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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte THOMAS WEITZE

Appeal 2020-001807
Application 15/610,260
Technology Center 3700

Before MICHAEL L. HOELTER, WILLIAM A. CAPP, and
BRANDON J. WARNER, *Administrative Patent Judges*.

HOELTER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant appeals from the Examiner's decision to reject claims 1–17, which are the sole claims pending in this application.¹ *See* Appeal Br. 18–22, Claims Appendix. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM the Examiner's rejections of these claims.

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 “Robert Bosch GmbH.” Appeal Br. 2.

CLAIMED SUBJECT MATTER

The disclosed subject matter relates to “a check valve for a solenoid valve.” Spec. 1.² Apparatus claims 1 and 7 are independent. Claim 1 is illustrative of the claims on appeal and is reproduced below.

1. A check valve for a solenoid valve, comprising:
a check valve seat arranged on an edge of a fluid passage;
and
a movable closing element configured to execute a direction-oriented throughflow and sealing function,
wherein the closing element has a sealing cone, a contact foot, and an elastic sealing ring arranged between the contact foot and the sealing cone, the contact foot having a circular base surface and a plurality of outflow grooves formed on a periphery that extends from the circular base surface, and
wherein the outflow grooves are configured in each case with an arcuate seating edge for the elastic sealing ring during sealing, the arcuate seating edges having a predetermined arc length so that a circle segment of the elastic sealing ring butts against the respective arcuate seating edge during sealing, the circle segments having an opening angle in the region of 40° to 120°.

EVIDENCE

Name	Reference	Date
Gruschwitz et al. (“Gruschwitz”)	US 6,382,250 B1	May 7, 2002
Guy et al. (“Guy”)	FR 2665503	Dec. 11, 1992
Bruno	FR 2699640	Mar. 10, 1995

² Appellant’s Specification lacks line or paragraph numbering. We thus reference Appellant’s Specification via page number only.

REJECTIONS

Claims 1, 3–6, 12, 14, and 15 are rejected under 35 U.S.C. § 102(a)(1) as anticipated by Bruno.³

Claim 2 is rejected under 35 U.S.C. § 103 as unpatentable over Bruno.

Claims 7–10 are rejected under 35 U.S.C. § 103 as unpatentable over Gruschwitz and Bruno.

Claims 11, 13, 14, 16, and 17 are rejected under 35 U.S.C. § 103 as unpatentable over Bruno and Guy.

ANALYSIS

The rejection of claims 1, 3–6, 12, 14, and 15 as anticipated by Bruno

Appellant argues the above claims (i.e., claims 1, 3–6, 12, 14, and 15) together. *See* Appeal Br. 6–12. We select claim 1 for review, with the remaining claims standing or falling therewith. *See* 37 C.F.R. § 41.37(c)(1)(iv).

Claim 1 recites a “sealing ring” and “a plurality of outflow grooves.” Claim 1 further recites “wherein the outflow grooves are configured in each case with an arcuate seating edge” and that a “segment of the elastic sealing ring butts against the respective arcuate seating edge during sealing.” Appellant contends that “Bruno does not disclose that any portion of [Bruno’s] elastic ring abuts against the edges of [Bruno’s] cutouts 26.” Appeal Br. 8; *see also* Reply Br. 5 (there is no “support for the Examiner’s assertion that the seal is compressed against the arcuate edge of the

³ We refer to the provided English machine translation of this document, as does the Examiner. *See* Final Act. 3. This translation lacks line or paragraph numbering, so we refer to this document via page number only.

longitudinal ducts” 26). The Examiner disagrees, finding that in Bruno, “the outflow grooves are configured in each case with an arcuate seating edge” and that “the sealing ring compresses against the arcuate seating edge to prevent flow.” Final Act. 3.

Both Appellant and the Examiner replicate and annotate Figures 2b and 2c of Bruno, and each also re-sizes these figures while providing additional lines extending between the figures to show alignment of certain features (the original Bruno drawings have no such inter-linking lines or any indication as to their relative scale). *See* Appeal Br. 9; Ans. 14. Both Appellant and the Examiner also allege that the other “improperly aligned” or “mischaracterized” Bruno’s figures. Reply Br. 2; Ans. 14.

Regardless of whose annotated drawings are reviewed, Figure 2b of Bruno depicts three evenly-spaced arcuate passages or ducts 26 cut into base 27. *See also* Bruno pg. 12 (“successively at 120 degrees of offset . . . a longitudinal passage 26 [is cut] in the thickness of the solid portion 27”); Reply Br. 4 (“the three longitudinal ducts (26) are evenly spaced around the center of the piston”). Figure 2c of Bruno depicts base 27 with arcuate cutouts on one side of seal 62 with Bruno stating, “the seal 62 . . . is compressed against the valve seat 65” located on the other side of seal 62. Bruno pg. 11. It is readily apparent to a skilled person that movement of scalloped or cutout base 27 is employed “to control the compression of the seal” 62 against conical valve seat 65.⁴ Bruno pg. 13; *see also* Bruno Fig. 2c.

⁴ What a reference teaches or suggests must be examined in the context of the knowledge, skill, and reasoning ability of a skilled artisan. Further, what a reference teaches a person of ordinary skill is not “limited to what a

Appellant contends that “Bruno does not disclose that any portion of the elastic ring abuts against the edges of the cutouts 26.” Appeal Br. 8; *see also* Reply Br. 3. However, such contention is at odds with Bruno’s clear teaching in Figure 2c of arcuate cutouts 26 in base 27 immediately adjacent to and engaging seal 62. *See also* Ans. 15. Appellant does not explain how seal 62 is to be compressed against seat 65 as enumerated above but for base 27 (including the edges of its arcuate cutouts) conveying the compressive force to seal 62.

Appellant further alleges that any contact between seal 62 and base 27 “will be *a linear contact*.” Appeal Br. 8. However, this assertion disregards the arcuate shape of the edges of cutouts 26 in base 27, which also compress against seal 62. Appellant additionally contends that “Bruno does not show or describe any portion of the sealing ring as laterally overhanging the edges of the cutouts 26 during sealing.” Appeal Br. 9. This is true because Bruno does not depict the device *when in the sealed position*. However, Bruno’s figures clearly depict seal 62 extending radially outwardly beyond the edges of cutouts 26. *See* Ans. 15 (“the sealing ring will overhang the outflow grooves 26 when seen in the view of Figure 2b”). Additionally, a skilled person would further understand that seal 62 is compressed via the movement of base 27 (along with its cutout edges) towards seat 65, with seal 62 sandwiched therebetween. *See* Bruno Fig. 2c and pg. 13.

reference specifically ‘talks about’ or what is specifically ‘mentioned’ or ‘written’ in the reference.” *Syntex (U.S.A.) LLC v. Apotex, Inc.*, 407 F.3d 1371, 1380 (Fed. Cir. 2005). An artisan must be presumed to know something about the art apart from what the references disclose. *See In re Jacoby*, 309 F.2d 513, 516 (CCPA 1962).

Appellant also reiterates the assertion that Bruno fails to disclose “that any portion of the sealing ring [62] would butt against the edges of the cutouts 26.” Appeal Br. 9. However, as cutouts 26 are made in base 27, and as base 27 abuts and compresses seal 62, Appellant does not explain how seal 62 could possibly avoid abutting base 27 and its associated cutout edges. *See also* Bruno Fig. 2c; Ans. 15.

Accordingly, and based on the record presented, we are not persuaded the Examiner erred in finding that Bruno discloses these limitations of claim 1.

Claim 1 further recites that the segments of the sealing ring that abut the arcuate edges during sealing “hav[e] an opening angle in the region of 40° to 120°.” The Examiner relies on page 12 of Bruno for such teachings. *See* Final Act. 3; *see also* Bruno Fig. 2b. As noted above, these arcuate edges of cutouts 26 that abut the sealing ring were cut into base 27 “at 120 degrees of offset.” Bruno pg. 12; *See also* Bruno Fig. 2b. Appellant contends that “[t]he angular offset between ducts, however, is not relevant to the angular segments of the sealing ring that abut the outflow grooves.” Appeal Br. 10. However, Appellant is mistaken that the location of cutouts 26 is irrelevant to the recited sealing ring segments. This is because the edges of the cutouts and the recited sealing ring segments are identified in terms of each other, i.e., claim 1 recites that “the elastic sealing ring butts against the respective arcuate seating edge.” Hence, the one defines the other. Here, due to Bruno’s cutout spacing of 120 degrees, the opening angle of each of Bruno’s equally spaced sealing ring segments can have no greater extent between them than an arc of 120 degrees (but the arc of each cutout can be less). *See* Bruno Fig. 2b. As a consequence, Appellant does

not explain how Bruno fails to teach the limitation of the sealing ring's "circle segments having an opening angle in the region of 40° to 120°." *See* Reply Br. 4.

Accordingly, and based on the record presented, Appellant is not persuasive that Bruno fails to anticipate claim 1. We sustain the Examiner's rejection of claims 1, 3–6, 12, 14, and 15.

*The rejection of claim 2
as unpatentable over Bruno*

Appellant's contention regarding claim 2 is that this claim "depends from claim 1, and thus incorporates all of the limitations of claim 1." Appeal Br. 12. Appellant contends that the Examiner's rejection of claim 2 is faulty "as set forth above" regarding claim 1. Appeal Br. 12. Appellant's contention is not persuasive. We sustain the Examiner's rejection of claim 2.

*The rejection of claims 7–10
as unpatentable over Gruschwitz and Bruno*

Appellant only presents arguments regarding independent claim 7. *See* Appeal Br. 12–16 ("claims 8–10 are patentable over Gruschwitz and Bruno for at least the same reasons as claim 7 as set forth above"). We select claim 7 for review.

Appellant contends that "like claim 1, claim 7 requires" certain limitations and acknowledges the Examiner's reliance on Bruno for depicting such limitations. Appeal Br. 13. Appellant thereafter contends that "[f]or the same reasons as those discussed above with regard to the rejection of claim 1, . . . the Examiner has mischaracterized the Bruno reference" and thus, claim 7 is equally allowable. Appeal Br. 13.

Appellant's contentions are not persuasive of Examiner error, and especially under the present rejection based on obviousness in contrast to the earlier rejection of claim 1 based on anticipation. *See* Appeal Br. 14–15. For example, the Examiner's reasoning for combining Gruschwitz and Bruno is because the combination “would allow for a large flow by increasing the flow area.” Final Act. 8. Appellant contends that the combination “is not needed and not relevant . . . because the advantage cannot actually be realized” in Gruschwitz's valve. Appeal Br. 15. However, Appellant does not dispute Bruno's clear teaching of reducing the size of base 27 via the creation of cutouts 26 therein. *See* above. As such, Appellant does not explain how this reduction in size of an impediment to fluid flow within Gruschwitz's reservoir 34 would fail to increase the flow area now available. To be clear, the Examiner is addressing Gruschwitz's fluid flow both “through and around [Gruschwitz's] valve 30 by use of the grooves taught by Bruno.” Ans. 16; *see also id.* at 15. In contrast, Appellant only addresses flow that moves “axially past the contact foot” (i.e., “through” the valve) and not also flow “around” the valve within Gruschwitz's reservoir 34, as addressed by the Examiner.⁵ Appeal Br. 15; *see also* Gruschwitz Fig. 1.

The Examiner states that “[b]y providing grooves in [Gruschwitz's] foot portion 40, as taught by Bruno, the fluid flowing through [Gruschwitz's] valve 30 does not impact the foot 40, and is instead able to

⁵ Appellant acknowledges that in Gruschwitz, “fluid can disperse radially” around the valve, but Appellant does not address the Examiner's reduction in the size of Gruschwitz's foot portion 40, via the implementation of Bruno's cutouts, to “allow for a large flow by increasing the flow area.” Reply Br. 6; Final Act. 8.

flow more freely through and around the valve 30 by use of the grooves taught by Bruno.” Ans. 15–16. Appellant does not address such flow “through and around” (see Appeal Br. 15; Reply Br. 6), and as such, Appellant is not persuasive of Examiner error on this point.

Accordingly, and based on the record presented, we sustain the Examiner’s rejection of claims 7–10 as unpatentable over Gruschwitz and Bruno.

*The rejection of claims 11, 13, 14, 16, and 17
as unpatentable over Bruno and Guy*

Appellant argues these claims as a group contending that they “depend directly or indirectly from claim 1” and that “Guy does not alleviate any of the deficiencies in Bruno discussed above with regard to the rejection of claim 1.” Appeal Br. 16. As indicated above, we are not persuaded that Bruno has any deficiencies that would need curing. Accordingly, as we are not persuaded the Examiner erred in rejecting claims 11, 13, 14, 16, and 17 as unpatentable over Bruno and Guy. We sustain their rejection.

CONCLUSION

In summary:

Claim Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 3–6, 12, 14, 15	102(a)(1)	Bruno	1, 3–6, 12, 14, 15	
2	103	Bruno	2	
7–10	103	Gruschwitz, Bruno	7–10	
11, 13, 14, 16, 17	103	Bruno, Guy	11, 13, 14, 16, 17	
Overall Outcome			1–17	

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED