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rs.vasciplegal@medtronic.com
medtronic_cv_docketing@cardinal-ip.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ANDREA VENTURELLI

Appeal 2010-007594
Application 10/538,913
Technology Center 3700

Before ERIC GRIMES, LORA M. GREEN, and JEFFREY N. FREDMAN,
Administrative Patent Judges.

GREEN, *Administrative Patent Judge.*

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the Examiner's rejection of claims 1-49 and 51-56. We have jurisdiction under 35 U.S.C. § 6(b).

STATEMENT OF THE CASE

Claim 1 is the only independent claim on appeal, and reads as follows (element lettering in [] added):

1. An expandable endolumenal prosthesis comprising, in the non-expanded configuration,
 - [a] a tubular body extending along a longitudinal axis and having a distal end and a proximal end;
 - [b] the tubular body having a porous wall defined by a plurality of interlaced circumferential lines forming a pathway motif or pattern wherein at least one line is closed onto itself;
 - [c] each of the lines extends along an axis;
 - [d] each of the lines comprises at least one plurality of modules;
 - [e] each module comprises three lobes, that is, two outer lobes and one inner lobe disposed between the two outer lobes in the pathway of the pattern;
 - [f] each lobe comprising one or more curved sections having concavities facing in the same direction, defining an apex of the lobe;
 - [g] the lobes opening alternately on opposite sides of the pathway of the pattern along the extent of the line;
 - [h] both of the outer lobes of the three lobes being extended by straight outer arms;
 - [i] the at least one plurality of modules being arranged consecutively so as to have successive outer arms which extend from the outer lobes in substantially opposite directions relative to the pathway of the pattern for two successive modules; and wherein,
 - [j] for each module, the distance between the apex of one of the outer lobes and the apex of the inner lobe of the same module is less than the distance between the apex of the same outer lobe and the apex of any outer lobe of an adjoining module;
 - [k] for each line, there is at least one adjacent line which has a motif that is a mirror image of the said line with respect to an axis parallel to the axis of the line;
 - [l] at least one connecting element or bridge is provided between two adjacent lines; and

[*m*] each said bridge directly connects two opposed outer lobes of two adjacent lines, and each said bridge extends along a longitudinal axis parallel to the longitudinal axis of the tubular body;

[*n*] one bridge is provided per module, said bridge extending towards an adjacent line on the opposite side to the outer arms of the module; and

[*o*] each said bridge is provided between two adjacent lines, for every five complete lobes of a line, three outer lobes and two inner lobes.

The following grounds of rejection are before us for review:

- I. Claims 1-17, 19-21, 23-31, 34, 40, 41, 43-46, and 51-53 stand rejected under 35 U.S.C. § 103(a) as being rendered obvious by the combination of Dang¹ and Fischell.²
- II. Claims 18, 22, 32, 33, 35-39, 47-49, and 54 stand rejected under 35 U.S.C. § 103(a) as being rendered obvious by the combination of Dang and Fischell, as further combined with Callol.³
- III. Claim 42 stands rejected under 35 U.S.C. § 103(a) as being rendered obvious by the combination of Dang and Fischell, as further combined with Moore.⁴
- IV. Claims 55 and 56 stand rejected under 35 U.S.C. § 103(a) as being rendered obvious by the combination of Dang and Fischell, as further combined with Ragheb.⁵

We affirm.

¹ Dang, US 5,935,162, issued Aug. 10, 1999.

² Fischell et al., US 6,540,775 B1, issued Apr. 1, 2003.

³ Callol et al., US 2002/0183763 A1, issued Dec. 5, 2002.

⁴ Moore, US 2002/0065547 A1, issued May 30, 2002.

⁵ Ragheb et al., US 6,299,604 B1, issued Oct. 9, 2001.

ISSUE

Does the preponderance of evidence of record support the Examiner's conclusion that the combination of Dang and Fischell renders the endolumenal prosthesis of claim 1 obvious?

FINDINGS OF FACT

FF1. The present invention is drawn to an expandable endolumenal prosthesis (Spec. 1).

FF2. Figure 1 of the Specification is reproduced below:

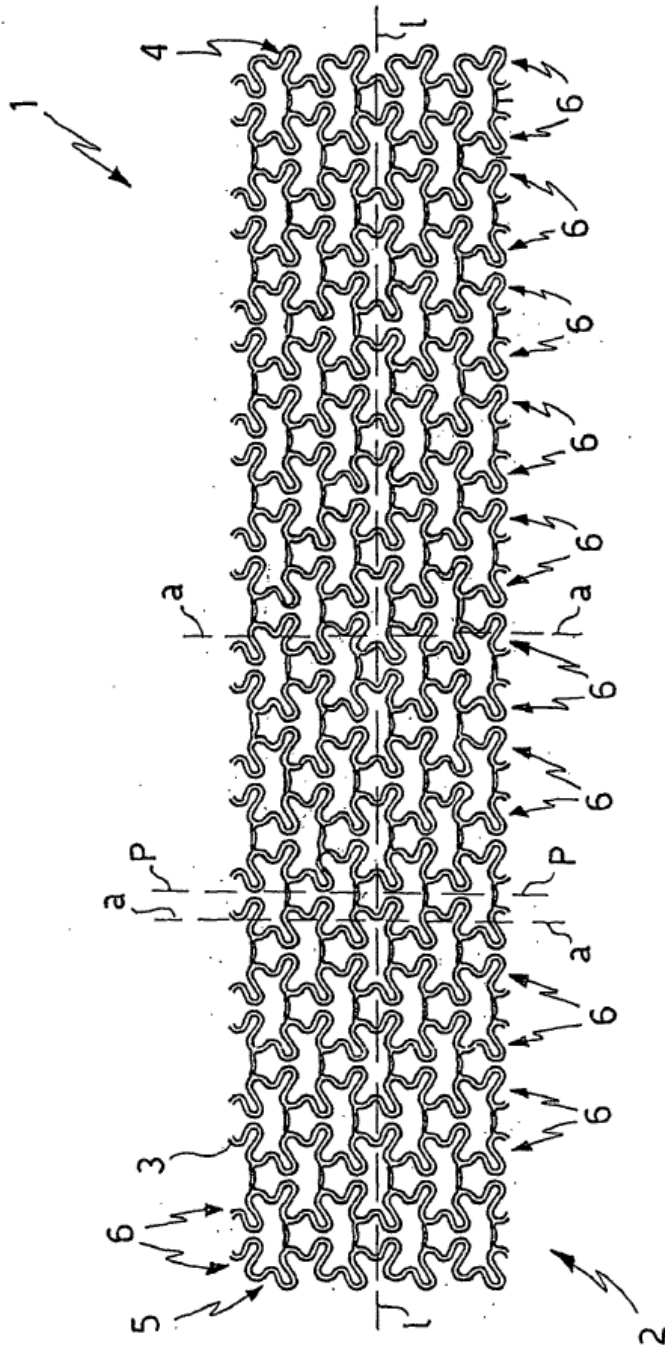


FIG. 1

Figure 1 is a two-dimensional view of a pathway motif for the endoluminal prosthesis, in the non-expanded configuration (*id.* at 5).

FF3. As to Rejection I, as Appellant does not argue the claims separately, we focus our analysis on claim 1, and claims 2-17, 19-21, 23-31, 34, 40, 41, 43-46, and 51-53 stand or fall with that claim. 37 C.F.R. § 41.37(c)(1)(vii).

FF4. The Examiner finds that Dang discloses elements [a] through [l] of claim 1 (Ans. 3-4 (referencing Figure 2 of Dang)).

FF5. Figure 2 of Dang is reproduced below.

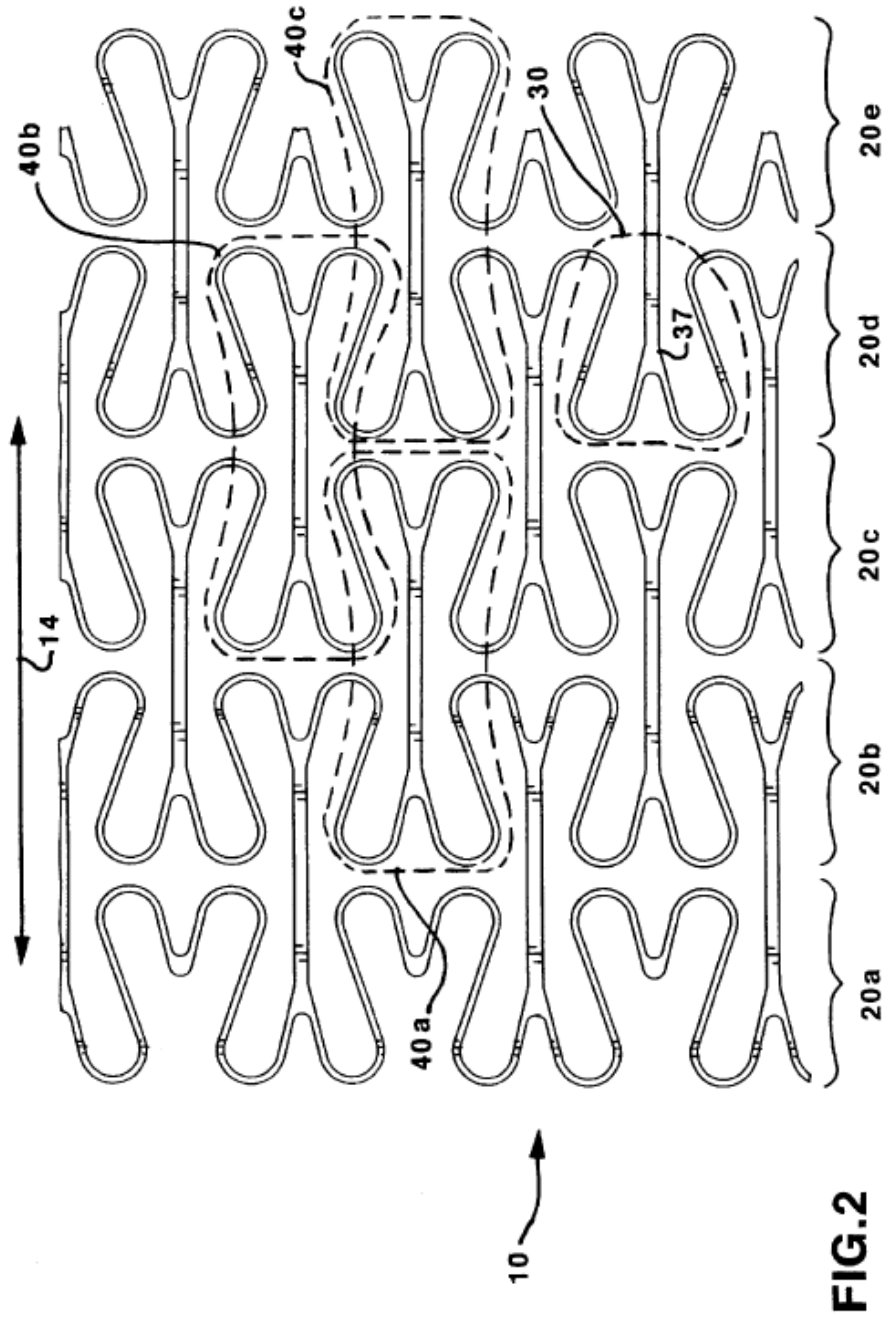


Figure 2 is a plan view of the stent of Dang after unrolling it from its tubular shape (Dang, col. 3, ll. 64-65).

FF6. The Examiner notes that “Dang does not disclose the bridges directly connect opposed outer lobes of adjacent lines wherein each bridge is provided between two adjacent lines, for every five complete lobes of a line, three outer lobes and two inner lobes” (Ans. 5).

FF7. The Examiner cites Fischell for teaching “using bridges to attach one outer lobe of opposing w-shaped modules for increased flexibility while allowing for the stent to have a reduced diameter upon crimping onto a balloon, as well as reduced flaring of the outer lobes” (*id.*).

FF8. The Examiner further finds that Fischell “essentially teach[es] that providing bridges on every other outer lobe prevents the bridges from interfering with eachother [sic] when the stent is crimped to a small diameter” (*id.*).

FF9. Figure 1 of Fischell is reproduced below:

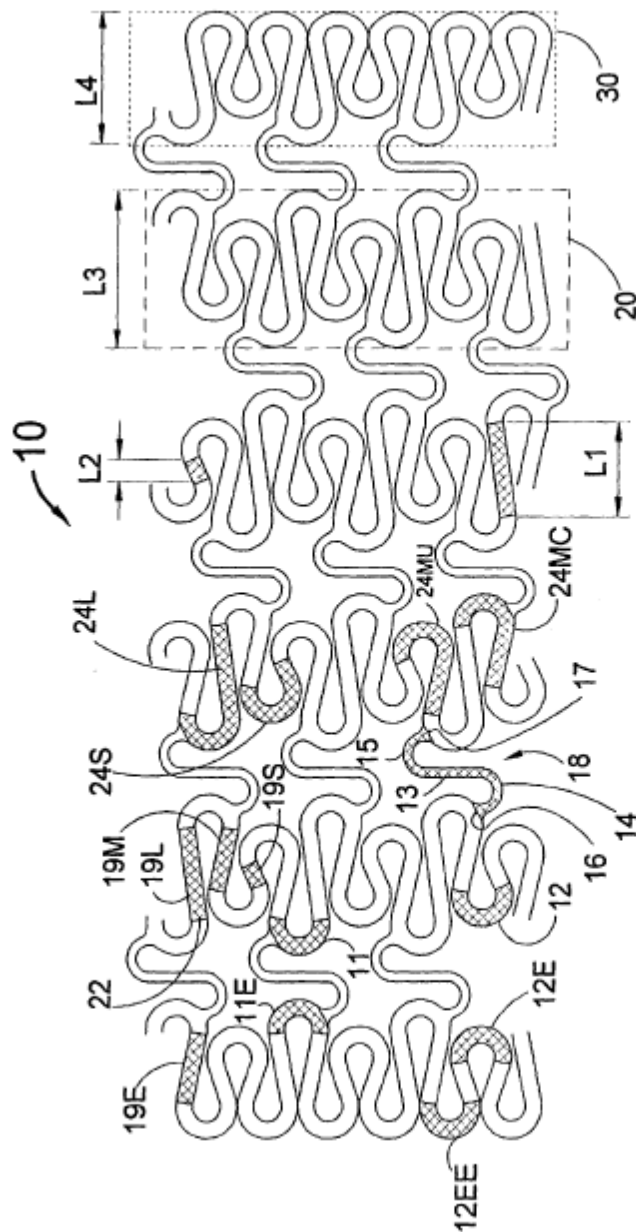
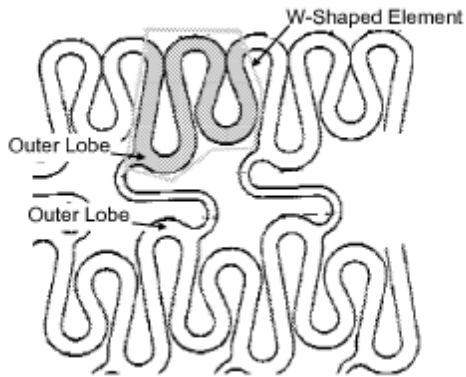


FIG. 1

Figure 1 is a layout view of the stent of Fischell in its pre-deployed state (Fischell, col. 3, ll. 54-56).

FF10. The Examiner characterizes Figure 1 of Fischell as showing:



Thus, as annotated by the Examiner, the above figure highlights a W-shaped element, as well as pointing out what the Examiner considers to be the outer lobes (Ans. 5).

FF11. Figure 5 of Fischell is reproduced below:

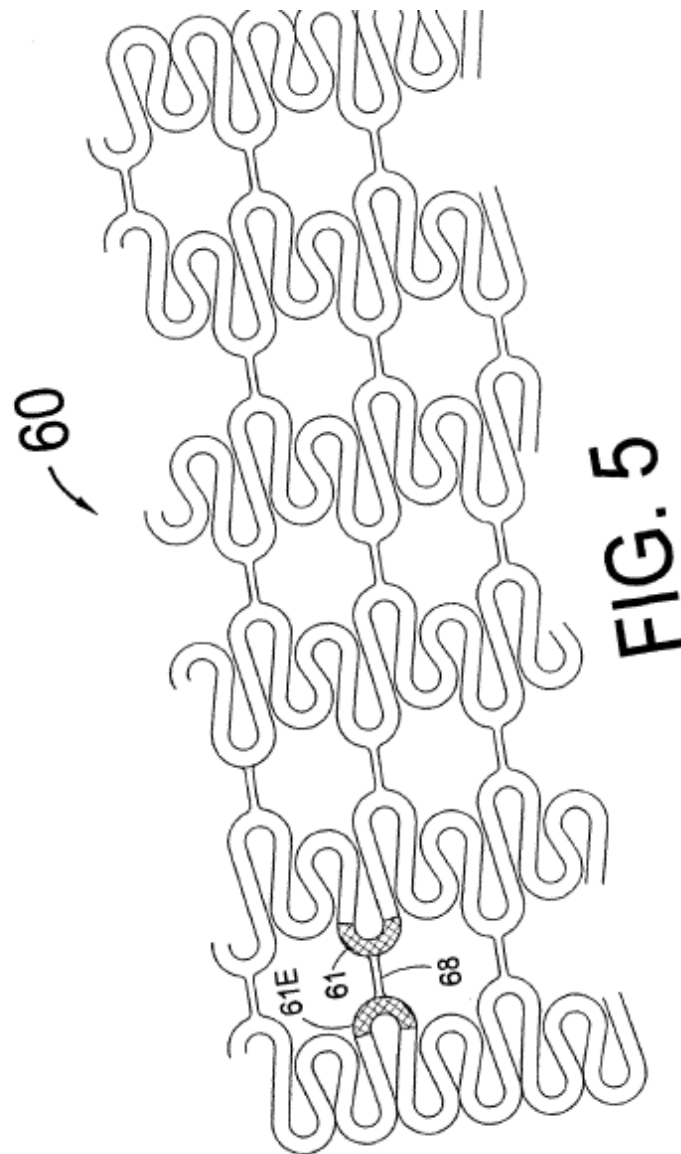
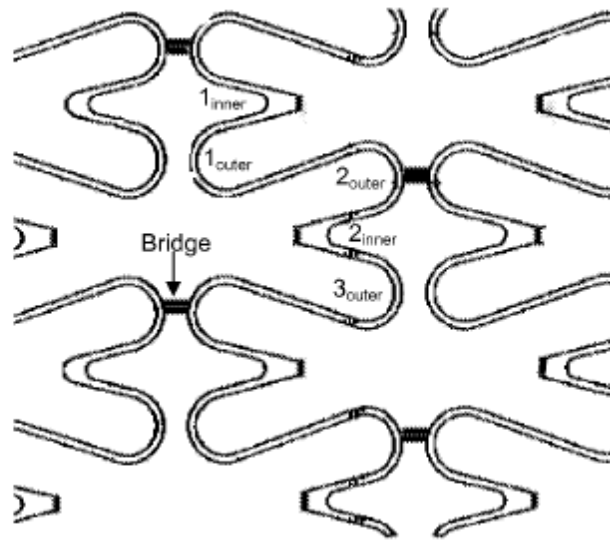


Figure 5 shows a layout of an alternative stent of Fischell wherein the “alternate adjacent curved sections are connected by straight longitudinal connecting links” (Fischell, col. 4, ll. 1-3).

FF12. The Examiner concludes:

[I]t would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Dang’s stent to include Fischell et al.’s bridges. Such a modification allows for improved flexibility, minimum crimpable diameter

and reduced outer lobe flaring. Furthermore, since Dang discloses that the bridge (tie members) should connect modules (“w-shaped” elements) that open up towards each other [sic] (Abstract; Figure 2), it would have been obvious to one of ordinary skill in the art to attach outer lobes (in view of Fischell et al.) only to modules that open up towards each other [sic] (in view of Dang). This would result in the structure shown below (of course with Fischell et al.’s extended bridge shape) which meets the limitations of Appellant’s claim 1.



(Ans. 6.)

ANALYSIS

Appellant argues that the combination is based on impermissible hindsight (App. Br.⁶ 4-6). We do not agree. Both Dang and Fischell are drawn to endolumenal prostheses, and the geometries of both are based on a W-shaped motif. In determining whether obviousness is established by

⁶ As Appellant did not number the pages in the Appeal Brief, we designate the title page of the brief as page 1, and number the pages consecutively therefrom.

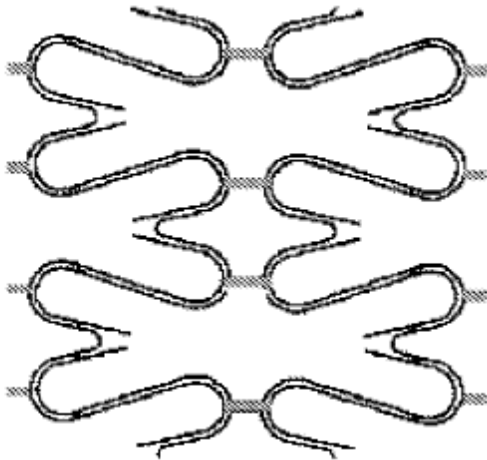
combining the teachings of the prior art, “the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). In addition, a reference disclosure is not limited only to its preferred embodiments, but is available for all that it discloses and suggests to one of ordinary skill in the art. *In re Lamberti*, 545 F.2d 747, 750 (CCPA 1976). Thus, we agree with the Examiner, that the ordinary artisan of ordinary skill in this art would have been motivated to combine the references to arrive at the endolumenal prosthesis of claim 1. *See also KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (noting that the analysis under 35 U.S.C. § 103 “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.”).

Appellant argues that both Dang and Fischell lack features (m) and (o) (Reply Br.⁷ 5). Appellant argues that Fischell teaches bridges on every long lobe and on every two lobes, and that Fischell’s certificate of correction “indicates that the essential feature of this patent is the 50% ratio between the unlinked lobes and the linked lobes” (*id.* at 3). Moreover, Appellant asserts that as shown in Figure 1 of Fischell, the bridge does not connect the apex of the lobe, nor does it connect the lobes, but “does project from or connect a line that extends between the arm and the lobe” (*id.* at 4). Appellant asserts that the modules of Fischell and Dang are completely

⁷ As Appellant did not number the pages in the Reply Brief, we designate the title page of the brief as page 1, and number the pages consecutively therefrom.

different, and thus there would be no reason to modify Dang's stent to include Fischell's bridges (*id.* at 7).

Appellant argues further that even if one were to use the alternate layout as shown in Figure 5 of Fischell, one would obtain the following geometry:



(*id.* at 8). Appellant asserts that the structure obtained by the Examiner “is obtained by connecting only certain curved sections of the module in a completely arbitrary (or inventive) way,” and is not taught or suggested by Dang or Fischell (*id.*).

We have carefully considered Appellant's arguments, but do not find them convincing. As noted by the Examiner, Fischell teaches using bridges to attach one outer lobe of opposing W-shaped molecules. While the motifs of Dang and Fischell are not the same, they are both comprised of W-shaped modules. Thus, substituting the bridge of Fischell, which is attached to one of two outer lobes of opposing W modules, for the bridge of Dang which connects two apexes of opposing W modules, would lead to the geometry as set forth by the Examiner (*see* FF12), which Appellant does not dispute meets the limitations of claim 1.

As to Appellant's argument that Fischell's certificate of correction indicates that the essential feature of Fischell is the 50% ratio between the linked and the unlinked lobes, Appellant appears to be arguing that Fischell teaches away from the combination.

"Under the proper legal standard, a reference will teach away when it suggests that the developments flowing from its disclosures are unlikely to produce the objective of the applicant's invention. A statement that a particular combination is not a preferred embodiment does not teach away absent clear discouragement of that combination." *Syntex (USA) LLC v. Apotex, Inc.*, 407 F.3d 1371, 1380 (Fed. Cir. 2005) (citations deleted). In this case, although Fischell teaches a 50% ratio between the linked and the unlinked lobes, as demonstrated by Dang, other bridging methods and ratios are known in the art. But both Dang and Fischell teach different ways to bridge lines in an expandable endolumenal prosthesis containing a W-shaped motif, and thus the substitution of the bridge of Fischell for the bridge of Dang would have been prima facie obvious to one of ordinary skill in the art.

As to the remaining rejections, Appellant argues that the additional references cited by the Examiner do not remedy the efficiencies of Dang and Fischell as to claim 1 (*see* App. Br. 6). Those arguments are not convincing for the reasons set forth above with respect to the rejection of claim 1.

CONCLUSION OF LAW

We conclude that the preponderance of evidence of record support the Examiner's conclusion that the combination of Dang and Fischell renders the endolumenal prosthesis of claim 1 obvious.

We thus affirm the rejection of claim 1 under 35 U.S.C. § 103(a) as being rendered obvious by the combination of Dang and Fischell. As claims 2-17, 19-21, 23-31, 34, 40, 41, 43-46, and 51-53 stand or fall with claim 1, we affirm the rejection as to those claims as well.

As Appellant did not offer separate arguments as to the remaining rejections, we also affirm the rejection of

claims 18, 22, 32, 33, 35-39, 47-49, and 54 under 35 U.S.C. § 103(a) as being rendered obvious by the combination of Dang and Fischell, as further combined with Callol;

claim 42 under 35 U.S.C. § 103(a) as being rendered obvious by the combination of Dang and Fischell, as further combined with Moore; and

claims 55 and 56 under 35 U.S.C. § 103(a) as being rendered obvious by the combination of Dang and Fischell, as further combined with Ragheb.

TIME PERIOD FOR RESPONSE

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

AFFIRMED

cdc