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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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Ex parte ATSUHIRO NISHIMURA, KENJI OSE, and TAKAMOTO ASAKAWA

_____

Appeal 2018-003875[1]
Application 14/720,116
Technology Center 3600

_____

Before STEFAN STAICOVICI, MICHELLE R. OSINSKI, and LEE L. STEPINA, *Administrative Patent Judges*.

STAICOVICI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant[2] appeals under 35 U.S.C. § 134(a) from the Examiner's decision in the Final Office Action (dated Apr. 6, 2017) rejecting claims 1–8 and 10–13.[3]

Appellant's representative presented oral argument on October 10, 2019. We have jurisdiction over this appeal under 35 U.S.C. § 6(b).

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[1] This appeal is related to Appeal No. 2015-003195, U.S. Application No. 13/474,025 (Decision mailed July 27, 2017, hereinafter "Decision").
[2] We use the word "Appellant" to refer to "applicant" as defined in 37 C.F.R. § 1.42. Shimano, Inc. is identified as the real party in interest in Appellant's Appeal Brief (filed Aug. 30, 2017). Appeal Br. 3.
[3] Claim 9 is canceled. *See* Appeal Br. 8.

SUMMARY OF DECISION

We AFFIRM.

INVENTION

Appellant's invention is directed to a "bicycle control cable." Spec. para. 1.

Claim 1, the sole independent claim, is representative of the claimed invention and reads as follows:

> 1. A bicycle control cable configured to be mounted to a bicycle comprising:
>
> a central wire including at least one metallic strand defining a radially outermost surface of the central wire; and
>
> at least one string made of resin spirally wound onto the radially outermost surface in a direction intersecting with a center longitudinal axis of the central wire, the at least one resin string having a spacing between adjacent windings of the at least one resin string with a pitch between the adjacent windings being less than or equal to 1 millimeter, the at least one resin string defining an outer sliding surface for reducing a sliding resistance of the central wire, grease being applied over the at least one resin string and the central wire, at least a portion of the grease being disposed in the spacing between adjacent windings,
>
> the central wire and the at least one resin string being configured and arranged to slidably move in an axial direction with respect to the center longitudinal axis of the central wire within an outer case, and
>
> the at least one resin string being thermally melted directly to the radially outermost surface of the central wire.

REJECTIONS

I. The Examiner rejects claims 1–3, 5, 7, 8, 10, 12, and 13 on the ground of nonstatutory double patenting as being

unpatentable over claims 6, 7, and 18 of U.S. Application No. 13/474,025[4] and Marr.[5]

II. The Examiner rejects claims 4 and 6 on the ground of nonstatutory double patenting as being unpatentable over claims 6 and 18 of U.S. Application No. 13/474,025, Marr, and Davidson.[6]

III. The Examiner rejects claim 11 on the ground of nonstatutory double patenting as being unpatentable over claim 6 of U.S. Application No. 13/474,025, Marr, and Ishikawa.[7]

IV. The Examiner rejects claims 1–8 and 10–13 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

V. The Examiner rejects claims 1–8 and 10–13 under 35 U.S.C. § 112, second paragraph, as being indefinite.

VI. The Examiner rejects claims 1, 2, 8, 10, 12, and 13 under 35 U.S.C. § 103(a) as being unpatentable over Dura[8] and Marr.

VII. The Examiner rejects claims 3–6 under 35 U.S.C. § 103(a) as being unpatentable over Dura, Marr, and Davidson.

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[4] U.S. Application No. 13/474,025 has issued as U.S. Patent No. 9,829,035 B2 on Nov. 28, 2017.
[5] Marr, US 3,135,131, issued June 2, 1964.
[6] Davidson et al., US 5,636,551, issued June 10, 1997.
[7] Ishikawa, US 5,288,270, issued Feb. 22, 1994.
[8] Dura, FR 1,245,753 A, published Nov. 10, 1960. Our understanding of this reference is based on an English language translation of record and all references to the text of this document are to portions of the translation.

VIII. The Examiner rejects claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Dura, Marr, and Sudo.[9]

IX. The Examiner rejects claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Dura, Marr, and Ishikawa.

X. The Examiner rejects claims 1–6, 8, 10, 12, and 13 under 35 U.S.C. § 103(a) as being unpatentable over Dura, Marr, and Davidson.

XI. The Examiner rejects claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Dura, Marr, Davidson, and Sudo.

XII. The Examiner rejects claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Dura, Marr, Davidson, and Ishikawa.

XIII. The Examiner rejects claims 1, 2, 8, 10, 12, and 13 under 35 U.S.C. § 103(a) as being unpatentable over Davidson and Marr.

XIV. The Examiner rejects claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Davidson, Marr, and Sudo.

XV. The Examiner rejects claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Davidson, Marr, and Ishikawa.

ANALYSIS

Rejections I–III

Appellant argues that the Examiner does not "adequately explain why a skilled artisan would have combined *Marr's* teachings regarding grease in a push-pull cable to the claimed bicycle control cable." Appeal Br. 8. Appellant further contends that "*Marr* fails to teach grease penetrating a helically wound resin string having the claimed pitch." *Id.*

[9] Sudo et al., US 2009/0260474 A1, published Oct. 22, 2009.

We are not persuaded by Appellant's arguments because the Examiner is correct that Appellant cannot show nonobviousness by attacking Marr individually when the rejection as articulated by the Examiner is based on a combination of claims 6, 7, and 18 of U.S. Application No. 13/474,025 and Marr. Ans. 5–6[10] (citing *In re Merck & Co. Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986); *In re Keller*, 642 F.2d 413, 425 (CCPA 1981)). Here, we agree with the Examiner's findings that claim 6 of U.S. Application No. 13/474,025 "discloses a helically wound resin string having the claimed pitch" and "Marr teaches grease penetrating [a] helically wound string." Ans. 6.[11] We, thus, agree with the Examiner's reasoning that it would have been obvious for a skilled artisan to provide grease, as taught by Marr, to the helically wound resin strand of the bicycle control cable of claim 6 of U.S. Application No. 13/474,025, "for the purpose of retaining a substantial amount of grease or other lubricant which may be necessary for operation, and preventing any loss of such lubricant from the cable." Final Act. 3–4.

We further agree with the Examiner that providing grease, as taught by Marr, to the helically wound resin strand of the bicycle control cable of claim 6 of U.S. Application No. 13/474,025 would also have been obvious to a skilled artisan because "it is already well known that grease, or other lubricant, decreases friction within a device and thus helps prevent/mitigate wear and . . . extends the useful life of a device." Ans. 6; *see also See In re Jacoby*, 309 F.2d 513, 516 (CCPA 1962) (An artisan must be presumed to know something about the art apart from what the references disclose.).

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[10] Examiner's Answer, dated Jan. 3, 2018.
[11] *Compare* claim 6 in the Claims Appendix of the Appeal Brief filed May 16, 2014 in U.S. Application No. 13/474,025, *with* claim 6 in U.S. Patent No. 9,829,035.

Lastly, we see no merit to Appellant's contention that Rejections I–III are improper due to a lack of a reasonable expectation of success based on claims 6, 7, and 18 of U.S. Application No. 13/474,025 failing to disclose providing grease between windings and Marr failing to disclose the pitch of the windings. *See* Reply Br. 3.[12] As discussed *supra*, such an argument amounts to an individual attack on each of claims 6, 7, and 18 of U.S. Application No. 13/474,025 and Marr, which for the reasons discussed above, is not persuasive.

In conclusion, for the foregoing reasons, we sustain Rejections I–III.

Rejection IV

The Examiner finds that the limitation "thermally melted" is not described in Appellant's Specification such that a person of ordinary skill in the art would "understand the specific structural features or cooperative relationships that are required by the limitation." Final Act. 8. The Examiner explains that the written description rejection is based on Appellant's arguments that assert the limitation "thermally melted" denotes a particular structure, which according to the Examiner, "is neither illustrated in the drawings nor described in the [S]pecification." Ans. 8–9.

"The test for the sufficiency of the written description 'is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.'" *Vasudevan Software, Inc. v. MicroStrategy, Inc.*, 782 F.3d 671, 682 (Fed. Cir. 2015) (quoting *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc)). In this case, we agree with

[12] Appellant's Reply Brief, filed Feb. 27, 2018.

Appellant that the disputed limitation is supported by the Specification's description of "'the radial protrusion 24 and the central wire 22" as "***attached to each other by <u>thermal melting</u>***.'" Appeal Br. 9 (citing Spec. para. 23). Accordingly, Appellant's Specification reasonably conveys to those skilled in the art that the inventor had possession of the claimed resin string (radial protrusion 24) being "thermally melted" onto central wire 22.

In conclusion, for the foregoing reasons, we do not sustain the rejection of claims 1–8 and 10–13 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

Rejection V

The Examiner further finds that the limitation "thermally melted" of claim 1 is indefinite because: (1) it "does not have written description support" and (2) it can be interpreted as both a product by process limitation and as a structural limitation. Final Act. 11. Thus, according to the Examiner, the metes and bounds of the claim cannot be determined. *Id.*

In a first instance, for the reasons discussed *supra* in Rejection IV, we do not agree with the Examiner's position that the limitation "thermally melted" is not supported by Appellant's original disclosure. Moreover, because the written description requirement found in the first paragraph of 35 U.S.C. § 112 is separate and distinct from the indefiniteness requirement found in the second paragraph of 35 U.S.C. § 112, the fact that a limitation is not supported by Appellant's original disclosure does not mean that the same limitation must also be indefinite.

In a second instance, we do not agree with the Examiner's position because a claim is indefinite when a person of ordinary skill in the art cannot translate the claim terms into meaningfully precise claim scope. *Haliburton*

Energy Services, Inc. v. M-I LLC, 514 F.3d 1244, 1251 (Fed. Cir. 2008). However, in this case, we agree with Appellant that in light of the Specification a skilled artisan would readily understand that "attaching materials by thermal . . . melting such that they are 'thermally melted' together means that the materials are *fixed* to each other, not merely detachably connected." Appeal Br. 9 (emphasis added). Such an interpretation is consistent with Appellant's Specification, which describes radial protrusion 24 and central wire 22 as being "attached to each other by *thermal melting*" such that "radial protrusion 24 *does not move* relative to the central wire 22." Spec. para. 23 (emphasis added); *see also In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997) (The correct inquiry in giving a claim term its broadest reasonable interpretation in light of the Specification is whether the interpretation corresponds with what and how the inventor describes his invention in the Specification, i.e., an interpretation that is "consistent with the specification."). Accordingly, Appellant is correct that the limitation "thermally melted" constitutes "a structural limitation" that describes the connection between the claimed resin string and central wire as being "attached/fixed." Reply Br. 4.

Furthermore, we appreciate the Examiner's concern that neither the Specification nor the Drawings "describe[s] any specific distinctive features that are unique to thermal melting" in order to create a fixed connection. *See* Ans. 10. For example, the Examiner notes the lack of description in the Specification of various parameters (variables) that form a fixed connection between the claimed resin string and central wire by thermal melting (i.e., heating time, temperature, and force applied to the resin string, adhesion force, molten resin amount, and whether partial or complete melting of the resin string occurs). *Id.* 14–16. However, by not specifying the exact

mechanism and parameters by which a "thermally melted," that is, a fixed, connection is created between the claimed resin string and central wire, the claim is merely broad, not ambiguous. *See In re Johnson*, 558 F.2d 1008, 1016 n.17 (CCPA 1977) (breadth is not indefiniteness). That is to say, it is clear that the claim requires a "thermally melted," i.e., fixed, connection; no further detail is necessary to know the metes and bounds of the claim.

Finally, in a third instance, we are not persuaded by the Examiner's enablement position because no such rejection is before us. *See* Ans. 13–14, 16–17. Accordingly, for the foregoing reasons, the limitation "thermally melted" of independent claim 1 is not indefinite.

With respect to claim 8, the Examiner finds that "the limitation 'a diameter of each of the plurality of metallic strands'" is indefinite because it is not clear whether it "refer[s] to a single diameter for the totality of metallic strands" or "to a plurality of diameters comprising a respective diameter for each of the plurality of metallic strands." Final Act. 11–12. We do not agree with the Examiner's position because, like Appellant, we determine that the use of the term "each" in the phrase "a diameter of each of the plurality of metallic strands" limits claim 8 to "a respective diameter for each of the [metallic] strands." Appeal Br. 10 (emphasis omitted).

In conclusion, for the foregoing reasons, we do not sustain the rejection of claims 1–8 and 10–13 under 35 U.S.C. § 112, second paragraph, as being indefinite.

Rejection VI

The Examiner construes the limitation "thermally melted" as a product by process limitation and finds that Dura's resin string 3 is "thermally melted" to the radially outermost surface of central wire 2

because they are "joined." Final Act. 12–13. In other words, the Examiner's position is that because the patentability of a product does not depend on its method of production, as long as Dura's resin string 3 is "joined" to central wire 2, it is not relevant whether "joining" is achieved by winding, as taught by Dura, or by "thermal melting," as required by independent claim 1.

We are not persuaded by the Examiner's position because we agree with Appellant that the limitation "thermally melted" does not constitute a mere product by process limitation, but rather "a structural limitation." *See* Reply Br. 4. Appellant is correct that "'thermally melted' requires materials to be attached or fixed together using heat and . . . the claimed resin string must be attached or fixed to the central wire such that it does not move relative to the central wire." Appeal Br. 11 (emphasis omitted).

In contrast, although Dura's resin string 3 is joined to central wire 2 by winding, Dura does not disclose that the winding is such that resin string 3 does not move relative to central wire 2. *See* Dura, Figure. At most, Dura discloses that cable 2, 3 moves within tube 1 with "negligible friction," but does not disclose that thread 3 does not move relative to strand 2. *See* Dura, p. 1, l. 26, Figure. The Examiner's finding that thread 3 does not move relative to strand 2 just because cable 2, 3 moves relative to tube 1 requires speculation on the Examiner's part. *See* Ans. 19.

Accordingly, for the foregoing reasons, we agree with Appellant that Dura fails to disclose a "thermally melted," that is, a fixed connection between resin string 3 and central wire 2, such that resin string 3 does not move relative to central wire 2. As the Examiner does not use the disclosure of Marr to remedy the deficiency of Dura (*see* Final Act. 13–14) discussed

supra, we do not sustain the rejection under 35 U.S.C. § 103(a) of claims 1, 2, 8, 10, 12, and 13 as unpatentable over Dura and Marr.

Rejections VII–IX

The Examiner's use of the Davidson, Sudo, and Ishikawa disclosures does not remedy the deficiency of the Dura and Marr combination discussed above in Rejection VI. *See* Final Act. 15–17.

Therefore, for the same reasons, we also do not sustain the rejections under 35 U.S.C. § 103(a) of claims 3–6 as unpatentable over Dura, Marr, and Davidson; of claim 7 as unpatentable over Dura, Marr, and Sudo; and of claim 11 as unpatentable over Dura, Marr, and Ishikawa.

Rejection X

Claims 1–6, 10, 12, and 13

Appellant has not presented arguments for the patentability of claims 2–6, 10, 12, and 13 apart from claim 1. *See* Appeal Br. 11–13. Therefore, in accordance with 37 C.F.R. § 41.37(c)(1)(iv), we select claim 1 as the representative claim to decide the appeal of the rejection of these claims, with claims 2–6, 10, 12, and 13 standing or falling with claim 1.

The Examiner construes the limitation "thermally melted" as a structural limitation and finds that the combined teachings of Dura and Marr disclose most of the limitations of independent claim 1, but do not disclose that resin string 3 is "thermally melted directly" to central wire 2. *See* Final Act. 17–19. Nonetheless, the Examiner finds that Davidson discloses a resin tape 17, 51 "thermally fused directly to the radially outermost surface of a [steel] central wire [11]." *Id.* at 19. According to the Examiner, "adhesive layer [13] . . . may be interpreted as part of the outermost surface of [steel]

central wire [11] and thus [resin tape] 17 directly contacts central wire [11]." *Id.* (citing Davidson, col. 3, ll. 35–44). In the alternative, the Examiner finds that Davidson discloses omitting the adhesive in a second embodiment "for the purpose of providing good adhesion of the tape [17] to the central wire [11]." *Id.* (citing Davidson, col. 3, ll. 35–58). Thus, the Examiner concludes that it would have been obvious to a skilled artisan to thermally fuse directly, as taught by Davidson, resin string 3 to the radially outermost surface of central wire 2 of Dura, as modified by Marr, "for the purpose of providing good adhesion of the at least one resin string to the central wire." *Id.* at 19–20.

Appellant argues that Davidson's resin tape 17 is not "thermally melted directly" to the radially outermost surface of either central wire 11 or central wire 11 and adhesive layer 13 because Davidson specifically discloses melting only intermediate adhesive layer 13 and not resin tape 17. Appeal Br. 12 (citing Decision 3); *see also* Davidson, col. 3, ll. 36–45. In regards to the second embodiment of Davidson, Appellant contends resin tape 17 is merely heat shrunk over central wire 11, and, thus, is not actually melted as well. Appeal Br. 12 (citing Decision 3); *see also* Davidson, col. 3, ll. 46–53. Hence, according to Appellant, Davidson fails to disclose "a resin string thermally melted directly to an outermost surface of a wire as required by independent [c]laim l." Appeal Br. 12 (emphasis omitted); *see also* Reply Br. 6 ("Nowhere does *Davidson* teach or even suggest melting a spirally wound resin string with spacings between the windings of the string directly to the outer surface of a wire such that the string does not move relative to the wire.").

We are not persuaded by Appellant's argument because Appellant cannot show nonobviousness by attacking Davidson individually when the

rejection as articulated by the Examiner is based on a combination of Dura, Marr, and Davidson. Here, the Examiner employs Davidson to show that it is known in the art to thermally melt a resin layer, i.e., resin tape 13 (*see* Davidson, col. 3, ll. 16–18), directly to the outermost surface of central steel wire 11. *See* Ans. 20 (citing Davidson, col. 3, ll. 35–37). The Examiner is correct that Appellant has not persuasively explained why Davidson's disclosure of thermally melting resin tape 13 directly to the outermost surface of central steel wire 11 "is not applicable to the resin string [3]" and central wire 2 of Dura, as modified by Marr. *See id*. The Examiner's modification is an *improvement* to the control cable of Dura, as modified by Marr, wherein resin string 3 is "thermally melted directly" to the radially outermost surface of metallic central wire 2, as taught by Davidson, to lead to a predictable result "of providing good adhesion of the tape to the central wire." *See* Final Act. 19; *see also KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) (An improvement that is nothing more than the predictable use of prior art elements according to their established functions is likely to be obvious.). Appellant has not persuasively argued the Examiner's findings or reasoning to combine the teachings of Dura, Marr, and Davidson.

Lastly, Appellant argues that a skilled artisan "would have no reasonable expectation of success in thermally melting a resin string with spacings therebetween to a central wire in the proposed combinations of *Dura* and/or *Davidson* and *Marr*." Appeal Br. 13. Appellant explains that because "*Marr* is entirely directed to a <u>flexible</u> cable in which the spacings between adjacent windings of steel wire 29 <u>can move apart and together</u> to allow for flexibility when the cable 11 is bent," Marr teaches away "from the claimed thermally melted limitation." Reply Br. 7; *see also* Appeal Br. 13.

We are not persuaded because Appellant's arguments are not commensurate with the Examiner's rejection. The Examiner is not proposing thermally melting Marr's wire 29, but is merely using Marr's teachings of the winding pitch and the application of grease between windings of wire 29. *See* Ans. 21. Furthermore, Appellant's arguments regarding the flexibility of Marr's cable are unpersuasive because obviousness does not require that all of the features of the secondary reference be bodily incorporated into the primary reference. *Keller*, 642 F.2d at 425.

In conclusion, for the foregoing reasons, we sustain the rejection of claim 1 under 35 U.S.C. § 103(a) as unpatentable over Dura, Marr, and Davidson. Claims 2–6, 10, 12, and 13 fall with claim 1.

Claim 8

Appellant argues that the combined teachings of Dura, Marr, and Davidson fail to disclose that the diameter of resin string 3 is smaller than each diameter of the plurality of strands forming central wire 2. Appeal Br. 13–14. According to Appellant, the diameter of Marr's wound wire 29 is "'somewhat larger' than that of wire 28 on which it is formed;" Dura fails to disclose that the diameter of resin string 3 is smaller than the diameter of each of the plurality of strands forming central wire 2; and Davidson's tape does not constitute a string having a diameter. *Id.* at 14 (emphasis omitted).

In response, the Examiner notes that the thickness of Davidson's tape 13, 17 is smaller than each diameter of strands 11, and a "skilled artisan recognizes that a diameter is itself a thickness." Ans. 22. Thus, according to the Examiner, the resulting diameter of Dura's resin string 3, as modified by Marr and Davidson, is "less than the respective local diameter of each

metallic strand" of central wire 2. *Id.*; *see also* Final Act. 21–22 (citing *Gardner v. TEC Systems, Inc.,* 725 F.2d 1338, 1346, (Fed. Cir. 1984), cert. denied, 469 U.S. 830 (1984)).

We do not agree with the Examiner's position because Appellant is correct "that a tape is distinguishable from a . . . string." Reply Br. 7 (citing Davidson, col. 4, ll. 53–64). Just because the thickness of Davidson's tape 13, 17 is smaller than the diameter of each of metal strands 11 does not mean that the diameter of resin string 3 is smaller than the diameter of each of the plurality of strands forming central wire 2 in the control cable of Dura, as modified by Marr and Davidson. We do not agree with the Examiner's proposition that the diameter of a string is the same as the thickness of a tape. For example, in a cross-sectional plane of a string, the diameter of the string is the same in any direction, whereas in a cross-sectional plane of a tape, the thickness of the tape is not the same in any direction. Furthermore, the Examiner's reliance on *Gardner* is misplaced because this case does not involve a mere difference in size, but rather a relationship between sizes, that is, a relationship between the diameters of the claimed resin string and the central wire.

Hence, for the foregoing reasons, the Examiner's legal conclusion of obviousness is not supported by sufficient factual evidence, and thus, cannot stand. *See In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967) (holding that "[t]he legal conclusion of obviousness must be supported by facts. Where the legal conclusion is not supported by facts it cannot stand."). Therefore, we do not sustain the rejection of claim 8 under 35 U.S.C. § 103(a) as unpatentable over Dura, Marr, and Davidson.

Rejections XI and XII

Appellant does not separately argue Rejections XI and XII. *See* Appeal Br. 11–14. Therefore, for the same reasons discussed in Rejection X, we also sustain the rejections under 35 U.S.C. § 103(a) of claim 7 as unpatentable over Dura, Marr, Davidson, and Sudo and of claim 11 as unpatentable over Dura, Marr, Davidson, and Ishikawa.

Rejection XIII

The Examiner finds that Davidson discloses most of the limitations of independent claim 1 including, *inter alia*, "at least one resin string [17 and/or 51] being thermally melted directly to the radially outermost surface of the central wire [11 or 11, 13]." Final Act. 24–25. According to the Examiner, "adhesive layer [13] . . . may be interpreted as part of [the] outermost surface of [steel] central wire [11] and thus [resin tape] 17 directly contacts central wire [11]." *Id.* at 25 (citing Davidson, col. 3, ll. 35–44). In the alternative, the Examiner finds that Davidson discloses omitting the adhesive in a second embodiment. *Id.* (citing Davidson, col. 3, ll. 46–58).

We agree with Appellant that Davidson fails to disclose "the at least one resin string being thermally melted directly to the radially outermost surface of the control wire," as called for by claim 1. Appeal Br. 12. Appellant is correct that Davidson's resin tape 17 is not "thermally melted directly" to the radially outermost surface of either central wire 11 or central wire 11 and adhesive layer 13 because Davidson specifically discloses that adhesive layer 13 melts, rather than resin tape 17. *Id.* (citing Decision 3); *see also* Davidson, col. 3, ll. 36–45. In other words, in Davidson, resin tape 17, which the Examiner finds to be the claimed "at least one resin string," does not actually melt. Likewise, Davidson's PTFE tape 51 does not melt,

but rather holds together multiple strands 11. *See* Davidson, col. 4, ll. 40–42, 53–58, 61 through col. 5, l. 2, Fig. 2A.

Similarly, in regards to the second embodiment of Davidson, Appellant is correct that resin tape 17 does not actually melt, but rather is heat shrunk over central wire 11. Appeal Br. 12 (citing Decision 3); *see also* Davidson, col. 3, ll. 46–53.

In conclusion, for the foregoing reasons, Davidson fails to disclose "at least one resin string being thermally melted directly to the radially outermost surface of the central wire," as recited by independent claim 1. Therefore, because the Examiner does not use the disclosure of Marr to remedy the deficiency of Davidson (*see* Final Act. 25–26) discussed *supra*, we do not sustain the rejection under 35 U.S.C. § 103(a) of claims 1, 2, 8, 10, 12, and 13 as unpatentable over Davidson and Marr.

Rejections XIV and XV

The Examiner's use of the Sudo and Ishikawa disclosures does not remedy the deficiency of the Davidson and Marr combination discussed above in Rejection XIII. *See* Final Act. 28–29.

Therefore, for the same reasons, we also do not sustain the rejections under 35 U.S.C. § 103(a) of claim 7 as unpatentable over Davidson, Marr, and Sudo and of claim 11 as unpatentable over Davidson, Marr, and Ishikawa.

CONCLUSION

Claim(s) rejected	**35 U.S.C. §**	**Reference(s)/Basis**	**Affirmed**	**Reversed**
1–3, 5, 7, 8, 10, 12, 13		Obviousness-type Double Patenting	1–3, 5, 7, 8, 10, 12, 13	
4, 6		Obviousness-type Double Patenting	4, 6	
11		Obviousness-type Double Patenting	11	
1–8, 10–13	112, first paragraph	Written description		1–8, 10–13
1–8, 10–13	112, second paragraph	Indefiniteness		1–8, 10–13
1, 2, 8, 10, 12, 13	103(a)	Dura, Marr		1, 2, 8, 10, 12, 13
3–6	103(a)	Dura, Marr, Davidson		3–6
7	103(a)	Dura, Marr, Sudo		7
11	103(a)	Dura, Marr, Ishikawa		11
1–6, 8, 10, 12, 13	103(a)	Dura, Marr, Davidson	1–6, 10, 12, 13	8
7	103(a)	Dura, Marr, Davidson, Sudo	7	
11	103(a)	Dura, Marr, Davidson, Ishikawa	11	
1, 2, 8, 10, 12, 13	103(a)	Davidson, Marr		1, 2, 8, 10, 12, 13
7	103(a)	Davidson, Marr, Sudo		7
11	103(a)	Davidson, Marr, Ishikawa		11
Overall outcome			1–8, 10–13	

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