

Claim Drafting in View of Recent Litigation

-- or --

The Top 5 Ways to Destroy Your Client's Patent Rights, As Taught by the Courts

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What are you doing about Festo? Under Festo and other recent cases, we are witnessing the doctrine of equivalents withering on the vine. Even more alarming, the case for literal infringement appears to be getting more difficult to establish as a result of a number of recent decisions that are limiting claims to the preferred embodiment.

The literature has been full of ideas for how to deal with Festo. While I do summarize some ideas for post-Festo claiming, I would like to focus on the following contention:

-- To have a robust claim, you must have a well-crafted specification. --

What do I mean by a "robust claim"? I mean one that prosecutes well (i.e., is efficient both in time and cost); one that withstands the heat of litigation and law shifts over time; and ultimately, one that protects your client's property.

A "well-crafted specification" is one that is filled with multiple layered definitions. It starts with broad, general principles and builds layers of functions. Eventually, in its narrowest aspect, it reaches the level of the particular, illustrated embodiment.

For example, suppose the preferred embodiment of the invention includes a bevel gear. Broadly, the invention could first be defined as having an arrangement to drive a spindle. At a next level, it could be described as a rotation-to-rotation arrangement that converts energy to rotary force on the spindle. At a next layer, the invention could be described as being embodied in a gear arrangement to translate force from an X to a Y that drives the spindle. At another layer, the specification describes the gear arrangement as being oriented between the X and the Y, such that when the X moves in a rotary motion, a rotary force is translated to the Y, which drives the spindle. Eventually, the specification points out that in the particular embodiment illustrated, the gear arrangement is a bevel gear. At that point, the specification goes into considerable detail about the structure of the particular bevel gear and the structural relationships between the bevel gear, the X, the Y, and the spindle, which should all be illustrated in the drawings.

Recent Federal Circuit cases do not instruct us how to write robust claims or well-crafted specifications. These cases can be instructive, however, on how to destroy your client's patent rights. My contention is that there is a common theme to each of these cases--the patent holder's problem wasn't with the claims; the problem was with the specification. Had the patent holder had a well-crafted specification, the claim should have been interpreted differently, perhaps in

the patent holder's favor. So, let us examine the top five ways to destroy your client's patent rights, according to the courts.

1. Ignore the 800-pound gorilla

Of course, the 800-pound gorilla that I am referring to is Festo. An analysis of claim drafting in view of recent litigation would be incomplete without some treatment of Festo. Here is a brief reminder of the holdings of Festo:

- ❑ An amendment that limits the scope of the claims for any reason related to the statutory requirements for a patent will give rise to prosecution history estoppel with respect to the amended claim element.
- ❑ Any amendment that narrows the scope of a claim for any reason related to patentability will give rise to prosecution history estoppel with respect to the amended claim element.
- ❑ When a claim amendment creates prosecution history estoppel, no range of equivalents is available for the amended claim element.
- ❑ No range of equivalents is afforded to unexplained amendments.

For those who prosecute patents as a daily part of their practice, Festo has made the job of seeking adequate patent protection for our clients more challenging. Consider the following cases:

In Pioneer Magnetics v. Microlinear Corp., 238 F.3d 1341 (Fed. Cir. 2001), in an amendment, the patent holder changed a claim term "multiplier circuit" to the claim term "switching analog multiplier circuit". The patent holder did not give an explanation as to why this limitation was added. The patent holder argued that the addition was inadvertent, or alternatively, voluntary. The Federal Circuit decided that the amendment was made, in fact, to avoid prior art. Relying upon Festo, the Federal Circuit afforded no scope of equivalents to this claim limitation.

In another post-Festo decision, the claim limitation at issue had been amended twice during prosecution. The original claim recited, "means for rotating said wheel in accordance with a predetermined sinusoidal variation." After the first amendment, the claim read, "means for rotating said wheel in accordance with a predetermined rate schedule which varies sinusoidally over the orbit." Finally, the limitation "at the orbital frequency of the satellite" was added to the claim limitation. The patent holder argued that amendments were made to distinguish the period of sinusoidal variation described in the prior art references and had nothing to do with sinusoidal operation. Even though the function performed by the accused device was not precisely the same, the patent holder argued that there should still be a holding of infringement under the doctrine of equivalents because the portion of the claim limitation that was amended was still met by the accused device. The Federal Circuit disagreed. The Court applied Festo and held that this means plus function limitation could be given no scope of

equivalents for doctrine of equivalents analysis because it had been amended during prosecution. Lockheed Martin Corp. v. Space Systems/Laurel, Inc., 249 F.3d 1314 (Fed. Cir. 2001).

Another post-Festo case is interesting because of a comment made in a footnote. In Gart v. Logitech, Inc., No. 00-1088 (Fed. Cir. June 26, 2001), Gart was issued a patent directed to an ergonomically shaped computer mouse. In arguing that the claim term "angular medial surface" must include an undercut area for the fingers, the accused infringer pointed out that the patent holder distinguished his invention in the patent specification from three prior art references on this basis. In a footnote, the Federal Circuit noted that these comments made by the patent holder were in the patent specification itself. The Federal Circuit stated that the specification, in and of itself, is not part of the prosecution history. The Court went on to state that since such remarks are part of the specification and not part of the prosecution history, they are not relevant to an evaluation of whether or not prosecution history estoppel bars a finding of infringement under the doctrine of equivalents under Festo. Id. at n. 2.

A. Lessons Learned From the 800 Pound Gorilla

The basic lesson is: don't ignore the 800 pound gorilla. To have a robust claim, you must have a well-crafted specification. By layering the specification with multiple, functional, definitions, you can pick and choose the claim scope that you wish to pursue (and convey) in your claims.

- Write many independent claims of varying scope, based upon the layered definitional work set up in the specification. Your target is a first-action allowance on at least some claims, to avoid the absolute bars of amending as established by Festo.
 - draft the broadest claim you believe just defines over the prior art which you know; these claims will rely on your highest level of functional language in the specification (i.e., from the example above, a "rotation-to-rotation arrangement to drive a spindle.")
 - draft a picture claim to the "preferred embodiment", one that focuses on the structure shown; these claims will rely on close to the lowest level of structural language in the specification ("a bevel gear in touching engagement between X and Y, the Y being connected to a spindle.")
 - draft a claim of scope between the broad claim and the picture claim; these claims will rely on specification language somewhere between the highest, functional description and the lowest, structural description (a gear arrangement oriented between X and Y to provide rotary force translation between X and Y.)
- Write the claims in a "modular" format to isolate the "elements".
 - For example, in the Pioneer case, suppose the claim had been set up differently.

You will recall that in the Pioneer case, the patent holder changed a claim term "a multiplier circuit" to the claim term "a switching analog multiplier circuit" and was

afforded no scope of equivalents. Suppose the claim had been written in modules, such as:

1. A switched power supply comprising:
 - (a) a rectifier adapter . . .
 - (b) a boost converter;
 - (i) the boost converter being connected to the output of the rectifier adapter;
 - (c) a multiplier circuit;

If it became desirable to amend claim 1 to add the limitation about "a switching analog", it could be done by adding a sub-module instead of amending the module containing the language about the multiplier circuit:

- (c) a multiplier circuit;
 - (i) the multiplier circuit being constructed and arranged to multiply based on switching analog functions.

Now, this technique may not save the claim from an overly narrow construction, but it does provide an argument that the element "multiplier circuit" has not been amended, and is entitled to some scope of equivalents. You would still need to deal with the limitation that had been added ("switching analog functions").

- If you do amend the claims, explain why.
 - Another lesson we learned from Festo and Pioneer is: Silence is deadly. At least explain that the amendments are for clarification purposes, to clarify the invention.
- If you know you will have to distinguish prior art at some point, do so in the patent specification rather than in prosecution arguments. Of course, it is best to not have to distinguish prior art at all, anywhere in the record. But, as the Gart case pointed out in its footnote, statements in the specification, as filed, do not give rise to formal "estoppel" principles. We will learn later, however, that statements made in the filed specification may be considered disclaimers to coverage of certain subject matter (see the SciMed case, discussed below.)

2. Don't distinguish between "the invention" and "the embodiment"

This is an age-old lesson. We have recently been reminded of it from a recent trend of Federal Circuit cases that I contend began with the sad story of Gentry Gallery in 1998.

In Gentry Gallery v. Berkline Corp., 145 F.3d 1473 (Fed. Cir. 1998), Gentry obtained a patent with claims directed to a sectional sofa. The claim included a pair of reclining seats, a fixed console disposed in the section between the pair of reclining seats, and a pair of control means, one for each reclining seat, mounted on the double reclining seat sofa section. The

embodiment described in Gentry's patent showed the control means as being on the console. The accused infringer argued that the patent was invalid because the claim did not require that the recliner controls be limited to the console.

The Federal Circuit agreed with the accused infringer and declared the patent to be invalid for failing to comply with the written description requirement under § 112, first paragraph. The Court stated that the original disclosure clearly identifies the console as the only possible location for the controls. The Court pointed out that the specification provided for only the most minor variation in the location of the controls, noting that the control "may be mounted on top or side surfaces of the console rather than on the front wall . . . without departing from this invention." The Court pointed out that no similar variation beyond the console was even suggested. The Court also looked to the objects of the invention and relied upon a statement made that "another object of the present invention is to provide . . . a console positioned between [the reclining seats] that accommodates the controls for both of the reclining seats." Thus, the Court noted that locating the controls anywhere but on the console is outside the stated purpose of the invention. Further, the Court noted that in the broadest original claim the control means was required to be located on the console.

The Gentry court distinguished Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 93 F.3d 1572, 1582 n. 7 (Fed. Cir. 1996). The proposition put forth in Ethicon was that an applicant need not describe more than one embodiment of a broad claim to adequately support that claim. The Court distinguished Ethicon by pointing out that in Ethicon, the precise location of the element was not considered to be an element of the invention. But, in this case, for all of the reasons provided, the Court held that the patent holder considered the location of the recliner controls on the console to be an essential element of his invention. Thus, the Court stated that the original disclosure served to limit the permissible breadth of the patent holder's later-draft claims.

Another case that demonstrated the importance of the principle of distinguishing between "the invention" and "the embodiment" is Toro v. White Consolidated Indus., 199 F.3d 1295 (Fed. Cir. 1999). In Toro, the claim was directed to a leaf vacuum blower and recited the following language: "said cover including means for increasing the pressure developed by the vacuum-blower during operation" A dependent claim recited that the "pressure differential increasing means includes a ring carried by said cover" The patent described, as a preferred embodiment, a restriction ring permanently attached to the cover. The accused device had a restriction ring as a separate piece from the cover--it was manually inserted into an air inlet opening under the cover.

The Federal Circuit held that there was no literal infringement. The Court construed the language "said cover including means for increasing the pressure" to mean that the restriction ring is permanently affixed to the cover. The Court's reasoning was based on:

- ❑ The specification and drawings showed the restriction ring as part of and permanently attached to the cover; no other structure was illustrated or described;
- ❑ The specification described the advantages of the unitary structure as important to the invention;

- ❑ The described embodiment was not simply the preferred embodiment -- it was the only embodiment
- ❑ Nowhere in the specification was the cover shown without the restriction ring attached to it.

Similar reasoning as Toro was applied to construe a means plus function term in Globetrotters Software, Inc. v. Elan Computer Group, Inc., 236 F.3d 1363 (Fed. Cir. 2001). In this case, the patent was directed to software to control the number of concurrent copies of a program in use on a computer network. The claim read in part: "said system comprising: license file means on at least one of said nodes for storing at least one and up to a selectable authorized number of said licenses." The issue was whether a unique identification disclosed in the specification is necessary structure required to perform the function of "storing at least one and up to a selectable number of said licenses," as recited for the license file means. The district court construed the claim by reading the "unique identification" limitation into the "license file means for storing." The patentee argued that the function of storing a license did not require a unique identification, as the district court concluded. The court found that because a unique identification is assigned to each license, whether or not that file actually contains any licenses, the unique identification is a defining characteristic of the invention and, therefore, essential to the claimed function.

The Federal Circuit agreed. The Court pointed to the specification that stated that it is necessary that a license be assigned a uniform identification. Also, the Court said that the patent drawings made it clear that a uniform identification is necessary. None of the drawings show an alternate method of storing a license. Because it is necessary to assign a uniform identification to store a license in both embodiments of the invention, the court held that the uniform identification was a necessary structure of the function. The Court claimed that it was not importing a limitation into the claim because the uniform identification limitation is necessary, as evidenced by the specification and the drawings in the written description.

A. Lessons Learned From Gentry, Toro, and Globetrotters

The lesson here is: do distinguish between the invention and the embodiment of the invention. Write a well-crafted specification.

- ❑ Draft the broadest claims with functional elements, and relate the functional elements to each other functionally, rather than structurally. Make sure your specification supports this level of breadth! (To have a robust claim, you must have a well-crafted specification.)
 - Step through your initially drafted claim and examine it for structure or function that you have connected or related to another element; ask yourself whether you can pull out the connection or relationship to the other element and just have it be part of the whole combination.
 - For example, there was nothing wrong with the litigated claim in Gentry; the only problem was that it was submitted too late. Had

the claim been part of the originally filed specification, the claim could not have been held invalid for failing the written description requirement. Remember, in Gentry the initially presented claim to a sofa required the controls to be mounted on the console; later during prosecution, a sofa claim was submitted that merely required the controls, as part of the overall combination of the sofa, for operating the recliners.

- Consider Toro. The claim recited "said cover including means for increasing the pressure developed by the vacuum-blower during operation." Could this claim have been written to merely require a "means for increasing the pressure developed by the vacuum-blower during operation"? Probably. (Of course, the specification would need adjustment to ensure description to support such claim breadth.)
- When using means plus function language, ask yourself what structure the Court has to lean on in your specification for claim interpretation purposes. Realize that means plus function language is narrow, given the statutory requirements for interpretation. In Globetrotters, according to the Court, there was no alternative structure upon which it could rely, other than the preferred embodiment.
 - If going for breadth, re-write the claim without means plus function language.

3. Do not enable the claimed invention

We all know that the first paragraph of § 112 requires that the claimed invention be enabled. Here is one recent case that makes the point:

In Union Pac. Res. Co. v. Chesapeake Energy Corp., 236 F.3d 684 (Fed. Cir. 2001), Union Pacific held a patent directed to a method of horizontal drilling for the exploration of oil and natural gas. The claim included steps of providing characterizing information of the earth from an offset location; providing characterizing information of the earth from a borehole; rescaling the borehole information onto a vertical scale; and comparing the rescaled information to the offset information to determine the location of the borehole.

The claim was held invalid for not meeting the enablement requirement of § 112. The patent did not disclose methods to perform the step of "rescaling." Indeed, the methods for rescaling were admitted by one of the inventors as being kept as *trade secrets* (computer programs designed to perform the rescaling step). Because of this, the claim was declared invalid.

A. **Lessons Learned From Union Pacific**

The lesson is obvious: make sure your claim is enabled. Support the claim in your well-crafted specification.

- Read the drafted claim; ask yourself whether, based on the specification, you could build the invention. Although the test is whether "one skilled in the art" could make and use the invention without undue experimentation, I believe a good, conservative "acid test" is whether you, the patent attorney, could build and use it. An interview with the inventor is important to walk through the claimed elements to determine both whether the element needs to be in the claim, and also, whether it is enabled by the specification.
 - Ask the inventor how each element is built, obtained, or implemented.
 - Ask the inventor whether there are any "special tricks" needed to get the results claimed.
 - Ask the inventor whether there is anything relating to the invention that is being kept as a trade secret. If the answer is yes, this should raise a red flag.

4. **Limit your claims to only "means plus function" style claims**

Means plus function claims continue to be the source of umpteen litigious matters. Perhaps a corollary to the number 4 way to destroy your client's patent rights is: if you want to run up your client's litigation bill, claim in terms of means plus function. Consider the following recent cases:

In Medtronic v. Advanced Cardiovascular Sys., Inc., 248 F.3d 1303 (Fed. Cir. 2001), the invention related to intravascular coronary stents, which hold open obstructed heart blood vessels. The patent disclosed a stent that minimizes longitudinal overstretch when inserted into the blood vessel. The claims were directed to a medical device for use in the interior of a body lumen comprising a radially expandable stent. One claim also required "means for connecting wire elements together," while another claim required "means for connecting adjacent elements together."

The district court construed the means-plus-function limitations to include only helical windings, and their equivalents, and found no infringement under such a construction. The district court concluded that the only structure identified in the specification as corresponding to that function was the helical winding of the continuous wire. The plaintiff argued that other structure disclosed in the specification, straight wire and hooks, also corresponded to the function recited in the claims. The district court, however, found no association between the claimed function of the means plus function limitation in the claims and the straight wire and hooks.

The Federal Circuit agreed. The Federal Circuit held that while the straight wire, hooks, and sutures were indeed capable of performing the function recited in the limitation, there was not sufficient evidence in either the specification or prosecution history to support a conclusion that an association existed between the function and the structures of the straight wire, hooks, and sutures. The Court first looked to the specification and found that the stent was only described as a helically wound wire-wire stent. The Court determined that from such a description, one skilled in the art would think, "that nothing more than a helically wound continuous-wire stent is disclosed." The specification described the straight wire, hooks, and sutures as already being interconnected, therefore, not serving the function of "connecting adjacent elements together." The Court, thus, concluded that "despite the fact that the straight wire, wire hooks, and suture ties can perform the recited function of connecting adjacent elements together, neither the specification nor the prosecution history of the '727 patent, either alone or in combination, provides a clear link or association with the recited function. Thus, . . . the only structure corresponding to the function of means-plus-function limitation in issue is the helical winding."

Now, consider the Globetrotters case discussed above under point 2. The claim required, "license file means on at least one of said nodes for storing at least one and up to a selectable authorized number of said licenses." The issue was whether a unique identification disclosed in the specification is necessary structure required to perform the function of "storing at least one and up to a selectable number of said licenses." As explained above, the Court said yes, such a unique identification is required. Indeed, the Court held that it was a defining characteristic of the invention and, therefore, essential to the claimed function.

A. Lessons Learned From Medtronic and Globetrotters

If using means plus function language, proceed with caution. Use alternate claiming styles. Don't rely totally on this language.

- ❑ To have a well-crafted specification, make sure that your specification provides a link between the "means language" and the structure. In Medtronic, the only link the Court could find to the function of connecting wire elements together was to the helical winding embodiment. Although the straight wire with hooks structure also accomplished this function, there was no link provided in the specification to the recited function.
- ❑ Provide alternate structures in your specification for accomplishing the recited function. This may be accomplished by describing layered, definitions of the invention in the specification.
- ❑ Realize that means plus function language is narrow. Use a variety of alternate claiming styles, which do not employ "means" language.

5. Define your terms too narrowly, or be sloppy with your definitions

One theme I am emphasizing is that the specification should include layered definitions, both in terms of function and in terms of structure. But, if the definitions are missing altogether, are sloppy, or are too narrow, you can destroy your client's patent rights.

For example, first consider DeMarini Sports, Inc. v. Worth, Inc., 239 F.3d 1314 (Fed. Cir. 2001). The invention was a high-performance double-walled aluminum softball bat. The claim was directed to a bat and recited, "a hollow tubular bat frame having a circular cross-section; and an insert positioned with the frame" The district court granted summary judgment in favor of the defendant, holding that: (1) the term "frame" as modified by term "bat," and used in patent, was a tubular structure having a large-diameter impact portion, a tapered portion, and a small-diameter handle, all of which are connected when the bat is fully constructed; and (2) "insert," as used in patent, meant a piece of material that was separate from, and completely surrounded by the frame.

The patent owner appealed, arguing that the district court's interpretation of "bat" as modified by "frame" was improper. The patent owner asserted that the term "bat frame" is a hollow tube that covers the hitting end of the bat and that the "insert" is a structure that incorporates both the handle and the portion of the hitting end of the bat that goes inside the "bat frame." The Federal Circuit affirmed the district court. The Federal Circuit noted that the claim language did not set forth what structure was described by the "bat frame," nor did the written description define "bat frame." Therefore, the court resorted to the ordinary dictionary definition of the term "frame." The Court then looked at the ordinary meaning in the context of the written description and prosecution history to determine the proper construction of the term in the claims in which it is used. The Federal Circuit interpreted "bat frame" essentially the same as the district court. The Federal Circuit also accepted the ordinary meaning of "insert" and held that the district court correctly interpreted the claim limitation.

Another case that demonstrates the importance of good definitional work in your specification is SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc., 242 F.3d 1337 (Fed. Cir. 2001). In this case, SciMed owned three patents for balloon dilation catheters used in coronary angioplasty procedures. The written description for each of the three patents was identical. The specification stated that a coaxial lumen structure was the "basic sleeve structure for all embodiments of the present invention contemplated and disclosed herein." The District Court concluded that this specification language "leaves no doubt that a person skilled in the art would conclude that the inventor envisioned only one design for the catheters taught in SciMed's patents--an intermediate sleeve section containing two . . . lumens arranged coaxially." Id. at 1340.

The Federal Circuit agreed and stated that the specification disclaimed a dual lumen configuration that limited the scope of the claims to catheters with coaxial lumen structures having annular inflation lumens. The Court relied upon first, the abstract of each of the patents as referring to an annular, coaxial lumen rather than a dual structure. Second, the Court noted that the written description in each of the patents discussed disadvantages of certain prior art that included dual lumen configurations. Third, the Court pointed to the summary of the

invention that stated "the present invention" has certain structure defining a "longitudinally extending annular inflation lumen." The Court pointed to numerous other instances in the patent specification that characterized the "present invention" as having an annular inflation lumen. The Court stated that the most compelling portion of the specification is the portion on which the District Court principally focused. It was the statement in the patent specification that declared the intermediate sleeve structure is the basic sleeve structure for "all embodiments of the present invention contemplated and disclosed herein."

Thus, even though the claim did not explicitly require a catheter with a coaxial lumen, the Court held that the language in the specification defined the claimed invention in a way that excludes a dual, or side-by-side lumen arrangement. As such, the Court found that there was no literal infringement. The Court also went on to conclude that the doctrine of equivalents was not available to the patent holder. The Federal Circuit said that the specification had an explicit disclaimer, and the patentee cannot be allowed to recapture the excluded subject matter under the doctrine without undermining the notice function of the patent.

A. Lessons Learned From DeMarini and SciMed

To have a robust claim, you must have a well-crafted specification. In these cases, definitional work in the specification may have "saved" these claims.

- Read the terms used in your claims and compare them to how they are used in specification. Ask yourself and the inventor whether you desire that the terms be limited in this way.
 - For example, in SciMed, the claims were directed to a catheter. The catheter was defined, in very strong language, as including an annular, coaxial lumen. The specification said that this structure was basic to "all embodiments of the present invention contemplated and disclosed." In hindsight, we probably can agree that this definition could have been softened.
- If the claim terms are not defined, ask yourself if you want the terms limited to how the structure appears in the drawings. If not, insert definitions in the specification that will not limit the terms to the way in which they are shown in the drawings.
 - In DeMarini, for example, there were no definitions provided for the claim terms "bat frame" or "insert." The patent owner was held to, basically, the structure shown in the drawings.

Summary

Recent court cases have demonstrated to us that often times, the key to having a robust claim that is interpreted in the patent holder's favor is by having a well-crafted specification.

The lessons learned:

1. Don't ignore Festo (the 800 pound gorilla). Address it by layering your specification with multiple, functional, definitions, so you may pick and choose the claim scope that you wish to pursue (and convey) in your claims.
2. Do distinguish between the invention and the embodiment of the invention. Draft the broadest claims with functional elements, and relate the functional elements to each other functionally, rather than structurally. Make sure your specification supports this level of breadth.
3. Make sure your claim is enabled. Read the drafted claim and give it a conservative test: Ask yourself whether, based on the specification, you (the patent attorney) could build the invention.
4. If using means plus function language, proceed with caution. Realize that means plus function language is narrow. Use a variety of alternate claiming styles, which do not employ "means" language.
5. Define the claim terms with multiple level functional and structural definitions. Read the terms used in your claims and compare them to how they are used in specification. Ask yourself and the inventor whether it is desired that the terms be limited in this way.

By applying these lessons, we will hopefully hit our target of having a robust claim that prosecutes efficiently, withstands changing law and the heat of litigation, and protects the client's property.