

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MICHAEL P. SURH,
WILLIAM D. WILSON,
TROY W. BARBEE, JR., and
STEPHEN M. LANE

Appeal 2007-0170
Application 10/262,510
Technology Center 1700

Decided: May 15, 2007

Before EDWARD C. KIMLIN, CHUNG K. PAK, and
THOMAS A. WALTZ, *Administrative Patent Judges*.

PAK, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the Examiner's refusal to allow claims 1, 3 through 5, 7, and 11, all of the claims pending in the above-identified application. We have jurisdiction pursuant to 35 U.S.C. § 6.

I. APPEALED SUBJECT MATTER

The subject matter on appeal is directed to “sensors using nano-laminates,” such as “electrophoretic/electrochemical devices with nanometer-scale metallic components (Specification 1, paragraphs 0002 and 0004).”

Further details of the appealed subject matter are recited in illustrative claims 1, 3, and 11, which are reproduced below:

1. An apparatus, comprising:

a first nano-laminate component comprising a first plurality of alternating layers of metal and insulator material and a first exposed cross-section of metal and insulator material of said first nano-laminate component, wherein no portion of any layer of insulator material of said first plurality of alternating layers contacts any other layer of insulator material of said first plurality of alternating layers;

a second nano-laminate component comprising a second plurality of alternating layers of metal and insulator material and a second exposed cross-section of metal and insulator material of said second nano-laminate component, wherein no portion of any layer of insulator material of said second plurality of alternating layers contacts any other layer of insulator material of said second plurality of alternating layers;

a first piece of insulating material that connects in a first spaced relationship a first side of said first nano-laminate component to a first side of said second nano-laminate component; and

a second piece of insulating material that connects in a second spaced relationship a second side of first nano-laminate component with a second side of said second nano-laminate component;

wherein said first exposed cross-section and said second exposed cross-section face each other, wherein said first piece of

insulating material and said second piece of insulating material face each other, wherein said first exposed cross-section and said second exposed cross-section and said first piece of insulating material and said second piece of insulating material form a closed fluid channel having four sides and two openings.

3. The apparatus of claim 1, wherein said first spaced relationship and said second spaced relationship both comprise a distance of about d, and wherein said distance d defines a width of said fluid channel.

11. The apparatus of claim 3, wherein said d comprises a distance of at least 1 μm .

II. PRIOR ART

The Examiner has relied upon the following sole reference as evidence of unpatentability:

Pisharody US 2004/0146863 A1 Jul. 29, 2004

III. REJECTIONS

The Examiner has rejected the claims on appeal as follows:

- 1) Claim 11 under 35 U.S.C. § 112, first paragraph, as containing subject matter not described in the application disclosure as originally filed;
- 2) Claims 1, 3, 4, and 7 under 35 U.S.C. § 102(e) as anticipated by the disclosure of Pisharody; and
- 3) Claims 5 and 11 under 35 U.S.C. § 103 as unpatentable over the disclosure of Pisharody.

IV. DISCUSSION

35 U.S.C. § 112, FIRST PARAGRAPH

In rejecting claim 11 under 35 U.S.C. § 112, first paragraph, the Examiner takes the position that the newly added limitation “d comprises a distance of at least 1 μm ” in claim 11 does not have written descriptive support in the application disclosure as originally filed (Answer 3). On the other hand, the Appellants contend that such a limitation is supported by the phrase “a distance in the range of μm to millimeters” recited in original claim 11 (Br. 3-4).

As our reviewing court in *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991) stated:

35 U.S.C. [§] 112, first paragraph, requires a “written description of the invention” which is separate and distinct from the enablement requirement. The purpose of the “written description” requirement is broader than to merely explain how to “make and use”; the applicant must also convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of *the invention*. The invention is, for purposes of the “written description” inquiry, *whatever is now claimed*.

. . . drawings alone may be sufficient to provide the “written description of the invention” required by § 112, first paragraph.

Any claims in the application as originally filed may also provide the “written description of the invention” required by § 112, first paragraph. *In re Gardner*, 475 F.2d 1389, 1391, 177 USPQ 396, 397 (CCPA 1973).

The dispositive question is, therefore, whether the newly added limitation in question has written descriptive support in the application

disclosure, as originally filed, within the meaning of 35 U.S.C. § 112, first paragraph. On this record, we answer this question in the negative.

As indicated *supra*, the Appellants rely on the phrase “a distance in the range of μ m to millimeters” recited in original claim 11 as written descriptive support for the newly added limitation “. . . a distance of at least 1 μ m” in present claim 11. However, the newly added limitation clearly embraces embodiments outside of the distance described in the application disclosure as originally filed. *In re Alton*, 76 F.3d 1168, 1175, 37 USPQ2d 1578, 1583 (Fed. Cir. 1996), citing *In re Wertheim*, 541 F.2d 257, 263, 191 USPQ 90, 97 (CCPA 1976). Specifically, as in *Wertheim*, 541 F.2d at 263-64, 191 USPQ at 97, the phrase “. . . at least 1 μ m” encompasses a distance greater than millimeters which are the upper limit of the distance originally recited and described in the application disclosure. The Appellants nevertheless proffer no evidence that the upper limit of the distance originally described (i.e., millimeters) is inherent in “. . . a distance of at least 1 μ m” as that limitation appears in present claim 11 (Br. 3-4).

Wertheim, supra.

Thus, based on this record, we concur with the Examiner’s finding that claim 11, as written, lacks written descriptive support within the meaning of 35 U.S.C. § 112, first paragraph.

35 U.S.C. § 102(e):

In rejecting claims 1, 3, 4, and 7 under 35 U.S.C. § 102(e), the Examiner finds that Pisharody

discloses an apparatus (Figure 6C; Paragraph 0081) comprising: two nanolaminate components comprising alternating metal and insulator layers (Paragraphs 0058, 0073-0075, and 0080) facing each other across a channel, as claimed, with pieces of

insulating material at either side of each nanolaminate component, connecting the two nanolaminate components in a spaced relationship. (Figure 6C)

(Answer 4)

The Appellants do not dispute the Examiner's finding that Pisharody teaches an apparatus comprising nano-scale laminates components arranged in the claimed manner (Br. 4-6). The Appellants only argue that Pisharody does not teach "nanolaminate materials as recited in claim 1 of the present invention." (Br. 4-5) In support of this argument, the Appellants rely on paragraph 39 of U.S. Patent Application 10/167,926, filed June 11, 2002, mentioned (but not incorporated by reference) in paragraph 0004 of the present application (Br. 4). According to the Appellants, the claimed nanolaminate components are limited to those made of the materials described at paragraph 39 of U.S. Patent Application 10/167,926 (*id.*). The Appellants specifically state at page 4 of the Brief that:

U.S. Patent Application S.N. 10/167,926, filed June 11, 2002 . . . states . . . : "Nano-laminate materials are a new class of materials for technological application. At this time, nano-laminate structures have been synthesized by PVD in elemental form, as alloys, or a compounds-from [sic] at least 82 of the 92 naturally occurring elements. The microstructure scale of these materials is determined during synthesis by controlling the thickness of the individual layers. These layers are from one monolayer (0.2 nm) to hundreds of monolayers (>500 nm) thick and, except in special cases, generally define the in-depth crystalline grain size."

The Examiner takes the position that the claimed nanolaminate components are not limited to those produced by the materials described at paragraph 39 of a patent application not incorporated into the present

application (Answer 5-6). In other words, the term “nanolaminate” recited in claim 1 defines laminate sizes, not laminate materials (Answer 6).

The dispositive question is, therefore, whether the Examiner’s interpretation of the claimed “nanolaminate component” as “a nano-scale laminate component” is unreasonable when it is properly construed in light of the Specification. On this record, we answer this question in the negative.

As indicated by our reviewing court in *In re Morris*, 127 F.3d 1048, 1053-54, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997), in proceedings before the U.S. Patent and Trademark Office (PTO), claim language must be given the broadest reasonable meaning in ordinary usage, taking into account the written description found in the Specification. Applying this principle of law to the present situation, we determine that the Examiner’s interpretation is reasonable. Initially, we observe that the words in claim 1 do not expressly limit the materials of the nanolaminate components to those referred to in paragraph 39 of Application 10/167,926. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312, 75 USPQ2d 1321, 1328 (Fed. Cir. 2005) (en banc) (our claim construction analysis begins with the words of the claims themselves); *In re Priest*, 582 F.2d 33, 37, 199 USPQ 11, 15 (CCPA 1978) (“We have consistently held that no ‘applicant should have limitations of the specification read into a claim where no express statement of the limitation is included in the claim.’”). Secondly, we observe that the Specification at page 1, paragraph 0003, defines “nano” in terms of dimensions, sizes and scales. Consistent with this written description, the Specification at page 1, paragraph 0004, indicates that “[t]he present invention involves electrophoretic/electrochemical devices with *nanometer-scale* metallic components.” [Emphasis added]. At page 5 of the

Specification [0018], materials used to form nanolaminate components are described in an unlimited manner as shown below:

By way of example, each of the nano-laminated components 11, 12 and 11'[,] 12' *may be* composed of from two pair to an arbitrary number of multilayers, each composed of alternating layers of *metal, such as* aluminum, gold, and molybdenum, and *layers of insulation, such as* alumina, silica, and ceria, with layer thicknesses in the range of nm to μm .
[Emphasis added.]

The Appellants' reference to paragraph 39 of a different patent application (not incorporated into the present Specification) does not negate the explicit disclosure of the present application. We observe nothing in this record relied upon by the Appellants, which requires us to import embodiments, i.e., materials used to form nanolaminate components, from a patent application not part of the present application. The Appellants simply have not demonstrated that the Examiner's interpretation is unreasonable. Accordingly, we concur with the Examiner that Pisharody would have rendered the subject matter of claims 1, 3, 4, and 7 anticipated within the meaning of 35 U.S.C. § 102(e).

35 U.S.C. § 103(a):

In rejecting claims 5 and 11 under 35 U.S.C. § 103(a), the Examiner takes the position (Answer 4-5) that:

Pisharody et al disclose[s] an apparatus as described above in addressing claims 1, 3, 4, and 7.

Pisharody do [sic, does] not explicitly disclose distances d as claimed.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Pisharody et al by widening the channel such that it is either wider than the height of the

nanolaminate or at least one micron wide, as required in these claims, depending on desired flow characteristics in the system.

The Appellants only argue that Pisharody does not teach non-claimed materials for forming nanolaminate components (Br. 5). Specifically, the Appellants only contend (*id.*) that:

The rejection of claim[s] 5 and 11 should be withdrawn because they depend from claim 1, which should be allowable over the reference as discussed above.

Thus, for the reasons indicated above, we determine that Pisharody would have rendered the subject matter of claims 5 and 11 obvious to one of ordinary skill in the art within the meaning of 35 U.S.C. § 103(a).

V. CONCLUSION

Having carefully evaluated the claims, Specification and prior art reference, including the arguments advanced by the Appellants and the Examiner in support of their respective positions, we determine that the Examiner's §§ 112, 102(e), and 103(a) rejections are well founded. Accordingly, we will sustain the Examiner's decision rejecting the claims on appeal for the factual findings and conclusions set forth in the Answer above.

VI. ORDER

The Examiner's decision rejecting the claims on appeal under 35 U.S.C. §§ 112, 102(e) and 103(a) is affirmed.

Appeal 2007-0170
Application 10/262,510

VII. TIME PERIOD

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED

tf/lS

The Regents of the University of California
Lawrence Livermore National Laboratory
P.O. Box 808, L-703
Livermore, CA 94551-0808