

The Levels of Abstraction Problem in Patent Law

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The concept of “invention” is fundamental to patent law. What the patentee creates as the invention, he receives as his monopoly reward. This *quid pro quo* suggests that patent scope is self-defining: the patentee receives whatever invention he created, and nothing else.

The *quid pro quo* framework breaks down, however, because “invention” means different things on the two sides of the equation. The invention that the patentee creates is an embodiment. The invention that defines monopoly scope, however, is an idea. Every embodiment contains many ideas, at different levels of abstraction.

For example, suppose an inventor produced a method of curing AIDS using radiation therapy, specifically using X-radiation, and uses a radiation machine to implement the method. The idea behind this cure can be described at many different levels of abstraction:

1. The idea of curing AIDS, covering all cures that might ever be devised.
2. The idea of curing AIDS by using radiation therapy, covering all cures using any type of radiation but not other methods.
3. The idea of curing AIDS by using radiation therapy, specifically by using X radiation; thereby excluding methods not using X radiation.
4. The idea of curing AIDS using radiation therapy, specifically by using X radiation, and more specifically by using the exact make and model of the patentee’s radiation machine.

Each idea at a different level of abstraction can be accurately described as the “invention.” Courts must choose one idea to give legal protection, with important consequences. The higher the level of abstraction chosen, the more scope the patentee receives, with attendant incentive benefits and monopoly costs.

The problem is that neither formalistic doctrine such as claim construction and enablement, nor the underlying idea of *quid pro quo*, reveals the proper level of abstraction to characterize an invention. This was revealed by Learned Hand’s “abstractions test” 79 years ago. Courts inherently exercise choice in determining scope, and greater transparency in exercising such choice is desirable. I argue in this Article that the problem of choosing a level of abstraction, rather than the linguistic vagueness of claims, explains much of the uncertainty in claim construction and enablement doctrine today.