# **United States Court of Appeals for the Federal Circuit**

04-1410

JVW ENTERPRISES, INCORPORATED,

Plaintiff-Appellant,

٧.

INTERACT ACCESSORIES, INC.,

Defendant-Appellee.

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Appealed from: United States District Court for the District of Maryland

Senior Judge Marvin J. Garbis

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DECIDED: October 3, 2005

Before MICHEL, <u>Chief Judge</u>, SCHALL and PROST, <u>Circuit Judges</u>. PROST, Circuit Judge.

JVW Enterprises, Inc. ("JVW") appeals from a judgment of the United States District Court for the District of Maryland. After a bench trial, the district court determined that certain products distributed by Interact Accessories, Inc. ("Interact") do not infringe any claim of United States Patent No. 4,494,754 ("the '754 patent"). See JVW Enters., Inc. v. Interact Accessories, Inc., No. 00-CV-1867 (D. Md. Mar. 31, 2003) ("Bench Trial Decision"); JVW Enters., Inc. v. Interact Accessories, Inc., No. 00-CV-1867 (D. Md. Mar. 31, 2003) ("Judgment"); JVW Enters., Inc. v. Interact Accessories, Inc., No. 00-CV-1867 (D. Md. May 6, 2003) ("Memorandum of Decision"). We reverse the judgment in part, affirm the judgment in part, and remand the case to the district court for further proceedings.

#### **BACKGROUND**

In the early 1980s, John Wagner set out to solve a problem he experienced playing his family's Atari video game system: he felt fatigue in his wrists after holding the Atari joystick for only a few minutes of play. As a result, Mr. Wagner invented an accessory that allows a video game player to operate a video game controller without having to hold the controller using his or her hands.

JVW owns the '754 patent, which discloses and claims Mr. Wagner's invention. According to the '754 patent, the accessory includes a base, a riser, a mounting member, and controller holders. '754 patent, col. 2, II. 26-28. The riser extends upward from the horizontal base and connects to the mounting member. <u>Id.</u> at col. 2, II. 48-55. The controller holders attach to the mounting member and allow the video game controller to be positioned and locked into place just above the player's lap. <u>Id.</u> at col. 2, II. 38-45; col. 1, II. 42-47.

A video game player uses the accessory to stabilize the controller using the player's lower body weight. <u>Id.</u> at col. 3, II. 13-28. For example, the player may sit or kneel on the base of the accessory with his or her legs on either side of the riser. <u>Id.</u> Because the controller is held in place by the controller holders and stabilized using the player's weight, the player's hands are freed to operate rather than hold the controller. <u>Id.</u> at col. 1, II. 42-47.

On September 1, 1999, JVW filed suit against Interact, alleging infringement of the '754 patent. On appeal, the parties focus on independent claim 1:

An accessory for aiding a video game player during play of a video game, the video game player operating a video game controller which transmits signals in response to manipulations made on the video game controller by the video game player, the transmitted signals being

processed by a computer processor which responsively manipulates images on a television screen, said accessory comprising: a base, said base extending horizontally, said base being positionable on a surface so as to permit a video game player to stabilize said base by placing lower body weight on said base; a riser, said riser extending upward from said base; and a mounting member attached to said riser, said mounting member being positioned over the lap of a player with lower body weight on said base, said mounting member including means for lockably receiving a video game controller in fixed position on said mounting member.

'754 patent, col. 3, I. 38-col. 4, I. 2.

The allegedly infringing products, generally called "racing wheels," include steering wheels that are used with video games to simulate driving cars. The products plug into computers that run video game software, and users turn the wheels back and forth to change the direction of automobiles simulated on displays. Users sit on the bottom of the products and use one or both hands to steer using the steering wheels.

Interact manufactured two versions of its racing wheels at issue in this appeal, the "V3" and the "V4." Both allow the height of the steering wheel to be adjusted, but each uses a different mechanism. The V3 utilizes plastic clips mounted inside a shell that surrounds a steering wheel column. The shell includes two halves that are screwed together to enclose the steering wheel column as well as the clips. The clips press against opposite sides of the column and engage evenly spaced detents in the column. After displacing the clips from a first set of detents, a user adjusts the column up or down until the clips engage a second set of detents. Whether the clips engage detents is determined by the position of a ring-shaped cam disposed in the shell. To engage or disengage the clips, the user rotates the cam.

The V4 also includes a shell joined with screws, but its shell does not encase plastic clips. Instead, the shell includes a metal shaft surrounded on each end by a

spring-loaded, donut-shaped plate. The plates, which do not rotate relative to the shaft, include regular projections resembling teeth found in gears. The district court referred to these plates as "wheels with teeth." The projections or "teeth" complement mating projections molded onto each side of a steering wheel unit. To tilt the steering wheel, a user disengages the mating projections, rotates the steering wheel unit from a first position to a second position by pivoting the steering wheel unit on the shaft, and then reengages the mating projections. The mating projections normally engage each other using spring-loaded cams. To disengage the mating projections, the user operates the cams using knobs.

Before holding a bench trial, the district court construed "means for lockably receiving a video game controller in fixed position on said mounting member" as a means-plus-function limitation. Regarding the function of this limitation, the court defined the word "lockably" to mean "attached by a method whereby one can lock a game controller in place for use and can unlock and release the game controller after use." JVW Enters., Inc. v. Interact Accessories, Inc., No. 00-CV-1867, slip op. at 10 (D, Md. Feb. 1, 2002) ("Memorandum and Order Re Patent Claim Construction"). Rejecting JVW's argument to the contrary, the court noted that "'lockably' in context means that the controller must be capable of being locked and unlocked from the mounting member." Id. To support this construction, the court characterized the '754 patent as disclosing a "controller/joy stick [that] is locked in place by readily unlockable resilient prongs." Id. Regarding the structure of the means-plus-function limitation, the court noted that the parties agreed that "controller holders 21-24 are disclosed structure" but disagreed as to whether the combination of the controller holders and the casing of the

video game controller constitutes the disclosed structure. <u>Id.</u>, slip op. at 11. On this disputed issue, the court requested additional briefing.

In its additional briefing JVW requested clarification regarding the court's construction of the function of the means-plus-function limitation. The district court responded by noting that its original construction could be "misunderstood" as adding unlocking to the function of the means-plus-function limitation, and therefore agreed to "rephrase" its construction of the term "lockably" by adopting one of several dictionary definitions: "received in fixed position by the interlacing of fitting of parts into each other." JVW Enters., Inc. v. Interact Accessories, Inc., No. 00-CV-1867, slip op. at 2-4 (D. Md. May 9, 2002) ("Supplemental Memorandum and Order Re Patent Claim Construction"). The court went on to state:

The use of the term "fixed position" in the Claim does not serve to negate the limitation that the fixing in position of the controller to the mounting member be "lockably." While in place, the controller is in a "fixed position" on the mounting member; however, the fixing in position must be "lockably," that is by the interlacing of fitting of parts into each other.

<u>Id.</u>, slip op. at 4. The court also determined that "the casing of controller 40 does not constitute disclosed structure performing the defined function." <u>Id.</u>, slip op. at 6.

After the bench trial, the district court entered a judgment of noninfringement.

See Bench Trial Decision; Judgment. In a memorandum explaining its decision, the court found that the means-plus-function limitation does not read on either the V3 or the V4. The court indicated that the V3's clips "might be said to 'lockably receive' a game controller," but went on to note that if the clips were deemed to be means for lockably receiving the controller, the clips "do not receive the controller in fixed position."

Memorandum of Decision, slip op. at 15. It determined that the V3 accomplishes the

function of receiving in fixed position "by other means, that is, by the structure assembled by screwing parts tightly together." <u>Id.</u>, slip op. at 15-16. The court also determined that the structure of the V3

materially differs from the disclosed structure in significant fashion. It is, perhaps, theoretically possible for a user to undertake the disassembly of the device and substitute a different video game controller. Nevertheless, by no means does the structure of the device perform the function of lockably receiving the controller in fixed position in the same way as the easily releasable disclosed clip structure to achieve the same result of permitting a convenient interchange of video game controllers.

<u>Id.</u>, slip op. at 17. Responding to an alternative argument made by JVW, the court also held that the V3's screw assembly does not provide for lockable reception and, furthermore, that a screw and threaded receptacle are not equivalent means to the disclosed structure. <u>Id.</u>, slip op. at 19.

With respect to the V4, the court explained:

It is not the wheel that receives the game controller in fixed position. Rather, it is an entire assemblage of parts held firmly together by screws. The controller cannot be removed and/or another controller substituted without substantial disassembly and reassembly. Even if the assembly performed a function of lockable reception, the "wheel" is not the equivalent of the disclosed structure.

<u>Id.</u>, slip op. at 21.

JVW timely appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

## DISCUSSION

Determining infringement involves two steps. First, the trial court must construe the claims. See <u>Vitronics Corp. v. Conceptronic, Inc.</u>, 90 F.3d 1576, 1581-82 (Fed. Cir. 1996). Second, the fact-finder must determine whether the claims, as properly construed, read on the accused device. <u>See id.</u> Claim construction is an issue of law we review de novo. <u>Cybor Corp. v. FAS Techs., Inc.</u>, 138 F.3d 1448, 1454-55 (Fed. Cir.

1998) (en banc). A district court's identification of the function and corresponding structure of a means-plus-function limitation is also reviewed de novo. ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1087 (Fed. Cir. 2003). On the other hand, the "determination as to whether the claims, as properly construed, read on the accused device presents an issue of fact which, following a bench trial, we review for clear error." WMS Gaming, Inc. v. Int'l Game Tech., 184 F.3d 1339, 1346 (Fed. Cir. 1999). "A finding is clearly erroneous when, despite some supporting evidence, 'the reviewing court on the entire evidence is left with the definite and firm conviction that a mistake has been committed." Forest Labs., Inc. v. Abbott Labs., 339 F.3d 1324, 1328 (Fed. Cir. 2003) (quoting United States v. U.S. Gypsum Co., 333 U.S. 364, 395 (1948)).

#### A. Construction of the Means-Plus-Function Limitation

The parties agree, as do we, that "means for lockably receiving a video game controller in fixed position on said mounting member" is a means-plus-function limitation recognized by 35 U.S.C. § 112, ¶ 6. They disagree, however, as to whether the district court correctly construed the limitation or committed clear error in determining that the limitation does not read on the accused devices.

JVW argues that, after trial, the district court erred in applying its "rephrased" claim construction by again improperly importing functions from outside the language of claim 1. Specifically, JVW argues that the court improperly required the claimed structure to unlock and allow the exchange of video game controllers. JVW contends that the function of the means-plus-function limitation is clear from the claim language, pointing out that the limitation's language says nothing about unlocking or exchanging one controller for another.

Interact contends that the court <u>should have</u> construed the limitation as requiring that the video game controller be "unlockable." Pointing to the second claim construction ruling, it simultaneously argues that the court <u>did not</u> construe the limitation to include the unlocking function.

The construction of a means-plus-function limitation includes two steps. First, we determine the claimed function. Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1321 (Fed. Cir. 2003). Second, we identify the corresponding structure in the written description that performs that function. Id.

#### 1. Function

As indicated, the district court first construed the function of the means-plusfunction limitation as "attached by a method whereby one can lock a game controller in
place for use and can unlock and release the game controller after use," but then
"rephrased" its construction as "received in fixed position by the interlacing of fitting of
parts into each other." Because the district court's infringement analysis does not
appear to proceed under only one of the two versions of its construction, and, moreover,
appears to involve both, we address both, beginning with the second.

The district court's second construction confuses function with structure. Determining a claimed function and identifying structure corresponding to that function involve distinct, albeit related, steps that must occur in a particular order. In short, function must be determined before corresponding structure can be identified. See, e.g., Omega, 334 F.3d at 1321 ("Once the functions performed by the claimed means are identified, we must then ascertain the corresponding structures in the written description that perform those functions."); BBA Nonwovens Simpsonville, Inc. v.

Superior Nonwovens, L.L.C., 303 F.3d 1332, 1343 (Fed. Cir. 2002) (stating that construction of a means-plus-function limitation "requires the court to first identify the function of the means-plus-function limitation and next identify the corresponding structure in the written description necessary to perform that function"); Cardiac Pacemakers, Inc. v. St. Jude Med., Inc., 296 F.3d 1106, 1113 (Fed. Cir. 2002) ("After identifying the claimed function, the court must then determine what structure, if any, disclosed in the specification corresponds to the claimed function."). By adopting "received in fixed position by the interlacing of fitting of parts into each other" as the claimed function, the district court effectively combined the two steps, resulting in the inappropriate inclusion of structure, "the interlacing of fitting of parts into each other," in the construction of the claimed function. The district court therefore erred in its second construction.<sup>1</sup>

As for the first construction, the district court seemed to recognize that that construction improperly adds unclaimed limitations to the function of the means-plus-function limitation. See Supplemental Memorandum and Order Re Patent Claim Construction, slip op. at 2-4. We agree. The first construction violated two tenets governing the determination of function in a means-plus-function limitation. First, a court may not construe a means-plus-function limitation "by adopting a function different from that explicitly recited in the claim." Micro Chem., Inc. v. Great Plains Chem. Co.,

The district court did not conclude that the "interlacing of fitting parts into each other" is structure disclosed by the specification as corresponding to the claimed function. Even if it had, however, in order to qualify as corresponding structure, "the structure must not only perform the claimed function, but the specification must clearly associate the structure with performance of the function." Cardiac Pacemakers, 296 F.3d at 1113. Here, the specification in no way associates the "interlacing of fitting parts into each other" with the claimed function of "lockably receiving a video game controller in fixed position."

194 F.3d 1250, 1258 (Fed. Cir. 1999). Second, a court errs "by importing the functions of a working device into the[] specific claims, rather than reading the claims for their meaning independent of any working embodiment." Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1303 (Fed. Cir. 1999). In construing the function to be "attached by a method whereby one can lock a game controller in place for use and can unlock and release the game controller after use," the district court adopted unclaimed functions of "unlocking" and "releasing" the controller. Those functions are not recited explicitly in the claim but rather relate to a working embodiment disclosed in the '754 patent's written description.

The means-plus-function limitation requires a "means for lockably receiving a video game controller in fixed position." Use of the terms "receiving" and "fixed position" does not indicate the function of "unlocking" or "releasing." Indeed, the district court derived this function from the term "lockably," aided by the written description's disclosure of what the district court characterized as "readily unlockable resilient prongs" that lock the Atari joystick in place. Memorandum and Order Re Patent Claim Construction, slip op. at 10. Even when read in light of the written description, however, in the context of the claim "lockably" means that the video game controller locks into place when it is received such that the controller is in a fixed position when it is used with a video game. Because there is no indication from the claim language that the structure must allow for the "unlocking" or "releasing" of the controller, the district court's first construction cannot stand. See Generation II Orthotics, Inc. v. Med. Tech., Inc., 263 F.3d 1356, 1364-65 (Fed. Cir. 2001) ("When construing the functional statement in

a means-plus-function limitation, we must take great care not to impermissibly limit the function by adopting a function different from that explicitly recited in the claim.").<sup>2</sup>

While in its first construction the district court impermissibly added unclaimed functional limitations of "unlocking" and "releasing" the video game controller, we nevertheless agree with the remainder of that construction, "attached by a method whereby one can lock a game controller in place for use." We also agree that the means-plus-function limitation requires that the controller be in a "fixed position" while in place for use with a video game. We therefore construe the function of "means for lockably receiving a video game controller in fixed position on said mounting member" as "receiving and locking a video game controller into a fixed position on the mounting member for use."

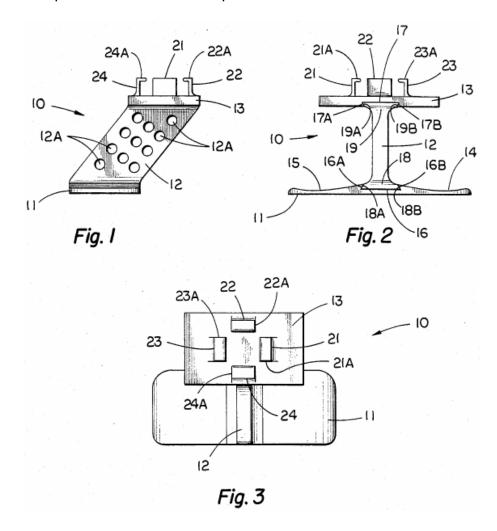
#### 2. Structure

The district court identified the structure associated with the "means for lockably receiving a video game controller in fixed position" as controller holders 21-24. "In order to qualify as corresponding, the structure must not only perform the claimed function, but the specification must clearly associate the structure with performance of the function." Cardiac Pacemakers, 296 F.3d at 1113. Because neither party disagrees with the district court's conclusion and we agree that the written description of the '754 patent clearly identifies controller holders 21-24 as corresponding structure linked to the function of "receiving and locking a video game controller into a fixed position on the mounting member for use," we accept the district court's identification of controller

For similar reasons as those discussed above, we reject Interact's alternative argument that "lockably received" means "that the video game controller can be both locked and unlocked from the accessory by manual manipulation without the need for mechanical attachment."

holders 21-24 as structure corresponding to the claimed function. <u>See</u> '754 patent, col. 2, II. 39-45 ("Controller holders 21-24... each include inwardly extending flanges 21A-24A respectively. Controller holders 21-24... allow a video game controller 40 to be positioned within the controllers and locked into place by flanges 21A-24A.").

The '754 patent includes three representations of controller holders 21-24:



B. Infringement of the Means-Plus-Function Limitation

"Literal infringement of a § 112, ¶ 6 limitation requires that the relevant structure in the accused device perform the identical function recited in the claim and be identical or equivalent" to the structure identified in the written description as corresponding to the recited function. Odetics, Inc. v. Storage Tech. Corp., 185 F.3d 1259, 1267 (Fed.

Cir. 1999). For the relevant structure in the accused device to be equivalent to the structure in the written description, differences between the two must be insubstantial.

Id. For example, the structure in the accused device must perform the claimed function in substantially the same way to achieve substantially the same result as the structure in the written description. Id.

We will address the issues of literal infringement by the V3 and the V4 separately.

#### 1. The V3

Interact argues that the district court did not clearly err because the disclosed and accused structures are not identical. Specifically, it contends that "[u]nlike the four clips disclosed in the specification, the clip structure element of the accused device cannot hold the steering wheel shaft attached to the steering wheel . . . in place without the need for additional structure (hence the lack of literal infringement)." As for the additional structure, Interact points to the V3's cam that rotates such that the clips either engage or disengage the detents in the steering wheel column.

We have construed the function of the means-plus-function limitation as "receiving and locking a video game controller into a fixed position on the mounting member for use" and the structure corresponding to this function as controller holders 21-24. In light of this construction and the record before us, we conclude that no reasonable fact-finder, applying the correct claim construction, could find that the means-plus-function limitation does not read on the V3.

The clips in the V3 perform the identical claimed function of "receiving and locking a video game controller into a fixed position on the mounting member for use."

While a user of the V3 might adjust the height of the steering wheel by disengaging the clips using the cam and moving the steering wheel column up or down through the shell, it is the V3's clips that receive and lock the steering wheel in a fixed position when the user seeks to use the V3 to simulate driving a vehicle in a video game. The shell and the screws holding the shell together do not lock the steering wheel column into a fixed position. Rather, the shell defines a space through which the steering wheel column slides when the height of the steering wheel is adjusted. Neither does the shell's cam lock the steering wheel column into a fixed position. Rather, the cam provides a mechanism to engage or disengage the clips so that the steering wheel's height may be adjusted. Even controller holders 21-24 must be "bendable away from each other to allow a video game controller . . . to be positioned within the controllers and locked into place . . . . " '754 patent, col. 2, II. 41-45. The fact that the V3 adds a shell to allow the steering wheel height to be adjusted and a cam mechanism to provide a mechanical way to tighten and loosen the clips does not mean that the clips do not lock the steering wheel in a fixed position. These additional features amount to improvements that do not avoid infringement. See Stiftung v. Renishaw PLC, 945 F.2d 1173, 1179 (Fed. Cir. 1991) ("[A]n improvement upon a patented device does not necessarily avoid infringement."). Furthermore, the means-plus-function limitation need only read on part of the V3 for the V3 to infringe, see SunTiger, Inc. v. Scientific Research Funding Group, 189 F.3d 1327, 1336 (Fed. Cir. 1999) ("If a claim reads merely on a part of an accused device, that is enough for infringement."). And the fact that controller holders 21-24 may perform unclaimed functions "differently or not at all is simply not pertinent to the measure of § 112, ¶ 6 equivalents," Odetics, 185 F.3d at

1271; see also Vulcan Eng'g Co. v. Fata Aluminum, Inc., 278 F.3d 1366, 1375 (Fed. Cir. 2002) ("It is irrelevant whether an element [shown in a patent] has capabilities in addition to that stated in the claim. When the claimed function is performed in the accused system, by the same or equivalent structure, infringement of that claim is established.").

Moreover, there is no reasonable conclusion but that the clips in the V3 are identical, or at least equivalent, structure when compared to controller holders 21-24. Indeed, the only potential difference between the clips and the claimed holders is that holders 21-24 are "bendable." Both controller holders 21-24 and the V3's clips are L-shaped pieces of plastic. For these reasons, based on the evidence before the district court, we are left with the definite and firm conviction that a mistake has been committed since no reasonable fact-finder, applying the correct claim construction, could conclude that the means-plus-function limitation does not read on the V3.

#### 2. The V4

JVW argues that the V4's donut-shaped plates lock the steering wheel into a fixed position on the mounting member until the plates are manually pulled back from the molded projections using cams. It therefore contends that the plates and the molded projections perform the identical function as the means-plus-function limitation. It also contends that this structure is equivalent to controller holders 21-24. In this regard, JVW points to testimony that the structures were known to be interchangeable and that the specific locking means disclosed in the '754 patent was not particularly important to Mr. Wagner's invention.

Like the V3, the V4 clearly performs the function of "receiving and locking a video game controller into a fixed position on the mounting member for use." The relevant question regards whether the structure used by the V4 to accomplish the claimed function is either identical or equivalent to controller holders 21-24. See Odetics, 185 F.3d at 1267 ("Literal infringement of a § 112, ¶ 6 limitation requires that the relevant structure in the accused device perform the identical function recited in the claim and be identical or equivalent to the corresponding structure in the specification.").

We are not persuaded that the district court clearly erred in determining that the V4 does not include structure that is identical or equivalent to controller holders 21-24. While JVW points to testimony that the structures were known to be interchangeable and that the specific locking means disclosed in the '754 patent was not particularly important to Mr. Wagner's invention, the district court necessarily rejected that testimony, and "credibility determinations by the trial judge 'can virtually never be clear error." First Interstate Bank of Billings v. United States, 61 F.3d 876, 882 (Fed. Cir. 1995) (quoting Anderson v. City of Bessemer City, 470 U.S. 564, 575 (1985)); see also Monon Corp. v. Stoughton Trailers, Inc., 239 F.3d 1253, 1263-64 (Fed. Cir. 2001). Moreover, even though the district court's infringement analysis was predicated on an incorrect claim construction, no reasonable fact-finder, applying the correct claim construction, could conclude that the means-plus-function limitation reads on the V4 because of substantial differences between controller holders 21-24 and the V4's plates and molded projections. While controller holders 21-24 are L-shaped, the plates are donut-shaped so as to surround the V4's metal shaft, and the projections are straight. Moreover, the structures clearly perform the claimed function in substantially different

ways. For example, controller holders 21-24 lock a controller into a fixed position by preventing linear, up and down movement of the steering wheel column. In contrast, the projections lock a controller into a fixed position by preventing rotational movement of the steering wheel unit on the shaft. We therefore affirm the district court's finding that the V4 does not infringe any claim of the '754 patent.

## C. Interact's Alternative Arguments to Affirm the Judgment

Interact presents alternative arguments to affirm the district court's judgment. It argues that the V3 and V4 are "monolithic" controllers and not an "accessory designed to aid a video game player." It also argues that a "video game controller" should be construed as a "self-contained device intended to be used by itself for playing a video game without any additional accessory."

Neither of Interact's alternative arguments to support the judgment are persuasive. Both would require us to limit claim language to the specific embodiment disclosed in the written description. This would be improper. We do not import limitations into claims from examples or embodiments appearing only in a patent's written description, even when a specification describes very specific embodiments of the invention or even describes only a single embodiment, unless the specification makes clear that "the patentee . . . intends for the claims and the embodiments in the specification to be strictly coextensive." See Phillips v. AWH Corp., 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc). Here, after reviewing the specification, we conclude that the patentee did not intend for the claims and the embodiments disclosed in the specification to be coextensive.

#### CONCLUSION

The district court erred in its construction of the function of the means-plus-function limitation. Because using the correct claim construction no reasonable fact-finder could conclude that the means-plus-function limitation does not read on the V3, we reverse the judgment that the V3 does not infringe any claim of the '754 patent. Because the district court did not clearly err in determining that the means-plus-function limitation does not read on the V4, we affirm the judgment that the V4 does not infringe any claim of the '754 patent. We remand the case to the district court for further proceedings not inconsistent with this opinion.

No costs.

REVERSED-IN-PART, AFFIRMED-IN-PART, AND REMANDED.