

INVENTION ANALYSIS AND CLAIMING: Inventive-Departure-Based Claims¹

PART I



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Drafting patent claims can be a challenging task, particularly for the novice. The specter of that blank sheet of paper or empty computer screen can be daunting.

However, if a problem-solution statement for the invention has already been developed,² the hard part will have already been done. Problem-solution statement in hand, the patent attorney can begin drafting claims for the invention not with an empty screen, but with a substantial kernel of inventive essence. The time invested in getting the problem-solution statement just right—defining the invention as broadly as possible without reading on the prior art—will now bear fruit. Far from being an isolated activity, drafting the claims becomes the capstone of a comprehensive invention analysis process.

A previous column³ described a technique for developing a claim directly from a problem-solution statement itself. This column describes another approach to drafting a claim to the broad invention—inventive-departure-based claiming. This technique also relies on the problem-solution thought process, but is more open-ended. The claim drafter is set free to bring creativity to bear, allowing for a virtually limitless variety of

claim structures and ways of expressing the broad invention.

THE PROBLEM WITH EMBODIMENT-BASED CLAIMING

Some practitioners undertake to develop a patent application’s broadest claims using an embodiment-oriented, invention-analysis-by-claim-drafting approach. A claim directed to the embodiment is drafted. That claim is then pruned and distilled; features that are clearly optional are eliminated and multiple elements or functions are consolidated into broader, overarching recitations. Another, similar approach prunes and distills a high-level figure of the patent drawing.

Claims drafted in this way may capture the *embodiment(s)* at their broadest. However, they may miss the real invention, no matter how much pruning and distilling is done. We saw this in a previous column⁴ using the example of the Konaclip paper clip.

Embodiment-based claiming does have its place. Independent claims focusing on the embodiment(s) are an important component of the Planned Retreat, as we saw last month.⁵ Moreover, sketching out a claim or two based on the embodiment(s) is a relatively painless way to get the claim drafting juices flowing. Embodiment-based approaches leave a lot to be desired, however, when we are undertaking to claim the invention at its broadest.

DRAFTING AN INVENTIVE-DEPARTURE-BASED CLAIM

How, then, to proceed?

There is no avoiding the need to identify the inventive concept at the outset. However, a less-than-fully-formed idea of the invention is sufficient to begin the process. The full breadth of the invention can be discovered as the claim takes shape. The key is to keep the goal of claiming the invention *conceptually* uppermost in our minds. This allows the claim in progress to capture the invention at its essence.

Central to this approach is notion of “inventive departure,” also referred to as the

“inventive step,” “inventive advance,” “point of novelty,” or simply “the improvement.”

The inventive departure is a physical element, method step, functionality, or a combination of these that defines how the invention departs from the prior art. The inventive departure does not necessarily involve a complete statement of the inventive solution. Nor does it speak to the invention’s environment or context. This is consistent with the notion of “departure.” The inventive departure states the improvement without saying what is being improved—how the invention departs from the prior art without saying what is being departed *from*—although obviously we will have at least some idea of that even at the outset.

The inventive departures for a number of everyday inventions discussed in previous columns are shown below. Note that the inventive departure is not necessarily a complete thought. It is, rather, the germ of an idea out of which a full-blown claim can grow.

Invention	Inventive departure
Ballpoint pen	Spheroidal marking-point
Alarm clock	Alert at a selectable time
Non-dripping coffee maker	Coffee flow is shut off if the carafe is not present
Aircraft lateral control	Controllable wing configuration
Chair	Elongated support member(s)
Traffic signal	Indicia for different directions of travel are changed in coordination

BEGIN WITH THE END IN MIND

In his book *The 7 Habits of Highly Effective People*,⁶ personal-effectiveness author Stephen Covey urges readers to “begin with the end in mind.” Being effective in life, Covey says, requires first deciding what one’s goals are. That goal is Covey’s “end in mind.” Once a goal is clearly in mind, action can be taken to achieve it.

Beginning with the end in mind is also a powerful claim drafting paradigm. The “end in mind” is the inventive departure. Drafting the claim begins by writing down the inventive departure—typically as a method step or an apparatus element. The process proceeds backwards from there. The claim is completed by adding only so much additional language as is necessary to do two things:

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

- 2) If necessary, 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 in this way helps ensure that only essential limitations make their way into the claim.

For an example of the technique, let's return to the microwave oven uniform food heating invention introduced in an earlier column.⁷ The inventive departure is to engender relative motion between the food being heated and the microwave energy source.

Let us draft a method claim, beginning by writing a generic preamble and a "payoff limitation" that presents inventive departure. The remainder of the claim is blank at this point:

A method ...

...engendering relative motion between the food and the microwave energy source.

Applying criterion 1) above, we see that antecedent support is required for "the food" and "the microwave energy source." That support can be put in the claim preamble, at which point all antecedent problems are resolved:

A method for heating food in a microwave oven, the oven including a microwave energy source, the method comprising engendering relative motion between the food and the microwave energy source.

Applying criterion 2) above, recall⁸ that the prior art knew to heat food by conveying it across the open end of a microwave waveguide. The method performed by that apparatus anticipates the above claim. However, we saw that the waveguide prior art is overcome by putting the invention into the context of a microwave oven "cavity." We therefore add the word "cavity" to the claim, and we're done!

A method for heating food in a microwave oven cavity, the oven including a microwave energy source, the method comprising engendering relative motion between the food in the cavity and the oven's microwave energy source.

This is a simple example. Future columns will present further ideas for ensuring that claims drafted using the technique of inventive-departure-based claiming will

capture the inventive concept as broadly as possible.

Next Month: Inventive-Departure-Based Claims—Part II

ENDNOTES

1. Copyright © 2007-2008 American Bar Association. Adapted with Permission. All Rights Reserved.
2. "Inventions Are Concepts," *Intellectual Property Today*, July, 2007.
3. "Problem-Solution-Based Claims," *Intellectual Property Today*, September, 2007.
4. "Begin from the Problem [Not the Embodiment]," *Intellectual Property Today*, August 2007.
5. "Dependent Claims and the Planned Retreat," *Intellectual Property Today*, June 2007.
6. Stephen R. Covey, *The 7 Habits of Highly Effective People*. (New York: Fireside, 1989), p. 95.
7. "Reining In Overbreadth—Part II," *Intellectual Property Today*, March, 2008
8. *Id.*