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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOHN P. PELMULDER and CONRAD O. DIAZ

Appeal 2010-010425
Application 11/634,672
Technology Center 3700

Before PHILLIP J. KAUFFMAN, PATRICK R. SCANLON and
SCOTT A. DANIELS, *Administrative Patent Judges*.

SCANLON, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellants seek our review under 35 U.S.C. § 134 of the Examiner's decision rejecting claims 1-6 and 8-13, which are all the claims remaining of record, claim 7 having been cancelled. App. Br. 2. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

THE INVENTION

The claims are directed to a pump. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A pump, comprising:
 - a compression surface;
 - a hollow compression tube secured to the compression surface;
 - compression means for incrementally compressing the compression tube against the compression surface to create a moving occlusion of the compression tube that uniformly pushes fluid through the compression tube, wherein the compression means has at least one rest position in which the compression means is free of all contact with the compression tube in a manner such that the compression tube is free of any occlusions;
 - a pump housing that defines a cavity, wherein the compression means is disposed in the cavity; and
 - a cassette assembly removably disposed in the cavity, wherein the cassette assembly includes the compression surface and the hollow compression tube;
- wherein:

a channel is formed in the compression surface,

the hollow compression tube includes a flange extending along a length thereof that is engaged with the channel for securing the compression tube to the compression surface, and

the flange has a cylindrically shaped cross-section and is integrally formed with the compression tube.

REFERENCES

The Examiner relies upon the following prior art references:

Seyler	US 2,693,766	Nov. 9, 1954
Muller	US 3,565,554	Feb. 23, 1971
Edwards	US 3,606,596	Sept. 20, 1971
Molimard	US 3,724,974	Apr. 3, 1973
Barraclough	US 3,930,761	Jan. 6, 1976
Iles	US 4,178,138	Dec. 11, 1979
Williams	US 4,936,760	Jun. 26, 1990
Nishioka	US 6,203,295 B1	Mar. 20, 2001
Ray	US 6,203,296 B1	Mar. 20, 2001
Sundén	US 6,494,693 B1	Dec. 17, 2002
Saito	JP 11190280 A	Jul. 13, 1999

REJECTIONS

Appellants seek review of the following rejections:

Claims 1-3 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Iles, Nishioka, and either Muller or Williams;

Claims 1 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ray, Saito, and either Muller or Williams;

Claims 1 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nishioka and either Muller or Williams;

Claims 6 and 10-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ray, Saito, Seyler, and either Muller or Williams;

Claims 4 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ray, Saito, Seyler, either Muller or Williams, Sundén, and Molimard;

Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ray, Saito, either Muller or Williams, Edwards, and Barraclough;

Claim 13 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ray, Saito, either Muller or Williams, Seyler, Edwards, and Barraclough.

ANALYSIS

Claims 1-3 and 9 rejected over Iles, Nishioka, and either Muller or Williams

The Examiner finds that Iles does not disclose the limitation of independent claims 1 and 9 of the compression tube flange having a cylindrically shaped cross section. Ans. 5. However, the Examiner determines that Iles discloses a flange (in the form of dovetail-shaped rib 27) that secures the compression tube to the compression surface and also notes that Iles discloses that the rib can be formed with a different section reducing to a neck adjacent the tube. Ans. 4-5 (citing Iles, col. 3, ll. 45-50). The Examiner then finds that Muller and Williams both disclose compression tubes having flanges with cylindrically shaped cross sections that reduce to a neck adjacent the tube and concludes it would have been obvious to a person having ordinary skill in the art to provide the flange of Iles with a cylindrically shaped cross section as taught by Muller or Williams. Ans. 5-6.

Appellants first argue that Muller and Williams both show flanges extending only partially along their respective compression tubes, with neither reference “showing its flange extending along the length of the compression tube.” App. Br. 15. This argument is not convincing. Claims 1 and 9 both recite the flange extending along “a length” of the compression tube and do not require the flange to extend the *entire* length of the tube. *See In re Self*, 671 F.2d 1344, 1348 (CCPA 1982) (“[A]ppellant’s arguments fail from the outset because . . . they are not based on limitations appearing in the claims.”). Moreover, the flange of Iles is shown to extend the entire length of its tube.

Appellants also argue that “there is no apparent teaching, suggestion or motivation” to combine Muller and Williams with Iles. *Id.* This argument is also unconvincing. The Supreme Court has rejected a rigid requirement for an actual teaching, suggestion, or motivation to combine references. *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 419 (2007) (“Helpful insights, however, need not become rigid and mandatory formulas; and when it is so applied, the [teaching-suggestion-motivation] test is incompatible with our precedents.”). Moreover, Appellants’ argument fails to address the specific rationale provided by the Examiner, namely that differently shaped reduced-neck sections will trap and hold the rib in place. Ans. 5-6 (citing Iles, col. 3, ll. 45-50). In this instance, a person having ordinary skill in the art would have recognized that the cylindrically shaped flanges of Muller and Williams, with their reduced necks adjacent the tube, would adequately secure the tube to the compression surface, contrary to Appellants’ assertion on page 14 of the Appeal Brief. The proposed modification of Iles is thus the simple substitution of one known mechanical

element for another that produces predictable results. *See KSR*, 550 U.S. at 416 (“when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result”). The Examiner thus provides adequate reasoning based on rational underpinnings to explain why one of ordinary skill would have been led to provide the compression tube of Iles with a cylindrically shaped flange.

The Examiner further finds that Iles does not disclose the claimed compression means or roller having a rest position in which the roller is not in contact with the compression tube, but Nishioka discloses a pump having a roller that is parked in a position not in contact with the tube when the pump is not operating to prevent damage to the tube. Ans. 6. The Examiner concludes it would have been obvious to a person having ordinary skill in the art to modify Iles such that the rollers do not compress the tubes when the pump is not operating as suggested by Nishioka. *Id.*

In response, Appellants argue that in all of the embodiments disclosed by Iles at least one roller is always in contact with the tube and Iles “fundamentally disclose[s] the importance of not providing a rest position with the compression means free of all contact with the tube, to achieve the stated goal of continuous flow.” App. Br. 13. Appellants also argue that “Nishioka discloses a valve 110 that squeezes and closes off tube 103 when roller 105 leaves the tube (see Figs. 10-12), and opens only after roller 105 engages the tube again (see col. 7, lines 53-62)” and Nishioka thus teaches away from the concept of incrementally compressing the compression tube in a manner such that the compression tube is free of any occlusions. App. Br. 14. However, Nishioka merely expresses a preference for using the

valve 110 and does not criticize, discredit, or discourage the use of pumps without such a valve. As such, Nishioka does not teach away from the proposed combination. *See DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) (“A reference does not teach away, however, if it merely expresses a general preference for an alternative invention but does not ‘criticize, discredit, or otherwise discourage’ investigation into the invention claimed. *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004).”). Therefore, Appellants’ teaching away argument is not persuasive.

In addition, we agree with the Examiner’s finding that the embodiment shown in Figures 14-16 of Nishioka expressly does not require the valve 110. Ans. 19 (citing Nishioka, col. 9, ll. 19-20). Specifically, this embodiment of Nishioka includes a pair of rollers 205 supported on a rotor plate 204 by levers 207 such that the rollers 205 move to an operation position when the rotor plate 204 rotates in the direction of arrow A in Figure 15 and to a rest or hold position when the rotor plate 204 rotates in the direction of arrow B in Figure 16. Nishioka, col. 8, l. 64 to col. 9, l. 2. The rollers 205 sequentially squeeze the tube when in the operation position and release pressure on the tube when in the rest position, thereby avoiding deterioration of the tube while the pump is stopped. Nishioka, col. 9, ll. 28-34. As such, this embodiment of Nishioka discloses a pump in which the rollers have a rest position where the compression tube is free from occlusion from the rollers and any other structure.

Appellants argue that even for this embodiment, Nishioka stresses the importance of constant contact and compression. Reply Br. 4. This is not persuasive because the constant compression of Nishioka applies only

during operation of the pump. As discussed *supra*, Nishioka teaches that the rollers do not compress the tube while the pump is stopped. Appellants also note that “it appears the Examiner did not rely on this portion of Nishioka [i.e., the embodiment of Figs. 14-16] in the Final Rejection.” *Id.* However, by failing to timely file a petition to the Director seeking review of the Examiner’s failure to designate the rejection as a new ground of rejection, Appellants have waived any arguments that the rejection must be designated as a new ground. *See Manual of Patent Examining Procedure* (MPEP) § 1207.03 (IV) (8th ed., Rev. 9, Aug. 2012).

For the above reasons, Appellants’ arguments do not apprise us of error in the Examiner’s rejection. We thus sustain the rejection of independent claims 1 and 9 under 35 U.S.C. § 103(a) as being unpatentable over Iles, Nishioka, and Muller or Williams. We also sustain the rejection of claims 2 and 3, which depend from claim 1 and for which Appellants do not advance separate argument.

Claims 1 and 9 rejected over Ray, Saito, and either Muller or Williams

The Examiner finds that Ray does not disclose a pump tube having a cylindrically shaped flange that engages a channel for securing the tube in place. Ans. 8. However, the Examiner finds that Muller and Williams both disclose such a tube and concludes it would have been obvious to a person having ordinary skill in the art to modify Ray by providing the tube with a cylindrically shaped flange to be received in a channel as taught by Muller or Williams for the purpose of holding the tube in place. *Id.*

Appellants argue against this modification on the basis that there is no need to provide the pump of Ray with the flanges and grooves of Muller or Williams to secure the tube because Ray already includes two rigid

connectors 204 and 205 for securing the compression tube. App. Br. 16. This contention is not persuasive. We agree with the Examiner that securing the middle portion of Ray's tube between the connectors 204 and 205 would motivate one of ordinary skill in the art to utilize the flanges and grooves of Muller or Williams. Ans. 23. In other words, Ray has a substantial length of flexible tube 202 extending between the rigid connectors 204 and 205. One of ordinary skill in the art would realize that flanges such as those taught by Muller or Williams might better secure this portion of tube 202. We accordingly agree with the Examiner's conclusion that it would have been obvious to provide the tube of Ray with a cylindrically shaped flange.

The Examiner further finds that Ray does not disclose the claimed compression means or roller having a rest position in which the roller is not in contact with the compression tube, but Saito discloses that the rollers can be evacuated to an area where the tube is not compressed by the rollers. Ans. 8. The Examiner concludes it would have been obvious to a person having ordinary skill in the art to modify Ray so that the rollers can be evacuated to an area where they do not compress the tube as taught by Saito for the purpose of preventing distortion of the tube when the pump is not being operated. Ans. 8-9.

Appellants argue that "there is no apparent modality how the two roller Saito pump could be implemented in the three roller Ray device." App. Br. 16. This argument is not persuasive because, as noted by the Examiner, Figures 11 and 12 of Saito depict a three-roller embodiment. Ans. 23. We also disagree with Appellants' argument that one skilled in the art would not be motivated to implement Saito, which is used for non-critical ink flow, in the Ray device used to administer critical amounts of medicine.

App. Br. 16-17. This argument is not persuasive because, as noted by the Examiner, using a non-occluded tube in the Ray device would not be problematic (with respect to administering unmeasured amounts of medicine) because the non-occluded state would only occur when the device is inactive. Ans. 23-24.

Appellants' arguments thus do not apprise us of error in the Examiner's rejection of claims 1 and 9 under 35 U.S.C. § 103(a) as being unpatentable over Ray, Saito, and Muller and Williams, and we sustain the rejection.

Claims 1 and 9 rejected over Nishioka and either Muller or Williams

The Examiner finds that Nishioka discloses a pump that includes a compression tube 103 and a roller or compression means 105 for compressing the tube. Ans. 9. Regarding the claimed cassette assembly, the Examiner finds that

the pump housing (ink jet housing) of Nishioka encloses a cavity which includes the assembly (15) with guide member (106) which reads on the cassette since the guide member (106) has a compression surface (106A) that conforms to the tube (103); the pump housing (ink jet housing) would then also include the compression means in the cavity.

Ans. 10. The Examiner also states that the flange like attachment shown in Figure 2 of Nishioka can be used to removably mount the assembly 15 to the "housing," which is identified as the "ink jet recording device depicted in Figure 1." Ans. 19. From this, the Examiner determines that "[t]he housing and its interior (cavity) reads on 'housing that defines a cavity'" and "[a]ssembly (15) therefore reads on the removable cassette because the

flange like attachment makes it possible to disassemble, and the cassette is inside the cavity of the housing.” *Id.*

We agree with Appellants that Nishioka fails to disclose a cassette assembly that is removably disposed in the cavity of a pump housing. App. Br 18; Reply Br. 5. The Examiner’s position that Nishioka’s ink jet recording device meets the claimed pump housing is misguided because the claims require that the pump housing be an element of the pump.¹ In Nishioka, the “assembly” 15 referred to by the Examiner is in fact the pump. *See* Nishioka, Abstr.; col. 4, ll. 46-47; Figure 2. The pump 15 is mounted to the frame of the ink jet recording device, as depicted in Figure 1 of Nishioka. The ink jet recording device thus cannot be considered to be a component of the pump 15. Furthermore, because the “assembly” 15 is actually the pump, and not a component of the pump, it cannot be the claimed cassette assembly.

For the above reasons, the Examiner’s combination of references does not teach or suggest all of the limitations of claims 1 and 9. As such, we do not sustain the rejection of claims 1 and 9 under 35 U.S.C. § 103(a) as being unpatentable over Nishioka and Muller and Williams.

Rejections of claims 4-6, 8 and 10-13

Each one of claims 4-6, 8 and 10-13, which depend from claim 1 or claim 9, is rejected as being obvious over the combination of Ray, Saito, and Muller and Williams in further combination with one or more of a plurality of additional references (i.e., Seyler, Sundén, Molimard, Edwards and Barraclough). Appellants advance no separate arguments in connection with

¹ Claims 1 and 9 both recite a pump that *comprises* a pump housing defining a cavity *and* a cassette assembly removably disposed in the cavity.

claims 4-6, 8 and 10-13 but instead rely on their dependency from claim 1 or claim 9 for patentability. App. Br. 20-21. As we find no deficiency in the Examiner's rejection of claims 1 and 9 as being obvious over the combination of Ray, Saito, and Muller and Williams for the reasons discussed *supra*, we also sustain the rejection of claims 4-6, 8 and 10-13 for the same reasons.

DECISION

We affirm the decision of the Examiner rejecting claims 1-3 and 9 under 35 U.S.C. § 103(a) as being unpatentable over Iles, Nishioka, and Muller or Williams.

We affirm the decision of the Examiner rejecting claims 1 and 9 under 35 U.S.C. § 103(a) as being unpatentable over Ray, Saito, and Muller and Williams.

We reverse the decision of the Examiner rejecting claims 1 and 9 under 35 U.S.C. § 103(a) as being unpatentable over Nishioka and Muller and Williams.

We affirm the decision of the Examiner rejecting claims 4-6, 8 and 10-13.

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

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