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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/513,309	10/14/2014	Nicholas R. Voelz	043020-9179-US01	9411
23409	7590	03/17/2020	EXAMINER	
MICHAEL BEST & FRIEDRICH LLP (Mke) 100 E WISCONSIN AVENUE SUITE 3300 MILWAUKEE, WI 53202			AHMAD, CHARISSA L	
			ART UNIT	PAPER NUMBER
			3638	
			NOTIFICATION DATE	DELIVERY MODE
			03/17/2020	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte NICHOLAS R. VOELZ and RICHARD NICOSON

Appeal 2019-002361
Application 14/513,309
Technology Center 3600

Before MICHAEL C. ASTORINO, KENNETH G. SCHOPFER, and
ROBERT J. SILVERMN *Administrative Patent Judges*.

SCHOPFER, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–5 and 7–26. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM IN PART.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real parties in interest as Joy Global Surface Mining Inc. and Harnischfeger Technologies, Inc. Appeal Br. 2.

BACKGROUND

The Specification discloses that “[t]he present invention relates to the field of mining machines. Specifically, the present invention relates to a liner system for a dipper.” Spec. ¶ 2.

CLAIMS

Claims 1, 15, and 21 are the independent claims on appeal. Claim 1 is illustrative of the appealed claims and recites:

1. A liner system comprising:

a first guide member and a second, separate guide member both sized and shaped to be coupled individually and separately to a surface of a mining machine, wherein the first and second guide members and the surface of the mining machine are configured to define a single channel extending along the mining machine between the first guide member and the second guide member, and wherein the liner system further includes an insert configured to be disposed at least partially within the channel that is inhibited from moving away from the surface of the mining machine by a portion of the first guide member,

wherein the insert has a first surface, a second surface disposed opposite the first surface, a third surface extending between the first and second surfaces, and a fourth surface extending between the first and second surfaces, wherein the first surface has a width that is smaller than a width of the second surface, and also smaller than a width of the channel, and wherein a height between the first surface and the second surface is greater than heights of both the first and second guide members.

Appeal Br. 18.

REJECTIONS²

1. The Examiner rejects claims 1–5, 7–14, and 21–23 under 35 U.S.C. § 103 as unpatentable over Valeri³ in view of Ben-Ezri.⁴
2. The Examiner rejects claims 15–20 and 24–26 under 35 U.S.C. § 103 as unpatentable over Valeri in view of Ben-Ezri and Kostecki.⁵

DISCUSSION

Claims 1, 2, 4, 6–10, 12–14, and 24

With respect to claim 1, the Examiner finds that Valeri discloses a liner system including first and second guide members 30, as claimed, and an insert 50 as claimed, except that Valeri's insert does not include a second surface that has a larger width than the first surface or that the height between the first and second surfaces is greater than the height of the guide members. Non-Final Act. 3 (citing Valeri Figs. 1, 3). Regarding these dimensions, the Examiner relies on Ben-Ezri. *Id.* at 3–4. In particular, the Examiner finds that Ben-Ezri discloses a liner system with guide members and an insert sized as claimed, i.e., Ben-Ezri discloses that insert 120 may have a trapezoidal shape such that the first surface is shorter than the second surface and the insert may have a height greater than the height of the guide members. *Id.* (citing Ben-Ezri Figs. 1D, 4B; col. 6, ll. 19–24). The Examiner also finds that Ben-Ezri discloses that the inserts may be formed of different materials and may be inserted into the guide members by

² The Examiner has withdrawn the rejection of claim 3 under 35 U.S.C. § 112(b). Ans. 3.

³ Valeri, US 4,029,354, iss. June 14, 1977.

⁴ Ben-Ezri, US 9,464,445 B2, iss. Oct. 11, 2016.

⁵ Kostecki, US 2005/0126056 A1, pub. June 16, 2005.

pressing. *Id.* at 10 (citing Ben-Ezri col. 2, ll. 61–64; col. 3, ll. 17–21). The Examiner concludes that it would have been obvious to modify Valeri to include an insert with the claimed dimensions, as taught by Ben-Ezri, in order to “restrain the insert removably within the channel” and to ensure that “the inserts would be in greater contact with the machine’s load than the guide members due to their greater height.” *Id.* at 4. The Examiner further finds that providing trapezoidal shaped inserts in Valeri would provide more surface area contact between the channels and the insert, which would provide a snugger fit. Ans. 4.

As discussed below, we are not persuaded of any error in the Examiner’s findings and conclusions regarding the rejection of claim 1.

Appellant first indicates that Ben-Ezri is not analogous art because “Ben-Ezri is directed to composite materials for decking, kitchens, floors, etc., not to a liner system for a mining truck.” Appeal Br. 10. Based on this assertion, Appellant argues that “one of skill in the art would not have motivation to look to [] Ben-Ezri to modify a mining truck,” and thus, “[r]elying on Ben-Ezri in this context amounts to hindsight reasoning.” *Id.* We disagree with Appellant’s premise that Ben-Ezri is not analogous.

Art is considered analogous to a claimed invention if it is either from the same field of endeavor as the claimed invention or if it is reasonably pertinent to the particular problem with which the inventor is involved. *In re Klein*, 647 F.3d 1343 (Fed. Cir. 2011). We determine that Ben-Ezri is analogous art because it is at least reasonably pertinent to the particular problems faced by the present inventor. The Specification discloses that industrial mining machines are used to execute digging operations to remove material from a bank of a mine and that “[o]n a conventional rope shovel, a

dipper is attached to a handle.” Spec. ¶ 3. During operation the dipper is lifted “upward through the bank and liberat[es] the material to be dug,” and “[t]his movement of the dipper through the material generates wear on one or more surfaces of the dipper.” *Id.* The Specification disclose a liner system that “protects the dipper from wear and damage as the dipper [] is swung through a bank of material to pick up material, and as abrasive elements . . . in the material scrape against the dipper.” *Id.* at ¶ 17. From this, one would understand that the problems faces by the inventor relate to providing a liner on a dipper so that the dipper is protected from wear.

Ben-Ezri discloses composite structural elements used for a variety of purposes including decking, tiling, and anti-corrosive flooring plates. *See, e.g.,* Ben-Ezri col. 5, l. 64–col. 6, l. 23. Ben-Ezri also discloses that filling elements 120 in voids 115 may be provided in various sizes including sizing that protrude above basal member 110 in order to protect the basal member from abrasion. *Id.* col. 4, l. 58–col. 5, l. 7. Thus, Ben-Ezri not only discloses coverings for sub-surfaces in the form of floor and ceiling tiles and anti-corrosive surfaces in the form of flooring plates, Ben-Ezri also discloses sizing and construction of filling elements that are designed to protect a base layer of the composite structures from abrasion. We determine that this is reasonably pertinent to the problems of wear in a dipper caused by mining activities.

Having determined that Ben-Ezri is analogous, we are not persuaded by Appellant’s further assertions that one of ordinary skill would have no motivation to look to Ben-Ezri in modifying Valeri or that the Examiner’s reliance on Ben-Ezri is based on hindsight. *See* Appeal Br. 10–11.

Appellant also argues that the proposed combination would render Valeri inoperable or its intended purpose because Valeri relies on elastomeric strips with a particular shape to include lower diverging surfaces. Appeal Br. 11. We disagree. Valeri discloses that surfaces 54 “function as camming surfaces” that act against the upper edges 36 to “deform the resilient strip 50 [] to permit its reception in the slot 48.” Valeri col. 3, ll. 48–51. Appellant does not explain adequately how or why the combination proposed would frustrate this functionality or any other purpose or function of Valeri.

Based on the foregoing, we sustain the rejection of claim 1. We also sustain the rejections of dependent claims 2, 4, 6–10, 12–14, and 24, for which Appellant does not provide separate arguments.

Claim 3

Claim 3 recites:

3. The liner system of claim 1, wherein the width of the first surface is measured along a direction that extends directly between the first and second guide members, wherein the insert has a thickness measured along a longitudinal direction that extends parallel to directions of elongate extension of the first and second guide members and perpendicular to the width direction, wherein the thickness is less than the width of the first surface.

Appeal Br. 19. The Examiner finds that it would have been obvious to form each of Valeri’s inserts as a plurality of inserts within a given channel.

Ans. 5. The Examiner finds that this “would provide for easier insertion of the inserts within the channel and also easier storage and transport of the inserts prior to insertion.” *Id.* Further, the Examiner finds that providing a plurality of inserts would allow for only damaged portions thereof to be replaced. *Id.* With respect to Valeri, the Examiner finds that Valeri teaches

blocks and strips that can be cut to size as needed and that the overlay 24 may include “shorter blocks . . . in an end-to-end manner” to cover the full length of the bottom of the truck box. *Id.* (citing Valeri col. 2, ll. 5–10; col. 4, ll. 36–41). From this, the Examiner determines that it would have been obvious to modify Valeri’s inserts to include a plurality of inserts 50 that are shorter than the full length of the truck box. *Id.* The Examiner also finds that modifying the thickness of the plurality of inserts would have been an obvious design choice because the thickness of the inserts can be modified and used without any unexpected results. *Id.* at 6.

Appellant argues that Valeri does not teach or suggest having multiple strips 50 pressed into each channel and that doing so would add extra time and effort to align the strips. Reply Br. 4. We are not persuaded. Rather, we determine that the Examiner has provided sufficient articulated reasoning with rational underpinning to support the conclusion that claim 3 would have been obvious. *See KSR Int’l. Co. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Specifically, the Examiner provides reasons why one of ordinary skill in the art would have recognized a benefit to providing Valeri’s inserts as a plurality of such inserts for each channel. Further, Valeri discloses that such blocks and inserts can be cut to whatever size is needed to cover a surface of the truck box, and that the blocks may be cut to shorter portions and placed end-to-end. Valeri col. 2, ll. 5–10; col. 4, ll. 37–45. We agree with the Examiner that based on this disclosure, one of ordinary skill in the art would have found it obvious to make Valeri’s inserts of any suitable size and that the specific size required by claim 3 would have been an obvious design choice. In doing so, one of ordinary skill would necessarily weigh the advantages

and disadvantages of providing a plurality of inserts. Thus, we are not persuaded by Appellant's argument that "[t]he Examiner has not adequately explained why one of skill would ever wish to modify the arrangement of Valeri in" the manner proposed by the Examiner. Reply Br. 4.

Further regarding the Examiner's reliance on design choice, we note that Appellant does not specifically address this rationale in the context of claim 3. We agree with the Examiner that the written disclosure does not specifically address the requirements of claim 3, i.e., there is no written disclosure regarding a comparison of the width and thickness of the insert. *See* Ans. 5. Appellant does not address this rationale and because the Specification does not explain the necessity or advantage of the relative dimensions required by claim 3. We agree with the Examiner that the particular dimensions required by claim 3 would have been an obvious design choice because the inserts of different sizes would serve the same purpose and function.

Based on the foregoing, we sustain the rejection of claim 3.

Claim 5

Claim 5 depends from claim 1 and recites that "a portion of the insert is configured to be exposed outside of the channel." Appeal Br. 19. With respect to this claim, Appellant argues only that Valeri teaches away because Valeri "requires, that top faces 58 of its strips 50 are to be flush with upper surfaces 34 of its blocks 30." Appeal Br. 12 (citing Valeri col. 3, ll. 57–64; Fig. 2). We are not persuaded of error. Valeri merely discloses that the tops of the inserts are "generally flush" with the upper surfaces and the portion of Valeri cited by Appellant does not disclose why these surface are flush. Further, Appellant does not cite to any evidence showing that Valeri either

discourages or disparages the use of inserts that are exposed outside of the channel, to extent one of ordinary skill in the art would even interpret the claim such that Valeri's flush inserts are not "exposed outside of the channel."

Accordingly, we sustain the rejection of claim 5.

Claim 11

Claim 11 depends from claim 1 and requires that "the guide members are each metallic and each have a trapezoidal cross-sectional shape, and wherein the insert is non-metallic and has a trapezoidal cross-sectional shape." Appeal Br. 21. Appellant argues that Valeri's blocks are elastomeric and not metallic, and that to the extent the Examiner relies on Valeri's anchors 38, they do not have, or form part of, a trapezoidal shape. Appeal Br. 13. We agree with Appellant. Without further explanation, the Examiner has not established that Valeri's guide members have a trapezoidal cross-sectional shape when the metallic anchors are included as part of the guide member. *See* Valeria Fig. 2. One of ordinary skill in the art would recognize that the shape of Valeri's guide members, if interpreted to include anchors 38, would have a cross-sectional shape that is something other than a trapezoid given that the welded portions of the anchors at 42 extend outward from the block body. Accordingly, we do not sustain the rejection of claim 11.

Claims 21–23 and 26

With respect to independent claim 21, Appellant raises arguments that we have been addressed above with respect to the rejection of claims 1 and 3. *See* Appeal Br. 14. For the reasons previously discussed, we are not persuaded by these arguments with respect to claim 21. Accordingly, we

also sustain the rejection of claim 21. Appellant does not raise separate arguments with respect to the rejections of dependent claims 22, 23, and 26. Thus, we also sustain the rejections of those claims for the reasons discussed.

Claims 15–20 and 25

Claim 15 is an independent method claim that recites, *inter alia*, “coupling . . . a first metallic, trapezoidal-shaped guide member . . . to an inner surface of a dipper.” Appeal Br. 22. The Examiner relies on Valeri as teaching a metallic, trapezoidal-shaped guide member. Non-Final Act. 7. However, for the reason discussed above with respect to claim 11, we determine that the Examiner has failed to explain adequately how Valeri teaches a guide member that is both metallic and trapezoidal shaped. The Examiner also does not explain why providing a metallic and trapezoidal shaped guide member would have been obvious in view of the art of record. Accordingly, we do not sustain the rejection of claim 15. We also do not sustain the rejection of claims 16–20 and 25, which depend from claim 15.

CONCLUSION

We AFFIRM the rejections of claims 1–5, 7–10, 12–14, 21–24, and 26. We REVERSE the rejections of claims 11, 15–20, and 25.

In summary:

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
1–5, 7–14, 21–23	103	Valeri, Ben-Ezri	1–5, 7–10, 12–14, 21–23	11
15–20, 24–26	103	Valeria, Ben-Ezri, Kostecki	24, 26	15–20, 25

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
Overall Outcome			1-5, 7-10, 12-14, 21- 24, 26	11, 15- 20, 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). See 37 C.F.R. § 1.136 (a)(1)(iv).

AFFIRMED IN PART