NOTE: This disposition is nonprecedential.

United States Court of Appeals
for the Federal Circuit

_____

INTELLIGENT AUTOMATION DESIGN, LLC,
Plaintiff-Appellant

v.

**ZIMMER BIOMET CMF AND THORACIC, LLC, DBA
BIOMET MICROFIXATION,**
Defendant-Appellee

_____

2019-1100

_____

Appeal from the United States District Court for the
Middle District of Florida in No. 3:16-cv-01044-BJD-MCR,
Judge Brian J. Davis.

_____

Decided: January 30, 2020

_____

JOHN DAVIS HOLMAN, Matthews, Lawson, McCutcheon
& Joseph, PLLC, Houston, TX, argued for plaintiff-appel-
lant.

KEVIN P. WAGNER, Faegre Baker Daniels LLP, Minne-
apolis, MN, argued for defendant-appellee. Also repre-
sented by LAUREN MARIE WILLIAMS STEINHAEUSER; DANIEL
M. LECHLEITER, Indianapolis, IN.

_____

Before PROST, *Chief Judge,* WALLACH and HUGHES, *Circuit Judges.*

HUGHES, *Circuit Judge.*

This is a patent case about controlling a motor used to drive a screwdriver bit. Intelligent Automation Design, LLC sued Zimmer Biomet CMF and Thoracic, LLC for infringement of all claims of U.S. Patent No. 7,091,683. The district court found that independent claims 1 and 6 were invalid as indefinite for failing to meet the requirements of 35 U.S.C. § 112 ¶ 6.[1] We agree with the district court that § 112 ¶ 6 applies because both claims include means-plus-function terms. But because we conclude that the '683 patent's specification discloses sufficient structure to define the bounds of the means-plus-function terms, we reverse the district court's finding of indefiniteness and remand for further proceedings.

I

The '683 patent teaches both a method and a system for controlling a motor used to turn a screwdriver bit.

Claim 1, the independent method claim, recites:

A method of controlling a motor **(106)** used to drive a screwdriver bit **(105)** such that screws **(107)** are seated to the optimum point of grip

---

[1]   The America Invents Act (AIA) re-designated § 112 ¶ 6 as § 112(f). Leahy-Smith America Invents Act, Pub. L. No. 112-29, sec. 4, 125 Stat. 284, 296 (2011). But the amended version of § 112 applies only to patent applications "filed on or after" September 16, 2012. *See* AIA § 4(e), 125 Stat. at 297. Because the '683 patent was filed before this date, we refer to the pre-AIA statute. *See* J.A. 24.

between the screw **(107)** and the work piece material, the method comprising:

(a) detecting a torque of the motor;

(b) determining a time when the torque reaches a maximum by an average means for determining an average value as a function of a current value and a new value, thereby determining the optimum point of grip; and

(c) stopping the motor at the optimum point of grip.

'683 patent col. 4 ll.11–20 (emphasis removed).

Claim 6, the independent system claim, recites:

A speed/torque controller (100) for controlling the rotation speed and output torque of the motor (106) with either sensor feedback or back EMF used to monitor motor (106) speed and current used to monitor motor (106) torque, the controller comprising:

a detector for detecting the output torque of the motor; and

a control circuit for determining a time when the torque reaches a maximum by an average means for determining an average value as a function of a current value and a new value, thereby determining the optimum point of grip, and stopping the motor at the optimum point of grip.

Id. col. 4 ll. 33–44 (emphasis removed).

The parties' dispute centers on two issues: first, whether "determining a time when the torque reaches a maximum" in claim 6 should be construed as a "means-

plus-function" element subject to § 112 ¶ 6 and second, if
the specification describes structure that adequately de-
fines this function and thus, the invention. IAD appeals
from the district court's entry of judgment holding inde-
pendent claims 1 and 6 of the '683 patent invalid as indefi-
nite. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

II

We review de novo the district court's ultimate inter-
pretation of a patent's claims, including "means-plus-func-
tion" constructions in which the claim language invokes
§ 112 ¶ 6. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339,
1346, 1347 (Fed. Cir. 2015). We also review de novo a dis-
trict court's conclusion finding a claim indefinite under
§ 112 ¶ 2. *Cox Commc'ns, Inc. v. Sprint Commc'n Co. LP*,
838 F.3d 1224, 1228 (Fed. Cir. 2016). Biomet must prove
any factual determination "critical to a holding on indefi-
niteness" by clear and convincing evidence. *Id.* For both
claim construction and indefiniteness, we review de novo
any underlying factual determinations based on evidence
intrinsic to the patent, but review for clear error any un-
derlying factual determinations based on extrinsic evi-
dence. *Williamson*, 792 F.3d at 1346; *Cox Commc'ns, Inc.*,
838 F.3d at 1228. "To trigger clear error review, 'it is not
enough that the district court may have heard extrinsic ev-
idence during a claim construction proceeding—rather, the
district court must have actually made a factual find-
ing . . . .'" *Sonix Tech. Co. v. Publ'ns Int'l, Ltd.*, 844 F.3d
1370, 1376 (Fed. Cir. 2017) (quoting *Cardsoft, LLC v. Ver-
iFone, Inc.*, 807 F.3d 1346, 1350 (Fed. Cir. 2015)). "If indef-
initeness can be determined based solely on intrinsic
evidence, our review is de novo." *Cox Commc'ns, Inc.*, 838
F.3d at 1228. (citing *Teva Pharms. USA, Inc. v. Sandoz,
Inc.*, 574 U.S. 831, 841 (2015) (holding the same for claim
construction)).

"An element in a claim for a combination may be ex-
pressed as a means . . . for performing a specified function"

but "such claim shall be construed to cover the corresponding structure" described in the specification. 35 U.S.C. § 112 ¶ 6 (2000). "[T]he use of the word 'means' in a claim element creates a rebuttable presumption that § 112 [¶] 6 applies[,]" but "the presence or absence of the word 'means'" may yield to the "essential inquiry" of whether an ordinarily skilled artisan would understand the recited claim element "to have a sufficiently definite meaning as the name for structure." *Williamson*, 792 F.3d at 1348. In construing a means-plus-function element, the court identifies the claimed function, then determines "what structure, if any, disclosed in the specification corresponds to the claimed function." *Id.* at 1351. "Under 35 U.S.C. § 112 ¶ 2 and ¶ 6 . . . a means-plus-function clause is indefinite if a person of ordinary skill in the art would be unable to recognize the structure in the specification and associate it with the corresponding function in the claim." *Noah Sys., Inc. v. Intuit Inc.*, 675 F.3d 1302, 1312 (Fed. Cir. 2012).

III

A

We agree with the district court that § 112 ¶ 6 applies to claims 1 and 6. IAD does not contest the district court's means-plus-function interpretation of claim 1. Since claim 1 recites the identical means-plus-function phrase as claim 6, including the "determining a time when torque reaches a maximum" function, that function should have the same meaning in claim 6.[2] A "strong" principle of claim construction dictates that the same phrase in different

---

[2] Nor did IAD ask the district court to construe this phrase differently between claims 1 and 6. *See* J.A. 391–94; J.A. 16–17. The district court considered whether the "control circuit" in claim 6 described sufficient structure for the disputed function, just as IAD requested. J.A. 18; J.A. 392–94.

claims of the same patent should have the same meaning
unless "it is clear that the same phrase has different mean-
ings in different claims." *In re Varma*, 816 F.3d 1352, 1363
(Fed. Cir. 2016). The recitation of a "control circuit for"
performing the determining function in claim 6 provides
detail about how the system achieves the function. But the
recited "control circuit" does not change the meaning of "de-
termining a time when torque reaches a maximum," nor
does it provide enough description of the structure to ren-
der the limitation structural, rather than functional. *See
Power Integrations, Inc. v. Fairchild Semiconductor Int'l,
Inc.*, 711 F.3d 1348, 1364–65 (Fed. Cir. 2013) (explaining
how "not just any adjectival qualification or functional lan-
guage" modifying a recited circuit will render a "circuit"
limitation structural, and providing examples of some ad-
jectival qualifications that would do so). We thus affirm
the district court's application of § 112 ¶ 6 to "determining
a time when torque reaches a maximum."

We next construe the claimed function. We agree with
IAD's interpretation. Despite arguing for a holistic claim
interpretation, Biomet parses the claimed "determining a
time" function too rigidly. Biomet's interpretation of the
function to mean determining when the torque is "arriving"
at the maximum, *see* Appellee's Br. 52, has a major flaw:
both parties agree that function would be impossible to
practice. *Id.* at 49–50; Appellant's Reply Br. 16–17. "[A]
construction that renders the claimed invention inoperable
should be viewed with extreme skepticism." *AIA Eng'g
Ltd. v. Magotteaux Int'l S/A*, 657 F.3d 1264, 1278 (Fed. Cir.
2011).

An ordinarily skilled artisan could plausibly under-
stand the claimed function to mean retrospectively observ-
ing changes in torque to ascertain when the torque has
reached the maximum, the tense of "reaches" notwith-
standing. Both the commonsense mathematics perspective
that one cannot conclusively determine whether the torque
reaches a maximum until one is able to calculate the slope

that follows the putative maximum, *e.g.*, Appellee's Br. 8,
and the operability of the invention support this interpre-
tation.   The intrinsic record, if not entirely consistent,
yields stronger inferences in favor of this interpretation
than against it. *See, e.g.*, J.A. 455 ("[The claimed method]
stops the motor at the *optimum point* of grip between the
screw and the material. It does [s]o by detecting a negative
rate of change in torque that occurs right after the peak
torque level is achieved at the *maximum point* of grip." (em-
phasis added)); *see also infra* n.3.

Because we understand Biomet to contest the suffi-
ciency of the disclosed structure rather than the adequacy
of the link between that structure and the claimed func-
tion, *see* Appellee's Br. 54, we need not address the link be-
tween this claimed function and the structure in the
specification.

B

We next address whether claims 1 and 6 are indefinite.
"[F]or a claim element recited in means-plus-function for-
mat, 'the specification must contain sufficient descriptive
text by which a person of skill in the field of the invention
would know and understand what structure corresponds to
the means limitation.'" *Bosch Auto. Serv. Sols., LLC v.
Matal*, 878 F.3d 1027, 1039 (Fed. Cir. 2017) (quoting *Ty-
phoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376,
1383–84 (Fed. Cir. 2011)). When describing microproces-
sor-implemented functions, the specification must "disclose
an algorithm for performing the claimed function" on the
microprocessor "in any understandable terms including as
a mathematical formula, in prose, or as a flow chart, or in
any other manner that provides sufficient structure."
Noah Sys., 675 F.3d at 1312 (quoting *Net MoneyIN, Inc. v.
VeriSign, Inc.*, 545 F.3d 1359, 1367 (Fed. Cir. 2008) and
Finisar Corp. v. DirecTV Grp., Inc., 523 F.3d 1323, 1340
(Fed. Cir. 2008)). Even so, "[t]his court does not impose a
lofty standard in its indefiniteness cases." *In re Aoyama*,

656 F.3d 1293, 1298 (Fed. Cir. 2011) (quoting *Finisar*, 523 F.3d at 1341). Rather, the specification need only disclose enough to "permit one of ordinary skill in the art to . . . perceive the bounds of the invention." *Id.* (quoting *Finisar*, 523 F.3d at 1340–41).

Here, the specification teaches "a series of instructions for the computer to follow," *Typhoon Touch*, 659 F.3d at 1384, that reasonably bounds how the claimed invention might "determin[e] a time when torque reaches a maximum . . . thereby determining the optimum point of grip." The microprocessor receives the already-filtered analog current signal representing torque and smooths it using an averaging formula. *See* '683 patent col. 3 ll. 9–26. The microprocessor measures and monitors the value of the signal after it receives and smooths it. *See id.* Then, if the microprocessor detects a decrease in current, signifying that the torque has begun dropping and therefore that the screw has reached the optimum point of grip, it signals the controller to stop the motor. *Id.* at col. 3 ll. 26–28. Understood as a whole, this written description provides a coherent series of steps defining how to perform the corresponding claimed steps: detecting the motor torque, smoothing that torque using an average means (the averaging formula), and stopping the motor at the optimum point of grip, determined by the time the torque reaches a maximum.[3] *Id.* at col. 4 ll. 15–20.

---

[3] The parallels between the written description and our interpretation of the claimed function reinforce the correctness of our interpretation. *See Budde v. Harley-Davidson, Inc.*, 250 F.3d 1369, 1379–80 (Fed. Cir. 2001) ("In construing [means-plus-function] terms used in patent claims, it is necessary to consider the specification as a whole, and to read all portions of the written description, if possible, in a manner that renders the patent internally consistent.").

Because the disclosed algorithm and the claimed function both solve the problem of establishing the "optimum point of grip" when the microprocessor should signal the control circuit to cut power to the motor, an ordinarily skilled artisan would associate the algorithm and the function. Given other simplifying assumptions disclosed by the patent, an ordinarily skilled artisan could perceive the bounds of the invention. For instance, the '683 patent teaches that the preferred embodiment's torque controller is designed to measure the value of a torque profile that is continuously increasing to a single peak before it drops. *See* '683 patent fig.5; *id.* col. 2 ll. 43–64, col. 3 ll. 3–5. The smoothing mechanisms taught by the '683 patent also help ensure that the torque curve takes this shape. *See id.* col. 3 ll. 29–46. Given these assumptions—whether realistic or not—the '683 patent need only describe a simple computational process to define how to determine the time that the torque reaches a maximum. It does so: The microprocessor should "monitor" the motor current; when it detects a decrease in current, torque has reached a maximum and the microprocessor should signal the controller to stop the motor. We are persuaded that an ordinarily skilled artisan would find this a reasonably certain description of how the invention determines a time when the torque reaches a maximum, especially in view of the ultimate goal of determining when to stop the screwdriver.

Biomet does not persuade us otherwise, particularly given its burden to show clear and convincing evidence of indefiniteness. In addition to relying on a faulty interpretation of the claimed function, Biomet mistakenly fixates on the '683 patent's inability to solve certain technical problems that the patent does not profess to solve. Biomet further misplaces its focus in making an immaterial comparison between the '683 patent's "algorithm" and the algorithm applied in IAD's commercial embodiment (because the latter purportedly *would* solve the alleged technical problems). These arguments rest on an implicit critique of

the '683 patent perhaps relevant to other patentability criteria, but not persuasive when evaluating indefiniteness. *Cf. Miles Labs., Inc. v. Shandon Inc.*, 997 F.2d 870, 875 (Fed. Cir. 1993) ("The invention's operability may say nothing about a skilled artisan's understanding of the bounds of the claim."); *EON Corp. IP Holdings LLC v. AT & T Mobility LLC*, 785 F.3d 616, 624 (Fed. Cir. 2015) (explaining the indefiniteness "question" as "whether the specification contains a sufficiently precise description of the 'corresponding structure' to satisfy section 112, paragraph 6, not whether a person of skill in the art could devise some means to carry out the recited function").

Nor does Biomet's expert testimony alter this conclusion. Even if we consider the district court's references to this testimony to be findings of fact, when the specification "unambiguously set[s] forth" the meaning of a claim term, expert testimony about the claim term becomes "irrelevant to the issue of indefiniteness." *Personalized Media Commc'ns, LLC v. Int'l Trade Comm'n*, 161 F.3d 696, 706 (Fed. Cir. 1998); *see id.* at 705–706 (explaining how the specification sufficiently informed an ordinarily skilled artisan of the meaning of a claim term and thus rejecting expert testimony that the specification's disclosure was inadequate). Applying IAD's sounder interpretation of the claimed function, the specification manifestly discloses an "algorithm" to perform that claimed function. Although the specification cannot itself unambiguously establish that the algorithm adequately defines the structure of the claimed function, Biomet's expert testimony does not provide clear and convincing evidence of the algorithm's insufficiency.[4] To the extent that this testimony even discusses

---

[4] The district court indisputably did not make findings of fact from Biomet's expert testimony regarding the sufficiency of the algorithm. The district court characterized the expert testimony as showing that the specification did

the sufficiency of the specification's disclosed algorithm, the testimony, like Biomet's arguments, focuses on the "sufficiency of the written description to enable the practice of the invention of the claims" and not the "imprecision of the claims." *Personalized Media Commc'ns, LLC*, 161 F.3d at 706.

We would not hold out the '683 patent as an exemplar of impeccable patent drafting. But given the simple problem described by this patent, the brief passage taught in the specification suffices to define the bounds of the claimed solution. In claims 1 and 6, the invention determines a time that torque reaches a maximum by using a microprocessor to detect a decrease in torque. A "decrease in current, corresponding to a drop in torque" provides a clear, reasonably certain boundary, particularly in light of the specification's explanation of the assumptions inherent in the method. That is enough for definiteness.

IV

We have considered the parties' remaining arguments and find them unpersuasive. We agree with the district court that the disputed claim term is subject to a means-plus-function analysis. But we reverse the district court's judgment holding the '683 patent invalid for indefiniteness and remand for further proceedings consistent with this opinion.

---

not disclose an algorithm, *see* J.A. 22, therefore foreclosing the possibility of fact-findings about the sufficiency of an algorithm. Evidence not relied on by the district court does not receive deferential review on appeal. *Cf. CardSoft*, 807 F.3d at 1351 n.1 ("[T]he mere submission of extrinsic evidence is not enough to mandate deference to a district court's claim construction.").

12　　INTELLIGENT AUTOMATION DESIGN v. ZIMMER BIOMET CMF
AND THORACIC

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

No costs.