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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/039,052	09/27/2013	Caroline SCHMID	888200-0150	6929
12919	7590	10/22/2019	EXAMINER	
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			ART UNIT	PAPER NUMBER
			3763	
			MAIL DATE	DELIVERY MODE
			10/22/2019	PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte CAROLINE SCHMID, MICHAEL MOSER,
NIKOLAUS DAUBITZER, HOLGER SCHROTH,
HEIKO NEFF, DOMINIQUE RAIBLE, ANTON KIERIG, and
THOMAS SCHIEHLEN

Appeal 2018-002595
Application 14/039,052
Technology Center 3700

BEFORE BRETT C. MARTIN, ANNETTE R. REIMERS, and
LEE L. STEPINA, *Administrative Patent Judges*.

STEPINA, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant,¹ Behr Gmbh & Co., Kg, appeals from the Examiner's decision to reject claims 1, 2, and 5–13. Non-Final Act. 1. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word “Appellant” to refer to “Applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as BEHR GMBH & CO. KG Appeal Br. 1.

CLAIMED SUBJECT MATTER

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

1. A heat exchanger comprising:
 - a first collecting box,
 - a second collecting box,
 - an at least one tube arranged between the first collecting box and the second collecting box,
 - a fluid inlet and a fluid outlet arranged on the first collecting box and the second collecting box,
 - wherein the at least one tube comprises at least two ends, wherein the first collecting box and the second collecting box each comprises an opening surrounded by an opening edge, wherein each opening edge comprises an edge contour corresponding to an outer contour of the at least one tube, wherein the at least two ends are each connected to the opening of the first collecting box and the second collecting box such that the at least one tube is in fluid communication with the first collecting box and the second collecting box, wherein each opening is designed such that an opening cross section narrows toward an interior portion of the first collecting box or the second collecting box, wherein, in an unassembled state, an inner contour of the opening bounds an opening hole having a width that is less than an outer width of the at least one tube, wherein, in an assembled state, the at least tube presses against the inner contour such that the opening hole width in the assembled state is larger than the opening hole width in the unassembled state, the inner contour deforms, the width of the opening hole matches the outer width of the at least one tube, and the inner contour applies a force to the at least one tube in a direction perpendicular to a surface of the tube, wherein said force fixes the at least one tube to the first collecting box, wherein the opening edge and the at least one tube form a groove that encircles the flat tube, wherein the groove contains an adhesive material.

Appeal Br. 22 (Claims App.).

REFERENCES

The prior art relied upon by the Examiner is:

Humpolik	US 4,531,577	July 30, 1985
Simcox	US 4,709,689	Dec. 1, 1987
Lesage	US 5,205,354	Apr. 27, 1993
Van Dine	US 6,230, 791 B1	May 15, 2001
Crook	US 2002/0162648 A1	Nov. 7, 2002
Amano	US 2007 /0240867 A1	Oct. 18, 2007

REJECTIONS

I. Claims 1, 2, 5, 7, 8, and 10 are rejected under 35 U.S.C. § 103(a) as unpatentable over Van Dine, Crook, and Humpolik. Non-Final Act. 2.

II. Claim 6 is rejected under 35 U.S.C. § 103(a) as unpatentable over Van Dine, Crook, Humpolik, and Lesage. Non-Final Act. 8.

III. Claim 9 is rejected under 35 U.S.C. § 103(a) as unpatentable over Van Dine, Crook, Humpolik, and Amano. Non-Final Act. 9.

IV. Claims 11 and 12 are rejected under 35 U.S.C. § 103(a) as unpatentable over Van Dine, Crook, Humpolik, and Simcox. Non-Final Act. 10.

V. Claim 13 is rejected under 35 U.S.C. § 103(a) as unpatentable over Van Dine, Crook, Lesage, Humpolik, Amano, and Simcox. Non-Final Act. 10.

OPINION

Rejection V (Claim 13)

Appellant first argues for the patentability of claim 13 (*see* Br. 14–21) and then relies on the same arguments in support of the remaining claims

(*see id.* at 21). Accordingly, our discussion begins with the rejection of claim 13 (Rejection V).

The Examiner finds that Van Dine discloses many of the elements recited in claim 13, but finds that “[Van Dine] is silent with respect to a multi-part collecting box including a box opening.” Non-Final Act. 10–15. The Examiner relies on the teachings of Lesage (specifically, multipart structure 1, 28, 38, and 40 including box opening 14, 38, and 40) to remedy this deficiency. *Id.* at 11–12 (citing Lesage, 5:9–15, Figs. 3, 5). The Examiner reasons that it would have been obvious “to configure the collecting box as disclosed by [Van Dine] in a multi-part form as taught by Lesage to facilitate assembly of a heat exchanger by ensuring proper seating of a plurality of tubes ends with at least one header tanks.” *Id.* at 12.

On pages 13–17 of the Brief, Appellant provides a table matching the references cited by the Examiner in the rejection of claim 13 with various claim elements, sets forth legal principles related to the law of obviousness, and baldly asserts, without explanation, that the rejection of claim 13 relies on impermissible hindsight. Such a conclusory assertion with no analysis to the underlying challenge is insufficient to apprise us of Examiner error.

Appellant then argues, “the Examiner mixes [] references that disclose metallic-only or plastics only heat exchangers without discussing the effect that a materials change would have on the features disclosed in that reference as a whole, or the intended purpose or application of the subject matter of each reference.” Br. 17. In this regard, Appellant asserts that the Examiner fails to explain how “the methods of creating a metal blank in Lesage allowing for the feature selected by the Examiner could be adapted for plastics, especially in view of Lesage relying on metal stamping and

forming, as well as other processes that *do not translate to plastics.*” *Id.* (emphasis added).

As the Examiner correctly points out, Lesage is relied upon to teach a multi-part structure for a collecting box, including a box opening closed by a cover (whereas Van Dine already discloses a collecting box). Ans. 7–8. Appellant’s assertion that the Examiner has not considered that Lesage discloses a metal heat exchanger, and claim 13 requires plastic or fiber-reinforced plastic collecting boxes, does not include any explanation as to why the box opening and multi-part structure disclosed by Lesage would not “translate to plastics.” Nor does Appellant explain persuasively why any of the processes used to create a box opening and multi-part structure in the heat exchanger disclosed by Lesage are necessary to the incorporation of a box opening and multi-part structure in the heat exchanger of Van Dine as proposed by the Examiner. In other words, the Examiner relies on the disclosure of certain structure in Lesage, not any particular process of making that structure, and Appellant has not pointed out any reason the Examiner’s proposed modification to the heat exchanger of Van Dine would require using the same processes Lesage uses.

The Examiner acknowledges that Van Dine does not teach the use of adhesive, as recited in claim 13, and turns to Crook to teach this element, reasoning that the use of an adhesive would improve heat exchanger leak resistance. Non-Final Act. 12–13 (citing Crook ¶ 65, Fig. 1D).

Appellant argues that “in using the Application as a blueprint, the Examiner failed to consider direct statements teaching away from making the combination proposed by the Examiner, including [Van Dine’s] teaching that, when using its latching or press-in embodiment, the adhesive is

eliminated.” Br. 18. In support of this argument, Appellant quotes the following language from Van Dine:

In the embodiment shown in FIG. 7, the end portions 34 of the cold plate 12 and the inner surfaces of the headers have no ramp-like engaging portions but instead are held together by a layer of an adhesive sealing material 46 coated on the end surfaces 36 of the cold plate and the engaging surfaces of the header. This arrangement also eliminates the necessity for fasteners to attach the headers to the cold plate.

Van Dine, 3:45–51; *see also* Br. 18.

We do not agree that the language quoted by Appellant teaches away from the use of adhesive. Indeed, the language quoted by Appellant appears to tout the benefits of using an adhesive inasmuch as the *need* for fasteners is eliminated.²

Appellant next asserts that various combinations of the references are possible, and, therefore, the Examiner must have resorted to the use of impermissible hindsight in proposing to combine the references in a way that meets all the requirements of claim 13. Br. 18. Specifically, Appellant states:

Lastly, the Examiner does not discuss why, when combining the six references together, the person of ordinary skill in the art would have selected each feature from the reference suggested by the Examiner and not one of the other five references. For example, why would one of ordinary skill in the art have selected a method of attaching tubes to a collecting box from a metal heat exchanger when there are two other references in the combination relating to plastics showing very different types of attachment? For that matter, within the two plastic

² We note that Van Dine does not indicate that the use of adhesive in combination with other fastening means is *precluded*. Rather, such a combination is simply not required.

references or the four metal references, why select one type over the other?

Id.

Appellant's argument does not specifically attack the rationales set forth by the Examiner in addressing each of the cited references. Rather, Appellant's argument amounts to an implied assertion that *only one* combination of the teachings of the cited references would have been obvious to a person of ordinary skill in the art at the time the claimed invention was made, or, that the existence of many possible combinations of the teachings in the prior art is evidence of the non-obviousness of any particular combination. Appellant provides no citation to any authority, either statutory or in case law, for such a principle.

Appellant next repeats a large portion of the language of claim 13 (beginning with the words "wherein, in an unassembled state" and ending with the words "said force fixes the at least one tube to the first collecting box" hereinafter the "fixing limitations") and asserts that neither of Van Dine and Humpolik discloses the quoted claim limitations. Br. 18–19. Specifically, Appellant asserts that Van Dine does not disclose applying a perpendicular force via its disclosed structure as required by claim 13. *Id.* at 19.

This argument is unpersuasive because, as the Examiner reiterates in the Answer, the rejection of claim 13 relies on Humpolik to teach this limitation. Ans. 12 (citing Humpolik, 6:19–32, Fig. 10).

Appellant addresses the Examiner's reliance on the teachings of Humpolik by reproducing a copy of Figure 8 of Humpolik and asserting that Humpolik's "tube [9]" is not even inserted into the sheet (21), but rather, it is the other way around, i.e., [.] the sheet is inserted into the tube." Br. 19–20.

Appellant's argument on this point is unpersuasive because the Examiner relies on the embodiment disclosed in Figure 10, not Figure 8, of Humpolik. In Figure 10 of Humpolik, tube 9 is inserted into sheet 21. *See* Humpolik, Fig. 10.

Appellant also asserts that the Examiner failed to give patentable weight to the "fixing limitations" because the Examiner determined that these were product-by-process features. Br. 20.

Although the Examiner stated that lines 15–23 of claim 13 recite product-by-process features, the Examiner also addressed the structure recited in this portion of the claim, finding that the proposed combination of the teachings of Van Dine and Humpolik would include this structure. Non-Final Act. 13–14. Aside from Appellant's unpersuasive contention above, based on a discussion of a Figure 8 of Humpolik instead of Figure 10, Appellant does not attempt to identify any structure that is missing from the proposed combination. *See* Br. 20–21. Accordingly, Appellant's argument on this point is unavailing.

We have considered all of Appellant's arguments in support of the patentability of claim 13, but find the Examiner has the better position. Accordingly, we sustain the rejection of claim 13.

Rejections I–IV

Appellant relies on the arguments discussed above regarding Van Dine and Humpolik in support of the patentability of claim 1 and claims 2 and 5–12 depending therefrom. *See* Br. 21. For the same reasons discussed above regarding Rejection V, we sustain Rejections I–IV.

CONCLUSION

Claims Rejected	Basis	Affirmed	Reversed
1, 2, 5, 7, 8, and 10	§ 103	1, 2, 5, 7, 8, and 10	
6	§ 103	6	
9	§ 103	9	
11 and 12	§ 103	11 and 12	
13	§ 103	13	

FINALITY AND 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). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED