

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. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte DAVID E. ACKER

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Appeal No. 2002-0311  
Application No. 09/030,241

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ON BRIEF

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Before ABRAMS, FRANKFORT, and McQUADE, Administrative Patent Judges.  
ABRAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-16.  
Claims 17-20 have been withdrawn as being directed to a non-elected invention.

We AFFIRM-IN-PART.

### BACKGROUND

The appellant's invention relates to a method of performing a medical procedure on the respiratory system of a patient. An understanding of the invention can be derived from a reading of exemplary claim 1, which appears in the appendix to the appellant's Brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Ben-Haim	5,443,489	Aug. 22, 1995
Darrow <u>et al.</u> (Darrow)	5,577,502	Nov. 26, 1996

Claims 1-16 stand rejected under 35 U.S.C. § 103 as being unpatentable over Darrow in view of Ben-Haim.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejection, we make reference to the Answer (Paper No. 19) for the examiner's complete reasoning in support of the rejection, and to the Brief (Paper No. 17) for the appellant's arguments thereagainst.

### OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations which follow.

The initial burden of establishing a basis for denying patentability to a claimed invention rests upon the examiner. See In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). The question under 35 U.S.C. §103 is not merely what the references expressly teach but what they would have suggested to one of ordinary skill in the art at the time the invention was made. See Merck & Co. v. Biotech Labs., Inc. 874 F.2d 804, 807, 10 USPQ2d 1843, 1846 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989) and In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). While there must be some suggestion or motivation for one of ordinary skill in the art to combine the teachings of references, it is not necessary that such be found within the four corners of the references themselves; a conclusion of obviousness may be made from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference. See In re Bozak, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969). Insofar as the references themselves are concerned, we are bound to consider the disclosure of each for what it fairly teaches one of ordinary skill in the art, including not only the specific teachings, but also the inferences which one of ordinary skill in the art would reasonably have been expected to draw therefrom. See In re Boe, 355 F.2d 961, 965, 148 USPQ 507, 510 (CCPA 1966) and In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

Darrow, which the examiner has applied as the primary reference against the appellant's claims, was discussed by the appellant on pages 4 and 5 of the specification. The appellant there explains that in the Darrow system of superimposing the position of a probe being advanced to a specific location in the respiratory system, a series of images is acquired at numerous stages of the respiratory cycle in order to provide a corrected image as the patient breathes. According to the appellant, this system has a number of disadvantage. The appellant seeks to improve upon Darrow by selecting single stage in the respiratory cycle, and utilizing only this point as the reference point, that is, superposing the images only at this point in the respiratory cycle. Specification, pages 6-8.

It is the examiner's view that Darrow discloses all of the subject matter recited in claim 1 except for sampling and utilizing a number of respiratory stages of the patient rather than a single one, but that one of ordinary skill in the art would have found it obvious to modify the Darrow system so that it operates in this fashion, in view of the teachings of Ben-Haim. The appellant disagrees, for several reasons, which will be discussed below.

We begin our analysis by noting the following statement by the appellant regarding Darrow (Brief, page 7):

*Darrow* deals with exactly the same problem as was faced by the present Applicants [*sic*], namely, somehow registering the acquired position of an invasive device or probe with an image despite changes in the patient's body structure caused by the movement of accompanying respiration.

However, *Darrow* takes an approach directly opposite to that set forth in claim 1. Rather than acquiring position of the invasive device or probe only while the patient is in a particular respiratory state, *Darrow* continually acquires the position of the probe at every respiratory state. *Darrow* also monitors the position of a point on the subject using optical, ultrasonic or mechanical device (FIGS. 2, 3, 4). However, *Darrow* uses this information to distort a previously acquired image so that the distorted image always represents the spacial relationships of objects within the body accurately, at all stages of the respiratory cycle. While this approach theoretically would result in accurate superposition of the position of the probe on the displayed image, it requires substantial mathematical manipulation of the actual data constituting the image . . . . Moreover, it is directly antithetical to the approach taken by Applicants [*sic*].

From our perspective, this makes it clear that the difference between the *Darrow* method and that which is recited in the appellant's claim 1 resides in *Darrow's* continual monitoring of the respiratory cycle as opposed to monitoring it only a single selected respiratory state in each cycle, as in the claim.

*Ben-Haim* is directed to an apparatus and method for treating cardiac arrhythmias. The appellant has explained the *Ben-Haim* system on page 8 of the Brief (emphasis has been added):

*Ben-Haim* uses a "trackable mapping/ablation catheter (e.g., 51, FIG. 10)" and "reference catheters (e.g., 110, 112, and 111, FIG. 10)" (col. 3, lines 44-46). The reference catheters are positioned within the heart as, for example, in the manner illustrated in FIG. 10 so that the reference catheters remain in fixed positions within the heart (col. 13, lines 58-66). The movement of mapping catheter 51 is tracked so that the image of the catheter can be superposed on an image of the heart chamber. "To correct for displacement of the heart chamber that occurs during the cardiac cycle, the catheter location is sampled at a single fiducial point during the cardiac cycle. To correct for displacement of the heart chamber that may occur because of breathing or patient movement, a set of more than two locatable catheters [i.e., the reference catheters] is placed at

specific points in the heart chamber during the mapping procedures” (col. 5, lines 6-13). The locations of these reference catheters are used “to align the location of the heart chamber relative to its location on the ‘basic image’ (col. 5, lines 37-40). Thus, as explained with reference to FIG. 3, the system derives a transformation into the frame of reference of the “basic image” by monitoring the locations of the reference catheters. Stated another way, while the system acquires location of the mapping catheter at a fixed point in the cardiac cycle, it acquires that location at a random point in the respiratory cycle and compensates for displacement of the heart chamber caused by this random point in the respiratory cycle using the information supplied by the reference catheters. See also, col. 11, lines 1-11.

Ben-Haim thus discloses a system in which the location of a catheter in a first cyclically expanding and contracting body organ (the heart) is sampled only at a fixed point of reference in the cycle. Since this particular body organ is so located as to be continuously moved essentially in its entirety by the respiratory action of the patient, Ben-Haim provides compensation by sampling the locations of a catheter in this second cyclically expanding and contracting body organ (the lungs) at random points in the cycle and then adjusting the location sampled in the first organ to compensate therefor.

Ben-Haim teaches “[t]o correct for displacement of the heart chamber that occurs during the cardiac cycle the catheter location is sampled at a single fiducial point during the cardiac cycle,” with compensation being made for displacement caused by breathing (column 5, lines 6-17, emphasis added). The reference further suggests that “[t]he above principles can be applied for mapping other structures of the body” (column 5, lines 18 and 19). Thus, from our perspective, one of ordinary skill in the art would have learned from Ben-Haim that it is necessary only to sample the cyclic movement of

the catheter in the organ that is the object of the procedure at a single selected point in the cycle. On the basis of this suggestion, it is our view that the artisan would have found it obvious to replace the sampling system disclosed in Darrow, in which the lungs are the object of the procedure, with a system in which a single selected point is sampled during each respiratory cycle.

Thus, it is our conclusion that the combined teachings of Darrow and Ben-Haim establish a prima facie case of obviousness with regard to the subject matter recited in claim 1, and we will sustain the rejection. Since the appellant has chosen to group dependent claims 2-7 and 11-16 with claim 1, the rejection of these claims also is sustained.

We have carefully considered the appellant's arguments, but they have not persuaded us that the decision of the examiner was in error. In particular, we do not agree with the appellant that an artisan seeking to improve upon Darrow's respiratory locating system would have ignored Ben-Haim's method of locating a probe in the heart and focused only on the disclosed method for locating the reference catheters because they were the ones in the respiratory system. Nor do we agree that to select this method is to pick and choose only the parts needed to support a given position to the exclusion of the other parts of the reference. Ben-Haim explicitly suggests that the principle of sampling movement at a single fiducial point can be applied to other organs, and it is our view that one of ordinary skill in the art would have recognized that it also

would be applicable to locating a probe in the respiratory system, for in an obviousness assessment skill is presumed on the part of the artisan, rather than the lack thereof. In re Sovish, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985). In the final analysis, the only argued difference between the method recited in claim 1 to locate a catheter in the respiratory system and that used by Ben-Haim to locate a catheter in the heart is the organ in which the method is practiced.

Claim 8 adds to claim 1 through claims 7 and 6 the requirement that the selected reference point which occurs in each cycle be established by “monitoring the position of said reference point over a plurality of cycles and finding an extreme position of said reference point which recurs in each cycle based on such monitoring.” No definition of “extreme position” has been provided, but from the example given on page 7 of the specification (the minimum inspiration state) it would appear that the “extreme positions” would be the maximum and the minimum states in the respiratory cycle. No advantage or criticality for selecting this position is set forth and on that basis the examiner has taken the position that to select an “extreme position” in the respiratory cycle as the reference point would have been within the purview of the skill of one of ordinary skill in the art.

We are persuaded by the appellant’s arguments, however, that the examiner’s position is not tenable. In particular, we agree with the appellant that there is no basis to support the conclusion that the method recited in claim 8 for finding the extreme

position, which includes monitoring the position of reference point over a plurality of cycles and then finding an extreme position which recurs in each cycle, would have been obvious. This being the case, a prima facie case of obviousness is lacking with regard to the subject matter recited in claim 8, and we will not sustain the rejection of claim 8 or, it follows, of claims 9 and 10, which depend therefrom.

#### CONCLUSION

The rejection of claims 1-7 and 11-16 is sustained.

The rejection of claims 8-10 is not sustained.

The decision of the examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

NEAL E. ABRAMS	)	
Administrative Patent Judge	)	
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	)	BOARD OF PATENT
CHARLES E. FRANKFORT	)	APPEALS AND
Administrative Patent Judge	)	INTERFERENCES
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