

# INVENTION ANALYSIS AND CLAIMING: Reaching for Breadth

## PART V<sup>1</sup>



BY RONALD SLUSKY

Ronald Slusky mentored dozens of attorneys in “old school” invention analysis and claiming principles over a 31-year career at Bell Laboratories. He is now in private practice in New York City. This article is adapted from his 2007 book *Invention Analysis and Claiming: A Patent Lawyer’s Guide*. Ron’s **two-day seminar** based on his book will be given **this month in Washington, D.C.** followed by **Dallas and New York** later in the year. For details, see [www.sluskyseminars.com](http://www.sluskyseminars.com). Ron can be reached at 212-246-4546 and [rdslusky@verizon.net](mailto:rdslusky@verizon.net).

This is the fifth column looking at ways for analyzing the inventor’s embodiment(s) to uncover the full breadth of the invention—a quest that the author calls “Reaching for Breadth.”

Prior columns<sup>2</sup> urged the practitioner to:

- **Start early.** Formulate a draft of the problem-solution statement as soon as

one has enough information to do so. Starting early counteracts the tendency for unessential implementational details to taint our notion of what the broad invention is.

- **Think big.** Envision what could be achieved for the patent owner by a patent that captures the broad function implemented by the embodiment(s), e.g., “alarming at a selected time” in the case of the first alarm clock.
- **Avoid being misled by the inventor’s embodiment focus.** Recognize that although the broad invention is often some new functionality—rather than how the embodiment happens to implement that functionality—the inventor may not appreciate the distinction and may erroneously imply that the new functionality is already known in the art. The opportunity to define the inventor’s contribution at its full breadth may then become lost.
- **First be a skeptic, then be an advocate.** Challenge the inventor to identify (with our help) whatever technological and/or legal arguments could be advanced as to why something that might seem at least prima facie obvious may not be so obvious after all.
- **Separate What From How.** Ask what solves the problem, as contrasted

with how the embodiment(s) just happen to pull it off.

This month we look at two further paradigms helpful in our quest for breadth: “Keep Separate Inventions Separate” and “Dream Up Alternatives, Including Some Farfetched Ones.”

### KEEP SEPARATE INVENTIONS SEPARATE

A device or process may solve two or more problems at the same time. In general, separate solutions to separate problems constitute separate inventions (assuming that the requirements of novelty and non-obvious are met). For example, the food steamer shown in FIG. 1 solves at least three problems, each solved by a respective feature of the steamer, and each giving rise to its own problem-solution statement:

- 1) The problem of foul odors that occur if the steamer is allowed to boil dry is solved by preventing the condensate from draining back to the boiling water reservoir.
- 2) The problem of the food getting soggy if allowed to remain in contact with the condensed steam is solved by a specially designed food tray that causes the condensate to drain away from the food.
- 3) The problem of long waiting times for initial steam formation to occur is solved by a baffle that promotes local heating of water in the boiling water reservoir.

Identifying the separate inventions embodied in a particular apparatus or method, and pursuing them in separate claim suites, may be crucial to secur-

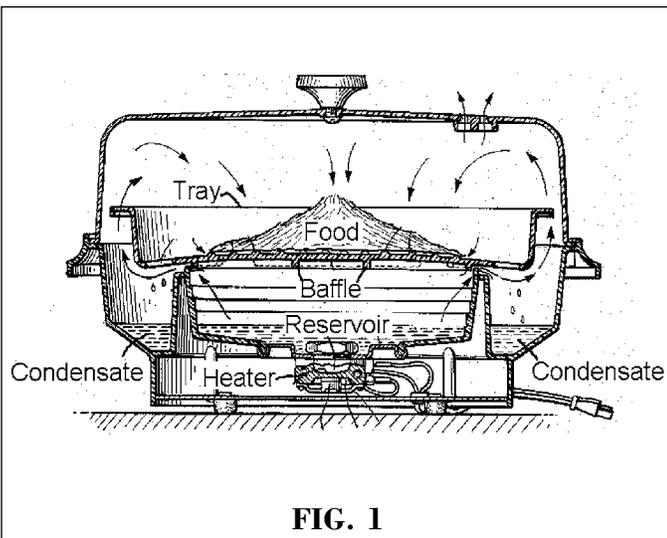


FIG. 1

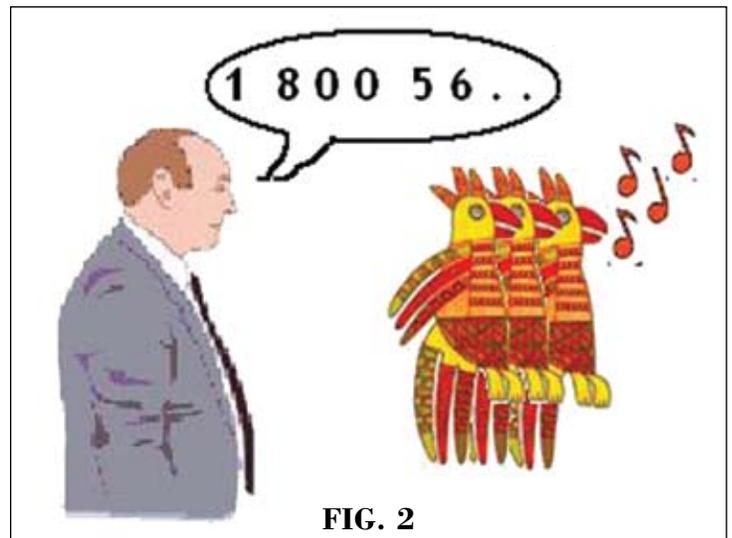


FIG. 2

ing patents that competitors cannot easily design around.<sup>3</sup> If instead of claiming the inventive solutions separately, the patent defines and claims the invention as a combination of multiple solutions to multiple problems, a competitor's product that implements less than all of those solutions escapes scot-free. It is therefore dangerous to lump all the solutions together, and call that the invention without thinking through the problems that may arise when it comes time to license or sue on the patent.

Perhaps the most straightforward option for pursuing protection for the separate inventions is to file separate patent applications with separate claims to each invention. If the client does not want to invest in more than one patent application—at least initially—an application can be prepared that discloses all the inventions but claims only one of them. If it later proves desirable to pursue claims to the other inventions, one or more continuations could be filed during the first application's pendency. Another option is to file a single application with claims to all the inventions and then file divisional applications downstream if the examiner had called for an election and the client is interested in pursuing coverage to the non-elected inventions.

## DREAM UP ALTERNATIVES, INCLUDING SOME FARFETCHED ONES

A powerful tool for finding loopholes in an invention definition (i.e., problem-solution statement or claim) is to dream up some alternatives to the inventor's embodiment(s), including some alternatives that are farfetched. These are embodiments that, while outlandish or "wacky," would nonetheless solve the problem to at least some extent. The more farfetched the better. The point is not to claim, or even to disclose, these embodiments in the patent application. The point is that even a farfetched embodiment can solve the problem without involving some of the implementational details required by practical embodiments. Dreaming up farfetched embodiments is thus another way of teasing out the essence of the invention from its implementational details and thereby identify limitations that aren't needed after all.

For example, the pushbutton telephone introduced in the 1960's replaced the voltage pulses generated by the prior art rotary dial telephone with tones generated by electronic oscillators. Oscillators were the only way known at the time to generate

tones electronically and a physical switch (e.g., push button) was the only way known to provide a user with a way of indicating which digit she wanted to dial.

An initial take on a problem-solution statement for this innovation might be something like:

**The problem of** slow dialing of rotary telephone instruments is solved by using oscillators to generate tones in response to user operation of push buttons.

Now let's dream up a farfetched embodiment. How about using trained miniature parrots to whistle the tones in response to verbal commands (FIG. 2). Such an embodiment would not use oscillators or push buttons. Yet the concept underlying this embodiment is the same concept that underlies the "real" embodiment—overcoming the problems inherent in the use of voltage pulses by using tones to signal into the telephone network from the telephone customer premises. Thinking about whistling parrots and voice commands should lead us to a problem-solution statement devoid of any mention of oscillators or push buttons—one that focuses, rather, on the naked notion of using tones to signal into the telephone network from the telephone customer premises:

**The problem of** slow dialing of rotary telephone instruments is solved by generating, for each of a plurality of unique dialing indications, a respective unique signal comprising at least one tone.

This second problem-solution statement covers not only the original oscillator-plus-push-button embodiment but also the parrots-plus-spoken-command embodiment. The latter embodiment is not of practical interest, of course. Importantly, however, conjuring up that farfetched embodiment led us to a problem-solution statement encompassing realistic embodiments that were probably unimagined, if not unimaginable, when the push button telephone was conceived of but yet implement the essence of the innovation. For example, there are now ways of generating tones without oscillators and ways of dialing a telephone number without the use of push buttons. The latter include voice command as well as dialing a person's telephone number by clicking on a screen-displayed icon associated with that person.. Thus a patent claim based on the second problem-solution state-

ment above would potentially have had longer staying power, and would have covered more real life, realistic embodiments, than a patent based on the first problem-solution statement

In this particular case, a patent directed to the broad concept would probably have expired long before non-oscillator-based tone generation came to market in any widespread way. In general, however, one never knows how quickly today's implementational imperative will become the old way of doing things. Dreaming up farfetched embodiments helps us deal with that possibility.

It may be unreasonable to expect an inventor or her attorney to divine the technological advances of the future. But it is not unreasonable to expect them to anticipate that advances of some kind will inevitably occur. Dreaming up various different embodiments of the invention, including some farfetched ones, helps us separating out those aspects of the inventor's embodiment that are inherent in the underlying inventive concept from those that are merely illustrative details.

## ENDNOTES

1. Copyright © 2007-2009 American Bar Association. Adapted with Permission. All Rights Reserved.
2. Intellectual Property Today, December, 2007; January, 2008; July, 2008; April, 2009.
3. On occasion, the broad invention resides in the fact two or more solutions have been brought together to achieve some unanticipated synergistic result. This discussion assumes that that is not the case.