

Functional claiming in the crosshairs

Functional claiming returns to the frontlines in the patent wars

There are a few potentially explosive issues in the high stakes patent wars with the capacity to separate winners from losers on a grand scale. The bounds of patentable subject matter (eligibility), the quantum of innovation worthy of patent protection (obviousness), and the legitimate reach of patent protection (claim construction and equivalents) are among them. The big guns turned again toward functional claiming on 4 June, 2013, when President Obama released a detailed executive report, *Patent assertion and US innovation*, announcing a number of legislative suggestions and executive actions designed to curb abusive patent litigation by certain patent owners known pejoratively as “patent trolls”. The President pulled no punches in his initial salvo, using the highly charged terms “hijack,” “extort,” and “drain on the American economy” to describe the situation. Item number two on the President’s list of executive actions takes dead aim at “functional claiming”.

At last count, 14 patent reform bills have been proposed in US Congress, but none address functional claiming. On the administrative side, the US Patent and Trademark Office (USPTO) announced “refresher training” to help examiners deal with functional claiming. While examiner education always sounds good, this round follows on the heels of several other formal examination guidelines and training materials issued in the last few years and two (arguably conflicting) sections in the examiner’s rule book (MPEP §§ 2114 and 2173) providing

specific procedures and form paragraphs for examining functional claim language. That makes it doubtful that examiner misimpression is a major source of the problem, but the Patent Office can only do so much. The administrative agency is bound to follow the patent statute as well as judicial precedent from a very active Court of Appeals for the Federal Circuit and the Supreme Court interpreting and applying the statute.

Patent law lies at the crossroads of the government, including constitutional authorisation, statutory enactment, administrative regulation under the USPTO, trade regulation under the International Trade Commission (ITC), and a large body of judicial and administrative case law. While the executive branch has limited ability to project power in this theatre of operations, it is not completely dead in the water. Hostilities have already intensified in the quasi-judicial branch of the Patent Trial and Appeal Board (PTAB), which hears administrative appeals from examination decisions. The PTAB has recently advanced an increasingly hard line rejecting claims in “processor plus function” format as impermissibly functional, even when the examiner did not raise that objection, and even when the claim itself recites a processor and the specification contains a flow chart supporting the claim, along with the same level of description in software patents that have been granted for decades under the prevailing Federal Circuit precedent:

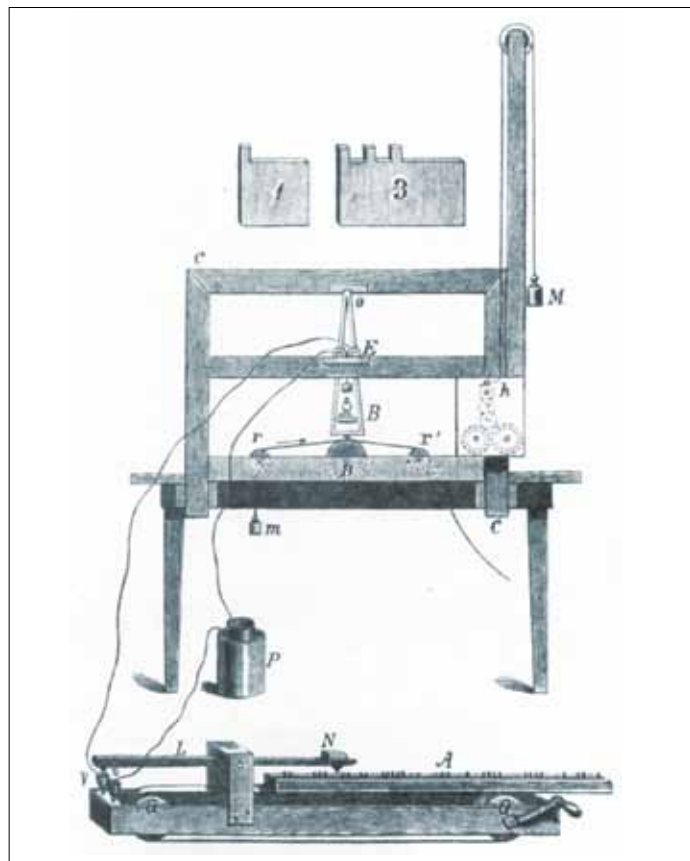
¹As this examination standard runs headlong into the settled

Federal Circuit precedent underlying hundreds of thousands of issued patents,² this may signal an administration charge on the judicial front lines of functional claiming.

Regardless of how well this seemingly aggressive examination foray ultimately affects future patents, the administration will need to find a way to provoke reconsideration of the current judicial policies and procedures if it hopes to significantly affect the way the courts respond to the huge number of functionally claimed patents already in the field. To understand how this battle will shape up, it will be helpful to review the history of the law of functional claiming to bring the “means for” provision of Section 112(f) into focus.

Running the old reels from the 19th century shows that inventors figured out early on that claiming the accomplishment of a broad functional objective, rather than a specific machine for achieving that objective, would result in the broadest patent coverage encompassing every possible way of performing a claimed function. Functional claiming therefore became the rage until it ran into major resistance in the famous telegraph patent case.³ (See image below) Samuel Morse had claimed (paraphrasing), “a machine for transmitting information using electro-magnetism as the motive force” which he tried to enforce against Alexander Graham Bell’s telephone.⁴ The Supreme Court ruled the claim invalid because Morse had not described how to make *all possible ways* of practising the invention,⁵ which is what he had literally claimed. In modern judicial language, the claim was invalid because “the teaching of the patent specification did not enable the full scope of the invention as claimed.”⁶ And that, of course, is the fundamental problem with functional claiming.

Simple as that may seem, Morse is far from the end of the story because most patents cover functional devices and it is extremely inconvenient – if not effectively impossible – to describe or claim these inventions *without* using functional language. After all, even a great



Telegraph and Claim No. 8 from the Morse Telegraph Patent
US Pat No 1647 (1840) reissued as US Pat No RE117 (1848)

deal of structural language is, at its root, really functional language (refrigerator, propeller, processor, connecting rod etc) Since examiners, judges and jurors are ultimately expected to understand what has been claimed in a patent, it would wreak havoc on everyone’s ability to understand claim language (which is usually hard enough to understand even when functional language is used) if the law were to really take away the most effective language just when it counts the most. The patent bar therefore didn’t, and in reality couldn’t, stop using functional language in patent claims – that would be akin to asking water to stop being wet. The Morse rule thus became limited to only proscribing claims directed to broadly stated goals (such as the single-means claim in the telegraph patent), while individual elements in a more detailed claim could still be recited with functional language. Functional claiming therefore continued as the norm back in the 19th century, as it does today.

Almost a century later, however, judicial hostility toward functional claims again gained the advantage with what became known as the “Halliburton Rule” where the Supreme Court held it impermissible to use “conveniently functional language at the exact point of novelty.”⁷ Under the so-called Halliburton Rule, courts were expected to examine claim language in detail to determine the “exact point of novelty” and then make the determination whether that particular element of the claim was expressed in unduly functional language. In addition to apparently invalidating an untold number of granted patents at the time, this approach proved to be so unwieldy that in 1952 Congress stepped in with a new section of the patent statute, Section 112(f), allowing an element in a claimed combination to recite a “means for” or “step for” accomplishing a stated objective. The tradeoff is that the particular functional claim element only covers the “corresponding structure, material, or act disclosed in the specification and equivalents thereof”.

Despite this statutory enactment undoubtedly designed to end the functional claiming controversy once and for all, a series of decisions by the Federal Circuit rendered the “means for” claim format both *unattractive* to patent applicants as well as *optional*, depending instead on whether the specific claim language expressed the *author’s intention* to invoke Section 112(f). The report from this shot to the heart of Section 112(f) and echoes sharply in the Federal Circuit’s *Microprocessor Enhancement* decision:⁸

“As this court recently stated, apparatus claims are not necessarily indefinite for using functional language... Functional language may also be employed to limit the claims without using the means-plus-function format [invoking 112(f)].”

Patent applicants swiftly flanked the wounded “means for” provision, still hoping to secure claim coverage broader than the specific embodiments described in their patent specifications “and equivalents thereof”. This has resulted in hundreds of thousands of patents relying on functional claim language carefully drafted to *specifically avoid* invoking 112(f) under the guidelines of the prevailing Federal Circuit precedent. The retaking of that high ground has been so extensive, in fact, that an analysis published in the Patently-O blog shows that in the last 25 years, the percentage of granted patent claims using the “means for” language *intentionally invoking* 112(f) has plunged to single digits, while claims with functional language *intentionally avoiding* 112(f) have surged to a staggering 70%. According to the President’s executive report, many of these functionally claimed patents have found their way into the hands of nefarious PAEs described as “intermediaries [who] acquire broad patents and threaten suit, in hopes of extracting settlements.”

There are already a number of judicial lines of counterattack in the case books. The basic tactic conjures up *Halliburton* by asserting that functional claims not limited to the specific embodiments in the patent’s disclosure “and equivalents thereof” by the “means for” provision of 35

USC 112(f) are invalid for exceeding the patent's scope of enablement. Indeed, the Federal Circuit has invalidated what it called "a classic example of a claim that is broader than the enablement as taught in the specification."⁹ The Patent Office decision *In re Miyazaki* took a direct shot at expressly reviving the Halliburton Rule by holding that apparatus claims with purely functional language are *per se* invalid unless they fall within Section 112(f).¹⁰ To be sure, the Patent Office pronouncement in *In re Miyazaki* cannot be reconciled with the governing Federal Circuit precedent in *Microprocessor Enhancement*, but *Miyazaki* did not make it to the Federal Circuit for judicial review and has not been widely applied by the Patent Office. There lie the major battle lines for judicial review of functional claiming under Section 112 and the Halliburton Rule.

Meanwhile, the academics have been digging in. Most notable is Stanford University's Mark Lemley who was cited favourably in President's Obama's executive report four times. His law review article, *Software patents and the return of functional claiming*, argues that the problems with functional claims can be effectively handled by "simply" construing 112(f) to be a mandatory provision applicable to all functional claim language, as opposed to the current approach applying this provision only when the claim itself uses the magic "means for" language indicating the author's *intention* to bring the claim within the statutory provision.¹¹

It does appear that the pressure is building to the point where something is likely to give. Those hoping to preserve the validity of patents with functional claims written to intentionally avoid falling within 112(f) would be wise to consider the alternatives. If functional claims *really aren't* inherently limited to the scope of enablement by Section 112(f), and functional claim language *really does* inherently read on non-enabled possible solutions, then a lot of patents could be rendered instantly invalid if the Federal Circuit or the Supreme Court were to become persuaded to adopt the view of the Patent Office expressed in *In re Miyazaki*. That would suddenly make Section 112(f) a whole lot more attractive to patent owners – resulting in a post-apocalyptic scrambling to determine whether the huge number of patent claims specifically drafted to *intentionally avoid* invoking Section 112(f) would nevertheless find protection in its safe harbor – not unlike the post-Halliburton scrambling back in the 1940-50s that led to enactment 112(f).

With those stakes involved, it might be wise to look elsewhere for a softer landing. One less potentially devastating approach would be judicial recalibration of the line of cases rendering Section 112(f) unattractive to patent owners in the first place. On this front, a sound argument can be made – based on the historical and legislative history of Section 112(f) – that the scope of claims under this provision should be *commensurate with the scope of enablement* of the patent's disclosure (subject, of course, to prosecution history estoppel). That would require application of "statutory equivalents" under 112(f) as of the application's filing date to determine the literal scope of functional claims, followed by application of the traditional "doctrine of equivalents" as of the date of infringement to account for post-filing technological developments. The greater bulwark of Federal Circuit claim construction law would then apply to functional claims as-is, with only a slight adjustment to Section 112(f) policy needed to cabin all functional claims by the scope of enablement. This would have the salutary side effect of obviating what promises to be a long and difficult campaign to sort out the increasingly important legal question of when functional claims not bounded by Section 112(f) exceed the scope of enablement as a matter of claim construction.

Together with this change in claim construction policy, it would make procedural sense to consider the scope of enablement as an element or defence in the infringement analysis. That is, the patent owner could be charged with proving that the *accused product* falls within the patent's scope of enablement as an element of infringement; or the defendant could be allowed to prove the opposite as an affirmative defence. This

alternative approach for adjusting and applying 112(f) to all functional claim language might be a very attractive compromise for judges seeking to reevaluate the law of functional claiming based on first principles without "nuking" the patent world, with the reincarnation of the Halliburton Rule envisioned by *In re Miyazaki*.

This more nuanced approach would allow the district courts to consider the scope of enablement (a highly fact dependent inquiry) on a case-by-case basis with reference to a specific accused product during the infringement phase of a patent trial, as opposed to the nearly impossible (and highly advisory) task of attempting to judicially define such a thing "in the abstract" as a matter of law at the claim construction phase prior to trial. The trier of fact would then be presented with a very telling dichotomy, where validity (obviousness) would be to determine by comparing the claimed invention to the scope of enablement of the prior art as of the patent's priority date, while infringement would be determined by comparing the accused product to the patent's scope of *enablement* in view of the state of the art at the time of infringement. And, since the district courts already appear to be struggling to find a workable way to more strictly limit the scope of all patents to their scope of enablement, the Federal Circuit might well be receptive to reconsidering the most appropriate stage of the litigation to take on this issue. Importantly for patent owners, this comparatively modest adjustment in patent litigation procedure would almost certainly provide far more tenable ground to hold in the looming functional claim battles ahead.

Footnotes

1. See, <http://www.jdsupra.com/legalnews/thinking-of-appealing-processor-function-08552> covering several recent decisions from the PTAB issuing *sua sponte* rejections of claims in "processor + function" format as unduly functional under 35 USC §§ 112.
2. *In re Swinehart*, 439 F.2d 210 (CCPA 1971).
3. *O'Reilly v Morse*, 56 US (15 How.) 62 (1853).
4. US Patent No 1,647 (1840) reissued as US Pat No RE117 (1848).
5. Claim No 8 from the Morse reissue patent no RE117: "I do not propose to limit myself to the specific machinery or parts of machinery, described in the foregoing specification and claims; the essence of my invention being the use of the motive power of the electric or galvanic current, which I call electro-magnetism, however developed, for making or printing intelligible characters, letters, or signs, at any distances, being a new application of that power, of which I claim to be the first inventor or discoverer."
6. *Eg, LizardTech, Inc v Earth Resource Mapping, Inc*, 424 F.3d 1336 (Fed Cir 2005).
7. *Halliburton Oil Well Cementing Co v Walker*, 329 US 1 (1946).
8. *Microprocessor Enhancement Corp v Texas Instruments Inc*, 520 F.3d 1367 (Fed Cir 2008).
9. *National Recovery Technologies, Inc v Magnetic Separation Systems, Inc*, 166 F.3d 1190 (Fed Cir 1999).
10. *In Ex Parte Miyazaki*, 89 USPQ2d 1207 (B.P.A.I. 2008).
11. Lemley, Mark A Software patents and the return of functional claiming. *Stanford Public Law Working Paper No 2117302 Working Paper Series*, 2012.

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