

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INGURAN, LLC d/b/a SEXING TECHNOLOGIES,
Petitioner,

v.

PREMIUM GENETICS (UK) LTD.,
Patent Owner.

Case PGR2015-00017
Patent 8,933,395 B2

Before KEN B. BARRETT, KRISTEN L. DROESCH,
TRENTON A. WARD, *Administrative Patent Judges*.

DROESCH, *Administrative Patent Judge*.

DECISION

Institution of Post-Grant Review
35 U.S.C. § 324, 37 C.F.R. § 42.208

I. INTRODUCTION

Inguran, LLC d/b/a/ SEXING Technologies (“Petitioner”) filed a Petition for post-grant review of claims 1–14 (“the challenged claims”) of U.S. Patent No. 8,933,395 B2 (“the ’395 Patent”). Paper 1 (“Petition” or “Pet.”). *See* 35 U.S.C. §§ 321–322. Premium Genetics Ltd. (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). *See* 35 U.S.C. § 323. We have statutory authority under 35 U.S.C. § 324, which provides that post-grant review shall not be instituted unless it is determined that “the information presented in the petition filed under section 321, if such information is not rebutted, would demonstrate that it is more likely than not that at least 1 of the challenged claims in the petition is unpatentable.” 35 U.S.C. § 324(a).

For the reasons provided below, and for purposes of this decision, we are persuaded by Petitioner that it is more likely than not that the challenged claims are unpatentable.

The ’395 Patent (Ex. 1001)

The ’395 Patent issued from Application No. 14/169,927 filed on January 31, 2014. Ex. 1001, 1. The ’395 Patent claims benefit under 35 U.S.C. §§ 119(e), 120, 121 to filing dates of several provisional and non-provisional applications filed before March 16, 2013, including Application No. 13/412,969, filed March 6, 2012 (“the ’969 Application”). Ex. 1001, 1–2, Ex. 1013, 849–850,¹ *see* Pet. 11.

The ’395 Patent discloses “a method and apparatus to identify at least one component from a plurality of components in a fluid mixture,” including

¹ Exhibit 1013 does not include page numbers. The page numbers listed correspond to the pagination in Patent Review Processing System (PRPS).

“a detector apparatus which detects and identifies selected components” and
“a laser which emits a laser beam which damages or kills selected
components of the plurality of components.” Ex. 1001, Abs.

Figure 1 of the '395 Patent is reproduced below:

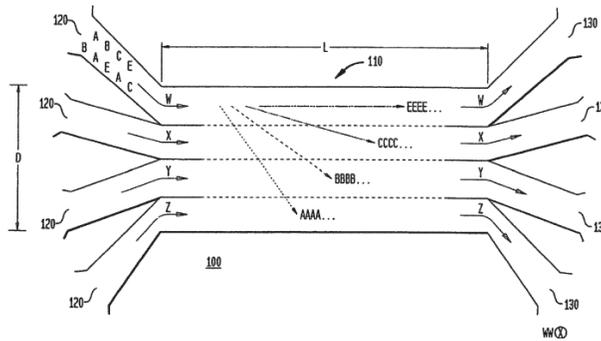


Figure 1 depicts apparatus 100 including sorting channel 110, plurality of inlets 120, plurality of outlets 130, and corresponding fluid flows W, X, Y, and Z. Ex. 1001, 13:20–28. Flow W can be a sample fluid, and flows X, Y, and Z can be buffer solutions. *Id.* at 16: 11–13. Apparatus 100 may be incorporated into a system to allow cell identification, and cell killing by high intensity laser exposure. *Id.* at Fig. 26, 23:26–24:42; *see id.* 33:58–64, 40:10–23. Apparatus 100 “may contain regions which align cells or materials in a certain way . . . sometimes done through shear flows.” *Id.* at 21:21–25; *see id.* at 14:6–23, 41:32–36.

Illustrative Claims

Claims 1 and 2 are independent. Claims 3–14 depend from claim 2.

Claims 1 and 2 are illustrative:

1. An apparatus to identify at least one component from a plurality of components in a fluid mixture, the apparatus comprising:
 - a first input channel into which a first flow is introduced, said first flow which contains the fluid mixture of the plurality of components;

a plurality of buffer input channels, into which additional flows of buffer solution are introduced, said plurality of buffer channels which are disposed on either side of said first input channel;
wherein said first flow and said additional flows have a flow direction along a length of the apparatus from one end of the apparatus to another end of the apparatus;
a detector apparatus which detects and identifies selected components of the plurality of components;
a laser which emits a laser beam which damages or kills selected components of the plurality of components; and
at least one channel disposed at said another end of the apparatus, said at least one channel which is adapted to receive said first flow and said additional flows after operation of said laser on said selected components.

2. A method for examining and selectively operating on cells, comprising:
inputting a stream of sample fluid into an inlet adapted to receive said sample fluid, into an input region of a flow chamber, said sample fluid containing cells to be processed;
inputting a plurality of streams of sheath fluids into a plurality of inlets adapted to receive said plurality of streams of sheath fluids, into said input region of said flow chamber;
wherein said sample fluid is in a contiguous relationship on all available sides with said sheath fluids, from said input region through to a selective operation region of said flow chamber;
wherein at least one of flow rates or pressures of said sheath fluids are chosen such that said sample fluid is constricted in two orthogonal directions, thereby allowing said sample fluid to form a relatively narrow stream in at least a detector region of said flow chamber, thereby causing the cells to be flattened and aligned such that flat sides of the cells are oriented parallel to confronting walls of the flow chamber;
distinguishing target cells from non-target cells in said detector region using a detector apparatus; and

damaging or destroying said target cells in said sample fluid using a laser beam, in said selective operation region of said flow chamber which is disposed downstream from said detector region.

Asserted Grounds of Unpatentability

Claim(s)	Statutory Basis	Reference(s)
1–14	§ 112(a) Enablement	
1–14	§ 112(b) Indefiniteness	
1–13	§ 102(a)(1)	Mueth ²
14	§ 103	Mueth alone, or Mueth and Durack ³
1	§ 102(a)(1)	Frontin-Rollet ⁴
1	§ 102(a)(1)	Durack
2–14	§ 103	Wada ⁵ , Durack, and Kachel ⁶

II. ANALYSIS

A. Claim Construction

Claims of an unexpired patent are interpreted using the broadest reasonable interpretation in light of the specification. 37 C.F.R. § 42.200(b); *see In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1275–79 (Fed. Cir. 2015). Claim terms also are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Petitioner and Patent Owner do not provide explicit claim

² Ex. 1008, U.S. Patent No. 7,355,696 B2, issued Apr. 8, 2008, filed Feb. 1, 2005 (“Mueth”).

³ Ex. 1005, WO 2004/088283 A2, published Oct. 14, 2004 (“Durack”).

⁴ Ex. 1007, WO 2005/075629 A1, published Aug. 18, 2005 (“Frontin-Rollet”).

⁵ Ex. 1009, U.S. Patent No. 6,506,609 B1, issued Jan. 14, 2003 (“Wada”).

⁶ Ex. 1012, Kachel, UNIFORM LATERAL ORIENTATION, CAUSED BY FLOW FORCES, OF FLAT PARTICLES IN FLOW-THROUGH SYSTEMS, *J. Histochemistry and Cytochemistry*, vol. 25, no. 7, 1977, 774–780 (“Kachel”).

constructions for any claim term or phrase. *See* Pet. 9; *see* Prelim. Resp. *passim*. However, for purposes of this decision, we find it necessary to construe the terms “channel,” and “side,” and the phrase “said plurality of buffer channels which are disposed on either side of said first input channel.”

1. “Channel”

Claim 1 recites multiple instances of “channel” in the context of “input channel,” “buffer channels,” and “at least one channel.” Ex. 1001, 44:42–62. The ’395 Patent discloses embodiments including a sorting channel, a plurality of inlets, and a plurality of outlets. Ex. 1001, Fig. 1, 7:13–51, 13:20–28, 43:26–63. The ’395 Patent also utilizes the terms “input channel” and “output channel.” *Id.* at Figs. 11A–11B, 24A, 23:33–37, 27:1–30, 36:46–37:63; 42:48–55. The ’395 Patent discloses that the sorting channel has a length, width, and depth. *Id.* at Fig. 1, 15:27–41. An explicit definition for the term “channel” is not provided in the ’395 Patent. Therefore, we turn to the ordinary and customary meaning of “channel,” which is: “a long gutter, groove, or furrow.” MERRIAM WEBSTER ONLINE DICTIONARY, <http://www.merriam-webster.com/dictionary/channel> (last accessed December 21, 2015).

We also observe that the ’395 Patent utilizes interchangeably the terms “channels” and “flows.” *See* Ex. 1001, 16:22–25, 16:43–45, 41:23–31. However, because claim 1 also recites multiple instances of “flow” (e.g., “a first input channel into which a first flow is introduced”), we do not broadly construe “channel,” as recited in claim 1, to include the meaning of “flow.”

Accordingly, for purposes of this decision, we construe the broadest reasonable interpretation of “channel” as “a long gutter, groove, or furrow”

2. *“Side”*

Claims 1 and 2 recite multiple instances of the term “side” in the context of “either side” and “all available sides.” Ex. 1001, 44:48–51, 45:5–8. An explicit definition for this term is not provided in the ’395 Patent. Therefore, we turn to the ordinary and customary meaning of “side” which is: “one of the longer bounding surfaces or lines of an object especially contrasted with the ends.” MERRIAM WEBSTER ONLINE DICTIONARY, <http://www.merriam-webster.com/dictionary/side> (last accessed December 21, 2015).

Accordingly, for purposes of this decision, we construe the broadest reasonable interpretation of the term “side” as “one of the longer bounding surfaces or lines of an object.”

3. *“Plurality of Buffer Channels Disposed on Either Side of the Input Channel”*

Claim 1 recites “said plurality of buffer channels which are disposed on either side of said first input channel.” Ex. 1001, 44:48–51. An explicit definition for this claim phrase is not provided in the ’395 Patent. Thus, we turn first to the ordinary and customary meaning of the term “either” in order to construe the claim phrase. The ordinary and customary meaning of “either” is: “one and the other of two,” and “one or the other of two.” MERRIAM WEBSTER ONLINE DICTIONARY, <http://www.merriam-webster.com/dictionary/either> (last accessed December 21, 2015). Based on the ordinary and customary meaning of “either,” and accounting for the ordinary and customary meanings of “side” and “channel,” discussed above, the ordinary and customary meaning of the claim phrase is: said plurality of

buffer channels disposed on one or the other, or one and the other of the two longer bounding surfaces of the input channel. The ordinary and customary meaning is consistent with the '395 Patent disclosure of a plurality of buffer channels (i.e., inlets corresponding to buffer flows X, Y, and Z) disposed on one side (i.e., bottom side) of the input channel (i.e., inlet corresponding to flow W). Ex. 1001, Fig. 1, 16:11–13. The ordinary and customary meaning of the claim phrase also is consistent with the disclosure of Figure 19 of the '395 Patent.

Figure 19 of the '395 Patent is reproduced below:

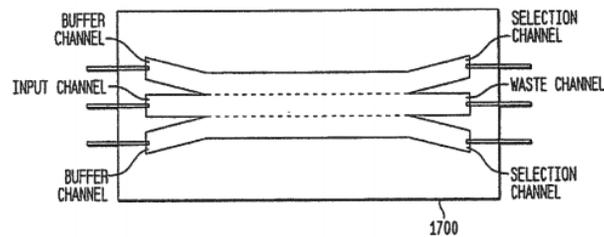


Figure 19 depicts buffer input channel disposed on one side (i.e., top side) of input channel, and a second buffer input channel disposed on the other side (i.e., bottom side) of input channel.

Accordingly, for purposes of this decision, we construe the broadest reasonable interpretation of the claim phrase as “said plurality of buffer channels disposed on one or the other, or one and the other of the two longer bounding surfaces of the input channel.”

B. Standing

Pursuant to 37 C.F.R. § 42.204(a), the petitioner bears the burden of setting forth grounds for standing for post-grant review. Specifically, “[t]he petitioner must certify that the patent for which review is sought is available for post-grant review and that the petitioner is not barred or estopped from requesting a post-grant review challenging the patent claims on the grounds

identified in the petition. *Id.*; *see* 37 C.F.R. §§ 42.201, 42.202. Post-grant review is limited “only to patents described in section 3(n)(1)” of the Leahy-Smith America Invents Act (“AIA”)—patents subject to the first inventor to file provisions of the AIA. AIA § 6(f)(2)(A), 125 Stat. 284, 311 (2011). In addition, “[a] petition for a post-grant review may only be filed not later than the date that is 9 months after the date of the grant of the patent.”

35 U.S.C. § 321(c); *see* 37 C.F.R. § 42.202(a).

Patent Owner does not dispute the Petition was filed within 9 months following the grant of the ’395 Patent on January 13, 2015. *See* Pet. 2; *see* Prelim. Resp. *passim*. Patent Owner also does not dispute Petitioner’s representations that it is not barred or estopped from requesting a post-grant review of the ’395 Patent. *See* Pet. 1; *see* Prelim. Resp. *passim*. The only dispute is whether the ’395 Patent is subject to the first inventor to file provisions of the AIA. *See* Pet. 3–4, 10–22; *see* Prelim. Resp. *passim*.

1. Discussion

a. First Inventor To File Provisions of AIA § 3(n)(1)

Section 3(n)(1) establishes that the first inventor to file (“FITF”) provisions of the AIA “shall apply to any application for patent, and to any patent issuing thereon, that contains or contained at any time—

(A) a claim to a claimed invention that has an effective filing date as defined in section 100(i) of title 35, United States Code, that is on or after the [March 16, 2013] effective date . . . ; or

(B) a specific reference under section 120, 121, or 365(c) of title 35, United States Code, to any patent or application that contains or contained at any time such a claim.

AIA § 3(n)(1), 125 Stat. at 293.

b. Effective Filing Date

The term “effective filing date” for a claimed invention in a patent or application for patent means “the filing date of the earliest application for which the patent is entitled, as to such invention, to a right of priority under section 119, 365(a), or 365(b) or to the benefit of an earlier filing date under section 120, 121, or 365(c).” 35 U.S.C. § 100(i)(1); *see also* AIA § 3(a), 125 Stat. at 285 (amending 35 U.S.C. § 100).

c. Benefit under §§ 119, 120, 121, or 365 and Disclosure under § 112(a)

Entitlement to the benefit of an earlier date under §§ 119, 120, 121, and 365, is premised on disclosure of the claimed invention “in the manner provided by § 112(a)⁷ (other than the requirement to disclose the best mode)” in the application for which the benefit of the earlier filing date is sought. *See* 35 U.S.C. §§ 119(e), 120. Certain patent applications filed on or after March 16, 2013, claiming the benefit under §§ 119, 120, 121, or 365 of an earlier filing date prior to March 16, 2013, (“transition applications”), may be subject to either the AIA FITF statutory provisions or the pre-AIA first to invent statutory provisions. *See* MPEP §§ 2159.03–2159.04.

The inquiry into whether a patent issued from a transition application is subject to the AIA FITF statutory provisions and, thus, available for post-grant review turns on whether the patent contains, or the corresponding application contained at any time, a claim that has an effective filing date on or after March 16, 2013. *See* AIA § 3(n)(1); 35 U.S.C. § 100(i). In other words, the issue turns on whether the patent contains, or the corresponding application contained at any time, a claim that is not entitled to the benefit

⁷ Section 4(c) of the AIA redesignated 35 U.S.C. § 112 ¶ 1 as 35 U.S.C. § 112(a). 125 Stat. at 296.

PGR2015-00017
Patent 8,933,395 B2

under §§ 119, 120, 121, or 365 to an earlier filing date prior to March 16, 2013. *See id.* Therefore, a patent granted from a transitional application would be available for post-grant review, if the patent contains, or the corresponding application contained at any time, at least one claim that was not disclosed in compliance with the written description and enablement requirements of § 112(a) in the earlier application for which the benefit of an earlier filing date prior to March 16, 2013 was sought. *See id.*

2. Analysis of the Effective Filing Date of the '395 Patent

The parties agree the '395 Patent Specification is identical to the Specification for U.S. Patent No. 7,118,676 (Ex. 1018), issued from Application No. 10/934,597 filed September 3, 2004, and all of the intervening Patents, including U.S. Patent No. 8,653,442 (Ex. 1004), issued from the '969 Application. Pet. 11, 13, 17; Prelim Resp. 2, 4, 5. Petitioner asserts the '395 Patent is available for post-grant review pursuant to AIA § 3(n)(1) because the challenged claims have an earliest effective filing date of January 31, 2014, because independent claims 1 and 2 were not disclosed in the manner required by § 112(a) in the applications having filing dates before March 16, 2013. Pet. 3, 10–12 (citing Ex. 1013, 842–846), 12–22. Patent Owner disagrees, and contends the '395 Patent is entitled to a pre-AIA effective filing date because it claims the benefit of the filing dates going back to at least September 3, 2004. Prelim. Resp. 1–2, 4–5.

We have considered Patent Owner's arguments that an effective filing date analysis is not warranted at the institution stage based on the prosecution history. *See* Prelim. Resp. 2–4. However, in view of 35 U.S.C. § 324, we are not persuaded that no effective filing date analysis by the Board is warranted in this case. Patent Owner also argues Petitioner's

citation to *SAP Am., Inc. v. Pi-Net Int'l, Inc.*, Case IPR2014-00414, slip op. 11–16 (PTAB Aug. 18, 2014) (Paper 11) (*see* Pet. 10) to support the proposition that an effective filing date analysis is an appropriate part of an institution decision is not applicable to post-grant reviews because the effective filing date is not a threshold issue in *inter-partes* review. *Id.* at 3–4. We are not persuaded by Patent Owner’s distinction between an effective filing date analysis of a challenged patent in a decision on institution of *inter partes* review for establishing a reference as prior art (*see SAP Am.*, Case IPR2014-00414, slip op. 11–16), and an effective filing date analysis of a challenged patent in a decision on institution of post-grant review for establishing standing. Lastly, Patent Owner’s argues:

it would be both inefficient and unfair to force a patent owner to undergo a post-grant review proceeding of a pre-AIA patent only to have the Board ultimately conclude that a patent was ineligible for post-grant review and that [Petitioner lacked standing]. The procedures for post-grant review themselves buttress this conclusion, as they allow the Petitioner to present expert witness testimony on this issue, while the Patent Owner ordinarily cannot do the same at the institution stage. This [standing] issue should not be decided on such unbalanced evidence.

Prelim. Resp. 4–5. We are not persuaded by these arguments because Patent Owner is not precluded from challenging standing, with supporting testimonial evidence, in its patent owner response. *See* Rules of Practice for Trials Before the Patent Trial and Appeal Board and Judicial Review of Patent Trial and Appeal Board Decisions; Final Rule, 77 Fed. Reg. 48,612, 48,695 (Aug. 14, 2012) (“After institution, standing issues may still be raised during trial.”), *id.* at 48,709 (“Once a proceeding is initiated, a party . . . may challenge standing in its patent owner response.”).

In addition to the arguments above, Petitioner presents specific contentions regarding written description support in the '969 Application for independent claims 1 and 2, which are disputed by Patent Owner. *See* Pet 12–23; Prelim. Resp. 2–17. We address below the parties' respective contentions regarding claims 1 and 2.

a. Claim 1

Petitioner asserts “at least one channel disposed at said another end of the apparatus is adapted to receive said first flow and said additional flows after operation of said laser on said selected components,” is not disclosed in the '969 Application. Pet. 13. Petitioner contends “claim 1 expressly encompasses one output channel and covers an apparatus where the fluid sample containing the cells or other components is combined with the buffer solution from the ‘plurality of buffer input channels’ into a *single* channel.” *Id.* Petitioner argues “[t]here is no single channel adapted to receive these multiple flows ‘after operation of said laser on said selected components.’” *Id.* (citing Ex. 1002 ¶ 86); *see id.* at 15–18. Petitioner also argues that two passing references in the '969 Application to “one or more channels” and the use of “any number of flows” are not sufficient to disclose the use of a single, combined receiving channel after operation of the laser, as recited in claim 1. *Id.* at 16 (citing Ex. 1004, 11:66–12:4, 16:22–25).

We agree with Patent Owner that Petitioner's arguments are premised on an incorrect reading of claim 1. *See* Prelim. Resp. 7, 9–10, 12. Specifically, we agree that claim 1 does not require combining flows into a single flow, and does not require a single output channel. *See id.* at 7–8, 11. Claim 1 recites “at least one channel,” therefore encompassing one channel, *and* more than one channel. The recitation of “at least one channel” does not

include any qualifiers such that it is limited to output channel(s). The only qualifiers for the at least one channel required by claim 1 are: (1) disposed at said another end of the apparatus, and (2) adapted to receive said first flow and said additional flows after operation of said laser.

As pointed out by Patent Owner, Figure 1 of the '969 Application explains element 110 is a sorting channel containing four flows, and demonstrates that sorting channel 110 can have numerous inputs 120 and outputs 130. *Id.* at 8 (citing Ex. 1001, 13:21–2), 11. Patent Owner further asserts the '395 Patent (and '969 Application) “contemplates embodiments with only a single channel.” *Id.* at 11 (citing Ex. 1001, 11:66–12:4 (“The various embodiments, as described below, utilize one or more sorting channels, having a plurality of substantially laminar flows.”)). The '395 Patent and the '969 Application disclose apparatus 100 of Figure 1 can be used in conjunction with the laser apparatus for killing cells, and explains all or a portion of the central sorting region (i.e., sorting channel) may be covered with glass to allow laser killing of samples. Ex. 1001, 23:26–40, 24:1–38, Fig. 26; Ex. 1004; 23:26–67, 24:1–13, Fig. 26. For purposes of this decision, “at least one channel disposed at said another end of the apparatus [] adapted to receive said first flow and said additional flows after operation of said laser on said selected components” is disclosed sufficiently in at least Figure 1 of the '969 Application by the portion of sorting channel 110 located adjacent to outputs 130.

On this record, we are not persuaded that claim 1 is not disclosed in the '969 Application in the manner required by 35 U.S.C. § 112 (a), and, therefore, we are not persuaded that claim 1 is not entitled to an effective filing date before March 16, 2013.

b. Claim 2

Independent claim 2 recites:

at least one of flow rates or pressures of said sheath fluids are chosen such that said sample fluid is constricted in two orthogonal directions, thereby allowing said sample fluid to form a relatively narrow stream in at least a detector region of said flow chamber, thereby causing the cells to be flattened and aligned such that flat sides of the cells are oriented parallel to confronting walls of the flow chamber.

Ex. 1001, 45:9–16 (“the constriction, alignment, and orientation recitation”).

Petitioner asserts the ’969 Application and other prior applications do not “disclose choosing a flow rate or pressure that constricts the sample stream in a manner that ‘caus[es] the cells to be flattened and aligned such that the flat sides of the cells are oriented parallel to confronting walls of the flow chamber.’”⁸ Pet. 19. Petitioner asserts there is only a brief disclosure in the ’969 Application that relates remotely to alignment of cells (*id.* at 19–20 (citing Ex. 1004, 21:21–25)), and argues that the mere possibility of cell alignment through shear flows is insufficient to disclose cell alignment such that the flat sides of the cells are oriented parallel to confronting walls of the flow chamber (*id.* at 20 (citing Ex. 1002 ¶ 155)). Petitioner contends the first time the constriction and cell orientation elements were disclosed was when claim 2 was submitted in the preliminary amendment filed on January 13, 2014. *Id.* at 21 (citing Ex. 1013, 844, Cl. 74, Ex. 1002 ¶¶ 64, 163).

Patent Owner contends the ’969 Application discloses: (1) alignment of cells can be achieved by shearing the solution, and (2) the device may

⁸ Petitioner gives patentable weight to the “thereby” clauses of claim 2. Patent Owner does not dispute the patentable weight accorded to the “thereby” clauses by Petitioner. *See* Prelim. Resp. 13–17.

contain regions which align cells in a certain way, done through shear flows Prelim. Resp. 14 (citing Ex. 1004, 14:7–23, 21:21–25). Patent Owner further directs attention to U.S. Patent No. 5,007,732 (Ex. 2001, “Ohki”) cited during prosecution of the ’395 Patent, as providing the following disclosure:

flow of the fluid in the capillary flow passage 8 is a laminar flow having a velocity gradient, i.e., a sheared flow. The cell 13 subjected to the sheared flow, therefore, is deformed into a cell 13 which has a form symmetrical with respect to the axis thereof, as shown in Fig. 4. . . . As a result, all the cells, even if they may be flat, take the same posture when they pass through the measuring section, whereby any fluctuation of the measured data is avoided to ensure a high degree of precision of measurement.

Id. at 16 (citing Ex. 2001, 4:14–26). Patent Owner concludes “[o]ne of ordinary skill in the art would understand that subjecting a sample to a shear flow causes cells to be flattened and aligned (i.e., to take the same posture), with the flat sides parallel to the walls, outside which the detector is disposed (e.g., Fig. 11B in ‘969 Application, Ex. 1004).” *Id.*

In order to comply with the written description requirement of § 112, “a prior application itself must describe an invention, and do so in sufficient detail that one skilled in the art can clearly conclude that the inventor invented the claimed invention as of the filing date sought.” *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997); *see also VasCath v. Mahurkar*, 935 F.2d 1555, 1563–64 (Fed. Cir. 1991) (“the applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in *possession of the invention* . . . now claimed.”) (emphasis added). A description which renders obvious the invention for which an earlier filing date is sought is not sufficient.” *Lockwood*, 107 F.3d

at 1572. Thus, the relevant inquiry here is whether the '969 Application conveys that Patent Owner was in *possession of the invention* set forth in claim 2.

For purposes of this decision, we determine the descriptions of aligning cells through shear flows in the '969 Application (*see* Ex. 1004, 14:7–23, 21:21–25), do not disclose the invention in sufficient detail such that one skilled in the art could conclude clearly that before March 16, 2013, the inventor was in possession of the claimed subject matter in dispute. Patent Owner cites to an unrelated prior art reference, Ohki, to allegedly demonstrate that one with ordinary skill in the art would understand that cells subjected to a shear flow would have the same posture when they pass through a measuring section. Prelim. Resp. 16 (citing Ex. 2001, 4:14–26). Patent Owner fails to identify sufficiently how a person of ordinary skill in the art aware of Ohki would understand, in view of the '969 Application, that Patent Owner was in possession of the specific constriction and cell orientation elements recited in claim 2. Accordingly, we are not persuaded that the '969 Application discloses the invention in sufficient detail such that one skilled in the art could conclude the inventor possessed before March 16, 2013 the subject matter of claim 2 including “at least one of flow rates or pressures of said sheath fluids are chosen such that said sample fluid is constricted in two orthogonal directions, . . . thereby causing the cells to be flattened and aligned such that flat sides of the cells are oriented parallel to confronting walls of the flow chamber.”

On this record, and for purposes of this decision, we are persuaded claim 2 is not disclosed in '969 Application in the manner required by 35 U.S.C. § 112(a), and, therefore, we are persuaded the '395 Patent is not

entitled to an effective filing date before March 16, 2013. Accordingly, for purposes of this decision, Petitioner demonstrates the '395 Patent is available for post-grant review, and has set forth sufficient grounds for standing.

C. Grounds of Unpatentability

*1. Enablement under 35 U.S.C. § 112(a)
Claim 1*

Petitioner argues the '395 Patent “lacks any example showing a single output channel, making it impossible for those in the art to make and use the invention without undue experimentation.” Pet. 75–76. Petitioner asserts the teachings of the '395 Patent are contrary to, and teach away from, the use of a single outlet channel. *Id.* at 76 (citing Ex. 1001, 1:65–2:1, 5:50–54, 6:9–19, 11:66–12:4; 14:66–15:6, Ex. 1002 ¶¶ 102–104, 106–107).

A specification is not enabling if one with ordinary skill in the art would be unable to practice the invention without “undue experimentation.” *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988). Factors relevant to determining whether undue experimentation would be necessary include: (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims. *Id.*

Petitioner’s arguments are misplaced because they are not commensurate in scope with the limitations of claim 1. As explained above in Section II.B.2.a., claim 1 does not recite a single output channel. Claim 1 instead recites “at least one channel,” and, therefore, encompasses one channel *and* more than one channel, without an output designation. Also as

explained above in Section II.B.2.a., “at least one channel disposed at said another end of the apparatus [] adapted to receive said first flow and said additional flows after operation of said laser” is disclosed Figure 1 of the ’969 Application by the portion of sorting channel 110 located adjacent to outputs 130. Petitioner further fails to present a meaningful analysis of the *Wands* factors or provide sufficient objective evidence to demonstrate that undue experimentation would be necessary to practice the claimed invention. *See* Pet. 75–78; Ex. 1002 ¶¶ 102–104, 106–107.

Accordingly, on this record, we are not persuaded by Petitioner that it is more likely than not that claim 1 fails to comply with the enablement requirement of 35 U.S.C. § 112(a).

Claims 2–14

Petitioner argues the ’395 Patent does not provide enablement for the constriction, alignment, and orientation recitation of independent claim 2. Pet. 78. Petitioner contends the generic statements in the ’395 Patent regarding alignment of cells with shear flows, provides insufficient guidance to a person of ordinary skill in the art to perform alignment with shear flows. *Id.* at 79 (citing Ex. 1001, 21:21–25, Ex. 1002 ¶ 155). Petitioner asserts the only mention of orienting cells is in the context of manipulating cells with optical tweezers, not through constriction of the sample fluid. *Id.* (citing Ex. 1002 ¶¶ 157–58). Petitioner further contends there is no disclosure of flat cells in the ’395 Patent. *Id.* (citing Ex. 1002 ¶ 160). Finally, Petitioner contends, “the implementation of alignment of flat cells and their orientation to the flow chamber, based on the control of flow rates or pressures of sheath fluids through the two-dimensional narrowing of the sample stream, would

require a significant degree of experimentation to yield acceptable and reproducible results.” *Id.* (citing Ex. 1002 ¶ 163).

Petitioner does not provide sufficient analysis of the *Wands* factors or present sufficient objective evidence to demonstrate that undue experimentation would be necessary to practice the claimed invention. Although Petitioner asserts the ’395 Patent provides insufficient guidance to one with ordinary skill in the art, and asserts that “a significant degree of experimentation” would be required (*see* Pet. 78–79), Petitioner does not address the state of the prior art, the unpredictability of the art, the relative skill of those in the art, all of which are pertinent factors to consider when determining whether the level of experimentation would be “undue.”

Accordingly, on this record, we are not persuaded that it is more likely than not that claim 2, and dependent claims 3–14, fail to comply with the enablement requirement of 35 U.S.C. § 112(a).

2. *Indefiniteness under 35 U.S.C. § 112(b)*
Claim 1

Petitioner asserts “said plurality of buffer channels which are disposed on either side of said first input channel” is indefinite. Pet. 28–30. Petitioner contends the claim term “side” lacks an antecedent basis, making it impossible for one of ordinary skill in the art to determine what constitutes “either side.” Petitioner also asserts, a person of skill in the art, reading the specification would understand the term “channel” to broadly cover a pathway for a flow, and that the ’395 Patent “discourages the use of physical separation (or sides) between channels. *Id.* at 29 (citing Ex. 1001, 16:22–25, 37:6–9). Petitioner concludes it would be impossible to determine what a “side” for such a pathway would constitute. *Id.*

Petitioner further asserts the '395 Patent fails to disclose the term “either side,” with the exception of the Abstract. Pet. 29. Petitioner contends “either side” is ambiguous on its face because under its plain meaning, the term either could mean “one or the other,” thus requiring the buffer channels to be on the same side of the first input channel. Pet. 29 (citing Ex. 1002 ¶ 74). Petitioner further asserts “either side could alternatively mean that the buffer channels are disposed separately on different sides of the first input channel, possibly opposing each other. *Id.* (citing Ex. 1002 ¶ 75).

We are not persuaded by Petitioner’s suggestion that one with ordinary skill in the art would understand the term “channel” as not including sides. As explained above in Section II.A.1., the '395 Patent discloses multiple instances of channels, and describes a channel as having a length, width, and depth—having sides. Ex. 1001, Fig. 1, 15:27–41. We also are not persuaded that two meanings for the term “either” would render claim 1 indefinite. As explained above in Section II.A.3, the disclosure of the '395 Patent is consistent with both meanings for the term “either.” *See* Ex. 1001, Figs. 1, 19, 16:11–13. Therefore, based on this record, we are not persuaded that the scope of claim 1 is indefinite because, consistent with the '395 Patent disclosure, the scope of claim 1 encompasses both meanings of “either side.”

Accordingly, on this record, we are not persuaded that it is more likely than not that claim 1 fails to comply with the definiteness requirement of 35 U.S.C. § 112(b).

Claims 2–14

Claim 2 recites “said sample fluid is in a contiguous relationship on all available sides with said sheath fluids, from said input region through to a selective operation region of said flow chamber.” Ex. 1001, 45:5–8.

Petitioner asserts there is no antecedent basis for “available sides” making it impossible for one of ordinary skill in the art to determine what constitutes “all available sides.” Pet. 30. Petitioner argues the phrase “available sides” is ambiguous on its face because the ’395 Patent does not explain how a side of the sample fluid is determined to be available or not. *Id.*

Petitioner’s arguments focus on the alleged ambiguity of “all available sides,” and overlook the plain language of the claim that requires the contiguous relationship “from said input region through to a selective operation region of said flow chamber.” In other words, the plain language of claim 2 requires the sample fluid and the sheath fluids to be in a contiguous relationship along a length of the flow chamber. As explained above in Section II.A.2., we construe the term “side” as one of the longer bounding surfaces or lines of an object.” Because the flow chamber has a length from the input region through to a selective operation region, the flow chamber includes sides (i.e., walls). According to claim 2, the sample fluid and the sheath fluids are input into the flow chamber at the input region, and the contiguous relationship is “from said input region through to a selective operation region of said flow chamber.” Therefore, one or more of the longer bounding surfaces of the sample fluid, the sheath fluid, or both fluids, may be in contact with one or more sides of the flow chamber. In the context of the language of claim 2, the scope of “all available sides” of the

sample fluid defines all sides of the sample fluid that are not in contact with the sides of the flow chamber.

Petitioner also contends that a sample fluid would not be considered to have any sides because a sheath fluid is understood in the art to be a cylindrical flow surrounding the sample flow. Pet. 30 (citing Ex. 1002 ¶ 76). We are not persuaded by this argument because Petitioner does not explain adequately why a cylindrical flow would not be considered to have a longer bounding surface.

Therefore, on this record, we are not persuaded by Petitioner that it is more likely than not that claims 2–14 fail to comply with the definiteness requirement of 35 U.S.C. § 112(b).

*3. Anticipation of Claims 1–13 by Mueth
Mueth (Ex. 1008)*

Mueth discloses a method and apparatus for characterizing and sorting bovine sperm by gender. Ex. 1002, 2:10–12.

Figure 2 of Mueth is reproduced below:

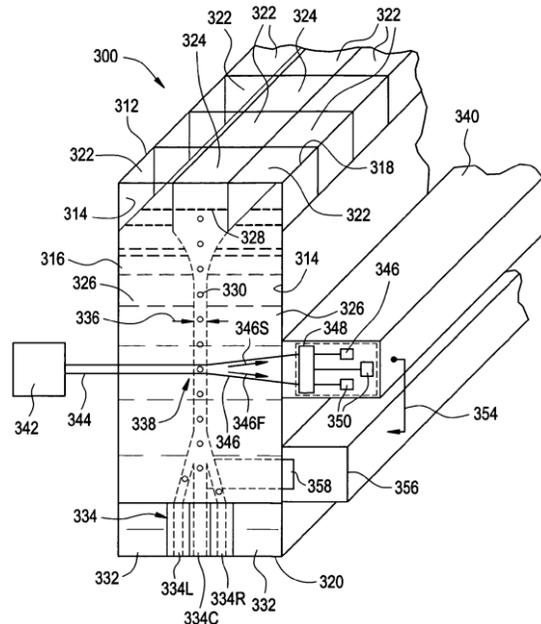


Figure 2 depicts flow cytometer 300 including flow chamber 312 formed by a pair of confronting walls 314 and end walls 316, open input 318, and open output 320. *Id.* at 3:28, 3:34–37. Input 318 is divided into outboard inputs 322 for receiving sheath fluid 326, and central sample input 324 for receiving a sample flow 328. *Id.* at 3:38–41; 4:50–51. Output 320 has left output sample channel 334L, central output sample channel 334C, and right output sample channel 334R. *Id.* at 3:44–47. Detector 340 produces output beam 344 directed toward sample flow path 336 in detection zone 338, discriminates among the cells 330, and produces an output 354 to sorter 356. *Id.* at 4:28–31, 4:42–44. The cells may be sorted as wanted or unwanted, and the wanted cells may be collected and unwanted cells may be destroyed. *Id.* at 4:48–49; *see id.* Fig. 11A, 3:21–23, 7:17–24.

Claim 1

We are persuaded, for purposes of this decision, by Petitioner’s citations to specific disclosures of Mueth and Petitioner’s supporting evidence that Petitioner establishes sufficiently that Mueth discloses each of the recited limitations of claim 1. *See* Pet. 31–35. For example, we are persuaded Mueth discloses an apparatus including a first input channel, a plurality of buffer input channels disposed on either side of the first input channel, a detector apparatus, a laser, and at least one channel disposed at another end of the apparatus after operation of the laser. *Id.* (citing Ex. 1008, Figs. 1–3, 5, 11A, 1:33–36, 2:6–12, 2:19–22, 3:34–4:54, 7:18–28, 8:27–37, 8:56–62, 8:65–67, Ex. 1002 ¶ 208).

Therefore, on the record before us, we are persuaded by Petitioner that it is more likely than not that claim 1 is anticipated by Mueth.

Claims 2–13

We are persuaded, for purposes of this decision, by Petitioner’s citations to specific disclosures of Mueth and Petitioner’s supporting evidence that Petitioner establishes sufficiently that Mueth discloses each of the recited limitations of independent claim 2. *See* Pet. 35–39. For example, we are persuaded Mueth discloses a method including inputting a stream of a sample fluid into an inlet into an input region of a flow chamber, and inputting a plurality of streams of sheath fluid into a plurality of inlets into the input region of the flow chamber. *Id.* at 35–36 (citing Ex. 1008, Figs. 2, 3, Abs., 3:34–58, 8:26–37, 8:39–39–42, Ex. 1002 ¶ 209). We also are persuaded Mueth discloses the sample fluid is in a contiguous relationship on all available sides with the sheath fluids from the input region through a selective operation region of the flow chamber, and discloses at least one of the flow rates or pressures of the sheath fluid are chosen such that the sample fluid is constricted in two orthogonal directions. *Id.* at 36–38 (citing Ex. 1008, Figs. 4, 4a, 3:50–56, 4:1–7, 8:43–50, Ex. 1002 ¶ 209). We further are persuaded Mueth discloses distinguishing target cells from non-target cells in the detector region using a detector apparatus, and damaging or destroying the target cells using a laser beam in a selective operation region of the flow chamber downstream from the detector region. *Id.* at 38–39 (citing Ex. 1008, Fig. 11A, 11B, 2:26–28, 4:11–49, 7:17–31, 8:28–29, 51–61, 9:1–7, Ex. 1002 ¶ 209).

Regarding dependent claims 3, 9, 10, and 11, we are persuaded, for purposes of this decision, by Petitioner’s citations to specific disclosures of Mueth and supporting evidence that Petitioner establishes sufficiently that Mueth describes the recited limitations directed to optically illuminating

cells in the detector region with a light beam from a laser, scattered or fluorescent light is output from cells in response to the light beam, an optical detector, and a flat sorter. *See* Pet. 39, 41–42 (citing Ex. 1008, Fig. 2, 4A, 8, 1:49–53, 2:21–26, 3:14–23, 3:34–37, 3:59–62, 4:28–49, 6:32–37, 6:58–61, 8:26–30, 9:1–6, 9:14–21, Ex. 1002 ¶ 210, 3, 9–11). As to dependent claims 4–8, we are persuaded, for purposes of this decision, by Petitioner’s citations to specific disclosures of Mueth and supporting evidence that Petitioner establishes sufficiently that Mueth describes the recited limitations directed to sperm cells and detecting target cells from non-target cells based on X and Y chromosomes. *See id.* at 39–40 (citing Ex. 1008, Abs., 1:37–48, 2:10–12, 2:26–28, 3:14–21, 4:41–49, 8:56–59, 9:6–7, 10:25–26, Ex. 1002 ¶ 210, 4–8). Regarding dependent claims 12 and 13, we are persuaded, for purposes of this decision, by Petitioner’s citations to specific disclosures of Mueth and supporting evidence that Petitioner establishes sufficiently that Mueth describes the recited limitations directed to pumping the sample fluid and sheath fluids into the input region and maintaining a constant flow rate and pressure by a pumping system. *See id.* at 42–43 (citing Ex. 1008, 3:50–58, 7:43–8:16, Ex. 1002 ¶ 210, 12–13).

Accordingly, on the record before us, we are persuaded by Petitioner that it is more likely than not that claims 2–13 are anticipated by Mueth.

4. Unpatentability of Claim 14 Over Mueth or Mueth and Durack

Dependent claim 14 recites “adapting a computer to provide user input for control of a selection of one of the cells in said sample fluid.” Ex. 1001, 46:25–27. We are persuaded, for purposes of this decision, by Petitioner’s assertions, supported by expert testimony, that it would have been obvious for one with skill in the art to add “gating” or controlling

selection by means of user input by computer to the apparatus disclosed by Mueth, because “gating” has been known in the practice of flow cytometry for decades. *See* Pet. 43–44 (citing Ex. 1002 ¶¶ 213–214).

We also are persuaded, for purposes of this decision, by Petitioner’s citations to specific disclosures of Durack and supporting evidence that Petitioner establishes sufficiently that Durack teaches the use of a computer to control various elements of a sort apparatus, and teaches user selection of cells and control of various sorting parameters. *See* Pet. 43–44 (citing Ex. 1005, Fig. 41, Ex. 1002 ¶¶ 215, 216, 218, 219, 221, 222); *see* Ex. 1005, 19:27, 126:30–31, 130:2–3, 134:20–23, 136:27–30. We further are persuaded, for purposes of this decision, by Petitioner’s assertions, supported by expert testimony, that “[i]t would have been obvious for a person of skill in the art to employ the computer disclosed in Durack to allow user input for control of a selection of one of the cells in the said sample fluid.” *Id.* at 44 (citing Ex. 1002 ¶¶ 223–224).

On the record before us, Petitioner provides articulated reasoning with some rational underpinning sufficient to support the legal conclusion of obviousness. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). Therefore, on this record, we are persuaded by Petitioner that it is more likely than not that claim 14 is unpatentable as obvious over Mueth, or Mueth and Durack.

*5. Anticipation of Claim 1 by Frontin-Rollet
Frontin-Rollet (Ex. 1007)*

Frontin-Rollet discloses methods and apparatus for orienting, selecting, and retaining viable desired sperm cells. Ex. 1007, 1.

A portion of Figure 6 of Frontin-Rollet is reproduced below:

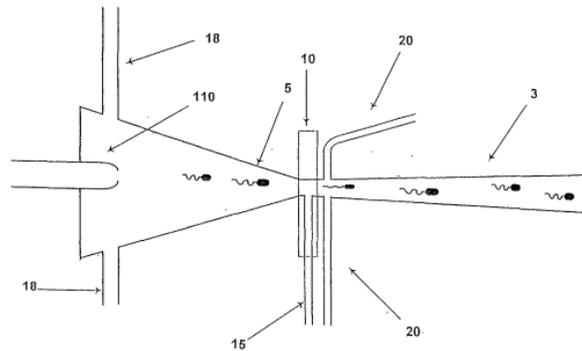


Figure 6 depicts a device including sample injection tube 110, sheath fluid entry points 18, detection zone 10, immobilizing laser 20, and pre-collection zone 3. Ex. 1007, 13–14. Sperm cells pass single file into testing zone 10 through a light source, and light emitted from the sperm cells is analyzed to identify whether the sperm cells carry X or Y chromosomes. *Id.* Sperm of a desired sex is selected utilizing immobilizing laser 20 located downstream from testing zone 10, and before pre-collection zone 3. *Id.* at 15.

Claim 1

We are persuaded, for purposes of this decision, by Petitioner's citations to specific disclosures of Frontin-Rollet and Petitioner's supporting evidence that Petitioner establishes sufficiently that Frontin-Rollet discloses each of the recited limitations of claim 1. *See* Pet. 45–50. For example, we are persuaded Frontin-Rollet discloses an apparatus including a first input channel (i.e., sample injection tube 110), a plurality of buffer input channels disposed on either side of the first input channel (i.e., entry points 18), a detector apparatus, a laser, and at least one channel (i.e., pre-collection zone 3) disposed at another end of the apparatus after operation of the laser. *Id.* (citing Ex. 1007, Figs. 1–3, 6, 2:30–31, 5:3, 6:3–5, 7:4–6, 8:10–24, 9:6–12, 9:37–38, 13:5–14:2, 14:7–14, 20:5–19, 21:26–28; Ex. 1002 ¶ 225).

Accordingly, on the record before us, we are persuaded by Petitioner that it is more likely than not that claim 1 is anticipated by Frontin-Rollet.

6. Anticipation of Claim 1 by Durack
Durack (Ex. 1005)

Durack discloses apparatus and methods for sperm sorting, including a single-channel flow cytometry photo-damage system. Ex. 1005, Abs., 144:17–145:21.

Figure 136 of Durack is reproduced below:

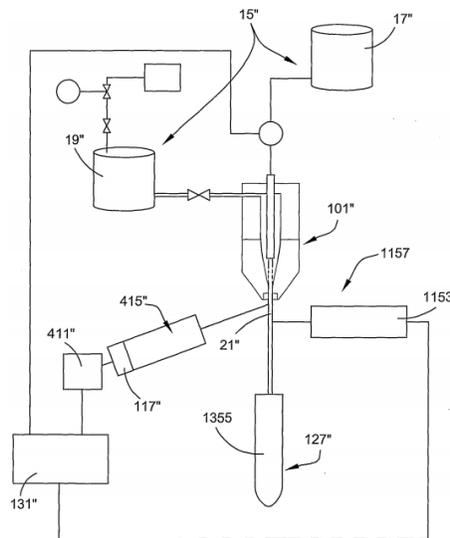


Figure 136 depicts single channel flow cytometry photo-damage system including fluid delivery system 15" for supplying carrier fluid 17" and sheath fluid 19" to nozzle system 101". Ex. 1005, 11:6–8, 11:17, 31:14–19, 144:21–27. Fluid stream 21" (*id.* at 31:19–23) is subject to photodetector 117" (*id.* at 11:9, 11:23, 32:13–16), and laser 1153 (*id.* at 144: 30–31). Microprocessor 131" controls fluid delivery system 15", photodetector 117", and laser 1153. *Id.* at 60:5–6, 60:17–20. Laser 1153 is responsive to instructions received from microprocessor 131" to ablate undesired particles in the fluid stream 21". *Id.* at 144:30–31. As a result, the stream collected in collection receptacle 1355 contains the desired cells. *Id.* at 144:32–37.

Claim 1

We are persuaded, for purposes of this decision, by Petitioner's citations to specific disclosures of Durack and Petitioner's supporting evidence that Petitioner establishes sufficiently that Durack discloses each of the recited limitations of claim 1. *See* Pet. 50–57. For example, we are persuaded Durack discloses an apparatus including a first input channel, a plurality of buffer input channels disposed on either side of the first input channel, a detector apparatus (i.e., photodetector 117"), a laser (i.e., laser 1153), and at least one channel (i.e., collection receptacle 1355") disposed at another end of the apparatus after operation of the laser. *Id.* (citing Ex. 1005, Figs. 2, 3, 5, 10, 41, 135, 136, 3:17–18, 30:3–4, 31:10–31, 32:13–16, 33:2–19, 33:26–29, 35:26–29, 60:32–34, 91:27–34, 144:2–5, 144:17–145:21, 169:25–36; Ex. 1002 ¶ 226).

Therefore, on the record before us, we are persuaded by Petitioner that it is more likely than not that claim 1 is anticipated by Durack.

7. Unpatentability of Claims 2–14 Over Wada, Durack, and Kachel Wada (Ex. 1009)

Wada discloses methods of systems for sorting cells, including focusing cells. Ex. 1009, Abs. 2:37–44, 2:60–3:4.

Figure 22 of Wada is reproduced below:

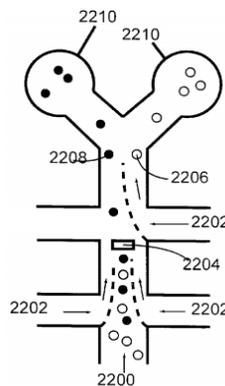


Figure 22 depicts particle sorting configuration, including main microchannel, first set of opposing microchannels, detector 2204, second set of opposing microchannels located downstream from detector 2204, and collection wells 2210. Ex. 1009, 13:1–17. Cells 2200 flow in main microchannel, and are focused or directed using hydrodynamic flow 2202 (e.g., buffer flow) from the first set of opposing microchannels. *Id.* at 13:1–10; *see id.* at 8:6–19. Hydrodynamic flow 2202 is introduced in the second set of opposing microchannels for directing selected cells 2208 and non-selected cells 2206 into one of two microchannels terminating in collection wells 2210. *Id.* at 13:10–17.

Kachel (Ex. 1012)

Kachel is directed to horizontally or vertically orienting flat sperm cells in a flow system utilizing flow forces of different magnitude. Ex. 1012, 774–776, Figs. 3A–3B, 4.

Claims 2–14

We are persuaded, for purposes of this decision, by Petitioner’s citations to specific disclosures of Wada, Durack, Kachel, and Petitioner’s supporting evidence that Petitioner establishes sufficiently that the combined teachings render obvious the subject matter of independent claim 2. *See* Pet. 57–67. For example, we are persuaded Wada teaches a method including inputting a stream of a sample fluid into an inlet into an input region of a flow chamber, and inputting a plurality of streams of sheath fluid into a plurality of inlets into the input region of the flow chamber. *Id.* at 59–61 (citing Ex. 1009, Figs. 3, 21, 22, 24, Abs. 2:37–44, 2:50–60, 4:58–62, 7:63–8:2, 9:32–39, 13:1–16, 15:4–6, 16:23–28, Ex. 1002 ¶ 241, 2a, 2b, 2c). We also are persuaded Wada teaches the sample fluid is in a contiguous

relationship on all available sides with the sheath fluids from the input region through a selective operation region of the flow chamber, and discloses at least one of the flow rates or pressures of the sheath fluid are chosen such that the sample fluid is constricted in two orthogonal directions. *Id.* at 61–63 (citing Ex. 1009, Figs. 1A, 2B, 22, 8:11–19, 8:22–34, 13:1–16, 22:27–29, 32:31–34, Ex. 1002 ¶ 241, 2d, Fig. F, 2e(1-2)). We further are persuaded Wada teaches distinguishing target cells from non-target cells in the detector region using a detector apparatus. *Id.* at 65–66 (citing Ex. 1009, 4:58–67, 5:14–17, 13:1–16, 23:49–67 Ex. 1002 ¶ 241, 2f).

Petitioner acknowledges Wada does not teach orienting cells in a flow chamber. Pet. 57. We are persuaded, for purposes of this decision, by Petitioner’s citations to specific disclosures of Kachel and supporting evidence that Petitioner establishes sufficiently that Kachel teaches or suggests a sample fluid is constricted in two orthogonal directions, thereby allowing said sample fluid to form a relatively narrow stream in at least a detector region of said flow chamber, thereby causing the cells to be flattened and aligned such that flat sides of the cells are oriented parallel to confronting walls of the flow chamber. *Id.* at 57, 63–65 (citing Ex. 1012, Figs. 3(A), 3(B), 774, 776, Ex. 1002 ¶ 241, 2e(2-4)). We also are persuaded, for purposes of this decision, by Petitioner’s assertions, supported by expert testimony, that it would have been obvious to combine Kachel’s teachings of orienting cells with the teachings of Wada to solve the problem of unreliable fluorescence, and to obtain an improved sorter, and more reliable system. *Id.* at 58–59, 65 (citing Ex. 1012, 774, Ex. 1009, 7:62–65, 8:48–51; Ex. 1002 ¶¶ 236, 237, 239).

Petitioner also acknowledges Wada does not teach using a laser to damage selected components. Pet. 57. We are persuaded, for purposes of this decision, by Petitioner's citations to specific disclosures of Durack and supporting evidence that Petitioner establishes sufficiently that Durack teaches or suggests destroying target cells using a laser beam in a selective operation region of the flow chamber downstream from the detector region. *Id.* at 66 (citing Ex. 1005, 91:28–30, 144:17–145:21, Ex. 1002 ¶ 241, 2g). We also are persuaded, for purposes of this decision, by Petitioner's assertions, supported by expert testimony, that one with ordinary skill in the art seeking to implement a faster more flexible integrated sorting apparatus would have looked for ways to overcome the bottlenecks in Wada's apparatus, and would have been motivated to combine the teachings of Wada with Kachel's solution. *Id.* at 57–58 (citing Ex. 1009, 2:14–18; Ex. 1002 ¶¶ 229–235).

On the record before us, Petitioner provides articulated reasoning with some rational underpinning sufficient to support the legal conclusion of obviousness. *See KSR*, 550 U.S. at 418.

As to dependent claims 3, 9, 10, and 11, we are persuaded, for purposes of this decision, by Petitioner's citations to specific disclosures of Wada and supporting evidence that Petitioner establishes sufficiently that Wada teaches or suggests the recited limitations directed to optically illuminating cells in the detector region with a light beam from a laser, scattered or fluorescent light is output by the cells in response to the light beam, an optical detector, and a flat sorter. *See* Pet. 67, 70–71 (citing Ex. 1009, 19:5–20, 23:49–67, 25:24–27, 26:5–22, 33:51–64, Ex. 1002 ¶ 241, 3, 9–11). Regarding dependent claims 4–8, we are persuaded, for purposes of

this decision, by Petitioner's citations to specific disclosures of Wada, Durack, Kachel, and supporting evidence that Petitioner establishes sufficiently that the references teach or suggest the recited limitations directed to sperm cells, and detecting target cells from non-target cells based on X and Y chromosomes. *See id.* at 67–70. As to dependent claims 12 and 13, we are persuaded, for purposes of this decision, by Petitioner's citations to specific disclosures of Wada and supporting evidence that Petitioner establishes sufficiently that Wada teaches or suggests the recited limitations directed to pumping the sample fluid and sheath fluids into the input region, and maintaining a constant flow rate and pressure by a pumping system. *See id.* at 71–72 (citing Ex. 1009, 27:59–28:15, 28:31–48; Ex. 1002 ¶ 241, 12–13). Regarding dependent claim 14, we are persuaded, for purposes of this decision, by Petitioner's citations to specific disclosures of Wada, Durack, and supporting evidence that Petitioner establishes sufficiently that the references teach or suggest the recited limitations directed to a computer for providing input for control of a selection of cells in the sample fluid. *See id.* at 72–73 (citing Ex. 1009: 4:64–67, 5:46–51, 14:41–53, 23:42–48, Ex. 1005, Fig. 41, 138:18–22; Ex. 1002 ¶ 241, 14).

Accordingly, on the record before us, we are persuaded by Petitioner that it is more likely than not that claims 2–14 are unpatentable over Wada, Durack, and Kachel.

III. CONCLUSION

For the foregoing reasons, based on this record, it is more likely than not that claims 1–14 of the '395 Patent are unpatentable. At this stage of the proceeding, we have not made a final determination with respect to the patentability of the challenged claims, including the claim construction.

IV. ORDER

Accordingly, it is ORDERED that pursuant to 35 U.S.C. § 324, post-grant review of the '395 Patent is instituted hereby on the following grounds:

Claims 1–13 under 35 U.S.C. § 102(a)(1) as anticipated by Mueth;
Claim 14 under 35 U.S.C. § 103 as unpatentable over Mueth, or
Mueth and Durack;

Claim 1 under 35 U.S.C. § 102(a)(1) as anticipated by Frontin-Rollet;
Claim 1 under 35 U.S.C. § 102(a)(1) as anticipated by Durack;
Claims 2–13 under 35 U.S.C. § 103 as unpatentable over Wada,
Durack, and Kachel;

FURTHER ORDERED that the trial is limited to the grounds
identified above; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 324(d) and 37
C.F.R. § 42.4, notice is given hereby of the institution of a trial on the
grounds of unpatentability authorized above; the trial commences on the
entry date of this Decision.

PGR2015-00017
Patent 8,933,395 B2

PETITIONER:

Kirt S. O'Neill
Daniel L. Moffett
George Andrew Rosbrook
AKIN GUMP STRAUSS HAUER & FELD LLP
koneill@akingump.com
dmoffett@akingump.com
arosbrook@akingump.com

PATENT OWNER:

Jeffrey P. Kushan
Mathew S Jorgenson
Peter Choi
SIDLEY AUSTIN LLP
jkushan@sidley.com
mjorgenson@sidley.com
peter.choi@sidley.com