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14/449,683	08/01/2014	Daniel FINE	UTSH.P0285US	3572
108197	7590	09/02/2020	EXAMINER	
Parker Highlander PLLC 1120 South Capital of Texas Highway Bldg. 1, Suite 200 Austin, TX 78746			DARB, HAMZA A.	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DANIEL FINE, ALESSANDRO GRATTONI, MAURO
FERRARI, XUEWU LIU, RANDAL GOODALL, and SHARATH
HOSALI

Appeal 2020-000523
Application 14/449,683
Technology Center 3700

Before JOHN C. KERINS, BRETT C. MARTIN, and
MICHAEL J. FITZPATRICK, *Administrative Patent Judges*.

MARTIN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the
Examiner’s decision to reject claims 165–192. We have jurisdiction under
35 U.S.C. § 6(b).

We REVERSE.

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 Board of Regents,
The University of Texas System. Appeal Br. 3.

CLAIMED SUBJECT MATTER

The claims are directed to a nanochanneled device with electrodes and related methods. Claim 165, reproduced below, is illustrative of the claimed subject matter:

165. A nanochannel delivery device comprising:
a plurality of inlet microchannels;
a first electrode;
a second electrode;
a plurality of nanochannels; and
a plurality of outlet microchannels, wherein:
each inlet microchannel is in direct fluid communication with an outlet microchannel via a single nanochannel;
the single nanochannel is perpendicular to the inlet microchannel and the outlet microchannel with which it is in direct fluid communication; and
the first electrode is directly coupled to a first surface of the nanochannel delivery device.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Sheng	US 2006/0275138 A1	Dec. 7, 2006
Ferrari	US 2010/0152699 A1	June 17, 2010

REJECTION

Claims 165–192 stand rejected under 35 U.S.C. § 103 as unpatentable over Ferrari and Sheng. Final Act. 2.

OPINION

Appellant argues that the Examiner’s combination is improper because “the Ferrari device operates by fluidic molecular diffusion without

the use of a pump or electrical power” and that “the diffusion of the administered substance can be more precisely controlled by selecting the dimensions of nanochannel delivery device.” Appeal Br. 6 (citing Ferrari ¶ 162). As such, Ferrari relies on the precise dimensions of the nanochannels alone to achieve the desired flow. Given that the device already achieves precise control, we agree with Appellant that there would not have been any reason to add an electrical charge to further control flow. In fact, adding an electrical charge to Ferrari might actually have a negative impact on the desired flow because the charge could potentially override the desired flow characteristics created by the precise dimensions selected to achieve flow through diffusion alone.

Appellant also correctly points out that “Sheng teaches the use of electrodes to create a pumping action via a thin membrane” whereas Ferrari comprises a thicker silicon on insulator (SOI) wafer and “would not create a pumping action via the electrodes disclosed in Sheng.” Appeal Br. 9. In response, the Examiner asserts that “the thickness of the device can be optimized based on the application of the device and other factors related to mechanical integrity.” Ans. 4 (citing Ferrari ¶ 92). Appellant correctly notes, however, that the passage referred to by the Examiner refers to mechanical integrity of the device, which “would benefit from increasing the thickness of the device,” not decreasing it as the Examiner has proposed. Reply Br. 5.

We also agree with Appellant that the Examiner’s explanation regarding the motivation for combining Sheng and Ferrari is lacking. The Examiner asserts that “Ferrari is formed from silicon ¶0080 and the device of Sheng is formed from a silicon ¶0010, so both surfaces can be used to

have an electrode on the surfaces of the same material.” Ans. 4. Simply because two devices utilize the same material as a component does not provide a reason to combine them. The Examiner provides no reason as to *why* one of skill in the art would have made the combination other than that it is possible to do so because they comprise the same material. The Examiner’s original motivation statement likewise contains a mere conclusory statement rather than a reasonable basis with rational underpinnings as to why one would make a combination, stating that the combination would be made “for the purpose of creating a translocation of a charged molecule[.]” Final Act. 3. Again, this rationale simply asserts that one of skill in the art *could* have taken a feature of Sheng and incorporated it into Ferrari, but gives no reason as to why. Given Ferrari’s reliance on precise dimensioning of the nanochannels, we cannot agree that one of skill in the art would have looked to add the pumping mechanism of Sheng to a device that required no pump to operate as intended. Accordingly, we do not sustain the Examiner’s rejection.

CONCLUSION

The Examiner’s rejection is REVERSED.

More specifically,

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
165–192	103	Ferrari, Sheng		165–192

REVERSED