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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JAMES C. ZUCK and ALEX L. HOFFMAN

Appeal 2019-002023
Application 15/407,588
Technology Center 3700

Before EDWARD A. BROWN, WILLIAM A. CAPP, and
BRENT M. DOUGAL, *Administrative Patent Judges*.

BROWN, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–14. 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 party in interest as Marshall Excelsior Co. Appeal Br. 3.

CLAIMED SUBJECT MATTER

Appellant's disclosure "relates to a valve assembly, and more specifically, a valve assembly for controlling pressures on opposing sides of the valve assembly prior to opening the valve assembly." Spec. ¶ 2.

Claims 1, 7, 8, and 14 are independent claims. Claim 1 illustrates the claimed subject matter.

1. A valve assembly comprising:
 - a housing having an inlet and an outlet spaced from each other, a first chamber defining said inlet, a second chamber defining said outlet, and a valve seat disposed between said first and second chambers, wherein fluid communicates between said first and second chambers;
 - a valve head disposed in said housing and moveable relative to said housing between an open position spaced from said valve seat and a closed position engaged with said valve seat;
 - a valve stem coupled to said valve head and being rotatably and reciprocally movable for moving said valve head between said open and closed positions;
 - a retainer plate coupled to said valve head;
 - a valve seal disposed between said valve head and said retainer plate; and
 - wherein said valve head includes an integrally formed rivet that secures said retainer plate to said valve head, thereby retaining said valve seal to said valve head.

Appeal Br. (Claims App.).

REJECTION

Claims 1–14 are rejected under 35 U.S.C. § 102(b) as anticipated by Novakovi (US 5,217,043, issued June 8, 1993).

ANALYSIS

Claims 1–6

The Examiner finds that Novakovi discloses all limitations of claim 1 including a valve head (plate 4), a retainer plate (diaphragm guide 9) coupled to the valve head, and a valve seal (central portion 80 of diaphragm) disposed between the valve head and the retainer plate, wherein the valve head includes an integrally formed rivet (“the un-numbered portion of 4 at the bottom most part of 4 which mates with 9”) that secures the retainer plate to the valve head, thereby retaining the valve seal to the valve head. Final Act. 2–3 (citing Novakovi Fig. 3).

In support of these findings, the Examiner provides an annotated Figure 3 of Novakovi, which identifies the “plate,” “seal,” “valve head,” and “rivet.” *Id.* at 6. The Examiner explains that the “rivet” is shown as “the enlarged section which abuts the outer portion of plate 9 to retain the assembly together and passes through the plate in a similar manner as applicant’s device.” *Id.* The Examiner notes that Figure 1 of Novakovi shows a screw 8 used to retain the assembly, but finds that Figure 3 does not depict a screw 8. *Id.* The Examiner finds that, in Figure 3, “[t]he cross-section lines for part 4 are uniform and unbroken throughout the complete part of the valve head through and including the rivet section/portion, therefore the rivet is included integrally with the valve head.” *Id.*; *see also* Ans. 10 (“Part 4 in Novakovi is shown as being one piece, there are no broken lines or other construction lines within the cross-section of Figure 3 which indicates that an additional part is present within part 4 (the cross-section lines (angled lines) are bold and consistent within part 4).”). The Examiner submits that as Figure 3 does not show a screw 8 threaded into the

valve head, therefore, the valve has a rivet integrally formed with the valve head. Final Act. 6.

Alternatively, the Examiner finds that, “if a screw 8 was threaded into the valve head 4 of Figure 3, then the screw 8 once fully threaded into the valve head would be formed by the threading process into the valve head and then would become integral to the valve head.” *Id.* at 7–8.

Appellant contends that Novakovi does not disclose a valve seal disposed between a valve head and a retainer plate coupled to the valve head, where the valve head includes an integrally formed rivet that secures the retainer plate to the valve head, thereby retaining the valve seal to the valve head. Appeal Br. 17. In contrast, Appellant contends, a screw 8 secures diaphragm guide 9 to valve plate 4. *Id.* Appellant disagrees that the unnumbered portion at the bottom-most part of valve plate 4 which mates with diaphragm guide 9 is “an integrally formed rivet.” *Id.* at 17–18. Appellant contends that Novakovi does not describe a rivet, but only screw 8 to secure diaphragm guide 9 to valve plate 4. *Id.* at 18.

Appellant further contends:

Novakovi further states that FIGS. 3 and 4 show a first alternate or second embodiment of the invention which has two additional features from the first embodiment of FIG. 1 (Col. 8, lines 55–57). *Contrary to the Examiner, the second embodiment of FIG. 3 includes the screw 8 (although not shown in broken outline) to secure the diaphragm guide 9 to the valve plate 4 to form a diaphragm connector and not a valve head including an integrally formed rivet that secures a retainer plate to the valve head, thereby retaining the valve seal to the valve head.* In other words, FIG. 3 is merely a genericized representation of the same screw 8 as Figure 1, without being numbered. This part in FIG. 3 is not a rivet. Nowhere does Novakovi suggest this is a rivet, and nowhere does Novakovi

suggest that anything other than a screw is used to secure diaphragm guide 9 to the valve plate 4.

Appeal Br. 19 (emphasis added).

Appellant points out paragraph 46 of Appellant's Specification describes the rivet. *Id.* Appellant contends that "those having ordinary skill in the art recognize that the term 'rivet' is more than a screw and generally comprises a fastener that requires some manner of deformation to connect two parts together." *Id.* at 20.

The Examiner responds:

Figure 3 in Novakovi shows a cylindrical shaped protrusion (the post part of 4 which goes through seal 80 and plate 9) that is flattened (*deformation must occur in order to form the flattened rivet end*) at its distal end once the retainer plate 76 is positioned over the rivet 80 to form a head (the lowermost end of 4 immediately above numeral 9 has a flange that abuts plate 9 which is flattened to form a head).

Ans. 11 (emphasis added).

Appellant's contentions are more persuasive. As described in Novakovi, "[a] screw 8, broken outline, secures the diaphragm guide 9 to the valve plate 4 to form a diaphragm connector." Novakovi, col. 4, ll. 13–15 (boldface omitted), Fig. 1. The reference number 8 is shown only in Figure 1. As pointed out by Appellant, Novakovi describes that the second embodiment shown in Figures 3 and 4 "has two additional features from the first embodiment of FIG. 1." Appeal Br. 19; *see* Novakovi, col. 8, ll. 55–58. Novakovi does not, however describe that either of these "two additional features" relates to replacing screw 8 with an alternative fastener to secure diaphragm guide 9 to valve plate 4 in the second embodiment. *See, e.g.*, Novakovi, col. 8, l. 55–col. 10, l. 68.

We note that Novakovi describes the first embodiment shown in Figure 1 with reference to Figure 2. *See* Novakovi, col. 3, l. 55–col. 5, l. 22. The bottom-most end of valve plate 4 shown in Figure 1 has a similar configuration as the bottom-most end of valve plate 4 shown in Figure 2. Figure 2 does not, however, show that diaphragm guide 9 is secured to valve plate 4 by a screw, as indicated in Figure 1. This appears to imply that the configuration of the bottom-most end of valve plate 4 shown in Figure 2 is a more simplified version than shown in Figure 1. Also, we note that valve plate 4 shown in Figure 2 appears to have the same cross-hatching pattern as valve plate 4 shown in Figure 3. We agree with Appellant that the cross-hatching pattern used for valve plate 4 in Figure 3 does not, by itself, establish by a preponderance of the evidence that the second embodiment does *not* include a screw to secure diaphragm guide to valve plate 4

Further, the “post part of 4 which goes through seal 80 and plate 9” shown in Figure 3 of Novakovi described by the Examiner (Ans. 11) appears to have a closely similar structure as the “post part of 4 which goes through seal 80 and plate 9” shown in Figure 1 of Novakovi. Also, screw 8 shown in Figure 1 appears to have a closely similar structure as the “flattened rivet end” of “the post part of 4” in Figure 3. We agree with Appellant that the Examiner has not established by a preponderance of the evidence that the valve shown in Figure 3 of Novakovi necessarily has a “flattened rivet end.”

As noted, the Examiner provides an alternative position that, if a screw 8 was fully threaded into the valve head (valve plate 4) of Figure 3 of Novakovi, then the screw 8 would become integral to the valve head. *See* Final Act. 7–8. Appellant’s Specification describes a threaded fastener 78 as shown, for example, in Figure 4, and separately describes a rivet 80, as

shown in Figures 5² and 11, as alternatives. *See* Spec. ¶ 44, Figs. 4. As such, Appellant’s Specification distinguishes threaded fastener 78 from rivet 80. As described, threaded fastener 78 extends through retainer plate 76 into valve head 36, whereas “the valve head 36 *includes an integrally formed rivet 80* that secures the retainer plate 76 to the valve head 36.” Spec. ¶ 44 (emphasis added). In view of this disclosure, even assuming, *arguendo*, that the second embodiment shown in Figure 3 of Novakovi includes a screw to secure diaphragm guide 9 to valve plate 4, this would not establish by a preponderance of the evidence that Novakovi discloses a “valve head [that] includes an integrally formed rivet that secures said retainer plate to said valve head,” as recited in claim 1.

For the foregoing reasons, we do not sustain the rejection of claim 1, or claims 2–6 depending therefrom, as anticipated by Novakovi.

Claim 7

Claim 7 is directed to a valve assembly and recites, *inter alia*, “said valve head includes *a post* extending from said front portion [of said post]” and “*said post has an enlarged head at a distal end of said post* spaced from said front portion to secure said retainer plate to said valve head, thereby retaining said valve seal to said valve head.” Appeal Br. 34–35 (Claims App.) (emphasis added).

The Examiner finds that Novakovi discloses a valve head (valve plate 4) including a post (“the section of 4 which passes through the opening in 9 and 80) extending from said front portion”), and that the post has an enlarged head (“the portion of the post that abuts 9 at the lower most portion

² *See* replacement Figure 5 filed on Sept. 18, 2017.

of the post”) at a distal end spaced from the front portion of the valve head to secure the retainer plate to the valve head, thereby retaining the valve seal to the valve head. Final Act. 4–5 (citing Novakovi, Fig. 3).

Appellant contends that, in Novakovi, screw 8 secures diaphragm guide 9 to valve plate 4, but Novakovi does not disclose a post having an enlarged head at a distal end of the post spaced from a front portion of the valve head to secure the retainer plate to the valve head, thereby retaining a valve seal to the valve head. Appeal Br. 22. Appellant asserts that the unnumbered portion of valve plate 4 at the bottom most part of valve plate 4 which mates with diaphragm guide 9 is not an enlarged head at a distal end of a post. *Id.*

As discussed above for claim 1, the Examiner has not established that Figure 3 of Novakovi discloses an integrally formed rivet at the lower most portion of valve plate 4. However, claim 7 does not recite an “integrally formed rivet” or that the post is “integrally formed” with the valve head. Accepting Appellant’s argument that Novakovi’s valve shown in Figure 3 includes a screw, such as screw 8 shown in Figure 1, which secures diaphragm guide 9 to valve plate 4, Appellant has not provided any persuasive argument why such screw cannot be considered as having “an enlarged head at a distal end of said post,” as recited in claim 7.

We sustain the rejection of claim 7 as anticipated by Novakovi.

Claims 8–13

Claim 8 is directed to a method of assembling a valve assembly, comprising, *inter alia*, the steps of “disposing a valve seal adjacent the valve head,” “disposing a retainer plate adjacent the valve seal,” and “forming a

rivet integrally with the valve head and securing the retainer plate to the valve head, thereby retaining the valve seal to the valve head.” Appeal Br. 35 (Claims App.) (emphasis added). The Examiner finds that “the device shown by Novakovi in Figure 3, will perform the methods as recited in claims 8–14, during normal operational use of the device.” Final Act. 5.

However, claim 8 is directed to a method of assembling the recited valve assembly, and, accordingly, the Examiner is required to establish that Novakovi discloses each of the assembly steps recited. As discussed above, however, we agree with Appellant that the Examiner has not established with sufficient evidence that Novakovi discloses “forming a rivet integrally with the valve head,” as recited in claim 8. Appeal Br. 23–27.

Accordingly, we do not sustain the rejection of claim 8, or claims 9–13 depending therefrom, as anticipated by Novakovi.

Claim 14

Claim 14 is also directed to a method of assembling a valve assembly, comprising, *inter alia*, the step “*enlarging the post at a distal end of the post to form an enlarged head by orbital forming to form a rivet integrally with the valve head and securing the retainer plate to the valve head, thereby retaining the valve seal to the valve head.*” Appeal Br. 36–37 (emphasis added).

As noted above, the Examiner’s position for claim 14 is that the device shown in Figure 3 of Novakovi will perform the recited method “during normal operational use of the device.” Final Act. 5. However, we agree with Appellant that the Examiner has not established with evidence that Novakovi discloses the claimed enlarging step. Appeal Br. 28–32.

Regarding this step, the Examiner states, “[i]n regards to the limitations for orbital forming the rivet,” and then quotes language from *In re Thorpe*, 777 F.2d 695, 698 (Fed. Cir. 1985), that pertains to product-by-process claims. To the extent the Examiner construes the “enlarging” step as a product-by-process limitation, or construes claim 14 as a whole as being directed to the valve assembly itself (i.e., a product as opposed to a method), we disagree. Claim 14 is directed to assembling the valve assembly. The “enlarging” step, in combination with the preceding steps of the method, positively describes how the valve assembly is assembled. It is improper to disregard how the post is enlarged by the enlarging step in this method. As the Examiner has not established that Novakovi discloses the enlarging step, we do not sustain the rejection of claim 14 as anticipated by Novakovi.

DECISION SUMMARY

In summary:

Claims Rejected	§	Reference(s)	Affirmed	Reversed
1-14	102(b)	Novakovi	7	1-6, 8-14

TIME PERIOD FOR RESPONSE

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 IN PART