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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte LUKE GIBSON, ANDREW R. KERR, CHARLES A. LACHENBRUCH, ERIC R. MEYER, JOSHUA A. WILLIAMS, and RACHEL L. WILLIAMSON

Appeal 2018-008139
Application 14/631,140
Technology Center 3600

Before LINDA E. HORNER, EDWARD A. BROWN, and SUSAN L. C. MITCHELL, *Administrative Patent Judges*.

HORNER, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision to reject claims 1–12 and 17–20.[2] We have jurisdiction under 35 U.S.C. § 6(b).

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[1] We use the word "Appellant" to refer to "applicant" as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Hill-Rom Services, Inc. Appeal Br. 2.

[2] Claims 13–16 are pending and withdrawn from consideration. Final Act. 1.

The Examiner rejected the claims on appeal as either anticipated by, or obvious over, Poulos et al. (U.S. Patent Application Publication No. US 2011/0163885 A1, published July 7, 2011) ("Poulos"). Appellant argues that Poulos does not disclose certain limitations recited in independent claims 1 and 20. For the reasons explained below, we agree with Appellant that the Examiner has failed to show where Poulos discloses limitations of independent claims 1 and 20. The rejections of the dependent claims also rely on these unsupported findings. Thus, we reverse.

CLAIMED SUBJECT MATTER

The subject matter of the claims on appeal relates to occupant supports such as mattresses that include longitudinally spaced-apart turn assist members. Spec. ¶ 1. In one embodiment, the occupant support includes a support layer and a turn assist layer below the support layer. *Id.* ¶ 6. The turn assist layer includes a reach-in space that extends longitudinally from a footward location, corresponding substantially to the gluteal sulcus of an occupant nominally positioned on the mattress, to a headward location, corresponding approximately to the sacral base or sacral promontory of a nominally positioned occupant. *Id.* ¶ 12. The occupant support also includes a controller configured to inflate or deflate the turn assist layer in conjunction with inflation or deflation of the support layer. *Id.* ¶¶ 22, 42.

Independent claim 1 is illustrative of the subject matter on appeal and is reproduced below.

1. An occupant support comprising:

a turn assist layer which includes:

a left side array of two or more longitudinally distributed turn assist members, each member of the array comprising one or more longitudinally distributed turn assist bladders, at least two of the array members being longitudinally spaced from each other by a left intermember reach-in space having a left intermember dimension;

a right side array of two or more longitudinally distributed turn assist members, each member of the array comprising one or more longitudinally distributed turn assist bladders, at least two of the array members being longitudinally spaced from each other by a right intermember reach-in space having a right intermember dimension;

a support layer above the turn assist layer, the support layer including a collapsible zone at least part of which overlies the intermember spaces; and

a user interface for enabling a user to operate the turn assist layer; and

a controller for inflating and deflating the collapsible zone in coordination with inflation and deflation of at least one of the turn assist members defining the intermember space which the collapsible zone overlies.

Appeal Br. 18–19.

REJECTIONS

The following rejections are on appeal:

1. Claims 1, 2, 6–8, 10–12, 19, and 20 are rejected under 35 U.S.C. § 102(b) as anticipated by Poulos.
2. Claims 3–5, 9, 17, and 18 are rejected under 35 U.S.C. § 103(a) as unpatentable over Poulos.

ANALYSIS

Independent Claim 1

Claim 1 is rejected as anticipated by Poulos. Final Act. 3. The Examiner found that Poulos discloses an occupant support (1010) comprising a turn assist layer (1028), including left and right side arrays of turn assist members (1110a, 1110b), a support layer (1016, 1060) above the turn assist layer, a user interface (928), and a controller (920, 1104), as recited in claim 1. *Id.* at 3–4 (citing Poulos, Figs. 20, 23, 27, 28, 29A, 29B, ¶¶ 87, 100–102, 122–123). With regard to the controller, the Examiner found that Poulos's controller is configured for inflating and deflating the collapsible zone of the support layer "in coordination with" inflation and deflation of at least one of the turn assist members defining the intermember space which the collapsible zone overlies. *Id.* at 4 (citing Poulos ¶¶ 113–115, 122–123).

Appellant argues that the Examiner erred in finding that Poulos discloses coordination of inflation and deflation of the support layer and inflation and deflation of the turn bladders. Appeal Br. 6.

The Examiner responded that Poulos discloses an embodiment in which a single controller can both sense and control the air pressure in both turning bladders 1110a, 1110b and support layer members 1060, and thus, "the pressure in each of these aforementioned bladders and layers can be said to be controlled together via a singular controller or in other words 'in-coordination' as claimed." Ans. 9 (citing Poulos, Figs. 29A, 29B).

We agree with Appellant that "[t]he fact that bladders 1110 and layer 1060 share certain resources, such as controller 1104 and pump 1100, is not

a disclosure that the controller and pump coordinate the inflation/deflation of bladders 1110 with inflation/deflation of layer 1060." Reply Br. 2.

We note that the ordinary meaning of "coordination," supplied by Appellant, requires elements enabled to work together effectively in a cooperative effort. Reply Br. 2 (quoting definition 1 from https://en.oxforddictionaries.com/definition/coordination). The description of the invention provided in Appellant's Specification comports with this ordinary meaning of "coordination." Specifically, with reference to Figure 30, the Specification describes that the controller may be configured to inflate and deflate support bladders in certain zones "in coordination with" inflating and deflating turn assist bladders. Spec. ¶ 42. This paragraph further describes the specific timing of inflation and deflation of turn assist bladders vis-à-vis the timing of inflation and deflation of bladders in zones of the support layer. Thus, the language "in coordination with" recited in claim 1, according to its ordinary meaning and when read in light of the Specification, calls for a controller for inflating and deflating the collapsible zone in a cooperative manner with inflation and deflation of at least one of the turn assist members defining the intermember space which the collapsible zone overlies.

The Examiner has failed to show where Poulos discloses the recited coordination of claim 1. As noted by Appellant, paragraphs 113 through 115 of Poulos describe, in relevant part, using controller 1104 to control operation of pump 1100 to control air pressure in air components 1060 of support layer 1016. Poulos ¶ 113. For instance, Poulos describes that controller 1104 can receive a signal from pressure sensor 1102, and may operate pump 1100 based on this received signal to alter or vary the air

pressure in one or more of air components 1060. *Id.* Poulos describes using single pump 1100 fluidly connected via valve 1106 and tubing 1108 to a plurality of air components 1060 to individually direct air to each air component 1060. *Id.* ¶ 114.

Paragraphs 122 and 123 of Poulos describe specifically the embodiment of Figures 29A and 29B, in which an air mattress that includes turning bladders 1110 is shown. Poulos ¶ 122. In this embodiment, at least one turning bladder 1110a is provided adjacent first side 1022 of the mattress, and at least another turning bladder 1110b is provided adjacent second side 1024 of the mattress. *Id.* Poulos describes that "a left rotation turn of the patient is accomplished by inflation of one or more of the first side turning bladders 1110a . . . while simultaneously exhausting air in the second side turning bladders 1110b." *Id.* A right rotation turn of the patient is accomplished by the converse. *Id.* Poulos describes that pressure sensor 1102 may be connected to each rotation bladder 1110a, 1110b and that controller 1104 controls the flow of air to and from each turning bladder. *Id.* Poulos describes that turning bladders 1110a, 1110b "are provided below the air components 1060." *Id.* ¶ 123.

Although Poulos appears to describe coordination of the inflation and deflation of the turning bladders 1110a and 1110b with each other, the paragraphs relied on by the Examiner do not appear to describe any coordination in the inflation and deflation of turning bladders 1110a, 1110b with inflation and deflation of air components 1060 of support layer 1016. Despite the fact that Poulos describes using the same controller 1104 and pump 1100 to provide air to the various bladders in both layers, the provision of air to each bladder appears to be controlled by independently

controllable valves, and the Examiner has not identified any discussion in Poulos that the opening and closing of these valves is cooperatively controlled so as to coordinate inflation/deflation of bladders in one layer with inflation/deflation of bladders in the other layer.

For these reasons, the Examiner has failed to provide adequate evidence on which to base a finding of anticipation of independent claim 1 by Poulos. Thus, we do not sustain the rejection of independent claim 1 and its dependent claims 2, 6–8, 10–12, and 19, under 35 U.S.C. § 102(b).

The Examiner's rejection of dependent claims 3–5, 9, 17, and 18 under 35 U.S.C. § 103(a) is based on the same deficient finding as to anticipation of claim 1 discussed above. Final Act. 9–12. As to dependent claim 17, which requires "the inflation and deflation of the collapsible zone is carried out concurrently, partially concurrently, or serially with the inflation and deflation of the turn assist member or members," the Examiner further found that Poulos describes specific control, either independently and/or coordinated, of both the patient support/collapsible zone (1060) and the turning bladders (1110a, 1110b). Final Act. 11 (citing Poulos ¶¶ 113–116, 119–123). As discussed above, we do not find adequate disclosure in Poulos to disclose that the control is coordinated.

The Examiner also found that "at least control of inflation/deflation of each of these separately inflatable components in a serial manner would be inherent based on the teachings of independent control via controller [1104] and pump [1100]." *Id.* at 11. We have insufficient evidence on this record to base a finding that Poulos must necessarily control inflation/deflation of these layers in a serial manner. It appears possible that Poulos's controller is using two separate, independent algorithms to control opening and closing of

the respective valves to permit inflation or deflation of the bladders in one layer independent of the other layer.

The Examiner alternatively finds that at the time of the invention it would have been obvious to one having ordinary skill in the art to have modified Poulos to carry out the inflation/deflation of the support layer either concurrently, partially concurrently, or serially with inflation/deflation of the turning bladders "for improved therapeutic effects and increased patient care and safety." Final Act. 11. Appellant argues that this reasoning is inadequate in view of Poulos's silence as to coordinated actions. Appeal Br. 16. The Examiner responds that only concurrent actions require coordination and partially concurrent or serial actions do not. Ans. 12.

We disagree with such a broad reading of claim 17 given that it depends from claim 1, which requires the actions to be in coordination with each other. As noted by Appellant, "[a]ctions can be coordinated, yet not occur at the same time." Reply Br. 7. Thus, we construe claim 17 to further limit the type of coordination recited in claim 1. We agree with Appellant that the Examiner's conclusory explanation of the proposed modification "for improved therapeutic effects and increased patient care and safety" is inadequate to explain what would have led a person having ordinary skill in the art to modify Poulos in the manner claimed. Thus, we likewise do not sustain the second ground of rejection of these dependent claims under 35 U.S.C. § 103(a).

Independent Claim 20

Claim 20 is directed to an occupant support and recites the same turn assist layer, support layer, and user interface as claim 1. Claim 20 omits, however, the controller limitation of claim 1, and recites instead that each

intermember reach-in space "extends longitudinally from a more footward location corresponding substantially to the gluteal sulcus of a nominally positioned occupant to a more headward location corresponding approximately to the sacral base of the nominally positioned occupant." Appeal Br. 25–26.

The Examiner, relying again on the embodiment shown in Figures 29A and 29B of Poulos, found that each turning bladder 1110a of the array is spaced apart and that the space between bladders 1110a has a dimension that extends longitudinally in the manner recited in claim 20. Final Act. 8–9. The Examiner further stated, "[r]egarding the intended placement of a nominally positioned occupant, it has held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations." *Id.* at 9 (citing *Ex parte Masham*, 1987 WL 123826 (BPAI 1987)).

Appellant asserts that the Examiner erred in treating the claim language as including a recitation of intended use. Appeal Br. 12. Appellant argues that this claim language "places two physical constraints on the reach-in space." *Id.* Appellant specifies:

> First, its longitudinal dimension must be substantially the distance between the gluteal sulcus and the sacral base of an occupant. Second, it must be located on the occupant support in the place that would be occupied by the portion of the patient's body extending between the gluteal sulcus and the sacral base if the patient were nominally positioned on the occupant support.

Appeal Br. 12–13.

As noted by Appellant (Appeal Br. 13), the Specification provides a definition of a "nominally positioned occupant":

> A nominally positioned occupant is one who is approximately laterally centered on the bed, i.e. one whose saggital plane approximately coincides with centerplane 46 when the occupant is supine on the mattress, and who is positioned longitudinally so that the positions of his or her anatomical features are compatible with the physical and/or functional features of the bed.

Spec. ¶ 12. The Specification further explains that many beds include a hip indicator to indicate the desired position of the occupant's hips, or include hinged, segmented decks that correspond to the occupant's anatomical features. *Id.*

In light of this description provided in Appellant's Specification, we understand the claim language to impart size and location limitations on each reach-in space by reference to anatomical features of an occupant positioned on the mattress such that the positions of the occupant's anatomical features match the corresponding features of the bed. Claim 20 calls for each reach-in space to extend from the location on the mattress where the gluteal sulcus of such an occupant would lie to the location where the sacral base of such an occupant would lie. Thus, we agree with Appellant's reading of the claim language as placing structural limitations on both the size and placement of the reach-in space on the mattress.

We disagree with the Examiner's reliance on *Ex parte Masham*. The claim at issue in *Masham* was directed to an apparatus for mixing flowing developer material. 1987 WL 123826 at *1. The claim recited structural limitations for receiving and mixing the flowing developer material. *Id.* The claim further recited that the mixing means is stationary and completely

submerged in the developer material. *Id.* The Board affirmed an anticipation rejection of the claim based on a prior art reference that satisfied the structural limitations of the claim, i.e., a chamber and a stationary mixing means. *Id.* The Board determined that the prior art mixing device is capable of retaining a supply of developer material above the top surface of the mixing device such that the mixing device can be completely submerged. *Id.* Thus, the Board held that the recitation of intended use in the claim did not impose any limitations which differentiate the claimed apparatus from the prior art apparatus. *Id.* at *2.

By contrast, the recitations in claim 20 about the size and location of each reach-in space structurally distinguish the claimed apparatus from the mattress of Poulos. Poulos describes that its mattress includes zones corresponding to anatomical features of an occupant. Poulos ¶ 122 (describing that different turning bladders are provided at the first and second sides 1022, 1024 of each zone of mattress 1010, including head zone 1050, seat zone 1054, knee zone 1056, and foot zone 1052); Fig. 29A. It appears from Figure 29A that the buttocks of an occupant nominally positioned on mattress 1010 would be positioned atop seat zone 1054, and one set of turning bladders 1110a, 1110b would lie directly below the occupant's buttocks. It does not appear from the description provided in Poulos that the intermember reach-in space between adjacent turning bladders extends between the gluteal sulcus and sacral base of a nominally positioned occupant. For this reason, we do not sustain the Examiner's rejection of claim 20 as anticipated by Poulos.

DECISION

The decision of the Examiner rejecting claims 1–12 and 17–20 is reversed.

CONCLUSION

In summary:

Claims Rejected	Basis	Affirmed	Reversed
1, 2, 6–8, 10–12, 19, 20	§ 102(b) Poulos		1, 2, 6–8, 10–12, 19, 20
3–5, 9, 17, 18	§ 103(a) Poulos		3–5, 9, 17, 18
Overall Outcome			1–12, 17–20

REVERSED