Co-Ownership of Patents: A Comparative and Economic View

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There are three questions that arise with co-ownership of patents: (1) can each co-owner independently work the patent without being obligated to compensate the other co-owners for any profits derived from it?; (2) can a co-owner’s share be transferred to a third party without the consent of the other co-owners?; and (3) can a co-owner’s share be subdivided by transferring portions of it to third parties?

In this article we examine these three questions by first describing the U.S. rule on each, then comparing the U.S. rules with those of several foreign countries and, finally, sketching a brief economic analysis of the incentives created by the various rules. Our conclusions on the three questions are as follows: (1) We favor keeping the U.S. rule permitting co-owners to work patents without compensating other co-owners; (2) contrary to the current U.S. rule, a co-owner’s share should not be transferrable to a third party without the consent of the other co-owners; and (3) also contrary to the current rule, no co-owner should be permitted to subdivide his or her interest by transferring portions of it to third parties. At the end of the article we provide some suggestions on how to protect clients from the vicissitudes of the current U.S. rules.

BACKGROUND

Joint inventors, generally speaking, must apply for a patent jointly.¹ The grant of a joint patent makes each joint patentee (also called a

joint owner, co-owner or tenant-in-common) an owner of an undivided one-half interest in the patent.  

Patent rights are different from any other form of property, so that rules adopted with respect to co-owners of ordinary chattels cannot safely be followed. For example, co-owners are said to be at the mercy of one another, as described in Walker on Patents; in the absence of a special agreement to the contrary:

One tenant in common of a patent right, however small his or her undivided interest in a patent, may exercise that right to any extent he or she pleases, without the consent of any co-tenant. The tenant in common may make, use and sell specimens of the patented invention to any extent, and may license others to do so, and neither the tenant nor the tenant’s licensees can be enjoined from a continuance in so doing. Nor can any recovery of profits or damages be had against such licensee at the suit of any co-tenant of any such licensor. And no recovery of profits or damages can be had against one co-tenant who, without the consent of the others, has made, used or sold specimens of the patented thing. The same rules apply as between two or more joint licensees or patentees, so that one joint patentee cannot restrain use of the patent, or require an accounting of profits, by the assignee of the other joint patentee under an unimpeached assignment.

These common law rules are partially codified at 35 U.S.C.A. § 262, which states:

In the absence of any agreement to the contrary, each of the joint owners of a patent may make, use or sell the patented invention without the consent of and without accounting to the other owners.

In sum, the consequences of co-inventor status are significant. Co-owners are at the mercy of one another in the absence of special agreements that protect against problems associated with the above general rules.

2 Drake v. Hall, 220 F 905, 906 (7th Cir. 1915); Bendix Aviation Corp. v. Kury, 88 F. Supp. 243, 244 (E.D.N.Y. 1950); 69 C.J.S., Patents § 219 (1951); S E. Lipscomb's Walker on Patents § 19:39 at 462. (Of course, if there were three joint inventors, each would own a one-third undivided interest, and so on.)

3 69 C.J.S., Patents § 219; Talbot v. Quaker-State Oil Refining, 104 F.2d 967, 968 (3d Cir. 1939).

4 S E. Lipscomb's Walker on Patents § 19:39 at 464-65, and cases cited therein (footnotes omitted). Other sources for these general rules include: Willingham v. Star Cutter Co., 555 F.2d 1340, 1344 (6th Cir. 1977); Talbot v. Quaker-State Oil Refining, 104 F.2d at 968; R. Ellis, Patent Assignments § 397 (3d ed. 1955); 60 Am. Jur. 2d, Patents § 8 (1987); 69 C.J.S., Patents § 219; and cases cited therein.

5 For examples of such agreements, see 14A Am. Jur. Legal Forms 2d, Patents § 196:126 (rev 1982) (agreement between co-owners of invention not to transfer patent rights); 14A Am. Jur. Legal Forms 2d, Patents § 196:354 (agreement between joint inventors defining rights in invention and patent to be applied for).
Exceptions to these general rules have been found and an accounting of profits required in certain cases involving fraud, such as where a co-owner’s interest was procured by fraud, or where a co-owner has led a licensee to believe that he was the sole owner. In addition, with respect to licenses, there is some (albeit scant and early) authority for the proposition that co-owners should divide royalties pro rata, but the weight of authority “is overwhelmingly contra.”

THE CONSEQUENCES OF ASSIGNING AN UNDIVIDED PARTIAL INTEREST

Under the express terms of the patent law, every patent application, patent or patent interest is assignable, without restriction. The results of an assignment of an undivided partial interest in an invention can be extraordinary.

The “benchmark case” discussing assignments is Waterman v. MacKenzie, which states:

[The monopoly conveyed by patent law] is one entire thing, and cannot be divided into parts, except as authorized by those laws. The patentee or his assigns may, by instrument in writing, assign, grant, and convey, either (1) the whole patent, comprising the exclusive right to make, use, and vend the invention throughout the United States; or (2) an undivided part or share of that exclusive right; or (3) the exclusive right under the patent within and throughout a specified part of the United States. [Rev. Stat., 1870 Act] § 4898. A transfer of either of these three kinds of interests is an assignment, properly speaking, and vests in the assignee a title in so much of the patent itself, with a right to sue infringers. In the second case, jointly with the assignor. In the first and third cases, in the name of the assignee alone.

Any co-owner is free to assign his interests in whole or in undivided part to another party, again in the absence of agreements to

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6 Haserot v. Keller, 228 P. 383 (Cal. App.), hearing den. (Ca. 1924) (interest procured by fraud); Seidensticker v. Bean, 300 P. 366 (Colo. 1931) (co-owner represented as sole owner to licensee); 69 C.J.S., Patents § 219 at 733.
10 138 U.S. at 255.
the contrary. The effect of an assignment of an undivided interest by a sole owner of a patent is clear:

Tenancy in common in a patent right will arise whenever the sole owner of such a right in all or part of the territory of the United States conveys to another an undivided interest in the whole or part of what he or she owns. ... The ordinary incidents of tenancy in common therefore appertain to such ownership and each owner becomes entitled to use the invention without accounting to the other. ¹¹

Note that an assignment can create this situation even where the assignor does not realize it. A remarkable case is where one of two or more co-owners assigns a partial undivided interest. An example follows: If there were two co-inventors or co-owners, for example A and B, and A sold a 25 percent undivided interest to C, then what A sold to C is a 25 percent undivided interest in what A owned. A owned an undivided interest in the entire invention. Strictly speaking, such an assignment would make assignee C a co-owner of A’s interest in the invention. What the assignment does in effect, though, is to create a third co-owner sharing the rights of the original co-owners. Assignee C in the above case would own an undivided interest in the entire invention through owning an undivided 25 percent of A’s undivided interest in the entire invention. C would be able to license the entire invention to another party without having to account to either A or B for profits. ¹²

As the quote above from Walker on Patents indicates, the general rules regarding co-owners apply however small the size of a co-owner’s undivided interest. ¹³ This apparently means that, in the absence of special agreements to the contrary, anyone assigned an undivided partial interest, by all or any of the co-owners, and regardless of the percentage owned, has essentially the same rights as other co-owners and can make, use, sell and license the invention. This would be true whether an undivided 1 percent interest or an undivided 99 percent interest in one or all of the co-owners’ rights was assigned. Even if a 1 percent undivided interest was assigned, a license to the entire invention could be sold by the party owning the 1 percent

¹¹ 5 E. Lipscomb’s Walker on Patents § 19:39 at 461.
¹² Talbot v. Quaker-State Oil Refining, 104 F.2d 967. See also R. Ellis, Patent Assignments § 391.
undivided interest and there would be no duty to account for profits. This would be true even if there were one or a very few potential customers.

The rules create obvious problems. But these are in turn exacerbated by two additional rules. First, all co-owners must join in a patent infringement suit. A "primary interest" protected by this requirement is "the interest of a co-owner in being able to license third parties under his or her patent without harassing suits by other co-owners." Thus a co-owner with a 1% interest can block an infringement suit by the other co-owner who holds the 99% interest. Relatedly, a license from one co-owner is as good as if given by all the co-owners; such a license is a "complete defense to an infringement suit" by other co-owners.

The actual percentage share of a co-owner becomes important only when infringement damages are at issue. It becomes important then because, as just noted, there is some authority that all co-owners must join in such a lawsuit, yet any recovery will be divided in proportion to the respective interests of the co-owners.

For certain purposes, therefore, there is arguably no effective difference between an assignment of a 1 percent undivided interest and an assignment of a 99 percent undivided interest as far as certain important rights of the assignee/co-owner are concerned. Assignments of undivided partial interests can pose a substantial trap for the unwary, and therefore special protective agreements are significant.

**A Comparative View**

The U.S. rule on assignability and transfer of whole or part interests is out of step with that of other countries. The continental countries and Japan require consent among co-owners of a patent when any of them disposes of their rights in it.

In addition, some continental patent laws require co-owners to compensate the other co-owners when they derive profit from working the patent individually. For example, the relevant section of the Patent Law of France reads as follows:

14 Willingham v. Star Cutter Co., 555 F.2d at 1344.
15 6 E. Lipscomb's Walker on Patents § 20:24 at 80–81; Talbot v. Quaker-State Oil Refining, 104 F.2d at 967–68.
16 Herring v. Gas Consumers' Ass'n, 9 F. 556, 557 (E.D. Mo. 1878); Ellis, Patent Assignments § 393.
Co-Ownership of Patents

(1) Joint ownership of the patent application or of the patent shall be governed by the following provisions:

(a) Each joint owner may work the invention for his own benefit subject to equitably compensating the other joint owners who do not personally work the invention or who have not granted a license. Failing agreement between the parties, such compensation shall be fixed by the District Court;

(c) Each joint owner may grant to a third party a nonexclusive license for his own benefit subject to making equitable compensation to the other joint owners who do not personally work the invention or who have not granted a license. Failing agreement between the parties, such compensation shall be fixed by the District Court.

However, the draft licensing contract shall be notified to the other joint owners with an offer to transfer the share at a specified price.

Within three months of such notification, any of the other joint owners may oppose the granting of a license on condition that he acquires the share of the joint owner wishing to grant the license.

Failing agreement within the time limit laid down in the above paragraph, the price shall be fixed by the District Court;

(d) An exclusive license may only be granted with the agreement of all the joint owners or by the authorization of the court;

(e) Each joint owner may, at any moment, assign his share. The joint owners shall have a right of pre-emption for a period of three months from the notification of the intended assignment. Failing agreement on the price, such price shall be fixed by the District Court.

(4) In the absence of provisions to the contrary, the provisions of this Section shall apply. The joint owners may derogate from this Section at any time by means of a joint ownership agreement.

The law in the Federal Republic of Germany (West Germany) is similar, in application if not on its face. Even though there are no detailed provisions on co-ownership in the German patent code, German law is quick to assume that two or more persons engaged in a joint venture of any kind, including most co-inventors, have formed a partnership. Where co-owners are deemed partners, they are pro-

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18 See Bernhard Geissler, Book Review (Review of Kurt Bartenbach, Zwischenbetriebliche Forschungs- und Entwicklungskooperation und das Recht der Arbeitnehmererfindung (1985), 19 Int'l Rev. Ind. Prop. & Copyright L. 416 (1988). See also A. Szakowski, Legal Regulation of Joint Inventions in Poland, in 3 Int'l Protection of Ind. Prop. 7 at 9–10 (S. Soltysinski, ed. 1983) ("A similar interpretation [to the French rule] has been arrived at in the theory and case law of West Germany" (citation omitted)).
hibited from unilaterally selling their share in individual pieces of partnership property.19

The laws in Japan and Great Britain share some of the characteristics of the continental rules, but also contain some elements present in the U.S. rule.

Japanese and British co-owners have the right to work the patent without being liable to other co-owners for infringement,20 but no co-owner may transfer his or her interest "without the consent of the other or others."21 In both countries, these rules can be varied by agreement.22 Under the British cases distinguishing permissible working from impermissible assignment without consent,23 a co-owner may appoint an agent to work the invention, but may not form a company to work it nor give the right to work it to an independent contractor operating for its own profit.24

AN ECONOMIC PERSPECTIVE

An economic view of the common ownership problem highlights the fact that co-owners have incentives to behave "opportunistically" with respect to one another—i.e., to cheat on each other. One view of the problem would see the patent as a common property resource, where those with access to the resource have an incentive to overuse it. The classic example of such a situation is the "tragedy of the commons," where common pasture land is overexploited since each individual owner of animals using the pasture maximizes earnings by using the land beyond the point where it is cost effective. There is an extensive economic literature on this problem.25

19 Id.
22 See T. White, Patents for Inventions at §§ 9-201 through 9-202 (4th ed. 1974) (Great Britain); R. Russell, Patents and Trademarks in Japan 118 (3d ed. 1974). White adds an interesting aside: Where sale or licensing is not contemplated, the amount of a "share" in a patent can have no significance, since all one co-patentee can do without the others is work the patent for his own benefit, and what fraction of it he is supposed to be working is clearly immaterial. But the custom of assigning peculiar fractions of patents is well documented from the reports. . . . Id., § 9-201 at 347.
23 Id., § 9-202 at 348.
24 Id., § 9-202 at 348.
While it would be nice to assert that we are the first to apply the "tragedy of the commons" concept to co-ownership of patents, it would be wrong. The first such treatment appeared 100 years ago in William C. Robinson's classic treatise on patent law. Section 796 of the treatise states:

Although no exact similitude exists between a patent privilege and any other property, yet the resemblance which it bears to a common of pasture is sufficient to suggest a possible solution of the present question. Both the patent privilege and the common of pasture are to be exercised within definite territory by specified means of enjoyment, and with a limited and determinable amount of profit. In both, the appropriation to himself, by one owner, of more than his just share of such profit is an unjust invasion of the rights of the others, whether, in the one case, by the introduction of an excessive number of commonable beasts, or, in the other, by distributing the patent privilege to an increased number of proprietors or licensees. Any assignment of either right which does not impose a greater burden on the common property, and any use of either by the owner which does not curtail its proper use by his co-owners, is fair and equitable although the ultimate result to him may far exceed any advantage which his co-owners may actually obtain. Now the law finds no difficulty in regulating the rights and duties of commoners of pasture. It recognizes the fact that the profit is limited in amount and, therefore, prevents its distribution among a greater number of cattle than the owners have the right to introduce. But it does not measure the keenness of their appetites, nor the capacity of their stomachs, nor the benefit derived by one owner over another on account of his choicer breed of animals or the higher value to him of the food obtained.\(^\text{26}\)

Robinson then notes that common ownership situations outside patent law are governed by interlocking duties among those who share the common resource. This allows the "commoners" to restrict each other from overuse. Robinson proposes to apply this treatment to co-owners of patents:

\[\text{Does not this suggest that the joint-owners of a patent privilege enjoy all the rights to which they are entitled, as against each other, when each is allowed to practice the invention without accountability to his co-owners for any benefit which his superior skill or larger capital may enable him to realize, and to assign his interest to one other person, natural or artificial, for what price he pleases, with the same power to use and assign; but that, as in the case of a commoner, he should not be allowed to introduce into the common property a greater number of those agencies by which its profits are to be absorbed, to the inevitable diminution of the advantage which his co-owners would otherwise have rightfully enjoyed?}\(^\text{27}\)

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\(^{26}\) 2 W. Robinson, Robinson on Patents § 796 at 571 n.2 (1890).

\(^{27}\) Id.
By this Robinson means to adapt the law of common pasturage to the co-ownerships of patents. Thus a co-owner need not share the proceeds of his own exploitation of the patent with the other co-owners; this would create a disincentive to maximize the value of one’s share in the common resource. There would be a reduced reward for outperforming the other co-owners, for example as a result of “superior skill or larger capital,” because the additional profit would have to be split among all the co-owners. (Another way of seeing this is to view the proceeds flowing from the outperforming co-owner to the other co-owners as a windfall to these other co-owners; they could in effect free-ride on the investment of time, energy, capital, etc. of the ambitious co-owner.)

But neither should a co-owner be permitted to transfer his interest as many times as he can get away with; this would be tantamount to a commoner continually introducing new animals to the common pasturage. Additional profit in this case would come out of the pockets of the other co-owners, who are left to compete with the greedy co-owner’s multiple assignees and licensees. In short, as Robinson rightly describes things, where profits are derived from superior use of the co-owner’s interest, they should not be split with the others; but where a co-owner attempts to opportunistically profit at the direct expense of the other owners (e.g., by transferring his or her interest repeatedly, thereby creating a series of new competitors), the law should prohibit the activity.

At the same time, Robinson overlooked an important consideration when he pressed the position that co-owners should be free to assign their interests a single time to anyone of their choosing. Robinson’s view does have the merit of promoting competition when an invention is being commercialized; the alternative rule—which we favor—does permit co-owners to withhold their consent to a transfer, thus perhaps giving them a tool to restrict competition by preventing a co-owner from transferring his or her interest to an efficient competitor. But the alternative to the Robinson position on this point is on balance more desirable. First, it would reduce the disincentives to engage in joint invention—because there is no possibility that the other joint inventors/co-owners can transfer their interests to a co-owner with whom the other co-owners will not be able to cooperate, e.g., because the new co-owner has very different plans for the commercialization of the technology. Second, and most important, adopting a rule whereby the consent of co-owners is required for any transfer of a co-owner’s rights would bring the U.S. into conformity
with the international norm on this point. This is an important consideration in this era of patent law harmonization.

But Robinson’s basic insight is nonetheless correct. Consider once again the distinction he makes between profits derived from the individual initiative of a co-inventor and those achieved at the expense of the other co-owners. This distinction can be defended a number of ways. Conceptually, the co-inventor rightfully claims an undivided share in an invention, and thus has the right to use that invention. Any profit derived from use should, therefore, not give rise to a claim for compensation by other co-owners; the co-owner using the invention is simply exercising his or her rights, and without the right to do so those rights would mean little. But where a co-owner appropriates some of the value rightfully belonging to the other co-owners, then the law should step in. Consequently, multiple assignments and licenses of purportedly “different” shares of a co-owner’s interest in the invention mean that the co-owner is, in effect, consuming some of the value of the invention that rightfully belongs to the other co-owners.

The U.S. rule would be better if it tracked Robinson’s reasoning on individual initiative and multiple assignments, which at heart reduces to an analysis of incentives. The current rule, where the law permits multiple assignments and licenses by each co-owner without consent of the others, could lead to exploitation by a greedy co-owner. Such a co-owner may have an incentive to consume some of the value of the other co-owner’s interests in the invention. At a minimum, there is no rule to prevent such a greedy co-owner from taking advantage of the others. This counsels strongly for adoption of the continental rule, whereby co-inventors may not transfer their interest or any “share” in it without consent of the other co-owners.  

At the same time, the current U.S. rule permitting a co-owner to work an invention without compensating the other co-owners should be retained. As Robinson correctly pointed out, the opposite rule results in unfairness, since non-working (or even lazy) co-owners

28 It would also seem wise to adopt the continental requirement that a court be permitted to settle any irreconcilable disputes between parties. This might occur, for instance, where one co-owner refuses to license a highly qualified licensee simply because that co-owner sees an opportunity to obstruct the transaction until she receives a premium over what the other co-owners are receiving. This is the case of a so-called “hold up” strategy, which would be especially effective where (1) there were more than two or three co-owners and (2) the party pulling the “hold up” was the final co-owner whose consent was needed by the licensee. Court supervision would prevent the “hold up” strategy from being successful.
could sit back and reap an equal share of the ambitious co-owner’s profits. This free-rider effect might be strong enough in some cases to actually make it foolish for a co-owner to work the invention.

A GAME THEORY MODEL OF THE CO-OWNERS’ INCENTIVES

The rationale for the American rule regarding compensation by co-owners for working a patent is easily captured by a simple game theory model. The matrix below presents payoffs in a hypothetical situation involving two co-owners deciding whether to work a patented invention. In each pair of numbers in the matrix, the number on the left indicates the payoff to Party A, and the number on the right indicates the payoff to Party B. In this example, the gross revenue to be gained by working the invention is $20; this applies whether one or both of the inventors produce it. The cost of production is $12, which is again independent of the number of producers. The figures in the upper left hand corner ("4/4") represent the net gain to each from working the patent (i.e., $4 each); this is the net profit of $8 (gross revenue minus cost, $20−$12) split between the two co-owners. The figures in the lower right-hand corner illustrate the gain to each from not producing at all. This is $3 per co-owner, which is based on the assumption that they can invest the money they would have spent commercializing the invention, and their investment would yield $3. The other two corners of the matrix represent the payoffs when one party works the patent and the other does not. In the upper-right corner, A works the patent but B does not. The lower-left corner represents the opposite situation.

<table>
<thead>
<tr>
<th></th>
<th>Party A</th>
<th>Party B</th>
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<tbody>
<tr>
<td>Works</td>
<td>Works</td>
<td>Does not work</td>
</tr>
<tr>
<td></td>
<td>4/4</td>
<td>4/7*</td>
</tr>
<tr>
<td>Does not work</td>
<td>7/4*</td>
<td>3/3</td>
</tr>
</tbody>
</table>

\[ (x/y) = (\text{payoff to Party A}/\text{payoff to Party B}) \]

In this hypothetical situation, the maximum payoff for one player comes when that party refuses to work the patent and the other party works it. Because of this, if one party elects to work the patent, the rational response on the part of the other party is to elect not to work.
it. On the other hand, one party may have an incentive to threaten not to work the patent; the other party would then face a difficult choice, since if he or she also refused to work the patent the return would be lower (3 instead of 4—i.e., the bottom-right corner). But then the other party could make a counter-threat not to work it, putting the original threatener to the same choice. As a consequence, the model predicts that neither party will elect to work the invention. (This is known as a "chicken" game, since the first party to "blink" or turn chicken loses.) This standoff results because each party's optimal payoff is achieved when it does not work the patent but the other party does. The asterisks by the lower-left and upper right corner values are meant to signify that these are the optimal payoffs for the respective parties.

While this is simply a schematic game, it does illustrate the nature of the problem created by the French patent statute quoted from earlier. The game theory model also suggests why the American rule is better: it takes away the opportunity for "strategic bargaining" by the co-owners. If one party elects to work the patent, there is no need to share the proceeds with the other co-inventors.29 One may conclude from this analysis that we should retain the American rule allowing one co-owner to work the patent without paying compensation to the other. And perhaps the French should consider changing their rule, which requires such compensation.30

29 It is interesting to note, however, that even under the American rule there is some room for strategic behavior. Co-owner B may still threaten to enter into competition with co-owner A. In addition to reducing A's market share, this would also tend to reduce the price that A could charge for the product embodying the patented invention, thus further cutting into A's profits. The result might be a voluntary license agreement whereby A agrees to pay B a royalty in exchange for B's promise not to compete. The problem with such an agreement, of course, is that it would likely violate federal antitrust laws. But it is interesting to observe that in the absence of these laws the voluntary transaction between A and B might look quite similar to the legally mandated arrangement under the continental rule.

30 There may of course be valid noneconomic justifications for the French rule, notably the historic foundations of French intellectual property law, which stress that inventors have "natural rights" over their inventions which the state merely ratifies by granting a patent. Also, note that the French law permits a district court to intervene if the two parties cannot reach agreement. This suggests that where a valuable technology is at issue, a French court is empowered to force an agreement between the parties. This reduces somewhat the chance of a permanent deadlock as predicted in the "chicken game" set out in the text. Such a deadlock, or other strategic behavior, is especially likely in France because joint ownership is granted to employees and employers when an employee makes an invention. See Commission on the European Communities, Comparative Study of Employees' Inventions Law in the Member States of the European Communities at 27 (Community Labour Law Series No. 2, 1977). Note, however, that the costs of judicial intervention could conceivably outweigh any benefits. And of course the ultimate threat of district court supervision merely constrains the strategic behavior the parties may engage in; it does not eliminate it entirely, as the American rule does.
CONCLUSION

The American rule permitting co-owners to work their patent without compensating the other co-owners is preferable to the French rule requiring compensation. As the simple game theory model sketched out above illustrates, the French rule can lead to a situation where both co-owners elect not to work the patent, in hopes of forcing the other co-owner to work it and split the profits. Since society has an obvious interest in seeing patented technology developed, the American rule is better.

The right of co-owners to license and assign their full interest, or any portion of it, should be restricted according to the rule in effect on the continent, in Great Britain and in Japan: consent of all co-owners should be required. This will prevent one co-owner from taking advantage of the others, as a "tragedy of the commons" analysis predicts will occur.

SOME PRACTICAL SUGGESTIONS

As discussed at length above, the need for special protective agreements should, therefore, be addressed in every case of joint invention. Such agreements should address such issues as accounting between the joint patentees, co-operation against infringers and limitations on rights in the invention generally.

The need for special protective agreements should also be addressed in every case of an assignment of an undivided partial interest. Such assignments should contain covenants regarding issues such as accounting between the co-owners and restrictions on sales of interests in the patent without consent of the other co-owner(s).31

One final caveat: Ellis points out that agreements between joint inventors are not assignments and might not be binding on assignees who take without notice. In such a situation, the only remedy would be by suit against the original joint inventor. Ellis suggests the following method to cover this situation: Each joint patentee assigns his interest to the other, includes desired covenants in the assignment, and then records the assignment.32 Besides providing record notice

31 See Ellis, Patent Assignments § 406.
32 Id. at § 405.
to third parties, an effect of this procedure would be to place desired limits on what each co-owner owns and so can assign to third parties.\footnote{Note the assumption in these practical points: that parties can make bargains which change the rules regarding co-ownership. Our suggestions are not meant to imply a change in the default nature of these rules. In certain cases, parties will wish to bargain around the default rules, and this should be permitted and encouraged. For example, universities often end up co-owning inventions with private firms that sponsor research. University licensing officials have been known to favor the American rule on licensing and assignment, since the interests of the university in developing a number of applications for a technology will often diverge from the private firm, which may resist licensing to a potential competitor. In this situation the university should have the opportunity to bargain for the American rule. An important result of a change in the default rule might well be to force the parties to bargain "up front" about the disposition of their co-owned rights in such a situation; this is a legitimate use of default rules. See Ayres & Gertner, Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules, 99 Yale L.J. 87, 95–100 (1989) (describing concept of a "penalty default" rule).}