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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MATTHEW L. FOURNEY

Appeal 2014-005045
Application 12/894,396[1]
Technology Center 3600

Before STEFAN STAICOVICI, GEORGE R. HOSKINS, and AMANDA F. WIEKER, *Administrative Patent Judges*.

STAICOVICI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Matthew L. Fourney (Appellant) appeals under 35 U.S.C. § 134(a) from the Examiner's final decision rejecting claims 1–23. We have jurisdiction over this appeal under 35 U.S.C. § 6(b).

SUMMARY OF DECISION

We AFFIRM.

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[1] According to Appellant, the real party in interest is Laitram, L.L.C. Appeal Br. 3 (filed Nov. 11, 2013).

INVENTION

Appellant's invention relates to "belt conveyors having actuated, belt-mounted multi-directional wheels for diverting articles conveyed by the belt." Spec. 1, ll. 5–7.

Claims 1, 9, and 18 are independent. Claim 1 is illustrative of the claimed invention and reads as follows:

> 1. A conveyor belt comprising:
> an endless loop having an outer side and an inner side defining the thickness of the conveyor belt and a pair of opposite side edges defining the width of the conveyor belt;
> a plurality of multi-directional wheels disposed at spaced apart locations along the endless loop, each wheel including:
> a hub having a central axis of rotation and an outer periphery;
> a plurality of rollers arranged on the periphery of the hub to rotate on different roller axes transverse to the central axis of rotation of the hub.

REJECTIONS

The following rejections are before us for review:

I. The Examiner rejected claims 1–7, 9–15, and 17–22 under 35 U.S.C. § 103(a) as being unpatentable over Costanzo (US 6,494,312 B2, iss. Dec. 17, 2002), Black (US 3,710,917, iss. Jan. 16, 1973), and Layne (US 6,874,617 B1, iss. Apr. 5, 2005).

II. The Examiner rejected claims 8, 16, and 23 under 35 U.S.C. § 103(a) as being unpatentable over Costanzo, Black, Layne, and Bogdanovic (US 7,497,313 B2, iss. Mar. 3, 2009).

ANALYSIS

Rejection I

Claims 1–5, 7, 18–20, and 22

Appellant has not presented arguments for the patentability of claims 2–5, 7, 18–20, and 22apart from claim 1. *See* Appeal Br. 5–7. 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 2–5, 7, 18–20, and 22standing or falling with claim 1.

The Examiner finds that Costanzo discloses most of the limitations of claim 1, but does not disclose a plurality of multi-directional wheels. Final Act. 3 (transmitted June 13, 2013); *see also* Costanzo, Figs. 2A, 4. Nonetheless, the Examiner finds that Black discloses a multi-directional wheel 33, as called for by claim 1, and furthermore finds that Layne discloses the use of "multi-directional wheels (16) disposed on a belt (10)." Final Act. 3; *see also* Black, Abstract, Fig. 6; Layne, col. 2, ll. 37–50, Fig. 1. Thus, the Examiner concludes that "[i]t would have been obvious [to a person of ordinary skill in the art] to use the multi-directional wheels of Black . . . in the belt of Costanzo to move articles laterally and expect predictable results, since Layne teaches the predictability of multidirectional wheels in a conveyor belt." Final Act. 3.

Appellant argues that because Layne discloses bi-directional rollers and Black discloses multi-directional rollers, "the teachings of Layne . . . [would not] predict that the multi-directional rollers . . . of Black . . . would provide an improvement to the conveyor belt and module of Costanzo." Appeal Br. 5; *see also* Reply Br. 2 (filed Mar. 14, 2014). Appellant further

argues that in contrast to Layne, which discloses passive rollers, the rollers of Black are powered. *See* Appeal Br. 5–6, 7. Furthermore, Appellant notes that Layne's system employs a diverter and its rollers rotate only on an axis perpendicular to the conveying direction of a belt and not on an axis having an oblique orientation. Reply Br. 2. Thus, according to Appellant, Layne "does not suggest using multi-directional rollers as in Black." Appeal Br. 7.

Although we appreciate Appellant's position that there are differences between the rollers of the conveying systems of Black and Layne, we agree with the Examiner that Appellant cannot show nonobviousness by attacking Costanzo, Black, and Layne individually when the rejection as articulated by the Examiner is based on a combination of Costanzo, Black, and Layne. *See* Ans. 8; *see also In re Merck & Co. Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). More specifically, even though Black's rollers are powered and multi-directional, whereas Layne's rollers are passive and bi-directional, we are not persuaded by Appellant's arguments because "[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 419 (2007). The relevant inquiry is whether the Examiner has set forth "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (*cited with approval in KSR*, 550 U.S. at 418).

In this case, the Examiner is correct that Costanzo's rollers 48 "allow movement in the direction of rotation of the rollers." Ans. 8; *see also*

Costanzo, col. 2, ll. 26–29, Fig. 2A. The Examiner is also correct that Black's roller assembly 33 (having hub 34 and barrel-shaped rollers 35) "allow[s] articles to move in a direction parallel to the axis of rotation of the wheels and in the direction of rotation of the wheels." Ans. 8; *see also* Black, col. 6, ll. 30–60, Figs. 1, 6, 7. Furthermore, the Examiner correctly finds that similar to Black's device, Layne's conveyor belt/chain 10 with rollers 16, is likewise capable of "allow[ing] articles to move in a direction parallel to the axis of rotation of the rollers and in the direction of rotation of the rollers." Ans. 8, *see also* Layne, col. 2, ll. 37–40. Hence, we agree with the Examiner that, "incorporating the multi-directional wheels of Black . . . in the belt of Costanzo would have yielded the predictable results of moving articles in directions other than the conveying direction." Ans. 8. We further note that Costanzo's belt 20 is an endless conveyor belt where rollers 48 advance with belt 20. *See* Costanzo, col. 4, ll. 35–37, col. 4, l. 67–col. 5, l. 2, Fig. 5. Therefore, even though we appreciate Appellant's contention that Black's rollers are powered and do not advance with the belt (*see* Appeal Br. 7), nonetheless, as Costanzo's belt 20 is an endless conveyor belt, Appellant fails to persuasively explain why when modifying Costanzo's belt 20 to include Black's roller assembly 33, the rollers of the resulting system of Costanzo, as modified by Black, would not likewise advance with belt 20.

The Examiner's modification is an improvement to Costanzo's conveyor belt 20 to include Black's multi-directional roller assembly 33 in the same way as Black to lead to a predictable result, namely, to "allow[] movement of articles in directions parallel to the axis of rotation of the

wheels and in the direction . . . of the wheels." *See* Ans. 8–9. Although we appreciate Appellant's position that Layne's system includes a diverter (*see* Reply Br. 1), nonetheless, Layne's rollers 16 allow movement in different directions (*see* Layne, col. 2, ll. 37–40) and furthermore, obviousness does not require that all of the features of the secondary reference be bodily incorporated into the primary reference. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Moreover, we note that the Examiner's modification is well within the skill of a person having ordinary skill in this art. *KSR*, 550 U.S. at 417 ("[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.").

Lastly, Appellant argues that, "[n]othing in Layne, Black . . . or Costanzo suggests to one of ordinary skill in the art how multi-directional wheels can replace the cylindrical rollers in the Costanzo belt to allow diverting wheels to be oriented at diverting angles of greater than 30° for rotation on a simple . . . bearing surface without slip." Reply Br. 3. We are not persuaded by Appellant's argument because limitations not appearing in the claims, i.e., diverting angles greater than 30° without slipping, cannot be relied upon for patentability. *In re Self*, 671 F.2d 1344, 1348 (CCPA 1982).

In conclusion, for the foregoing reasons, we sustain the rejection under 35 U.S.C. § 103(a) of claim 1, and claims 2–5, 7, 18–20, and 22 falling with claim 1, as unpatentable over Costanzo, Black, and Layne.

Claims 9–12, 14, 15, and 17

Independent claim 9 recites, *inter alia*, "a bearing surface underlying the inner side of the conveyor belt." Appeal Br. 12.

In addition to the arguments presented *supra*, which we have not found to be persuasive, Appellant further argues that Layne "does not mention or suggest actuating his bidirectional rollers with a bearing surface that the belt rides on." *Id.* at 7. Thus, according to Appellant, "[t]he effect of substituting the multi-directional drive rollers of Black et al. for the cylindrical rollers in a conveyor in which those rollers are actuated by a bearing surface as the belt advances is not predicted by the teachings of Layne." *Id.*

We are not persuaded by Appellant's arguments because the Examiner did not use the disclosure of Layne to teach the claimed bearing surface, but rather the disclosure of Costanzo. *See* Final Act. 4. More specifically, the Examiner correctly finds that Costanzo discloses a roller bearing surface 185 that underlies the rollers in rolling frictional contact. *Id.* at 4–5; *see also* Costanzo, col. 6, ll. 57–61, Fig. 20. Appellant has not persuasively shown error in the Examiner's findings or reasoning in combining the teachings of Costanzo, Black, and Layne.

As such, we likewise sustain the rejection under 35 U.S.C. § 103(a) of claims 9–12, 14, 15, and 17 as unpatentable over Costanzo, Black, and Layne.

Claims 6, 13, and 21

Each of dependent claims 6 and 13 recites that, "the central axes of rotation of the hubs are oriented oblique to the edges of the conveyor belt." Appeal Br. 11–12. Similarly, dependent claim 21 requires that, "the central axis of rotation of the hub is oriented oblique to the first and second edges of the module body." *Id.* at 13.

In addition to the arguments presented *supra*, which we have not found to be persuasive, Appellant also argues that because "[t]he bidirectional rollers of Layne have their central axes perpendicular, not oblique, to the sides of the belt. . . . Layne cannot be said to predict how his bidirectional rollers, much less the rollers of Black . . . , would operate on oblique central axes." *Id.* at 8.

We are not persuaded by Appellant's arguments because the Examiner did not use the disclosure of Layne to teach the claimed oblique orientation of the rollers' axis of rotation with respect to the conveyor belt's side edges, but rather the disclosure of Costanzo. *See* Final Act. 4–6; *see also* Reply Br. 1–2. More specifically, the Examiner correctly finds that Costanzo discloses the claimed oblique orientation. Final Act. 4; *see also* Costanzo, Figs. 18, 21, 22. Appellant has not persuasively shown error in the Examiner's findings or reasoning in combining the teachings of Costanzo, Black, and Layne.

As such, we likewise sustain the rejection under 35 U.S.C. § 103(a) of claims 6, 13, and 21 over the combined teachings of Costanzo, Black, and Layne.

Rejection II

Claims 8, 16, and 23

The Examiner finds that although the combined teachings of Costanzo, Black, and Layne fail to disclose that "the rollers include structure to restrict rotation of the rollers . . . to one direction," nonetheless, "Bogdanovic teaches a roller (10) including structure (42) to restrict rotation of the rollers to one direction." Final Act. 7; *see also* Bogdanovic, col. 3, l. 64–col. 4, l. 13, Figs. 9, 10. The Examiner concludes that, "[i]t would have been obvious to include [Bogdanovic's] structure to restrict rotation of the rollers [of Costanzo, Black, and Layne] to one direction [in order] to prevent motion of articles in an undesired direction." Final Act. 7.

Appellant argues that "there is no suggestion in the prior art to add a locking mechanism to much smaller conveyor belt wheels." Appeal Br. 9. Appellant further contends that Appellant recognized the problem of inertia of conveying articles rotating the rollers "temporarily in an unintended direction," but "[n]one of the cited references recognized [this] problem or provided a teaching, suggestion, or the motivation to solve it." *Id.*

Appellant's arguments appear to be holding the Examiner to the old teaching, suggestion, or motivation ("TSM") standard, in which the Examiner must have identified some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; such a standard is not required. *KSR*, 550 U.S. at 415 ("We begin by rejecting the rigid [application and requirement of a TSM to combine known elements in order to show obviousness]"). The proper inquiry is

whether the Examiner has articulated adequate reasoning based on a rational underpinning to explain why a person of ordinary skill in the art would have been led to combine Costanzo, Black, Layne, and Bogdanovic. Appellant's conclusory assertion that there is "no motivation" ignores this inquiry and fails to point out the error in the rationale provided by the Examiner, namely, "to prevent motion of articles in an undesired direction." *See* Final Act. 7. Given that Bogdanovic discloses "a locking mechanism . . . to prevent reverse rotation," the Examiner's reasoning has a rational underpinning. *See* Ans. 9.

In conclusion, for the foregoing reasons, we sustain the rejection of claims 8, 16, and 23 under 35 U.S.C. § 103(a) as being unpatentable over Costanzo, Black, Layne, and Bogdanovic.

SUMMARY

The Examiner's decision to reject claims 1–23 is affirmed.

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