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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ANANDHAN DHANASINGH and
CLAUDE JOLLY

Appeal 2020-000319
Application 14/915,653
Technology Center 3700

Before MURRIEL E. CRAWFORD, PHILIP J. HOFFMANN, and
BRADLEY B. BAYAT, *Administrative Patent Judges*.

HOFFMANN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's rejection of claims 1–8 and 10–12. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

According to Appellant, the “invention relates to implantable electrodes for . . . [cochlear implants,] and specifically to mechanical

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 Med-El Elektromedizinische GmbH. Appeal Br. 2.

fixation of a hydrogel covering over the electrode contacts.” Spec. ¶ 2; *see also id.* at Abstract. Claim 1 is the sole independent claim on appeal.

Below, we reproduce independent claim 1 as representative of the appealed claims.

1. A cochlear implant electrode comprising:
an implantable electrode array made of resilient material having a center longitudinal axis and an outer surface;
a plurality of electrode contacts distributed on the outer surface of the electrode array along the longitudinal axis for applying electrical stimulation signals to adjacent neural tissue;
and
at least one biocompatible hydrogel layer fixed to the electrode array solely by mechanical connection and adapted to swell from contact with perilymph fluid within a cochlea without separating away from the outer surface of the electrode array;
wherein the electrode array includes at least two openings connected together through the interior of the electrode array and filled with hydrogel material of the hydrogel layer to form a closed loop of hydrogel material to mechanically connect the hydrogel layer to the electrode array.

REJECTIONS AND PRIOR ART

The Examiner rejects the claims as follows:

- I. Claims 1–7 and 10–12 under 35 U.S.C. § 103 as unpatentable over Chambers,² Gerber,³ and Van Antwerp;⁴ and
- II. Claim 8 under 35 U.S.C. § 103 as unpatentable over Chambers, Gerber, Van Antwerp, and Capcelea.⁵

² Chambers, US 2011/0178587 A1, published July 21, 2011.

³ Gerber, US 2008/0103579 A1, published May 1, 2008.

⁴ Van Antwerp et al., US 5,786,439, issued July 28, 1998 (“Van Antwerp”).

⁵ Capcelea et al., US 2011/0034969 A1, published Feb. 10, 2011 (“Capcelea”).

ANALYSIS

Rejection I—Obviousness rejection of claims 1–7 and 10–12

As set forth above, independent claim 1 recites the following:

1. A cochlear implant electrode comprising:
an implantable electrode array made of resilient material having a center longitudinal axis and an outer surface;
a plurality of electrode contacts distributed on the outer surface of the electrode array along the longitudinal axis for applying electrical stimulation signals to adjacent neural tissue;
and

at least one biocompatible hydrogel layer fixed to the electrode array solely by mechanical connection and adapted to swell from contact with perilymph fluid within a cochlea without separating away from the outer surface of the electrode array;

wherein *the electrode array includes at least two openings connected together through the interior of the electrode array and filled with hydrogel material of the hydrogel layer to form a closed loop of hydrogel material to mechanically connect the hydrogel layer to the electrode array.*

Appeal Br., Claims App. (emphasis added). The Examiner's obviousness rejection of independent claim 1 does not rely on any reference to disclose the emphasized claim recitation—i.e., an electrode array that includes two openings connected together through an interior of the electrode array and filled with hydrogel material of the hydrogel layer to form a closed loop of hydrogel material to mechanically connect the hydrogel layer to the electrode array. Rather, according to the Examiner, it would have been obvious to modify Chambers based on Gerber, as discussed below, to provide the claimed closed loop of hydrogel material. More specifically, as set forth below, the Examiner combines what we term an exterior portion of

a hydrogel loop from Chambers with an interior portion of a hydrogel loop from Gerber, to thereby form a closed loop of hydrogel.

With reference to Chambers's Figures 3A, 3B, and 4, Chambers discloses a cochlear implant's intracochlear electrode array 20 including electrode 21. Chambers, Figs. 3A, 3B, 4. Hydrogel 40, using claim 1's nomenclature, is "fixed to the electrode array by mechanical connection"—specifically, electrode 21 include channels 41 into which hydrogel 40 flows. *See id.* ¶ 33. However, electrode 21 does not include an open interior, and does not include two opening connected through an interior, such that hydrogel material is disposed in the interior and two openings. In this way, Chambers discloses what will be the exterior portion of the claimed hydrogel loop.

With reference to Gerber's Figure 4A, for example, Gerber discloses a lead 60 with electrodes 64 and exit ports 66. With reference to Gerber's Figure 8, substance 186 flows through lead 180's open interior, and through exit ports 184. Thus, Gerber's lead 180 discloses (using claim 1's nomenclature) "two openings connected together through the interior of the electrode array and filled with hydrogel material." However, the Examiner does not point to anything in Gerber disclosing that after substance 186 flows through exit ports 184 to the exterior of lead 180, substance 186 from one exit port flows into substance 186 from another exit port. Restated, while Gerber discloses what will be the interior portion of the claimed hydrogel loop, Gerber does not disclose what will be the hydrogel loop's exterior portion.

Nonetheless,

[t]he Examiner propose[s] a modification of the cochlear implant system of Chambers so that the electrode array would have at least two exits (channels 41) connected together through the interior of the electrode in similar configuration to the exits taught in Gerber, while still maintaining all other aspect of . . . [Gerber] . . . , including the biocompatible hydrogel layer 40 in contact with the electrode array.

Answer 5.

It is well settled that “rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). We do not sustain the rejection because the Examiner does not provide a rational reason to modify Chambers based on Gerber, as the Examiner proposes. *See* Appeal Br. 5–9.

According to the Examiner,

[i]t would have been obvious . . . to modify the invention taught by Chambers and Van Antwerp with the electrode array configuration having at least two exits connected together through the interior of the electrode array as taught by Gerber, since such modification would be applying a known technique to a known device to yield the predictable result of a reliable means for fixating the hydrogel layer within the electrode array.

Final Action 5; *see also* Answer 5. Neither Chambers nor Gerber shows a closed loop of hydrogel as claimed. Further, to the extent that it would have been obvious to modify Chambers to include (using claim 1’s nomenclature) Gerber’s “two openings connected together through the interior of the electrode array and filled with hydrogel material,” the Examiner does not explain why it would then be obvious, on the electrode’s exterior, to flow the hydrogel from one opening into the hydrogel from another opening (i.e., to

form the exterior portion of the claimed hydrogel loop). Restated, the question remains why if one modifies Chambers based on Gerber, it would not have been obvious to flow the hydrogel to form only the interior portion of the claimed hydrogel loop and not the exterior portion of the claimed hydrogel loop, as Gerber discloses. Based on our review of the record, it appears that the reason to combine Chambers and Gerber as the Examiner proposes is because claim 1 recites such an arrangement—i.e., impermissible hindsight.

Accordingly, we do not sustain the Examiner's obviousness rejection of independent claim 1. We also do not sustain the Examiner's obviousness rejection of claims 2–7 and 10–12 that depend from, and the Examiner rejects with, claim 1.

Rejection II—Obviousness rejection of claim 8

Claim 8 depends from claim 1. The Examiner does not rely on Capcelea to disclose anything that would remedy the above deficiency in independent claim 1's rejection. Thus, we also do not sustain the Examiner's obviousness rejection of claim 8.

CONCLUSION

We REVERSE the Examiner's obviousness rejections of claims 1-8 and 10-12.

In summary:

Claims Rejected	35 U.S.C. §	Basis/Reference(s)	Affirmed	Reversed
1-7, 10-12	103	Chambers, Gerber, Van Antwerp		1-7, 10-12
8	103	Chambers, Gerber, Van Antwerp, Capcelea		8
Overall Outcome				1-8, 10-12

REVERSED