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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte EDWARD A. ENYEDY, LARRY BOEHNLEIN, and
CHRIS HAMILTON

Appeal 2014-005083
Application 11/456,904¹
Technology Center 3700

Before STEFAN STAICOVICI, WILLIAM A. CAPP, and
BRANDON J. WARNER, *Administrative Patent Judges*.

STAICOVICI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Edward A. Enyedy et al. (Appellants) appeal under 35 U.S.C. § 134(a) from the Examiner's final decision rejecting claims 1–18. We have jurisdiction over this appeal under 35 U.S.C. § 6(b).

SUMMARY OF DECISION

We REVERSE.

¹ According to Appellants, the real party in interest is Lincoln Global, Inc. Appeal Br. 3 (filed July 31, 2013).

INVENTION

Appellants' invention relates to a "coaxial welding cable" and a system for manufacturing such a cable. Spec. 1 ¶ 1.

Claims 1, 8, and 15 are independent. Claims 1 and 15 are illustrative of the claimed invention and read as follows:

1. A coaxial cable assembly, said cable assembly comprising:
 - a central electrical conductor core;
 - a first electrically insulating jacket surrounding said central electrical conductor core;
 - a plurality of peripheral electrical conductors surrounding said insulated central electrical conductor core, wherein said central electrical conductor core is electrically insulated from said plurality of peripheral electrical conductors only by said first electrically insulating jacket, and wherein a substantially uniform electrical resistance path is maintained through said coaxial cable assembly via conductive electrical materials and cross-sectional areas of said central electrical conductor core, and conductive electrical materials and the sum of cross-sectional areas of said plurality of peripheral electrical conductors; and
 - a second electrically insulating jacket surrounding said plurality of peripheral electrical conductors to contain said insulated central electrical conductor core and said plurality of peripheral electrical conductors.

15. A system for constructing a coaxial cable assembly, said system comprising:
 - a means for wrapping a plurality of electrically un-insulated peripheral electrical conductors around an electrically insulated central electrical conductor core, wherein a substantially uniform electrical resistance path is maintained through said coaxial cable assembly via conductive electrical materials and cross-sectional areas of said electrically insulated central electrical conductor core, and conductive electrical

materials and the sum of cross-sectional areas of said plurality of electrically un-insulated peripheral electrical conductors; and a means for applying an electrically insulating jacket around said plurality of electrically un-insulated peripheral electrical conductors to contain said electrically un-insulated peripheral electrical conductors and said electrically insulated central electrical conductor core.

REJECTIONS

The following rejections are before us for review:

- I. The Examiner rejected claims 1 and 3 under 35 U.S.C. § 102(b) as anticipated by Jansens (US 5,558,794, iss. Sept. 24, 1996).
- II. The Examiner rejected claims 2, 4, and 5 under 35 U.S.C. § 103(a) as being unpatentable over Jansens and Leathers (US 3,163,704, iss. Dec. 29, 1964).
- III. The Examiner rejected claims 6 and 7 under 35 U.S.C. § 103(a) as being unpatentable over Jansens, Leathers, and Ott (US 2006/0138113 A1, pub. June 29, 2006).
- IV. The Examiner rejected claims 8–12 under 35 U.S.C. § 103(a) as being unpatentable over Leathers, Jansens, McClure (US 3,815,054, iss. June 4, 1974), and Boyal (US 4,864,107, iss. Sept. 5, 1989).
- V. The Examiner rejected claims 13 and 14 under 35 U.S.C. § 103(a) as being unpatentable over Leathers, Jansens, McClure, Boyal, and Ott.
- VI. The Examiner rejected claims 15 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Leathers and Jansens.

- VII. The Examiner rejected claims 16 and 17 under 35 U.S.C. § 103(a) as being unpatentable over Leathers, Jansens, and Ott.

ANALYSIS

Rejection I

Independent claim 1 is drawn to a coaxial cable assembly “wherein a substantially uniform electrical resistance path is maintained through said coaxial cable assembly.” Appeal Br. 29 (Claims App.).

The Examiner finds that Jansens discloses a coaxial cable assembly 10 including a central electrical conductor core 12, a first insulating jacket 18 that surrounds core 12, a plurality of peripheral electrical conductors 22 that surround jacket 18, and a second insulating jacket 23. Final Act. 2–3 (citing Jansens, col. 4, ll. 1–20, col. 6, ll. 50–65, Fig. 1A) (transmitted Apr. 5, 2013). The Examiner takes the position that Jansens’s coaxial cable assembly 10 has “a substantially uniform electrical resistance path [that] is maintained through said coaxial cable assembly.” *Id.* at 2. According to the Examiner, “because all the electrical resistance has one path or one direction that direct the electrical resistance [throughout] the cable . . . Jansens’s coaxial cable has the *capabilities* of having uniform electrical resistance path that is maintained through said coaxial cable assembly.” Ans. 3 (emphasis added).

Although we appreciate that Jansens’s coaxial cable assembly 10 is capable of having a uniform electrical resistance throughout its length, nonetheless, the fact that a certain result or characteristic may occur or be present in Jansens is not sufficient to establish that Jansens’s coaxial cable

assembly 10 necessarily has a “substantially uniform electrical resistance path” throughout its length. *See In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (citations omitted). The Examiner fails to provide any persuasive evidence or reasoning that may be construed as support for the finding that Jansens’s coaxial cable assembly 10 actually has a uniform electrical resistance throughout its length. As correctly noted by Appellants, “an outgoing path of a cable could have a very different electrical resistance than a return path of the cable if care is not taken to design the cable with the goal of uniform resistance in mind.” Appeal Br. 13. For example, as Jansens’s cable is a continuous heating element with its core 12 at a higher temperature than its ground shield 22, the electrical resistance of Jansen’s core may be different from the electrical resistance of shield 22. *See Jansen*, col. 4, ll. 17–18.

The Examiner’s finding that Jansens’s coaxial cable assembly 10 is capable of having a uniform electrical resistance throughout its length does not go far enough to show that Jansens’s coaxial cable assembly 10 necessarily has a “substantially uniform electrical resistance path” throughout its length. For example, Appellants’ Specification states that a “uniform resistance path” is achieved when the cross-sectional area of the central electrical conductor core is the same as the sum of the cross-sectional areas of the plurality of peripheral electrical conductors. *See Spec.* 7 ¶ 33. In contrast, the cross-sectional area of Jansens’s core 12 (diameter of 0.3 mm results in a cross-sectional area of 0.070 mm²) is more than three times the cross-sectional area of the plurality of peripheral electrical conductors 22 (24 conductors, where each conductor has a diameter of 0.1

mm, results in a cross-sectional area of 0.188 mm²). *See* Jansens, col. 2, ll. 31–33 and 65–67, col. 3, l. 1.

As such, without sufficient evidence or reasoning to support the finding that Jansens’s coaxial cable assembly 10 necessarily has a substantial uniform electrical resistance throughout its length, Jansens does not anticipate claims 1 and 3. Therefore, we do not sustain the rejection under 35 U.S.C. § 102(b) of claims 1 and 3 as anticipated by Jansens.

Rejections II and III

The Examiner’s use of the disclosure of Leathers and Ott does not remedy the deficiency of Jansens as discussed *supra*. *See* Final Act. 4–6. Accordingly, for the same reasons as discussed above, we also do not sustain the rejections under 35 U.S.C. § 103(a) of claims 2, 4, and 5 as unpatentable over Jansens and Leathers, and of claims 6 and 7 as unpatentable over Jansens, Leathers, and Ott.

Rejections IV and V

The Examiner finds that Leathers discloses most of the limitations of independent claim 8, but fails to disclose “a substantially uniform electrical resistance path [that] is maintained through said coaxial cable assembly.” *See* Final Act. 6–7; *see also* Appeal Br. 30 (Claims App.). Nonetheless, the Examiner relies on Jansens to disclose the missing limitation. *See* Final Act. 7.

However, for the reasons set forth *supra*, the Examiner’s position that Jansens’s coaxial cable assembly 10 has a “substantially uniform electrical

resistance path” throughout its length is not supported by a preponderance of the evidence. *See id.* at 7–8. The Examiner’s use of the disclosures of McClure, Boyal, and Ott does not remedy the deficiency of Jansens as discussed above. *See id.* at 8–9. Therefore, the Examiner’s legal conclusion of obviousness is based on an erroneous finding that is unsupported by sufficient factual evidence, and thus, cannot stand. *See In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967).

Accordingly, for the foregoing reasons, we do not sustain the rejections under 35 U.S.C. § 103(a) of claims 8–12 as unpatentable over Leathers, Jansens, McClure, and Boyal, and of claims 13 and 14 as unpatentable over Leathers, Jansens, McClure, Boyal, and Ott

Rejections VI and VII

Independent claims 15 requires, *inter alia*, “a means for wrapping a plurality of electrically un-insulated peripheral electrical conductors around an electrically insulated central electrical conductor core” and “a means for applying an electrically insulating jacket around said plurality of electrically un-insulated peripheral electrical conductors.” Appeal Br. 31 (Claims App.).

The Examiner finds that Leathers discloses most of the limitations of independent claim 15, but fails to disclose “a substantially uniform electrical resistance path [that] is maintained through said coaxial cable assembly.” *See Final Act.* 10–11 (citing Leathers, col. 3, ll. 47–61, Fig. 7); *see also* Appeal Br. 31 (Claims App.). Nonetheless, the Examiner relies on Jansens to disclose the missing limitation. *See Final Act.* 11. The Examiner concludes that it would have been obvious for a person of ordinary skill in

the art “to modify Leathers with a uniform electrical resistance path as taught by Jansens in order to provide even coverage of the sheath by the strands (Jansens, col.2, lines 9-10).” *Id.*

As independent claim 15 does not set forth any structure for performing the recited functions, we interpret this limitation to use means-plus-function language as provided for in 35 U.S.C. § 112, sixth paragraph. *York Prods., Inc. v. Central Tractor*, 99 F.3d 1568, 1574 (Fed. Cir. 1996). “The construction of a means-plus-function limitation includes two steps. First, we determine the claimed function. Second, we identify the corresponding structure in the written description that performs that function.” *JVW Enters., Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1330 (Fed. Cir. 2005) (citations omitted). As such, in order to meet a means-plus-function limitation, a prior art reference must (1) perform the identical function recited in the means limitation and (2) perform that function using the structure disclosed in the specification or an equivalent structure. *Carroll Touch Inc. v. Electro Mechanical Sys. Inc.*, 15 F.3d 1573, 1578 (Fed. Cir. 1994) (citing *Valmont Indus. Inc. v. Reinke Mfg. Co.*, 983 F.2d 1039, 1042 (Fed. Cir. 1993)).

In this case, Leathers performs the functions recited in the means limitation. More specifically, Leathers discloses arranging insulating tubular member 2 over electrical conductor 1, circumferentially wrapping a plurality of electrical conductors 3 around the exterior of insulating tubular member 2, and applying an outer, insulating tube 48 over conductors 3. *See* Leathers, col. 3, ll. 47–61, col. 4, ll. 72–75. However, the Examiner fails to identify any portion of Leathers where the functions recited in the means limitations

are performed using the structure described in Appellants' Specification or an equivalent structure. *See* Final Act. 10–11. Appellants' Specification describes “a means for wrapping a plurality of electrically un-insulated peripheral conductor around an electrically insulated central conductor length” as “a robotic system 700” having clamps 710, 720, and 730. Spec. ¶ 52. The Specification further describes “a means for wrapping a plurality of electrically un-insulated peripheral conductor around an electrically insulated central electrical conductor length” as “a sliding clamp 740” that clamps an insulating jacket 230 and slides the jacket along the length of central conductor 210 and peripheral conductors 220. *Id.* ¶ 53.

As the Examiner does not identify any portion of Leathers that discloses performing the claimed functions using the structure disclosed in the Specification or an equivalent structure, we agree with Appellants that “Leathers does not teach or suggest a system for constructing a coaxial cable assembly,” as called for by claim 15. Appeal Br. 25 (emphasis omitted). The Examiner's use of the disclosures of Jansens and Ott does not remedy the deficiency of Leathers. *See* Final Act. 11–13.

Therefore, for the foregoing reasons, we do not sustain the rejections under 35 U.S.C. § 103(a) of claims 15 and 18 as unpatentable over Leathers and Jansens, and of claims 16 and 17 as unpatentable over Leathers, Jansens, and Ott.

SUMMARY

The Examiner's decision to reject claims 1–18 is reversed.

REVERSED