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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/789,841	05/28/2010	Richard M. Kleber	P001752-R&D-MJL	9380
104102	7590	10/28/2016	EXAMINER	
BrooksGroup 48685 Hayes Shelby Township, MI 48315			BOWES, STEPHEN M	
			ART UNIT	PAPER NUMBER
			3657	
			MAIL DATE	DELIVERY MODE
			10/28/2016	PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RICHARD M. KLEBER and MICHAEL D. HANNA

Appeal 2014-009958
Application 12/789,841¹
Technology Center 3600

Before PHILIP J. HOFFMANN, CYNTHIA L. MURPHY, and
KENNETH G. SCHOPFER, *Administrative Patent Judges*.

SCHOPFER, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the rejection of claims 1, 3–8, 10–12, and 17–21. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

BACKGROUND

According to Appellants, “[t]he field to which the disclosure generally relates includes ways to join components of different materials, and ways to join components that are cast-in-place.” Spec. ¶ 1.

¹ According to Appellants, the real party in interest is General Motors LLC. Appeal Br. 5.

CLAIMS

Claims 1, 3–8, 10–12, and 17–21 are on appeal. Claim 1 is illustrative of the appealed claims and recites:

1. A product comprising:

a first component comprising a first metal material and having a flange extending away from a body of the first component, the flange having a groove located on an upper surface and a lower surface of the flange wherein the flange has a plurality of alternating projections and recesses extending therearound, and wherein the grooves are located in each of the projections; and

a second component comprising a second metal material different than the first metal material, the second component having a portion located over at least part of the flange and over the grooves to form a radially, axially, and rotationally locking interconnection between the first and second components, and wherein one of the first component or the second component is cast-in-place.

Appeal Br. 35.

REJECTIONS

1. The Examiner rejects claims 1, 3, 4, 6, and 7 under 35 U.S.C. § 103(a) as unpatentable over Hanna '667² in view of Boykin.³
2. The Examiner rejects claims 5, 8, 10–12, 17, 18, 20, and 21⁴ under 35 U.S.C. § 103(a) as unpatentable over Hanna '667 in view of Boykin and Hanna '598.⁵

² Hanna et al., US 2007/0119667 A1, pub. May 31, 2007.

³ Boykin, Jr., US 1,674,851, issued June 26, 1928.

3. The Examiner rejects claim 19 under 35 U.S.C. § 103(a) as unpatentable over Hanna '667 in view of Boykin and Miskinis.⁶
4. The Examiner rejects claims 1 and 3–5 under 35 U.S.C. § 102(b) as anticipated by Boykin.

DISCUSSION

Obviousness

Rejection 1

Claim 1

With respect to claim 1, the Examiner finds that Hanna '667 discloses a product as claimed except that “Hanna ['667] does not disclose the flange having a groove located on an upper surface and a lower surface of the flange, and wherein the grooves are located in each of the projections, and wherein one of the first component or the second component is cast-in-place.” Final Act. 5. Regarding these limitations, the Examiner relies on Boykin and concludes

it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the rotor of Hanna ['667] by forming the rotor flange with grooves and casting one of the components in place as taught by Boykin, Jr in order to increase the strength of the hub-rotor connection.

Id.

⁴ The heading for this rejection lists claims 5 and 8–12. Final Act. 7. However, the body of the rejection and Appellants' acknowledgement of such make clear that the rejection relates to claims 5, 8, 10–12, 17, 18, 20, and 21. *See id.* at 7–11; Appeal Br. 7.

⁵ Hanna et al., US 2009/0035598 A1, pub. Feb. 5, 2009.

⁶ Miskinis et al., US 2007/0235270 A1, pub. Oct. 11, 2007.

We agree with and adopt the Examiner's findings and conclusions regarding the scope and content of the prior art with respect to claim 1. For the reasons set forth below, we are not persuaded of error by Appellants' arguments.

Appellants argue that the Examiner erred in finding that Boykin discloses “a brake drum, the flange having a groove (10, Fig 2) located on an upper surface (10) and a lower surface of the flange (10), and wherein the grooves are located in each of the projections (Fig. 2).’ (Office Action dated 12/2/13, page 5).” Appeal Br. 16. However, Appellants' specific assertions in support of this argument focus on the Examiner's findings with respect to the anticipation rejection, i.e., Appellants assert that Boykin does not include a flange with alternating projections and recesses. Specifically, Appellants assert:

The Examiner refers to the projecting lugs 17 in Boykin, Jr. to show the alternating projections and recesses. (Office Action dated, 12/2/13, page 2)(SF14). The projecting lugs 17 are a separate flange than the tenons 10 (SF15). Even if the lugs 17 and the tenons 10 are considered the same flange, which the Appellants deny, Boykin, Jr. does not teach, suggest, or disclose the projecting lugs 17 including any grooves (SF16). Therefore, Boykin, Jr. does not teach, suggest, or disclose ‘a first component . . . having a flange extending away from a body of the first component, the flange having a groove located on an upper surface and a lower surface of the flange wherein the flange has a plurality of alternating projections and recesses extending therearound, and wherein the grooves are located in each of the projections,’ as recited, *inter alia*, in independent claim 1 (SF27).

Id. at 17.

Regardless of whether the Examiner's finding that Boykin includes a flange with grooves, projections, and recesses is in error with respect to the

anticipation rejection, the obviousness rejections do not specifically rely on Boykin disclosing flange projections and recesses. *See* Final Act. 5. Rather, the obviousness rejections rely only on Boykin’s disclosure of a flange with grooves that extend through a projection, regardless of whether the lugs 17 may be considered part of the flange. Boykin discloses drum 9 with two flange projections including “grooves 8, shown in Fig. 2, extending circumferentially around the drum,” which are used to “firmly anchor the rim on the spokes.” Boykin, ll. 53–63. Further, Boykin does disclose alternating projections (lugs 17) and spaces around the circumference of rim 9. *Id.* at Fig. 1. Based on these disclosures, we find that Boykin at least suggest that the grooves extend through the projections, as the Examiner finds in support of this rejection. Further, we find that Appellants’ argument is an argument against Boykin individually and does not address the combination before us, which relies on Hanna ’667 as disclosing a flange with alternating projections and recesses. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *See In re Keller*, 642 F.2d 413, 426 (CCPA 1981); *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

For these reasons, we sustain the rejection of claim 1. We also sustain the rejection of claims 6 and 7, which depend from claim 1 and for which Appellants do not raise separate arguments. *See* Appeal Br. 17–18.

Claim 3

Appellants raise a separate argument regarding claim 3, which requires that each groove traverse the longitudinal direction of the projection continuously from one edge to the other. *See* Appeal Br. 18–19. The Examiner finds that Boykin “discloses wherein each groove traverses the

longitudinal direction of the projection and extends continuously from a first side edge” to a second edge. Final Act. 6. Appellants argue that Boykin “does not teach that the tenons [] include alternating projections and recesses[;]” that lugs 17, relied upon in the anticipation rejection as the claimed projections and recesses, are not part of the flange; and that the lugs do not include any grooves. Appeal Br. 18.

We are not persuaded of error. As noted above, Boykin discloses that the grooves extend circumferentially around the drum. Boykin, ll. 53–54. Thus, the grooves would appear to necessarily extend from one edge of lug/projection 17 to the other, regardless of whether the lug is considered part of the flange. Accordingly, Appellants have not pointed with particularity to any specific error in the Examiner’s findings and conclusions with respect to this claim, and thus, we sustain the rejection of claim 3.

Claim 4

For substantially the same reasons as discussed above with respect to claim 3, Appellants argue that Boykin does not teach or suggest grooves that “traverse the longitudinal direction of the flange” as required by claim 4. We are not persuaded of error here for the same reasons discussed above with respect to claim 3, and thus, we sustain the rejection of claim 4.

Rejection 2

Claims 5, 17, 18, 20, and 21

With respect to claims 5, 17, 18, 20, and 21, Appellants argue only that these claims “are in condition for allowance based on at least their dependency on independent claim 1.” Appeal Br. 20. Having found no error in the rejection of claim 1, as discussed above, we are not persuaded of

error in the rejection of these claims for the same reasons. Thus, we sustain the rejection of claims 5, 17, 18, 20, and 21.

Claims 8 and 12

With respect to claim 8, the Examiner relies on the combination of Hanna '667 and Boykin substantially as discussed above with respect to claim 1, and further relies on Hanna '598 only for the requirement that the claimed second annular flange is cast-in-place over the first flange. Final Act. 8–9. The Examiner concludes “it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the rotor of Hanna ['667] by casting the hub in place as taught by Hanna ['598] in order to provide a strong bond.” *Id.* at 9.

We agree with and adopt the Examiner’s findings and conclusions regarding the scope and content of the prior art with respect to claim 8. For the reasons set forth below, we are not persuaded of error by Appellants’ arguments.

First, Appellants rely on substantially the same arguments presented above with respect to claim 1, which we also find unpersuasive here. Appeal Br. 21–22. Further, with respect to Hanna '598, Appellants argue only that Hanna '598 “does not overcome the deficiencies of Hanna ['667] and Boykin.” *Id.* at 22–23. Having found no deficiencies in the combination of Hanna '667 and Boykin, we are not persuaded of error by this argument. Accordingly, we sustain the rejection of claim 8. We also sustain the rejection of claim 12, for which Appellants do not provide separate arguments. *See* Appeal Br. 23.

Claim 10

Claim 10 depends from claim 8 and further requires

wherein each projection extends radially from a proximal end at the body to a distal end at a free end of the projection, and each groove traverses the radial direction of the projection and extends continuously from a first side edge of the projection to a second side edge of the projection.

Appeal Br. 37. With respect to this claim, the Examiner finds:

Hanna ['667] further discloses wherein each projection extends radially from a proximal end at the body to a distal end at a free end of the projection (24). Boykin, Jr. further discloses wherein each groove traverses the radial direction of the projection and extends continuously from a first side edge of the projection to a second side edge of the projection (Fig. 2).

Final Act. 9.

Appellants rely on arguments substantially similar to those presented with respect to claim 3. Appeal Br. 24. We are not persuaded of error by these arguments for the same reasons discussed above. Accordingly, we sustain the rejection of claim 10.

Claim 11

With respect to claim 11, the Examiner finds:

Hanna et al[.] ('667), Boykin, Jr[.] and Hanna et al[.] ('598) disclose a product as set forth in claim 8. Boykin, Jr[.] further discloses wherein the groove includes a first groove (Fig. 2) located in the upper surface of the first annular flange and includes a second groove [(Fig. 2)] located in the lower surface of the first annular flange, wherein the first and second grooves generally extend at least part way around the circumference of the first annular flange. Hanna et al[.] ('598) further discloses wherein the second annular flange is cast-in-place over ([0035]) and into the first and second grooves to form the interconnection between the cheek and the hub.

Final Act. 10. Appellants' arguments with respect to this claim are substantially the same as those presented with respect to claim 10, discussed

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above. We are unpersuaded by those arguments here for the same reasons, and we also note that those arguments are not germane to the Examiner's specific findings with respect to claim 11. Accordingly, we sustain the rejection of claim 11.

CONCLUSION

For the reasons set forth above, we AFFIRM the rejections of claims 1, 3–8, 10–12, and 17–21 as obvious. We do not reach the rejection of claims 1 and 3–5 as anticipated.

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