



PATENT, TRADEMARK & COPYRIGHT



VOL. 74, NO. 1821 161

JOURNAL

JUNE 7, 2007

PATENTS

The author provides a primer for patent claim drafting and prosecution, taking into account the increased risk of confronting patent invalidity determinations by the Patent and Trademark Office and the courts in the wake of the Supreme Court's ruling in *KSR International Co. v. Teleflex Inc.*

A Sow's Ear; Importance of Patent Quality After *KSR*

By JOHN ROEDEL

The April 30 Supreme Court decision in *KSR International Co. v. Teleflex Inc.*, No. 04-1350 (550 U.S. ___), (April 30, 2007), 82 USPQ2d 1385 (74 PTCJ 5, 5/4/07), is the latest in a series of judicial decisions which increase and underscore the need for high quality patent applications and high caliber patent prosecution.

Aiming for the 'Silk Purse' Patent

When a patent is held invalid, it does not mean that the underlying invention is necessarily unpatentable. In adjudicating validity, a court evaluates only the subject matter defined in the claims. It does not go beyond the claims to decide whether a patentable invention may be disclosed in the specification. Occasionally, a patent examiner will review what is disclosed and suggest a different form of claim. But neither the court nor the examiner can go beyond what is disclosed to identify a patentable invention which the inventor has actually made, but which the patent application neither claims nor disclosed.

In many instances, a validly patentable invention has been made, but the patent claim structure is inadequate, the disclosure in the patent specification is insufficient, prosecution in the Patent and Trademark Office has been mishandled, or all three. As described and

claimed in the invalidated patent, the invention may appear to be a "sow's ear," and an old one at that. But if properly understood, described and claimed, many such inventions may be recognized as representing significant advances in the art.

Competent patent prosecution may not turn a bad patent application from a sow's ear into a "silk purse," but it can nonetheless convey its real scope and value to the patent examiner, and ultimately to the court and the jury, who will determine the invention's ultimate fate in the market.

KSR: High Patentability Standard Reaffirmed

Although portrayed in the press as substantially raising the standard of patentability, *KSR* is a complex decision that attempts to balance competing considerations in evaluating the patentability and validity of patent claims. Just how much it will raise the bar to patentability remains to be seen.

The only definitive impact of the decision was to eliminate the rigid rule that a patent claim could not be invalidated for obviousness unless the party challenging validity had adduced positive evidence of a "teaching, suggestion, or motivation" that would lead to the invention as claimed.

While still acknowledging such evidence as relevant, the *KSR* court emphasized that the statutory standard of patentability measures the claimed invention against the level of ordinary skill in the relevant art, and thereby determines whether the claimed subject matter would or would not have been obvious to one of ordinary skill.

John Roedel is an intellectual property attorney with Senniger Powers, St. Louis.

The KSR decision emphasizes that the standard of patentability is reasonably high, and further underscores the need for high quality patent preparation and prosecution.

Under the KSR ruling, the existence of an earlier teaching, motivation, or suggestion to modify or combine older products or processes can still have a bearing on the ultimate issue of obviousness. But if the evidence as a whole demonstrates that the claimed product or process would have been obvious, i.e., within the ordinary skill of the art, it is improper for the lower courts to add a separate requirement for teaching, motivation, or suggestion in either the prior art, level of skill, or the nature of the problem.

The KSR decision nonetheless emphasizes that the standard of patentability is reasonably high, and further underscores the need for high quality patent preparation and prosecution. That need was already apparent from the fundamental dilemma confronting the inventor and attorney in crafting patent claims; and had been reinforced by recent decisional trends on other issues affecting patent enforcement, such as claim construction, the doctrine of equivalents, and written description requirements.

The ‘Patent Dilemma’—Broad Enough, But Not Too Broad

The “patent dilemma” is well recognized among inventors, attorneys, and investors in industrial research, and has been acknowledged by the courts.

Unless drafted with exquisite perception and balance, a patent claim can be either too broad or too narrow, and sometimes both. The claim must be broad enough to cover not only the specific product or process the inventor has developed, but also variants by which competitors will attempt to capitalize on the principle of the invention.

On the other hand, the claim must be narrow enough to avoid the prior art, not only to establish bare novelty, but also to meet the non-obviousness standard, the criterion by which claims fell short in KSR.

While the Supreme Court has consistently maintained a high standard of patentability, it has also recognized the difficulty faced by inventors and attorneys in resolving this dilemma:

The specification and claims of a patent, particularly if the invention be at all complicated, constitute one of the most difficult legal instruments to draw with accuracy, and in view of the fact that valuable inventions are often placed in the hands of inexperienced persons to prepare such specifications and claims, it is no matter of surprise that the latter frequently fail to describe with certainty the exact invention of the patentee, and err either in claiming that which the patentee had not in fact invented, or in omitting some element which was a valuable or essential part of the actual invention.”

Topliff v. Topliff 145 U.S. 156, 171, 12 S.Ct. 825, 831, 36 L.Ed. 658, 664 (1892)(emphasis supplied).

A variety of considerations may shape the contour of claims that will ultimately be enforceable to exclude competitors from using the client’s invention. Many of these are either unknown or imperfectly known at the time the patent application is drafted and filed.

These considerations may include: (1) unknown prior art that may later materialize; (2) the specific combination of features comprised by the product or process which the client may ultimately commercialize; (3) what measures the competition can or will take to avoid claims of a given scope, i.e., which features and combinations are fundamentally necessary and which are not; (4) what substitutions of features or parameters may be feasible; (5) what combination of features the market will ultimately demand; (6) what the economics of manufacturing may be, or what factors will drive them; (7) how the technology will develop in the field to which the invention is addressed; (8) what regulatory hurdles will be faced by the client or its competitors; and (9) when, whether, and how identifiable trends in ancillary or competing technologies may affect any of these or other factors.

The claim structure must also be crafted without specific knowledge of how the ultimately subjective evaluation of obviousness will be made by the examiner assigned to the application, or by the court or jury reviewing patent validity.

Preparing the Application: Converging Pressures

The patent application cannot wait for perfect knowledge about these factors. To establish priority against other inventors, and to preempt publications or competitive products that might otherwise become limiting prior art, time is of the essence in filing a patent application.

Moreover, the application needs to be complete when filed. The law strictly prohibits introduction of new matter during patent prosecution.

Recent decisions on issues other than obviousness create further complications in crafting claims of appropriate scope, and constructing a specification which will reliably provide support for later submitted claims of a scope differing from those originally filed. For example, *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 62 USPQ2d 1705 (2002)(64 PTCJ 98, 05/31/02), limited the scope of the doctrine of equivalents, making it ever more important to obtain claims that literally cover products that competitors may devise.

The problem of obtaining literal coverage is further complicated by recent decisions imposing increasingly restrictive written description requirements for support of claims added during prosecution. And in a reverse twist on the written description issue, *Scimed Life Systems Inc. v. Advanced Cardiovascular Systems Inc.*, 242 F.3d 1337, 58 USPQ2d 1059 (Fed. Cir. 2001) (61 PTCJ 489, 3/23/01), and a dozen or so other decisions have restricted the scope of claims by importing limitations from the specification, thus finding non-infringement even where the claim appears to literally cover the competitive product.

In each case wherein a patent has been found unenforceable under *Festo* or *Scimed*, or invalid for lack of written description, the problem could have been avoided by better-drafted claims and/or a better-drafted

specification. In some of these instances, serious issues of obviousness might have been encountered with a claim properly crafted to literally cover the competitor's product.

The patent dilemma lurks at each step. But these are issues that should be identified during the drafting process, not patched together as an afterthought after the application is filed, or after the patent has issued and is in litigation.

It may often be possible to claim the invention in terms that satisfy the standard of *KSR* and still provide reasonable commercial protection.

Moreover, if the scientific principles on which the invention is based are properly understood, the shape of the market is adequately visualized, and the invention and its alternative embodiments are adequately described in recognition of these considerations, it may often be possible to claim the invention in terms that satisfy the standard of *KSR* and still provide reasonable commercial protection.

Because of the converging pressures of the standards for obviousness, written description, claim construction, and doctrine of equivalents, the preparation and prosecution of the patent application require a high degree of prescience and skill. These developments impose an ever more exacting burden on the client and the attorney to describe and define the invention in terms that establish a basis for nonobviousness while literally covering the various competitive alternatives, and avoiding any basis for narrowing construction based on language of the specification.

To the maximum extent possible, the client and attorney must know the market in which the invention will be exploited, know the scientific and engineering principles on which the invention is based, and evaluate the other relevant factors.

And, of course, the attorney must know and apply the law, including *Festo*, *Scimed*, *KSR*, and multiple other decisions which affect claim construction, novelty, obviousness and specification support for patent claims.

Although the most diligent attorneys and clients cannot achieve omniscience, targeting foreknowledge is critical to the value of the patent. That value can vary enormously with the skill of the attorney, and the understanding that the attorney gains of considerations such as those outlined above.

Gathering intelligence required for prescient drafting requires a detailed, critical, and often extended dialog between the attorney and the client, the inventor (where the client is an employer or investor), and others with expertise who are associated with the client, or to which the client may have access. Turning that intelligence into a valuable patent application requires current knowledge of the law, strong grounding in scientific and engineering fundamentals, meticulous drafting skill, and unrelenting attention to detail.

Claiming Strategies—How Multiple Claims Can Work

Although multiple independent claims can complicate patent prosecution, it is often desirable, nonetheless, to write more than one independent claim.

Multiple independent claims defining the invention in terms of varying combinations have value in closing alternative routes by which the competitor might otherwise avoid the scope of the patent, thereby providing the client with breadth of coverage. Such claims are especially valuable in affording a maximum scope of coverage where the prior art bars the novelty of a claim truly generic to the commercial embodiments which can be visualized.

Although multiple independent claims can complicate patent prosecution, it is often desirable.

Multiple independent claims may be particularly important where, for example: (1) there is uncertainty as to what features will establish novelty; (2) there are multiple identified embodiments for the same industrial application; (3) there are combinations and/or subcombinations that are different but complementary; (4) there is uncertainty as to which features are essential and which may prove optional; (5) there are alternative scientific theories of how the invention works, and consequent uncertainty as to which features are important or even functional; (6) the scientific principle underlying the invention is entirely unknown; (7) there are uncertainties as to scope of utility; (8) there is a risk that future scientific developments may render one feature unnecessary or another critically important; (9) there is uncertainty whether claims of a given scope define statutory subject matter under Section 101 of the statute; (10) the broadest claims are directed to derivatives of nature; and (11) a novel assay is based on an *in vivo* response.

In still other instances, non-overlapping embodiments are filed in a single case to minimize foreign filing costs.

In all these instances, multiple independent claims provide breadth of protection and establish breadth of disclosure that may become critical in prosecution and enforcement.

It is also desirable to write multiple dependent claims along parallel lines in order to assure depth of coverage and disclosure.

At least several tiers of subgeneric scope are particularly important. This provides insurance against unknown prior art, and against vagaries in application of the obviousness standard by the examiner, court or jury who may ultimately decide this issue.

During prosecution, such a claim structure allows orderly retreat in short measured steps, thereby preserving a maximum scope of literal coverage. A relatively elaborate claim structure also helps to assure written description support for claims that may need to be crafted during prosecution to avoid previously unidentified prior art, or to cover parallel developments in the market place.

During litigation, such claiming reduces the risk that the client will be compelled to resort to the doctrine of equivalents, which may be foreclosed by the *Festo* decision or other recent authorities which have restricted the applicability and scope of that saving doctrine. Where parallel dependent (or independent) claims proceed from different scientific perspectives, they provide insurance against the risk that the original scientific interpretations were in error.

Because the principles of the *KSR* decision may increase the risk that the invention as claimed will be found *prima facie* obvious, it is increasingly important to disclose the benefits provided by the invention, the advantages that it may provide compared to the prior art, obstacles overcome, and deterrents in the art that may have been defied. However, benefits and advantages must be described with consummate care, so that they do not create the basis for unnecessarily narrow construction of claims.

Prosecution: Amend, but With Caution

Amendments and arguments made during prosecution must be crafted with careful consideration of their effect on claim construction and the doctrine of equivalents.

Prosecution may typically require in-depth analysis and quantitative evaluation of the disclosures of cited references and the inherent features that they may potentially include, and/or the inherent properties they may possess or inherent functions they may provide. Effective prosecution also requires maintaining current knowledge of the commercial market place, especially the activities of principal competitors, further learning on the advantages and disadvantages of the invention, etc. It may also call for revisiting scientific understanding of how the invention operates.

In patent prosecution, narrowing amendments to the claims are often unavoidable if prior art is to be distinguished. The *KSR* decision will not only increase the pressure for narrowing amendments, but it will also increase the importance of alternative independent claims, and of presenting and maintaining a reasonably extensive dependent claim structure, in order to preserve the best prospect for literal coverage of competitive products.

In any case, all amendments must be critically evaluated toward this end. Further dialogue with the client is crucial in this regard, and it must include a full understanding of prevailing market realities, technology trends, scientific principles, and regulatory realities.

The *KSR* decision will not only increase the pressure for narrowing amendments, but it will also increase the importance of alternative independent claims.

To overcome PTO rejections for *prima facie* obviousness, it is often necessary to bring the benefits of the invention to the fore, as well as the advantages that it enjoys over the prior art, the obstacles that have been overcome, and the deterrents which the inventor ig-

nored or rejected in arriving at the invention as claimed.

However, as in the case of patent preparation, emphasis on benefits and advantages must be articulated with an eye toward claim construction, and the avoidance of bases for a court to later import limitations from the specification into the claims. For this reason, emphasis on benefits and advantages runs contrary to notions of antiseptic disclosure and prosecution, in which the patent applicant is counseled to avoid emphasizing any objects or advantages of the invention that might later be construed as limiting.

Antiseptic drafting and prosecution were promoted by some commentators during the recent 20-year period in which obviousness had become a lesser concern for the patentee and patent prosecutor. During that period, the motivation test, now curtailed by *KSR*, had given the patent prosecutor leverage in the PTO; and, once issued, patents became difficult to challenge for obviousness because the lower courts had placed heavy emphasis on the presumption of validity.

The concerns that promoted antiseptic prosecution remain valid, but the patent heyday which justified it may be over. Moreover, if the PTO adopts recently proposed rules for expediting prosecution, there will be increased pressure on the patent prosecutor to put evidence of benefits and advantages in the record early in the prosecution, quite possibly in response to the first Office action.

Economics of Patent Protection: Know Your Market

Although corporate budgeting schemes vary, a functional analysis of patent expenses may consider them as a component of the corporate budget for research and development. What fraction that should be is outside the scope of this paper, except to observe that it will depend on the market in which the client participates, the technologies which affect that market, the way those technologies affect the market, and the rate and direction of change in those technologies.

Once the patent budget is fixed, the further question is how it should be allocated. Some commentators have recommended that it be allocated to generate the maximum number of patent applications without particular regard for quality. Others prefer to selectively pursue fewer applications, but invest in high quality preparation and prosecution.

Each client must analyze these alternatives in light of intelligence from the same quarters that affect the size of the budget in the first place, i.e., the market, the technologies which affect the market, the way those technologies affect the market, and the rate and direction of change in those technologies. Given the considerations mentioned above, however, the wisest course is to invest in quality rather than sheer numbers.

The objective is to obtain commercially enforceable patents. This requires not only breadth and depth of claim structure and disclosure, as outlined above, but substantial investment of time and effort to gather and integrate the data and intelligence necessary to provide scope of coverage while warding off attacks on validity.

For example, before preparation even begins, an extended dialogue with the client may be necessary to understand the science on which the invention is based, the nature of the market, the specific products or processes that will be commercialized, the known or antici-

pated revenue streams that will be generated, the alternatives that may be available to competitors, and how such alternatives compare with respect to product function, product quality, manufacturing cost, raw material availability, regulatory constraints, and sometimes other considerations such as packaging and shipping issues, or aesthetic appeal.

Moreover, the client has an important role that goes beyond responding to specific inquiries from the attorney. Careful, knowledgeable, and thoughtful clients will critically review and comment on drafts of the application. Careful review typically requires revision of drafts, often through several iterations, and often requiring further detailed dialog between client and attorney until the document is in optimal shape.

No matter how experienced or proficient the attorney may be, complete accuracy and proper focus are seldom achieved without thoughtful input from the client with regard to technical detail, manufacturing and regulatory implications, market realities, competitive reactions, etc.

Aside from budget issues per se, clients should always be selective in choosing inventions for which patent protection will be pursued. The guiding principle is commercial value within the scope of novelty.

If the commercial potential is insufficient, a patent application may not be justified regardless of the novelty and non-obviousness of the invention. But where there is significant commercial value within the scope of novelty, or at least significant potential value, the pursuit of a patent application is ordinarily justified, even if patentability under the obviousness standard is uncertain.

Where the invention has significant commercial value, there is not only an opportunity for valuable coverage that will gain the client an advantage in the market place, there is also a corresponding risk that patents may be obtained by competitors that will put the client at a disadvantage. Filing helps forestall the competitors, and also creates the potential for cross-licensing.

All of these factors suggest allocating patent budgets toward high quality applications for high priority innovations, rather than a scattershot of hastily prepared applications on innovations whose significance to the enterprise may not have been critically evaluated. Of course, each client must analyze its needs and circumstances.

Where the direction of the client's business is uncharted, or the direction of the technology is confusing, some speculative filing may be justified, and thin applications may be dictated by absence of data. But where and as the data become available, there is no substitute for thoroughness and quality.

Prosecution Cost vs. Litigation Cost

The costs of patent litigation are notorious. Where patents are tested in litigation, the expense on each side normally runs into seven figures, and not infrequently into eight. But there is nothing the litigator can do to resolve defects in the patent. These are entirely a function of drafting and prosecution. New claims cannot be presented in litigation, and new matter cannot be added either in litigation or in remedial Patent Office procedures such as reexamination or reissue.

Only in the original drafting and prosecution does the client have the opportunity to control the disclosure, to

make certain that the disclosure is adequate, and to present new and amended claims of varying scope.

The opportunity to present new and amended claims can be extended from original prosecution to reexamination and reissue, but the latter proceedings do not allow claims containing new matter. All the disclosure the client will ultimately need to rely on must be in the application as filed.

Where the invention is exploited in a commercial market of any significant volume, the preparation and prosecution of a patent application represents a relatively minimal marginal cost, and the preparation and prosecution of a proper application versus a thin application represents only a margin on a margin. At the very worst, the cost of proper preparation and prosecution, where problems can often be anticipated and can best be forestalled, is a tiny fraction of the cost of litigation.

Moreover, well-drafted patents on significant advances may be respected by the competition. Such patents can preserve the client's market share, and minimize competitive price erosion, without the crushing expense of litigation.

On the other hand, the decision to pursue patent protection should be based on commercial value within the scope of novelty, and sometimes, in fact, often, the most commercially valuable developments are not those that represent the most radical departures from the existing technologies.

Radically new developments, while highly patentable, typically require a new market to be established. Thus, the most commercially attractive innovations, at least in the short to intermediate term, are those that can be implemented to exploit existing markets. As such, they may not depart as radically from the prior art.

For inventions of the latter category, litigation may not so readily be avoided. These are the inventions that are most likely to erode a competitor's market share, which make the competitor desperate enough to litigate. Patents on such developments may appear sufficiently vulnerable to encourage the competitor to try its luck in the judicial arena.

Because of their increased exposure to litigation, inventions that are commercially important, but not strikingly different from existing art, have the greatest need of all for high quality patent preparation and high caliber prosecution. The radical departure from the art may be highly patentable in broadly defined terms, potentially lessening the need for depth of claim structure.

However, where the advance is solid and innovative, but not facially dramatic, it is important to explore the technology in depth to understand where the innovative step has been made, to bring this to the fore in the specification, and to provide a claim structure with multiple fall back positions that can still capture that advance and literally read on the products of competitors who attempt to capitalize on it. Such patents may not have the power to preclude a judicial challenge, but they stand the best prospect of withstanding the challenge.

In some instances, a client may choose to pursue a patent application for reasons other than protection of its position in the market place. For example, applications might be filed for purposes of employee recognition or for mere promotional purposes rather than enforcement. In such circumstances, the thin patent might

have a role. But patents pursued for such secondary purposes can unexpectedly become important in the marketplace, in which case sketchy ill-considered drafting can be fatal.

Conclusion

Where the patent is pursued for purposes of protecting the client's position in the market, there is no substitute for quality.

The need for quality will only be intensified as the *KSR* decision is implemented by the PTO and the lower courts. By in-depth scientific analysis of the invention, its use, performance and place in the market, the experienced patent professional cannot make a silk purse out of a sow's ear.

But in depth analysis will often reveal the true nature, sophistication, function and advantages of the sow's ear, and competent, exacting patent draftsmanship and prosecution may bring out that advance in a way that the patent examiner and the court will be compelled recognize as a non-obvious step in the art.

However, that is still only half the game. The full challenge is to define the advance in a scope that both meets the obviousness standard and forecloses the competition. Sometimes it simply cannot be done. But by demanding the highest standards of patent drafting and prosecution, the client can best expect to keep to itself the market for the novel sow's ear.