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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte STEVEN FIRRA

Appeal 2020-000542
Reissue Application 14/840,719
Patent 8,878,701 B2
Technology Center 3900

Before ALLEN R. MacDONALD, JOHN A. JEFFERY, and
JENNIFER L. McKEOWN, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

Under 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–10 and 17–23. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Gulfstream Aerospace Corporation. Appeal Br. 1.

STATEMENT OF THE CASE

Appellant seeks to reissue U.S. Patent 8,878,701 B2 (“’701 patent”) directed to an aircraft instrumentation system for a cockpit instrument panel that includes standby instrument display/controllers, each with a display and control panel. Among other things, the display/controllers integrate traditional displays and configurable controllers into a single unit. *See* ’701 patent, Abstract; col. 6, l. 9 – col. 7, l. 3. Claim 1 is illustrative:

1. An aircraft instrumentation system for a cockpit instrument panel, comprising:
 - a first device having a standby mode and a controller mode, the first device including:
 - a first display; and
 - a first controller having a first set of controls for controlling the first display and aircraft systems; and
 - a second device having a standby mode and a controller mode, the second device including:
 - a second display; and
 - a second controller having a second set of controls for controlling the second display and the aircraft systems;wherein at least one of the first display and the second display is in the standby mode [at all times] to present attitude, altitude and airspeed when a first primary flight display and a second primary flight display are unavailable and the aircraft is on emergency power, and
wherein the first controller controls the first display to present aircraft system data and system menus only if at least one of the [second display is in the standby mode and concurrently presents attitude, altitude and airspeed] first primary flight display and the second primary flight display is available and the aircraft is not on emergency power, and the second controller controls the second display to present aircraft system data and system menus only if at least one of the [first display is in the standby mode and concurrently presents attitude, altitude and airspeed] first primary flight display and the second primary flight display is available and the aircraft is not on emergency power.

THE REJECTIONS²

The Examiner rejected claims 1–10 and 17–23 under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement. Final Act. 3–9.³

The Examiner rejected claims 1–10 and 17–23 under 35 U.S.C. § 112, second paragraph as indefinite. Final Act. 3–9.

THE INDEFINITENESS REJECTION

Regarding independent claim 1, the Examiner finds that the recited first and second controllers having sets of controls for controlling first and second displays and aircraft systems, respectively, recite means-plus-function limitations under § 112, sixth paragraph, but lack sufficient corresponding structure in the Specification and are, therefore, indefinite. Final Act. 3–9; Ans. 3–7.

Appellant argues that, when read in light of the Specification, the recited controllers are not means-plus-function limitations, but rather refer specifically to modified conventional standby displays and configurable controllers that existed in the art at the time of the invention. Appeal Br. 5–10; Reply Br. 4–5. Given this interpretation, Appellant contends that the recited controllers are amply described in the Specification to satisfy both

² Because the Examiner withdrew a new matter rejection under § 251 (Ans. 3, 7–9), that rejection is not before us.

³ Throughout this opinion, we refer to (1) the Final Rejection mailed November 26, 2018 (“Final Act.”); (2) the Appeal Brief filed July 15, 2019 (“Appeal Br.”); (3) the Examiner’s Answer mailed September 3, 2019 (“Ans.”); and (4) the Reply Brief filed October 31, 2019 (“Reply Br.”).

the definiteness and written description requirements under § 112. Appeal Br. 5–10; Reply Br. 4–5.

ISSUE

Has the Examiner erred in rejecting claim 1 by finding that the recited controllers render the claim indefinite under § 112, second paragraph? This issue turns on whether the controller limitations are means-plus-function limitations under 35 U.S.C. § 112, sixth paragraph and, if so, whether the Specification describes the corresponding structure associated with those limitations to render the claim definite.

ANALYSIS

As noted above, this dispute turns on whether the first and second controller limitations are equivalent to means-plus-function limitations under § 112, sixth paragraph, for if they are, they must be construed in light of the corresponding structure in the Specification and its equivalents. *See In re Donaldson Co., Inc.*, 16 F.3d 1189, 1193 (Fed. Cir. 1994) (en banc). For computer-related inventions so construed, the 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).

As noted above, the Examiner interprets the controller limitations as means-plus-function limitations under § 112, sixth paragraph because the

term “controller” is said to be a “generic placeholder” that is not modified structurally, where this “generic placeholder” performs certain recited functions. *See* Final Act. 4–5; Ans. 4–7. Similarly, the Examiner interprets the controllers’ respective sets of controls as means-plus-function limitations because the term “controls”—like the term “controller”—does not imply any particular type of structure, and is, therefore, also a “generic placeholder” equivalent to the term “means.” Final Act. 4–5.

We see no error in this means-plus-function interpretation. Apart from reciting that the first and second controllers each have respective sets of controls for controlling respective display and aircraft systems, the claim recites no particular structure to perform the recited functions.

Although omitting the term “means” in a claim element creates a rebuttable presumption that § 112, sixth paragraph does not apply, 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). In such a case, § 112, sixth paragraph 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.

That is the case here. First, we agree with the Examiner that the term “controller” is merely a generic description for software or hardware that performs the recited functions, despite the controllers comprising respective sets of controls—controls that are likewise recited solely in terms of their function. That is, the term “controller” and “controls” 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 1, invoke § 112, sixth paragraph. *Cf. id.* at 1350 (discussing similar nonce words, and interpreting the term “distributed learning control module” under § 112, sixth paragraph 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) (unpublished) (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.*, -- F. App’x --, 2019 WL 6216149, at *4 (Fed. Cir. 2019) (unpublished) (construing the term “control” as a means-plus-function limitation).

The clear import of these authorities is that the term “control” adds no structural significance as a modifier or descriptor of a recited term to avoid means-plus-function treatment under § 112, sixth paragraph. Therefore, terms like “control device” and “control means”—or even the term “control” itself as in the *Ciena* case cited above—must be interpreted under § 112, sixth paragraph.

On this record, we see no reason to treat the terms “controller” and “controls” in claim 1 any differently. To the extent that Appellant contends that these terms are inherently structural to avoid means-plus-function treatment under § 112, sixth paragraph (*see* Appeal Br. 7–9; Reply Br. 4–5), there is no persuasive evidence on this record to substantiate such a

contention. In this sense, the recited controllers and controls are analogous to the claimed processors that expanded panels of this Board held were non-structural generic placeholders that required 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)).⁴ *Accord* Ans. 6–7 (referring to the lack of structural description in connection with the “controller/processor”).

We reach this conclusion despite the fact that the recited controllers each have a respective set of controls. Like the recited “controllers,” the recited “controls” are merely nonce words or “non-structural generic placeholders” that are equivalent to the term “means” because they fail to connote sufficiently definite structure. Nor do the controllers’ and controls’ respective modifying terms, namely “first” and “second,” add sufficient structure to the recited elements to preclude § 112, sixth paragraph construction, for they merely distinguish one set of elements from the other.

Appellant’s contention, then, that the recited controllers are not means-plus-function limitations, but rather refer specifically to *modified* conventional standby displays and configurable controllers that existed in the art at the time of the invention (Appeal Br. 7–8), is unavailing. Not only

⁴ These three informative opinions are available from the Board’s web page at <https://www.uspto.gov/patents-application-process/appealing-patent-decisions/decisions-and-opinions/informative-opinions-0#heading-8>.

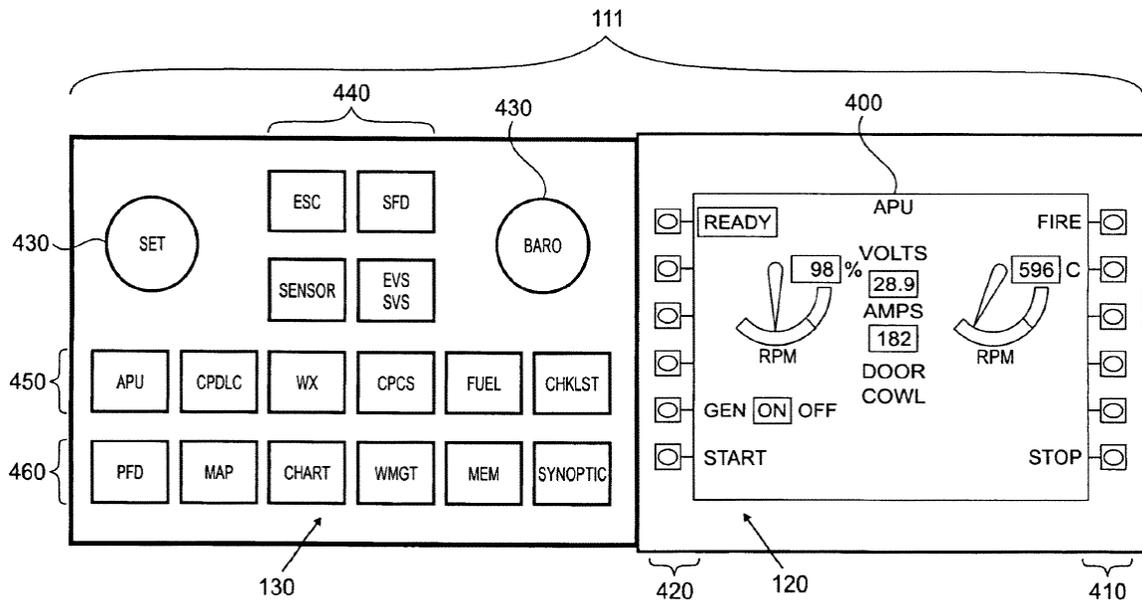
is the term “controller” a nonce word as explained above, our emphasis on Appellant’s term “modified” underscores that even assuming, without deciding, that the recited controllers refer to conventional standby displays and configurable controllers as Appellant contends, they are nonetheless *modified* and, therefore, differ from those ostensibly conventional elements. This acknowledged modification, then, undercuts Appellant’s contention that the term “controller” is structurally equivalent to known controllers in the art to presumably impart the requisite structure to the term to avoid means-plus-function treatment under § 112, sixth paragraph.

Nevertheless, we agree with the Examiner that the ’701 patent fails to disclose sufficient corresponding structure for the means-plus-function limitations to perform the recited functions. Final Act. 6–8; Ans. 4–7. In the Appeal Brief’s Summary of the Claimed Subject Matter section, Appellant indicates that (1) the recited “controller” corresponds to control panel 130 in column 7, lines 11 and 12 of the ’701 patent, and (2) the recited “controls” correspond to “keys, buttons, and knobs” in column 9, lines 53 to 62, where these controls are for controlling the respective displays and aircraft systems in column 6, lines 48 to 55.

As shown in the ’701 patent’s Figure 2, standby display/controllers 111 and 112, which correspond to the recited first and second devices respectively (*see* Appeal Br. 3; Reply Br. 4), each include a display 120 and control panel 130, the latter corresponding to the recited “controller” as noted above. As the ’701 patent explains, the control panel 130 not only enables selecting options to manage aircraft systems, but it can also be

programmable to control any number or type of flight deck avionic displays and other aircraft systems. '701 patent, col. 7, ll. 15–24.

Figure 4, reproduced below, shows display/controller 111 in the controller mode, including control panel 130 with knobs 430⁵ and keys 440.



'701 patent's Figure 4 showing control panel 130 with knobs and keys

As shown above, the control panel includes knobs 430 with textual labels “SET” and “BARO,” and keys 440 with textual labels “ESC,” “SFD,” “SENSOR,” and “EVS SVS.” The control panel in Figure 4 also includes Display System and Aircraft System Management Menu Keys 450 and 460 that include textual labels such as “APU,” “CPDLC,” “CPCS,” “PFD,”

⁵ Although the '701 patent refers to knobs 430 and 431 in column 9, line 55, numeral 431 does not appear in Figure 4. We, therefore, refer to both knobs with the reference numeral 430 consistent with the depiction in Figure 4.

“WMGT,” “MEM,” “SYNOPTIC,” etc. According to column 9, lines 54 to 60, the knobs 430 may be used to rotate and push set functions to select menus and displays, and keys 440 can not only be configured as a set of four basic standby display and higher order display selection keys, but also can configure and control the display in the standby mode as shown in Figure 5.

Given the apparently specialized functions associated with the control panel’s knobs and keys indicated by their respective textual labels—specialized functions that are not detailed with particularity in the ’701 patent—the Examiner’s point that the functions of the recited controller, namely the control panel 130, go well beyond those of the basic functions of general-purpose processors or computers (*see* Ans. 6–7) has merit. In short, ordinarily skilled artisans would understand that implementing the control panel’s particular specialized functionality requires, among other things, some sort of processing capability and associated algorithms to effect those particular functions. That the control panel is *programmable* to control any number or type of flight deck avionic displays and other aircraft systems—particular programming whose associated algorithms are likewise undisclosed—only bolsters this conclusion. *See* ’701 patent, col. 7, ll. 20–24.

As the Examiner indicates (Ans. 6–7), the ’701 patent does not disclose the corresponding structure of the recited controller, namely the control panel’s algorithm, with sufficient particularity to perform the recited functions. To be sure, this requisite algorithmic-based disclosure can be expressed in any understandable terms, such as a mathematical formula, in prose, or as a flowchart. *See Finisar*, 523 F.3d at 1341. But apart from

merely indicating what the control panel 130 *does*, the '701 patent does not explain *how* it does it, let alone describe the underlying algorithm to achieve that result. At best, the control panel's functionality is described at a high level of generality, with no details as to what the particular specialized functions associated with the knobs' and keys' textual labels in Figure 4 are, let alone how these unidentified functions are implemented.

This lack of corresponding structure is crucial here, for the inquiry is whether ordinarily skilled artisans would understand the *specification itself* to disclose a structure—not simply whether those artisans would be *capable* of implementing a structure as Appellant seems to suggest. *See Biomedino, LLC v. Waters Technologies Corp.*, 490 F.3d 946, 953 (Fed. Cir. 2007). “Accordingly, a bare statement that known techniques or methods can be used does not disclose structure. To conclude otherwise would vitiate the language of the statute requiring ‘corresponding structure, material, or acts described in the specification.’” *Id.*

Therefore, to the extent that Appellant contends that the '701 patent discloses sufficient corresponding structure in connection with the recited controller because it has “a reasonably well understood meaning in the art” (*see* Appeal Br. 8), we find such a contention unavailing. That Appellant acknowledges that the recited controllers refer specifically to *modified* conventional standby displays and configurable controllers (Appeal Br. 7–8) only further undercuts Appellant's argument in this regard. Our emphasis on Appellant's term “modified” underscores that even assuming, without deciding, that the recited controllers refer to conventional standby displays

and configurable controllers as Appellant contends, they are nonetheless *modified* and, therefore, differ from those ostensibly conventional elements.

To be sure, a patent's disclosure is written for a person of skill in the art, and such a person comes to the patent with the knowledge of what has come before. *LizardTech, Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005). Therefore, it is unnecessary to spell out every detail of the invention in the Specification; only enough must be included to convince a person of ordinary skill in the art that the inventor possessed the invention and to enable such a person to make and use the invention without undue experimentation. *Id.*

But that is not the case here. In short, there is insufficient structure disclosed in the '701 patent corresponding to the recited controllers that, as noted previously, are means-plus-function limitations. Therefore, claim 1 is indefinite.

Accordingly, we are not persuaded that the Examiner erred in rejecting claim 1, and claims 2–10 and 17–23 not argued separately with particularity.

THE WRITTEN DESCRIPTION REJECTION

For reasons similar to those indicated regarding the indefiniteness rejection, we are also unpersuaded of error in the Examiner's written description rejection of claims 1–10 and 17–23. We reach this conclusion even assuming, without deciding, that the corresponding structure associated with the recited controllers would have been obvious from Appellant's original disclosure, for it is well settled that a description that merely renders

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the invention obvious does not satisfy the written description requirement under § 112. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1352 (Fed. Cir. 2010) (*en banc*) (citations omitted).

Therefore, we are not persuaded that the Examiner's written description of claims 1–10 and 17–23 under § 112, first paragraph is erroneous.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/ Basis	Affirmed	Reversed
1–10, 17–23	112, second paragraph	Indefiniteness	1–10, 17–23	
1–10, 17–23	112, first paragraph	Written Description	1–10, 17–23	
Overall Outcome			1–10, 17–23	

TIME PERIOD FOR RESPONSE

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).

AFFIRMED