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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* TRENT SPENCER WELLS, MATTHEW T. MCCORMICK,  
RAPLH KERNS, and MARK S. HUMAYUN

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Appeal 2018-008133  
Application 14/130,888  
Technology Center 3700

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Before GEORGE R. HOSKINS, LISA M. GUIJT, and  
BRENT M. DOUGAL, *Administrative Patent Judges*.

HOSKINS, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 1–20<sup>2</sup> in this application. The Board has jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM IN PART.

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<sup>1</sup> We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies Doheny Eye Institute as the real party in interest. Appeal Br. (filed Jan. 26, 2018) 3.

<sup>2</sup> Claims 21–23 are canceled. Appeal Br. 22 (Claims App.).

### CLAIMED SUBJECT MATTER

Claim 1 illustrates the claimed subject matter on appeal, and it recites, with our emphases added:

1. An ocular cutting device comprising:  
a housing having a motor positioned within the housing;  
an aspiration line; and  
a working end coupled to the aspiration line, the working end comprising:

*an outer sleeve member* coupled in fixed relationship to the housing and having a proximal end and a distal end, the proximal end coupled to the housing, the distal end *having first and second openings*, the first opening having a first cutting edge; and

an inner sleeve member having a proximal end and a distal end, the inner sleeve member positioned within the outer sleeve member, the motor operatively coupled to the proximal end to move the inner sleeve member relative to the outer sleeve member, *the inner sleeve member having a third opening* with a second cutting edge and a fourth opening in the distal end of the inner sleeve member, wherein *the third opening is smaller than the first opening* and the first opening and third opening are configured to interact to cut tissue between the first and second cutting edges; and

wherein the second opening of the outer sleeve is configured to remain unobstructed by the movement of the inner sleeve such that a vacuum applied to the working end through the aspiration line allows the second opening to hold a tissue mass at a first location of the tissue mass while the tissue mass is cut and removed by the working end at a second location of the tissue mass spaced from the first location.

Appeal Br. 18 (Claims App.) (emphases added).

## REJECTIONS ON APPEAL

Claim 8 is rejected under 35 U.S.C. § 112(a)<sup>3</sup> for lack of written description. Final Act. (dated June 27, 2017) 3.

Claims 11, 14, 17, and 18 are rejected under 35 U.S.C. § 112(b) as indefinite. Final Act. 3–4.

Claims 1–20 are rejected under 35 U.S.C. § 103(a) as unpatentable over Hayafuji (US 5,106,364, iss. Apr. 21, 1992) and Vijfvinkel (US 5,843,111, iss. Dec. 1, 1998). Final Act. 4–13.

## OPINION

### A. *Lack of Written Description (claim 8) and Indefiniteness (claims 11, 14, 17, and 18)*

The Appeal Brief states the written description and indefiniteness rejections “are not appealed herein.” Appeal Br. 9. Further: “Appellant[] agree[s] that amendment of the claims to overcome the [written description and indefiniteness] rejections under 35 U.S.C. § 112 is appropriate and will attend to such amendment or cancellation of the claims upon withdrawal” of the obviousness rejections. *Id.* at 9–10.

We, therefore, summarily sustain the written description and indefiniteness rejections. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2017); *In re Baxter Int’l, Inc.*, 678 F.3d 1357, 1362 (Fed. Cir. 2012) (argument waived when not timely presented in briefing to the Board, absent exceptional circumstances); MPEP § 1215.03 (9th ed., Rev. 08.2017, eff. Jan. 2018)

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<sup>3</sup> This application was filed on August 28, 2014, after the AIA amendments to § 112 took effect on September 16, 2012. *See* Leahy-Smith America Invents Act (“the AIA”), Pub. L. No. 112-29, § 4(e), 125 Stat. 284, 297 (2011); MPEP § 2161(I).

(“An appellant may, of course, choose not to present arguments or rely upon particular evidence as to certain claim rejections; however, such arguments and evidence are waived for purposes of the appeal and the Board may summarily sustain any grounds of rejections not argued.”).

*B. Obviousness over Hayafuji and Vijfvinkel (Claims 1–20)*

*1. Claims 1–11*

*a. Hayafuji Disclosure*

The Examiner relies principally on Figure 14 of Hayafuji, which we reproduce here:

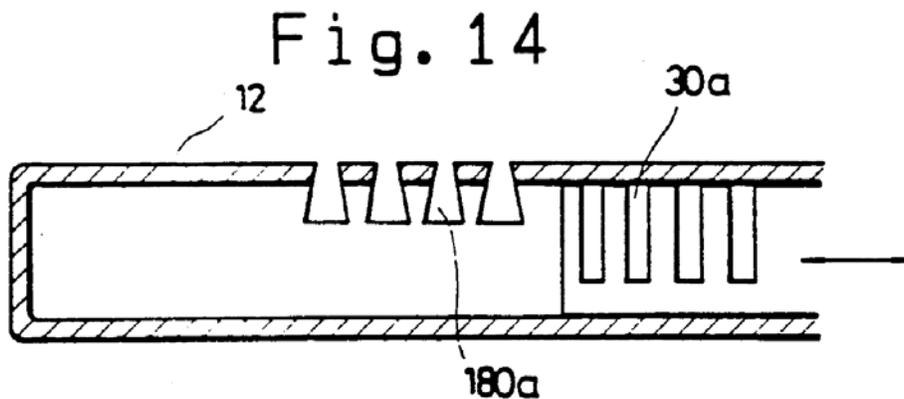


Figure 14 is a sectional view of the cutting portion of Hayafuji’s ocular cutting device, where inner tube 13 with apertures 30a reciprocates within outer tube 12 with apertures 180a to cut tissue. Hayafuji, 4:11–22, 12:55–62. The Examiner finds, in part, that Hayafuji’s device comprises *a third opening* (i.e., one of the openings 30a) that is *smaller than a first opening* (i.e., one of the openings 180a). Final Act. 5–6. In support, the Examiner states “the bottom of 180a is wider than 30a.” *Id.* at 6.

Appellant argues the Examiner errs in relying on Hayafuji as disclosing a third opening 30a being smaller than a first opening 180a. Appeal Br. 10–12.

The Examiner responds that Figure 14 of Hayafuji “may . . . be used to establish relative sizes and relationships between the various [illustrated] components.” Ans. (dated May 25, 2018) 4. For example, the Examiner finds Figure 14 discloses one opening 180a “is larger than” another opening 30a. Advisory Act. (dated Sept. 7, 2017) 2; Ans. 4.

Upon our review of the foregoing, we determine a preponderance of the evidence does not support the Examiner’s finding that Hayafuji discloses, in Figure 14, a third opening 30a that is smaller than a first opening 180a. Claim 1 requires a third *opening* to be smaller than a first *opening*. The Examiner’s focus on “the bottom of” an opening 180a being “wider than” the bottom of an opening 30a (Final Act. 6) is not commensurate with that claim requirement. Also, openings 180a have a complex configuration. *See, e.g.*, Hayafuji, Figs. 9–10, 11:12–24 (illustrating and describing configuration of aperture 180); *id.* at 12:55–58 (apertures 180a are “each similar in shape to the aperture 180”). The Examiner’s findings do not account for the complex configuration of openings 180a, or the fact that openings 30a are shown in Figure 14 to be much deeper than openings 180a, in finding the latter openings are smaller than the former openings.<sup>4</sup> For these reasons, we conclude the Examiner merely speculates in finding that Hayafuji’s openings 30a are smaller than openings 180a.

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<sup>4</sup> Appellant’s Specification indicates, in at least some circumstances, the “ratio of the axial length[s]” between two openings may be used as a proxy to determine the relative size of two openings. Spec. ¶ 43. However, given the complex configuration of openings 180a, and the fact that openings 30a are much deeper than openings 180a, this simplified comparison does not apply to Hayafuji’s Figure 14.

*b. Vijfvinkel Disclosure, and Obviousness*

In the event it is found Hayafuji fails to disclose a third opening 30a being smaller than a first opening 180a in Figure 14, as we have done above, the Examiner alternatively relies on Vijfvinkel for obviousness in this regard. Final Act. 7; Ans. 4. The Examiner cites Vijfvinkel as disclosing “*the size of the openings on the outer sleeve is a result effective variable, wherein the depth [of] the opening affects fine control of the shaving and the width of the slit affects the rate of material removal.*” Final Act. 7 (emphasis added) (citing Vijfvinkel, 6:21–24). Based on that disclosure, the Examiner determines it would have been obvious to modify the size of Hayafuji’s outer sleeve openings 180a such that inner sleeve openings 30a are smaller than openings 180a. *Id.*; Ans. 4. This would have been done “for the purpose of finding the correct balance of fine control and rate of material removal, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.” Final Act. 7 (citing *In re Aller*, 220 F.2d 454 (CCPA 1955)).

Appellant argues Vijfvinkel does not establish the obviousness of the claimed invention, because “[t]he mere teaching in Vijfvinkel that opening size[] affect[s] the results in the tool of Vijfvinkel is not sufficient reason to modify the different tool of Hayafuji.” Appeal Br. 12–13.

The Examiner answers that “Vijfvinkel teaches a similar cutting mechanism” to Hayafuji’s cutting device, “and establishes that the size of the openings is a result effective variable” such that it would have been obvious “to increase the size of the outer sleeve openings of Hayafuji as

taught by Vijfvinkel, *in order to allow for faster material removal.*” Ans. 5 (emphasis added).

Upon review of the foregoing, we determine a preponderance of the evidence does not support the Examiner’s determination of obviousness. We agree with the Examiner’s finding that Vijfvinkel indicates the size of an outer sleeve opening is a variable that affects how fast tissue may be removed via a cutting action provided by a reciprocating inner sleeve. *See* Vijfvinkel, Figs. 2 & 3, 4:11–55 (inner sleeve 202 with sharp cutting edge 206 reciprocates within outer sleeve 200 to provide a cutting action at slit ports 204 in outer sleeve 200); *id.* at Fig. 11, 6:21–24 (“[t]he smaller depth of the first slit is intended to provide more fine control of the shaving action closest to the retina and when only one slit is active” and “[t]he wider third slit allows for faster material removal”). However, the outer sleeve opening size is not the claim limitation at issue here, which instead specifies an *inter-relationship* between the size of an outer sleeve opening and the size of an inner sleeve opening, namely that the latter is smaller than the former.

Even if we were to agree with the Examiner’s determination that it would have been obvious to increase the size of Hayafuji’s outer sleeve openings 180a to allow for faster material removal, the Examiner additionally needs to provide a reason why this would have led to Hayafuji’s inner sleeve openings 30a being smaller than outer sleeve openings 180a. *See, e.g., In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (Examiner bears burden to provide a rational underpinning sufficient to support legal conclusion of obviousness), *cited with approval in KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). For example, the Examiner apparently

concludes that a person of ordinary skill in the art would have maintained the size of inner sleeve openings 30a as they are shown in Hayafuji's Figure 14, while increasing the size of outer sleeve openings 180a to achieve faster tissue removal. It is not clear, however, how such a design would lead to faster tissue removal, given that the removed tissue must pass through one outer sleeve opening 180a *and* one inner sleeve opening 30a. *See* Hayafuji, Fig. 14. It seems that increasing the size of both openings would be required to achieve the desired goal. Further, Vijfvinkel differs from Hayafuji in that Vijfvinkel has just one inner sleeve opening formed in the distal end of inner sleeve 202 to cut tissue, whereas Hayafuji has several inner sleeve openings 30a formed in the side surface of inner sleeve 13 to cut tissue. *See* Vijfvinkel, Figs. 2–3; Hayafuji, Fig. 14. Due to this difference in structure, it is not readily apparent that increasing the size of Hayafuji's outer sleeve openings 180a, without other changes, will have the same effect as in Vijfvinkel. Thus, a preponderance of the evidence does not support the Examiner's determination of obviousness.

*c. Conclusion as to Claims 1–11*

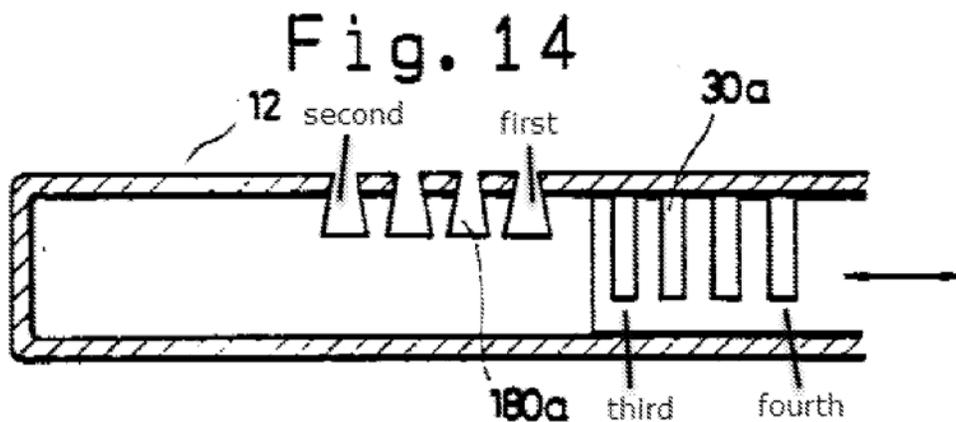
For the foregoing reasons, we do not sustain the rejection of claim 1 as having been obvious over Hayafuji and Vijfvinkel. The Examiner's additional consideration of dependent claims 2–11 does not cure the noted deficiencies as to claim 1. *See* Final Act. 7–9. We, therefore, likewise do not sustain the rejection of claims 2–11 as having been obvious over Hayafuji and Vijfvinkel.

2. *Claims 12–16*

Appellant argues for the patentability of independent claim 12 and its dependent claims 13–16 as a group, without arguing for any of the claims in this group separately from the other claims. *See* Appeal Br. 13–15. We therefore select claim 12 to decide the appeal of the obviousness rejection of these claims. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2017).

The Examiner finds Hayafuji discloses an ocular cutting device embodying the invention of claim 12, “except for a motor,” which it would have been obvious to employ in light of the combined teachings of Hayafuji and Vijfvinkel. Final Act. 9–10. Appellant challenges only one aspect of these findings and determination. *See* Appeal Br. 13–15. Appellant has therefore waived any other objection to the Examiner’s determination of obviousness as to claim 12. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2017) (“any arguments or authorities not included in the appeal brief will be refused consideration by the Board for purposes of the present appeal”).

The Examiner pertinently finds Hayafuji’s ocular cutting device comprises a first port and a second port that are configured as recited in the final clause of claim 12. Final Act. 9–10; Ans. 5–7. In support, the Examiner provides the following annotations to Hayafuji’s Figure 14:



Ans. 7. Figure 14 is a sectional view of the cutting portion of Hayafuji's device, where inner tube 13 with apertures 30a reciprocates within outer tube 12 with apertures 180a to cut tissue. Hayafuji, 4:11–22, 12:55–62. The Examiner has identified a first port 180a, a second port 180a, a third port 30a, and a fourth port 30a. Our following discussion will correspondingly refer to these specific ports as “the” first, second, third, and fourth ports.

The Examiner finds Hayafuji discloses, as recited in claim 12, that the second port 180a remains unobstructed by the movement of inner tube 13 such that an applied vacuum allows the second port 180a to remain attached to tissue while tissue is cut and removed at the first port 180a. Final Act. 9–10; Ans. 5–7. In particular, according to the Examiner, as inner tube 13 begins to move distally from the proximal position illustrated in Figure 14, the tissue in the first port 180a “will be cut first while the more distal [second port 180a] would just be holding tissue *since there are no blades there yet.*” Advisory Act. 2 (emphasis added); Final Act. 9–10; Ans. 7.

Appellant argues Hayafuji fails to disclose that the second port 180a remains unobstructed by the movement of inner tube 13. Appeal Br. 13–15. Appellant cites Hayafuji's Figure 5 as illustrating that “all openings [18a, 18b] in outer sleeve 12 [are] obstructed by portions of inner sleeve 13.” *Id.* at 14. Appellant then addresses Hayafuji's Figure 14 by asserting “there is no disclosure in Hayafuji indicating that the surgical cutting instrument shown in Figure 14 operates differently from the surgical cutting instrument shown in Figure 5.” *Id.* In Appellant's view, the embodiment of Figure 14 differs from that of Figure 5 in having “additional cutting apertures, but [the

two embodiments have] the same mechanical operation.” *Id.* at 14–15 (citing Hayafuji, 2:55–62). Appellant additionally asserts the Examiner’s finding that “there are no blades there **yet**” at the second port 180a in Figure 14 of Hayafuji is “in contrast with the limitation recited in [claim 12] that the second [port 180a] is ‘configured to **remain** unobstructed.’” *Id.* at 15 (emphases by Appellant).

The Examiner answers that Appellant’s “reliance on Figure 5 is misplaced,” because the respective embodiments of Figure 5 and Figure 14 “cannot operate in the same manner.” Advisory Act. 2; Ans. 6. The Examiner further concludes Appellant errs in reading the “remain obstructed” term in claim 12 to require “that the second [port 180a] is never obstructed during the entirety of the procedure.” *Id.* at 7. The Examiner’s position is that claim 12 “does not require that the second [port 180a] remain unobstructed indefinitely.” *Id.*

Upon review of the foregoing, we agree with the Examiner. Claim 12 pertinently recites that “the second port . . . is configured to *remain unobstructed* by the movement of the inner cutting member to cut tissue such that vacuum applied through the aspiration line allows the second port to *remain attached to tissue while tissue is cut and removed at the first port.*” Appeal Br. 20 (Claims App.) (emphases added). Under a broadest reasonable construction, this does not require the second port to remain unobstructed throughout the entire cutting cycle of the claimed cutting device, as Appellant would construe the claim. Claim 12 merely requires that, at one point during the cutting cycle, tissue is cut at the first port while the second port is unobstructed by the movement of the inner cutting member to remain attached to tissue. That occurs in Hayafuji’s Figure 14,

when inner tube 13 begins a distal cutting movement from the position illustrated in Figure 14, and the third port 30a encounters the first port 180a. As to Hayafuji's Figure 5 embodiment, we agree with the Examiner's position that it operates differently from Hayafuji's Figure 14 embodiment. In particular, Figure 14 indicates inner tube 13 retracts proximally far enough that the distal-most inner tube port (i.e., the third port 30a) is proximal of the proximal-most outer tube port (i.e., the first port 180a), which does not appear to occur in Figure 5. *See* Hayafuji, Figs. 5 & 14, 2:56–65, 7:65–8:7.

For the foregoing reasons, we sustain the rejection of claims 12–16 as having been obvious over Hayafuji and Vijfvinkel.

### 3. *Claims 17–20*

Claim 17 recites, similarly to claim 1 as discussed above, “the third opening [of an inner cutting member] is smaller than the first opening [of an outer cutting member].” Appeal Br. 21–22 (Claims App.). The Examiner's rejection of claim 17 in this respect is substantially the same as discussed above in connection with claim 1, and Appellant's opposition is likewise substantially the same. *See* Final Act. 11–12; Appeal Br. 10–12. Therefore, for the reasons provided above concerning claim 1, we do not sustain the rejection of claim 17 and its dependent claims 18–20 as having been obvious over Hayafuji and Vijfvinkel.

### CONCLUSION

In summary:

<b>Claim(s) Rejected</b>	<b>35 U.S.C. §</b>	<b>Basis/References</b>	<b>Affirmed</b>	<b>Reversed</b>
8	112(a)	Written Description	8	
11, 14, 17, 18	112(b)	Indefiniteness	11, 14, 17, 18	
1-20	103	Hayafuji, Vijfvinkel	12-16	1-11, 17-20
<b>Overall Outcome</b>			8, 11-18	1-7, 9, 10, 19, 20

### 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). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED IN PART