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## Are U.S. Law Idiosyncrasies Destroying Your PCT Applications?

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Suppose a business's patent strategy makes studied use of the Patent Cooperation Treaty application: draft one master application to serve as the basis for filing throughout the world. Coverage is required in the United States, so the business is advised to enter national phase prosecution in the U.S. Patent and Trademark Office — but this is where the trouble begins.

Although the application was allowed in the originating jurisdiction, the USPTO has unexpectedly lodged a set of arcane rejections against the application. The claims have been rejected as failing to recite statutory subject matter under 35 U.S.C. § 101; and as being fatally indefinite under 35 U.S.C. § 112(f)/(b) because the claims recite function without proper support. Seemingly neither of these rejections has anything to do with the prior art. Moreover, the claims have been drafted in this style for years and never before received such rejections. What should be done?

### Rams vs Lions

First, it needs to be understood why these rejections are now being lodged. The applicable U.S. statutes

have not changed; but the interpretation of these statutes has changed radically. It stems from an ongoing struggle between two powerful opposing industry forces, let's suppose a contest between "Rams" and "Lions". The Rams have evolved blunt teeth designed for grazing; they prefer weak patents so their herd will not be repeatedly attacked. The Lions have evolved sharp teeth designed for carnivorous attack; they prefer strong patents.

The Rams include the financial and advertising industries, and computer companies that support them. The Rams are fed up with defending the incessant attacks by the so-called patent trolls, who themselves produce nothing, but merely prey on others using carefully assembled patent portfolios, often purchased from others. The Lions include the biotech and pharmaceutical industries, who need strong patents to protect their huge investments in research, development and FDA product approval. Also on the Lions' team are the universities, who want their patents to bring top dollar in the marketplace. At present, it is the Rams that are in the ascendancy. As will be seen, the Rams' winning playbook employs an effective combination: use § 101 to cut the tree at its base and § 112(f) to strip the branches of all leaves.

## Section 101 and the History of Patent Eligible Subject Matter

Reading the § 101 statute, there is little indication that it should present any difficulties whatsoever. Indeed, § 101 speaks in broad, permissive terms:

“Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title” (35 U.S.C. § 101).

The current patent statute dates back to 1952. Yet the concept of patent eligible subject matter is far older. In 1852, for instance, the U.S. Supreme Court, in *Le Roy v. Tatham*, rejected a patent on the improvement of making pipe from lead. Lead had desirable melting properties which made it easy to work into pipe. The Supreme Court struck down the patent because it viewed the claim as asserting ownership over a melting property that had forever existed in nature. Two years later, the court struck down Samuel Morse’s broad patent claims on the use of electromagnetism (by whatever means created) for communicating at a distance, finding that Morse had claimed far more than he had actually invented. In both of these cases the court rejected the patent claim, not because the idea was known in the prior art, but because the claim asserted ownership beyond what the court deemed society was willing to grant.

In 1972, using similar reasoning, the court in *Gottschalk v. Benson*, struck down Bell Laboratory’s claim to a computer algorithm that would convert binary coded decimal numbers into binary numbers. The court ruled that the claim pre-empted all uses of the mathematical formula. In 1978 the court again struck down a software invention that applied a known mathematical formula to calculate an alarm limit used in a chemical process. The claim merely calculated a value but did not apply it to the chemical process.

The trend for broad patents was looking pretty grim, when in 1980 the Supreme Court made an about face. In *Diamond v. Chakrabarty*, it was asked of the judge whether a man-made bacteria, useful in treating oil spills, was patent eligible subject matter. Although the bacteria was a life form, and thus arguably quite close to the court’s prohibition against patenting nature, the court ruled that a man-made bacteria, which did not exist in nature, was eligible. In so ruling the court waxed eloquent, rhapsodizing 101 in words from the legislative history that “anything under the sun that is made by man” is eligible for patent. One year later the court applied the same “anything under the sun” reasoning to permit a patent on software used to control a rubber molding press.

*Chakrabarty* was a landmark decision. In the struggle between weak patents versus strong, the momentum had finally shifted to the Lions, and for the next thirty years the Lions basked in it, sphinx-like under the sun of their golden age.

### **Alice v. CLS Bank**

Now nearly 35 years later, the court has once again turned skeptic. “Anything under the sun” seems to have

lost its luster and the Lions are on the run. In its most recent § 101 case, *Alice Corp. v. CLS Bank*, the Supreme Court has again returned to its age old limits to the scope of § 101:

“We have long held that this provision contains an important implicit exception: Laws of nature, natural phenomena and abstract ideas are not patentable.”

The first two these forbidden fruit exceptions are the bane of the life sciences, because life and nature are so intertwined. Even from the “anything under the sun *made by man*” perspective, the question can be posed, did we humans make this, or are we now only just discovering something in nature that has been there all along?

The prohibition against abstract ideas is more problematic. It seems that a disembodied idea, without any means of acting on that idea, should not be prematurely granted patent to the first person to think it. Rather, the patent grant should wait until the true inventor actually conceives a way to put the idea to practical use. This abstract idea prohibition has proven the bane of the computer sciences, because computers manipulate information, and information is abstract.

Abstract ideas fall into two categories. There are abstract ideas so outlandish that no one knows how to extract anything useful from them; and then there are those that are so mundane that instinctively we all have the skills to use them. An example of the former would be improving world health or reversing the effects of global warming by changing our worldwide system of beliefs. Noble pursuits these may be but how do you get people to change their beliefs? No-one can answer that. An example of the latter would be the idea of using a broker to introduce a willing buyer to a willing seller. Even a child can grasp the concept of introducing her friend in need of a baseball glove to her older brother who has one to sell.

*Alice Corp. v. CLS Bank* (see “Mere Implementation of Abstract Idea With Computer Not Patent-Eligible” [28 WIPR 20, 7/1/14]) involved an abstract idea of the latter type. The invention was a scheme for mitigating settlement risk in a financial transaction that used a computer system to act as a third-party intermediary or escrow agent. Alice argued that it used a *computer* to implement the escrow arrangement and that turned the abstract idea into a tangible, patent eligible invention. The Supreme Court saw things differently, ruling that “mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.”

Lacking in the Alice claims was that elusive “something more” to move the claim out from the abstract domain. The court said there was no “practical assurance that the process is more than a drafting effort designed to monopolize the abstract idea itself.” Here the court looked at each claim element separately to determine if the recited computer function was other than conventional. In Alice’s case each computer step was deemed conventional. Then the court looked at the claims as a whole to see if the “ordered combination” of computer steps was more than conventional. It found the claims recited nothing beyond what a generic, general purpose computer would do.

As a result of *Alice* the courts and the USPTO have begun rejecting patent claims in record numbers. The rams, at least for the time being, can again graze without fear. Business method patents on abstract concepts that rely solely on use of a computer for patent eligibility have taken the largest hit. However, even inventions in the mechanical arts are receiving § 101 rejections at present. *Alice* is making it difficult to be a lion these days. That, however, is not all — for as will be seen, a worthy lion may successfully duck the § 101 rejection only to be ensnared by § 112(f).

## Lurking § 112(f) Rejection

The recent rise in § 112(f) rejections is rooted in the position espoused by the rams that the U.S. patent system has become lax in managing the *quid pro quo* by awarding patents on ideas without demanding detailed disclosure in return. The § 112(f) rejection is thus an attack on the practice of *functional claiming*. In the strict sense, § 112(f) is presumably not invoked unless the words “means for” or “step for” have been used. However, the USPTO takes the more liberal view that words like “unit adapted to”, “processor programmed to”, or “system configured to”, are just means-plus-function claims in disguise. Thus once the examiner spots a claim element that is — in so many words — functionally claimed, the examiner will decree that the following § 112(f) is applicable:

“§ 112(f) ELEMENT IN CLAIM FOR A COMBINATION. — An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the *corresponding structure, material, or acts described in the specification and equivalents thereof*” (emphasis added — note in particular “*equivalents thereof*”).

Merely having a claim construed under § 112(f) is not fatal, of course. Indeed, the statute permits such functional claims, assuming the statutory provisions are met. Those provisions require that each means-plus-function element be supported by sufficient technical disclosure in the patent specification. If support is lacking, the examiner must reject the claim as being indefinite, citing the following related clause of § 112:

“§ 112(b) CONCLUSION. — The specification shall conclude with one or more claims particularly pointing out and *distinctly claiming* the subject matter which the inventor or a joint inventor regards as the invention” (emphasis added).

So it can be seen that the § 112(f)/112(b) rejection amounts to a one-two counter-punch, which can have devastating consequences. If the specification does not provide sufficient structure, there may be no practical way to fix this without adding new matter to the specification — which would likely destroy the applicant’s claim of priority. Of course the claim can be amended to recite structure sufficient to avoid claiming only function. However, in practice, that is often difficult.

Beware not to be misled into thinking that the specification merely needs to recite the same words as used in the claim. The § 112(f) rejection is something different, a unique aspect of U.S. law. To satisfy § 112(f) the speci-

fication must provide enough details about the structure used to accomplish the claimed function so that one of skill in the art can assess what is *equivalent* to the structure disclosed in the specification. By way of a simple example, consider the following claim:

1. An office decoration comprising:
  - A picture; and
  - A means for securing the picture to a wall.

If the specification discloses a nail as the means for securing, then one of skill in the art could readily conclude that a screw would be an equivalent means, but that a ball of sticky rubber would not. The nail and screw work essentially the same, by piercing the wall; the sticky rubber not so. However, if the specification contains no description other than reference to some “means for securing” one of skill in the art would have nowhere to start in assessing what would be equivalent. This leads to the inevitable conclusion that the claim is indefinite under § 112(b).

If one of skill in the art already knows what structure to use, can the disclosure requirements of § 112(f) be dispensed with? The answer is no. The specification must contain that description explicitly, although incorporation by reference to a patent or published application will satisfy this requirement. In other words, the general knowledge within the art will not satisfy § 112(f). There must be words in the specification to explain it.

## PPH Pitfalls

The Patent Prosecution Highway is a fast-track framework permitting an application with claims that have been determined to be patentable by an office of earlier examination (e.g. EPO) to go through an accelerated examination in an office of later examination (e.g. USPTO). Many enjoy this expedited procedure. However, there is a caveat. The U.S. application still undergoes examination for compliance with U.S. law, and there is no guarantee that the earlier allowance will be rubber-stamp approved by the USPTO. Indeed, the § 101 and § 112(f) issues may well stand in the way.

## How to Deal With This

Fortunately, both the § 101 and § 112(f) maladies can be cured with common medicine. To address the § 101 issue, one needs a specification that will support casting the invention in terms of a non-obvious technical feature. To address the § 112(f) issue, one needs a specification that provides technical details not only to provide structural support for claimed function, but also to provide a clear basis for determining what would be an equivalent way to perform the claimed function. If planned wisely, the technical details to meet both of these objectives can be embodied by the same written description.

To achieve this, first assume that the U.S. examiner will deem the claimed concept to be an abstract idea, even if in the applicant’s opinion it is not. Looking at the claim through the examiner’s eyes, the question should be asked as to what element of the claim adds something substantially more, ensuring that the abstract idea *per se* is not being claimed. This special “something more” is

best placed at the heart of the invention. Perhaps that special element is currently expressed broadly in the claim. That is fine; but the applicant must be prepared to narrow the claim if a § 101 rejection is lodged. To do this, a fallback dependent claim should be drafted that refines the “something more” element in terms of a technological advance that is believed not to be obvious.

Next, assume that the fallback dependent claim will be construed under § 112(f), even if “means for” terminology is not used. Thus particularly for this claim element, and any other functionally described elements, add disclosure in the specification that goes technically deeper than what the claim element recites. To illustrate, say the invention is an airbag deployment system and the claim element is a processor programmed to analyze vibrations to discriminate between a crash impact and normal road bumps. The supporting technical specification might disclose, for example, a vibration pattern recognizer that models the frequency components of vibration energy, using an FFT algorithm to define parameters used to train the recognizer. Note that it is not necessary to limit the claim to this technical degree. Broader functional statements can be used. However, only by providing deep technical disclosure for the heart of the invention can it be ensured that the applicant will have the options needed to overcome the § 101 and § 112(f) rejections if they are raised.

## Draft to Win, Whether Ram or Lion

The Rams vs Lions struggle for control of the U.S. patent system has been raging for the past 150 years — indeed it has been raging since the English Statute of Monopolies of 1624 — and seems to be oscillating on about a 30-year cycle. Once all of the overly broad patents have been swept away, say in about the next five years or so, perhaps the Lions will begin to gain back some momentum. They always do, eventually. However, for the foreseeable future the need to deal with these § 101 and § 112(f) issues should be anticipated. This is going to require a more technically rich specification. However, if an alertness to these issues can be cultivated and written description planned carefully, a victory can be ensured, no matter who happens to be currently winning the Rams vs Lions contest.

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