

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte ROBERT E. FISCHELL, DAVID R. FISCHELL, and
TIM A. FISCHELL

Appeal 2008-1356
Application 10/340,883
Technology Center 3700

Decided: May 14, 2008

Before ERIC GRIMES, FRANCISCO C. PRATS, and JEFFREY N.
FREDMAN, *Administrative Patent Judges*.

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DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 involving claims to a stent for implantation into a vessel of a human body which the Examiner has rejected as anticipated. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

Background

“Stents are well known medical devices that have been used for maintaining the patency of a large variety of vessels of the human body. The most frequent use is for implantation into the coronary vasculature” (Spec. 1). The Specification notes that “[m]ost current tubular stents use a multiplicity of circumferential sets of strut members connected by either straight longitudinal connecting links or undulating longitudinal connecting links” (Spec. 1). The Specification discloses that an “open cell stent is defined as a stent that has circumferential sets of strut members with some curved sections (crowns) that are not connected by a longitudinal connecting link to an adjacent circumferential set of strut members” (Spec. 2).

Statement of the Case

The Claims

Claims 14 and 16-32 are on appeal. We will focus on claim 14, which is representative and reads as follows:

14. A stent formed by a thin cylindrical tube with a longitudinal axis, the stent comprising:
 - a pair of ends and a plurality of circumferential set of interior strut members separating the pair of ends;
 - the circumferential set of interior strut members consisting of a series of pairs of strut members, each pair having a long section having a longitudinal length L_1 and a short section having a longitudinal length L_2 , such that $L_1 > L_2$;
 - wherein said long sections are connected to said short sections by a curved section;
 - each pair connected to an adjacent pair by a curved section; and
 - the circumferential set of interior strut members are each longitudinally separated by and connected to an adjacent circumferential set of interior strut members by a series of flexible connecting links.

The prior art

The Examiner relies on the following prior art references to show unpatentability:

Fischell	US 5,697,971	Dec. 16, 1997
Wijay	US 6,340,366 B2	Jan. 22, 2002

The issues

The rejections as presented by the Examiner are as follows:

- A. Claims 14, 18-21, 23, 26-29, 31, and 32 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Wijay.
- B. Claims 16, 17, 24, and 25 stand rejected under 35 U.S.C. § 103(a) as being obvious over Wijay and Fischell.
- C. Claims 22 and 30 stand rejected under 35 U.S.C. § 103(a) as being obvious over Wijay.

A. 35 U.S.C. § 102(e) rejection over Wijay

The Appellants argue that “Wijay does not contain a circumferential set of interior strut members which are ‘longitudinally separated by and connected to’ an interior set of interior strut members by a series of *flexible connecting links*” (App. Br. 4). Appellants then contend that “[o]ne of normal skill in the art would understand that links which are intended to be ‘flexible’ would be designed to be more flexible than links which are not ‘flexible’” (App. Br. 4).

The Examiner responds that the “introductory statement of intended use and all other functional statements such as ‘flexible’ have been carefully considered but are deemed not to impose any structural limitations on the

claims distinguishable over the Wijay's device which is capable of being used as claimed if one desires to do so" (Ans. 4).

The Examiner argues that the "claims simply claim 'flexible connecting links' as long as the prior art disclose a connecting links that could bend, those connecting links would meet the claimed limitation. The claimed limitations do not limit the degree of flexibility of the connecting links" (Ans. 6).

In view of these conflicting positions, we frame the anticipation issue before us as follows:

Would the ordinary artisan have reasonably interpreted the connecting links between strut members in the stent of Wijay as "flexible?"

Findings of Fact

1. Wijay teaches that a "flexible stent is disclosed which reduced openings between rings by two alternative techniques" (Wijay 3:31-32).

2. Wijay discloses a stent that is a thin cylindrical tube with a longitudinal axis (*see* Wijay, Fig. 11).

3. Wijay teaches a stent with a pair of ends and shows in Fig. 4 separation of the ends where "adjacent undulating rings **30** and **32** are illustrated. Each of these rings has an undulating, preferably sinusoidal shape with alternating high and low peaks" (Wijay 4:1-3; Fig. 4).

4. Wijay teaches that the internal strut members consist of pairs where they alternate in lengths as Wijay notes regarding Fig. 4 that "in ring **30** alternating high peaks **34** exist between low peaks **36**. Between peaks **34** and **36** are valleys **35**. The height is defined as the distance from the valleys **35** to peaks **34**" (Wijay 4:4-6; Fig. 4).

5. Wijay further discloses in Fig. 4 that the long sections are connected to short sections by a curved section and that each adjacent pair is connected by curved sections (*see* Wijay, Fig. 4).

6. Wijay teaches that the circumferential set of interior strut members are longitudinally separated by and connected to adjacent sets by a connecting link where “crossties 38 connect ring 30 to ring 32” (Wijay 4:7; Fig. 4). Wijay teaches that “[c]rossties can connect peaks to peaks, valley to valley, or at least one peak or one valley to another location on the next ring” (Wijay 4:9-11).

7. Wijay notes that one problem with the prior art stents is that they “are not flexible enough to be placed in curved vessels. Arteries and veins in the human body are mostly curved and are tapered. As such, these tube stents suffer from this main disadvantage” (Wijay 2:27-32).

8. Wijay teaches that the stent is a “flexible stent” (Wijay 3:30).

Discussion of 35 U.S.C. § 102(e) over Wijay

We interpret the claims using the broadest reasonable interpretation. *See, e.g., In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000) (“[D]uring examination proceedings, claims are given their broadest reasonable interpretation consistent with the specification.”). We think that the proper interpretation requires reading “flexible” in light of Appellants’ Specification, which notes that “[a]lthough an ‘S’ type flexible strut 18 is shown in FIG. 1, it should be understood that any flexible longitudinal connecting link shape that can readily lengthen or shorten its longitudinal extent as the pre-deployed stent is advanced through a curved vessel could be used” (Spec. 12:10-13). We note that Wijay teaches a stent (FF 1-6)

which must be flexible (FF 8) and which is intended to address the issue curved vessels (FF 7).

We are not persuaded by the Appellants' argument that "Wijay does not contain a circumferential set of interior strut members which are 'longitudinally separated by and connected to' an interior set of interior strut members by a series of *flexible connecting links*" (App. Br. 4). Given the absence of a precise definition of "flexible" in the Specification and the express requirement by Wijay that the disclosed stent is flexible (FF 7-8), we think that the connecting links disclosed by Wijay (FF 6) reasonably satisfy the "flexible" requirement. If the links were "rigid," they would not permit the stent to bend through curved vessels, as required by Wijay (FF 7).

We are also not persuaded by Appellants' argument that "links which are intended to be 'flexible' would be designed to be more flexible than links which are not 'flexible'" (App. Br. 4). This argument of degrees lacks any basis in the Specification or prior art. Appellants have not identified any specific level of "flexibility" required by the links, simply arguing that the level found in Wijay is insufficient. Since Wijay expressly desires that the stent is "flexible" and capable of moving through curved vessels (FF 7-8), we conclude that the links of Wijay are sufficiently "flexible" to satisfy the limitations of claim 14.

We are mindful that the Federal Circuit addressed a question of rigidity and flexibility in *Buszard*, and noted "[w]e agree with Buszard that it is not a reasonable claim interpretation to equate 'flexible' with 'rigid.'" *In re Buszard*, 504 F.3d 1364, 1367 (Fed. Cir. 2007). However, in *Buszard*, the prior art Eling reference disclosed a "[p]rocess for preparing a rigid foam"

which the Board interpreted as flexible. *See Buszard*, 504 F.3d at 1365-66. The current case is distinguished from *Buszard*, since unlike in *Buszard* where the prior art reference taught a rigid element, in the instant case the prior art reference teaches a flexible stent (*see* FF 1, 7, 8). We think that it is reasonable to interpret a “flexible” stent as being composed of “flexible” components.

We affirm the rejection of claim 14 as anticipated by Wijay. Pursuant to 37 C.F.R. § 41.37(c)(1)(vii)(2006), we also affirm the rejections of claims 18-21, 23, 26-29, 31, and 32 as these claims were not argued separately.

B. 35 U.S.C. § 103(a) rejection over Wijay and Fischell

Claims 16, 17, 24, and 25 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Wijay and Fischell.

The Examiner relies on Wijay as discussed above. The Examiner relies on Fischell to reach the limitations of claims 17, 24, and 25, drawn to the use of an “S” shaped connecting link. We will affirm this rejection since Appellants do not separately argue these claims and rely upon overcoming the primary rejection over Wijay, which was affirmed above.

C. 35 U.S.C. § 103(a) rejection over Wijay

Claims 22 and 30 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Wijay.

The Examiner relies on Wijay as discussed above. The Examiner further relies on Wijay and common knowledge in the art to reach the limitations of claims 22 and 30, drawn to the use of stainless steel at a specific wall thickness. Appellants do not argue that the specific limitations of stainless steel at 0.0045 inches thickness is unobvious over Wijay, only

that Wijay does not teach “flexibility” (*see* App. Br. 5). We will affirm this rejection since Appellants are simply repeating the argument regarding “flexibility,” which was addressed above and do not separately argue these claims based upon their specific limitations.

CONCLUSION

In summary, we affirm the rejection of claim 14 under 35 U.S.C. § 102(e). Pursuant to 37 C.F.R. § 41.37(c)(1)(vii)(2006), we also affirm the rejections of claims 18-21, 23, 26-29, 31, and 32 as these claims were not argued separately. We also affirm the rejections of claims 16, 17, 22, 24, 25, and 30 under 35 U.S.C. § 103(a).

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)(2006).

AFFIRMED

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