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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte STEPHEN F. QUINN

Appeal 2020-001170
Application 13/906,247
Technology Center 3700

Before CHARLES N. GREENHUT, MICHAEL L. HOELTER, and
ANNETTE R. REIMERS, *Administrative Patent Judges*.

HOELTER, *Administrative Patent Judge*.

DECISION ON APPEAL
STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner’s decision to reject claims 1, 5, 14–18, and 24–35, which constitute all the claims pending in this application. Final Act. 1 (Office Action Summary). Claims 2–4, 6–13, and 19–23 have been canceled. *See* Appeal Br. 9–10 (Claims App.). We have jurisdiction under 35 U.S.C. § 6(b). For the reasons explained below, we do not find error in the Examiner’s rejections. Accordingly, we AFFIRM the Examiner’s rejections.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as “W. L. GORE & ASSOCIATES, INC.” Appeal Br. 2.

CLAIMED SUBJECT MATTER

The disclosed subject matter “relates to intravascular stent grafts.”

Spec. ¶ 2. Apparatus claims 1 and 31 are independent. Claim 1 is illustrative of the claims on appeal and is reproduced below.

1. A stent graft, comprising:

a stent;

a primary graft coupled to the stent, the primary graft having a first end and a second end, the primary graft having a side opening therethrough between the first and second ends, the primary graft forming a fluid flow channel with the side opening being arranged on a perimeter of the primary graft between the first end and the second end; and

an internal graft channel formed within the primary graft and separated from the fluid flow channel by a partition, the internal graft channel having a first open end arranged with the side opening and a second open end parallel to the first end of the primary sleeve, the second open end of the internal graft channel in fluid communication with the side opening in the primary graft, the internal graft channel capable of allowing branch fluid flow through and between the first open end and the side opening of the primary graft.

REFERENCES RELIED ON BY THE EXAMINER

Pinchuk	US 5,855,598	Jan. 5, 1999
Wisselink	US 5,984,955	Nov. 16, 1999
Hyodoh et al.	US 2003/0040771 A1	Feb. 27, 2003

THE REJECTIONS ON APPEAL

Claims 1, 5, 14–18, and 24–30 are rejected under (pre-AIA) 35 U.S.C. § 112, second paragraph, as being indefinite. Final Act. 3.

Claims 1, 5, 14–18, and 24–35 are rejected under (pre-AIA) 35 U.S.C. § 103(a) as unpatentable over Pinchuk, Hyodoh, and Wisselink. Final Act. 3.

ANALYSIS

The rejection of claims 1, 5, 14–18, and 24–30 as being indefinite

The Examiner finds, “[t]here is insufficient antecedent basis” for the recitation “the primary sleeve” at line 11 of claim 1. Final Act. 3. Thus, the Examiner determines that claim 1 is indefinite because “[i]t is not evident” what “the primary sleeve” refers to in the claim. Final Act. 3.

Appellant concedes that “the limitation ‘primarily sleeve’ in line 11 of claim 1 is a typographical error” and states that “Appellant is amendable to amending claim 1 by way of [an] Examiner’s amendment or if prosecution is re-opened.” Appeal Br. 8. Appellant, however, argues that the term at issue “would be under[]stood by one of skilled in the art to refer to the claimed primary graft” because “[t]he primary graft is the sole ‘primary’ feature in claim 1.” Appeal Br. 8; *see also* Reply Br. 5.

A claim is properly rejected as being indefinite under 35 U.S.C. § 112, second paragraph if, after applying the broadest reasonable interpretation in light of the specification, the metes and bounds of a claim are not clear because the claim “contains words or phrases whose meaning is unclear.” *In re Packard*, 751 F.3d 1307, 1310 (Fed. Cir. 2014).

It is undisputable that “the primary sleeve” lacks antecedent basis. As such, it is uncertain that a skilled reader would understand that “the primary sleeve” refers back to “a primary graft” of claim 1. Thus, the metes and bounds of claim 1 and its dependent claims are not clear.

For these reasons, the rejection of claims 1, 5, 14–18, and 24–30 as indefinite, is sustained.

*The rejection of claims 1, 5, 14–18, and 24–35
as obvious over Pinchuk, Hyodoh, and Wisselink*

Appellant argues claims 1, 5, 14–18, and 24–35 (i.e., all the claims) together. Appeal Br. 3–6. We select claim 1 for review, with independent claim 31, and dependent claims 5, 14–18, 24–30, and 32–35, standing or falling with claim 1. *See* 37 C.F.R. § 1.37(c)(1)(iv).

Claim 1 recites a stent graft comprising “a primary graft” and “an internal graft channel formed within the primary graft.” The primary graft is recited as having “a side opening” that is “arranged on a perimeter of the primary graft” between its first end and second end. The internal graft channel is recited as having “a first open end arranged with the side opening and a second open end parallel to the first end of the primary [graft].”²

Appeal Br. 9 (Claims App.).

Appellant contends:

(1) “[t]he *Pinchuk* reference fails to discuss a side opening within the trunk” (Appeal Br. 4);

(2) “the *Hyodoh* reference cannot teach an internal graft channel within a primary graft,” “cannot teach a main graft with a side opening,” and “an internal graft channel having a first open end arranged with the side opening and a second open end parallel to the first end of the primary graft” (Appeal Br. 5); and,

(3) the *Wisselink* reference fails to teach or describe a device “having an internal graft channel having a first open end arranged with the side

² Assuming Appellant intends claim 1 to recite “parallel to the first end of the primary *graft*” rather than the existing recitation of “parallel to the first end of the primary *sleeve*,” which lacks antecedent basis, as discussed above. Emphasis added.

opening and a second open end parallel to the first end of the primary graft” (Appeal Br. 6). *See also* Reply Br. 2–4.

“Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references []. [The reference] must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole.” *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). *See also* Ans. 5–6.

Here, Appellant does not address the rejection but rather, attacks the references individually. The Examiner finds that Pinchuk discloses a stent graft having a stent 121c and a primary graft that is coupled to the stent. Final Act. 3 (citing Pinchuk Fig. 32); *see also* Pinchuk Fig. 31. The Examiner further finds that Pinchuk discloses “an internal graft channel **128c** formed within the primary graft separated by a partition **126c** from another fluid flow channel.” Final Act. 3. The Examiner acknowledges that “Pinchuk does *not* disclose the primary graft having a *side opening* therethrough between the first and second ends with [an] internal channel [being] in fluid communication with the side opening.” Final Act. 3–4; emphases added. Hence, Appellant’s contention above regarding Pinchuk lacking a side opening (*see* Appeal Br. 4) is not responsive to the Examiner’s rejection.

Rather, the Examiner relies on Hyodoh for disclosing “that multiple branch or secondary stent grafts are placed within the aorta and out the *side* vessel for maintaining flow through the branches.” Final Act. 4 (citing Hyodoh Fig. 55); emphasis added. The Examiner did not rely on Hyodoh for disclosing an “internal graft channel within a primary graft” as Appellant

contends above, but instead for teaching “a main graft with a side opening” (which Appellant disputes despite Hyodoh’s disclosure thereof in Figure 55). Appeal Br. 5; Final Act. 4. Thus, Appellant’s contention that Hyodoh fails to disclose an “internal graft channel” as recited (*see* Appeal Br. 5) is not responsive to the Examiner’s reliance on Hyodoh (*see* Final Act. 4) and, consequently, is not persuasive of Examiner error.

The Examiner further relies on Wisselink for additionally disclosing “stent grafts having a primary graft **12** [that] can include *side openings* **14** for branch grafts **16**.” Final Act. 4 (citing Wisselink Figs. 1a, 1c); emphasis added. *See also* Ans. 5–6. Accordingly, Appellant’s contention above regarding Wisselink as failing to teach “an internal graft channel having a first open end arranged with the side opening” (*see* Appeal Br. 6) is likewise not persuasive of Examiner error.

However, claim 1 includes the further limitation that the second end of the internal graft channel be “parallel to” the first end of the primary graft. Appellant contends that “no reference” teaches this limitation. Appeal Br. 3; *see also id.* at 5, 6; Reply Br. 3, 4 (“[t]here is no combined teaching of the references . . . that includes . . . a second open end parallel to the first end of the primary graft”). The Final Office Action does not specifically address this “parallel” recitation, but does reference Figure 32 of Pinchuk, which appears to disclose an opening into internal graft channel 128c that is depicted parallel to the opening of the primary graft. *See* Final Act. 3. The Examiner further states, “thus a branch stent graft of Pinchuk can be diverted to a side vessel [and that] the second opening of the internal channel would be parallel with the primary graft first end.” Ans. 6. As above, Appellant contends that no reference explicitly teaches this “parallel” limitations, but

Appellant does not explain how Figure 32 of Pinchuk fails to at least suggest this limitation as indicated by the Examiner above. *See also* Pinchuk Figures 20, 21, 25, 29, and 30 for further suggestions to one skilled in the art that “the second opening of the internal channel would be parallel with the primary graft first end.” Ans. 6.

Appellant also contends that there is a lack of motivation to combine the teachings of the references. *See* Appeal Br. 3. Appellant argues that, instead, the rejection is based on improper hindsight reconstruction and a mere rearrangement of parts that is “insufficient to support a finding of obviousness.” Appeal Br. 7. Appellant contends that the lack of motivation stems from the fact that Pinchuk discloses that its device is designed to extend below the renal arteries and to be used with respect to issues concerning the aorto-iliac bifurcation. Appeal Br. 7 (citing Pinchuk 11:1–10); *see also* Reply Br. 4. In other words, Appellant argues that if Pinchuk’s device is designed for use at the renal arteries, which are secondary arteries that extend nearly 90 degrees from the main artery, then Pinchuk’s device would need a side opening in its stent graft. *See* Appeal Br. 7. However, according to Appellant, because Pinchuk’s device is designed for use with the lower aorto-iliac bifurcation, which has branch arteries extending at a smaller angle with respect to each other—rather than at 90 degrees, Pinchuk’s device does not need a side opening in its stent graft.³ Appellant

³ We further note that in the Reply Brief, Appellant asserts that claim 1 requires the first open end of the internal graft to be *perpendicular* to the second open end of the internal graft, but this is nowhere recited. *See* Reply Br. 2; Appeal Br. 9 (Claims App.).

argues that because of the above-noted disclosure, Pinchuk teaches away from the claimed side opening. *See* Reply Br. 4–5.

We first note that the Examiner articulates a motivation for the side-opening modification of Pinchuk by stating that

it would have been obvious to one of ordinary skill in the art to use a side opening in a stent graft as taught by Wisselink to establish fluid flow out the side opening into a branch vessel per the teaching of Hyodoh et al. and modify the stent graft of Pinchuk to have the internal graft channel be in communication with a side opening for a branch stent graft *to maintain flow into the renal arteries*.

Final Act. 4; emphasis added. The Examiner further explains that “those of ordinary skill in the art [would] understand there are other locations in the body where a main [] or primary [vessel] (that [is] larger in diameter) has smaller branches extending off the side [and] which stent grafts [can be] designed to allow or reestablish fluid flow to these side vessels.” Ans. 7. Thus, in view of this explanation, the Examiner has provided articulated reasoning with rational underpinning for the proposed modification, which involves use with the *renal*, as opposed to iliac, arteries. *See In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006).

Second, contrary to Appellant’s assertion (and as noted above), claim 1 does *not* require the first open end of the internal graft to be *perpendicular* to the second open end of the internal graft. Claim 1 merely requires, “the internal graft channel having a first open end *arranged* with the side opening.” Appeal Br. 9 (Claims App.); emphasis added. In other words, the internal graft’s first open end does not need to be at 90 degrees with its second open end in order to be “arranged” with the side opening of the primary graft.

Third, Pinchuk discloses “[s]ame is shown in connection with treating an aneurysm *such as* an abdominal aorto-iliac aneurysm. The device includes a trunk component 101 which, *in the illustrated use*, is designed to extend from below the renal arteries to a location between the proximal neck of the aneurysm and the aorto-iliac bifurcation.” Pinchuk 11:3–8; emphasis added. Pinchuk further discloses that “[i]n this illustrated embodiment, this leg component is an iliac component of the bifurcated supportive graft being assembled within the body vessel.” Pinchuk 11:35–37; emphasis added. The recitations of “such as,” “in the illustrated use,” and “[i]n this illustrated embodiment,” indicate that Pinchuk’s stent graft can be modified for use at *other* locations rather than being designed specifically and only for use at the aorto-iliac bifurcation. Thus, Pinchuk does not restrict its stent graft from having branches at a particular angle or that it is for use only at a particular location. Finally, Pinchuk does not discredit, criticize, nor disparage the claimed side opening. *See DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1364 (Fed. Cir. 2006).⁴ As such, we do not agree with Appellant that there is no motivation to modify Pinchuk’s stent graft in the manner proposed by the Examiner, or that Pinchuk teaches away as argued.

In summary, and based on the record presented, we are not apprised of Examiner error in rejecting independent claim 1 as being unpatentable over

⁴ In the Reply Brief, Appellant intimates that the proposed modification would also render Pinchuk’s stent graft unsatisfactory for its intended purpose, i.e., designed for use only at the aorto-iliac bifurcation. *See* Reply Br. 5 (citing MPEP § 2143.01). However, this argument is unpersuasive for the reasons discussed above.

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Pinchuk, Hyodoh, and Wisselink. Accordingly, we sustain the Examiner's rejection of claims 1, 5, 14–18, and 24–35.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 5, 14–18, 24–30	112, Second Paragraph	Indefiniteness	1, 5, 14–18, 24–30	
1, 5, 14–18, 24–35	103(a)	Pinchuk, Hyodoh, Wisselink	1, 5, 14–18, 24–35	
Overall Outcome			1, 5, 14–18, 24–35	

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).

AFFIRMED