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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte OLIVIER MANIERE

Appeal 2019-002443
Application 13/382,177
Technology Center 1700

Before KAREN M. HASTINGS, JULIA HEANEY, and
MICHAEL G. McMANUS, *Administrative Patent Judges*.

McMANUS, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ seeks review of the Examiner's decision to reject claims 1–8, 10–13, and 15–18. 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. Appellant identifies the real party in interest as Solenis Technologies, L.P. Appeal Br. 3.

CLAIMED SUBJECT MATTER

The present application generally relates to an apparatus, system and method for emulsifying oil and water. Specification dated Jan. 4, 2012 (“Spec.”) ¶ 2. The disclosed apparatus, system and method are taught to be “useful for preparing aqueous emulsions of sizing agents for internal sizing or surface sizing of paper and paperboard.” *Id.* The Specification teaches to prepare the desired emulsions “by feeding water through a venturi apparatus at relatively high pressure and introducing the sizing agent at the venturi suction inlet.” *Id.* ¶ 14. Figure 3 of the Specification shows a venturi apparatus taught to be useful in practicing the disclosed method.

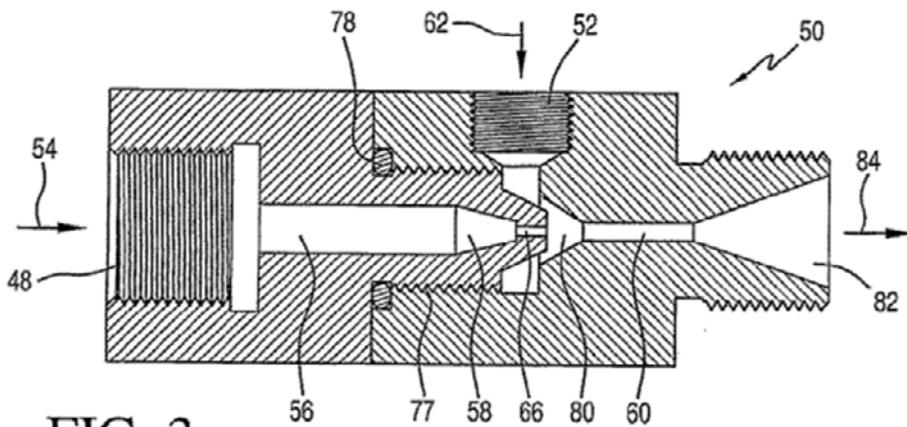


FIG. 3

Figure 3 is a cross-sectional view of a venturi apparatus 50 including first inlet 48 for the continuous phase, continuous phase nozzle 66, suction inlet 52 for the dispersed phase, conical mixing chamber 80, and mixed phase nozzle 60. Spec. ¶¶ 33–35.

Claim 1 is illustrative of the subject matter on appeal and is reproduced below with certain limitations bolded for emphasis:

1. A system for emulsifying oil in water or water in oil that comprises
a venturi apparatus (50) having:
a first inlet (48) for introducing a continuous phase stream,
a channel (56) for receiving the continuous phase stream having both a smaller diameter than the first inlet and a conical section (58),
a continuous phase nozzle (66) positioned downstream of the channel for receiving the continuous phase stream,
a conical mixing chamber (80) that tapers in diameter wherein the widest diameter is where the channel meets the mixing chamber to a narrower diameter where the mixing chamber meets a mixed phase nozzle and wherein the mixing chamber is positioned downstream of the continuous phase nozzle;
a second inlet for introducing a dispersed phase to the venturi apparatus (50) and mixing chamber (80); wherein an emulsion is formed between the continuous phase and dispersed phase in the mixing chamber (80) and the emulsion fed to the mixed phase nozzle (60) and to a discharge diffuser, characterized in that **the ratio of the diameter of the mixed phase nozzle to the diameter of the continuous phase nozzle is greater than 1:1 and less than 4:1**; and wherein the median particle size of the resulting emulsion droplet is less than about 2 microns.

Appeal Br. 15 (Claims App.) (emphasis added).

REFERENCES

The Examiner relies upon the following prior art:

Name	Reference	Date
Best	US 1,540,592	June 2, 1925
Ciuti et al. (“Ciuti”)	US 4,026,817	May 31, 1977
Von Berg	US 5,403,522	Apr. 4, 1995
Hicks et al. (“Hicks”)	US, 5,989,446	Nov. 23, 1999
Dilts et al. (“Dilts”)	US 2003/0205167 A1	Nov. 6, 2003
Lott	US 2005/0058020 A1	Mar. 17, 2005
Moreira Campos (“Campos”)	US 2008/0267006 A1	Oct. 30, 2008

REJECTIONS

The Examiner maintains the following rejections:

1. Claims 1–7 are rejected under pre-AIA 35 U.S.C. § 112, ¶ 2, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. Final Action dated Nov. 17, 2017 (“Final Act.”), 2.
2. Claims 1, 2, and 4–7 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Campos in view of Ciuti and further in view of Lott. *Id.* at 3–7.
3. Claim 3 is rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Campos in view of Ciuti and further in view of Lott and Von Berg. *Id.* at 8.
4. Claims 8, 10–13, 15, and 16 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Ciuti in view of Dilts and further in view of Lott and Best. *Id.* at 8–13.
5. Claims 17 and 18 are rejected under pre-AIA 35 U.S.C. § 103(a)

as being unpatentable over Ciuti in view of Dilts and further in view of Lott, Best, and Hicks. *Id.* at 13–17.

DISCUSSION

Rejection 1. The Examiner rejects claims 1–7 as indefinite. Final Act. 2. The Examiner determines that there is insufficient antecedent basis for the second occurrence of the term “a mixed phase nozzle” in claim 1. Appellant sought to cure any indefiniteness by amendment filed subsequent to the Final Rejection.² *See* Response Pursuant to 37 CFR § 1.116 and After Final Consideration Pilot 2.0 (AFCP 2.0), dated Jan. 16, 2018 (“Response After Final Action”). The Examiner declined to enter such amendment on February 9, 2018. The Appellant does not address this rejection in its briefs. Accordingly, we summarily affirm the rejection on this basis. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2012); *see also* Manual of Patent Examining Procedure (MPEP) § 1205.02 (8th ed., Rev. 7) (“If a ground of rejection stated by the examiner is not addressed in the appellant’s brief, that ground of rejection will be summarily sustained by the Board.”).

Rejection 2. The Examiner rejects claims 1, 2, and 4–7 as obvious over Campos in view of Ciuti and further in view of Lott. Final Act. 3–7. In support of the rejection, the Examiner finds that Campos teaches a system

² In the proposed amendment, Appellant sought, *inter alia*, to change the second reference to “a mixed phase nozzle” to “**the** mixed phase nozzle” in claim 1. *See* Response After Final Action 2. The claims Appellant lists in the Claims Appendix include this proposed amendment as though it were entered by the Examiner. *See* Appeal Br. 15 (Claims App.). We were unable to locate any record of such amendment being entered.

for emulsifying oil in water (or water in oil) that includes a venturi apparatus. Campos teaches a venturi apparatus having a continuous phase nozzle (tube 1) and “a conical mixing chamber (conical section of decompressor 2) that tapers in diameter wherein the widest diameter is where the channel meets the mixing chamber (where tube 1 meets decompressor 2).” *Id.* at 4. Figure 2 of Campos is reproduced below.

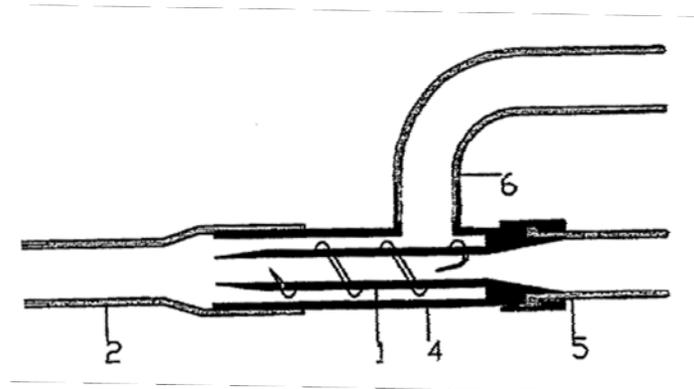


Figure 2 of Campos depicts a mixing device including injection tube 1, decompressor 2, and inlet 6. Campos ¶ 15. The Examiner finds that Campos is silent as to the ratio of the diameter of the mixed phase nozzle (narrow portion of decompressor 2) to the diameter of the continuous phase nozzle (nozzle of injection tube 1). Final Act. 4–5.

The Examiner additionally finds that Lott teaches a venturi apparatus having a continuous phase nozzle (inner nozzle 52 having diameter D_1) and a mixed phase nozzle (throat 62 having diameter D_2). *Id.* at 5. The Examiner further finds that Lott teaches that the ratio of the diameter of the mixed phase nozzle to the diameter of the continuous phase nozzle is greater than 1:1 and less than 4:1. *Id.* (citing Lott ¶ 29). Figure 4 of Lott is reproduced below.

as to the ground of rejection with respect to the group or subgroup on the basis of the selected claim alone.”)

Appellant argues that the rejection is erroneous in two respects. First, Appellant argues that “Lott does not [] disclose, teach, or even suggest inclusion of the narrowest portion of decompressor 2 of Campos and thus would not suggest to a POSITA to apply the ratio of diameters . . . of its device to the diameters of the decompressor 2 and the tube 1 of Campos.” Appeal Br. 10. Appellant argues that “throat 62 [of Lott] corresponds to the conical section of decompressor 2 of Campos (albeit not conical) as a mixing chamber and not the narrowest portion of decompressor 2 of Campos.” *Id.* at 11 (emphasis omitted).

In the Answer, the Examiner cites Lott’s teaching that “mixing is at a maximum adjacent the lower end of nozzle 52.” Answer 21 (citing Lott ¶ 29). The Examiner finds that this disclosure indicates that the conical section 60 of Lott serves as a mixing chamber. *Id.*

Appellant disputes such finding. Reply Br. 3. In its Reply Brief, Appellant further argues that “[i]n Figure 2 of Campos . . . the ‘mixing chamber’ analog is seen just upstream of the decompressor 2, where the fluids from the first inlet 5 and the second inlet 6 first meet.” Reply Brief dated Jan. 31, 2019 (“Reply Br.”), 2. Appellant cites to Lott’s statement that structure 60 is an “outer nozzle.” *Id.*; Lott ¶ 28. Appellant argues that the Examiner errs in finding that outer nozzle 60 is a mixing chamber. Reply Br. 3. Appellant cites to Lott’s teaching of a “mixing chamber 71,” *id.*; Lott ¶ 29, that is slightly downstream of the conical area and concludes that the mixing chamber of Lott is not analogous to that of Campos. Appellant argues that “[i]f [structure] 71 is the mixing chamber of Lott, there is no

outlet. It follows there is no structure analogous to the decompressor 2 of Campos and the mixed phase nozzle 60 of the current claims.” Reply Br. 3 (emphasis omitted). Accordingly, Appellant reasons, “there is no motivation outside the current disclosure that would make the person of ordinary skill apply the references the way the Examiner has in the Final Rejection.” *Id.* at 4.

We find the Examiner’s reasoning to be persuasive. The lower end of Lott’s nozzle 52 is located within conical section 60. Lott teaches that mixing is at a “maximum” at such location. It is reasonable for the Examiner to find that a person of ordinary skill in the art would have regarded such area as a mixing chamber. Accordingly, Appellant has not shown error in the Examiner’s stated reason to combine the teachings of Campos and Lott so as to achieve the stated ratio of the diameter of the mixed phase nozzle to the diameter of the continuous phase nozzle.

For its second argument, Appellant contends that, even if one of skill in the art would have had reason to modify Campos so as to incorporate Lott’s teaching regarding the ratio of the diameters of the nozzles, the proposed combination “would have rendered the device of Campos unsatisfactory for its intended purpose.” Appeal Br. 12.

Appellant argues that Lott teaches “that both the diameter D1 and the length of the throat 62 are dependent on the dimensions of the diameter D2.” *Id.* (referring to Lott ¶ 29). Appellant further argues that the “lower diverging ring 58, having an increasing diameter, extends from the length of the throat 62.” *Id.* at 13. Appellant argues that modification of the decompressor 2 of Campos with the dimensional restrictions described above for the throat 62 of Lott would result in a) the length of the

decompressor being too short to connect with the helical tube 3 and b) the lower diverging ring 58 extending from the throat 62 of Lott having a cross-section not equal to the cross-section of helical tube 3. *Id.*

These arguments are not persuasive. The Examiner relies on Lott only for teachings regarding the diameter of nozzles, not for any teaching regarding the length of the throat or the shape of the diverging section. Answer 23 (“Only the diameters from Lott are being applied to analogous structures of Campos.”). Further, “[t]he test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference,” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981), but rather whether “a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention,” *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1361 (Fed. Cir. 2007). Further, the Board “can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

Thus, neither the length of the throat section nor the structure of the lower diverging ring are part of the Examiner’s hypothetical combination; nor has it been shown that the Examiner’s proposed modification of the Campos device would have rendered it unsatisfactory for its intended purpose.

In view of the foregoing, we determine that Appellant has not shown error with respect to the reversal of independent claim 1 or dependent claims 2 and 4–7.

Rejections 3–5. The Examiner rejects claims 3, 8, 10–13, and 15–18 as obvious over various references as stated above. *See* Final Act. 8–17. Appellant’s arguments applicable to independent claims 8 and 17 are addressed above. Appellant further argues that the rejection of all dependent claims should be reversed for the same reasons advanced with respect to the independent claims discussed above. Appeal Br. 13–14. As we have not found such arguments persuasive, we determine that Appellant has failed to show error with regard to rejections of the dependent claims at issue. Further, we note that the rejections of claims 8, 10–13, and 15–18 do not rely upon the teachings of the Campos reference. Accordingly, Appellant’s arguments regarding Campos are not relevant to the rejections of these claims and do not show error therein.

CONCLUSION

The Examiner’s rejections are affirmed.

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–7	112, ¶ 2	Indefiniteness	1–7	
1, 2, 4–7	103(a)	Campos, Ciuti, Lott	1, 2, 4–7	
3	103(a)	Campos, Ciuti, Lott, Von Berg	3	
8, 10–13, 15, 16	103(a)	Ciuti, Dilts, Lott, Best	8, 10–13, 15, 16	
17, 18	103(a)	Ciuti, Dilts, Lott, Best, Hicks	17, 18	
Overall Outcome			1–8, 10–13, 15–18	

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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