

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 2007-0169
Application 10/262,015
Technology Center 1700

Decided: May 11, 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 through 3, 5, 6, and 24, 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 “electrophoretic devices,... more particularly to electrophoretic devices with nanometer-scale metallic elements.... (Specification 1, paragraph 0002).” This appealed subject matter is related to the subject matter described in Appeal No. 2007-0170, Application 10/262,510.

Further details of the appealed subject matter are recited in illustrative claim 1, which is reproduced below:

1. In an electrophoretic device, the improvement comprising:

a nanolaminated structure comprising a plurality of alternating layers of electrically conductive and electrically insulative material, wherein a cross-section is exposed of said electrically conductive and electrically insulative material, wherein no portion of any layer of said electrically insulative material contacts any other layer of said electrically insulative material;

a three walled non-electrically conductive structure operatively connected to said nanolaminated structure, wherein said nanolaminated structure together with said three walled non-electrically conductive structure forms an enclosed fluid flow channel; and

means for producing an electric field across the electrically conductive layers of said nanolaminated structure.

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) Claims 1 through 3, 5, and 24 under 35 U.S.C. § 102(e) as anticipated by the disclosure of Pisharody; and
- 2) Claim 6 under 35 U.S.C. § 103 as unpatentable over the disclosure of Pisharody.

IV. DISCUSSION

35 U.S.C. § 102(e):

In rejecting claims 1 through 3, 5, and 24 under 35 U.S.C. § 102(e), the Examiner finds (Answer 3) that:

Pisharody et al disclose an electrophoretic device (Paragraph 0155) comprising: a nanolaminated structure comprising a plurality of alternating conductive and insulative layers as claimed (Figures 4A-6B; paragraphs 0073-0075 and 0080); a three walled non-electrically conductive structure connected to the nanolaminated structure, so as to form an enclosed fluid channel as claimed (Paragraph 0079; the nanolaminated structure mounted in a side of a conventional microchannel would read on this limitation); and means for producing an electric field across the conductive layers of the laminate. (Paragraphs 0086-0088)

The Appellants do not dispute the Examiner's finding that Pisharody teaches an electrophoretic device comprising a nano-scale laminated structure, a three walled non-electrically conductive structure and a means for producing electric field arranged in the claimed manner (Br. 3-4). The Appellants only argue that Pisharody does not teach "nanolaminate materials as recited in claim 1 of the present invention (*id.*).” In support of this argument, the

Appeal 2007-0169
Application 10/262,015

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. 3). 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 (Br. 3-4). The Appellants specifically state at pages 3 and 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 structure is not limited to that 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 (*id.*).

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 structure 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), *cert. denied sub. nom.*, 126 S. Ct. 1332 (2006)(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 0002, indicates that “[t] present invention relates to....electrophoretic devices with *nanometer-scale* metallic components.” [Emphasis added] At paragraphs 0014 and 0015 of the Specification, the nanolaminate components are also described as follows:

As pointed out above, it has been shown to synthesize periodic arrays of metallic and insulating layers with nanometer-scale precision....

....the layer thickness and/or material composition may vary from layer to layer or section to section, whereby the conductivity of the individual or layer section may be different.

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 limitations from a patent application different from 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 through 3, 5, and 24 anticipated within the meaning of 35 U.S.C. § 102(e).

35 U.S.C. § 103(a):

In rejecting claim 6 under 35 U.S.C. § 103(a), the Examiner takes the position (Answer 4-5) that:

Pisharody et al disclose a device as described above in addressing claims 1-3, 5, and 24. Pisharody et al also disclose a means for applying voltage to the electrodes which would require two conductive members extending across the nanolaminated structure. (Figure 8; Paragraph 0088; Common connections to both electrodes in each pair requires two separate conductive members).

Pisharody et al do not explicitly disclose that the conductive members are disposed at opposite ends of the laminated structure.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Pisharody et al by positioning the conductive members at opposite ends of the structure, because it would minimize the chances of an inadvertent short circuit, which would render the device inoperative. Additionally, such positioning of the members is a matter of design choice to a skilled artisan, who could select any appropriate position to make the connections.

The Appellants only argue that Pisharody does not teach non-claimed materials for forming nanolaminate components (Br. 4). Specifically, the Appellants only contend (*id.*) that:

The rejection of claim 6 should be withdrawn because it depends 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 claim 6 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 §§ 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 here and in the Answer.

VI. ORDER

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

Appeal 2007-0169
Application 10/262,015

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).

AFFIRMED

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