

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

Final Written Decision
35 U.S.C. § 328(a), 37 C.F.R. § 42.73

I. INTRODUCTION

Inguran, LLC d/b/a/ SEXING Technologies (“Petitioner”) filed a Petition for post-grant review of claims 1–14 of U.S. Patent No. 8,933,395 B2 (“the ’395 Patent”). Paper 1 (“Petition” or “Pet.”). Premium Genetics Ltd. (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). Pursuant to 35 U.S.C. § 324, we instituted trial on December 22, 2015 as to claims 1–14 of the ’395 Patent. Paper 8 (“Institution Decision” or “Dec. Inst.”). Patent Owner filed a Request for Rehearing of the Institution Decision. Paper 10 (“Req. Reh’g”). Patent Owner’s Request for Rehearing was denied. Paper 11 (“Dec. Req. Reh’g”).

During trial, Patent Owner filed a Patent Owner Response (Paper 13, “PO Resp.”), and Petitioner filed a Reply (Paper 15, “Pet. Reply”). Oral argument was held on September 14, 2016. Paper 21 (“Tr.”).

On September 16, 2016, Patent Owner filed a disclaimer for claims 2–14 of the ’395 Patent, pursuant to 35 U.S.C. § 253(a) and 37 C.F.R. § 1.321(a). Ex. 2007. Therefore, only claim 1 (“the remaining challenged claim”) is at issue.

We have authority under 35 U.S.C. § 6. This final written decision is issued pursuant to 35 U.S.C. § 328(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine Petitioner has shown by a preponderance of the evidence that claim 1 is 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”) and Application No. 10/934,597, filed September 3, 2004 (“the ’597 Application”). Ex. 1001, 1–2; Ex. 1013, 849–50,¹ *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 “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:

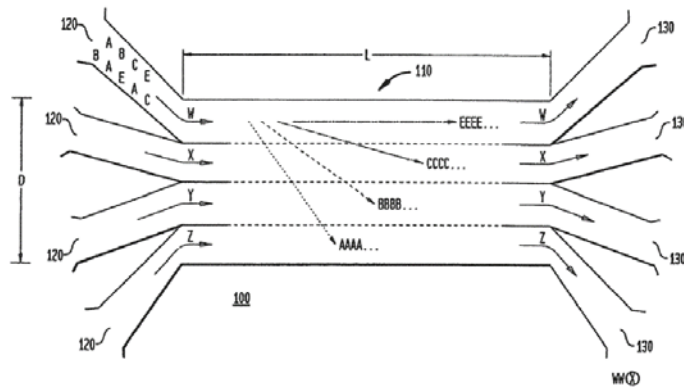


Figure 1 is a lateral view of apparatus 100 depicting sorting channel 110, plurality of inlets 120, plurality of outlets 130, and corresponding fluid flows W, X, Y, and Z. Ex. 1001, 13:20–28. Flow W can be a sample fluid, and flows X, Y, and Z can be buffer solutions. *Id.* at 16:11–13. Apparatus 100 may be incorporated into a system to allow cell identification, and cell killing by high intensity laser exposure. *Id.* at 23:26–24:42; *see id.* at 33:58–64, 40:10–23; Fig. 26.

¹ Exhibit 1013 does not include page numbers. The page numbers listed correspond to the pagination in the PDF exhibit.

Claim 1 - The Remaining Challenged Claim

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.

The Remaining Grounds of Asserted Unpatentability

We instituted review of claim 1 as unpatentable under 35 U.S.C. § 102(a)(1) as anticipated by Durack², anticipated by Mueth³, and anticipated by Frontin–Rollet⁴. Dec. Inst. 24, 28–30, 35.

² Ex. 1005, WO 2004/088283 A2, published Oct. 14, 2004 (“Durack”).

³ Ex. 1008, U.S. Patent No. 7,355,696 B2, issued Apr. 8, 2008, filed Feb. 1, 2005 (“Mueth”).

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

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 Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016). Claim terms also are generally 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 did not initially provide explicit claim constructions for any claim term or phrase. *See* Pet. 9; *see* Prelim. Resp. *passim*. For purposes of the Institution Decision, the Board found 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.” *See* Dec. Inst. 6–8. Neither party contests the construction of “side” as “one of the longer bounding surfaces or lines of an object especially contrasted with the ends.” Dec. Inst. 7. The parties do contest, however, the construction of the terms “channel” and “said plurality of buffer channels which are disposed on either side of said first input channel.”

1. “*Channel*”

For purposes of the Institution Decision, the Board construed “channel” as “a long gutter, groove, or furrow.” Dec. Inst. 6–7. Patent Owner relies on testimony by Petitioner’s expert, Dr. Vacca, to assert that “channel” should be construed as “a hollow member for conveying fluids.” PO Resp. 14 (citing Ex. 1002, 153; Ex. 2006, 17:17–18:12). In response,

Petitioner contends that Patent Owner provides no support for its contention that a channel must convey and not collect. *See* Pet. Reply 17.

We are not persuaded by Patent Owner's arguments that a "channel" must convey fluid. At deposition, Dr. Vacca explained, "a hollow member for conveying fluids" "is a definition that I have supplied . . . as one of the definitions of channel that I have . . . provided here." Ex. 2006, 17:22–18:4. Although Patent Owner provides testimony regarding one definition for "channel," Patent Owner does not provide evidence sufficient to demonstrate that "a hollow member for conveying fluids" is the broadest reasonable interpretation of "channel." We maintain the construction of the broadest reasonable interpretation of "channel" as "a long gutter, groove, or furrow," (*see* Dec. Inst. 6) which encompasses within its scope "a hollow member for conveying fluids."

2. *"Plurality of Buffer Channels Disposed on
Either Side of the Input Channel"*

For the purpose of the Institution Decision, the Board construed "said plurality of buffer channels which are disposed on either side of said first input channel" 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." Dec. Inst. 7–8. Patent Owner disagrees implicitly with this construction in the context of a channel viewed in three dimensions. *See* PO Resp. 8. Patent Owner explains "for example, a channel with a square or rectangular cross section will have four 'longer bounding surfaces' (i.e., a top and bottom surface and a left and right surface)." *Id.* But Patent Owner asserts that in the "context of a channel viewed in three dimensions, applying the ordinary English meaning, 'on either side' must mean 'on one side and on the other, opposite, side.'" PO Resp. 8–9. Patent Owner further

contends “for example, a plurality of buffer channels located on the top side and the left side of a square cross-section channel would be described as being located ‘on adjacent sides.’ No reasonable use of plain English would describe such a configuration as having buffer channels ‘on either side.’” *Id.* at 9. Patent Owner contends the same analysis applies to a circular cross-section channel, and asserts this analysis is consistent with the specification which shows buffer channels on opposite sides (citing Ex. 1001, Fig. 19), but never shows buffer channels on adjacent sides. *See id.* Patent Owner also asserts that the Board’s construction “presumes that there are only two longer bounding surfaces.” Tr. 27:17–22. Patent Owner contends there are more than two sides if the channel is rectangular and fewer than two sides if the channel is cylindrical (i.e., arguing that a cylindrical channel cannot be accurately characterized as having distinct “sides”). *See* Tr. 28:22–29:2.

Petitioner agrees with the Board’s construction. *See* Pet. Reply 7; Tr. 5:24–7. Petitioner contends that for a circular cross-section of a cylindrical channel, whether the plurality of buffer channels are disposed on either side of the input channel depends on how the circular cross-section of the channel is halved or bisected. *See* Pet. Reply 6–7; Tr. 8:9–9:19.

Patent Owner’s arguments are not persuasive because they are premised incorrectly on the input channel having a solid cross-section. Patent Owner’s proposed construction overlooks that the input channel must include a passageway or interior surface to permit introduction of the first flow, as recited claim 1.⁵ *See* Ex. 1001, Claim 1, 44:45, 52–53 (“a first input

⁵ The claimed buffer input channels also must be at least partially hollow to accommodate the introduced flows. *See* Ex. 1001, Claim 1, 44:48–49 (“a

channel into which a first flow is introduced”). Thus, a cylindrical channel including a passageway has at least two longer bounding surfaces—at least one interior longer bounding surface and one exterior circumferential longer bounding surface. A channel with a rectangular cross-section including a passageway has at least one interior longer bounding surface and four exterior planar longer bounding surfaces.

Patent Owner’s arguments also are not persuasive because they are unsupported by evidence (e.g., dictionary definition, testimony by one with ordinary skill in the art) sufficient to support its contentions regarding reasonable use of plain English or the ordinary English meaning. *See* Pet. 8–9. It is well settled that attorney argument, unsupported by factual evidence, is entitled to little probative value. *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997); *see also In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974) (attorney argument is not evidence). In addition, Patent Owner’s proposed construction eliminates the “disposed on one *or* the other . . . of the two longer bounding surfaces of the input channel” aspect of the Board’s construction, thereby excluding at least one embodiment disclosed in the ’395 Patent Specification. Specifically, the embodiment of Figure 1, reproduced above, was identified as consistent with the construction because it depicts a plurality of buffer channels disposed on one side of the input channel. *See* Dec. Inst. 8 (citing Ex. 1001, Fig. 1, 16:11–13). Although we do not necessarily limit the claimed invention to a specific embodiment, the inconsistency between Patent Owner’s proposed construction and the embodiment of Figure 1 further supports a determination that Patent

plurality of buffer input channels, into which additional flows of buffer solution are introduced”).

Owner's proposed construction is incorrect, particularly where Patent Owner has characterized Figure 1 as indicative of the claimed subject matter. *See* Prelim. Resp. 8–9 (“Figure 1 . . . is evidence that the application discloses the subject matter of the challenged claim [1] element [regarding the channel adapted to receive flows].”).

Based on Patent Owner's assertion that the Board's preliminary construction erroneously “presumes that there are only two longer bounding surfaces” (Tr. 27:17–22), we recognize that the construction set forth in the Institution Decision may connote an input channel having only two longer bounding surfaces due to the inclusion of the word “the” in the phrase “of the two longer bounding surfaces.” The inclusion of the “the” was not intended to limit the input channel to only two longer bounding surfaces. Rather, the broadest reasonable interpretation of the claim phrase should encompass input channels having at least two, and more than two, longer bounding surfaces. To remedy the aforementioned inadvertent connotation, we modify the construction to remove the problematic instance of “the.” Accordingly, we construe the broadest reasonable interpretation of “said plurality of buffer channels which are disposed on either side of said first input channel” as “said plurality of buffer channels disposed on one or the other, or one and the other of two longer bounding surfaces of the input channel.”

The construction of the claim phrase remains consistent with the disclosures of Figures 1 and 19 of the '395 Patent. Figure 1, reproduced above, depicts a lateral view of a plurality of buffer channels (i.e., inlets 120 corresponding to buffer flows X, Y, and Z) disposed on one side (i.e., the bottom exterior longer bounding surface) of the input channel (i.e., inlet 120

having a rectangular cross-section and corresponding to flow W of components A, B, C, E). Ex. 1001, Fig. 1, 13:20–28; 14:41–46; 16:11–13. The channels disclosed in the '395 Patent are not limited a channel having a rectangular cross-section, as other shapes may be devised as well. See Ex. 1001, 31:8–10. If, for example, a circular cross-section is the shape utilized for the channels, Figure 1 also depicts a plurality of buffer channels (i.e., inlets 120 corresponding to buffer flows X, Y, and Z) disposed on one side (i.e., the exterior longer bounding surface) of the input channel (i.e., cylindrical inlet 120 corresponding to flow W of components A, B, C, E). See *id.* Fig. 19.

Figure 19 of the '395 Patent is reproduced below:

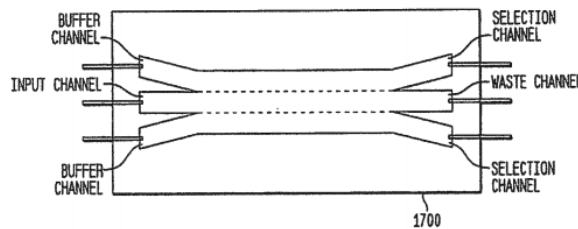


Figure 19 is a plan view depicting two buffer channels and one input channel. Ex. 1001, 42:40–41. If, for example, a rectangular cross-section is the shape utilized for the channels, Figure 19 depicts a first buffer input channel disposed on one side (i.e., top exterior longer bounding surface) of the input channel, and a second buffer input channel disposed on the other side (i.e., bottom exterior longer bounding surface) of the input channel. See *id.* Fig. 19. If for example, a circular cross-section is the shape utilized for the channels Figure 19 depicts two buffer input channels disposed on one side (i.e., disposed on exterior longer bounding surface) of the input channel. See *id.* Fig. 19.

In sum, we construe the broadest reasonable interpretation of “said plurality of buffer channels which are disposed on either side of said first

input channel” as “said plurality of buffer channels disposed on one or the other, or one and the other of two longer bounding surfaces of the input channel.”

*3. 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*

Patent Owner and Petitioner have differing views regarding the implications of the claim phrase “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.” See PO Resp. 10, 12–13; Pet. Reply 8–10. Therefore, we find it necessary to construe this claim phrase in light of the parties’ arguments.

Patent Owner contends the flow direction of buffer fluid (i.e., additional flows) is being used to describe structural elements, namely, the plurality of buffer input channels. See PO Resp. 13; Tr. 34:7–10. Patent Owner asserts “the buffer input channels must be configured so as to permit additional flows to be introduced, wherein those ‘additional flows’ that are introduced have a certain direction.” PO Resp. 13; see *id.* at 10, Tr. 34:7–17.

Petitioner disputes Patent Owner’s position, and argues that excluding the sheath fluid direction of flow after exiting the buffer input channels is incorrect because it contradicts the claim language and the preferred embodiment depicted in Figs. 18 and 19 of the ’395 Patent. See Pet. Reply 8–10 (reproducing Ex. 1001, Figs. 18 and 19 with annotations (quoting *Accent Packaging, Inc. v. Leggett & Platt, Inc.*, 707 F.3d 1318, 1326 (Fed. Cir. 2013))). Petitioner contends that Patent Owner focuses incorrectly on the buffer input channels that introduce the sheath fluid to the apparatus and

ignores the direction of flow after introduction to the apparatus and through the apparatus. *See* Pet. Reply 9. Petitioner asserts it is the flow of fluid after introduction that is critical under the claim language (*see* Pet. Reply 9) and the channels that carry the sheath fluid through the remainder of the apparatus would be the structural elements claimed (*see* Pet. Reply 10–11).

As pointed out correctly by Patent Owner, “[t]he fluid itself is not a limitation of the claim. The direction of flow of the fluid is being used to describe the structure. It’s not itself a limitation of the claim.” Tr. 34:3–6. The direction of flow of the first flow and additional flows describe the intended use of the apparatus recited in claim 1. Although patent owners and applicants are free to define something by what it does rather than by what it is, there is inherent risk in doing so. *See In re Swinehart*, 439 F.2d 210, 212 (CCPA 1971). One risk is that the recited use will cover any and all embodiments capable of performing the recited use or function. *See id.* at 213; *see also In re Schreiber*, 128 F.3d 1473, 1476 (Fed. Cir. 1997) (“Schreiber’s contention that his structure will be used to dispense popcorn does not have patentable weight if the structure is already known, regardless of whether it has ever been used in any way in connection with popcorn.”). The structure implied by the language “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” is not limited to the structure of the buffer input channels, as suggested by Patent Owner. When parsed correctly, the structure of the apparatus of claim 1 includes a first input channel, a plurality of buffer input channels, and a length of the apparatus from one end of the apparatus to another end of the apparatus. However, the structural arrangement of the input channel and the buffer

input channel in relation to the length of the apparatus from one end of the apparatus to another end of the apparatus is not set forth in the language of claim 1. We construe the broadest reasonable construction of “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,” as covering any and all structures capable of allowing the first flow and the additional flows to have a flow direction along a length of the apparatus from one end of the apparatus to another end of the apparatus. The construction does not require a structure along the entire length of the apparatus from one end of the apparatus to another end of the apparatus, because claim 1 recites a flow direction, not a flow length, along a length of the apparatus from one end of the apparatus to another end of the apparatus. The construction is consistent with the embodiments of Figures 1, 2, and 16–23 of the ’395 Patent, each of which disclose an apparatus having one or more passageways capable of allowing the first flow and the additional flows to flow in a direction along the length of the apparatus from one end of the apparatus to another end of the apparatus. *See* Ex. 1005, Figs. 1, 2, 16–23.

Accordingly, we construe the broadest reasonable interpretation of “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” as covering any and all structures capable of allowing the first flow and the additional flows to flow in a direction along the length of the apparatus from one end of the apparatus to another end of the apparatus.

B. Anticipation by Durack

Durack discloses apparatuses and methods for sperm sorting.

Ex. 1005, Abs. Figure 2 of Durack is reproduced below.

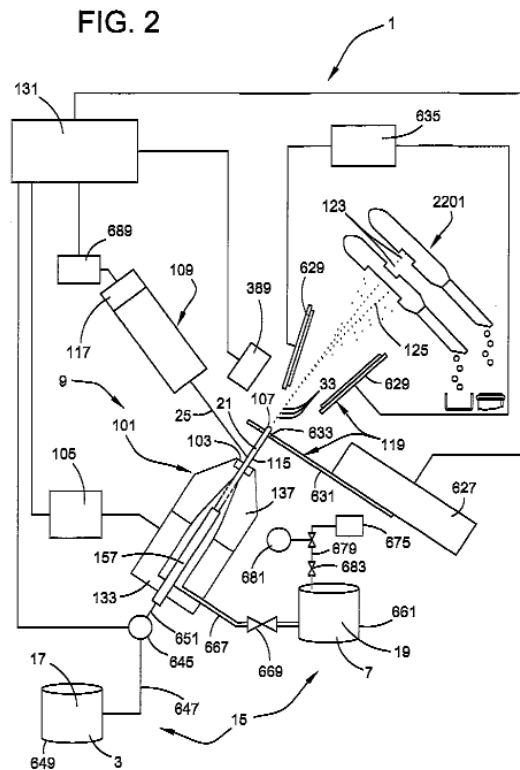


Figure 2 is a schematic diagram depicting one embodiment of flow cytometry system 1. Ex. 1005, 4:36–37, 31:12–14. Flow cytometry system 1 includes flow cytometry apparatus 9, supply 3 of carrier fluid 17 containing particles to be sorted, supply 7 of sheath fluid 19, and fluid delivery system 15 for delivering carrier fluid 17 and sheath fluid 19 under pressure to flow cytometry apparatus 9. *Id.* at 31:15–19. Flow cytometry apparatus 9 comprises a nozzle system 101 for delivering a fluid stream 21 containing particles through nozzle orifice 103 under pressure. *Id.* at 31:36–38. Transducer 105 is provided opposite nozzle orifice 103 for introducing acoustical energy into fluid stream 21 which causes stream 21 to break into droplets 33 containing individual cells at droplet break off

location 107. *Id.* at 31:23–26, 31:40–32:4. Optics system 109 focuses a beam of electromagnetic radiation 25 on fluid stream 21 at interrogation location 115 which is between nozzle orifice 103 and droplet break-off location 107. *Id.* at 32:4–7. Photodetector 117 is operable to detect fluorescence emissions of the cells and convert them into electrical signals which are processed and used to classify the cells according to selected characteristics. *Id.* at 32:13–15. Flow cytometry apparatus 9 includes sorting system 199 for sorting droplets 33 according to one or more characteristics of the particles into different populations 123, 125. *Id.* at 32:17–19. Collection system 2201 collects droplets 33 and maintains the segregation of the different populations 123, 125. *Id.* at 32:19–20. Operation of the system is controlled by processor 131. *Id.* at 32:21.

A portion of Figure 5 of Durack is reproduced below:

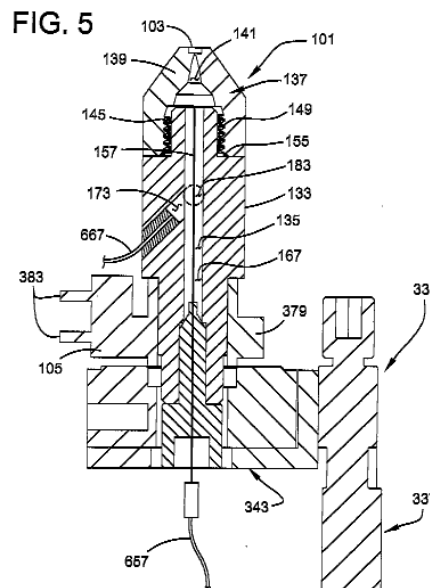


Figure 5 is a sectional view of a nozzle and nozzle holder. Ex. 1005, 5:3–4. Figure 5 depicts nozzle system 101 comprising a generally cylindrical flow body 133 having central longitudinal bore 135 through it, and nozzle 137 on flow body 133 having funnel shaped nozzle body 139. Ex. 1005, 32:33–35.

Passage 141 extends through nozzle body 139 co-axial with bore 135 in flow body 133 and terminates in nozzle orifice 103. *Id.* at 32:35–37. Particles are delivered to nozzle 137 by conduit 157 positioned co-axially in bore 135 of flow body 133. *Id.* at 33:3–4. The outside diameter of conduit 157 is less than the inside diameter of bore 135 so that annular space 167 is formed around conduit 157. *Id.* at 33:4–5. The back end of conduit 157 is connected to fluid delivery system 15 for delivery of carrier fluid 17. *Id.* at 33:8–10. Annular space 167 surrounding conduit 157 is connected by radial bore 173 in flow body 133 to fluid delivery system 15 for delivery of sheath fluid 19 into annular space 167. *Id.* at 33:10–12. Optional second radial bore 183 is provided in flow body 133 connecting annular space 167 to another line for supply of additional sheath fluid 19 to nozzle 137. *Id.* at 33:12–15.

Durack also discloses a photo-damage sorting system. Ex. 1005, 144:17–145:21. Figure 136 of Durack is reproduced below:

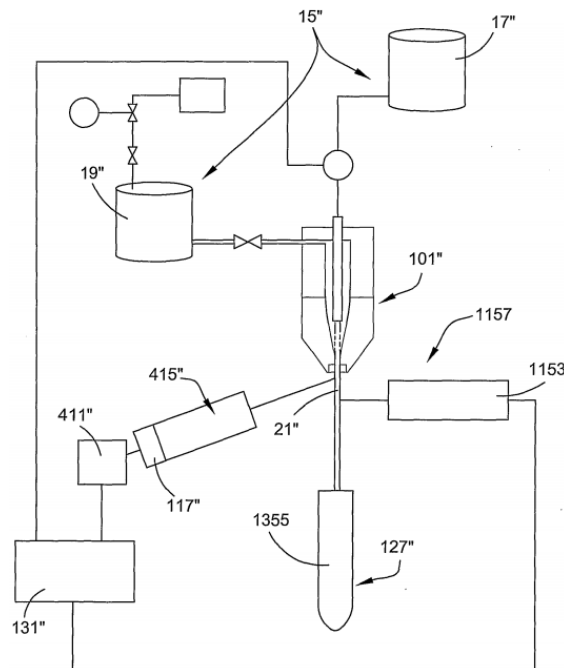


Figure 136 is a schematic diagram of a photo-damage sorting system.

Ex. 1005, 10:7–8. Figure 136 depicts flow cytometry photo-damage system including fluid delivery system 15" for supplying carrier fluid 17" and sheath fluid 19" to nozzle system 101". *Id.* at 11:6–8, 11:17, 31:14–19, 144:21–27. Fluid stream 21" (*id.* at 31:19–23) is subject to photodetector 117" of epi-illumination optics system 415" (*id.* at 11:9, 11:23, 13:58–59, 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.

1. *Apparatus Comprising a First Input Channel Into Which a First Flow is Introduced, a Plurality of Buffer Input Channels Into Which Additional Flows of Buffer Solution Are Introduced*

Claim 1 recites "[a]n 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." Ex. 1001, 44:41–49. Petitioner asserts "Durack discloses an apparatus that introduces a sample fluid into a nozzle [137] of a flow cytometer through a conduit [157] positioned co-axially in a bore [135] of the flow body [133]." Pet. 51 (citing Ex. 1005, 30:3–4, 33:2–10, Figs. 5, 10). Petitioner contends "[i]n one example, the conduit [157] is a tubular needle . . . having one end that connects to the back of the nozzle, another end that is connected to the fluid delivery system containing the carrier fluid." *Id.* (citing Ex. 1005, 33:4–10; Ex. 1002 ¶ 226, 1b). Petitioner further asserts that Durack discloses a

plurality of buffer input channels based on Durack's disclosure of radial bore 173 and radial bore 183. *See Id.* at 51–52 (citing Ex. 1005, 33:8–14, Fig. 3; reproducing Ex. 1005, Fig. 5 with annotations; Ex. 1002 ¶ 226, 1c). Patent Owner does not contest these assertions by Petitioner. *See* PO Resp. 7–18.

We have considered Petitioner's arguments based on the record before us. We are persuaded by a preponderance of the evidence that Durack discloses “[a]n 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,” as recited in claim 1, and adopt Petitioner's arguments, which are supported by record evidence, as our own findings of fact.

*2. Said Plurality of Buffer Input Channels Disposed on
Either Side of the First Input Channel*

Claim 1 further recites “said plurality of buffer channels which are disposed on either side of said first input channel.” Ex. 1001, 44:49–51. Petitioner asserts that Durack discloses “said plurality of buffer input channels disposed on either side of the first input channel” based on “annular space [167] that carries sheath fluid [19], surrounding the conduit [157], connected to the sheath delivery system by two radial bores [173, 183].” Pet. 51–52 (citing Ex. 1005, 33:8–14; Fig. 3, Ex. 1002 ¶ 226, 1c; reproducing Figure 5 with added annotations). Petitioner contends annular space 167 surrounding conduit 157 is connected to the fluid delivery system through first radial bore 173 for delivery into the space, and additional radial bore 183 may be provided in flow body 133 connecting annular space 167 to another line that supplies sheath fluid. *See id.* at 52–53 (citing Ex. 1005,

33:10–14; Ex. 1002 ¶ 226, 1c; reproducing Figure 5 with added annotations). Petitioner asserts disclosed annular space 167 is formed around conduit 157, and radial bores 173, 183 are disposed to a side of center element. *See id.* at 53 (citing Ex. 1005, 33:5; Fig. 3).

Patent Owner contends Durack does not disclose the claim limitation because the structures identified by Petitioner as the plurality of buffer channels in Durack are disposed on adjacent sides, not “on either side.” *See* PO Resp. 7. Patent Owner contends that because radial bore 173 is orthogonal to radial bore 183, the first buffer channel is on one side of conduit 157 (left side of Fig. 5) and the second buffer channel is on a different side (the top or bottom in Fig. 5). *See id.* at 8 (citing Ex. 2006, 42:8–14). Patent Owner argues that this configuration means that the two channels are not on the same side, nor are they on the opposite sides, of the conduit 157. *See id.* Patent Owner further asserts that there is no two-dimensional cross section of Durack where the two alleged buffer channel will be found on either side of the first channel. *See id.*

In response, Petitioner contends that “Durack specifically discloses at least two input channels (radial bores 173 and 183) surrounding a first input channel (conduit 157) for supplying buffer (sheath fluid 19).” Pet. Reply 4–5 (citing Ex. 1005, 33:3–14, reproducing Figure 5). Petitioner further asserts “in Figure 5 of Durack, the two buffer channels 173 and 183 *are* disposed on one side of the input channel 157 but can also be disposed on one and the other of the two longer bounding surfaces of the input channel.” *Id.* at 6 (citing Ex. 1002 ¶ 226, 1c). Petitioner contends the particular arrangement of buffer channels will depend on how the cross-section of the input channel 157 is halved or bisected. *See id.* at 6–7; Tr. 8:9–9:19.

In view of the broadest reasonable interpretation of “said plurality of buffer channels which are disposed on either side of said first input channel” discussed above in Section II.A.2, on this record, we disagree with Patent Owner’s arguments. We are persuaded that Petitioner has established by a preponderance of the evidence that Durack discloses this claim limitation based on radial bores 173 and 183 disposed on one side of conduit 157 (i.e., the exterior circumferential bounding surface of conduit 157). *See* Ex. 1005, Fig. 5.

*3. 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*

Claim 1 further recites “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.” Ex. 1001, 44:52–54. Petitioner asserts that Durack discloses “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” because Durack discloses both the sheath fluid and the sample fluid flow along the length of the apparatus. *See* Pet. 53 (citing Ex. 1005, 33:15–19, 35:26–29). Specifically, Petitioner contends that the higher velocity of the sheath fluid accelerates the sample fluid toward the orifice of the nozzle, and the stream moves through the nozzle system. *See id.* (citing Ex. 1005, Figs. 2; 135, 33:15–19, 26–29 35:26–29, 144:2–5; Ex. 1002 ¶ 226, 1d).

Patent Owner contends that Durack does not disclose this claim limitation, and directs attention to the deposition testimony of Petitioner’s expert Dr. Vacca (Ex., 2006), Exhibit 2004, and Figures 5 and 135 of Durack to support its assertions. *See* PO Resp. 9–12. Patent Owner

contends that Dr. Vacca identifies the flow direction in Figure 135 by labeling the claimed one end of the apparatus with a letter A and the claimed another end of the apparatus with a letter B and labeling the flow direction with an arrow. *See id.* at 10–11 (reproducing Ex. 2004, citing Ex. 2006, 88:6–89:11, 75:16–77:4).

Exhibit 2004, reproduced below, provides an illustration of this apparatus.

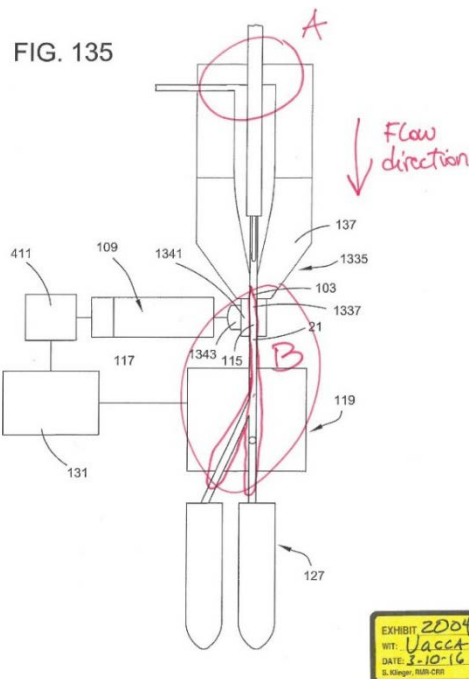


Exhibit 2004 depicts Figure 135 of Durack with annotations added by Petitioner’s expert Dr. Vacca during deposition testimony. *See* Ex. 2006, 88:6–89:11. Patent Owner contends that Figure 135 does not show a plurality of buffer input channels, but Figure 5 shows second radial bore 183 is orthogonal to the direction of flow identified by Dr. Vacca, and second radial bore 183 is orthogonal to first radial bore 173. *See* PO Resp. 10–12 (reproducing Ex. 2004 and Ex. 1005, Fig. 5 with annotations; citing Ex. 2006, 88:6–89:11, 75:16–77:4; Ex. 1005, 42:8–14). On this basis, Patent

Owner contends at least one of the two alleged buffer input channels (i.e., radial bores 173, 183) is oriented in such a way that any fluid therein will not flow along the length of the apparatus from one end of the apparatus to another end of the apparatus as required by claim 1. *See id.* at 12. In response, Petitioner asserts that Figures 2 and 135 of Durack show that sheath fluid 19 flows alongside and in the same direction as the fluid stream 21 in the input channel 157 along the length of the apparatus. *See Pet. Reply* 10.

As explained above in Section II.A.3, we construe the broadest reasonable interpretation of “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,” to cover any and all embodiments having structure capable of allowing the first flow and the additional flows to have a flow direction along a length of the apparatus from one end of the apparatus to another end of the apparatus.” We further determined that this claim limitation does not require structure along the entire length of the apparatus from one end of the apparatus to another end of the apparatus. With the aforementioned claim construction in mind, we return to the respective positions of Petitioner and Patent Owner.

Petitioner bases its position regarding the disputed claim language on Durack’s disclosure related to Figures 2 and 135 (*see Pet.* 53; *Pet. Reply* 7–11; *Ex.* 1002 ¶ 226, 1d; *Ex.* 1005, 10:4:36–37, 10:5–6), while Patent Owner bases its position primarily on Durack’s disclosure related to Figure 5 (*see PO Resp.* 9–12). Utilizing Dr. Vacca’s identifications of the flow direction and one end of the apparatus and another end of the apparatus depicted in *Ex.* 2004, we find that Figure 5 of Durack depicts the apparatus

has structure—conduit 157 and annular space 167—capable of allowing the first flow and the additional flows to have a flow direction along a length of the apparatus from one end of the apparatus to another end of the apparatus. *See* Ex. 1005, Fig. 5; 33:4–12. Likewise, we find Figures 2 and 135 of Durack, relied upon by Petitioner, depict structure—conduit 157 connected to supply 3 of carrier fluid 17 and annular space surrounding conduit 157 connected to supply 7 of sheath fluid 19—capable of allowing the first flow and the additional flows to have a flow direction along a length of the apparatus from one end of the apparatus to another end of the apparatus. *See* Ex. 1005, Figs. 2, 135, 11:39, 31:14–19.

On this record, we are persuaded by a preponderance of the evidence that Durack discloses “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,” as recited in claim 1, based on Durack’s disclosed structure that allows the first flow and the additional flows to have a flow direction along a length of the apparatus from one end of the apparatus to another end of the apparatus.

4. A Detector and a Laser

Claim 1 further recites “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.” Ex. 1001, 44:54–57. Petitioner asserts “Durack discloses an interrogation location where cells pass through a beam of light causing excitation of chemical stain, and a photodetector used to detect these emissions and convert them into electrical signals which are processed and used to classify the cells according to selected characteristics.” Pet. 54

(citing Ex. 1005, 32:13–16, Fig. 29, Ex. 1002 ¶ 226, 1e). Petitioner also contends “Durack discloses a flow cytometry photo-damage system, wherein a microprocessor is used to selectively activate a laser to ablate cells of a given undesired characteristic in a given sample fluid.” *Id.* (citing Ex. 1005, 144:17–145:21, Ex. 1002 ¶ 226, 1f); *see also id.* at 54–55 (describing additional features of Durack’s system) (citing Ex. 1005, 91:27–34, 144:21–22, 145:20–21, Ex. 1002 ¶ 226, 1f). Patent Owner does not contest these assertions by Petitioner. *See* PO Resp. 7–18.

We have considered Petitioner’s arguments based on the record before us. We are persuaded by a preponderance of the evidence that Durack discloses “a detector apparatus which detects and identifies selected components of the plurality of components,” and “a laser which emits a laser beam which damages or kills selected components of the plurality of components,” as recited in claim 1, and adopt Petitioner’s arguments, which are supported by record evidence, as our own findings of fact.

5. *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*

Lastly, claim 1 recites “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.” Ex. 1001, 16:58–61. Petitioner asserts that Durack discloses a collection receptacle adapted to receive the first flow and additional flows after operation of the laser. *See* Pet. 55 (citing Ex. 1005, 144:25–38, Fig. 136). Petitioner contends that a collection receptacle is a

channel as that term would be understood by a person of ordinary skill in the art. *See id.* (citing Ex. 1002 ¶ 226, 1g).

Patent Owner argues a collection receptacle is not a channel under any reasonable construction of the term. *See* PO Resp. 13–14. Patent Owner argues the closed-ended collection receptacle disclosed in Durack collects rather than conveys fluids, and thus, fails to meet Dr. Vacca’s definition of a channel as “a hollow member for conveying fluids.” *See id.* at 14 (citing Ex. 1002, 153, Ex. 2006, 17:17–18:12). Patent Owner directs attention to Dr. Vacca’s testimony that a typical collection container is something like a test tube, and argues that a test tube does not convey fluid. *See id.* (citing Ex. 2006, 93:14–95:5). Patent Owner further contends that a test tube cannot be a channel because it is closed on one end. *See id.* (citing Ex. 2006, 93:14–95:5). Patent Owner also contends that even if Durack’s receptacle 1355 performs the same function as the claim recites for the “channel,” it does not establish that one of ordinary skill in the art would consider a receptacle to be a channel. *See id.* at 15 (citing *In re Ruskin*, 52 C.C.P.A 1557, 1560 (CCPA 1965)). Lastly, Patent Owner contends the Board’s construction of a channel leads to the same result because a collection receptacle such as a test tube is not “a long gutter, groove, or furrow.” *See id.*

Petitioner responds that Patent Owner provides only attorney argument for its contention that a channel must convey and not collect. *See* Pet. Reply 17. Petitioner contends “the receptacle described in Durack can be described as a gutter that receives and contains the combined fluids.” *Id.* (citing Ex. 1002 ¶ 226, 1g). Petitioner further argues that Patent Owner

provides no support for the assertion that one of ordinary skill in the art would not consider a receptacle to be a channel. *See id.* at 17–18.

As explained above in Section II.A.1, we construe the broadest reasonable interpretation of “channel,” as “gutter, groove, or furrow.” Patent Owner does not direct us to evidence sufficient to demonstrate that the broadest reasonable interpretation of channel would preclude a closed-ended collection receptacle or test tube. Even considering Patent Owner’s arguments based on its proposed narrower meaning, we are not persuaded that Durack’s collection receptacle 1335 is not “a hollow member for conveying fluids,” because it does not convey, but collects fluid. Patent Owner’s characterization of Durack’s collection receptacle is inaccurate because at least the opening of collection receptacle 1335 conveys fluid to the remainder of collection receptacle 1335. Consistent with the construction of the broadest reasonable interpretation of “channel,” discussed in Section II.A.1, Durack’s collection receptacle 1335 (*see* Ex. 1005, Fig. 136) is within the scope of the meaning of a “gutter, groove, or furrow.” On this record, we are persuaded by the preponderance of the evidence that Durack’s collection receptacle 1335 located downstream from laser 1153 (*see* Ex. 1005, Fig. 136) describes “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,” as recited in claim 1.

Upon the record before us, we are persuaded by a preponderance of the evidence that claim 1 is unpatentable under 35 U.S.C. § 102(a)(1) as anticipated by Durack.

C. *Anticipation by Mueth and Anticipation by Frontin-Rollet*

1. *Entitlement of Claim 1 to Earlier Effective Filing Date*

Patent Owner asserts that neither Mueth nor Frontin-Rollet qualify as prior art to claim 1. *See* PO Resp. 1, 3–6. Patent Owner contends that for the reasons explained in the Institution Decision and the Preliminary Response, claim 1 is entitled to a September 3, 2004, effective filing date. *See id.* at 5.

By way of background, a threshold issue addressed in the Institution Decision was whether Petitioner established standing for post-grant review. *See* Dec. Inst. 8–18. Petitioner presented arguments to establish that the '395 Patent was available for post-grant review on the basis that claims 1 and 2 were not disclosed in any of the earlier patent applications filed before March 16, 2013 (i.e., the '969 Application and the '957 Application) in the manner required by 35 U.S.C. § 112(a). *See* Pet. 12–17. Specifically, Petitioner asserted that “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” (“at least one channel limitation”), as recited in claim 1, was not disclosed in any of the earlier patent applications. *See id.* In the Institution Decision, the Board addressed Petitioner’s contentions regarding written description support for the at least one channel limitation of claim 1 (*see* Dec. Inst. 13–17), was “not persuaded that claim 1 is not disclosed in the '969 Application in the manner required by 35 U.S.C. § 112 (a), and . . . not persuaded that claim 1 is not entitled to an effective filing date before March 16, 2013.” *Id.* at 14. The Board determined, however, that Petitioner established standing for post-grant review based on claim 2. *See id.* at 15–18.

Patent Owner requested Rehearing of the Institution Decision, contending the Board overlooked the fact that Mueth and Frontin-Rollet do not qualify as prior art to claim 1 because claim 1 *is entitled* to an effective filing date of September 3, 2004. *See* Req. Reh’g 1. Patent Owner contended that claim 1 is entitled to an effective filing date of September 3, 2004 because the Board considered and rejected Petitioner’s argument that claim 1 of the ’395 Patent is not entitled to the March 6, 2012, effective filing date of the ’969 Application, and because the parties agreed that the Specification of the ’969 Application is identical to the Specification of the ’597 Application filed on September 3, 2004. *See id.* at 1–2. In the Decision denying Patent Owner’s Request for Rehearing, the Board stated that the Institution “Decision cannot be read fairly as affirming the entitlement of claim 1 to an effective filing date before March 16, 2013 (e.g., Sept. 4, 2004).” Dec. Req. Reh’g 3; *see also* PO Resp. 4 (acknowledging statement in Decision on Request for Rehearing). Therefore, following the Decision denying Patent Owner’s Request for Rehearing, whether claim 1 is entitled to an effective filing date before March 16, 2013 remained an open issue.

Returning to the issue before us, Patent Owner now expands upon its arguments presented in the Request for Rehearing. Patent Owner contends that because Petitioner bears the burden of showing unpatentability, it is Petitioner’s burden to show that claim 1 is not entitled to an earlier effective filing date. *See* PO Resp. 4. Patent Owner contends that the only burden that ever shifts is the burden of production to show the existence of an earlier application and why the written description in the earlier application supports the claim. *See id.* (citing *Dynamic Drinkware LLC v. National*

Graphics, Inc., 800 F.3d 1375, 1380-81 (Fed. Cir. 2015)). Patent Owner asserts that it has met this burden of production in the Preliminary Response, and the Board agreed that Petitioner failed to show that claim 1 was not entitled to an earlier effective filing date. *See id.* at 2–4 (citing Dec. Inst. 13–14). Patent Owner contends that the burden has shifted back to Petitioner to persuade the Board that Patent Owner is not entitled to the earlier effective filing date. *See id.* at 2, 4–5. Patent Owner asserts that for the reasons explained in the Institution Decision, and because the record is the same as it was at the time of the Institution Decision, Petitioner has failed to carry its burden to show that claim 1 is not entitled to the benefit of an earlier filing date. *See id.* At oral argument, Patent Owner contends that entitlement of the ’395 Patent to an earlier filing date, while a different legal question from Petitioner’s standing for post-grant review, “factually it becomes the exact same question . . . [with] the exact same analysis and . . . exactly the same burdens for both questions. And the burdens can shift in the same ways. So the analysis for the one carries over to the other.” Tr. 23:18–24; *see id.* at 22:9–12, 25:10–12.

Although there may be some overlap in the analysis and applied facts, we do not agree that the analysis and burdens of production and persuasion are the same for establishing standing for post-grant review and establishing entitlement to an earlier effective filing date. On the issue of entitlement of a patent claim to an earlier effective filing date, the recent decision in *Dynamic Drinkware* is instructive regarding the parties’ respective burdens of persuasion and production. For post-grant review, like *inter partes* review, the burden of persuasion is on the petitioner to prove unpatentability by a preponderance of the evidence, and this burden does not shift to the

Patent Owner. *See Dynamic Drinkware*, 800 F.3d at 1378; *compare* 35 U.S.C. § 326(e) *with*, 35 U.S.C. § 316(e). The distinct burden of production⁶, however, is a shifting burden, and the allocation of this burden depends upon where in the process of trial the issue arises. *See id.* at 1379 (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)).

In *Dynamic Drinkware*, the petitioner, challenging patentability on the basis of the Raymond reference, had the initial burden of production, and satisfied that burden by arguing that the prior art Raymond reference anticipated the challenged claims of the patent. *See Dynamic Drinkware*, 800 F.3d at 1379. The burden of production then shifted to the patent owner to argue or produce evidence that the Raymond reference was not prior art because the challenged claims are entitled to the benefit of an earlier effective filing date prior to the date of the Raymond reference. *See id.* at 1380. The patent owner produced evidence concerning the date of the reduction to practice and argued that the challenged patent claims were entitled to an earlier date, thereby shifting the burden of production back to Petitioner to show either that the invention was not reduced to practice as argued or that Raymond was indeed prior art, by showing that Raymond was entitled to an effective filing date earlier than the challenged patent's earliest date. *See id.*

⁶ The burden of production is also called the burden of going forward with evidence, which means both producing evidence and presenting persuasive argument based on the evidence. *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008).

The underlying principle from *Dynamic Drinkware* is: although the burden of persuasion to prove unpatentability always rests with petitioner, the burden of production for showing that a patent claim is entitled to an earlier effective filing date shifts between the party asserting the entitlement and the party asserting lack of entitlement. *See Tech. Licensing*, 545 F.3d at 1327–29 (explaining that the accused infringer/defendant, having the ultimate burden of proving its defense of invalidity, had the burden of going forward with evidence that there is anticipating prior art, and once the accused infringer met that burden, the burden shifted to the patent owner to go forward with evidence that asserted claim is entitled to an earlier filing date); *id.* at 1327 (“This requires TLC [patent owner] to show not only the existence of the earlier application, but why the written description in the earlier application supports the claim. In the context of the allegedly anticipating Elantec prior art, that means producing sufficient evidence and argument to show that an ancestor to the ’250 patent, with a filing date prior to the Elantec date, contains a written description that supports all the limitations of claim 33, the claim being asserted.”). Patent Owner acknowledged this principle at oral argument: “If Petitioner can show that there is intervening prior art, the burden of production can shift to the Patent Owner to show entitlement to the earlier filing date.” Tr. 18:15–18

When viewed in light of *Dynamic Drinkware*, Petitioner met its initial burden of production by providing Mueth (Ex. 1008) and Frontin-Rollet with filing dates prior to the actual filing date (January 31, 2014) of the ’395 Patent, and asserting, with supporting evidence, that Mueth and Frontin-Rollet each disclose each of the limitations of claim 1. *See* Pet. 31–35, 45–50. The Institution Decision instituting review of claim 1 as anticipated by

Mueth and anticipated by Frontin-Rollet confirms that Petitioner met its initial burden of production. *See* Dec. Inst. 23–24, 27–29, 35. The burden of production then shifted to Patent Owner to come forward with evidence to demonstrate that Mueth and Frontin-Rollet each are not prior art. At oral argument, Patent Owner conceded this burden shift: “*we don’t dispute . . . that there was a burden of production that was shifted to us because Petitioner raised Mueth and Frontin-Rollet,*” and “we would need to establish that the ’395 patent is entitled to the earlier 2004 date.” Tr. 18:19–22, 19:7–8 (emphasis added); *see also* Tr. 19:17–26 (“I agree [] that the Petitioner has raised two references that have dates early enough in time that Patent Owner needs to be able to rely on the priority date . . . is what causes the burden of production to shift to the Patent Owner to show why it’s entitled to the earlier date.”). Nonetheless, Patent Owner maintains that it has met its burden to show entitlement of the ’395 Patent to an earlier effective filing date in the Preliminary Response and prior to our Decision on Institution. *See* Tr. 20:9–14; 23:3–13, 23:25–24:15.

In order to show entitlement to an earlier effective filing date in accordance with 35 U.S.C. § 120, including compliance with the written description requirement of § 112, the “prior application itself must describe [the] 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) (“[T]he applicant must also 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.”). “One shows . . .

possession[] of *the invention* by describing *the invention*, with all its claimed limitations” *Lockwood*, 107 F.3d at 1572.

In light of Patent Owner’s position that it met its burden of production in the Preliminary Response, we return to the positions advanced by the parties. As discussed briefly above, Petitioner asserted that the at least one channel limitation recited in claim 1 was not disclosed in the manner required by § 112(a) in any of the patent applications filed before March 16, 2013 (i.e., the ’969 Application and the ’957 Application). *See* Pet. 12–17. Patent Owner, in its Preliminary Response, argued that there was adequate written description support for the at least one channel limitation of claim 1. *See* Prelim. Resp. 8–13 (citing Ex. 1001, Fig. 1, 13:21–23; Ex. 1004, 11:66–12:4, 16:22–25). Patent Owner, however, does not address the remaining limitations of claim 1 and whether the prior applications disclose those remaining limitations in the manner required by § 112(a). *See* PO Resp. 3–6; Prelim. Resp. 7–13. Patent Owner, at oral argument, acknowledged that just one limitation of claim 1 was addressed in the Preliminary Response because it was the only limitation disputed by Petitioner. *See* Tr. 24:16–25:2.

Although Petitioner arguments addressing standing for post-grant review only disputed written description support for the at least one channel limitation of claim 1, we are not aware of any obligation on the part of Petitioner to address whether each and every limitation of claim 1 was disclosed in the manner required by § 112(a). In contrast, in order for Patent Owner to show entitlement to an earlier effective filing date, Patent Owner must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, possession of the invention now claimed by describing

the invention, *with all its claimed limitations*. See *Lockwood*, 107 F.3d at 1572; *VasCath*, 935 F.2d at 1563–64. Patent Owner’s arguments addressing only the at least one channel limitation of claim 1 (*see* PO Resp. 3–6; Prelim. Resp. 7–13) are insufficient to meet Patent Owner’s burden of coming forward with evidence or argument to show possession of the invention, *with all its claimed limitations*, as of the September 3, 2004 filing date.

For all of the foregoing reasons, Patent Owner has not shown sufficiently that the '395 Patent is entitled to an earlier effective filing date of September 3, 2004. Thus, Mueth and Frontin-Rollet remain prior art to the '395 Patent.

2. Anticipation by Mueth (Ex. 1008)

Mueth discloses a method and apparatus for characterizing and sorting bovine sperm by gender. Ex. 1008, 2:10–12.

Figure 2 of Mueth is reproduced below:

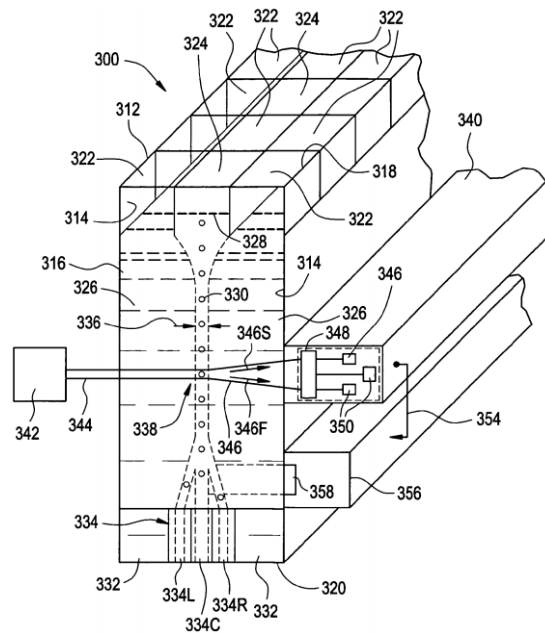


Figure 2 depicts flow cytometer 300 including flow chamber 312 formed by a pair of confronting walls 314 and end walls 316, open input 318, and open output 320. *Id.* at 3:28, 3:34–37. Input 318 is divided into outboard inputs 322 for receiving sheath fluid 326, and central sample input 324 for receiving 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.

Petitioner asserts 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. *See* Pet. 31–35 (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). Patent Owner does not dispute Petitioner’s assertion that Mueth discloses all of the limitations of claim 1. *See* PO Resp. 1–6.

We have considered anew Petitioner’s arguments based on the record before us. We are persuaded by a preponderance of the evidence that claim 1 is unpatentable under 35 U.S.C. § 102(a)(1) as anticipated by Mueth, and adopt Petitioner’s arguments, which are supported by record evidence, as our own findings of fact.

3. *Anticipation by 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:

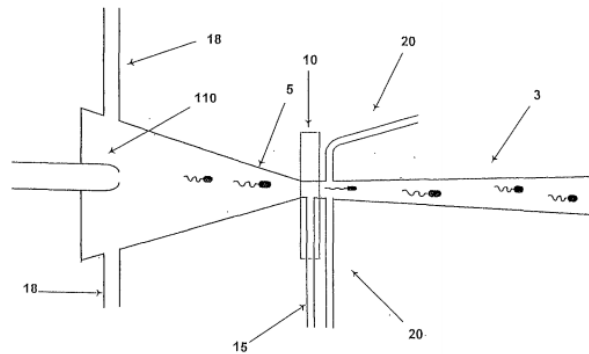


Figure 6 depicts a device including sample injection tube 110, sheath fluid entry points 18, detection zone 10, immobilizing laser 20, and pre-collection zone 3. Ex. 1007, 13–14. Sperm cells pass single file into testing zone 10 through a light source, and light emitted from the sperm cells is analyzed 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.

Petitioner asserts 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. See Pet. 45–50 (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). Patent Owner does not dispute Petitioner’s assertions that Frontin-Rollet discloses all of the limitations of claim 1. See PO Resp. 1–6.

We have considered anew Petitioner's arguments based on the record before us. We are persuaded by a preponderance of the evidence that claim 1 is unpatentable under 35 U.S.C. § 102(a)(1) as anticipated by Frontin-Rollet, and adopt Petitioner's arguments, which are supported by record evidence, as our own findings of fact.

III. CONCLUSION

Petitioner has shown by a preponderance of the evidence that claim 1 is unpatentable under 35 U.S.C. § 102(a)(1) as anticipated by Durack, anticipated by Mueth, and anticipated by Frontin-Rollet.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claim 1 of the '395 Patent has been shown to be unpatentable under 35 U.S.C. § 102(a)(1) as anticipated by Durack;

FURTHER ORDERED that claim 1 of the '395 Patent has been shown to be unpatentable under 35 U.S.C. § 102(a)(1) as anticipated by Mueth;

FURTHER ORDERED that claim 1 of the '395 Patent has been shown to be unpatentable under 35 U.S.C. § 102(a)(1) as anticipated by Frontin-Rollet; and

FURTHER ORDERED that because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

PGR2015-00017
Patent 8,933,395 B2

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