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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JEFFREY J. RAMLER, ANNA LEE TONKOVICH, RACHID TAHA, KAI JAROSCH, ROBERT J. LUZENSKI, JEFFERY D. SLANE, THOMAS HICKEY, SEAN FITZGERALD, HARLEY D. FREEMAN, and FREDERICK A. ZENZ¹

Appeal 2018-003309
Application 12/265,727
Technology Center 1700

Before BEVERLY A. FRANKLIN, DEBRA L. DENNETT, and LILAN REN, *Administrative Patent Judges*.

FRANKLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ Appellants identify the real party in interest as Velocys Inc. Appeal Br. 2.

Appellants request our review under 35 U.S.C. § 134(a) of the Examiner's decision rejecting claims 1–7, 9, 11, and 18–28. We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

STATEMENT OF THE CASE

Claim 1 is illustrative of Appellants' subject matter on appeal and is set forth below (with text in bold for emphasis):

1. A method of increasing packing density of particulates loaded into a plurality of microchannels in microchannel apparatus, comprising:
 - providing a microchannel apparatus comprising a plurality of microchannels that comprise particulates;
 - positioning a ultrasound-producing head at one end of the plurality of microchannels and placing the head **in sonic contact** with the plurality of microchannels; and,
 - applying ultrasonic energy to the plurality of microchannels from the ultrasound-producing head.

Appeal Br. (Claims Appx. i).

THE REJECTIONS

1. Claims 1, 2, 5, 6, 18, 19, 21, and 22 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Boughtflower, *The Production of Packed Capillaries Using a Novel Pressurised Ultrasound Device*, *Chromatographia*, Volume 41, No. 7/8, pp. 398–402, October 1995.

2. Claims 1, 2, 6, 7, 11, 20, 21, 23, 25, and 27 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Hobbs (US 2003/0150806 A1, published Aug. 14, 2003), in view of Boughtflower.

3. Claim 3 is rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Hobbs, in view of Boughtflower, as applied to claim 1 above, and further in view of Arnold (US 6,444,150, issued Sept. 3, 2002).

4. Claim 4 is rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Hobbs in view of Boughtflower, further in view of Arnold (US 6,444,150 B1, issued Sept. 3, 2002), as applied to claim 3 above, and further in view of Taylor, *Lysing Bacterial Spores by Sonication through a Flexible Interface in a Microfluidic System*, Anal. Chem. 73 pp. 492–496 (2001).

5. Claims 5, 18, and 19 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Hobbs in view of Boughtflower, as applied to claim 1 above, and further in view of Sparey-Taylor (US 2004/0066703 A1, published Apr. 8, 2004).

6. Claim 9 is rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Hobbs, in view of Boughtflower, as applied to claim 1 above, and further in view of Monzyk (US 6,503,298 B1, issued Jan. 7, 2003).

7. Claim 22 is rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Hobbs, in view of Boughtflower, as applied to claim 1 above, and further in view of Wang (US 2002/0114762 A1, published Aug. 22, 2002).

8. Claims 22 and 24 are rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Hobbs in view of Boughtflower, as applied to claim 1 above, and further in view of Kravitz (US 6,746,496 B1, issued June 8, 2004).

9. Claim 26 is rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Hobbs, in view of Boughtflower as applied to claim 1 above, and further in view of Guillemín (US 3,248,856, issued May 3, 1966).

10. Claim 28 is rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Hobbs in view of Boughtflower as applied to claim 1 above, and in further view of Yasuda (US 6,244,738 B1, issued June 12, 2001).

ANALYSIS

Upon consideration of the evidence and each of the respective positions set forth in the record, we find that the preponderance of evidence supports Appellant's position in the record, and we thus reverse each rejection essentially for the reasons set forth therein, and add the following for emphasis.

Critical to our analysis in this appeal is claim interpretation of the term "sonic contact" found in the phrase "placing the head in sonic contact with the plurality of microchannels". The term "sonic contact" is clearly defined on page 6 of the Specification, as follows: "sonic contact means that the sonicating head is either in direct contact or the head contacts the apparatus through a solid medium (preferably having a thickness of 0.5 cm or less, more preferably 2 mm or less) that transmits sound." For "sonic contact" to be present, the ultrasonic head must either therefore (a) directly contacts the plurality of microchannels, or (b) contact the plurality of microchannels through a solid medium.

The ultrasonic head of Boughtflower is labeled "1" in Figure 1, reproduced below:

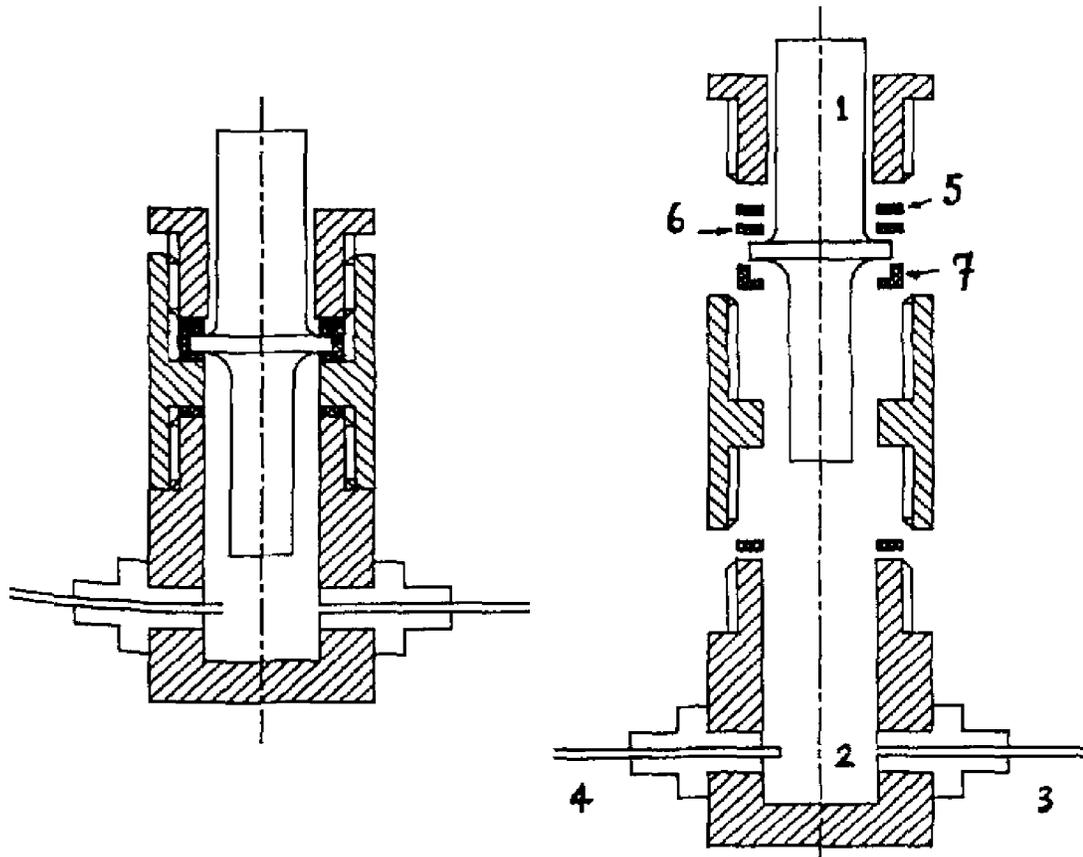


Figure 1

Schematic view of ultrasound slurry chamber.

1 = Ultrasound probe, 2 = Slurry chamber, 3 = Solvent inlet (from packing pump), 4 = Capillary, 5 = Steel support ring, 6, 7 = High pressure seals.

Appellant submits that since ultrasonic Boughtflower's head 1 does not contact capillary tube 4, there is no direct contact, and Boughtflower does not suggest direct contact between an ultrasonic head and a microchannel. Appeal Br. 6. We agree. Appellant states that since there is no direct contact, this leaves only the question whether Boughtflower suggests that the ultrasonic head contacts the apparatus through a solid medium that transmits sound. *Id.*

It is the Examiner's position that the sonic head 1 of Boughtflower contacts the apparatus through high pressure seals 7, and housing of chamber 2, that transmits sound. Ans. 4.

Appellant argues that the aforementioned pathway does not establish "sonic contact" within the meaning of this claim term in view of the Specification. Appellants also refer to the Declarations of record in this regard. Appeal Br. 6–7. For example, Appellant refers to the explanation by Dr. Schubert in the Declaration filed on June 15, 2017, on pages 2–3, stating that one skilled in the art, having read the present Specification, would understand the term "sonic contact" requires a solid medium that transmits sound that would affect particle packing²; not merely a solid that might (theoretically) transmit a very small amount of sound. Appeal Br. 7. This situation is analogous to a "conductor" in an electrical device: for example, no electrical engineer would consider rubber to be a conductor, although it will transmit some small amount of electricity. *Id.* We are persuaded by such argument. The Examiner's response (made throughout the response beginning on page 23 of the Answer) relies upon the notion that Appellant is relying upon a new definition of "sonic contact" in making the arguments and therefore found unpersuasive, but, as Appellant states on page 2 of the Reply Brief, this is not correct.

In view of the above, we thus reverse Rejection 1. We also reverse the other rejections for the same reasons.

DECISION

Each rejection is reversed.

² This is discussed, for example, on pages 1–3 of the Specification.

Appeal 2018-003309
Application 12/265,727

ORDER
REVERSED