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# The Antitrust Laws and the Rights of Patentees: A Defense of Limited Compulsory Licensing

Brian W. Peckham\*

## I. INTRODUCTION

In December of 1953 the eleven members of the Automobile Manufacturers Association entered into an agreement providing for cooperative research on the development of devices for the control of vehicle emissions. In July of 1955 the members of the Association further agreed to exchange royalty-free, nonexclusive licenses to any relevant technical information in their possession. Moreover, the auto makers agreed to purchase in concert and at jointly determined prices any inventions in this field offered to any of them by parties outside the agreement.<sup>1</sup>

This patent pool eventually attracted the attention of officials in the Antitrust Division of the United States Department of Justice, who became concerned that it was primarily an artifice for the suppression of competition within the automobile industry in the design and purchase of technologies for the abatement of vehicular air pollution. Accordingly, in January 1969 attorneys for the Antitrust Division filed a complaint alleging that the members of the Automobile Manufacturers Association had conspired by means of their cross-licensing agreement to violate the Sherman Act and requesting that the court grant appropriate injunctive relief.<sup>2</sup> According to the government's attorneys, the patent pool was but part of a collusive scheme to control the development and disclosure of methods for abating automobile emissions in order to delay the imposition of strin-

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1. *Clean Air: Hearings Before a Special Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works*, 88th Cong., 2d Sess. 857-58 (1964) (statement of H.A. Williams, Managing Director, Automobile Mfrs. Ass'n).

2. *United States v. Automobile Mfrs. Ass'n*, 307 F. Supp. 617 (C.D. Cal. 1969), *aff'd per curiam sub nom. City of New York v. United States*, 397 U.S. 248 (1970).

gent governmental regulations.

Answering the complaint, the leading auto manufacturers denied any improper motives in setting up their patent pool. They insisted that they had established the pool solely to facilitate joint research on pollution control and that it had served this purpose very well by promoting the free exchange of technical information and the avoidance of the waste of duplicative research.<sup>3</sup>

The consent decree which settled the case in October 1969 required the members of the manufacturer's association to dissolve their 1955 cross-licensing agreement. It enjoined them from colluding in the purchase of patent rights offered to them by outsiders and from exchanging among themselves patented and unpatented technology relating to pollution control devices.<sup>4</sup>

The *Automobile Manufacturers* case illustrates how the pursuit of cooperative research by patent pooling can collide with the restrictions of the antitrust statutes. Similar conflicts can arise when parties to a joint research project condition the licensing of their patents upon compliance by licensees with controls on their pricing, marketing, or product development.<sup>5</sup>

These examples are indicative of the fundamental tensions between the rights conferred by the patent laws and the duties imposed by the antitrust laws. The former create manifold opportunities for practice of the very restraints of trade that the latter are intended to suppress. The social importance and com-

3. *Denials by Industry*, N.Y. Times, Jan. 11, 1969, at 65, col. 6; *U.S. Charges Auto Makers Plot to Delay Fume Curbs*, N.Y. Times, Jan. 11, 1969, at 1, col. 3 (city ed.); *Smog Over Auto Accord*, Bus. Wk., Jan. 18, 1969, at 28.

4. *United States v. Automobile Mfrs. Ass'n*, 1969 Trade Cas. (CCH) ¶ 72,907, at 87,457-58 (C.D. Cal. 1969). The consent decree of October 29, 1969, was entered despite the opposition of New York City, Los Angeles County, and several other plaintiffs in related private suits against the AMA. *Decree Settles Auto Smog Suit*, N.Y. Times, Oct. 29, 1969, at 28, col. 1 (city ed.). These private suits are listed in *In re Multidistrict Private Civil Treble Damage Antitrust Litigation Involving Motor Vehicle Air Pollution Control Equipment*, 1970 Trade Cas. (CCH) ¶ 73,136 at 88,456-57 (J.P.M.D.L. 1970). In July 1979 the court refused to extend for ten years an expiring provision of the 1969 decree relating to the exchange of confidential information regarding emission controls. *United States v. Motor Vehicle Mfrs. Ass'n*, 1979-2 Trade Cas. ¶ 62,759 (C.D. Cal. 1979). In November 1981, the Justice Department joined the four principal U.S. auto manufacturers in petitioning the court to modify the decree in order to permit some kinds of patent cross-licensing between Chrysler and American Motors and recommended to the court that the entire decree be allowed to expire in 1986. *U.S. Asks Court to Relax Ban on Accords Among Auto Firms for Pollution Control*, Wall St. J., Nov. 10, 1981, at 7, col. 2.

5. See ANTITRUST DIVISION, U.S. DEP'T OF JUSTICE, ANTITRUST GUIDE CONCERNING RESEARCH JOINT VENTURES 20 (Nov. 1980).

plexity of this basic conflict in American law are evidenced by the large volume of case law and associated commentary directed toward its resolution.

The purpose of this addition to that steadily growing body of literature is to defend a system of restricted compulsory licensing as the best means of achieving a reasonable compromise between the social interests advanced by the patent law and those advanced by the antitrust laws. The argument proceeds by (1) considering the basis of the conflict between these two bodies of law; (2) discussing the merits of some alternative proposals for its resolution: complete exemption of the patentee from the reach of the antitrust laws, abolition of the American patent system, and establishment of per se prohibitions of certain kinds of patent licensing; and (3) advocating adoption of a system of limited compulsory licensing which avoids the disadvantages of the other proposals while maintaining and protecting the patentee's statutory rights of exclusive use, manufacture, and sale.

## II. EXISTENCE OF THE CONFLICT

Some have argued that there is little conflict between the interests served by the patent laws and those served by the antitrust laws. Bowman and Baxter, for example, contend that Congress enacted both sets of statutes in order to maximize national wealth by encouraging investment in research and discouraging restrictions of output by monopolies and cartels.<sup>6</sup> A former commissioner of patents has suggested that the competitive conduct sought by the antitrust authorities is in fact also promoted by the patent system, since efforts to circumvent a strong patent position have long been important sources of rivalry among research-intensive firms.<sup>7</sup> Turner and others have noted that the

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6. W. BOWMAN, JR., PATENT AND ANTITRUST LAW 1-3 (1973); *Panel Discussion: Patents, Technology and Antitrust Enforcement*, 42 A.B.A. ANTITRUST L.J. 78, 85 (1972) [hereinafter cited as *Panel Discussion*] (remarks of William F. Baxter); Letter from William F. Baxter to Sen. Phillip Hart (May 12, 1971), reprinted in *Patent Law Revision: Hearings on S. 643, S. 1253, & S. 1255 Before the Subcomm. on Patents, Trademarks, and Copyrights of the Senate Comm. on the Judiciary*, 92d Cong., 1st Sess. 550 (1971) [hereinafter cited as *Patent Law Revision 1971*]. For a critical analysis of the view that the law does and should maximize national wealth, see Kornhauser, *A Guide to the Perplexed Claims of Efficiency in the Law*, 8 HOFSTRA L. REV. 591 (1980); Rizzo, *The Mirage of Efficiency*, 8 HOFSTRA L. REV. 641 (1980); Englard, *The Failure of Economic Justice* (Book Review), 95 HARV. L. REV. 1162 (1982) (reviewing R. POSNER, *THE ECONOMICS OF JUSTICE* (1981)).

7. Dann, *Patents vs. Antitrust Law*, 4 CHEMTECH 537 (1974).

antitrust laws, because they encourage competitive conduct in industry, and the patent laws, because they inhibit imitation of inventions, have the common effect of stimulating technical progress.<sup>8</sup>

While such consistency of purpose and effect may exist in some circumstances, it remains true that the rights created by the patent laws can be used, and often have been used, to defeat important objectives of the antitrust laws. During the past one hundred years American businessmen have learned much about the use of the patent laws to sustain the creation and diffusion of technological knowledge. Unfortunately, they have also come to appreciate the talismanic powers of patents to protect their owners from social controls upon private economic activity. By artful licensing and patent pooling a good many of them have been able to transcend the narrow confines of the statutory patent grant and acquire the capacity to cartelize entire industries throughout the world.

The prospect of such private domination of important economic institutions can only alarm those who believe that extraordinary accumulations of power will inevitably be abused.<sup>9</sup> The primary purpose of the antitrust laws should be to prevent injustice by preserving competitive markets and enforcing competitive conduct—that is, by promoting markets free of gross imbalances of bargaining power or, where such a policy might unduly discourage efficiency, by promoting the fair, uncoercive conduct that could be expected to occur under conditions of approximate equality. The antitrust laws, contrary to the views of some,<sup>10</sup> should be seen not just as a means to increase national wealth but also as a means to balance the pursuit of that objective with the pursuit of social justice. Enforcement of these statutes, whatever may be its collateral effects upon the efficiency of market systems, should be directed at regulating the distribu-

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8. *Spotlight on U.S. Industrial and Intellectual Property Systems: Critique, Outlook and Recommendations*, 10 IDEA 1, 32 (1966) (Conf. Number 1966) (remarks of Donald Turner) [hereinafter cited as *Spotlight*]; *Panel Discussion*, *supra* note 6, at 83 (remarks of Richard H. Stern); M. BALZ, INVENTION AND INNOVATION UNDER SOVIET LAW: A COMPARATIVE ANALYSIS 14 (1975).

9. Perhaps the most eminent exponent of such pessimism in this century has been Reinhold Niebuhr. See R. NIEBUHR, FAITH AND POLITICS 139-64 (1968); R. NIEBUHR, LOVE AND JUSTICE 89-119 (1957); R. NIEBUHR, MORAL MAN AND IMMORAL SOCIETY (1932).

10. See, e.g., R. BORK, THE ANTITRUST PARADOX 51-117 (1978); R. POSNER, ANTI-TRUST LAW, AN ECONOMIC PERSPECTIVE 20 (1976); Bork & Bowman, *The Crisis in Antitrust*, 65 COLUM. L. REV. 363 (1965).

tion of economic power so that the basic human right to be free of coercion and extortion can be protected.<sup>11</sup> Injustice, the violation of these and other elemental rights, arises from the great disparities of power that the antitrust authorities seek to prevent and which the exercise of patent rights can often create.

Throughout this century businessmen in the industrialized world have again and again used the patent laws to sabotage competition and control markets. The elaborate cartels that they erected on the basis of patent cross-licensing agreements during the interwar period illustrate graphically the dangers of unchecked private economic power.

The published reports of the hearings conducted by the Bone and Kilgore committees during the early 1940's contain great volumes of information about such cartels in the industries producing magnesium, beryllium, plastics, tungsten carbide, military ammunition, zinc, gasoline, optical products, ethical drugs, dyestuffs, and several other important materials.<sup>12</sup> These disclosures resulted from investigations, begun in 1938 by Thurman Arnold at the Antitrust Division, that led to a series of criminal indictments and civil suits, many of which were concluded with the entry of consent decrees and no contest pleas, and with the imposition of fines.<sup>13</sup>

In 1929 Standard Oil Company of New Jersey and I.G. Farbenindustrie, A.G., wishing to avoid competition with each other and to control world commerce in chemicals and petroleum, formed a secret alliance. The firms agreed in substance to pool their patents and to share their know-how relating to hydrogenation and other technologies, reserving to Standard the exclusive right (outside Germany) to control this information for the manufacture of petroleum products and to I.G. Farben the exclusive

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11. This view of the mission of the antitrust authorities finds support in both the case law and legal literature. See, e.g., *Northern Pac. Ry. v. United States*, 356 U.S. 1, 4 (1958); *United States v. Columbia Steel Co.*, 334 U.S. 495, 536 (1948) (Douglas, J., dissenting); *Standard Oil Co. v. United States*, 221 U.S. 1, 50 (1911); Pitofsky, *The Political Content of Antitrust*, 127 U. PA. L. REV. 1051 (1979).

12. *Patents: Hearings on S. 2303 Before the Senate Comm. on Patents*, 77th Cong., 2d Sess., pts. 1-10 (1942) [hereinafter *Bone Comm. Hearings*]; *Scientific and Technical Mobilization: Hearings on S. 702 Before the Subcomm. of the Senate Comm. on Military Affairs*, 78th Cong., 1st Sess., pts. 1 & 4 (1943) [hereinafter *Kilgore Comm. Hearings*].

13. See, e.g., *United States v. General Elec. Co.*, 80 F. Supp. 989 (S.D.N.Y. 1948); *United States v. Merck & Co.*, 1944-45 Trade Cas. (CCH) ¶ 57,416 (D.N.J. Oct. 28, 1945); *United States v. Standard Oil Co.*, 1940-43 Trade Cas. (CCH) ¶ 56,198 (D.N.J. Mar. 25, 1942).

right to control it for the manufacture of chemicals in which I.G. Farben had a special interest. This cartel, which was enlarged during the 1930's to take in other firms (e.g., M.W. Kellogg Company, Royal Dutch Shell) and other technologies (e.g., the Fischer process for hydrocarbon synthesis), protected Standard from the competition of petroleum synthesized by coal hydrogenation and allowed it to benefit from the work of I.G. Farben's large research laboratories. However, the cartel, among its other consequences, jeopardized the military security of the United States by delaying the establishment in this country of a synthetic rubber industry and operating as a conduit for the transmission to the Nazi war machine of important technical information relating to tetraethyl lead and high-octane motor fuel.<sup>14</sup>

While Standard Oil and I.G. Farben were dominating world markets for petroleum chemicals, General Electric Company and another large German firm, Friedrich Krupp, A.G., were dividing up the world market for cemented tungsten carbide, a hard metal composition used to make cutting edges for machine tools. Court records reveal that in 1928 these two firms pooled their patents covering the manufacture of this material in Carboloy Company, Inc., a General Electric subsidiary, and agreed to exchange any related know-how they had or might acquire.<sup>15</sup> By threatening infringement suits or by purchasing their assets, General Electric brought the other American makers of machine tool metals into the pool. The firms that remained independent licensees were compelled to sell tungsten carbide at the prices set each month by Carboloy. In addition, they had to license Carboloy under their existing and future patents in the field and to concede the validity of the pooled patents. In 1936 Krupp and General Electric concluded a new agreement by which the former received an exclusive right to sell tungsten carbide in the Eastern Hemisphere and the latter a similar right in the Western Hemisphere. When, four years later, the cartel's key patents were finally given a judicial test, the trial court invalidated them.<sup>16</sup>

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14. See *Bone Comm. Hearings*, *supra* note 12, at 3325-3428 (statement of Patrick A. Gibson, U.S. Dep't of Justice). *Elimination of German Resources for War: Hearings Before a Senate Subcommittee of the Committee on Military Affairs*, 79th Cong., 1st Sess., pt. 7, ch. 4 (1945).

15. *United States v. General Elec. Co.*, 80 F. Supp. 989, 994-95 (S.D.N.Y. 1948).

16. *General Elec. Co. v. Willey's Carbide Tool Co.*, 33 F. Supp. 969 (E.D. Mich. 1940).

Many patent-based cartels, while similar in many respects to those mentioned above, have not involved the same measure of international cooperation. *Hartford-Empire Co. v. United States*<sup>17</sup> for example, involved a complicated and largely successful conspiracy during the interwar years by Owens-Illinois Glass Company, Corning Glass Works, and other American firms to regulate the domestic manufacture of glassware by means of licensing pooled patents on automatic glassmaking machinery. In the years after World War II American courts have struck down patent pools that had cartelized the United States machine tool,<sup>18</sup> radio tuning device,<sup>19</sup> gypsum products,<sup>20</sup> metal strain gauge,<sup>21</sup> and several other industries.<sup>22</sup>

This collision between antitrust policies and the rights asserted by patentees is also seen in the history of judicial attempts to define the terms under which patents may lawfully be licensed. Since 1890 the efforts of patentees to control markets through restraints imposed on their licensees and the efforts of others to oppose such practices as subversive of federal antitrust policy have led to much litigation. In resolving these conflicts, courts have had to determine the legality of contracts tying unpatented accessories to the licensing of patented machinery,<sup>23</sup> putting limits on the prices of licensees and of their customers,<sup>24</sup> restricting the fields in which patented inventions could be

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17. 323 U.S. 386 (1945).

18. *United States v. Associated Patents, Inc.*, 134 F. Supp. 74 (E.D. Mich. 1955), *aff'd per curiam sub nom. Mac Inv. Co. v. United States*, 350 U.S. 960 (1956).

19. *United States v. General Instrument Corp.*, 87 F. Supp. 157 (D.N.J. 1949), *final order*, 115 F. Supp. 582 (D.N.J. 1953).

20. *United States v. United States Gypsum Co.*, 333 U.S. 364 (1948).

21. *Baldwin-Lima-Hamilton Corp. v. Tatnall Measuring Sys. Co.*, 169 F. Supp. 1 (E.D. Pa. 1958), *aff'd per curiam*, 268 F.2d 395 (3d Cir.), *cert. denied*, 361 U.S. 894 (1959).

22. *See, e.g., United States v. New Wrinkle, Inc.*, 342 U.S. 371 (1952); *United States v. Line Material Co.*, 333 U.S. 287 (1948); *United States v. Krasnov*, 143 F. Supp. 184 (E.D. Pa. 1956), *aff'd per curiam*, 355 U.S. 5 (1957).

23. *Morton Salt Co. v. G.S. Suppiger Co.*, 314 U.S. 488 (1942); *Leitch Mfg. Co. v. Barber Co.*, 302 U.S. 458 (1938); *Carbice Corp. of Am. v. American Patents Dev. Corp.*, 283 U.S. 27 (1931); *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917); *Henry v. A.B. Dick Co.*, 224 U.S. 1 (1912); *Heaton-Peninsular Button-Fastener Co. v. Eureka Specialty Co.*, 77 F. 288 (6th Cir. 1896).

24. *United States v. United States Gypsum Co.*, 333 U.S. 364 (1948); *United States v. Line Material Co.*, 333 U.S. 287 (1948); *United States v. Masonite Corp.*, 316 U.S. 265 (1942); *United States v. Univis Lens Co.*, 316 U.S. 241 (1942); *Ethyl Gasoline Corp. v. United States*, 309 U.S. 436 (1940); *Straus v. Victor Talking Mach. Co.*, 243 U.S. 490 (1917); *Bauer & Cie v. O'Donnell*, 229 U.S. 1 (1913); *Standard Sanitary Mfg. Co. v. United States*, 226 U.S. 20 (1912); *Bement v. National Harrow Co.*, 186 U.S. 70 (1902).



worked,<sup>25</sup> creating comprehensive patent pools within important industries,<sup>26</sup> requiring licensees to share rights to their future inventions with licensors,<sup>27</sup> and constraining licensees in a variety of other ways.<sup>28</sup>

This extensive history of litigation and patent-based cartelization belies the views of those who have held that the operation of the patent system has been fully consistent with anti-trust policies.

### III. PROPOSALS FOR RESOLVING THE CONFLICT

#### A. *Relaxation of Antitrust Controls*

A conflict between two bodies of law can of course be mitigated or avoided altogether by diminishing the force or scope of one of them. It is therefore hardly surprising that some have sought to resolve the current conflict between the patent and antitrust laws by subordinating one to the other.

Following this strategy, several leading members of the American patent bar have within the past fifteen years worked to relax the constraints placed by the antitrust laws upon the exploitation of patent monopolies. They have alleged that enforcement of these laws has so confused inventors and businessmen about the lawful limits of their patent rights that they have often been reluctant to develop or license patented innovations.<sup>29</sup> Citing such concerns, the President's Commission on the Patent System in 1966 recommended the statutory enactment of the "rule of reason" doctrine of *United States v. General Electric Co.*,<sup>30</sup> which would permit the patentee to impose upon

25. *General Talking Pictures Corp. v. Western Elec. Co.*, 304 U.S. 175 (1938).

26. *United States v. National Lead Co.*, 332 U.S. 319 (1947); *Hartford-Empire Co. v. United States*, 323 U.S. 386 (1945); *Standard Oil Co. v. United States*, 283 U.S. 163 (1931); *United States v. Vehicular Parking, Ltd.*, 54 F. Supp. 828 (D. Del. 1944).

27. *Transparent-Wrap Mach. Corp. v. Stokes & Smith Co.*, 329 U.S. 637 (1947).

28. See generally A. NEALE & D. GOYDER, *THE ANTITRUST LAWS OF THE UNITED STATES OF AMERICA* 288-325 (3d ed. 1980).

29. See, e.g., *Patent Law Revision 1971*, *supra* note 6, at 196 (statement of John A. McKinney, Johns Manville Corp.), 527 (Memorandum of American Chemical Society); *General Revision of the Patent Laws: Hearings on H.R. 5924, H.R. 13951, and Related Bills Before Subcomm. No. 3 of the House Comm. on the Judiciary, 90th Cong.*, Serial No. 11, at 406 (1968) (statement of Frank B. Pugsley, American Patent Law Ass'n) [hereinafter cited as *General Revision*]; Letter and Brief from Merl Sceales, Chairman of the Patent, Trademark & Copyright Section of the American Bar Ass'n, to Senator John L. McClellan (Nov. 5, 1970), *reprinted in* 117 CONG. REC. 7170 (statement of Sen. Scott).

30. 272 U.S. 476, 489-90 (1926).

licensees any conditions "the performance of which is reasonable under the circumstances to secure to the patent owner the full benefit of his invention and patent grant."<sup>31</sup> Two senators, supported by several leaders of the American patent bar, tried without success in the 90th, 91st, and 92d Congresses to secure legislative approval of this recommendation.<sup>32</sup>

Enactment of this "rule of reason" doctrine as Turner and others have argued, would substantially amplify the liberties of patentees and possibly strike down most antitrust constraints on licensing.<sup>33</sup> It is hard to imagine a restrictive license that could not plausibly be defended as reasonably necessary to permit a licensor to maximize the income from a patent. To restrict the set of unlawful licensing transactions to those that are not reasonably ancillary to exploitation of a patent is in effect to nullify the majority of antitrust controls upon licensors' conduct.

Such a result, though it would relieve the conflict between patent and antitrust law, would have grave consequences for the American economy. The discussion in Part II indicates that the patent laws have often been used to control market prices and output to the detriment of competition. Patent cartels have restrained trade, raised barriers to entry, and created those gross imbalances of market power from which inefficiency, technological lethargy, and, of greatest importance, social injustice are likely to arise. The prevention of these evils is hardly promoted if, in the interests of maximizing the liberties of the patentee, most antitrust controls over his actions are weakened or removed altogether.

It may, however, be objected that antitrust controls cannot be justified because they infringe on the statutory rights of patentees to maximize the income from their intellectual property.<sup>34</sup>

31. PRESIDENT'S COMMISSION ON THE PATENT SYSTEM, TO PROMOTE THE PROGRESS OF USEFUL ARTS 36 (Final Report, 1966).

32. S. 2597, 90th Cong., 1st Sess., § 263, 113 CONG. REC. 30370, 30378 (1967) (introduced by Sen. Dirksen); amend. no. 578 to S. 2756, 91st Cong., 2d Sess., 116 CONG. REC. 10783 (1970) (introduced by Sen. Scott); amend. no. 24 to S. 643, 92d Cong., 1st Sess. 117 CONG. REC. 7168 (1971) (introduced by Sen. Scott).

33. *General Revision*, *supra* note 29, at 141 (statement of Donald F. Turner, Assistant Attorney General, Antitrust Division, U.S. Dep't of Justice); *Patent Law Revision: Hearings on S. 2, S. 1042, S. 1377, & S. 1691 Before the Subcomm. on Patents, Trademarks, and Copyrights of the Senate Comm. on the Judiciary*, 90th Cong., 1st Sess. 154 (1968) (statement of Donald F. Turner) [hereinafter cited as *Patent Law Revision 1968*]. See also Brodley, *Patents, the Scott Amendments and Competitive Free Enterprise*, 8 CONF. BOARD REC. 48, 50 (Oct. 1971).

34. Such an objection appears to be a key element in Bowman's criticism of U.S.

Antitrust officials, it is argued, have overreached their authority by seeking undue restrictions on the freedom of patentees to appropriate the full returns from their inventions. This argument, however, rests upon an erroneous view of the economic limits of the patentee's statutory grant and a failure to appreciate how these limits can be exceeded by means of licensing transactions.

It is settled doctrine that the patentee's statutory grant consists only of the right to prevent others from making, using (prior to sale), or selling the protected invention within the United States for a term of seventeen years and the right to bring a civil action to restrain infringement.<sup>35</sup> Thus, the patentee is by law entitled to any profits that he can earn from the enjoyment and defense of these exclusive rights; this represents the authorized social reward for his creation and disclosure of a useful, novel technology.

By licensing and pooling patents this authorized compensation can often be augmented. Permitting others to make, use, and sell the invention will often increase the demand for it by those reluctant to buy any product supplied by a single source.<sup>36</sup> The patentee may be able to reduce the cost of enforcing his patent by establishing licensees who, since they pay royalties, will have an incentive to identify and report infringers who do not.<sup>37</sup> In addition, the patentee may be able to reduce the costs and risks of making and marketing the patented invention by enlisting the aid of licensees;<sup>38</sup> as a result, his income from royalties and his own operations may greatly exceed what he could ever hope to earn through complete reliance upon self-manufac-

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patent/antitrust law, which has, in his view, interfered unduly with patentees' abilities to maximize their profits from their patents by means of price restrictions and other licensing devices. W. BOWMAN, *supra* note 6, at 64-139, 241.

35. 35 U.S.C. §§ 154, 281 (1976); *United States v. Univis Lens Co.*, 316 U.S. 241, 250 (1942).

36. For an illustration of a demand for a second source by buyers, see *United States v. Huck Mfg. Co.*, 227 F. Supp. 791, 797 (E.D. Mich. 1964), *aff'd per curiam*, 382 U.S. 197 (1965). This "second-sourcing" has become almost a requirement of doing business in the modern U.S. electronics industry. Moad, *TI Buys Production Rights to Shugart Tech. 5 1/4 Inch Disc*, *ELECTRONIC NEWS*, July 14, 1980, at 1; Robertson, *TI, IBM Set to 2d-Source Their VHSIC Circuits*, *ELECTRONIC NEWS*, June 15, 1981, at 39.

37. *PPG Indus. v. Westwood Chemical, Inc.*, 530 F.2d 700, 702-03 (6th Cir. 1976). For examples of licensees cooperating in the enforcement of patents, see *Riker Laboratories, Inc. v. Gist-Brocades, N.V.*, 208 U.S.P.Q. (BNA) 777 (D.C. Cir. 1980); *Troxel Mfg. Co. v. Schwinn Bicycle Co.*, 465 F.2d 1253, 1254 (6th Cir. 1972).

38. W. BOWMAN, *supra* note 6, at 69-70; McGee, *Patent Exploitation: Some Economic and Legal Problems*, 9 *J.L. & ECON.* 135, 138-43 (1966). For examples of these benefits, see *On the Royalty Road to Profits*, *CHEMICAL WEEK*, March 26, 1966, at 75.

ture. In a larger or rapidly growing market, licensing can allow a patentee to profit from sales to customers that he could not supply from the output of his plant alone.<sup>39</sup> Through cross-licensing agreements a patentee can gain the monetary benefits of rights under complementary or dominant patents owned by others,<sup>40</sup> and the benefits of avoiding risky, expensive infringement litigation and interference proceedings.<sup>41</sup> Unfortunately, licensing and pooling can also provide extremely profitable means to cartelize worldwide industries<sup>42</sup> and to protect weak or invalid patents—the bases for such lucrative collusions—from legal challenge, circumvention, or early obsolescence.<sup>43</sup>

By waiving in return for royalties his right to exclude others from making, using, or selling his protected invention, the patentee can thus gain more than his authorized reward and can therefore transcend the economic limits of his statutory grant. Such extension of the patentee's returns from his invention may in some circumstances spur him to make further technological discoveries. However, in other circumstances it may only intensify his efforts to maintain and expand a cartel contrived by manipulation of the patent laws. The patentee's extension of his reward, however it may affect social welfare, comprehends claims to income that are not guaranteed and protected by the patent statutes. These laws fully entitle the patentee to whatever money he can make by exercise of the right to exclude others by means of infringement suits. They do not, however, entitle him to the income he may receive by exercise of his rights under commercial law to create and enforce contracts with licensees. The transactions generating this supplemental income

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39. NEY, CORPORATE PATENT PROGRAM AND SELECTIVE PATENT LICENSING, PROCEEDINGS, SECOND ANNUAL MEETING OF THE LICENSING LAW AND PRACTICES INSTITUTE 87, 97 (R.M. Milgrim ed. 1971). See also *Old Dominion Box Co. v. Continental Can Co.*, 273 F. Supp. 550, 568 (S.D.N.Y. 1967).

40. See, e.g., *United States v. Line Material Co.*, 333 U.S. 287, 291 (1948).

41. See, e.g., *Standard Oil Co. v. United States*, 283 U.S. 163 (1931); *Clapper v. Original Tractor Cab Co.*, 165 F. Supp. 565 (S.D. Ind. 1958), *aff'd in part, rev'd in part*, 270 F.2d 616 (7th Cir. 1959), *cert. denied*, 361 U.S. 967 (1960); *United States v. General Instrument Corp.*, 87 F. Supp. 157 (D.N.J. 1949).

42. See, e.g., *United States v. National Lead Co.*, 332 U.S. 319, 338-46 (1947); *United States v. Imperial Chem. Indus.*, 100 F. Supp. 504 (S.D.N.Y. 1951); *United States v. Minnesota Mining & Mfg. Co.*, 92 F. Supp. 947 (D. Mass. 1950).

43. See W. Baxter, *Legal Restrictions on Exploitation of the Patent Monopoly: An Economic Analysis*, 76 YALE L.J. 267 (1966). See also *United States v. Line Material Co.*, 333 U.S. 287, 319 (1948) (Douglas, J., concurring); *Patent Law Revision 1971, supra note 6*, at 568 (statement of Joseph Bradley).

thus fall within the reach of the laws that regulate ordinary contractual relationships.<sup>44</sup> Antitrust officials have full authority, therefore, to seek judicial review of licensing and pooling agreements that appear to endanger the social interests protected by the statutes they must enforce. Their efforts to do so cannot be impeached by the objection that they are thereby breaching patentees' statutory rights to maximize the income from their patents.

Moreover, the justification for antitrust controls gains force from the abundant evidence that many patents are of doubtful validity under the standards of the law. For decades students of the American patent system have been decrying the conditions that have appeared to lead to lax enforcement of the statutory requirements for patentability: *ex parte* proceedings in the Patent Office; the evaluation of an examiner's work by reference to the number of his disposals of pending cases and his actions on new cases relative to a quota assigned to him by superiors; an administrative system that would seem to encourage cursory searches of the prior art and the allowance of applicants' claims whenever they are not obviously invalid; appeal procedures providing administrative protections against wrongful rejection of claims but not against wrongful allowance; and the failure of Congress to provide the Patent Office with sufficient resources to permit careful scrutiny of applications by experienced and appropriately motivated examiners.<sup>45</sup> The courts have been echoing these complaints about the low quality of the Patent Office's work while invalidating a large proportion of the patents coming before them in infringement and declaratory judgment actions.<sup>46</sup>

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44. *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 513-14 (1917).

45. See, e.g., *American Patent System: Hearings on S. Res. 92 Before the Subcomm. on Patents, Trademarks, and Copyrights of the Senate Comm. on the Judiciary*, 84th Cong., 1st Sess. 305 (1956) (statement of Albert I. Kegan, Patent Attorney, Chicago, Ill.) [hereinafter cited as *American Patent System*]; *Patent Law Revision 1971*, *supra* note 6, at 325 (statement of Stanley M. Clark, Patent Counsel, Firestone Tire & Rubber Co.), pt. 2, at 419-20 (statement of John C. Stedman, Professor of Law, Univ. of Wisc.); *Patent Law Revision: Hearings on S. 1321 Before the Subcomm. on Patents, Trademarks, and Copyrights of the Senate Comm. on the Judiciary*, 93d Cong., 1st Sess. 103 (1973) (statement of Edward S. Irons, Lawyer, Washington, D.C.), 151 (statement of John J. Pederson, Director of Patents, Zenith Radio Corp.), 137-38 (statement of Charles M. Hogan, General Patent Counsel, Avco Corp.) [hereinafter cited as *Patent Law Revision 1973*]; Hamilton & Till, *What Is a Patent?*, 13 *LAW & CONTEMP. PROBS.* 245, 257 (1948); Woodward, *A Reconsideration of the Patent System as a Problem of Administrative Law*, 55 *HARV. L. REV.* 950, 953 (1942).

46. "It is not easy to assign definite causes for this proliferation of patent-antitrust

This judicial suspicion of Patent Office operations has led to a de facto nullification of the presumption of validity set up by section 282 of the Patent Act and to much uncertainty among patentees about their ability to enforce their statutory grants.<sup>47</sup> The presumptive *invalidity* of many patents furnishes additional grounds for the imposition of antitrust controls upon patentees' conduct, for it suggests that such regulation only limits the exercise of rights that in many cases should never have been granted.

Antitrust constraints on patentees' freedom to license could, however, weaken incentives to invent and innovate. It is possible that disallowing the supplemental income earned as a result of restrictive licensing might significantly depress investments in research and development.<sup>48</sup> Such a result, though it cannot be entirely ruled out on the basis of present knowledge, nevertheless seems unlikely. There are both theoretical and empirical reasons for thinking so. Turner, for example, has argued that the enormous uncertainties of research enterprises preclude inventors and corporate managers from taking into account in their investment decisions the present value of the supplemental in-

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litigation in recent years, but at least part of the blame must be laid at the door of the United States Patent Office which, despite protestations to the contrary, seems unable to say 'no' to any patent solicitor who has the persistence to prosecute a patent through as many as six rejections." *Duplan Corp. v. Deering Milliken, Inc.*, 444 F. Supp. 648, 771 (D.S.C. 1977) (footnote omitted). For similar expressions of judicial mistrust of the patent system, see the remarks of Judge Miles Lord reported in *Pfizer, Inc. v. Lord*, 456 F.2d 532, 542 (8th Cir.), *cert. denied*, 406 U.S. 976 (1972), and those of Mr. Justice Clark in *Graham v. John Deere Co.*, 383 U.S. 1, 18 (1966).

There have been many studies of rates of judicial invalidation of patents. For one of the best and most recent, see Baum, *The Federal Courts and Patent Validity: An Analysis of the Record*, 56 J. PAT. OFF. SOC'Y 758 (1974), wherein it is shown that since 1941 U.S. courts of appeals have invalidated about 70% of the patents coming before them, and U.S. district courts have invalidated about 67% of the patents that they were asked to consider during the same period. For an analysis of these data, see Popovich, *Patent Quality: An Analysis of Proposed Court, Legislative, and PTO Administrative Reform—Reexamination Resurrected (Part I)*, 61 J. PAT. OFF. SOC'Y 248 (1979).

47. On nullification of the presumption of validity, see *Ansul Co. v. Uniroyal, Inc.*, 301 F. Supp. 273, 280 (S.D.N.Y. 1969), *aff'd in part, rev'd in part*, 448 F.2d 872 (2d Cir. 1971), *cert. denied*, 404 U.S. 1018 (1972); Fortas, *The Patent System in Distress*, 14 IDEA 571, 572 (1970-71). On patentee uncertainties, see U.S. DEPT. OF COMMERCE, DOMESTIC POLICY REVIEW OF INDUSTRIAL INNOVATION, PUBLIC SYMPOSIUM ON PATENTS: TRANSCRIPT OF PROCEEDINGS 17, 108 (1979, NTIS PB 290412) and, for Great Britain, see COMMITTEE TO EXAMINE THE PATENT SYSTEM AND PATENT LAW, REPORT: THE BRITISH PATENT SYSTEM, Cmd. No. 4407, at 24 (1970) [hereinafter cited as *British Patent System*].

48. "The uncertainty regarding the rights of patentees is undoubtedly one factor leading to the present lack of growth in corporate investment in research." *Patent Law Revision 1971*, *supra* note 6, at 681.

come foreclosed by antitrust restrictions on patent licenses.<sup>49</sup> Even if such calculations could be made, they might in many circumstances have only trivial effects upon R&D expenditures. The expected supplemental income foreclosed might be only a negligible proportion of the total expected returns from R&D, especially in a high-technology industry in which a vigorous research program is an indispensable condition for corporate survival.<sup>50</sup> Furthermore, the empirical evidence that can be brought to bear on this question does not suggest that antitrust controls upon licensing would substantially depress R&D investments. It appears, for example, that some of this spending, especially within large firms, serves a defensive purpose. It is intended to produce patents that, regardless of their licensing value, can be used to protect the firm from being harassed or excluded from important markets by infringement suits.<sup>51</sup> In addition, the research on industrial patent practices of Taylor and Silberston, Scherer, and others, which is discussed in the next section, suggests that within most industries in the United States and the United Kingdom the proportion of research spending that is dependent upon the prospect of patent protection is quite small.

Another objection to antitrust restrictions upon licensing is

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49. Turner, *The Patent System and Competitive Policy*, 44 N.Y.U. L. REV. 450, 459 (1969). For a similar argument, see F. SCHERER, et al., *PATENTS AND THE CORPORATION* 50 (2d ed. 1959).

50. "It seems very likely that even without any patents, past, present, or future, firms in these industries [chemicals and electronics] would carry on research, development, and innovation because the opportunities for the search for new processes and new products are so excellent in these fields that no firm could hope to maintain its position in the industry if it did not constantly strive to keep ahead of its competitors by developing and using new technologies." *An Economic Review of the Patent System, Study No. 15: Subcomm. on Patents, Trademarks, and Copyrights of the Senate Comm. on the Judiciary*, 85th Cong., 2d Sess. 78 (1958) (F. Machlup). See also F. SCHERER, *supra* note 49, at 47-58, 118, 149; Stedman, *Invention and Public Policy*, 12 LAW & CONTEMP. PROBS. 649, 669 (1947); J.E.S. PARKER, *THE ECONOMICS OF INNOVATION* 236 (1974); K.D. GEORGE & C. JOLL, *INDUSTRIAL ORGANIZATION* 230 (3d ed. 1981).

51. *Patent Law Revision 1973*, *supra* note 45, at 359 (statement of Stanley Clark); *General Revision*, *supra* note 29, at 252 (statement of Prof. John Bardeen, Dep't of Physics, Univ. of Ill.), at 763-64 (statement of N.J. Patent Law Ass'n); *Patent Law Revision 1968*, *supra* note 33, at 90 (statement of Simon Rifkind, Cochairman, President's Commission on the Patent System); *British Patent System*, *supra* note 47, at 145. In testimony before the Temporary National Economic Committee in December 1938, the presidents of Ford Motor Company, General Motors Corporation, and Packard Motor Car Company declared that their firms had acquired patents primarily for defensive purposes. *Investigation of Concentration of Economic Power: Hearings on P. Res. 113 Before the Temporary National Economic Committee*, 75th Cong., 3d Sess., pt. 2 (Patents) (1939).

that they can cause some patentees to exercise their right to refuse to license their inventions altogether,<sup>52</sup> a right that has been consistently upheld by United States courts for many decades.<sup>53</sup> Such actions would have the immediate effect of restricting the extent of use of the inventions and, it is often argued, would thereby prevent their exploitation under competitive conditions. However, it is not clear that competition would necessarily be so harmed by a reduction in the rate of patent licensing, which, if it should occur, might in fact quicken the rate of technical progress and invigorate competition by forcing firms to invent around the patents to which they have been denied access or to attempt to break them in court by inviting infringement actions.<sup>54</sup> Taylor and Silberston report that within British industry refusals of licensing applications have often stimulated the development of new substitutes for the patented technologies.<sup>55</sup>

Despite these arguments, it cannot be conclusively shown that antitrust controls on licensing do not discourage research investments or diminish the frequency and extent of transactions involving intellectual property. However, the risk that such

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52. See, e.g., *Patent Law Revision 1971*, supra note 6, at 451 (statement of Prof. Glen Weston, Professor of Antitrust and Trade Regulation Law, George Washington Univ. Law School).

53. See, e.g., *Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U.S. 405, 429 (1908); *SCM Corp. v. Xerox Corp.*, 645 F.2d 1195, 1204 (2d Cir. 1981); *United States v. Westinghouse Elec. Corp.*, 648 F.2d 642, 648 (9th Cir. 1981); *Preformed Line Products Co. v. Fanner Mfg. Co.*, 328 F.2d 265, 279 (6th Cir.), cert. denied, 379 U.S. 846 (1964).

54. *Patent Law Revision 1971*, supra note 6, at 412 (statement of John Stedman); *General Revision*, supra note 29, at 637-38 (statement of Donald F. Turner, Assistant Attorney General, Antitrust Division, Dep't of Justice); L.A. SULLIVAN, *HANDBOOK OF THE LAW OF ANTITRUST* 526 (1977). Arnold has noted the reasons why deliberate infringement may often be a sensible strategy for firms denied licenses under a patent. A patentee, mindful that legal efforts to enforce his patent will entail considerable expense and the risk of an adverse ruling on any of three grounds (invalidity, non-infringement, misuse), may elect to ignore infringers. Moreover, the infringers themselves must always take encouragement from the knowledge that a challenge of a patent, even if unsuccessful, will usually afford them four or five years within which to utilize and design around the invention, at the end of which time the patent may be near expiration. Arnold, *Legal Factors and Strategies Affecting Invention Development and Patent Marketing*, 9 *PATENT L. REV.* 3, 13 (1977).

In addition, it should be noted that the prospect of having to give up the several benefits of licensing may often deter a patentee from following a policy of excluding all others from use of his invention.

55. C.T. TAYLOR & Z.A. SILBERSTON, *THE ECONOMIC IMPACT OF THE PATENT SYSTEM* 183 (1973). For an example of circumvention induced by a competitor's successful patent, see *Kearney & Trecker Corp. v. Cincinnati Milacron, Inc.*, 403 F. Supp. 1040, 1043 (S.D. Ohio 1975), *aff'd*, 562 F.2d 365 (6th Cir. 1977). See also the dictum in *Chicago Steel Foundry Co. v. Burnside Steel Foundry Co.*, 132 F.2d 812, 816 (7th Cir. 1943).



effects might occur must be weighed against the far more serious and evident risks to public welfare created by the crippling or removal of regulations on patentee conduct outside the limits of the statutory grant. Such a relaxation of public restraints on business conduct would very likely expose the American economy to significant dangers of cartelization and domination by an industrial oligarchy. The gravity of these dangers is evident in the repeated efforts of businessmen to manipulate the patent laws to destroy competition.<sup>56</sup>

This evidence of patent misuse extending over decades clearly shows the need for strong social controls over transactions involving intellectual property. The application of anti-trust principles to the laws governing licensing and pooling is required for the realization of the proper purposes of the American patent system, which, as the courts have repeatedly emphasized, embrace the promotion of technological progress and not the enrichment of patentees or the provision to large multinational corporations of means by which to fulfill hegemonic designs upon the world economy.<sup>57</sup>

The recent attempts by the patent bar and some business leaders to restore the full scope of *General Electric* and to narrow the doctrine of patent misuse show an exaggerated faith in the virtues of freedom of contract and an inadequate appreciation of the force with which greed and overweening ambition can turn institutions from their appointed purposes. Adoption of these proposals, while it would indeed relieve the conflict between the principles of patent and of antitrust law, would carry the risks of wholesale cartelization of large parts of the American economy, a result that, like all great consolidations of power, would destroy the basis for a tolerably just and efficient society.

### B. Abolition of the Patent System

The conflict between patent and antitrust law, as noted

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56. Occasionally the value of the patent law in achieving such objectives has been openly, if not brazenly, acknowledged. In 1906, for example, a prominent member of the patent bar declared in a magazine article: "Patents are the best and most effective means of controlling competition. They occasionally give absolute command of the market, enabling their owner to name the price without regard to cost of production, as for example when they cover all known forms of devices for accomplishing a given purpose." Prindle, *Patents as a Factor in a Manufacturing Business*, 31 *ENG'G MAG.* 809 (1906).

57. *United States v. Masonite Corp.*, 316 U.S. 265, 278 (1942); *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 511 (1917).

above, can be resolved by giving primacy to the former. However, it is clear that it can also be resolved by an opposite strategy—abolition of the entire patent system. Although few in recent times have advocated such a drastic measure, it had many champions during the great European patent controversies of 1850-1875<sup>58</sup> and could conceivably emerge in coming decades as a feasible political option.

The most important justification offered for the patent system has been that it promotes technological change. These contentions can usefully be interpreted as statements about the determinants of the demand for and the supply of invention, a factor of production used by firms to increase the efficiency and scope of their manufacturing operations. Patent laws, under this view, can encourage technical progress by increasing either the firm's demand for invention or the supply of invention to it, or by increasing both variables.

Empirical studies of the actual impact of patent systems on technological change have usually employed two methods: detailed investigations into the technological histories of particular industries and surveys of managerial attitudes toward use of the patent laws. Studies of the first type have disclosed that over the past one hundred years the American patent system has had diverse effects. According to some historians, it has apparently induced important changes in the technology and the structure of some large industries.<sup>59</sup> However, in others it has had very few

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58. Machlup & Penrose, *The Patent Controversy in the Nineteenth Century*, 10 J. ECON. HIST. 1 (1950).

59. Jenkins argues that U.S. manufacturers of photographic equipment, although they made little use of the patent laws before about 1880, relied on them to an increasing extent after that to restrict or achieve entry into markets. The desire for market power attained through patents was apparently a prime motive for the investments of George Eastman, the preeminent entrepreneur of the industry who built the Eastman Kodak Company. Eastman consistently aimed at dominating the markets for film, cameras, and other equipment by accumulating patents through intensive research in his own laboratories or by purchase. R.V. JENKINS, *IMAGES AND ENTERPRISE: TECHNOLOGY AND THE AMERICAN PHOTOGRAPHIC INDUSTRY 1839 TO 1925*, at 63, 90, 111, 118-20, 184, 189 (1975). The hope of gaining strong patent positions also motivated much of the research of Edison, Westinghouse, and their successors in the U.S. electric lamp industry. According to Bright, accumulation of patents, either by internal research or by merger, was an important means by which General Electric maintained its dominant position in incandescent lamps for decades. Its vigorous efforts to enforce those patents caused the failure of many small manufacturers, most of which could not afford the costs of infringement litigation, and eventually forced most of the firms in the industry to accept restrictive licenses under G.E. patents, thereby dampening their incentive to invest in research of their own. Despite this, Bright concludes that "the patent incentive has provided a very strong stimulus to progress in electric-lamp technology." A.A. BRIGHT, JR.,

such effects.<sup>60</sup> Similar contrasts are apparent in the findings of those studies that have used questionnaires and interviews to uncover managerial policies and attitudes regarding the protection of intellectual property. Several of these investigations have tried to estimate the technological benefits of the patent laws by estimating the likely reaction of firms to liberal programs of compulsory licensing. These studies of Scherer, Mansfield, Tay-

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THE ELECTRIC-LAMP INDUSTRY: TECHNOLOGICAL CHANGE AND ECONOMIC DEVELOPMENT FROM 1800 TO 1947, at 468 (1949). See also *id.* at 66, 86-87, 97, 104, 235, 344-45, 468-70. For more information on the effect of patents on the structure of the electrical equipment industry, see H.C. PASSER, *THE ELECTRICAL MANUFACTURERS 1875-1900*, at 324-25, 331-32, 352 (1953).

Schwartzman, in his study of the U.S. ethical drug industry, argues that because pharmaceutical research entails such important scientific and regulatory risks and because its products can so easily be duplicated by competitors, drug manufacturers will invest in research only if assured of patent protection on their discoveries. "Without patents," he concludes, "the return from investment in pharmaceutical R&D would fall to zero and private companies would no longer engage in R&D." D. SCHWARTZMAN, *INNOVATION IN THE PHARMACEUTICAL INDUSTRY* 4 (1976). See also *id.* at 6, 10, 11, 162, 165. Spokesmen for pharmaceutical manufacturers have often declared in congressional testimony that their firms' research investments have required the protections afforded by the patent laws. See, e.g., *Patent Term Restoration Act of 1981: Hearings on S. 225 Before the Senate Comm. on the Judiciary*, 97th Cong., 1st Sess. at 78 (statement of L.H. Sarett), 90 (statement of T. Duerden) (1981); *Drug Industry Antitrust Act: Hearings on S. 1552 Before the Subcomm. on Antitrust and Monopoly of the Senate Comm. on the Judiciary*, 87th Cong., 1st Sess. 2006 (statement of E.N. Beesley), 2209 (statement of J.T. Connor), 2262 (statement of T.G. Klumpp) (1961).

60. Welsh reports that following the invalidation of the famous Selden patent by the Second Circuit in 1911, most of the American automobile manufacturers freely cross-licensed all their patents into one pool administered by the Automobile Manufacturers Association. Ford refused to enforce its patents by bringing infringement suits, a policy that was later adopted by General Motors and Packard. This system of defensive patenting, which lasted for several decades, did not arrest technical progress in the automobile industry; thus its history, according to Welsh, "contradicts the thesis that without monopolistic patent structures industrial advancement cannot occur." Welsh, *Patents and Competition in the Automobile Industry*, 13 *LAW & CONTEMP. PROBS.* 260, 277 (1948). See also L.J. WHITE, *THE AUTOMOBILE INDUSTRY SINCE 1945*, 213-15 (1971).

In the contemporary U.S. semiconductor industry patents apparently have little influence upon research incentive, primarily because the high speed of technological change in this industry makes most inventions obsolete by the time that they can be patented and because most patents must be cross-licensed widely in order to avoid costly litigation. Semiconductor manufacturers do, however, obtain patents to minimize risks of being sued for infringement. They also secure many process and equipment innovations as trade secrets. R.W. WILSON, P.K. ASHTON & T.P. EGAN, *INNOVATION, COMPETITION, AND GOVERNMENT POLICY IN THE SEMICONDUCTOR INDUSTRY* 62-64 (1980). See also David, *Industrial Research in America: Challenge of a New Synthesis*, 209 *SCIENCE* 133, 137 (1980). On the liberal licensing policies of Bell Telephone Laboratories with respect to the first semiconductor patents, see Weinberg & Siegel, *Development and Implications of the First Transistor Patents*, 3 *PAT. TRADEMARK COPYRIGHT J. RESEARCH & EDUC.* 392 (1959).

lor & Silberston, and others,<sup>61</sup> though their results must be interpreted with caution, do furnish important evidence of the diverse effects that the industrialized nations' patent laws have had during the past thirty years upon the demand for and supply of invention. They indicate that in some industries, such as ethical drugs, patent systems have contributed to high rates of technological progress, but in others, such as electronics, they have had only negligible effects upon the conduct of research programs. This historical and survey evidence certainly does not invite the conclusion that discarding or weakening the patent laws of a nation must inevitably condemn it to technological stagnation.

Understanding how such a drastic change would affect an economy requires consideration of relationships among many variables. Withdrawal of patent protection, by itself, would tend to decrease firms' demand for invention by increasing the risk to them of rapid imitation of their innovations, reducing their need to circumvent strong patents or to hold defensive patents, depriving them of an intellectual asset useful in interfirm bargaining, and limiting their access to venture capital and possibly to foreign patent protection. On the other hand, abolition would tend to increase the demand for invention by decreasing the risks of preemption and infringement litigation. Repeal of the patent laws, by itself, would tend to decrease the supply of invention by reducing communication among industrial scientists but would tend to increase it by reducing the diversion of R&D resources out of basic and into duplicative research.<sup>62</sup> These effects could, however, be modified by firms' substitution of trade secrets for patents. The extent of such substitution would depend principally upon perceptions of the relative costs and productivities of the two inputs. Increased reliance upon trade

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61. F. SCHERER, *supra* note 49; F. SCHERER, *THE ECONOMIC EFFECTS OF COMPULSORY PATENT LICENSING* (Monograph No. 1977-2, N.Y. Univ., Center for the Study of Fin. Inst. 1977); Mansfield, Schwartz & Wagner, *Imitation Costs and Patents: An Empirical Study*, 91 *ECON. J.* 907 (1981); Taylor & Silberston, *supra* note 55; Sanders, Rossman & Harris, *Attitudes of Assignees Toward Patented Inventions*, 2 *PAT. TRADEMARK & COPYRIGHT J. RESEARCH & EDUC.* 463 (1958).

62. Some have argued that the patent laws, because they reward invention and not scientific discovery, divert industrial R&D resources away from basic research; that because they encourage circumvention of strong patents and strenuous efforts to gain preemptive access to new fields of technology, they induce investments in research that essentially duplicates that already done. *See generally* K.D. GEORGE & C. JOLL, *INDUSTRIAL ORGANIZATION* 230-31 (3d ed. 1981).

secrecy would tend to reduce the supply of invention, but this effect might be small if firms patent only those inventions that they do not consider eligible for trade secrecy. Industrial demand for invention could also be influenced by state action to subsidize applied research or to create a competitive environment favorable to it. Any waste of resources resulting from these public policies could well be offset by the improvements in the efficiency of use of information and other R&D resources that would result from the elimination of patent restraints and duplicative research conducted with excessive haste.

From current knowledge, limited as it is, it is unfortunately not possible to infer the total, cumulative effect of all these conflicting forces acting on the determinants of invention. It is thus not possible to predict with much confidence how removal of the United States patent system would affect the growth of American technology.

That such a radical change would not have disastrous consequences for technological progress seems fairly certain from the empirical literature noted above, and from reasonable conjectures about the efficacy of state action and trade secrecy in protecting incentives to invest in R&D. Even without the patent laws many firms, spurred by competitive pressures, aided perhaps by federal subsidies or tax credits, and protected by trade secrecy and barriers to entry, would probably continue their research efforts and their introduction of new technologies.

However, it is less clear whether innovation would go forward in these industries at the same *rate* as under current laws. Abolition of the patent laws might not decrease the volume of invention, but it might decrease the rate at which those new products and processes are brought into the economy. Society would then get as many inventions as it does now, but it would get some of them later. Unfortunately, the magnitude of this possible slowing of technological progress cannot be inferred from present knowledge.

Also unclear is the impact of abolition upon small, innovative firms and upon those industries that apparently cannot rely on trade secrecy and barriers to entry to inhibit copying of their inventions. It has often been argued that independent inventors and entrepreneurs starting up small firms to exploit a new technology require patents in order to enter markets, gain security against competition from large companies, and obtain venture

capital for future growth.<sup>63</sup> However, many small firms and inventors may derive few advantages from their patents because they cannot afford to enforce them by infringement litigation.<sup>64</sup> Termination of the patent system, according to the empirical/historical literature that has been discussed, could also have serious effects upon manufacturers of ethical drugs and other chemicals that, because of their technology and the structure of their industries, have found it hard to secure the returns from their R&D investments without the use of patents. There is a risk that the output of new drugs from United States firms could be even more severely depressed by the withdrawal of patent protection than it apparently has been by the 1962 amendments to the federal Food, Drug, and Cosmetic Act.<sup>65</sup> However, public subsidies for pharmaceutical R&D could probably reduce the size of this loss, although at the cost of a substantial waste of resources. Unfortunately, one can only guess at the relative size of these various effects.

The current ignorance on this and related issues makes abolition of the United States patent system a risky enterprise. The risk is not that such a change would cause a catastrophic inter-

63. R.R. NELSON, M.J. PECK, & E.D. KALACHEK, *TECHNOLOGY, ECONOMIC GROWTH, AND PUBLIC POLICY* 161 (1967); J. JEWKES, D. SAWERS, & R. STILLERMAN, *THE SOURCES OF INVENTION* 188 (2d ed. 1969); F.M. SCHERER, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE* 389 (1970).

The histories of concerns such as Xerox Corporation and Polaroid Corporation have been cited in support of this view. See *General Revision*, *supra* note 29, at 251 (statement of Prof. John Bardeen, Dep't of Physics, Univ. of Ill.); *American Patent System*, *supra* note 45, at 266 (statement of Donald Brown, Vice President and Patent Counsel, Polaroid Corp.).

64. "A very weak patent in strong hands is pretty powerful. A very strong patent in weak hands is not worth anything." *American Patent System*, *supra* note 45, at 221 (statement of Thurman Arnold). See also *id.* at 101 (statement of Allen B. DuMont, President, DuMont Television Corp.); *id.* at 324 (statement of M.D. McFarlane, Inventor), *id.* at 355 (statement of C.H.C. Van Pelt, Industrial Economist and Management Consultant); *General Revision*, *supra* note 29, at 260 (statement of J.W. Birkenstock, Vice Pres., International Bus. Mach. Corp.). That small firms and independent inventors face severe disadvantages in enforcing their patents has been recognized throughout this century: "Under our very defective patent laws no poor man can hold a patent for any length of time against the wishes of a man of wealth. . . . [Threatened with a legal challenge] he will either drop it or accept a paltry sum for it. . . . What we need as much as a tariff revision is a revision of our patent laws." 42 CONG. REC. 6166 (1908) (remarks of Rep. Küstermann).

65. S. PELTZMAN, *REGULATION OF PHARMACEUTICAL INNOVATION* (1974); Grabowski & Vernon, *Structural Effects of Regulation on Innovation in the Ethical Drug Industry*, in *ESSAYS ON INDUSTRIAL ORGANIZATION IN HONOR OF JOE S. BAIN* 181 (1976); Grabowski & Vernon, *Consumer Protection Regulation in Ethical Drugs*, 67 AM. ECON. REV. PAPERS AND PROCEEDINGS 359 (1977).

ruption of technological progress but rather that it might generate social costs considerably in excess of the corresponding social benefits, thereby reducing the general welfare. The likelihood of such a result cannot be estimated because so little is known about the probable reactions of firms, inventors, and governments to the total elimination of patent rights. Significant as they are, the social costs of the existing United States patent system could nevertheless be exceeded, so far as is known, by the social costs of its elimination. Present knowledge is therefore inadequate to justify such a fundamental change in the nation's laws.<sup>66</sup>

Under these circumstances it seems prudent to subordinate fundamental to piecemeal reform, to set aside schemes for total abolition, and to continue the search for modifications of the established patent system that show promise for relieving the conflict between it and the antitrust laws with less risk to social welfare. One such proposal is discussed below in Part IV.

### C. *Per Se Prohibitions*

In recent years the search for a satisfactory reconciliation of patent and antitrust law has led to proposals for *per se* prohibitions of certain kinds of patent licensing transactions, especially those conveying exclusive field or territorial rights and those imposing restrictions upon the prices and output rates of licensees. Prohibiting these practices, while it would defeat many efforts to cartelize markets without any material danger to technological progress, would unfortunately also defeat many efforts to use the patent system to accomplish ends fully consistent with the fragmentation and balancing of economic power sought by the antitrust authorities. The risks of such interference with innocent and useful activities weaken the justification of these prohibitory rules.

A patent licensor may wish to control the prices and output rates of his licensees for several reasons. He may impose such restrictions in order to regulate his royalties. He may, that is, use them to achieve the distribution of output among licensees of varying efficiency that minimizes the costs of manufacturing the patented product, and the level of collective output that maximizes the aggregate profits of the industry and thus maxi-

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66. For similar conclusions, see Machlup, *supra* note 50, at 79-80; Parker, *supra* note 50, at 255.

mizes also the fund available for royalty payments.<sup>67</sup> Price restrictions may also be used to protect a manufacturing licensor against loss of business to licensees who, being more efficient or having avoided the burdens of R&D investments, have lower costs. This protection may be especially important to the licensor who is uncertain about the validity of his patents, and thus also about the size of his future royalties, and who therefore wishes to acquire the manufacturing experience and marketing skills that will insure him against great loss of market share in the event that his patents can no longer be enforced.<sup>68</sup> A licensor may also wish to control the prices of his licensees in order to reduce the threat from firms that seem likely to enter his industry by infringing or circumventing his patents. Such limit pricing may deter entry by restraining the current profits of the industry and also the profits that infringers could reasonably expect to earn during the pendency of litigation to enforce the licensor's patents.<sup>69</sup> In addition, some writers have defended price controls as necessary to ensure an optimal supply of presale services in connection with the marketing of a patented product.<sup>70</sup> They argue that in the absence of such restraints any licensee might be tempted to invest nothing in such services in order to gain a cost and price advantage over other licensees; the temptation to do this would be especially great if a licensee that did not invest could nevertheless receive substantial benefits from the presale services provided by competitors in the same territory. Other possible reasons for imposing price and output controls include a need to attract licensees by guaranteeing them freedom from competition and a need to make sure that those licensees, once signed up, put a reasonable amount of effort into developing the market for the patented goods.<sup>71</sup>

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67. Priest, *Cartels and Patent License Arrangements*, 20 J.L. & ECON. 309, 318-22 (1977).

That regulating licensees' prices is but regulating the licensor's royalties was one of the principal arguments pressed upon the court in *General Electric*. Brief for Appellee (General Elec. Co.) at 67, 76-77; Brief for Appellee (Westinghouse Elec. & Mfg. Co.) at 29, *United States v. General Elec. Co.*, 272 U.S. 476 (1926).

68. Such may be the explanation of the price restrictions imposed in *Royal Indus. v. St. Regis Paper Co.*, 1970 Trade Cas. (CCH) ¶ 73,076 (C.D. Cal. 1968), *aff'd*, 420 F.2d 449 (9th Cir. 1969).

69. Adelman, *Property Rights Theory and Patent-Antitrust: The Role of Compulsory Licensing*, 52 N.Y.U. L. REV. 977, 988-90 (1977).

70. Priest, *supra* note 67, at 324-25; Bowman, *supra* note 6, at 123-33; *Spotlight*, *supra* note 8, at 42 (remarks of Robert H. Bork).

71. C.T. TAYLOR & A. SILBERSTON, *supra* note 55, at 121; Ney, *supra* note 39, at 101-



Some have argued that these direct controls are really unnecessary because their functions could be served equally well by regular adjustments in royalties.<sup>72</sup> It is, however, arguable that the transaction costs of such continual changes would be so great that licensors would usually prefer direct controls.<sup>73</sup>

The patent bar has justified exclusive field and territorial licenses as legitimate means by which firms, especially those that are small and new, can induce licensees to invest in the development of markets for untested but promising technologies.<sup>74</sup> It is argued that these innovating firms must guarantee their licensees freedom from competition in a field or territory in order to get them to assume the risks of applying untried inventions to new uses or of extending their sale into new markets. Without such assistance from licensees, it is contended, many small firms could not by themselves afford to widen the markets for their inventions and would therefore be forced to sell them to larger competitors or to leave them unexploited. However, a patentee might also place territorial or field restraints upon its licensees in order to reserve a portion of the market for its own sales or to practice price discrimination.<sup>75</sup>

Restrictions upon patent licensees allow the owners of inventions to increase the income from their patents and to strengthen their market positions. However, these benefits, as emphasized above,<sup>76</sup> constitute returns on R&D investments that exceed those guaranteed and protected by statute: returns to which patentees have no inviolable entitlement and which cannot therefore be used to justify the licensing transactions that have produced them. Contrary to what Bowman and others

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02. For an example of an output restraint motivated by such an interest, see *American Indus. Fastener Corp. v. Flushing Enterprises, Inc.*, 362 F. Supp. 32, 34 (N.D. Ohio 1973).

72. Baxter, *supra* note 43, at 322; L.A. SULLIVAN, *supra* note 54, at 543.

73. Adelman, *supra* note 69, at 993. To enforce output and price controls indirectly by periodic variation of royalties would of course require the licensor to incur the costs of regularly collecting and verifying data on the costs and demand conditions of each of his licensees. Use of direct controls would obviate such activities.

74. See, e.g., *Patent Law Revision 1971*, *supra* note 6, at 534-35 (Memorandum on the Need for Legislative Clarification of the Law Relating to Patent License Provisions, Submitted on behalf of the American Patent Law Ass'n); *id.* at 586 (Letter from A.R. Whale to Sen. John L. McClellan, May 13, 1971); *id.* at 652 (Letter from John B. Clark to Sen. John L. McClellan, April 30, 1971); Letter from Merl Sceales to Sen. John L. McClellan, Nov. 5, 1970, *reprinted in* 117 CONG. REC. 7170 (March 19, 1971) (remarks of Sen. Scott).

75. TAYLOR & SILBERSTON, *supra* note 55, at 125; SULLIVAN, *supra* note 54, at 555.

76. See *supra* text accompanying notes 34-44.

have suggested,<sup>77</sup> one cannot legitimate restrictive licensing by a simple showing that it permits firms to make more money from their intellectual properties. These private benefits must in every case be weighed against the effects on other important social interests of allowing the freedoms that have made possible the enlarged flows of income.

Unfortunately, private freedoms can at times impair the social interests protected by the antitrust laws. The restraints on licensees that allow a patentee to regulate his royalties, practice price discrimination, or encourage development of markets are also the restraints that allow him, often in league with those licensees, to establish and maintain a cartel. Licenses that provide exclusive rights to fields of use or to territories or that restrict the prices and output of licensees can be tributary to a conspiracy to divide and control markets under cover of the patent laws. Licensor and licensee alike profit from these collusive arrangements: in return for the licensor's suppression of competition, and possibly his reduction of royalties below the profit-maximizing level, the licensees forbear from challenging his monopoly grant, which is often of dubious validity, by either litigation or circumvention.<sup>78</sup> Moreover, the training in cooperative behavior that such collaboration provides can facilitate concurrent or subsequent collusion in the sale of unpatented goods.<sup>79</sup>

Collusive agreements achieved by means of the patent laws can for long periods arrest both competition and technical progress and sustain large imbalances of economic power. Cartels always menace market economies, especially when the patent laws are used to restrain the centrifugal forces inherent in any

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77. W. BOWMAN, *supra* note 6, at 64-139, 162, 241. Bowman apparently believes that any patentee should be allowed to maximize the profits from exploitation of his patent, provided that the resulting rewards measure "the patented product's competitive superiority over substitutes." *Id.* at x. See also Furth, *Price-Restrictive Patent Licenses Under the Sherman Act*, 71 HARV. L. REV. 815 (1958). For Bowman's application of this rule, see W. BOWMAN, *supra* note 6, at 169, 186, 189, 223, 237, 241. However, as Priest has argued forcefully, it is very hard to assess the relative value of a patented invention. The Furth-Bowman test for discriminating the rightful limits of a patentee's freedoms is therefore not very operational. Priest, *supra* note 67, at 337 n.101. The Furth-Bowman test, therefore, is nothing more than a restatement of the simple rule that the law should not interfere with the patentee's efforts to maximize his returns from exploitation of his patent grant.

78. See *supra* note 43.

79. See, e.g., *United States v. Associated Patents, Inc.*, 134 F. Supp. 74, 80 (E.D. Mich. 1955), *aff'd per curiam sub nom. Mac Inv. Co. v. United States*, 350 U.S. 960 (1956). See also SULLIVAN, *supra* note 54, at 526.

collusive agreement.

A realization of these dangers has led Baxter and others to propose that patentees be strictly prohibited from granting exclusive field or territorial rights or from imposing controls on the prices and output rates of licensees.<sup>80</sup> This proposal has merit. Its adoption would obstruct use of the patent laws to subvert competition and transform world industries into the private estates of a few business managers. Few patentable inventions are so valuable that the public should celebrate their arrival by conferring on private corporations the legal right to rule an industry by means of a cartel. Such a reward is extravagant and unjustifiable because it is not duly proportioned to the individual inventor's marginal contribution to what is in fact a *social* process of technological discovery<sup>81</sup> and because, by giving too much power to too few, it creates the conditions for social injustice.

It is not a telling objection to this proposal that forbidding the licensing restrictions most adaptable to the needs of cartelists could cause many patentees to narrow competition by refusing to license at all. There will be many patentees who, because they have no manufacturing facilities or because they wish to receive the certain returns that royalties provide, will license their patents with or without the right to impose price or output controls or to grant field and territorial monopolies.<sup>82</sup> Moreover, as argued above,<sup>83</sup> the refusal of some patentees to license could, by inducing efforts to circumvent their patents, quicken both competition and the rate of technical progress.

A more important objection to the proposal is that enforcing its prohibitions might block innocent uses of the patent system that present few, if any, threats to competition. The impact

80. Baxter, *supra* note 43, at 337; SULLIVAN, *supra* note 54, at 545, 561; *Patent Law Revision 1971*, *supra* note 6, at 554-56 (Letter from W.F. Baxter to Sen. Hart). It must be noted that Baxter has in recent years abandoned this position to some degree and now appears to reject a *per se* rule against price controls. See the remarks of Baxter's deputy in the Antitrust Division before the ABA Antitrust Section last year: Abbott Lipsky, Jr., Current Antitrust Division Views on Patent Licensing Practices, U.S. Dep't of Justice, Antitrust Division 15 reprinted in 5 TRADE REG. REP. (CCH) ¶ 50,434 (Nov. 5, 1981). The author is grateful to Dr. Russel Pittman of the Antitrust Division for bringing this paper to his attention.

81. Polanvyi, *Patent Reform*, 11-12 REV. ECON. STUD. 61 (1943-45); Machlup, *supra* note 50, at 29.

82. Gibbons, *Price Fixing in Patent Licenses and the Antitrust Laws*, 51 VA. L. REV. 273, 285 (1965). Patentees with blocking patents will also be forced to license regardless of the extent of their freedoms to impose restrictions on licensees. *Id.* at 296.

83. See *supra* text accompanying notes 52-55.

of any licensing transaction on competition will depend on the structure of the markets within which the parties to the agreement operate, the scope of the agreement, and the licensor's position in those markets. Thus, a set of exclusive field licenses will not harm competition to the extent that (1) the relevant market has only trivial barriers to entry, (2) the licensor's technology has good substitutes sold by other firms, (3) the restraints do not involve these other firms nor all of the firms capable of using the patented technology, and (4) the restraints help a small or new firm take market share away from larger competitors.<sup>84</sup> Price controls will not harm competition to the extent that the licensees on which they are imposed, perhaps because of their size relative to that of the licensor, would not have engaged in price competition in any event.<sup>85</sup>

The courts have often recognized these relationships. Thus, they have sanctioned the imposition of price restraints and license grant-backs by a patentee manufacturing lockbolts in competition with several other firms making alternative fasteners;<sup>86</sup> the grant of an exclusive license by a small firm selling thermoplastic highway pavement-marking compositions in competition with large firms making paint, adhesive tapes, and other such marking materials;<sup>87</sup> and the imposition on licensees of concessions of validity by a manufacturer of a metal-threader facing increasing competition from sellers of alternative metal-working tools serving similar functions.<sup>88</sup> Furthermore, the courts have rejected counterclaims of patent misuse in infringement actions when analysis of the structure of the relevant market disclosed little danger that the patents in question could be used to monopolize.<sup>89</sup>

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84. Professor Joseph Brodley has often emphasized this point; see his statement in *Patent Law Revision 1971*, *supra* note 6, at 565. See also the remarks of Circuit Judge Pell in *Moraine Products v. ICI America, Inc.*, 538 F.2d 134, 145 (7th Cir. 1976), *cert. denied*, 429 U.S. 941 (1976).

85. *Gibbons*, *supra* note 82, at 304.

86. *United States v. Huck Mfg. Co.*, 227 F. Supp. 791 (E.D. Mich. 1964), *aff'd per curiam*, 382 U.S. 197 (1965).

87. *Cataphote Corp. v. DeSoto Chem. Coatings, Inc.*, 450 F.2d 769 (9th Cir. 1971), *cert. denied*, 408 U.S. 929 (1972).

88. *Bendix Corp. v. Balax, Inc.*, 471 F.2d 149 (7th Cir. 1972), *cert. denied*, 414 U.S. 819 (1973).

89. *Prestole Corp. v. Tinnerman Products, Inc.*, 271 F.2d 146, 157 (6th Cir. 1959), *cert. denied*, 361 U.S. 964 (1960); *Mercantile Nat'l Bank v. Quest, Inc.*, 303 F. Supp. 926 (N.D. Ind. 1969), *aff'd*, 431 F.2d 261 (7th Cir. 1970), *cert. denied*, 401 U.S. 956 (1971); *Diamond Int'l Corp. v. Walterhoefer*, 289 F. Supp. 550 (D. Md. 1968).

Unfortunately, the proposed per se rule would prevent courts from being so discriminating in their assessments of various licensing practices. It would force them to strike down field restrictions applied by a small, new firm struggling to develop a market for a new substitute for established technologies as well as field restrictions applied by a dominant firm pursuant to a cross-licensing agreement covering all the manufacturers in a concentrated, rather stagnant industry with formidable barriers to entry. The dangers to competition from the former restraints are hardly the same as those from the latter.

This legal inflexibility may be justified in order to economize on scarce judicial resources or to make the law more certain and predictable. It could, for example, be argued that the restrictions covered by the proposed per se rule are almost always used to further conspiracies to suppress competition and that discriminating judicial scrutiny of particular cases would therefore save from the law's interdiction only a negligible number of innocuous or pro-competitive transactions and that, for that reason, a per se rule is justified.<sup>90</sup>

This argument, while entirely plausible, is unfortunately very hard to test. There is little evidence from which one might be able to draw reliable inferences about the frequency with which price controls or exclusive territorial licenses have been used in ways consistent with the antitrust laws. Such evidence could perhaps be assembled, but it is not now available.<sup>91</sup> Moreover, the argument fails to consider that there may be other rules that, relative to the per se rule, permit a more discriminating application of the law at approximately the same costs in judicial and administrative resources.

Thus, the proposed strict rule, despite its considerable merit, does not warrant adoption by the courts. Its absolute prohibition of those licensing practices most useful in cartelization has important drawbacks. These probably would not include, for

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90. See, e.g., *Northern Pac. Ry. v. United States*, 356 U.S. 1, 5 (1958); SULLIVAN, *supra* note 54, at 535.

91. Priest has suggested criteria by which abuses of the patent laws can be identified. Abuses will, he maintains, be evident from the distribution of patent rents between the licensor and his licensees: royalties of patents used primarily to support cartels will tend to be lower than those of patents being legitimately exploited. Priest, *supra* note 67, at 326-55. However, a low royalty (i.e., one substantially less than the value of the invention to licensees) may nevertheless be consistent with lawful exploitation if it is, for example, necessary to recruit a second-source (alternative supplier) of the patented good, without which the market cannot be developed.

reasons argued above,<sup>92</sup> any material hindrance of technical progress, since the per se rule would not abrogate in any way the basic exclusive rights of patentees. It would, however, block some legitimate uses of the patent system, especially by small or new firms, that would advance the ends of the antitrust laws. For this reason it is less satisfactory than the more flexible rules put forward in the next section.

#### IV. LIMITED COMPULSORY LICENSING

The three proposals that have been discussed for reducing the interference between the patent and antitrust laws have serious disadvantages. Restoring the doctrines of relatively unlimited licensor freedom would create opportunities for cartelization that would almost certainly be turned to advantage by firms in many industries. Preventing this result by abandoning the present patent system might well entail equally undesirable consequences in the form of slowed technical advance in some important industries and a weakening of the competitive positions of small firms. Absolute prohibition of the licensing restraints most useful for cartelization would unnecessarily obstruct legitimate and beneficial uses of the patent system.

These problems demonstrate the need to consider yet another proposal for reconciling patent and antitrust law, a proposal for a type of limited compulsory licensing that would not intrude on the exclusive rights of patentees but would compel them to limit the number of restricted licenses that they could grant under their patents. Limited compulsory licensing provides a reasonable system for balancing the rights of patentees with the social interests in moderating inequalities of bargaining power within markets.

This Article proposes that Congress create a new federal agency, the Patent Licensing Review Board, composed of the Assistant Attorney General-Antitrust Division, the chairman of the Federal Trade Commission, and the Commissioner of Patents (or their deputies). The Board and its staff would be charged with enforcing certain regulations pertaining to the sale of rights to patented technology. To enable it to do this, Congress would provide by statute for the mandatory registration with the Board of all assignments of and licenses under United

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92. See *supra* text accompanying notes 58-66.

States patents and closely related know-how.<sup>93</sup> This requirement, proposed by Thurman Arnold almost forty years ago,<sup>94</sup> would furnish the Board with information on the workings of an important part of the markets for intellectual assets and would block covert use of the patent system to further anticompetitive conspiracies.

Under the proposed system each patentee would retain the right to exclude others from making, using, or selling his patented inventions throughout the nation. There would be no requirement that he license or work his patent; it would be presumed that a rational entrepreneur would suppress only those of his inventions that, because of their obsolescence or other infirmities, could not profitably be developed or marketed.

A patentee would, however, be subject to the Board's regulation as soon as he exceeded his statutory grant by offering licenses under his patents. The Board would define by administrative rules two kinds of licenses: restricted, under which licensors could place any restraints upon the market conduct or the research programs of licensees; and unrestricted, under which they could not impose such restraints.<sup>95</sup> The Board would allow every patentee at least one restricted license in order to permit him to realize such lawful benefits of licensing as the establishment of second sources for new products or technologies, or the settlement of interference or infringement actions. Upon application from the patentee, the Board could authorize him to

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93. Under 35 U.S.C. § 290 (1976), the clerks of all U.S. courts are required to send to the Commissioner of Patents notices of patent infringement actions initiated within their districts. The proposal under discussion would not affect this reporting system.

94. *Bone Comm. Hearings*, *supra* note 12, pt. 7, at 3281 (statement of Thurman W. Arnold, Assistant Attorney General, Dep't of Justice).

95. The Board, as a result of its experience with particular cases, would have to develop (and regularly revise) administrative rules specifying the lawful terms of an unrestricted licensing agreement. These would certainly not include restrictions upon the prices, output rates, marketing practices, or customers of licensees, nor grants of exclusive rights to fields or territories, grant-back requirements, or obligations to report current transaction prices to an industry's statistical bureau. They would, however, include the standard provisions relating to the measurement, payment, and adjustment of royalties; the transfer from the licensor of unpatented know-how or other technical assistance; duties of the licensees to maintain records relevant to the assessment of royalties; rights of sublicensing; arbitration of disputes over the interpretation of the agreement; defense of the licensee against infringement suits; and the consequences of licensee default or of patent invalidation. There would of course also have to be provisions protecting any rights created by the authorized restricted licenses. Thus, if these restricted licenses conveyed exclusive rights to certain territories, then any subsequent unrestricted license would have to bar the licensee of that contract from working the invention in those territories.

grant additional restricted licenses, the number of which would depend on the structure of the markets (for both inventions and final goods) likely to be affected by these licensing transactions and the patentee's position within them. The Board would refuse applications for restricted licenses upon a finding that the structure of the relevant markets would favor the use of such licenses for collusive purposes. Thus, other things being equal, a patentee's opportunities to grant more than one restricted license would be diminished the higher the concentration and the barriers to entry of the industry in which the invention would be worked.<sup>96</sup> However, regardless of the structure of his industry, the patentee would have the right to grant an unlimited number of unrestricted licenses. The Board would have the authority to enjoin the performance of any unsanctioned restricted licensing contract, subject to judicial review.

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96. The concentration of an industry measures the extent to which it is dominated by a few large firms or, more precisely, indicates the proportion of its economic activity (usually represented by data on sales or value-added) generated by its largest  $n$  firms (where  $n$  usually equals 4, 8, or 20). The barriers to entry into any industry are those conditions (e.g., states of demand; capital costs of a plant of efficient scale; the pricing, costs, vertical integration, patents, and financial reserves of incumbent firms) that discourage investments in new capacity within the industry and thus limit the number of actual and potential competitors for incumbent firms. In theoretical terms, the height of an industry's entry barriers at any particular time can be measured by the difference between the limit price (i.e., the minimum price that incumbent firms can charge without inducing entry) and the average total costs of those incumbent firms or, alternatively, by the number of firms at that particular time for which the net present value of investments in new capacity is negative. Clearly, since many variables affect the height of entry barriers and since some of these variables (e.g., expected reactions of incumbent firms to entry) are hard to measure, an economist can hope only to approximate the height of the barriers at any given time, relying primarily upon such relatively accessible information as capital costs of new plants, the history of entry, and the resources, efficiency, and reputation of established firms. Concentration, because it indicates the number of significant firms, and barriers to entry, because they indicate the capacity for sustained supra-competitive pricing, are important measures of the costs of negotiating and preserving a cartel.

There are of course other measures or indicators that the Board's staff would have to take into account in making recommendations regarding quotas of restricted licenses. The number of such licenses allowed should probably be more constrained, other things being equal, the lower the countervailing power of buyers; the lower the number of sellers; the higher the average ratio of fixed to variable costs for firms in the industry; the greater the similarity of firms' costs, products, and demand conditions; and the slower the normal rate of technological change for the industry. For a discussion of these and other elements of industrial structure that affect risks of cartelization, see R.A. POSNER, *ANTITRUST LAW: AN ECONOMIC PERSPECTIVE* 47-61 (1976).

Because firms even in a very unconcentrated industry may be tempted to use the patent laws to try to overcome the considerable obstacles to cartelization that they face, the Board should probably never allow the imposition of restricted licenses on all or most of the firms in an industry.



This proposal for limited compulsory licensing would give the Board discretionary power to vary the patentee's licensing freedom with the conditions of the relevant markets, thereby providing the flexibility lacking in a system of per se prohibition of exclusive licensing agreements. A patentee, for example, operating in a highly concentrated oligopoly with high barriers to entry and selling technology with no substitutes would probably be allowed but one restricted license in order to reduce as much as possible the risks of cartelization. He could impose a price or output restraint upon only one other firm in the industry, thereby reducing, if not eliminating, his capacity to organize collusive control of markets. On the other hand, to a small or new firm trying to create a market for an untried invention that would compete with technologies supplied by large firms, the Board might well allow several restricted licenses. This policy would then permit such a patentee, at very little risk to competition, to issue exclusive field or territorial licenses. By varying the number of restricted licenses the Board would be able to reduce the danger to the public of patent misuse.<sup>97</sup>

Because it would not detract from the patentee's exclusive rights and thus his capacity to earn his authorized returns, the proposed system would not jeopardize technological progress to any substantial extent; the impact would certainly be less than that caused by a system of comprehensive, liberal compulsory licensing.<sup>98</sup> Regulation of a patentee's restrictive licensing would neither abridge his freedom to maximize the profits from exercise of his statutory exclusive rights nor weaken his incentive to invest in circumventing R&D by providing guaranteed access to the patented technology of competitors.

If properly administered, the proposed program of limited compulsory licensing would break down incentives to build up

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97. Thus, the proposed system would permit a more flexible, discriminating control of licensing transactions than would be possible by use of the somewhat similar systems suggested by Turner, *supra* note 49, at 475, and by Adelman, *supra* note 69, at 999, under which the patentee, having granted one (Turner) or two (Adelman) licenses, would be required by law to grant comparable licenses to any qualified applicant. In addition, these systems also suffer from the disadvantage that they require the authorities to devise and apply criteria for determining qualified applicants for licenses and comparable licenses.

98. For theoretical arguments as to why compulsory licensing should have an adverse impact upon firms' willingness to invest in R&D, see Whitaker, *Compulsory Licensing—Another Nail in the Coffin*, 2 AM. PAT. L.A.Q.J. 155, 163 (1974); Arnold & Janicke, *Compulsory Licensing Anyone?*, 55 J. PAT. OFF. Soc'y 149 (March 1973).

cartels by misuse of the patent system. The Board's control of restrictive licensing would so reduce the scope of any price, output, field, or territorial restraints which oligopolists might impose, that conspiracies to divide and dominate markets under color of the patent laws would be significantly impeded. Licensors would find it difficult to organize and police an effective cartel under the guise of enforcing the terms of a licensing contract. They would also find it difficult to protect their weak patents from challenge by bribing licensees with exclusive field or territorial rights. On the other hand, they would retain an appropriate measure of freedom to realize the benefits of licensing consistent with the objectives of the antitrust laws.

Despite these expected benefits, there are nevertheless grounds for objecting to the licensing controls under discussion. Administration of the controls would require the Board's staff to gather and analyze costly information on the structure of markets in order to determine the appropriate number of restricted licenses to allow each applicant. That mistakes would be made in interpreting these data and therefore in assessing the likelihood of patent cartels in certain markets seems almost certain. Furthermore, the limitations on the freedom of licensors might cause them to narrow the use of new technologies by granting no unrestricted licenses at all or perhaps, only those few restricted licenses to which they are entitled by law. Finally, the protection of petitioners' rights would require that appeals be permitted from the Board's decisions allotting restricted licenses. It is possible that this would result in protracted litigation in the federal courts that could seriously impede the regulatory process.

While the information costs of a system of limited compulsory licensing would not be trivial, they would nevertheless be moderated by the Board's access to the voluminous data on the structure, conduct, and performance of American industries prepared by the Federal Trade Commission, the Antitrust Division, and other agencies of the federal government.<sup>99</sup> These data, gathered primarily to further enforcement of the antitrust statutes, especially those covering anticompetitive mergers, should be most relevant to the Board's evaluations of the potential for

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99. Examples of this include the data gathered by the F.T.C.'s Line of Business Program pursuant to § 6 of the Federal Trade Commission Act (15 U.S.C. § 46 (1976)) and those gathered by the Antitrust Division of the Department of Justice pursuant to the pre-merger notification provisions of the Hart-Scott-Rodino Antitrust Improvements Act of 1976 (15 U.S.C. §§ 1311-14 (1976)).

patent abuse in industries. The costs of information would also be limited by the requirement that the Board prescribe quotas of restricted licenses not for every patentee and every patent but only for those patentees wishing to grant more than one restricted license. Many patentees, such as those using patents for defensive purposes only, would not wish to apply for authorization to grant additional restricted licenses. However, in dealing with those who would apply, the Board would admittedly confront the difficult problems of defining relevant markets for gauging the dangers of extending restricted licensing. These problems, which raise great puzzles in merger cases, are nevertheless no more intractable or complex than those currently confronting administrative agencies dealing with patents. They are not, for example, any more difficult than the problems of judging the patentability of an invention or of determining the "reasonable" royalties to award under terms of a comprehensive compulsory licensing statute.<sup>100</sup> The Board should therefore find its tasks challenging, but certainly not impossible.

The Board would, however, surely find it impossible to avoid making mistakes in assigning quotas of restricted licenses to patentees. As a consequence, adoption of the proposed system would certainly not guarantee the total elimination of all cartels built upon patents. Yet it is hard to think that the Board, closely associated with experts in the antitrust agencies, would be so incompetent in interpreting economic data and so reckless in dispensing authority for restricted licenses that its actions would have negligible or even perverse effects upon competition. Merely putting the burden on patentees to justify publicly a need for multiple restricted licenses would probably discourage many efforts at cartelization.

The objection that the proposed system would cause patentees to contract their licensing to the detriment of competition suffers from weaknesses that have been noted previously in other contexts.<sup>101</sup> Moreover, it fails to take into account the pressures for wide diffusion of new technologies that arise from

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100. For illustrations of the difficulties of determining reasonable royalties under a compulsory licensing statute (§§ 67-68 of the Canadian Patent Act, CAN. REV. STAT. ch. P-4, 1970), see *Parke, Davis & Co. v. Fine Chem. of Canada, Ltd.*, 17 D.L.R. 2d 153 (1959); *Hoffman-La Roche, Ltd. v. Bell-Craig Pharmaceuticals Div. of L.D. Craig, Ltd.*, 1966 S.C.R. 313; *Gordon Johnson Co. v. Callwood*, 1960 Can. Exch. 466.

101. See *supra* text accompanying notes 36-43 and 52-55.

the incentives of patentees to grant multiple licenses.<sup>102</sup>

The objection that the proposed system would generate litigation must be acknowledged. Judicial appeals from the Board's decisions would almost certainly occur. Disappointed applicants would have many opportunities for challenging the Board's market definitions and its evaluations of the risks to competition of plural restrictive licensing. Litigation is an inevitable incident of any regulatory system requiring exercise of administrative discretion: It is merely a social cost of flexibility that must be weighed against the benefits derived from a system that permits the law's effects to be conformed more closely to its purposes than is possible by reliance upon rigid, general rules such as those discussed in Part III. However, litigation is not a free good, and firms must weigh its costs against its expected benefits. The marginal revenue from restricted licenses in excess of the Board's allotment would be greatest for those firms contemplating cartelization by use of their patents, and they would certainly be the least likely to invite a judicial inquiry into their operations and business strategies. Thus, the firms for which the direct financial consequences of a successful lawsuit would be most favorable would be the least inclined to start such an action. The volume of litigation resulting from the Board's decisions would therefore probably not be so great that it would materially interfere with its regulatory activities.

## V. CONCLUSION

The proposed system for limited compulsory licensing can be defended as a feasible and relatively efficient means for resolving the conflicts that have emerged between the social interests served by the antitrust laws and the rights claimed by patentees.<sup>103</sup> It shows promise in dealing with the conflict with-

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102. These incentives arise not only from the patentee's wish to realize the benefits of licensing discussed above, but also from his wish to avoid the risks of having an exclusive licensee. For decades courts have permitted some kinds of exclusive licensees to initiate infringement suits on their own behalf when the owner of the patent could not or would not make an effort to enforce it and thus protect the licensee's exclusive rights. Such involuntary joinder of a patentee as a co-plaintiff exposes him to the risk that his patent may be invalidated in an infringement suit that he neither initiated nor conducted. See Heines, *Indispensable Parties in Patent Litigation*, 58 J. PAT. OFF. SOC'Y 232 (1976).

103. It must, however, be acknowledged that the proposed rules for limited compulsory licensing fail to deal with several problems of U.S. patent law that have important antitrust implications. Because they do not disturb the patentee's exclusive rights, they

out producing the serious disadvantages of the alternative policies that have been considered. Because limited compulsory licensing would not attenuate the exclusive rights of patentees, it would not create serious dangers of technological stagnation. Because it would constrain the freedom of patentees to impose restrictive licenses, it would also constrain their ability to subvert competition by resort to the patent laws. Because, unlike per se rules, it would allow a discriminating application of licensing constraints, it would not frustrate legitimate uses of the patent system conducive to competition. Instead, the proposed system would economize on legal restraints by proportioning them to the risks of cartelization indicated by the structures of the relevant industries. Although administration of the system would give rise to some problems, there are reasons to think that they would not be serious obstacles to realization of its objectives. As a consequence, the present proposal for limited compulsory licensing deserves serious consideration as a potentially useful amendment to current American patent law.

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do not afford any protection against the use of infringement suits by large firms for the primary purpose of intimidating or coercing their smaller rivals, nor does the proposed system provide any protection against the accumulation of economic power through the purchase of great numbers of patents. See, e.g., *Kobe, Inc. v. Dempsey Pump Co.*, 97 F. Supp. 342 (N.D. Okla. 1951), *aff'd*, 198 F.2d 416 (10th Cir.), *cert. denied*, 344 U.S. 837 (1952). The proposed rules also do not offer any solutions to the problems that appear to have arisen in the wake of *Blonder-Tongue*: the doctrine of collateral estoppel, by making patent invalidation a public good, may be weakening the incentives of licensees and other firms to pursue such judgments. *Blonder-Tongue Laboratories, Inc. v. University of Illinois Found.*, 402 U.S. 313 (1971). For an analysis of this problem, see Kidwell, *Comity, Patent Validity, and the Search for Symmetry: Son of Blonder-Tongue*, 57 J. PAT. OFF. SOC'Y 473 (1975).