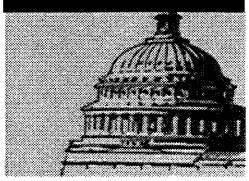
FEATURE



# Structure Research Collaborations for Optimal Patent Ownership

By **Mark Pohl**

## *Introduction*

Research collaborations can hasten scientific progress. They can also, however, curry argument over who owns the resulting inventions.

To help you get the most benefit from your research collaborations, I will here review some law regulating the ownership of research collaboration patents. I first review the general legal theory behind patent ownership and then discuss some legal rules for determining patent ownership in research collaborations. Last, I discuss the ownership rules for a specific type of collaborative research arrangement prevalent in the pharmaceutical industry, the submission of blind labeled compounds for testing by a research partner.

## *Finders Keepers, Losers Weepers*

Patents are personal property. Personal property is generally owned by whoever finds it, a time-honored English legal coda succinctly abstracted as, "finders keepers, losers weepers."

With United States patents, the "finder" owns the patent. With intangible things, however, such as new ideas, it is often difficult to determine who first "finds" a new idea.

Compounding this difficulty, the United States patent statute does not expressly say who owns a newly found idea. Thus, identifying who "finds" a new invention, and thus who owns the patent on it, has been called "one of the muddiest concepts in the muddy metaphysics of the patent law."

Nonetheless, certain legal guidelines are available. Legally speaking, finding a new invention entails two parts: 1) thinking up the idea, and 2) doing the technical work to show the idea works. Under U.S. patent law, researchers who first think up the idea are considered to have "found" that idea, and thus to own the patent on it. By contrast, those who thereafter work with that researcher to confirm the newly found idea will work, are not considered to have "found" the idea, and thus have no ownership rights in the resulting patent.

The thinking up of the new idea must, however, be legally sufficient. This requires the formation, in the mind of the researcher, of a definite idea of the complete and ultimately operative solution to the problem. In contrast, subsequent testing to see if the idea actually works, is not legally considered as part of the "finding" of the solution. Thus, testing or experimentation to demonstrate that the invention possesses sufficient utility, i.e., that the invention is suitable for its intended purposes, is not part of the "finding" of the invention, and does not entitle one to own the resulting patent.

To be legally sufficient, the researcher must think up each and every feature of the claimed invention. Thus, to be complete, the solution must include knowing the kind of material that is necessary to solve the problem. For example, where a researcher does not know the kind of material needed for the invention to operate, the researcher is not entitled to the patent. To qualify as a "finder" of the idea, the researcher

must conceive of every single feature of the patented invention, at one point in time.

This rule is simpler to apply with inventors working independently of each other. Where they collaborate, however, there can be arguments over who thought up what, and when, and who is consequently entitled to own what patents.

For example, one of these arguments is *Polye v. Uhl.* This argument involved an inventorship dispute over gyroscope switches. Mr. Polye found that certain kinds of gyroscope switches explode due to a buildup of hydrogen gas in them. Polye began searching for a suitable hydrogen gas absorber for the switches.

Polye discussed this search with a fellow chemist, Mr. Uhl. Polye said that he was considering spongy platinum, platinum black and zinc oxide, as hydrogen absorbers. Uhl suggested that Polye use an unsaturated hydrocarbon. Uhl specifically recommended using allyl alcohol. Within a month, Polye succeeded in using allyl alcohol to make an improved gyroscope switch.

Polye and Uhl each then filed their own, competing patent applications on the new switch. The Patent Office court ultimately found that Uhl — the guy who suggested the successful solution in the first place — was not entitled to ownership of the disputed patent. The patent court found that Uhl did not think of a solution with each and every one of the specific limitations of the patent application claims at issue. For example, the patent court concluded that Uhl did not think of the specific concentration of allyl alcohol required by the patent.

## *Coded Test Sample Vials*

To minimize such disputes, pharmaceutical companies have adopted the practice of exchanging their test materials in coded, blind-labeled vials. Such blind labeled vials sharply curtail the recipients' ability to patent the resulting research.

This is because, for an inventor to be considered to have legally and fully "found" an idea, the researcher must be able to disclose information full enough to allow a person of ordinary skill to make the invention work, without an unduly large amount of further research. This requirement for a complete and operative invention is met if, and only if, the researcher is able to make a written disclosure which would enable other researchers to replicate the invention without extensive research or experimentation.

This requirement is problematic if researchers are given chemical compounds to test in coded vials, without knowing the chemical identity of the compounds. Without knowing the chemical identity, the receiving researcher may not be able to make a disclosure which would enable a person of ordinary skill to replicate the invention. Researchers in this position are thus often left without any patent ownership rights in the project.

In that position, a researcher may assert that while their ignorance of essential limitations means they cannot be the *sole* owner of the patent, they may be a *joint* owner because they were the first person to find that the confidential compounds are useful for a given application. The researcher may allege that the collaborator's prior intellectual "finds" were modified as a result of the new findings.

It is true that, if a prior invention is modified as a result of a collaborative effort, the modified invention may become jointly owned. The collaborator may thus assert that his findings are an independent part of an entire invention. If someone contributes an independent part of the entire invention, which, united with the other parts, creates a whole, then he is a co-owner of the patent. To constitute a jointly owned patent, each of the inventors must make some contribution to both the inventive thought, or original idea for the solution, and to the final result. Each joint patent owner, however, needs to perform but a part of the task, if a patent emerges from all of the steps taken together.

In the instance of testing blind labeled chemical compounds, however, succeeding with this argument can prove difficult. The seminal legal case in this area is *MacMillan v. Moffett. MacMillan* involved the use as an antiperspirant of scopolamine pivalate HCl. This compound, at the time, was already known, albeit not as an antiperspirant. Moffett's employer, The Upjohn Company, sent samples of each of a group of several anticholinergic compounds to an outside consultant for testing. These samples included a sample of scopolamine pivalate HCl, in a vial code labeled simply as "U-5008." The consultant's test results were inconclusive.

Upjohn also sent a different group of scopolamine derivatives for testing to MacMillan's employer, The Procter & Gamble Company ("P&G"). After its tests, P&G proposed to Upjohn's Dr. Moffett that he screen other anticholinergics, for antiperspirant efficacy.

Dr. Moffett then selected from over 500 anticholinergic compounds, a subset of 60 compounds to test. One of the 60 was scopolamine pivalate HCl.

Samples of the 60 compounds were sent (in coded vials) to P&G to test for topical antiperspirant activity. No express guidance appears to have been given to P&G concerning the chemical concentration required for such a use. P&G's Dr. MacMillan tested these compounds using tests standard for P&G evaluation. Dr. MacMillan's tests revealed that the compound code labeled U-5008 was an outstanding antiperspirant.

Upjohn and P&G then each filed competing patent applications on the newly found invention, and became embroiled in a legal dispute over who actually "found," and thus owned, the invention.

The Patent Office concluded that Mr. Moffett was the one who found the new use of scopolamine pivalate HCl, and consequently was the sole and exclusive owner of the patent. The Patent Office found that MacMillan was merely conducting standard tests, under a prior agreement, of a compound previously selected for testing by Moffett. The Patent Office held that Moffett, by merely selecting the compounds for testing, "found" the complete idea. The Patent Office held that the invention was complete by Moffett when he selected the specific the compounds to be tested, not when MacMillan later completed his testing on these compounds.

MacMillan argued to the Patent Office that Moffett's merely selecting compounds for testing cannot be sufficient to

entitle Moffett to sole ownership of the patent, to the exclusion of MacMillan. MacMillan said that Moffett "merely pulled from his shelves" the assortment of the anticholinergic compounds, having no knowledge that U-5008 would have new and unexpected properties.

The Patent Office found this assertion immaterial: [W]e fail to see the relevance of that fact, even if true, to the completeness of Moffett's conception. Moffett did not merely think generally. He thought specifically about 69 different compounds .... He chose them individually, knowing that a method of making each was available, and thinking of a use for each in a method of controlling perspiration. His reasons or lack of reasons for including U-5008 are not relevant to the question of conception. The important thing is that he did think in definite terms of the method claimed.

Thus, according to the Patent Office, the reasons — or lack of reasons — for selecting a candidate compound for testing are irrelevant to ownership.

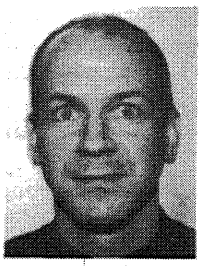
MacMillan also argued that Moffett's idea was incomplete because Moffett did not "appreciate" the idea of using U-5008 in a method of controlling perspiration. The Patent Office court dismissed this argument. The court noted, "[W]e do not think that the conceiver must know the unexpected properties associated with the conceived invention." Thus, full ownership does not require knowledge of, much less concrete proof of, clinical effectiveness. Rather, ownership of the patent for a new use of a known chemical compound is complete no later than when that compound is selected for testing in the new use.

In contrast to the *MacMillan* case, where "no express guidance appears to have been given concerning concentration," it is common for "material transfer agreements" from, for example, many American universities, to specify exactly what tests can (and cannot) be done with the transferred materials, and at what concentration ranges. Such guidance makes the argument supporting excluding the tester from patent ownership, that much stronger.

An invention which is completed by an inventor before commencement of a collaborative effort is not jointly-owned. Similarly, a person who first found a solution to a given problem and first reduced this solution to practice cannot be simply a joint owner, sharing rights with a person who did not even find the solution to the problem until after the former researcher's reduction to practice. Where compounds are pre-selected for testing by one collaborator, the testing — the collaborative effort — starts no earlier than the date the tester receives the selected compounds from the selector. By this date, the selector often already, as a matter of law, has completely "found" the invention.


## *Summary*

Given the complexity of US patent law in this area, many companies choose to expressly specify who owns what, in their collaborative research contracts. Where, however, the contract obliquely says, "inventorship is determined under US patent law," or other words to that effect, it may be informative to review the contract with your patent counsel.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