

Invention Analysis and Claiming: Reaching for Breadth—Part III¹

By Ronald Slusky

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This is the third column discussing ways of analyzing the inventor's embodiment(s) to uncover the full breadth of the invention—a quest that the author calls "Reaching for Breadth."

Prior columns² 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 implements 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) technological and/or legal arguments as to why something that might seem to us at least *prima facie* obvious is not so obvious after all.

This month's column offers another prescription under the rubric of Reaching for Breadth—*Separate What From How*.³

Separate *What From How*

Certain aspects of the inventor's embodiment(s) may allow the problem to be solved more completely or more advantageously than if the invention were to be embodied in some other way. But the invention is not about preferred ways of solving the problem. It is about solving the problem, period. Separating *What From How* means asking ourselves *what* solves the problem, as contrasted with *how* the embodiment(s) just happen to implement the solution.

The process of separating *What From How* focuses not on what the broad invention *is*, but what it is *not*. The question is: Would the invention solve the problem to at least some extent, even in the absence of a particular embodiment element, step, or interrelationship. If so, that aspect of the embodiment is most likely a *how* not a *what*—relating not to the broad invention but to the implementation. We saw in a prior column discussing the original ballpoint pen⁴ that its embodiment's "ink regulating means" and contracted barrel mouth were not essential to solving the problem of ink-writing on a rough surface and, as such, were not necessary to define the broad invention.

This is not to say that the implementational details—the *how's*—are unimportant. Some of the embodiment's *how's* will serve as the basis for important fallback feature claims. The *how's* of the embodiment(s) are also needed to satisfy the requirements of "enablement" and "best mode." Our focus at the moment, however, is distilling the invention down to its bare essence.

The process of separating *What From How* addresses one of the patent practitioner's more insidious demons—the almost irresistible mental hold that certain embodiment details can exert over us. Even the most experienced attorney can be seduced into thinking that some aspect of the embodiment(s) is necessary to the invention, when it is not. Thinking about separating *What From How* helps guide our analysis away from the embodiment and the lure of its implementational details toward a broader view of the invention.

A caveat: Used in isolation, separating *What From How* may broaden out the embodiment but completely miss the invention, as we saw in the case of the Konadip paper clip.⁵ So this technique should not be used when formulating a problem-solution statement or claim in the first instance. It should be used only after a problem-solution-based analysis is already under way or when we are intentionally setting out to define the invention at less-than-fully-broad scope.

Case in Point: The Wright Brothers' "Aeroplane"

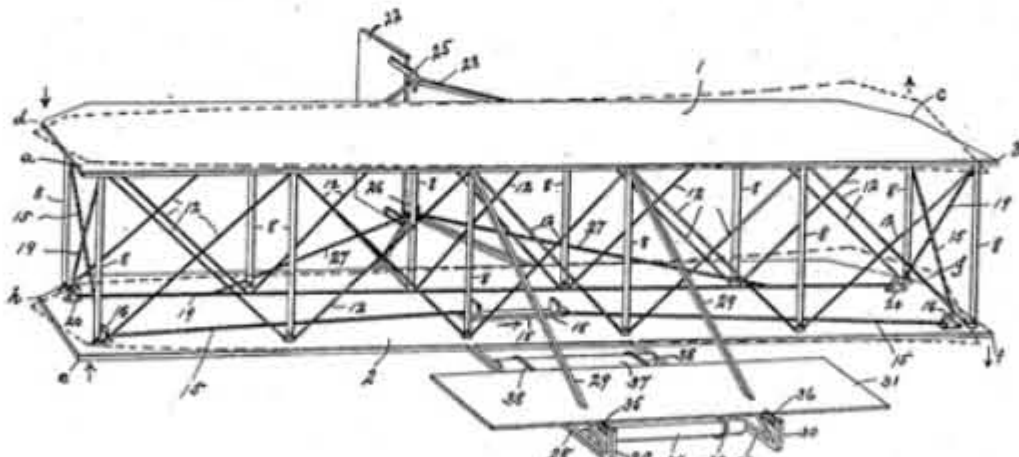
Our view of the *what* vs. *how* status of an embodiment detail may change once in initial draft of the problem-solution statement is held up to the light of the prior art. For example, a feature of the Wright brothers' 1903 flying machine was a wing-warping mechanism, as shown by the dashed lines in the FIG. Wing-warping provided lateral control during flight, allowing the pilot to keep the wings level. Providing lateral control would certainly seem to be an implementational detail—a *how* not essential to a definition of a machine capable of heavier-than-air flight. One might therefore think to characterize the Wrights' invention as comprising nothing more or less than a lift-producing wing and a source of motive energy, as in the following problem-solution statement:

The problem of achieving heavier-than-air flight is solved by the combination of a) a wing structure that provides lift when moved relative to the atmosphere and b) a source of motive power to provide said relative motion.

This problem-solution statement is too broad, however. At least one flying machine having a lift-producing wing and a source of motive power was built by one Clement Ader some 13 years before Kitty Hawk. Ader's craft was impractical; it had no lateral control mechanism, and as a result was incapable of sustained flight beyond perhaps 50 meters. Even so, the above problem-solution statement characterizes not only the Wrights' 1903 flying machine, but Ader's as well. It also reads on flying dinosaurs and most species of birds.

We see, therefore, that changing the wing configuration to achieve lateral control was not an aspect of *how* the Wright brothers implemented their invention. It was the invention and, indeed, is recited in even the broadest claims of their 1906 patent.⁶

Next month: Independent Embodiment Claims



Endnotes

- 1 Copyright © 2007-2008 American Bar Association. Adapted with Permission. All Rights Reserved.
- 2 *Intellectual Property Today*, December, 2007, January, 2008.
- 3 The author thanks colleague Gene Nelson for suggesting this paradigm.
- 4 *Intellectual Property Today*, July, 2007.
- 5 *Intellectual Property Today*, August, 2007.
- 6 United States Patent No. 821,393. Claim 1 of the Wrights' patent recites "In a flying-machine, a normally flat aeroplane [wing] marginal portions capable of movement to different positions above or blow [sic] the normal plane of the body of the aeroplane"