

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 DONALD DIETER FRANTZ, PAUL DAVID CLAUSEN,
TERRY HAROLD FISHER and STEPHEN ELDON LEIS

Appeal No. 2006-1526
Application No. 09/861,815
Technology Center 3700

HEARD: September 13, 2006

Before FRANKFORT, CRAWFORD and BAHR, *Administrative Patent Judges*.
BAHR, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal from the examiner's rejection of claims 30, 31, 33, 34, 36, 37, 39-43, 46, 47, 49, 50, 52 and 54. Claims 44 and 45 stand objected to as depending from a rejected base claim but are otherwise indicated to be allowable by the examiner. Claims 1-29, 32, 35, 38, 48, 51 and 53 have been canceled.

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We REVERSE.

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BACKGROUND

The appellants' invention relates to flexible instruments, and medical instruments in particular, having three-dimensional positioning systems including sensors at the distal and proximal ends and at an intermediate portion of the instrument. A copy of the claims under appeal is set forth in the appendix to the appellants' brief.

The examiner relies upon the following as evidence of unpatentability:

Shlomo Schulz	US 6,272,371 B1 WO 00/39576	Aug. 7, 2001 (Feb. 22, 1999) Jul. 6, 2000
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The rejection of claims 30, 31, 33, 34, 36, 37, 39-43, 46, 47, 49, 50, 52 and 54 under 35 U.S.C. § 103(a) as being unpatentable over Shlomo in view of Schulz is before us for review in this appeal.

Rather than reiterate in their entirety the conflicting viewpoints advanced by the examiner and the appellants regarding this appeal, we make reference to the examiner's answer (mailed July 21, 2005) for the examiner's complete reasoning in support of the rejection and to the appellants' brief (filed April 28, 2005) and reply brief (filed September 23, 2005) for the appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art, and to the

respective positions articulated by the appellants and the examiner. For the reasons that follow, we cannot sustain the examiner's rejection.

Each of appellants' independent claims 30, 47 and 49 requires a plurality of optical sensors positioned at the proximal end of the flexible member. Shlomo, the jumping off point of the rejection, is directed to a flexible elongate medical probe, a catheter in particular, provided with a position-sensing device, typically near the catheter's distal end, that gives rise to signals that are used to determine the position of the device, and hence the catheter, relative to a frame of reference that is fixed. The position-sensing device comprises first and second sensors 28, 30 fixed at known positions along a generally distal portion of the length of the catheter, in known relation to one another and to the distal end. Shlomo teaches that the catheter, or other probe, may preferably comprise more than two position sensors and/or bend sensors, which additional sensors may be particularly useful when a portion of the length of the catheter must be tracked within a convoluted passage or when the catheter is brought to bear against and is desired to conform to a convoluted surface within a body cavity. Shlomo emphasizes, however, that the number of such sensors is held to the minimum needed to achieve the desired accuracy of determination of the plurality of points along the length of the catheter (para. bridging cols. 8 and 9). While preferably the first sensor 28, located closest to the distal end, is a magnetic position sensor, the second sensor may comprise a bend sensor of the piezoelectric type or fiberoptic type (col. 3, last full para.). Shlomo does not disclose any sensors at the proximal end of the catheter, let alone

a plurality of sensors positioned at such location, and, further, does not appear to be interested in position or bend information at the proximal end of the catheter.

Schulz is directed to a hybrid light and non-light tracking system for tracking the 3-dimensional position of a probe or other rigid body. By incorporating both light sensors (markers 24) and non-light sensors, such as angular and linear accelerometers 34 and 31, Schulz “combines the precision and robustness of light based tracking with another tracking system that does not have the ‘line of sight’ limitations” (p. 5). The examiner finds that Schulz discloses a plurality of optical sensors 24 at the proximal end of the probe and determines that it would have been obvious at the time of appellants’ invention to modify the position-sensing system of Shlomo to include an auxiliary light based tracking system using a plurality of light emitting markers as taught by Schulz to provide more accurate and robust tracking of slight movements, and/or for recalibration of the instrument (answer, p. 3).

Even assuming that Schulz does disclose a plurality of markers 24 at the proximal end of the probe, we find no suggestion in the combined teachings of Schulz and Shlomo to position a plurality of such sensors at the proximal end of the Shlomo catheter. While the recognition by Schulz of the advantages of a hybrid light based and non-light based tracking system would appear to have been generally applicable to Shlomo’s position-responsive catheter, Shlomo does not indicate any interest in measuring the position of the proximal end of the catheter but, rather, appears to be exclusively interested in the generally distal portion of the

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catheter. Accordingly, it is not apparent why one of ordinary skill in the art would have found suggestion in Schulz to provide any sensors at the proximal end of the Shlomo catheter, let alone a plurality of such sensors.

In light of the above, we conclude that the combined teachings of Shlomo and Schulz are insufficient to establish a *prima facie* case that the subject matter of appellants' independent claims 30, 47 and 49 would have been obvious to one of ordinary skill in the art at the time of appellants' invention. It follows that we cannot sustain the rejection of these claims or of claims 31, 33, 34, 36, 37, 39-43, 46, 50, 52 and 54 depending therefrom.

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CONCLUSION

To summarize, the decision of the examiner to reject claims 30, 31, 33, 34, 36, 37, 39-43, 46, 47, 49, 50, 52 and 54 is reversed.

REVERSED

CHARLES E. FRANKFORT)
Administrative Patent Judge)
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MURRIEL E. CRAWFORD) BOARD OF PATENT
Administrative Patent Judge) APPEALS
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