

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SANG K. SHEEM

Appeal No. 2001-0659
Application 08/935,368¹

ON BRIEF

Before BARRETT, FLEMING, and GROSS, Administrative Patent Judges.
BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1-3. The rejections of claims 4, 5, and 7-9 are withdrawn in the examiner's answer. Thus, claims 4, 5, and 7-9 are objected to as depending from a rejected claim,

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We reverse.

BACKGROUND

The invention relates to an optical fiber sensor as may be understood from claim 1, reproduced below.

1. An optical fiber sensor comprising:

a tubing, an optical fiber residing inside the tubing, and a membrane attached to the tubing; and

a plugging material located between said optical fiber and said tubing, wherein an air-tight cavity is formed by plugging material in combination with said tubing and said optical fiber and said membrane, whereby the surface of said membrane becomes resilient due to the air-cushion effect of said air-tight cavity;

wherein the surface of the membrane is non-planar, smooth, and taut.

The examiner relies on the following reference:

Mori 3,814,081 June 4, 1974

Claims 1-3 stand rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Mori.

We refer to the final rejection (Paper No. 6) and the examiner's answer (Paper No. 14) (pages referred to as "EA__")

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OPINION

Appellant argues several differences between Mori and the subject matter of claim 1.

First, it is argued that the examiner erred in finding that spacer ring 408 in Figs. 23 and 24 is a "tubing" (Br5), because it is a spacer ring.

We agree that spacer ring 408 is a "tubing" and that the optical fibers reside at least partly inside the tubing and a membrane is attached to ring 408. The fact the spacer ring has a different name is not persuasive. In addition, although it is inconsistent with the examiner's rejection, we note that the optical fibers are within a flexible cover 403 which can also be considered a "tubing" since claim 1 does not preclude the tubing from being flexible and does not preclude the membrane from being attached to the tubing indirectly via the spacer ring 408.

Second, it is argued that Mori requires two fibers while "[t]he present invention claims the use of a single fiber" (Br5).

The examiner correctly points out (EA6-7) that claim 1 is an open-ended claim which does not preclude the presence of additional optical fibers. Thus, this argument is not

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becomes resilient due to the air-cushion effect of said air-tight cavity" (Br5-6). It is argued that Mori does not specifically disclose the formation of an air-tight cavity.

The examiner responds that the combination of the diaphragm 409, corresponding to the "membrane," the spacer ring 408, corresponding to the "tubing," and the periphery of the forward end of the cover tube 304, corresponding to the "plugging material," seals the forward end of the optical system against the exterior. Therefore, the examiner finds that Mori teaches an air-tight cavity. In addition, the examiner notes that the diaphragm changes shape due to the blood pressure and states that "it appears that without air tight cavity, it would be hard to change the shape of the elastic diaphragm 409 only with the blood pressure" (EA7).

We disagree with the examiner's findings. Mori does not disclose that the flexible cover 403 is sealed to the optical fiber to form an air-tight cavity or that the surface of the membrane acts against the air-cushion effect of the air-tight cavity. It is improper to resort to speculation or unfounded assumptions to supply deficiencies in the factual basis for a

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to the flexible cover 403, not that the flexible cover 403 is sealed to the optical fiber to provide an air-tight cavity. The flexible cover 403 tube could be open to the atmosphere at the other end and the diaphragm end would still be sealed. There is no reason why an air-tight cavity would necessarily be inherent. The examiner's reasoning that it would be hard to change the shape of the elastic diaphragm 409 with only the blood pressure without an air-tight cavity (apparently an implied argument of inherency) is not convincing because it takes less force to deflect a membrane that is open at one side to the atmosphere than if it had to act against an air-tight cavity where the force increases with the amount of deflection.

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Because we find that Mori does not disclose the limitations of a plugging material forming an air-tight cavity and the membrane acts against the air-cushion effect of the air-tight cavity, the anticipation rejection of claim 1 is reversed. The rejection of claims 2 and 3, which depend from claim 1, are also reversed.

REVERSED

LEE E. BARRETT)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
MICHAEL R. FLEMING)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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