INVENTION ANALYSIS AND CLAIMING:
Inventive-Departure-Based Claim Drafting—Part II[1]

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Last month's column described a claim drafting approach called inventive-departure-based claiming. One begins by writing down the so-called inventive departure[2]—a physical element, method step, functionality, or a combination of these that defines how the invention departs from the prior art. We then proceed backwards from the inventive departure, adding only so much additional language as is necessary to do one of two things:

1) Provide *antecedent support* for the language used to express the inventive departure;

2) Put the inventive departure into a *particular context* in which the claimed subject matter is novel and non-obvious.

Working backwards from the inventive departure helps ensure that only essential limitations make their way into the claim because it keeps us from introducing a limitation into the claim fabric until such time as it becomes clear that that limitation is really needed. Working backwards from the inventive departure also helps for us to take on the mindset of the Opposing Team—the potential infringer and his patent attorney[3]—as one of the author's colleagues observed when describing his approach to inventive-departure-based claiming:

> I focus on the departure or difference from the prior art that the invention contains and build a claim around that. Drafting the claim is then a matter of writing something down that recites the difference and then thinking of ways to avoid the language of the claim, yet still practice the invention. This forces you to think of generic terms that keep that from happening. Of course, removing limitations that are not needed in order to provide a context for the inventive distinction is part of that process.[4]

This month's column continues the discussion of inventive-departure-based claiming by looking at a number of ways that the inventive departure can be identified.

CONSIDER THE PROBLEM AND THE SOLUTION

A formal way of identifying the inventive departure is to develop a complete problem-solution statement. As discussed in an earlier column,[5] a problem-solution statement is a one-sentence definition of the invention, stating as broadly as possible, a) the problem the invention solves, and b) the inventor's solution to that problem, but without the overall problem-solution statement reading on the prior art.

Here, for example, is a problem-solution statement for Clarence Birdseye's food processing invention. The inventive concept is to package food in the container it is to be marketed in and then freezing it under pressure.

> *The problem of* being able to package and preserve food in an economical and commercially practical way *is solved by* first packing the food in the container in which it is to be marketed and freezing the same under pressure applied to substantial surface areas of the packed container.

The solution portion of the problem-solution statement is, or contains, the inventive departure. Different versions of the inventive departure will arise from different versions of the problem-solution statement.

Even if the claim drafter is intent on just digging in without writing and burnishing a full problem-solution statement, the same analytical techniques that go into developing a problem-solution statement can be used to identify the inventive departure, at least preliminarily. We ask ourselves what problem was intended to be solved and how, broadly speaking, it *was* solved. Aspects of the embodiment(s) that might have initially seemed central to the invention might not seem so when the invention is analyzed from the standpoint of being the solution to some problem. Thus, even without developing a formal problem-solution statement, it is often fruitful to take a problem-solution approach when attempting to identify the inventive departure.

For example, we saw in an earlier column[6] that the ballpoint pen addressed the problem that the previously existing (fountain and quill) pens could not write on a rough surface. That problem was solved by the pen having a spheroidal marking point or, alternatively a marking sphere capable of revolving in all directions. "Spheroidal marking point" is one way to characterize the ballpoint pen's inventive departure. "Marking sphere capable of revolving in all directions" is another.

FIGURE OUT "WHAT'S REALLY GOING ON"

Another way of identifying the inventive departure is to ask *What's Really Going On?* and then answering that question in functional terms. Any detail not helping to answer *What's Really Going On?* should be suspected as being not essential to the inventive departure.

Think in terms of gerunds rather than nouns; in method steps rather than structural elements. In last month's example of uniform heating of food in a microwave oven, the inventive departure is the gerund phrase "engendering relative motion between the food and the microwave source," rather than the noun "turntable."

Identify what is common among the various embodiments. Thinking about alternative embodiments can help in this.

Giving free rein to our technological curiosity is another way to get to the bottom of what's really going on—taking the thing apart in the mind's eye to understand what is going on at the 50,000-foot level.

SEPARATE WHAT FROM HOW

A broad invention is not about preferred ways of solving the problem, but about solving the problem, period. *Separating What From How*, means figuring out *what* solves the problem, as compared to *how* the embodiment(s) just happen to implement the solution.

The inventive departure is the *what* of this paradigm.

Separating What from How focuses not on what the invention *is*, but what it is *not*. An aspect of the embodiment is not intrinsic to the broad invention if the problem is at least partially solved without that aspect. It is the ball of the ballpoint pen that solves the problem of how to write on a rough surface. All the other parts of the embodiment relate to *how* the inventive concept is implemented, and do not inform the inventive departure.

A thread running through this series of columns is that an embodiment-based approach may miss the invention. However, the exercise of drafting an embodiment-based claim *can* facilitate separating "what" from "how" and thereby help us identify the inventive departure. Writing down potential claim limitations and seeing how they interplay can sharpen our understanding of the inventive departure at its essence.

Once having identified the inventive departure in this way, however, we should use it as the starting point for drafting a new claim following the procedure described above.

Next Month: Pack Only What You Need

ENDNOTES

1.
2. The inventive departure is also sometimes referred to as the "inventive step," "inventive advance," "point of novelty," or simply "the improvement."
3. "The Opposing Team," *Intellectual Property Today*, October, 2007
4. Thanks to colleague Harry L. Newman for this contribution.
5. "Inventions Are Concepts," *Intellectual Property Today*, July, 2007.
6. Id.