm does not make it non-statutory."[19] The court placed emphasis on the existence of a ROM in the algorithmic process.[20] Later, however, the *Alappat* court stated that "[t]he *Iwahashi* court clearly did not find patentable subject matter merely because a ROM was recited in the claim at issue; rather the court held that the claim as a whole, directed to the combination . . . was directed to statutory subject matter. It was not the ROM alone that carried the day."[21]

In re Alappat[22] is a complex en banc decision by the Federal Circuit. The invention at issue was directed to a "means for creating a smooth wave-

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[17] *Id.* at 1374, 12 U.S.P.Q.2d (BNA) at 1911.

[18] *Id.* at 1375, 12 U.S.P.Q.2d (BNA) at 1911.

[19] *Id.*

[20] *Id.*

[21] *In re* Alappat, 33 F.3d 1526, 1544 n.24, 31 U.S.P.Q.2d (BNA) 1545, 1558 n.24 (Fed. Cir. 1994).

[22] 33 F.3d 1526, 31 U.S.P.Q.2d (BNA) 1545 (Fed. Cir. 1994).

These three basic principles of object-oriented programming: encapsulation, polymorphism, and inheritance, coupled with the concept of frameworks, enforce structure onto object-oriented programs and objects.

The novelty[10] of an apparatus invention is determined by the structure of its parts rather than its function or the particular problem being solved.[11] The inherent structure of object-oriented software provides patent examiners with a convenient method for determining novelty of the invention. This is because software objects are entities made up of data and logic which can operate on the data. Together, the data and logic allow them to simulate the characteristics and behavior of almost any real-world entity, including concrete items, such as computers, people, and physical places and abstract concepts, such as geometric shapes and data structures.

Like traditional apparatus claims, software objects are claimed with structure, function, and relationship. The structure and function are defined by the instance variables and methods of the object, and the relationship is defined by the interaction the instant object has with other objects in the program. Claiming software as objects is an efficient method for determining the scope of an invention because of the inherent delineation between the elements of an object. Software objects are differentiated by comparing the instance variables and methods as well as their function and relationship to the whole program. Determining patentability in this manner aids prosecution by the PTO and results in strong, comprehensible patents.

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[10] Novelty of an invention is determined by standards set forth in 35 U.S.C. § 102 (1994), which in part provides that "[a] person shall be entitled to a patent unless the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent." *Id.* § 102(a).

[11] *See* Shearing v. Iolab, 975 F.2d 1541, 1544, 24 U.S.P.Q.2d (BNA) 1134, 1136 (Fed. Cir. 1992) ("[T]o prove anticipation [under 35 U.S.C. § 102(a)], Iolab must have convinced the jury with clear and convincing evidence at trial that Dr. Simcoe disclosed in advance of Dr. Shearing's invention *each and every element* of the '546 patent's claims.") (emphasis added). *See also In re* Wright, 848 F.2d 1216, 1219, 6 U.S.P.Q.2d (BNA) 1959, 1962 (Fed. Cir. 1988) ("Factors including unexpected results, new features, solution of a different problem, and novel properties, are all considerations in the determination of *obviousness* in terms of 35 U.S.C. § 103.") (emphasis added).

Frameworks have only recently emerged as a mainstream concept on personal computing platforms. This migration has been assisted by the availability of object-oriented languages such as C++. Traditionally C++ was limited to UNIX systems and researcher's workstations instead of computers in commercial settings.[9] Object-oriented languages such as C++ and Smalltalk enabled a number of university and research projects to produce the precursors to today's commercial frameworks and class libraries. Some examples of these are: InterViews from Stanford University, the Andrew Toolkit from Carnegie-Mellon University, and the University of Zurich's ET++ framework. Programming with frameworks requires a new way of thinking for developers accustomed to the traditional programming paradigm. In fact, it is not like "programming" at all in the traditional sense. In old-style operating systems such as DOS or UNIX, the developer's own program provides all of the structure. The operating system provides services through system calls. The developer's program executes a system call when it needs a service and control returns to the calling program when the requested service has been provided. The program structure is based on the flow-of-control that is embodied in the code the developer writes. This is reversed when frameworks are used.

When frameworks are used, the developer must forego the tendency to organize programming tasks in terms of flow of execution because the developer is no longer responsible for the program's flow-of-control—the framework is instead. The programmer, in turn, must rethink his role in terms of the responsibilities of the objects. The objects rely on the framework to determine when they are to perform their tasks. Routines written by the developer are activated by code that the developer did not write and will normally not even see. This flip-flop in control flow can be a significant psychological barrier for developers experienced only in procedural programming. However, once this methodology is understood, framework programming requires much less effort than other types of programming.

In the same way that an application framework provides the developer with groundwork functionality, system frameworks leverage the same concept by providing system level services that developers extend to create customized solutions. For example, consider a multimedia framework

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[9] When AT&T first created C++, it would run only on powerful workstations. Now object-oriented programs run on standard home computers.

software object is a group of elements working together, or in succession, to perform a specific task, where the elements are the instance variables and methods of the object. The combination and interaction of several software objects may also be considered an invention and, therefore, patentable.

II. BACKGROUND

Object-oriented programming is relatively new and only in the last few years has the PTO issued patents covering this technology; nevertheless, object-oriented programming is rapidly becoming the industry's preferred method for developing software. Consequently, many software companies are filing for patents that claim software as objects.[7]

A. *Software Objects*

Object-oriented programming is preferred over traditional methods for developing software because it facilitates designs in a tangible domain. A program is written by designing each object separately, and once the individual objects are implemented, they are connected together in a coherent fashion resulting in a modular system. Software objects are also extensible and portable, meaning they can be easily reused in other designs. Most object-oriented development is performed in the "C++" programming language. Object-oriented programming objects are software elements comprising data structures that facilitate operations on the object's data. Together, these elements enable objects to model virtually any real-world entity in terms of its characteristics as represented by its data elements and its behavior as represented by its data manipulation functions. In this way, objects can model concrete things like people and computers, and they can model abstract concepts like numbers or geometric figures. The benefits of object technology derive from three basic principles: encapsulation, polymorphism, and inheritance. Software developed using these three principles have inherent structure. These principles are further described in Part IV.

An important aspect of object-oriented programming is the framework approach to application development. One of the most rational

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[7] Companies filing for object-oriented patents include Microsoft, Apple Computer, Taligent, IBM, Sun Microsystems, AT&T, and Schlumberger Technology Corporation.

claiming an apparatus) are written to claim the implementation of a software program in a computer "machine," such as a computer apparatus for pinning a menu onto the screen. Manufacture patents, for example, claim an article of manufacture for computer disks embedded with a software package—such as a novel, nonobvious software program for displaying graphical information on a display.[3] Finally, design patents are written to claim software as an ornamental design, such as an icon in the form of a

switch coupled to said CPU from a first position to a second position;

(d) generating and displaying said menu corresponding to said selected button function, said menu having a plurality of borders, said menu including at least one menu item and an icon, said icon being enclosed within said plurality of menu borders;

(e) positioning said pointer over said icon, said switch being maintained in said second position until said pointer is positioned over said icon;

(f) placing said switch in said first position once said pointer has been positioned over said icon;

(g) retaining said menu on said display during said other display operations until said user positions said pointer over said icon and then places said switch from said first position to said second position and then back to said first position; whereby said menu is selectively retained on said display during said other display operations.

[3] Recently, such claims were approved indirectly approved by the Federal Circuit in *In re* Beauregard, No. 95-1054 (Fed. Cir. May 12, 1995) (remand ordered). Since the remand, the United States Patent and Trademark Office ("PTO") has issued new guidelines instructing examiners that article of manufacture claims for software related inventions are statutory subject matter if the claims recite a specific article of manufacture. Examination Guidelines for Computer-Implemented Inventions, 61 Fed. Reg. 7,478 (1996) (hereinafter Examination Guidelines). However, manufacture patents have not yet been tested by the courts beyond the *In Re* Beauregard decision.

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(g) Annual report

The Trade Representative shall, by not later than the date by which countries are identified under subsection (a) of this section, transmit to the Committee on Ways and Means of the House of Representatives and the Committee on Finance of the Senate, a report on actions taken under this section during the 12 months preceding such report, and the reasons for such actions, including a description of progress made in achieving improved intellectual property protection and market access for persons relying on intellectual property rights.

CREDIT(S)

1995 Interim Update (Pub.L. 98-618, Title I, s 182, as added Pub.L. 100-418, Title I, s 1303(b), Aug. 23, 1988, 102 Stat. 1179, and amended Pub.L. 103-182, Title V, s 513, Dec. 8, 1993, 107 Stat. 2156; Pub.L. 103-465, Title III, s 313, Dec. 8, 1994, 108 Stat. 4938.)

(A) violate provisions of international law or international agreements to which both the United States and the foreign country are parties, or

(B) constitute discriminatory nontariff trade barriers.

(4) A foreign country may be determined to deny adequate and effective protection of intellectual property rights, notwithstanding the fact that the foreign country may be in compliance with the specific obligations of the Agreement on Trade-Related Aspects of Intellectual Property Rights referred to in section 3511(d)(5) of this title.

(e) Publication

The Trade Representative shall publish in the Federal Register a list of foreign countries identified under subsection (a) of this section and shall make such revisions to the list as may be required by reason of action under subsection (c) of this section.

(f) Special rule for actions affecting United States cultural industries

(1) In general

By no later than the date that is 30 days after the date on which the annual report is submitted to Congressional committees under section 2241(b) of this title, the Trade Representative shall identify any act, policy, or practice of Canada which—

(A) affects cultural industries,

(B) is adopted or expanded after December 17, 1992, and

(C) is actionable under article 2106 of the North American Free Trade Agreement.

(2) Special rules for identifications

For purposes of section 2412(b)(2)(A) of this title, an act, policy, or practice identified under this subsection shall be treated as an act, policy, or practice that is the basis for identification of a country under subsection (a)(2) of this

(B) whose acts, policies, or practices described in subparagraph (A) have the greatest adverse impact (actual or potential) on the relevant United States products, and

(C) that are not—

(i) entering into good faith negotiations, or

(ii) making significant progress in bilateral or multilateral negotiations, to provide adequate and effective protection of intellectual property rights.

(2) In identifying priority foreign countries under subsection (a)(2), of this section, the Trade Representative shall—

(A) consult with the Register of Copyrights, the Commissioner of Patents and Trademarks, other appropriate officers of the Federal Government, and

(B) take into account information from such sources as may be available to the Trade Representative and such information as may be submitted to the Trade Representative by interested persons, including information contained in reports submitted under section 2241(b) of this title and petitions submitted under section 2412 of this title.

(3) The Trade Representative may identify a foreign country under subsection (a)(1)(B) of this section only if the Trade Representative finds that there is a factual basis for the denial of fair and equitable market access as a result of the violation of international law or agreement, or the existence of barriers, referred to in subsection (d)(3) of this section.

(4) In identifying foreign countries under paragraphs (1) and (2) of subsection (a) of this section, the Trade Representative shall take into account—

(A) the history of intellectual property laws and practices of the foreign country, including any previous identification under subsection (a)(2) of this section, and

(B) the history of efforts of the United States, and the response of the foreign country, to achieve adequate and effective protection and enforcement of intellectual property rights.

1993	Thailand	Serious concerns regarding copyright enforcement and deficiencies in a recently enacted patent law.	See 1991.
1994	China	Inadequate protection and enforcement of intellectual property rights.	Memorandum of Understanding signed February 26, 1995

APPENDIX B

United States Trade Representative (USTR) Designated Priority Foreign Countries, 1989-1995

Year	Country	Unfair Trade Practices	Resolution of Case
1991	China	Lack of protection of intellectual property and enforcement of intellectual property laws.	In January 1992, China signed a memorandum of understanding with the United States regarding the protection of intellectual property rights.
1991	India	Lack of protection of intellectual property and adequate access for audiovisual works.	In February 1992, USTR concluded that India's lack of protection of intellectual property was unreasonable and burdened or restricted U.S. commerce.
1991	Thailand	Inadequate copyright enforcement and patent law.	Because Thailand was already the subject of an ongoing Section 301 investigation, no new investigation was initiated in 1991. In January 1989, the President had removed $644 million in duty-free entry of goods from Thailand under the Generalized System of Preferences (GSP) program. Since 1989, no further sanctions have been applied against Thailand's GSP benefits have not been restored.

APPENDIX A

SPECIAL 301 REVIEW CUMULATIVE LISTINGS

PFC = Priority Foreign Country
WL = Watch List
PWL = Priority Watch List
SM = Special Mention

COUNTRY	1995	1994	1993	1992	1991	1990	1989
Argentina	WL	PWL	PWL	WL	WL	WL	WL
Australia		WL	PWL	PWL	PWL		
Bahrain	WL						
Brazil	PWL	SM	PFC	PWL	PWL	PWL	PWL
Canada	WL	SM					
Chile	WL	WL	WL	WL	WL	WL	WL
China	WL	PFC	WL	WL	PFC	PWL	PWL
Colombia	WL	WL	WL	WL	WL	WL	WL
Costa Rica	WL						
Cyprus		WL	WL	WL	WL		
EU	PWL	PWL	PWL	PWL	PWL	PWL	
Egypt	WL	*WL	PWL	PWL	WL	WL	WL
El Salvador	WL	WL	WL	WL	WL		
Germany		SM					
Greece	PWL	*WL	WL	WL	WL	WL	WL
Guatemala	WL	WL	WL	WL			
Honduras		SM					
India	PWL	PWL	PFC	PFC	PFC	PWL	PWL
Indonesia	WL	WL	WL	WL	WL	WL	WL
Israel		SM					

In this case, the role of Special 301 as a dialogue promoter is especially valuable.

Even outside any WTO considerations, the unilateral extension of TRIPS in this context raises questions of international fairness. First, should the United States be able to force lesser developed countries to forego the transition period to which they are entitled?[83] Second, is the use of Special 301 in these cases actually counterproductive to U.S. interests?[84]

IV. THE FUTURE OF SPECIAL 301

As the U.S. economy becomes increasingly dependent on intellectual property, the effort to protect these rights internationally will play a larger role in foreign policy. In shifting the international patent debate from WIPO to GATT, the United States revealed its agenda to aggressively ensure the protection of patent rights.[85] Outside the WTO, the most effective way to promote the advancement of intellectual property in foreign countries is through the Special 301 review. This allows the United States to monitor questionable trade practices and engage countries in consultations on an annual basis.

Despite strong international criticism,[86] the United States will continue to use the various 301 procedures. Regular Section 301 has proven

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[83] *See* Marjorie Minkler, *The Omnibus Trade Act of 1988, Section 301: A Permissible Enforcement Mechanism or Violation of the United States' Obligations Under International Law?*, 11 J. L. & COM. 283 (1992).

[84] These issues are beyond the scope of this comment. They are mentioned to alert the reader to concerns raised by the unilateral application of Special 301.

[85] 1995 TRADE POLICY AGENDA, *supra* note 12.

[86] "On the basis of section 301 . . . the U.S. often threatens unilaterally to impose sanctions against allegedly 'unfair' trade practices of foreign countries. Most contracting parties of the WTO consider such unilateral resolutions of trade disputes to contradict the multilateral mechanisms for dispute resolution of the WTO." Yosho Ohara, The Princeville Dialogue and Related Papers on Antitrust: A New International Trade Remedy? 41 (1995) (on file with the author). Criticism will continue to grow if the DSU proves to be effective.

Sumitomo, a Japanese corporation, made and sold a product exactly the same as Genentech, except for one amino acid at the 245th position.[70] Genentech sued Sumitomo for infringement. The Osaka District Court held that there was no literal infringement because of the substituted amino acid.[71] Genentech argued unsuccessfully that the substitution was minor and inconsequential, thus being an equivalent of its TPA.[72] U.S. sentiment was that in a U.S. court, Genentech could have obtained relief based upon a showing of infringement under the doctrine of equivalents.[73]

As a result of the case, industry groups and Congress presumed the USTR to use Special 301 to negotiate a change of Japanese laws protecting biotechnological patents.[74] An additional concern was the possible use of the *Genentech* case to negotiate unfair licenses for similar patents held by other U.S. companies.

The historical treatment of Japan in the Special 301 process underscores the use of the review as a tool in the larger framework of trade negotiations and overall foreign policy. Despite strong pressure from U.S. industry and damages that are comparable to cited PFC countries,[75] Japan has never been identified as a PFC.[76]

The 1995 Special 301 review took place in the wake of a Memorandum of Understanding between the United States and Japan and during a regular Section 301 assessment of the Japanese replacement auto

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[70] *Id.* at 28-29.

[71] *Id.* at 29-30.

[72] *Id.*

[73] The doctrine of equivalents is a doctrine whereby patent infringement, while not literal, may be found when there is proof of insubstantial differences between the claimed and accused products or processes. Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1521-22, 35 U.S.P.Q.2d (BNA) 1641, 1648 (Fed. Cir. 1995) (en banc).

[74] Letter from Gerald J. Mossinghoff, *supra* note 4.

[75] *Id.*

[76] *See* Appendix A.

the petition requirements are met, the Commission may, but is not required to, hold consultations with the foreign government.[56] The Commission and Council have broad discretion in deciding whether to retaliate.[57] As with Section 301, Council Regulation 2641/84 mandates an international dispute resolution proceeding if required by an international agreement.[58] Despite its availability, Council Regulation 2461/84 has only been invoked in six cases.[59] In comparison, forty-four Section 301 actions were initiated after the passage of Council Regulation 2641/84, including one resulting from the Special 301 review.[60]

III. PRACTICAL OPERATION OF SPECIAL 301

In 1995, the seventh Special 301 review was conducted. Just as a level of predictability of ratings by the USTR has emerged, TRIPS will change the complexion of the review by substantially reducing the disparity of intellectual property protection proscribing the use of DSU procedures.

Four countries have been identified as PFC's a combined total of ten times.[61] In each instance, the lack of a legal framework to enforce intellectual property rights was the major factor in the determination.[62] None of the PFC's were highly industrialized countries, and the areas most affected were patent and copyright.[63]

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[56] *Id.* art. 6(1)(b).

[57] *See Retaliatory Action, supra* note 51, at 78-80.

[58] 19 U.S.C. § 2413(a)(2) (1994); Reg. 2641/84, *supra* note 50, art. 10(2).

[59] *See Retaliatory Action, supra* note 51, at 89.

[60] Office of the United States Trade Representative, *Section 301 Table of Cases* (1995) (on file with author); *see* Appendix B.

[61] *See* Appendix B.

[62] General Accounting Office, *Intellectual Property Rights: U.S. Trade Representative Investigations of Foreign Country Practices*, GAO/GGD-94-168FS (July 1994).

[63] *Id.*

Retaliatory action is mandatory[38] if the USTR determines that the rights of the United States under a trade agreement are being denied, or the country's actions are inconsistent with a trade agreement or are unjustifiable and burdens or restricts U.S. commerce.[39] Discretionary action is authorized where the foreign country's actions are unreasonable or discriminatory thereby causing a burden on U.S. commerce, and the USTR determines that action by the United States is appropriate.[40] Responsive actions available to the United States include those specifically provided by statute[41] as well as those authorized pursuant to the broad powers of the President to affect trade in goods and services, or any other relations with the foreign country.[42]

Procedurally, Special 301 is consistent with the World Trade Organization ("WTO")[43] Dispute Settlement Understanding ("DSU").[44] WTO Members must use the DSU procedures when they seek to address a violation of the Uruguay Round Agreement.[45] Also, no WTO member may determine that another Member has violated the Uruguay Round Agreement before a DSU panel has reached that conclusion.[46] However, if the dispute is not resolved within eighteen months of "priority foreign country" identification,[47] then the USTR is required by Special 301 to make

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[38] Several findings can place the retaliation as discretionary. *Id.* § 2411(a)(2).

[39] *Id.* § 2411(a)(1).

[40] *Id.* § 2411(b).

[41] *Id.* § 2411(c).

[42] *Id.* § 2411(a), (b).

[43] The World Trade Organization ("WTO") is the successor organization to GATT; *see* William J. Davey, *The WTO/GATT World Trading System: An Overview*, *in* 1 HANDBOOK OF WTO/GATT DISP. SETTLEMENT 7 (1995).

[44] Understanding on Rules and Procedures Governing Settlement of Disputes, Annex: 2 to WTO Agreement [hereinafter DSU].

[45] *Id.* Art. 1.

[46] *Id.* Art. 1.

[47] *See* 19 U.S.C. § 2242 (1994).

Submission of the NTE triggers a thirty-day deadline for the identification, in the Special 301 review, of countries that deny adequate protection of intellectual property rights or market access for U.S. intellectual property.[21] Identified countries are labelled "priority foreign countries."[22] In addition, the USTR employs several non-statutory categories to apprise countries of their respective status. In descending order of severity they are: "priority foreign countries;" a "priority watch list;"[23] a "watch list;"[24] and "special mention."[25]

Three criteria identify a Priority Foreign Country ("PFC"). First, the country must act in such ways or have policies that deny adequate protection for intellectual property rights or market access for those who rely on intellectual property protection.[26] Second, these practices must have the greatest actual or potential impact on the relevant U.S. products.[27] Finally, a PFC label can be avoided if the target country either enters into good faith negotiations or makes significant progress in bilateral or

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[21] 19 U.S.C. § 2242(a) (1994).

[22] *Id.* § 2242(a)(2).

[23] Created by the USTR in 1989, placement on the priority watch list or watch list indicates that particular problems exist with respect to the protection or enforcement of intellectual property rights or market access for persons relying on intellectual property. Office of the United States Trade Representative, *Results of Special 301 Review* (Apr. 30, 1989).

[24] *Id.*

[25] In 1994, "the USTR determined that, while some countries had made progress in improving the level of intellectual property protection, there is need for greater effort or further improvement. In other instances, intellectual property problems are beginning to become serious. The Administration has placed these countries in the 'special mention' category to draw attention to areas of concern." Office of the United States Trade Representative, *"Special 301" on Intellectual Property* 13 (Apr. 30, 1994). See Appendix A for Cumulative Special 301 listings.

[26] 19 U.S.C. § 2242(b)(1)(A) (1994).

[27] This does not mean that the practice or policies must have the greatest impact on the entire U.S. economy. *Id.* § 2242(b)(1)(B).

("TRIPS")[11], raises several issues in regards to the use of Special 301. Whereas the primary focus of Special 301 before TRIPS was the level of legal protection and enforcement afforded by a country, now, as a result of TRIPS, there exist baseline definitions and protection for intellectual property. This Article examines Special 301 to provide a context in which to address its past performance, its current use, and the role it will play in the future. Appendices A and B summarize the Special 301 actions since inception. Appendix C sets forth the entire text of Special 301.

II. STATUTORY FRAMEWORK

As described in the 1995 Trade Policy Agenda, Section 301 of the Trade Act of 1974, as amended, is the principal U.S. statute for addressing foreign unfair trade practices affecting U.S. export of goods and services.[12] Available to enforce U.S. rights under both bilateral and multinational agreements, Section 301 may also be used to respond to unreasonable, unjustified, or discriminatory foreign government practices that burden or restrict U.S. commerce. For example, Section 301 may be used to increase export opportunities for U.S. goods and services, provide more equitable conditions for U.S. investment abroad, and obtain more effective protection worldwide for U.S. intellectual property.[13]

Section 301 provides a domestic procedure whereby affected enterprises or individuals may petition the USTR to investigate a foreign government policy or practice and take affirmative steps to remedy the offending practice. The USTR may also initiate an investigation on its own initiative. In each investigation the USTR must consult with the foreign government whose practices are under investigation.[14]

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[11] The Agreement on Trade-Related Aspects of Intellectual Property Rights, Including Trade in Counterfeit Goods, *opened for signature* Apr. 15, 1994, 33 I.L.M. 81 [hereinafter TRIPS].

[12] OFFICE OF THE UNITED STATES TRADE REPRESENTATIVE, 1995 TRADE POLICY AGENDA AND 1994 ANNUAL REPORT OF THE PRESIDENT OF THE UNITED STATES ON THE TRADE AGREEMENTS PROGRAM 10 (1995) (on file with author) [hereinafter 1995 TRADE POLICY AGENDA].

[13] *Id.*

[14] *Id.*

I. INTRODUCTION

The protection of intellectual property is a long held tradition in the United States.[1] Through this respect for innovation, the United States has traditionally maintained a large surplus in the international trade of intellectual property.[2] However, this concept of protection is not universally held, and, as a result, much time and effort is spent on creating, defining, and enforcing these rights.[3] While these noble efforts are undertaken, U.S. firms lose billions of dollars to those who pirate and deprive authors and inventors of the financial benefits of their proprietary ideas.[4]

In 1988, dissatisfied with the level of international protection for intellectual property and multilateral efforts designed to heighten protection, Congress created section 182 of the Omnibus Trade Act of 1974.[5] Section 182, commonly referred to as "Special 301," is a means by which the United States can identify countries that deny adequate intellectual property

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[1] The first colonial statute granting patent rights was issued in 1641 when Samuel Winslow was given the exclusive right to manufacture salt by his own method. Jeremiah L. MacCauliffe, *Patents and Their Purpose*, 14 J. PAT. & TRADEMARK OFF. SOC'Y 253 (1932).

[2] In 1991, U.S. total receipts from intellectual property trade approached $18 billion. During the period from 1987-91, U.S. firms' receipts were four to five times the amount of payments to foreign firms. NATIONAL SCIENCE FOUNDATION, SCIENCE AND ENGINEERING INDICATORS 167 (1994).

[3] For example, the World Intellectual Property Organization ("WIPO") is a body devoted to the administration of several treaties on intellectual property. Efforts within WIPO were recently concentrated on drafting a patent harmonization treaty. These efforts have limited chance of success due to the inclusion of intellectual property in the Uruguay Round of the General Agreement on Tariffs and Trade. *See* Monique L. Cordray, *GATT v. WIPO*, 76 J. PAT. & TRADEMARK OFF. SOC'Y 121 (1994).

[4] Letter from Gerald J. Mossinghoff, President, Pharmaceutical Research and Manufacturers of America, to Michael Kantor, Ambassador, United States Trade Representative (Feb. 13, 1995) (on file with author) [hereinafter Letter from Gerald J. Mossinghoff].

[5] Trade Act of 1974, § 182, Pub. L. No. 93-618, 88 Stat. 1978, 1999, § 141 (1974), *amended by* Omnibus Trade and Competitive Act of 1988, Pub. L. No. 100-418, 102 Stat. 1107, 1179, § 1303 (codified *as amended* at 19 U.S.C. § 2242 (1994)).

or public disclosure predominates,"[123] which must include one or more of the following determinations:

> (1) [t]hat the documents or materials contain highly intimate or embarrassing facts or statements, the publication of which would be highly objectionable to the reasonable person, or
> (2) [t]hat the documents or materials contain facts or statements that the court finds might be libelous, or
> (3) [t]hat the documents or materials contain facts or statements, the dissemination or publication of which would reasonably result in economic or financial loss or harm . . . , or
> (4) [t]hat the documents or materials contain facts or statements that might threaten or endanger the life or safety of individuals.[124]

Any interested person or the court may move to seal or unseal records upon motion, notice, and hearing.[125] The court must issue a written decision, which it may reconsider, alter, or amend at any time.[126]

I. *Michigan*

Michigan Court Rule 8.105 provides that:

> a court may not enter an order that seals court records . . . in any action or proceeding, unless
>
> (a) a party has filed a written motion that identifies the specific interest to be protected,
>
> (b) the court has made a finding of good cause, in writing or on the record, which specifies the grounds for the order, and

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[123] *Id.*

[124] *Id.*

[125] *Id.*

[126] *Id.* at r. 32(k).

C. *Virginia*

The Virginia public access statute provides that a protective order to prevent disclosure of materials relating to a personal injury or wrongful death action will not prohibit an attorney from sharing the information with an attorney involved in a similar matter, after gaining permission of the court.[112] The statute requires that any party protected by a protective order be given notice and an opportunity to be heard before the court orders any sharing of materials.[113]

D. *Delaware And New York*

Delaware and New York have adopted rules requiring that a party show "good cause" before a court can order the sealing of court records. The New York rule does not affect protective orders or discovery.[114] The Delaware rule applies to all documents filed with the court, but often it is unnecessary to file discovery with the court.[115]

E. *North Carolina*

The North Carolina legislature has enacted a statute prohibiting the state from entering into confidential settlement agreements.[116]

F. *Oregon*

The State of Oregon cannot enter into confidential settlement agreements unless the court makes written findings of fact that the privacy

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[112] VA. CODE ANN. §§ 8.01-420.01A (Michie Supp. 1991).

[113] *Id. See generally* Nissen, *supra* note 48, at 955.

[114] N.Y. R. CT. r. 216.1 (McKinney 1995). *See generally* Nissen, *supra* note 48, at 956 (discussing lack of clear meaning of "good cause" under New York law).

[115] DEL. R. ANN. r. 5(g) (Michie 1994); *BNA's 50 State Survey, supra* note 43, at 15.

[116] N.C. GEN. STAT. § 132-1.3(a) (1994). *See generally* Nissen, *supra* note 48, at 955.

If the court finds that the documents are "court records," then the presumption of openness attaches. "At that point, the party moving for the sealing order has the burden to show by a preponderance of the evidence that the court records, though presumed open to the general public, should be sealed nonetheless for the reasons set forth in 76a(1)."[99]

Evoking the general procedures under 76a(1) can be time consuming. Testimony may be necessary to show that each document does not concern matters of public health and safety or the administration of government.[100] The procedures can create practical difficulties. For example, in *Ford Motor Co. v. Benson*,[101] Ford refused to produce any documents until the court entered a protective order.[102] Thus, the party claiming that the documents should be open to the public had no access to the documents before the hearing and therefore was unable to show that the documents were "court records" or that the documents would have an adverse effect upon the general public health or safety.

Texas Rule 76a has created additional litigation costs. For example, "[a]ny order . . . relating to sealing or unsealing of court records shall be deemed to be severed from the case and a final judgment which may be appealed by any party or intervenor who participated in the hearing preceding issuance of such order."[103] Because orders under Rule 76a are immediately appealable, satellite litigation has resulted.[104] "Through February 18, 1993, motions to seal had been filed in 202 different cases.

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[99] *Biffle*, 868 S.W.2d at 809.

[100] *See, e.g.*, Dunshie v. General Motors Corp., 822 S.W.2d 345, 347-48 (Tex. Ct. App. 1992).

[101] Ford Motor Co. v. Benson, 846 S.W.2d 487 (Tex. Ct. App. 1993).

[102] *Id.* at 491-92.

[103] TEX. R. CIV. P. ANN. r. 76a(8) (West 1995).

[104] *See* Nissen, *supra* note 48, at 953-54; *see also* Public Citizen v. Insurance Serv. Office, Inc., 824 S.W.2d 811 (Tex. Ct. App. 1992) (where consumer advocate group intervened and moved to vacate protective order).

certain settlement agreements and unfiled discovery.[85] One commentator believes that the inclusion of unfiled discovery has led to added satellite litigation and has decreased the number of settlements.[86]

There are three ways to avoid disclosure of "court records" under Rule 76a: (1) show that the suit was brought to preserve a trade secret or other intangible property right;[87] (2) enter into an agreed protective order; or (3) make the showings required by Rule 76a(1)(a)-(b).

As to suits originally brought to protect trade secrets or other intangible property rights, presumably the movant would merely have to show that the suit was "originally initiated to preserve bona fide trade secrets or other intangible property rights."[88] If so, on the face of the rule, unfiled discovery would not be "court records," even if nondisclosure of the information would "have a probable adverse effect upon the general public health or safety, or the administration of public office, or the operation of government."[89] The vagueness of this exception has led one commentator to question (1) the difference between "bona fide" trade secrets and other trade secrets, and (2) what "other intangible property rights" includes.[90]

In suits not filed to preserve bona fide trade secrets, the dictates of Rule 76a can be minimized by negotiating an agreed protective order.[91]

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[85] *See* TEX. R. CIV. P. ANN. r. 76a(2) (West 1995); *see also* Sickler & Heim, *supra* note 84, at 96; *see generally* Nissen, *supra* note 48, at 931. It is interesting to note that "the Advisory Committee [to the Texas Supreme Court] specifically voted not to include unfiled discovery within the Rule." *Id.* at 936.

[86] *E.g.*, Nissen, *supra* note 48, at 958.

[87] *See* TEX. R. CIV. P. ANN. r. 76a(2)(c) (West 1995).

[88] *See* Sickler & Heim, *supra* note 84, at 96.

[89] TEX. R. CIV. P. ANN. r. 76(a)(2)(c) (West 1995).

[90] Sickler & Heim, *supra* note 84, at 96-97.

[91] *Id.* at 101-03 (citing Ford Motor Co. v. Benson, 846 S.W.2d 487, 491 (Tex. Ct. App. 1993)).

matters having a probable adverse effect upon the general public health or safety" is at risk in Texas of losing those trade secrets. One can imagine that arguments opposing protective orders might be raised against owners of trade secrets relating to drugs and medical technology, chemical and environmental technology, foods, and virtually any technology that has the potential for involvement in injuries or death.

a. *Trade Secrets*

Rule 76a does not define the type of "specific, serious and substantial interest" that will justify sealing. The original advisory committee draft of the rule set forth a nonexclusive list of "protectible interests" which would support the issuance of a sealing order. These interests included "(a) a right of privacy or privilege established by law; (b) constitutional rights; (c) trade secrets; [and] (d) the protection of the identity or privacy of an individual who has been the subject of a sexually related assault or injury."[76]

The Texas Supreme Court has held that "a properly proven trade secret is an interest that should be considered in making the determination required by Rule 76a."[77] Although the court did not say that a properly proven trade secret is a "specific, serious and substantial interest" that justifies sealing, the court appears to recognize the need to protect trade secrets.[78]

Until promulgation of Rule 76a, Texas courts granted protective orders upon a showing of good cause.[79] As a general rule, the protection of

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[76] Memorandum from Chuck Herring & Lefty Morris to the Texas Supreme Court Advisory Committee, attachment A (Feb. 9, 1990), *in* 2 TEXAS SUPREME COURT ADVISORY COMMITTEE, RULE 76A: TRANSCRIPTS, AGENDAS, CORRESPONDENCE 1989-90, at 444 (1990).

[77] Eli Lilly & Co. v. Marshall, 829 S.W.2d 157, 158 (Tex. 1992); *see also* Upjohn Co. v. Freeman, 906 S.W.2d 92 (Tex. Ct. App. 1995) (affirming trial court's order sealing documents because they contain trade secrets).

[78] For example, in another case, the Texas Supreme Court stated that "[a]t a time of rapid technological change, genuine trade secrets certainly deserve the continued protection that our Texas courts have traditionally afforded." Chapa v. Garcia, 848 S.W.2d 667, 670 (Tex. 1992).

[79] TEX. R. CIV. P. ANN. r. 166b(5)(c) (West 1995).

proceedings, upon payment of the fee required for filing a plea in intervention. The court may inspect records in camera when necessary. The court may determine a motion relating to sealing or unsealing court records in accordance with the procedures prescribed by Rule 120a.

76a(5) Temporary Sealing Order. A temporary sealing order may issue upon motion and notice to any parties who have answered in the case pursuant to Rules 21 and 21a upon a showing of compelling need for specific facts shown by affidavit or by verified petition that immediate and irreparable injury will result to a specific interest of the applicant before notice can be posted and a hearing held as otherwise provided herein. The temporary order shall set the time for the hearing required by paragraph 4 and shall direct that the movant immediately give the public notice required by paragraph 3. The court may modify or withdraw any temporary order upon motion by any party or intervenor, notice to the parties, and hearing conducted as soon as practicable. Issuance of a temporary order shall not reduce in any way the burden of proof of a party requesting sealing at the hearing required by paragraph 4.

76a(6) Order on Motion to Seal Court Records. A motion relating to sealing or unsealing court records shall be decided by written order, open to the public, which shall state: the style and number of the case; the specific reasons for finding and concluding whether the showing required by paragraph 1 has been made; the specific portions of court records which are to be sealed; and the time period for which the sealed portions of the court records are to be sealed. The order shall not be included in any judgment or other order but shall be a separate document in the case; however, the failure to comply with this requirement shall not affect its appealability.

76a(7) Continuing Jurisdiction. Any person may intervene as a matter of right at any time before or after judgment to seal or unseal court records. A court that issues a sealing order retains continuing jurisdiction to enforce, alter, or vacate that order. An order sealing or unsealing court records shall not be reconsidered on motion of any party or intervenor who had actual notice of the hearing

public hazard or any information concerning a public hazard or any information that may be useful to members of the public in protecting themselves from injury that may result from the public hazard.

B. *Texas—Public Access To Discovery Concerning Matters Having A Probable Adverse Effect Upon The General Public Health Or Safety*

1. The Language Of The Rule

Texas Rule of Civil Procedure 76a provides in full:

76a(1) Standard for Sealing Court Records. Court records may not be removed from court files except as permitted by statute or rule. No court order or opinion issued in the adjudication of a case may be sealed. Other court records, as defined in this rule, are presumed to be open to the general public and may be sealed only upon a showing of all of the following:

(a) A specific, serious and substantial interest which clearly outweighs:
  (1) this presumption of openness;
  (2) any probable adverse effect that sealing will have upon the general public health or safety;

(b) no less restrictive means than sealing records will adequately and effectively protect the specific interest asserted.

76a(2) Court Records. For purposes of this rule, court records means:

(a) all documents of any nature filed in connection with any matter before any civil court, except:
  (1) documents filed with a court in camera, solely for the purpose of obtaining a ruling on the discoverability of such documents;
  (2) documents in court files to which access is otherwise restricted by law;

"pertinent to public hazards" is a narrower or broader class than information that would conceal "a public hazard or any information concerning a public hazard . . . or any information which may be useful to members of the public in protecting themselves from injury which may result from the public hazard."[63]

After the 1991 amendment of the Act, any portion of a settlement agreement with the government that might conceal information concerning the settlement "is void, contrary to public policy, and may not be enforced."[64] However, this rule concerning government settlement agreements does not apply to trade secrets.[65]

Thus, the inconsistency is that under the Florida statute, government settlement agreements may protect any and all trade secrets, but otherwise, any agreement (not just settlement agreements) is void, contrary to public policy, and may not be enforced to the extent that the agreement seeks to conceal trade secrets that are pertinent to public hazards.

c. *Procedure*

Upon a motion seeking a protective order to prevent disclosure of information or materials,[66] a Florida court must "examine the disputed

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[63] In General Motors Corp. v. Dickerson, 654 So. 2d 1036 (Fla. Dist. Ct. App. 1995), the appellate court quashed a trial court's denial of a protective order. The trial court order adopted a Special Master's finding that none of the 50,000 documents submitted to the Special Master for protection under the trade secret privilege were entitled to protection. *Id.* at 1036-37. The appellate court stated that it "does not matter whether the [trial] court's denial of [the] protective order is based on the statute [the Sunshine in Litigation Act] or an alleged need to protect trade secrets." *Id.* at 1037 n.1.

[64] FLA. STAT. ch. 69.081(8)(a) (1994).

[65] *Id.* ch. 69.081(8)(c).

[66] Although the Florida statute does not require public notice of motions for protective orders, the statute permits "any substantially affected person, including but not limited to representatives of news media" to contest any order that violates the Act. A third party may challenge an order or judgment by filing a motion with the court or by bringing a declaratory judgment action. *Id.* ch. 69.081(6).

2. Analysis

a. *Public Hazard*

In essence, the Act precludes and voids any court order or judgment that would conceal "a public hazard or any information concerning a public hazard" or "any information which may be useful to members of the public in protecting themselves from injury which may result from the public hazard."[52] Thus, the concept of what constitutes a "public hazard" is central to the statute. The statute defines a "public hazard" as: "an instrumentality, including but not limited to any device, instrument, person, procedure, product, or a condition of a device, instrument, person, procedure or product, that has caused and is likely to cause injury."[53]

The breadth of the Florida statute is exemplified by the refusal of a Florida court of appeals to enforce a confidentiality order governing certain depositions in an action against an asbestos manufacturer.[54] The court relied in part on the Sunshine in Litigation Act and held that, notwithstanding the general public awareness of the dangerousness of asbestos, the depositions were governed by the statutory ban on any court order that conceals "any information concerning a public hazard."[55]

However, another Florida court of appeals set aside a trial court's "ruling that would have unsealed thousands of documents involving the . . . fungicide Benlate," citing procedural due process concerns.[56] The trial court determined that the evidence at trial, combined with Florida's declaration that Benlate is a public health hazard, were sufficient to dissolve

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[52] FLA. STAT. ch. 69.081(3)-(4) (1994).

[53] *Id.* ch. 69.081(2).

[54] ACandS, Inc. v. Askew, 597 So.2d 895, 897 (Fla. App. 1992).

[55] *Id.* at 898.

[56] *Florida Appeals Court Sets Aside Ruling Aimed at Opening DuPont Fungicide Files*, 9 Toxics L. Rep. (BNA) No. 41, at 1129 (Mar. 22, 1995) (discussing E.I. DuPont Nemours & Co. v. Lambert, 654 So. 2d 226 (Fla. Dist. Ct. App. 1995)).

in protecting themselves from injury which may result from the public hazard.

(4) Any portion of an agreement or contract which has the purpose or effect of concealing a public hazard, any information concerning a public hazard, or any information which may be useful to members of the public in protecting themselves from injury which may result from the public hazard, is void, contrary to public policy, and may not be enforced.

(5) Trade secrets as defined in s. 688.002 which are not pertinent to public hazards shall be protected pursuant to chapter 688.

(6) Any substantially affected person, including but not limited to representatives of news media, has standing to contest an order, judgment, agreement, or contract that violates this section. A person may contest an order, judgment, agreement, or contract that violates this section by motion in the court that entered the order or judgment, or by bringing a declaratory judgment action pursuant to chapter 86.

(7) Upon motion and good cause shown by a party attempting to prevent disclosure of information or materials which have not previously been disclosed, including but not limited to alleged trade secrets, the court shall examine the disputed information or materials in camera. If the court finds that the information or materials or portions thereof consist of information concerning a public hazard or information which may be useful to members of the public in protecting themselves from injury which may result from a public hazard, the court shall allow disclosure of the information or materials. If allowing disclosure, the court shall allow disclosure of only that portion of the information or materials necessary or useful to the public regarding the public hazard.

(8)(a) Any portion of an agreement or contract which has the purpose or effect of concealing information relating to the settlement or resolution of any claim or action against the state, its agencies, or subdivisions or against any municipality or constitutionally created body or commission is void, contrary to public policy, and may not be enforced.

III. STATE LEGISLATIVE EFFORTS TO BROADEN THE PUBLIC RIGHT OF ACCESS

By late 1992, six states had enacted laws restricting or limiting to some degree the use of protective orders, although, due in part to strong opposition from both industry and the defense bar, another twenty-seven states had rejected similar proposals.[43] At least nine states have recently enacted or adopted some form of public access laws or rules. Further, each year, new statutes and rules are proposed or reintroduced. For example, in 1993, protective order legislation was introduced in nine states: Connecticut, Hawaii, Illinois, Louisiana, Massachusetts, Mississippi, Pennsylvania, Tennessee, and Washington.[44]

Since 1989, several state legislatures have attempted to limit the availability of protective orders covering documents and information produced during discovery, particularly in product liability actions. The state legislatures have:

1. heightened the standard necessary to show "good cause" for entering a protective order;

2. "permitted nonparties to intervene in protective order motions";

3. permitted the "sharing of information among parties bringing similar actions";

4. prohibited the entry of protective orders when the government is a party; and

5. "prohibited settlement agreements from containing a provision requiring the return or destruction of documents."[45]

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[43] *See Protective Orders--BNA's 50 State Survey*, Prod. Safety & Liab. Rep. (BNA) No. 47, at 10-32 (Nov. 27, 1992) [hereinafter *BNA's 50 State Survey*]; *see also* Rogers & Kennedy, *supra* note 9, at 319.

[44] Rogers & Kennedy, *supra* note 9, at 320 n.4.

[45] *Id.* at 319.

> not be invaded for other purposes and that need not be surrendered as part of the process of judicial decision.[29]

The Committee concluded, however, that further study of the topic of general public access was untimely.[30] There is currently no action planned on the proposed rule.

C. *Proposed Litigation In The Sunshine Act Of 1993—And 1995*

Senator Herbert Kohl (D. Wisc.) has been actively pushing for legislation concerning protective orders. In the last Congress, he introduced the Litigation in the Sunshine Act of 1993 "'to combat a dangerous trend: secret court settlements and confidentiality orders which prevent people from gaining access to vital information about threats to public health and safety.'"[31] This bill died a procedural "death;"[32] therefore, in 1994, Senator Kohl urged the Federal Judicial Conference to require courts to consider evidence on the health and safety effects of protective orders before granting them.[33]

He has also reintroduced his bill because he believes the amendment proposed by the Federal Judicial Conference "is . . . an incomplete solution."[34] In the 104th Congress, Senator Kohl introduced the Sunshine in Litigation Act of 1995.[35] This bill is "essentially identical" to the 1993

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[29] *Id.* at 29.

[30] *Id.*

[31] *Wisconsin Senator Introduces Measure Limiting Protective Orders, Agreements*, 8 Toxics L. Rep. (BNA) No. 11, at 307 (Aug. 18, 1993) (quoting 139 CONG. REC. S10,854 (daily ed. Aug. 6, 1993) (statement of Senator Kohl)).

[32] Reske, *supra* note 4, at 32.

[33] Richard Schmitt, *Protective Orders to Get a Fresh Look by Judicial Panel*, WALL ST. J., Oct. 14, 1994, at B3.

[34] 141 CONG. REC. S2339 (daily ed. Feb. 8, 1995) (remarks of Senator Kohl).

[35] S. 374, 104th Cong., 1st Sess. (1995) [hereinafter S. 374].

The Committee stated that this provision was to "dispel any doubt whether the power to enter a protective order includes power to modify or vacate the order."[21]

Third, the Committee analyzed how to place the burden to grant, dissolve, or modify protective orders. The Committee recognized that the competing interests between permitting certain information to remain protected from discovery and allowing public access require careful balance. The Committee stated:

> The question whether to modify or dissolve a protective order is, apart from the question of reliance, much the same as the initial determination whether there is good cause to enter the order. An almost infinite variety of interests must be weighed. The public and private interests in defeating protection may be great or small, as may be the interests in preserving protection. Special attention must be paid to a claim that protection creates a risk to public health or safety. If a protective order actually thwarts publication of information that might help protect against injury to person or property, only compelling reasons, if any, could justify protection. Claims of commercial disadvantage should be examined with particular care and mere commercial embarrassment deserves little concern. On the other hand, it is proper to demand a realistic showing that there is a need for disclosure of protected information.[22]

These competing concerns were raised "[t]hroughout the discussion of other proposed changes."[23]

On March 14, 1995, it was announced that the Judicial Conference of the United States, the principal policy-making body for the federal court system, had voted to delete language in the proposed rule that would have

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[21] *Id.* at 6.

[22] Memorandum of the Administrative Office of the United States Courts 9 (June 1995) [hereinafter Memorandum] (on file with the authors).

[23] Letter, *supra* note 15, at 9.

> among other matters, the following: (i) the extent of reliance on the order; (ii) the public and private interests affected by the order, including any risk to public health or safety; . . . and (v) the burden that the order imposes on persons seeking information relevant to other litigation.[13]

The Committee met in April 1994 to review written comments on the proposed changes to Rule 26(c) and the initial results of a Federal Judicial Center study on the effects of protective orders. At that time, the Committee recommended broadening the study to gain more meaningful information and delayed action on the proposed changes until at least October 1994 to await final results of the study.[14] There was a public meeting in Tucson, Arizona on October 20-22, 1994 to discuss the proposed changes. The Committee considered whether to amend its proposed rule to permit nonparties to challenge a protective order under guidelines similar to, or by reference to, the rules for intervention provided in Rule 24(b).

At the October meeting, the Federal Judicial Center presented its preliminary results. The Center had studied three different districts for three years each and found as follows: "[T]here was protective order activity in . . . 4.7% to 10.0% of all cases;"[15] "most protective order activity is initiated by

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[13] COMMITTEE ON RULES OF PRACTICE AND PROCEDURE, JUDICIAL CONFERENCE OF THE UNITED STATES, REQUEST FOR COMMENT ON PRELIMINARY DRAFT OF PROPOSED AMENDMENTS TO THE FEDERAL RULES OF APPELLATE, BANKRUPTCY, CIVIL, CRIMINAL PROCEDURE AND EVIDENCE, 120-121 (1995), *reprinted in* WEST'S FEDERAL SUPPLEMENT CCLX-CCLXI (1995) (softbound edition containing 894 F. Supp. 465-1583 and 895 F. Supp. 1-315, dated October 16, 1995).

[14] Judicial Conference Minutes, *supra* note 12, at 8.

[15] Letter from the Honorable Patrick E. Higginbotham to Members of the Committee on Rules of Practice and Procedure Standing Committee, attachment A, at 8 (Dec. 13, 1994) [hereinafter Letter] (on file with the authors). The Committee noted that the actual figure was probably somewhat higher, because the Federal Judicial Center's analysis did not take into account whether there had been discovery in the case, or whether there had been substantial discovery.

for greater public access include the media, personal injury plaintiffs, attorney groups, and consumer protection groups.[6]

In response, some courts and state legislatures have made it more difficult to obtain protective orders.[7] On the federal level, all three branches of the government are examining the practice of sealing court records as a condition of settlement or payment of a verdict in civil suits: Congress is considering legislation to limit protective orders, the Department of Justice has included issues relating to protective orders in its civil justice reform study, and the Judicial Conference of the United States is considering proposed changes to the Federal Rules of Civil Procedure.[8]

Opponents of expanded public access argue that existing rules have not kept health hazards secret and that judges should be allowed discretion to determine the scope of protection on a case-by-case basis.[9] Moreover, opponents of the movement argue, the promise of confidentiality is an incentive to disclose more information, aiding particularly the discovery and

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presumed public because there is an "abiding presumption of access to trial records," *Poliquin*, 989 F.2d at 533, and "[o]nly the most compelling reasons can justify non-disclosure of judicial records," FTC v. Standard Fin. Management Corp., 830 F.2d 404, 410 (1st Cir. 1987) (quoting *In re* Knoxville News-Sentinel Co., 723 F.2d 470, 476 (6th Cir. 1983)). On the other hand, a litigant must make a lesser "good cause" showing to protect the "raw fruits of discovery" from disclosure because of the liberality of pretrial discovery and the significant potential for abuse. *Poliquin*, 989 F.2d at 533; *see also Seattle Times*, 467 U.S. at 34-36. This dividing line between discovery materials and judicial records "accords with long-settled practice in this country separating the presumptively private phase of litigation from the presumptively public." *Poliquin*, 989 F.2d at 533 (citing Cowley v. Pulsifer, 137 Mass. 392 (1884) (Holmes, J.)).

[6] *See, e.g.*, Benjamin Weiser, *When Secrecy Orders Hide Dangerous Products*, WASHINGTON POST NAT'L WKLY. ED., Aug. 1-7, 1994, at 32.

[7] *See, e.g., In re* Agent Orange Prod. Liab. Litig., 821 F.2d 139 (2d Cir. 1987), *cert. denied*, 484 U.S. 953 (1987); TEX. R. CIV. P. ANN. r. 76a (West 1995); FLA. STAT. ch. 69.081 (1994).

[8] Reske, *supra* note 4, at 32.

[9] *E.g.*, Richard A. Rogers & Karen Steinberg Kennedy, *New Developments in State Protective Order Legislation and Procedural Rules*, C915 ALI-ABA, Winter 1994, at 315, 319.

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