

INVENTION ANALYSIS AND CLAIMING: Reaching for Breadth – PART I¹



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An invention should be claimed as broadly as the prior art will allow. Some practitioners are taught that the best way to arrive at such a claim is a process that the author refers to as “pruning and distilling.” A claim of some indeterminate breadth is drafted. The claim is then broadened by pruning away limitations; broadening individual recitations; and/or coalescing two or more limitations into a single one (e.g., “pointing” and “clicking” become “selecting”). The process continues until any further broadening would cause the claim to read on the prior art. That which remains is supposedly the broadest possible claim to the invention.

Previous columns² showed how this is a sub-optimal strategy because the underlying inventive concept may involve functions or relationships not present in the original claim. It is unlikely that these will find their way into the final version of the claim if they weren’t present at the outset. Significant infringement loopholes can result.

A better approach, as we also saw, is summarized by the prescription Begin from the Problem [Not the Embodiment]. We first identify the problem the invention is intended to solve, then think about how—broadly and functionally—the problem was solved and then write a problem-solution statement that reflects what we’ve figured

out. After that, drafting a broad claim that captures the inventive concept is straightforward.

Here, for example, is a problem-solution statement for the breakthrough technique for producing ammonia in commercial quantities patented by Haber et al in 1910:³

The problem of producing ammonia at a low temperature and as quickly as possible is solved by passing gases containing nitrogen and hydrogen over a catalyst containing osmium.

And here is the corresponding claim:

The process of producing ammonia by passing gases containing nitrogen and hydrogen over a catalyst containing osmium.

This is the first of several columns offering approaches to analyzing the inventor’s embodiment(s) to identify the broad inventive concept in problem/solution terms. Other upcoming columns will present ways of analyzing a problem-solution statement to determine if it is too broad, and, if it is, how best to narrow it into the patentable realm.

These techniques can also be used by practitioners who would rather dig in and write claims in the first instance.

START EARLY

A first draft of the problem-solution statement should be formulated as soon as we have enough information about the problem and the general outlines of the solution to do so. Starting early counteracts the tendency for unessential implementational details to taint our notion of what the broad invention is. It protects us from becoming blindsided by the details and going too narrow right at the outset. Waiting until all the details have been laid out, and then trying to synthesize the invention out of all that, opens the door to an analysis that is embodiment-based rather than problem-solution-based. It is difficult to be misled by what we don’t know.

Our introduction to the invention may be a technical paper or other written description supplied by the inventor. In that case, we should have the problem-solution paradigm in mind as soon as we begin to read. As the inventor’s exposition unfolds, we mentally separate what seems to be the

problem from what seems to be the solution, as well as separating what seem to be implementational details from what seems to be at the heart of the inventive concept.

Or our introduction to the invention may occur in a face-to-face or telephone conversation with the inventor. Here, again, the problem and solution should be the early focus. The inventor should be set on a problem-solution course, being asked what problem she set out to solve and what she knows about prior art attempts to solve it.

The inventor can then be asked to explain how she solved the problem. A useful way of setting the stage for this is to bring the inventor back in time to the moment of inventive realization and to prompt her to articulate her solution in terms that put a heavy emphasis on function with as few implementational details as possible.

Typically the inventor picks up her pencil and begins explaining her solution in the context of the embodiment. This is not surprising. Inventors are used to thinking about their work in the tangible realm rather than the conceptual. Nonetheless, given the attorney’s exhortation to describe the solution broadly and functionally, the inventor will present it in at least some level of generality, which is fine for a start.

The attorney should therefore stay alert for what could be the broad solution and take an initial stab at a problem-solution statement as soon as it appears possible to do so. That initial view of the invention can then be presented to the inventor for discussion.

If the attorney is not familiar with the technology at hand, his initial take on the problem-solution statement can be wildly overbroad. It is nonetheless desirable to start early and aim high even though it may well mean having to fall back to a more limited view of the invention once the full extent of the prior art becomes clear. The alternative of holding back and aiming lower in the first instance may result in an invention definition that is unduly narrow. Having been apprised by the inventor that the proposed problem-solution statement is too broad, the attorney can simply prompt the inventor to pick up the thread of her story, staying alert for an opportunity to formulate a problem-solution statement that is better focused on her contribution to the art.

THINK BIG

A companion idea to the prescription Start Early is to Think Big.

Having been exposed to the broad functionality of the embodiment early on in his discussion with the inventor, the attorney who “thinks big” says to himself, “imagine the value of this patent if only we could capture the naked notion of that,” meaning the broad functionality of the embodiment stripped of its implementational trappings. The earlier in the process we start thinking in these terms, the better.

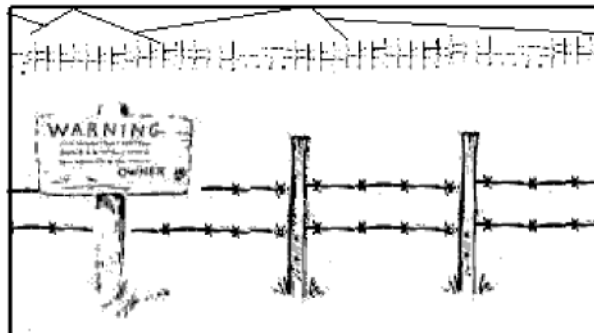
attorney who was “thinking big” at that time would have been asking himself, “Is it possible that we could get (i.e., claim) the naked notion of alarming at a selectable time? Think of royalties! Think of the market share!” And then, “What’s the prior art? Can it stop us? How can we get around it?” How much easier to capture the alarm clocks of the future—electrical clocks, electronic watches, personal digital assis-

to own the naked notion of random access control of a display screen cursor. Such a claim would encompass such post-mouse innovations as the trackball, joystick, touch pad or even cursor control with voice commands.

Of course, the problem-solution statement cannot be so broad as to encompass prior art. It would be great to own the naked notion of sending moving pictures over the airwaves, but that idea is already almost a century old. So at some point our grandiose ideas of how broadly the invention can be defined may have to give way to reality.

Better, however, to aim high and have to fall back somewhat than to aim low and achieve a lesser goal, only to realize too late in the game—when others enter the marketplace with a variant of the inventor’s embodiment not captured by the patent’s claims—that more could have been achieved.

Next Month: Reaching for Breadth—Part II



To Think Big means not being satisfied to pursue a limited parcel of intellectual property, even though it may be relatively easy to acquire. It means having a persistent, relentless mindset of trying to secure as expansive a parcel of intellectual property real estate as possible, even though it may be more difficult to do so.

Imagine that our client was the inventor of the first alarm clock. An embodiment-based analysis of this device would have focused on its various components—an analog clock face, a bell, a hand to indicate the desired alarm time, etc. However, an

tants, etc.—if the patent is not limited to any particular configuration of the time-keeping device or any particular alarming mechanism.

Or consider the computer mouse. An attorney thinking big would want his client

ENDNOTES

1. Copyright © 2007 American Bar Association. Adapted with Permission. All Rights Reserved.
2. Intellectual Property Today, August and September, 2007.
3. U.S. Patent 971,501

USPTO Grants the EFF’s Request for Re-Examination of NeoMedia Technologies’ Patent

NeoMedia Technologies, Inc. (OTCBB: NEOM), the global leader in camera-initiated transactions for mobile devices, announced that the United States Patent and Trademark Office (USPTO) granted the Ex-Parte Re-examination of U.S. Patent No. 6,199,048.

NeoMedia has a large portfolio consisting of U.S. and foreign patents and pending applications relating to various inventions surrounding the processing of “machine readable codes over wireless networks.” NeoMedia expects the ‘048 patent will be confirmed by the USPTO in course of the re-examination. According to publicly available statistics, only about 10% of patents that are re-examined have all their claims declared invalid.

NeoMedia’s CEO, William J. Hoffman, states, “Regardless of the outcome of the re-examination, NeoMedia’s inventions and the patent portfolio that protects them will continue to effectively serve the creation of a global and interoperable infrastructure that enables large scale adoption of mobile codes as triggers of optically initiated transactions.” He added, “NeoMedia’s main motivation is to use its inventions to make this wireless ecosystem a reality and create advantages for the global value chain.”

Additionally, in an effort to focus its energy on building a profitable ecosystem, and not to be distracted by time-consuming and costly patent litigation, NeoMedia has agreed to stay the current patent litigation against Scanbuy pending the re-examination’s outcome.

NeoMedia’s CEO affirms, “NeoMedia will use the ‘stay period’ to develop and to deploy our turn-key solutions for reading and processing a multitude of barcode formats that are ISO certified. Our patents have been reviewed and granted by appropriate government agencies, subsequently challenged, then licensed by numerous multinational companies deeply versed in Intellectual Property Rights. At the appropriate time, NeoMedia will move forward vigorously with the litigation and protect the rights we have been granted by patent offices worldwide.”

About NeoMedia Technologies, Inc.

NeoMedia Technologies, Inc. (OTCBB: NEOM) is the global leader in optically initiated wireless transactions, bridging the physical and mobile world with innovative direct to web technology solutions. To provide a robust high-performance infrastructure for the processing of optical codes NeoMedia extends their offering with award winning Gavitec technology. Located in Germany, Gavitec AG-mobile digit is a leader in development and distribution of mobile scanners and software for mobile applications. In addition, Gavitec provides standardized and individual solutions for mobile marketing, couponing, ticketing and payment systems. To learn more visit www.neom.com, www.neoreader.com, and www.mobiledigit.de.