

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

MTD PRODUCTS INC.,
Appellant

v.

**ANDREI IANCU, UNDER SECRETARY OF
COMMERCE FOR INTELLECTUAL PROPERTY
AND DIRECTOR OF THE UNITED STATES
PATENT AND TRADEMARK OFFICE,**
Intervenor

2017-2292

Appeal from the United States Patent and Trademark
Office, Patent Trial and Appeal Board in No. IPR2016-
00194.

Decided: August 12, 2019

JOHN SALVATORE CIPOLLA, Calfee, Halter & Griswold
LLP, Cleveland, OH, argued for appellant. Also repre-
sented by ANDREW ALEXANDER, TRACY SCOTT JOHNSON,
MARK McDOUGALL.

PETER JOHN SAWERT, Office of the Solicitor, United
States Patent and Trademark Office, Alexandria, VA, ar-
gued for intervenor. Also represented by THOMAS W.
KRAUSE, PHILIP J. WARRICK.

Before REYNA, TARANTO, and STOLL, *Circuit Judges*.

STOLL, *Circuit Judge*.

The Toro Company sought inter partes review of claims 1–16 of U.S. Patent No. 8,011,458 before the U.S. Patent and Trademark Office’s Patent Trial and Appeal Board. The Board instituted review and, in its final written decision, held the challenged claims obvious under 35 U.S.C. § 103. Critical to its decision, the Board determined that the claim term “mechanical control assembly . . . configured to” perform certain functions is not a means-plus-function term subject to 35 U.S.C. § 112, ¶ 6. MTD Products Inc., owner of the ’458 patent, appeals the Board’s decision.

We conclude that the Board erred by conflating corresponding structure in the specification with a structural definition for the term, and by misinterpreting certain statements in the prosecution history. Under the appropriate legal framework, we conclude that the term “mechanical control assembly” is a means-plus-function term governed by § 112, ¶ 6. We therefore vacate the Board’s obviousness conclusion, which was predicated on its incorrect claim construction, and remand for further proceedings consistent with this opinion. Because we are persuaded by MTD’s primary argument, we do not reach its alternative arguments.

BACKGROUND

I

The ’458 patent discloses a steering and driving system for zero turn radius (“ZTR”) vehicles, with specific reference to ZTR lawn mowers. ’458 patent col. 1 ll. 17–21. The patented system is designed to provide a more intuitive steering mechanism to operators of ZTR vehicles. *Id.* at col. 1 ll. 20–38. In contrast to prior art systems that

reverse in the opposite direction of a forward motion turn, the claimed invention permits ZTR vehicles to turn in the same direction both forward and backwards. *Id.* at col. 1 ll. 20–47. The claimed steering mechanism thus mimics the forward and backward movements of an automobile.

The term “mechanical control assembly” appears in both claims 1 and 9, the only independent claims of the ’458 patent. Claim 1 recites:

1. A vehicle capable of making a small radius turn, comprising:

a frame;

a left drive wheel and a right drive wheel, both coupled to the frame;

two independent left and right drive units, the left drive unit coupled to the left drive wheel via an axle and the right drive unit coupled to the right drive wheel via another axle;

a steering device coupled to the frame;

a speed control member coupled to the frame; and

a *mechanical control assembly* coupled to the left and right drive units that is configured to actuate the left and right drive units based on a steering input received from the steering device and a speed input received from the speed control member;

the *mechanical control assembly* being configured such that if the speed control member is shifted from (a) a forward position in which the left drive wheel is rotating in a forward direction at a first forward speed and the right drive wheel is rotating in a

forward direction at a second forward speed that is less than the first forward speed as a result of the steering device being in a first right turn position to (b) a reverse position while the first right turn position of the steering device is maintained, then the left drive wheel will rotate in a reverse direction at a first reverse speed and the right drive wheel will rotate in a reverse direction at a second reverse speed that is less than the first reverse speed.

Id. at col. 7 l. 63–col. 8 l. 24 (emphasis added to highlight portion of disputed claim term). Claim 9 is identical to claim 1 in substantial part, adding only the further limitation of:

the *mechanical control assembly* also being configured to cause the vehicle to execute a zero-radius turn when the speed control member is in a maximum forward position and the steering device is in a maximum turn position.

Id. at col. 9 ll. 13–16 (emphasis added).

While the patent specification does not expressly refer to a “mechanical control assembly,” it discloses a preferred embodiment that includes a “ZTR control assembly.” *Id.* at col. 3 ll. 41–42. The specification describes components of the ZTR control assembly and its inputs, outputs, and linkages. *Id.* at col. 3 l. 41–col. 4 l. 57.

II

Toro petitioned for inter partes review of the ’458 patent in November 2015, arguing that the challenged claims were invalid as anticipated or obvious. MTD responded that the term “mechanical control assembly” is a means-plus-function term, and that the asserted prior art did not disclose the claim term’s corresponding structure. In

support of its argument, MTD introduced expert testimony indicating that “mechanical control assembly” has no reasonably well-understood meaning in the art. Specifically, MTD’s expert testified that “mechanical control assembly” is a nonce term that is not used in common parlance and does not bring to mind any specific structure to a person of ordinary skill in the art. J.A. 1366. He explained that the term is used as a black box recitation for structure and, at most, amounts to a collection of various parts. J.A. 1248, 1366. He further demonstrated that the term is used in various prior patents and publications to describe a wide variety of structures with varying functions. J.A. 1367–69 (noting that “mechanical control assembly” is used generically to describe mechanisms for infusion pumps, digital firing systems, flush tanks, endoscopes, transmissions, and engine outputs).

Toro did not expressly contradict MTD’s evidence that “mechanical control assembly” did not have a well-understood structural meaning. Instead, Toro responded that a person of ordinary skill in the art would understand the term to denote a specific structure in the context of the ’458 patent specification. Specifically, Toro argued that the “ZTR control assembly” disclosed in the specification provides an express structural definition for the claimed “mechanical control assembly.” J.A. 2201–03. Toro also argued that MTD admitted that the term “mechanical control assembly” conveys particular structure when it distinguished the patent claims from a prior art reference during prosecution. J.A. 2203.

The Board initially agreed with MTD, stating that when viewed “in isolation, the genericness of this term bears similarities to other words or phrases that have been held to be subject to § 112, ¶ 6 . . . such as ‘mechanism,’ ‘element,’ ‘device,’ ‘link member,’ and ‘control mechanism.’” *Toro Co. v. MTD Prods. Inc.*, No. IPR2016-00194, 2017 WL 1969747, at *9 (P.T.A.B. May 10, 2017) (first citing *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1350

(Fed. Cir. 2015) (en banc); then citing *Mas-Hamilton Grp. v. LaGard, Inc.*, 156 F.3d 1206, 1215 (Fed. Cir. 1998); and then citing *Toro Co. v. Deere & Co.*, 355 F.3d 1313, 1325 (Fed. Cir. 2004). The Board also determined that the “language reciting what the mechanical control assembly is ‘configured to’ do . . . fits the mold of functional language because it describes the mechanical control assembly by what it does.” *Id.* The Board thus concluded that “the claim language of the disputed phrase is primarily, but not entirely, functional, which tends to favor [MTD]’s position that § 112, ¶ 6 applies.” *Id.*

The Board agreed with Toro, however, that the ’458 patent specification weighed against application of § 112, ¶ 6. *Id.* at *10. Citing the parties’ briefs, the Board stated that “[t]he parties agree that the claimed ‘mechanical control assembly’ is referred to in the specification as a ‘ZTR control assembly.’” *Id.* According to the Board, a person of ordinary skill in the art would understand “mechanical control assembly” to denote structure because “the specification illustrates and describes the specific structure that makes up the ZTR control assembly, and how it connects to and operates with other components.” *Id.*

The most persuasive piece of evidence to the Board, however, was the prosecution history. *Id.* at *9 (“The factor that weighs most heavily in [the] determination is the prosecution history.”). According to the Board, MTD admitted that the term “mechanical control assembly” connotes specific structure by asserting that the claims recite “a mechanical control assembly that is structurally different from what [the asserted prior art] discloses.” *Id.* The Board emphasized MTD’s statements that “the claim language at issue concerns the **configuration** of the claimed mechanical control assembly” and “the claimed configuration **is** indeed structural.” *Id.* (emphases in original). The Board concluded that these statements “present[] strong evidence that the disputed phrase should be understood as a structural limitation rather than a means-plus-function

limitation under § 112 ¶ 6.” *Id.* at *11. Relying on the specification and prosecution history, the Board ultimately determined that “mechanical control assembly” is not governed by § 112, ¶ 6. *Id.*

DISCUSSION

I

This appeal requires us to address whether a particular claim limitation is drafted in means-plus-function format. Whether claim language invokes 35 U.S.C. § 112, ¶ 6¹ is a legal question of claim construction that we review de novo. *Williamson*, 792 F.3d at 1346. We review the Board’s factual findings underlying this inquiry for substantial evidence. *EnOcean, GmbH v. Face Int’l Corp.*, 742 F.3d 955, 959 (Fed. Cir. 2014).

Under this court’s guidance in *Williamson*, we begin by asking whether the claim limitation employs the word “means.” *Williamson*, 792 F.3d at 1348. If it does not, we apply a rebuttable presumption that the term conveys sufficiently definite structure and is not subject to § 112, ¶ 6. *Id.* A challenger can rebut the presumption by demonstrating “that the claim term fails to ‘recite sufficiently definite structure’ or else recites ‘function without reciting sufficient structure for performing that function.’” *Id.* (quoting *Watts v. XL Sys., Inc.*, 232 F.3d 877, 880 (Fed. Cir. 2000)). The “essential inquiry is not merely the presence or absence of the word ‘means’ but whether the words of the

¹ Because the issue date of the ’458 patent is September 6, 2011, and neither the ’458 patent nor the application from which it issued ever contained a claim with an effective filing date on or after September 16, 2012, the version of 35 U.S.C. § 112 that applies here is the one preceding the changes made by the America Invents Act. *See Leahy-Smith America Invents Act*, Pub. L. No. 112-29, 125 Stat. 284, 296, § 4(c) (2011).

claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.” *Id.*

One way to demonstrate that a claim limitation fails to recite sufficiently definite structure is to show that, although not employing the word “means,” the claim limitation uses a similar “nonce word that can operate as a substitute for ‘means’ in the context of § 112, para. 6.” *Id.* at 1350. Generic terms like “module,” “mechanism,” “element,” and “device” are commonly used as verbal constructs that operate, like “means,” to claim a particular function rather than describe a “sufficiently definite structure.” *Id.* Our case law is replete with guidance on whether or not a particular claim term is a “nonce” term. *See, e.g., Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003, 1008 (Fed. Cir. 2018) (holding that “program” and “user interface code” are not nonce words because they are “used not as generic terms or black box recitations of structure or abstractions, but rather as specific references to conventional graphical user interface programs or code”); *Williamson*, 792 F.3d at 1350 (noting that “module” is a nonce term because it “sets forth the same black box recitation of structure for providing the same specified function as if the term ‘means’ had been used”). In each case, a critical question is whether “the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure,” including either a particular structure or a class of structures. *Skky, Inc. v. MindGeek, s.a.r.l.*, 859 F.3d 1014, 1019 (Fed. Cir. 2017) (citing *TecSec, Inc. v. Int’l Bus. Machs. Corp.*, 731 F.3d 1336, 1347 (Fed. Cir. 2013)) (holding that the claim term “wireless device means” does not invoke § 112, ¶ 6 because it denotes a class of structures).

In addition, even if the claims recite a nonce term followed by functional language, other language in the claim “might inform the structural character of the limitation-in-question or otherwise impart structure” to the claim term. *Williamson*, 792 F.3d at 1351. In assessing whether the

claim limitation is in means-plus-function format, we do not merely consider the introductory phrase (e.g., “mechanical control assembly”) in isolation, but look to the entire passage including functions performed by the introductory phrase. See *Apex Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364 (Fed. Cir. 2003). The ultimate question is whether “the claim language, read in light of the specification, recites sufficiently definite structure to avoid § 112, ¶ 6.” *Media Rights Techs. Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1372 (Fed. Cir. 2015) (citing *Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1099 (Fed. Cir. 2014)).

In *Apex*, for example, the court concluded that the term “circuit” recited sufficient structure in the context of the claims at issue. 325 F.3d at 1372–73 (considering the use of the term “circuit” in the claim limitation “a first interface circuit for receiving keyboard and cursor control device signals from the workstation”). Based on a dictionary definition of the word “circuit,” the court reasoned that “the term ‘circuit’ by itself connotes some structure,” and that “the term ‘circuit with an appropriate identifier such as ‘interface,’ ‘programming,’ and ‘logic,’ certainly identifies some structural meaning to one of ordinary skill in the art.” *Id.* at 1373. The court noted that the extrinsic evidence did not show that the term “circuit” was not understood to have structure, but rather “only that the term ‘circuit’ is understood . . . as a very broad term.” *Id.* at 1374. As neither the specification nor the prosecution history used the term “in a manner clearly inconsistent with the ordinary meaning,” the court held that the defendant failed to rebut the presumption that § 112, ¶ 6 did not apply. *Id.* at 1373–74.

In contrast, in *Diebold Nixdorf, Inc. v. International Trade Commission*, the court held that the term “cheque standby unit” for performing certain specified functions was governed by § 112, ¶ 6. 899 F.3d 1291, 1300 (Fed. Cir. 2018). The court noted that “there is no evidence—in the form of dictionary definitions or otherwise—that ‘cheque standby unit’ was reasonably well understood by persons

of ordinary skill in the art to refer to a structure or class of structures.” *Id.* at 1302. Instead, the extrinsic evidence demonstrated only that “a skilled artisan would understand the functional term ‘cheque standby unit’ to be *any* structure capable of performing the claimed function.” *Id.* at 1301. Further, neither the words of the claim nor the specification suggested a “structural limitation that might serve to cabin the scope of the functional term,” thus supporting the conclusion that the claim limitation was written in means-plus-function format. *Id.*

Finally, we note that “[c]laims are interpreted in light of the written description supporting them, and that is true whether or not the claim construction involves interpreting a ‘means’ clause.” *Inventio AG v. ThyssenKrupp Elevator Ams. Corp.*, 649 F.3d 1350, 1356 (Fed. Cir. 2011), *overruled on other grounds by Williamson*, 792 F.3d at 1339. For example, a patentee may avoid application of § 112, ¶ 6 by acting as a lexicographer and providing its own structural definition of a nonce term in the specification by “clearly set[ting] forth a definition of the disputed claim term’ other than its plain and ordinary meaning.” *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (citing *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)). Just as it is improper to “import[] limitations from the specification into the claims,” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005), however, a preferred embodiment disclosed in the specification cannot impart structure to a term that otherwise has none. As with all lexicography, “[i]t is not enough for a patentee to simply disclose a single embodiment.” *Thorner*, 669 F.3d at 1365. Rather, “the patentee must ‘clearly express an intent’ to redefine the term.” *Id.* (quoting *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1381 (Fed. Cir. 2008)).

With these background principles in mind, we turn to the claim language at issue in this case.

II

The disputed claim limitation is lengthy and recites:

a mechanical control assembly coupled to the left and right drive units that is configured to actuate the left and right drive units based on a steering input received from the steering device and a speed input received from the speed control member;

the mechanical control assembly being configured such that if the speed control member is shifted from (a) a forward position in which the left drive wheel is rotating in a forward direction at a first forward speed and the right drive wheel is rotating in a forward direction at a second forward speed that is less than the first forward speed as a result of the steering device being in a first right turn position to (b) a reverse position while the first right turn position of the steering device is maintained, then the left drive wheel will rotate in a reverse direction at a first reverse speed and the right drive wheel will rotate in a reverse direction at a second reverse speed that is less than the first reverse speed.

'458 patent col. 8 ll. 7–24.

At the outset, we agree with the Board that the term “mechanical control assembly” is similar to other generic, black-box words that this court has held to be nonce terms similar to “means” and subject to § 112, ¶ 6 because the term does not connote sufficiently definite structure to one of ordinary skill in the art. *Toro*, 2017 WL 1969747, at *9. We also agree with the Board that the rest of the “claim language of the disputed phrase is primarily, but not entirely, functional.” *Id.* While the claim language reciting that the mechanical control assembly is “coupled to the left and right drive units” connotes structure, the claim language reciting what the mechanical control assembly is

“configured to” do is functional. In this respect, as the Board correctly recognized, the claim format tends to favor MTD’s position that § 112, ¶ 6 applies.²

We also discern no error in the Board’s acceptance of MTD’s extrinsic evidence as showing that the term “mechanical control assembly” does not have an established meaning in the art and instead merely operates as a generic label for a collection of parts. Toro did not dispute MTD’s expert testimony that, in common parlance, “mechanical control assembly” does not bring to mind any specific structure to a person of ordinary skill in the art. J.A. 1366. Toro likewise did not dispute MTD’s reliance on various prior patents and publications that used “mechanical control assembly” to describe a wide variety of structures with varying functions. J.A. 1367–69 (noting that

² The Board also stated that construing the disputed phrase as a means-plus-function limitation “would seem to render the second part [of the claim’s recitation of a ‘mechanical control assembly’] . . . superfluous” as it “would no longer serve to define functionally the structural features of the mechanical control assembly, as those features would be part and parcel of what [MTD] alleges is the corresponding structure.” *Toro*, 2017 WL 1969747, at *9. We disagree. Both the first and second limitations following the two occurrences of the term “mechanical control assembly” recite functions associated with the “mechanical control assembly”; i.e., (1) actuate the left and right drive units and (2) rotate the wheel in a particular direction based on the position of the speed control member. As we have held, “[w]here there are multiple claimed functions, as we have here, the patentee must disclose adequate corresponding structure to perform all of the claim functions.” *Williamson*, 792 F.3d at 1351–52. Thus, the corresponding structure for “mechanical control assembly” in the specification must perform both of these functions.

“mechanical control assembly” is used generically to describe mechanisms for infusion pumps, digital firing systems, flush tanks, endoscopes, transmissions, and engine outputs).

We conclude that the Board erred, however, when it relied on the specification’s description of a “ZTR control assembly” to conclude that the claim term “mechanical control assembly” has an established structural meaning. While the parties agreed that the ZTR control assembly in the specification is the structure “corresponding to” the claimed mechanical control assembly, MTD did not agree that the specification expressly defines the claim term “mechanical control assembly.” That the specification discloses a structure corresponding to an asserted means-plus-function claim term does not necessarily mean that the claim term is understood by persons of ordinary skill in the art to connote a specific structure or a class of structures.

Interpretation of an asserted means-plus-function limitation involves two steps. First, we determine if the claim limitation is drafted in means-plus-function format. As part of this step, we consider whether the claim limitation connotes “sufficiently definite structure” to a person of ordinary skill in the art. If we conclude that the limitation is in means-plus-function format, the second step requires us to review the specification to identify the structure that performs the claimed function(s) and thus “corresponds to” the claimed means. While related, these two inquiries are distinct. In this case, however, the Board conflated these distinct inquiries, holding that the specification’s disclosure of corresponding structure demonstrates that the alleged means-plus-function term is sufficiently definite so as to not invoke § 112, ¶ 6. The Board’s analysis implies that so long as a claim term has corresponding structure in the specification, it is not a means-plus-function limitation. This is not consistent with our prior decisions. Indeed, this view would seem to leave § 112, ¶ 6 without any application: any means-plus-function limitation that met the

statutory requirements, i.e., which includes having corresponding structure in the specification, would end up not being a means-plus-function limitation at all.

While we agree with the Board that the specification plays a role in assessing whether particular claim language invokes § 112, ¶ 6, we do not agree that the patent specification at issue here renders the nonce term “mechanical control assembly” sufficiently structural to a person of ordinary skill in the art. The specification does not demonstrate that the patentee intended to act as its own lexicographer and define the nonce term “mechanical control assembly” as the “ZTR control assembly” of the preferred embodiment. Indeed, the specification does not even refer to a “mechanical control assembly.” Furthermore, the functional language in the claim limitation suggests a broader meaning of the generic term “mechanical control assembly,” as it specifically adds to the “mechanical control assembly” limitation the ability to execute a zero radius turn. ’458 patent col. 9 ll. 13–16. Interpreting the “mechanical control assembly” as the “ZTR”—or zero-turn-radius—control assembly would render this functional language superfluous.

We are also not persuaded by the Board’s interpretation of the prosecution history. While it would have avoided uncertainty and argument had MTD shared its current view that the claim limitation is written in means-plus-function format during the original prosecution, MTD’s statements did not clearly disclaim such an interpretation. Rather, MTD’s statements indicated that the phrase “mechanical control assembly configured to” perform certain functions must be given weight because it connotes structure and thus is not merely an intended use. These statements were not made within the context of § 112, ¶ 6. Moreover, stating that the limitation connotes structure and has weight is not inconsistent with claiming in means-plus-function format since means-plus-function limitations connote structure (i.e., corresponding structure

and their equivalents) and have weight. Furthermore, as MTD explained, its interpretation of the claims as being in means-plus-function format during inter partes review was based on this court's intervening law in *Williamson*. J.A. 1204. Given the lack of any clear and undisputed statement foreclosing application of § 112, ¶ 6, we conclude that the Board erred in giving dispositive weight to the equivocal statements it cited in the prosecution history.

CONCLUSION

We conclude that the Board erred by using the existence of corresponding structure in the specification to conclude that “mechanical control assembly” has a sufficiently definite structure to evade § 112, ¶ 6. The Board also erred by giving improper weight to out-of-context statements in the prosecution history. We hold that the remaining evidence and the Board's factual findings demonstrate that the term “mechanical control assembly . . . configured to” perform certain functions in independent claims 1 and 9 of the '458 patent is governed by § 112, ¶ 6. We therefore vacate the Board's decision and remand for further proceedings consistent with this opinion.

VACATED AND REMANDED

COSTS

Costs to Appellant.