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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte CÉLINE LEVECQ and THOMAS THOUVENOT

Appeal 2018-001253
Application 13/984,565
Technology Center 1700

Before LINDA M. GAUDETTE, JENNIFER R. GUPTA, and
MERRELL C. CASHION, JR., *Administrative Patent Judges*.

CASHION, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellants¹ appeal under 35 U.S.C. § 134(a) from the Examiner's decision to reject claims 23–30, 33, 37–43, and 45–49. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ Veolia Water Solutions & Technologies Support is identified as the real party in interest. Appeal Br. 2.

The subject matter on appeal is directed to a device for bringing a liquid species into contact with a growing particulate solid species, applicable to the treatment of particle-laden industrial and urban wastewater, which it is desired to homogenize, and to the purification treatment of water intended for consumption or for industrial processes requiring particularly clean water. Spec. 1. Independent claim 23 illustrates the subject matter on appeal and is reproduced below:

23. Device for bringing a liquid species into contact with a growing particulate solid species, comprising a vat in which a blade stirrer is arranged in rotation about a shaft for generating a downward fluid flow in the vat, the vat comprising a static obstacle generally centered about said shaft in an extension of the stirrer, characterized in that the static obstacle has an outer surface having, in a plane passing through the shaft, an outer transverse dimension that increases moving away from the stirrer parallel to said shaft, with a constant or increasing slope with respect to the shaft and a plurality of ribs extending along the outer surface of the static obstacle for attenuating rotational components in the downward fluid flow induced by the stirrer.

Independent claim 45 is directed to substantially the same device as independent claim 23.

Appellants (*see generally* Appeal Brief) request review of the following rejections from the Examiner's Final Office Action:

I. Claims 45, 46, 48, and 49 rejected under pre-AIA 35 U.S.C. § 102(b) as anticipated by Beers (US 1,762,950, issued June 10, 1930).

II. Claim 47 rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Beers.

III. Claims 23–28, 33, 37, 40 and 41 rejected under pre-AIA 35 U.S.C. § 102(b) as anticipated by Earhart (US 4,422,771, issued December 27, 1983).

IV. Claims 29 and 30 rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Earhart and Devereux (US 1,430,362, issued September 26, 1922).

V. Claims 38, 39, 42, and 43 rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Earhart.

OPINION

The Prior Art Rejections

Rejections based on Beers

Appellants present arguments only for independent claim 45. *See generally* Appeal Br. 4–5. Accordingly, we select claim 45 as representative of the subject matter before us for review on appeal for Rejections I and II and decide the appeal as to these grounds of rejection based on the arguments made by Appellants in support of patentability of claim 45.

After review of the respective positions provided by Appellants in the Appeal and Reply Briefs and the Examiner in the Final Action and Answer, we affirm the Examiner’s prior art rejections of claims 45, 46, 48, and 49 under pre-AIA 35 U.S.C. § 102(b) and of claim 47 under pre-AIA 35 U.S.C. § 103(a) based on Beers for the reasons presented by Examiner. We focus our discussion on the anticipation rejection and add the following for emphasis.

We refer to the Examiner's Final Action for a statement of rejection of claim 45. Final Act. 4. Briefly, the Examiner finds Beers discloses a device for mixing a liquid with growing solids that comprises a static obstacle supported on a bottom of a tank. Final Act. 4; Beers 1 and Figures 1 and 3.

Appellants argue that Beers fails to teach a static obstacle supported by physical contact with the bottom of the tank as claimed because Beers teaches the flow director is preferably spaced above tank bottom 16 by bosses 17 on the bottom of the cone-base 18 into which screws 19 are inserted through the tank bottom to secure the flow director-structure in position. Appeal Br. 4–5.

We have considered Appellants' arguments but are unpersuaded of error in the Examiner's determination of anticipation for the reasons presented in the Final Action and the Answer. To anticipate, a reference must identify something falling within the claimed subject matter with sufficient specificity to constitute a description thereof within the purview of § 102. *In re Schaumann*, 572 F.2d 312, 317 (CCPA 1978). It is well established that specific examples of the claimed subject matter are not necessary to establish anticipation. Rather, to anticipate, one skilled in the art must be able to "at once envisage" the claimed subject matter in the prior art disclosure. *In re Petering*, 301 F.2d 676, 681 (CCPA 1962). Further, in determining whether a reference anticipates the subject matter recited in a claim, "it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom." *In re Preda*, 401 F.2d 825, 826 (CCPA 1968).

The portion of Beers cited by the Examiner and acknowledged by Appellants discloses the use of a flow director spaced above the tank bottom 16 as a preferred embodiment. Beers 1, ll. 72–74 (“The base of the flow-director is preferably spaced above the tank bottom 16 . . .”). Given this disclosure, a person of ordinary skill would have drawn a reasonable inference that Beers envisages an embodiment where the flow director is in physical contact with the bottom of a tank. Thus, Appellants have not adequately explained how the claimed invention distinguishes from Beers’ disclosed device.

Accordingly, we affirm the Examiner’s prior art rejections of claims 45–49 based on Beers for the reasons presented by the Examiner and given above.

Rejections based on Earhart alone (Rejections III and V)

Appellants present arguments for the anticipation rejection of only independent claim 23 (Rejection III) and do not present arguments for the obviousness rejection of dependent claims 38, 39, 42, and 43 (Rejection V). *See generally* Appeal Br. Accordingly, we select claim 23 as representative of the subject matter before us for review on appeal for Rejections III and V and decide the appeal as to these grounds of rejection based on the arguments made by Appellants in support of patentability of claim 23.

After review of the respective positions provided by Appellants in the Appeal and Reply Briefs and the Examiner in the Final Action and Answer, we affirm the Examiner’s prior art rejections of claims 23–28, 33, 37, 40 and 41 under pre-AIA 35 U.S.C. § 102(b) and of claims 38, 39, 42, and 43 under pre-AIA 35 U.S.C. § 103(a) based on Earhart for the reasons presented by

Examiner. We focus our discussion on the anticipation rejection of claim 23 and add the following for emphasis.

The Examiner finds Earhart describes a device for bringing a liquid species into contact with a growing particulate solid species where the device includes static obstacle comprising inner cone 71, outer cone 72 and gussets 73, with the gussets 73 corresponding to the claimed ribs, that extend along the outer surface of the static obstacle cone 71 and are capable of attenuating rotational components in the downward flow induced by the stirrer. Final Act. 2; Earhart Figures 1 and 3.

Appellants argue that the Examiner did not consider the claimed functional limitations requiring the ribs to attenuate rotational components of the downward fluid flow in the device. Appeal Br. 7. According to Appellants, the Examiner has not shown that Earhart's gussets 73 are capable of functioning as the claimed ribs because Earhart does not describe that gussets 73 attenuate rotational components of the downward flow that passes over inner cone 71. *Id.* at 8. Appellants further contend that Earhart's inner and outer cones 71, 72 provide an annular flow area that leads to a downward ring shaped flow without rotation of the flow. *Id.* at 8–9. Appellants additionally contend the gussets divide the downflow into four streams with each stream passing downwardly over inner cone 71 and between two gussets 73 and out the bottom of the device. *Id.* at 10.

We find the arguments unavailing. As the Examiner explains, Earhart discloses a device having the same structural features recited in claim 23, including rotational blade stirrer and a static obstacle including plurality of ribs extending along the outer surface of the static obstacle. Ans. 13. As the Examiner further explains, Earhart's rotational blade stirrer will impart

rotational downward flow (that is, imparts rotational components) which then come in contact with ribs/gussets 73 to produce the annular downward flow within the static obstacle comprising inner cone 71. *Id.*

Therefore, because the structure required by the claims is taught by the applied prior art, we agree with the Examiner's determination that there is no structural difference between Earhart and the claimed invention. In light of this similarity in structure, the Examiner correctly finds that the apparatus of Earhart would have been capable of attenuating rotational components of the downward fluid flow in the device.

Accordingly, we affirm the Examiner's prior art rejections of claims 23–28, 33, and 37–43 based on Earhart for the reasons presented by the Examiner and given above.

Obviousness Rejection based on Earhart and Devereux (Rejection IV)

We also affirm the rejection of claims 29 and 30 under 35 U.S.C. § 103(a) for the reasons presented by Examiner. We add the following for emphasis.

Claim 29 requires the outer surface of the static obstacle is connected to the bottom of the vat at least approximately tangentially, at an angle of at most 15°. Claim 30 requires the outer surface of the static obstacle assumes a generally concave shape.

Regarding claim 29, the Examiner finds that “mixing efficiency and turbulence are variables that can be modified, among others, by adjusting the angle of the static obstacle connected to the vat,” and, therefore, that the angle of the static obstacle is a result effective variable. Final Act. 5. The Examiner finds that, absent a showing of criticality, achieving the claimed

angle of the static obstacle connected to the vat would have been a matter of routine optimization based on the desired mixing efficiency and turbulence within a vat. *Id.* With respect to claim 30, the Examiner finds Devereux teaches the shape for the outer surface of a static obstacle. Final Act. 6; Devereux Figure 1.

As to claim 29, Appellants argue the Examiner has not shown that the angle of the static obstacle connected to the vat is a recognized result-effective variable. Appeal Br. 12, n. 1.

We are unpersuaded by this argument because it does not identify error in the Examiner's reasons for finding that the angle of the static obstacle is a result-effective variable, and does not adequately explain why one skilled in the art would not have been capable of optimizing the angle of the static obstacle connected to the vat for a desired mixing energy/turbulence, particularly given Devereux's disclosure of a static obstacle 2 to redirect fluid flow from the bottom of the tank. Devereux Figure 1.

With respect to claim 30, Appellants argue the Earhart's downflow mixer is designed to float and move about the surface of an open body of water and, thus, Earhart is not concerned with scouring the bottom of a tank. Appeal Br. 13.

We are unpersuaded by this argument because, as the Examiner finds, Earhart discloses use of the mixing device in a tank. Final Act. 2; Earhart col. 2, ll. 42–52. Moreover, Earhart discloses that “if the body of liquid has a substantially constant liquid level, the mixer can be rigidly supported at a fixed level relative to the surface of the body of liquid [instead of being buoyantly supported].” Earhart col. 2, ll. 60–63. Thus, contrary to

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Appellants' argument, Earhart's disclosure is not limited to floating downflow mixers.

Accordingly, we affirm the Examiner's prior art rejection of claims 29 and 30 for the reasons presented by the Examiner and given above.

ORDER

The Examiner's prior art rejections of claims 23–30, 33, 37–43, and 45–49 are 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