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EXAMINER
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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* TIMOTHY J. CORVI and RICARDO D. ROMAN

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Appeal 2017-003082  
Application 13/281,761<sup>1</sup>  
Technology Center 3700

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Before RICHARD M. LEBOVITZ, JOHN G. NEW, and  
DEVON ZASTROW NEWMAN, *Administrative Patent Judges*.

LEBOVITZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal under 35 U.S.C. § 134 involves claims directed to a catheter having a plurality of electrodes. The Examiner rejected the claims as unpatentable under 35 U.S.C. § 102. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

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<sup>1</sup> The Appeal Brief (“Appeal Br.”) 3 lists Medtronic Ablation Frontiers LLC as the real party in interest.

STATEMENT OF THE CASE

Claims 1 and 3–11 stand rejected by the Examiner as follows:

1. Claims 1 and 3–11 under pre-AIA 35 U.S.C. § 102(b) as anticipated by Swanson et al. (U.S. Pat. No. 6,142,994, issued Nov. 7, 2000) (“Swanson”).

2. Claims 1 and 3–11 under pre-AIA 35 U.S.C. § 102(b) as anticipated by Taimisto et al. (U.S. Pat. Application Pub. No. 2009/0018534 A1, pub. Jan. 15, 2009) (“Taimisto”).

Claim 1, the only independent claim on appeal, is reproduced below (indentations added for clarity) (emphasis added to highlight the disputed limitations):

1. A medical device, comprising:
  - a handle assembly;
  - an elongate catheter body coupled to the handle assembly and having a proximal portion, a distal portion, and a longitudinal axis, the elongate catheter body defining a guide wire lumen therethrough; and
  - a distal assembly defined by the distal portion of the elongate catheter body, *the distal assembly having a plurality of electrodes and being transitionable between a substantially linear configuration and an expanded configuration,*
    - the distal assembly being wound in a substantially semi-circular configuration around the longitudinal axis of the elongate catheter body when the electrode array is in the expanded configuration,
    - all of the plurality of electrodes in the expanded configuration being coplanar in a plane that is substantially orthogonal to the longitudinal axis of the elongate catheter body.*

### CLAIM INTERPRETATION

The claimed catheter comprises a “distal assembly having a plurality of electrodes and being transitionable between a substantially linear configuration and an expanded configuration.” The claim requires that “all of the plurality of electrodes in the expanded configuration being coplanar in a plane that is substantially orthogonal to the longitudinal axis of the elongate catheter body.” The Examiner found that the claimed “plurality of electrodes” is not a “reference to all electrodes present” in the claimed catheter device. Final Act. 3. The Examiner stated:

the recitation of “all of the plurality of electrodes” does not equate to or necessitate each and every electrode included in the invention to be “in the expanded configuration being coplanar in a plane that is substantially orthogonal to the longitudinal axis of the elongate catheter body.” All that is required by the limitation is that *those electrodes being considered to read on the claimed plurality of electrodes* be so coplanar in the expanded configuration in order for anticipation to exist. It is within the metes and bounds of BRI [(broadest reasonable interpretation of the claim)] for any two or more electrodes to be regarded as the claimed “plurality” and so long as those electrodes relied upon meet the limitation, then the art reads on the claim.

Ans. 4–5.

We do not agree that the Examiner’s interpretation is the broadest reasonable interpretation of the claim.<sup>2</sup> The claim recites the distal assembly

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<sup>2</sup> “The correct inquiry in giving a claim term its broadest reasonable interpretation in light of the specification is not whether the specification proscribes or precludes some broad reading of the claim term adopted by the examiner. And it is not simply an interpretation that is not inconsistent with the specification. It is an interpretation that corresponds with what and how the inventor describes his invention in the specification, *i.e.*, an interpretation that is

as “having a plurality of electrodes.” The Examiner interpreted “having” as open-ended and, thus, as not excluding the addition of other components, including other electrodes. Ans. 4. Based on this interpretation, the Examiner concluded that additional electrodes are not excluded and that, therefore, the subsequent reference to “all of the plurality of electrodes” does not mean *all* the electrodes in the distal assembly. *Id.*

The Examiner’s interpretation that, in addition to the “plurality of electrodes” in the distal assembly, there are *other electrodes* present is not consistent with the plain language of the claim. The electrodes are claimed as a “plurality,” meaning more than one in number; thus, reading the claim to comprise electrodes *in addition* to the “plurality” ignores the most reasonable interpretation of “plurality of electrodes” as an identifier of those electrodes that are present in the distal assembly. In other words, the term “plurality” indicates the number of electrodes in the distal assembly and, therefore, all the electrodes present in the assembly.

The subsequent language in the claim requires “all of *the* plurality of electrodes” (emphasis added) are coplanar and orthogonal to the catheter’s longitudinal axis when in the expanded configuration. The term “the” refers to the previously recited “a plurality of electrodes” in the distal assembly. “All” of *these* electrodes in the distal assembly must be coplanar and orthogonal. The Examiner’s interpretation that the “plurality of electrodes” only includes some of the electrodes in the distal assembly and, therefore, some of the electrodes in the distal assembly do not have to be coplanar and

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‘consistent with the specification.’ *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).” *In re Smith Int’l, Inc.*, 871 F.3d 1375, 1382–83 (Fed. Cir. 2017).

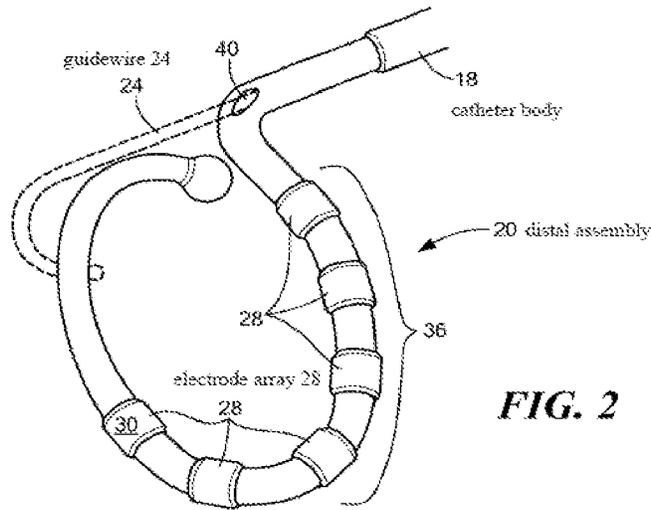
orthogonal in the expanded configuration is not reasonable because the only electrodes in the distal assembly are those comprising the “plurality” and the claim requires all of them to have this configuration when expanded.

The meaning of the term “longitudinal axis of the elongate catheter body” is also in dispute. The term “longitudinal axis” is not defined in the Specification. Accordingly, we give the term its ordinary meaning to mean running in the direction of the length of the body through its center of gravity.<sup>3</sup> Since the longitudinal axis is defined with respect to the body and through its center of gravity, we interpret longitudinal axis to require that the axis is within the catheter body.

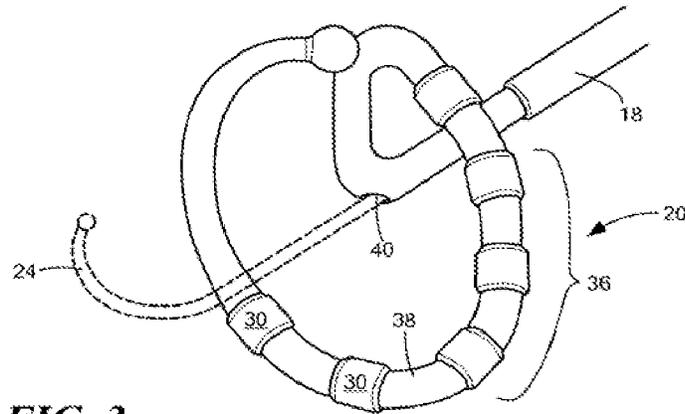
Figures 2 and 3 of the Specification (as annotated herein, reproduced below, are consistent with this interpretation,

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<sup>3</sup> ENGLISH OXFORD LIVING DICTIONARY, [https://en.oxforddictionaries.com/definition/longitudinal\\_axis](https://en.oxforddictionaries.com/definition/longitudinal_axis) (last visited Feb. 10, 2018).



**FIG. 2**



**FIG. 3**

Figure 2 of the Specification shows the display assembly below and parallel to the longitudinal axis and Figure 3 shows the assembly wrapped around and through the longitudinal axis.

Original dependent claim 4 narrows the distal assembly (“carrier arm”) to one “wherein at least a portion of the carrier arm is coaxial with the guide wire lumen,” indicating that the original claims covered a coaxial configuration, i.e., one in which the carrier arm is “being wound in a substantially semi-circular configuration around the longitudinal axis of the

elongate catheter” as shown in Figure 3, and one in which the carrier arm is not wound around the longitudinal axis, but is located below it as shown in Figure 2.

### SWANSON REJECTION

The Examiner found that Swanson describe an apparatus comprising all the features of the claimed medical device. Final Act. 2–3. For the distal assembly, the Examiner relied upon loop 92 comprising electrode elements 28. *Id.* at 2. The Examiner cited Figure 24 of Swanson as showing coplanar and orthogonal electrodes. *Id.* at 3. The Examiner acknowledged that not all the electrodes had the claimed configuration, but, based on the Examiner’s interpretation of “plurality of electrodes” to not include all the electrodes in the distal assembly, the Examiner found that “it is reasonable to consider the distal or top-most electrodes seen in Fig 20 as ‘the plurality’, and once bent as seen in Fig 24 to be perpendicular.” *Id.* at 3.

There is no factual dispute between the Examiner and Appellants that the apparatus described by Swanson only shows the distal most electrodes in a substantially orthogonal configuration. Figure 24 (annotated with the dotted arrow along the longitudinal axis) is reproduced below:

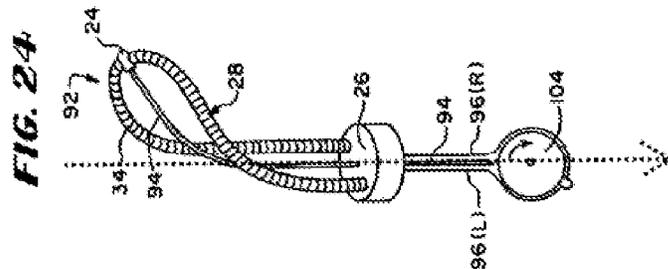


Figure 24 shows the distal assembly 92 with electrodes 28. The Figure shows that not all of the electrodes 28 are bent orthogonally in the expanded configuration, but only those in the topmost part, while the remainder are directed along the longitudinal axis of the assembly as indicated by the arrow. We have interpreted the claim to require all the electrodes in the distal assembly to be coplanar and orthogonal, and clearly, in the Swanson's apparatus, they are not. The Examiner did not provide additional evidence that Swanson discloses an embodiment in which all the electrodes in the assembly would be orthogonal when in the expanded configuration, but rather relied upon a claim interpretation (Ans. 3–5), which we have determined is not the broadest reasonable interpretation of the claim. Consequently, the anticipation rejection based on Swanson of independent claim 1 and dependent claims 3–11 is reversed.

#### REJECTION BASED ON TAIMISTO

The Examiner found that Taimisto's catheter assembly comprises all the elements of the claimed medical device. Final Act. 5. Appellants contend that the catheter disclosed in Taimisto does not have "the distal assembly being wound in a substantially semi-circular configuration *around the longitudinal axis* of the elongate catheter body when the electrode array is in the expanded configuration" as recited in the claims. Appeal Br. 7.

The Examiner cited Figures 7–11 of Taimisto as teaching the distal assembly. Figure 8 of Taimisto is reproduced below (annotated to indicate the locations of the electrodes and longitudinal axis):

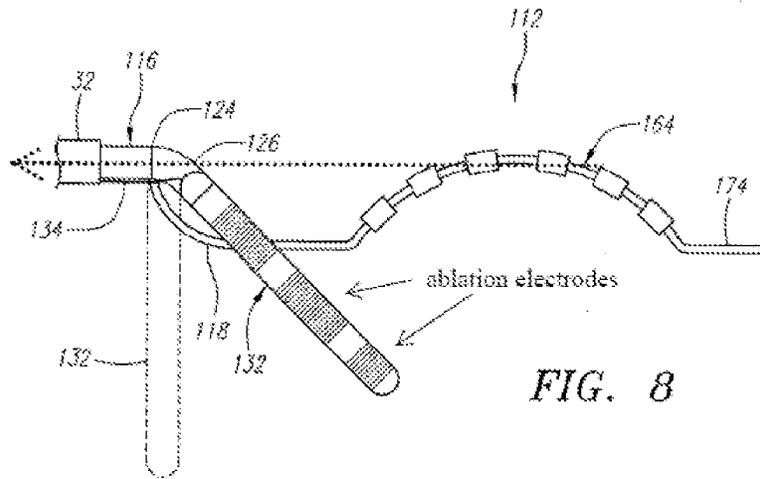


FIG. 8

Figure 8 shows “an ablation catheter 116 comprises a flexible elongate catheter body 124 having a distal member 126 that forms a loop-shaped ablative structure 132.” Taimisto ¶ 65. The drawing has been annotated by labeling the ablation electrodes. The loop 132 (in side view so loop is not visible), when elongated, is substantially orthogonal and coplanar to the longitudinal axis (the dotted arrow) of the catheter body 124. The issue is whether the structure 132 is wrapped “around the longitudinal axis of the elongate catheter” as required by the claims.

Appellants contend that the loop structure 132 is oriented below the device’s longitudinal axis along an axis that is parallel to, but not, the longitudinal axis. Appeal Br. 8. The Examiner contends that Appellants’ assertion “is a misrepresentation of the common accepted meaning and scope of ‘around the longitudinal axis’ and that a proper BRI analysis does not imply, suggest or require ‘around the longitudinal axis’ to mean specifically a co-radial, coaxial or concentric configuration.” Ans. 6. However, the Examiner did not provide evidence of the “common[ly] accepted meaning” of longitudinal axis nor evidence that a longitudinal axis

Appeal 2017-003082  
Application 13/281,761

of the elongate catheter body would include area completely outside the elongate body. As explained above, we interpret longitudinal axis to mean the axis running along the length of the catheter body, and because the axis is defined with respect to the catheter body, we also interpret the phrase to mean the axis within the catheter body and not below the body and parallel to it as shown in Figure 8 of Taimisto. Consequently, we are compelled to reverse the rejection of claim 1 and dependent claims 3–11 as anticipated by Taimisto.

#### DECISION

The rejections of claims 1 and 3–11 under pre-AIA 35 U.S.C. § 102(b) are reversed.

REVERSED