



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO. Includes details for application 14/536,140 and 23721 7590, listing inventor George R. Corrigan and attorney Quinn W. Schartner.

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

- gcorrigan@new.rr.com
george.corrigan@corrigan.pro
kari.brekke@corrigan.pro

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte QUINN W. SCHATNER, BERNARD J. VOGEL, and
ANDREW S. NELSON

Appeal 2019-006111
Application 14/536,140¹
Technology Center 3700

Before JOSEPH A. FISCHETTI, NINAL. MEDLOCK, and
BRADLEY B. BAYAT, *Administrative Patent Judges*.

BAYAT, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner’s final rejection of claims 13–25, which constitute all the claims pending in the application.² We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the term “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as “Illinois Tool Works Inc.” Appeal Br. 3.

² Appellant indicates that claims 1–12 are withdrawn from consideration. *Id.* at 5.

CLAIMED INVENTION

The disclosure “relates to welding type power supplies used for air carbon arc cutting and providing welding type power for air carbon arc cutting.” Spec. ¶ 1.

Apparatus claims 13, 18, and 20 are the independent claims on appeal and reproduced below.

13. A welding-type power supply system comprising:
a user mode selector, including an air carbon arc cutting (CAC-A) mode;
a power circuit, disposed to receive an input power and provide CAC-A power, and having a control input; and
a controller, having a control output connected to the control input, wherein the controller has a CAC-A control module responsive to the CAC-A mode, and having a feedback input indicative of the output current and indicative of the output voltage.

18. A welding-type power supply comprising:
a user mode selector, including an air carbon arc cutting (CAC-A) mode;
a power circuit, disposed to receive an input power and provide CAC-A power, and having a control input; and
a controller, having a control output connected to the control input, wherein the controller has a CAC-A control module responsive to the CAC-A mode, and having a feedback input indicative of the output current and indicative of the output voltage, wherein the CAC-A control module includes a CAC-A start module having a CAC-A

hot start current that is greater than a stick hot start current, a CAC-A hot start time, a CAC-A hot start delay time, responsive to the feedback input, a CAC-A dig module having a dig threshold that is greater than a stick dig threshold, and having a dig slope, wherein the CAC-A start module includes a weld start module having a CAC-A start current time and a CAC-A slew rate, and responsive to the feedback input.

20. A welding-type power supply for air carbon arc cutting (CAC-A), comprising:
- means for providing welding-type power;
 - user select means for selecting a plurality of modes, including a CAC-A mode;
 - control means, for controlling the means for providing welding-type power, wherein the control means is responsive to the user select means.

REJECTIONS

Claims 13–25 stand rejected under 35 U.S.C. § 112(a) as failing to comply with the written description requirement.

Claims 13–25 stand rejected under 35 U.S.C. § 112(b) as indefinite.

Claim 20 stands rejected under 35 U.S.C. § 102(a)(1) as being anticipated by Radtke et al. (US 2011/0114036 A1, pub. May 19, 2011).

Claims 13 and 14 stand rejected under 35 U.S.C. § 103 as being obvious Radtke and Leisner et al. (US 6,603,097 B2, iss. Aug. 5, 2003).

Claim 15 stands rejected under 35 U.S.C. § 103 as being obvious over Radtke, Leisner, and Laabs et al. (US 2008/0047942 A1, pub. Feb. 28, 2008).

Claims 16 and 17 stand rejected under 35 U.S.C. § 103 as being obvious over Radtke, Leisner, and Fosbinder (US 2006/0016791 A1, pub. Jan. 26, 2006).

Claim 18 stands rejected under 35 U.S.C. § 103 as being obvious over Radtke, Leisner, Fosbinder, and Harris (US 2009/0071949 A1, pub. Mar. 19, 2009).

Claim 19 stands rejected under 35 U.S.C. § 103 as being obvious over Radtke, Leisner, Fosbinder, Harris, and Geissler (US 5,783,799, iss. July 21, 1998).

Claim 21 stands rejected under 35 U.S.C. § 103 as being obvious over Radtke and Geissler.

Claim 22 stands rejected under 35 U.S.C. § 103 as being obvious over Radtke and Laabs.

Claims 23–25 stand rejected under 35 U.S.C. § 103 as being obvious over Radtke, Laabs, and Harris.

OPINION

Written Description

The Examiner rejects claims 13–25 under 35 U.S.C. § 112(a) as failing to comply with the written description requirement. Final Act. 10–11; Ans. 3. Section 112(a) requires that the specification contain a written description of the claimed invention. “[T]he hallmark of written description is disclosure.” *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351

(Fed. Cir. 2010) (en banc). The written description requirement is met when the specification “conveys to those skilled in the art that the inventor had possession of” and “actually invented” the claimed subject matter. *Id.*

In support of the rejection, the Examiner maintains:

Claim limitations “CAC-A control module”, “CAC-A start Module”, “CAC-A dig module”, “CAC-A increased hot start module”, “weld start module”, “droop disable module”, “means for providing welding type power”, “user select means”, “control means for controlling the means for providing welding type power”, “means for disabling stick droop”, “means for setting a CAC-A dig slope”, “means for setting a CAC-A hot start time”, “means for setting a CAC-A hot start delay time”, “means for increasing the CAC-A hot start time”, “means for a CAC-A start current”, do not have corresponding structure for any of the claim limitations interpreted under 112 sixth paragraph are not disclosed in the specification in a way for one skilled in the art to understand what structure will perform the recited function.

Ans. 3.

Appellant’s description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the Examiner to rebut the presumption. *See, e.g., In re Marzocchi*, 439 F.2d 220, 224 (CCPA 1971). As such, the Examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in Appellant’s disclosure a description of the invention defined by the claims. *In re Wertheim*, 541 F.2d 257, 263 (CCPA 1976). This initial burden has not been met because the Examiner’s mere assertion as to the lack of corresponding structure for means-plus-function claim terms is the basis for an indefiniteness rejection, which we address below, rather than written description. *See, e.g., In re Dossel*, 115 F.3d 942, 946 (Fed. Cir. 1997) (“Failure to describe adequately the necessary structure,

material, or acts in the written description means that the drafter has failed to comply with the mandate of § 112 ¶ 2 . . . the mandate that all claims must particularly point out and distinctly claim the subject matter which the applicant regards as his invention.”).

Accordingly, we do not sustain the rejection under 35 U.S.C. § 112(a) as failing to comply with the written description requirement.

Indefiniteness

Claims 13–19

We determine the rejection of claims 13–19 under 35 U.S.C. § 112(b) as indefinite is proper because independent claims 13 and 18 recite means-plus-function limitations that lack corresponding structure in Appellant’s written description. Final Act. 11–12; Ans. 3–4.

The relevant portion of claim 13 recites “a controller, having a control output connected to the control input, wherein the controller has a CAC-A control module responsive to the CAC-A mode.” *See* claim 13 *supra*. We acknowledge that omitting the term “means” in a claim element creates a rebuttable presumption that § 112(f) does not apply; however, such an omission does not automatically prevent that element from being construed as a means-plus-function element. *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc). Section 112(f) will apply if the claim term fails to recite sufficiently definite structure, or else recites function without reciting sufficient structure for performing that function. *See id.* at 1349.

We determine that the term “controller” is merely a description for software or hardware, recited as having a pair of connected “control[s]” that are likewise recited solely in terms of their function—i.e., input and output.

The claimed “controller” is further recited as having a “control module” that functions as being responsive to a mode of a welding-type power supply that is dedicated to air carbon arc cutting. *See* Spec. ¶ 6. The terms “controller,” “control,” and “module” are merely nonce words or “non-structural generic placeholders” that are equivalent to the term “means” because they fail to connote sufficiently definite structure and, in the context of claim 13, invoke § 112(f). *Cf. id.* at 1350 (discussing similar nonce words, and interpreting the term “distributed learning control module” under § 112(f) because it did not recite sufficiently definite structure); *Aristocrat Techs. Australia Pty Ltd. v. Multimedia Games, Inc.*, 266 F. App’x 942, 945–46 (Fed. Cir. 2008) (construing “control means” as a means-plus-function limitation); *Ergo Licensing, LLC v. CareFusion 303, Inc.*, 673 F.3d 1361, 1363–64 (Fed. Cir. 2012) (“The recitation of ‘control device’ provides no more structure than the term ‘control means’ itself, rather it merely replaces the word ‘means’ with the generic term ‘device.’”); *Fiber, LLC v. Ciena Corp.*, 792 Fed. App’x 789, 2019 WL 6216149 (Fed. Cir. 2019) (unpublished) (construing the term “control” as a means-plus-function limitation).

In fact, Appellant acknowledges that “[m]odule is explicitly defined in the specification as ‘software and hardware that cooperate to perform a given function,’” which are “part of another structure—controller 104.” Appeal Br. 21 (citing Spec. ¶¶ 44–45). Appellant quotes various parts of the Specification in which these terms are defined by their function. *See id.* at 21–22. For example, Appellant asserts that “CAC-A dig module was explicitly defined as a control module that causes a welding-type power supply to provide a dig output below a dig threshold, when in a CAC-A mode.” *Id.* at 21 (citing Spec. ¶ 45). According to Appellant, “specific

hardware structure was [sic] is described for all of these modules – analog circuitry, a digital controller with discrete elements, and DSPs [and g]iven the specific structure of each module these rejections should be overturned.” *Id.* at 22. But describing these software modules by their function and ascribing a generic digital controller or computer as the hardware structure that performs those functions is not sufficient under 35 U.S.C. § 112(f) because the specification must disclose an algorithm for performing the claimed specific computer function, or else the claim is indefinite under 35 U.S.C. 112(b). *See Net MoneyIN, Inc. v. Verisign. Inc.*, 545 F.3d 1359, 1367 (Fed. Cir. 2008).

The recited controller, controls, and module are analogous to the claimed processors that expanded panels of this Board held were non-structural generic placeholders that require means-plus-function treatment in three instructive informative opinions regarding functional claiming. *See Ex parte Lakkala*, No. 2011-001526 (PTAB Mar. 13, 2013) (expanded panel) (informative); *Ex parte Erol*, No. 2011-001143 (PTAB Mar. 13, 2013) (expanded panel) (informative); *Ex parte Smith*, No. 2012-007631 (PTAB Mar. 14, 2013) (expanded panel) (informative)). “The standard is whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.” *Williamson*, 792 F.3d at 1349; *see also Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996). Because the claim is devoid of any language that provides the requisite structure, we conclude that these limitations are means-plus-function limitations. *See Media Rights Techs., Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1372 (Fed. Cir. 2015).

Because the claim terms are means-plus-function terms as described in § 112(f), we must construe these terms by identifying the corresponding structure, material, or acts described in the specification to which each term will be limited. *Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1097 (Fed. Cir. 2014). As such, we next determine whether Appellant’s Specification contains corresponding structure for these limitations. The corresponding structure, material, or acts may be disclosed in the original drawings, figures, tables, or sequence listing. However, the corresponding structure, material, or acts cannot include any structure, material, or acts disclosed only in the material incorporated by reference or a prior art reference. *See, e.g., Pressure Prods. Med. Supplies, Inc. v. Greatbatch Ltd.*, 599 F.3d 1308, 1317 (Fed. Cir. 2010); *Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1381 (Fed. Cir. 1999).

“In cases involving a computer-implemented invention in which the inventor has invoked means-plus-function claiming, [the Federal Circuit] has consistently required that the structure disclosed in the specification be more than simply a general purpose computer or microprocessor.” *EON Corp. IP Holdings LLC v. AT & T Mobility LLC*, 785 F.3d 616, 621 (Fed. Cir. 2015) (quotation omitted). Thus, an algorithm is required to provide sufficient structure unless the function can be performed by any general purpose computer with no special programming. *Id.*

Here, it is clear from a review of the Specification in the context of the pertinent art to which the claims are directed that any general purpose computer with no special programming cannot implement instructions for air carbon arc cutting. The Abstract of the Specification indicates: “Start and restrike algorithms can be used that are specifically for CAC-A” (air carbon arc

cutting). Therefore, this application must disclose enough of an *algorithm* to provide the requisite structure—a disclosure that can be expressed in any understandable terms (*e.g.*, a mathematical formula, in prose, or as a flowchart). *See Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1341 (Fed. Cir. 2008); *see also Aristocrat Techs. Australia Pty Ltd. v. Int’l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008).

In support of the claimed subject matter Appellant cites paragraphs 42–46 and Figures 1–2 of the Specification. Appeal Br. 7–8. Paragraph 42 of the Specification discloses that “[c]ontroller 104 is preferably a digital pulse width controller, such as that described in U.S. Pat. No. 8,455,794. Controller 104 may also be such as that described in US-2014-0021180-A1. Alternatives provide for an analog controller, a digital controller with discrete elements, a controller using DSPs, and a controller using other circuitry.” “Simply mentioning prior art references in a patent does not suffice as a specification description to give the patentee outright claim to all of the structures disclosed in those references.” *Pressure Prods.*, 599 F.3d at 1317.

Paragraph 44 discloses that “controller 105 implements a number of software modules,” and paragraphs 45–46 provide a laundry list of modules and their functions. The drawings of Figures 1 and 2 do not impart any structural detail. Appellant’s Specification does mention the use of algorithms at various portions of the Specification without disclosing the algorithm itself. *See e.g.*, Spec. ¶7 (discloses that a welding-type power supply that includes a CAC-A mode will include a start algorithm that is suitable for CAC-A.); ¶37 (“If current is detected within a CAC-A delay time of an outage, the algorithm determines it is restrike and transitions to

the CAC-A weld start state.”). The Specification provides no flowcharts or mathematical formulas. And we do not find, nor does Appellant direct us to any, algorithm with sufficient particularity to perform the recited functions. Apart from merely indicating what the controller and modules *do*, the Specification does not explain *how* it does it, let alone describe the underlying algorithm to achieve that result.

Therefore, these limitations in independent claim 13, and similarly in independent claim 18, lack corresponding structure and are rendered indefinite under 35 U.S.C. § 112(b). *See In re Donaldson*, 16 F.3d 1189, 1195 (Fed. Cir. 1994) (en banc). Accordingly, we are not persuaded that the Examiner erred in rejecting claim 13 and 18, and dependent claims 14–17 and 19, which are not argued separately, as indefinite.

Claims 20–25

We reach the same conclusion as to system claims 20–25, which employ means-plus-function language in the claims and do not satisfy the requirement of disclosing the particular structure for performing the function of each means-plus-function limitation. In the briefs, Appellant does not dispute the rejection of claims 20–25 as indefinite for lacking corresponding structure. *See* Appeal Br. 20–22 (Section VII B 1: contesting only claims 13–19 under § 112(b)). Accordingly, we summarily sustain the rejection of claims 20–25 as indefinite under 35 U.S.C. § 112(b).

Prior Art Rejections

We do not reach the merits of the §§ 102(a)(1) and 103 rejections of claims 13–25 because without a discernable claim construction, an analysis of the claims under the prior art cannot be performed. *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1332 (Fed. Cir. 2010) (“[A] claim cannot be

both indefinite and anticipated.”). Before a proper review of those rejections can be made, the subject matter encompassed by the claims on appeal must be reasonably understood without resort to speculation. Because the claims fail to satisfy the requirements under 35 U.S.C. § 112(b), we are constrained to reverse, *pro forma*, the Examiner’s prior art rejections as to claims 13–25. *See In re Steele*, 305 F.2d 859, 862 (CCPA 1962) (A prior art rejection cannot be sustained if the hypothetical person of ordinary skill in the art would have to make speculative assumptions concerning the meaning of claim language).

It should be understood that our decision to reverse the rejections of these claims is based solely on the indefiniteness of the claims, and does not reflect on the merits of the underlying rejections.

CONCLUSION

The rejection of claims 13–25 under 35 U.S.C. § 112(a) is reversed.

The rejection of claims 13–25 under 35 U.S.C. § 112(b) is affirmed.

The rejections of claims 13–25 under 35 U.S.C. §§ 102(a)(1) and 103 are reversed *pro forma*.

Decision summary:

| Claims Rejected | 35 U.S.C. § | References(s)/Basis | Affirmed | Reversed |
|------------------------|--------------------|--|-----------------|-----------------|
| 13–25 | 112(a) | Written Description | | 13–25 |
| 13–25 | 112(b) | Indefiniteness | 13–25 | |
| 20 | 102(a)(1) | Radtke | | 20 |
| 13, 14 | 103 | Radtke, Leisner | | 13, 14 |
| 15 | 103 | Radtke, Leisner, Laabs | | 15 |
| 16, 17 | 103 | Radtke, Leisner, Fosbinder | | 16, 17 |
| 18 | 103 | Radtke, Leisner, Fosbinder, Harris | | 18 |
| 19 | 103 | Radtke, Leisner, Fosbinder, Harris, Geissler | | 19 |
| 21 | 103 | Radtke, Geissler | | 21 |
| 22 | 103 | Radtke, Laabs | | 22 |
| 23–25 | 103 | Radtke, Laabs, Harris | | 23–25 |
| Overall Outcome | | | 13–25 | |

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED