

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NANOCELLECT BIOMEDICAL, INC.,
Petitioner,

v.

CYTONOME/ST, LLC,
Patent Owner.

IPR2020-00550
Patent 9,011,797

Before JO-ANNE M. KOKOSKI, WESLEY B. DERRICK, and
JAMES A. WORTH, *Administrative Patent Judges*.

DERRICK, *Administrative Patent Judge*.

DECISION

Denying Institution of *Inter Partes* Review
35 U.S.C. § 314, 37 C.F.R. § 42.4

INTRODUCTION

Petitioner NanoCollect Biomedical, Inc., filed a Petition requesting *inter partes* review of claims 1, 2, 5, 13, 16, 18, and 19 of U.S. Patent No. 9,011,797 B2 (“the ’797 patent”). Paper 2 (“Pet.”). Patent Owner Cytonome/ST, LLC filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). As authorized, Petitioner also filed a Pre-Institution Reply (Paper 7, “Reply”) and Pre-Institution Supplemental Briefing (Paper 11), and Patent Owner, in turn, also filed a Pre-Institution Sur-Reply (Paper 8) and a Response to Petitioner’s Pre-Institution Supplemental Briefing (Paper 12).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314; 37 C.F.R. § 42.4(a). We may not institute an *inter partes* review “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Applying that standard, for the reasons set forth below, we decline to institute an *inter partes* review because Petitioner has not shown a reasonable likelihood that it would prevail in establishing the unpatentability of any of claims 1, 2, 5, 13, 16, 18, and 19.

BACKGROUND

A. Real Parties in Interest

Petitioner identifies itself as the real party-in-interest. Pet. 3. Patent Owner identifies itself and Inguran, LLC, as the real parties-in-interest. Paper 4, 1.

B. Related Matters

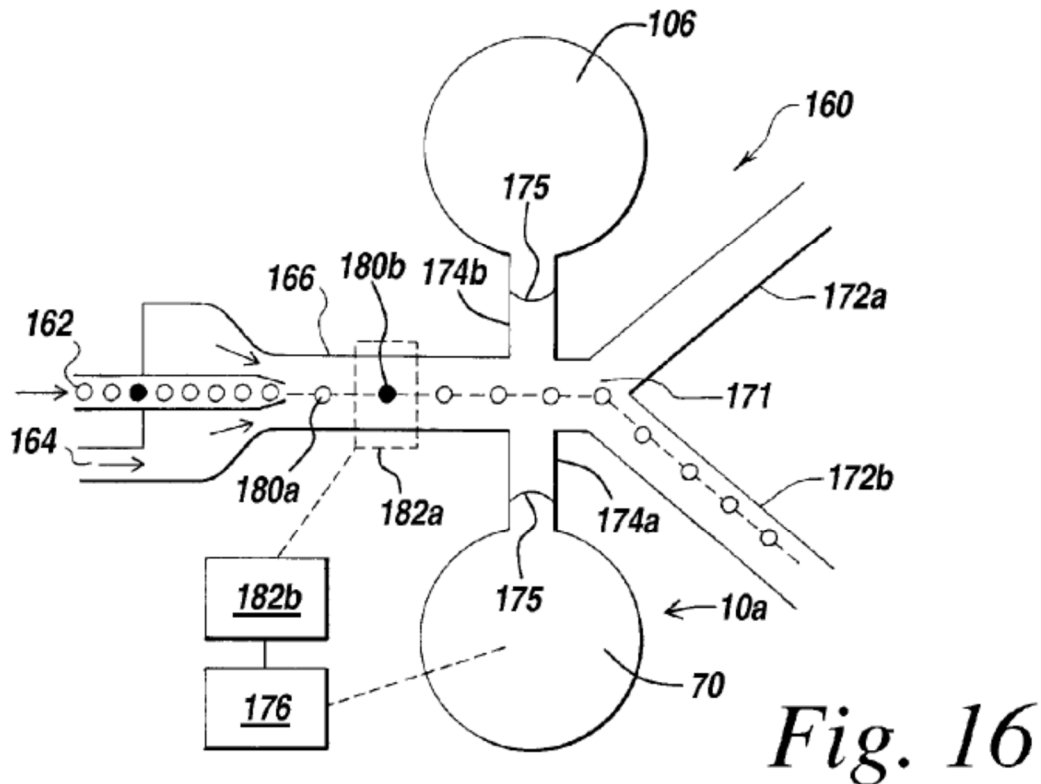
The parties identify *Cytonome/ST, LLC v. NanoCollect Biomedical, Inc.*, No. 1:19-cv-00301-UNA (D. Del.) as a related proceeding. Pet. 3; Paper 4, 1. The ’797 patent is one of a number of patents asserted in that

district court proceeding. Pet. 3; Paper 4, 1. Other patents asserted are also subject to filed *inter partes* review petitions, and are identified by Petitioner as related proceedings: IPR2020-00545 (US 6,877,528 B2); IPR2020-00546 (US 9,339,850 B2); IPR2020-00547 (US 10,029,283 B2); IPR2020-00548 (US 8,623,295 B2); IPR2020-00549 (US 10,029,263 B2); and IPR2020-00551 (US 10,065,188 B2). Pet. 3; Paper 4, 1.

C. The '797 Patent (Ex. 1001)

The '797 patent is titled “Microfluidic System Including a Bubble Valve for Regulating Fluid Flow Through a Microchannel,” and issued on April 21, 2015, from an application filed on June 19, 2012. Ex. 1001, at [22], [45], [54]. The '797 patent identifies related applications, including a provisional application—the earliest filed—that was filed on April 17, 2002. *Id.* at [60], [63], 1:5–19.

The '797 patent relates to “[a] microfluidic system [that] includes a bubble valve for regulating fluid flow through a microchannel.” *Id.* at [57]. Figure 16, reproduced below, depicts an apparatus that provides for regulating fluid flow in a manner that allows sorting particles. *Id.* at 5:40–42.



Id., Fig. 16 (depicting a schematic of a particle sorting system). As disclosed in the '797 patent, “particle sorter 160 . . . for sorting particles, such as cells. . . comprises a first supply duct 162 for introducing a stream of particles . . . a second supply duct 164 for supplying a carrier liquid . . . a measurement duct 166, which branches into a first 172a and a second branch 172b at branch point 171,” and “[t]wo opposed bubble valves 10a and 10b . . . in communication . . . with the measurement duct 166 through a pair of opposed side passages 174a and 174b, respectively.” *Id.* at 11:40–57, Fig. 16. In operation, and as depicted, “[l]iquid . . . partly fill[ing] these side passages 174a and 174b . . . form[s] a meniscus 175,” and a provided “external actuator 176” “actuat[es] the bubble valves 10a, 10b, . . . momentarily caus[ing] a flow disturbance in the duct to deflect the flow therein.” *Id.* at 11:57–61; *see also* Figs. 17A–17C (depicting operation of

particle sorter 160 to sort particles flowing from left to right in the figures into one or the other of first branch 172*a* and 172*b*). As to the operation of the apparatus, the '797 patent discloses that the external actuator increases pressure within one of the two opposed bubble valves causing a transient discharge of fluid from the associated side channel, which causes a sudden increase in pressure at this point in the duct, which increased pressure causes liquid to flow into the associated side channel of the second opposed bubble valves because of the resilient properties of the reservoir of the second bubble valve. *Id.* at 12:23–33.

D. Illustrative Claims

Independent claims 1 and 5 are illustrative of the claimed subject matter.

1. A method for facilitating analysis or processing of a sample, the method comprising:
flowing a sample through a microfluidic flow channel formed in a substrate;
propagating a pressure pulse across the microfluidic flow channel in a crosswise direction; and
dampening or absorbing the pressure pulse using a first reservoir in fluid communication with the microfluidic flow channel,
wherein the pressure pulse is used to sort one or more particles suspended within the channel.

Ex. 1001, 13:41–51.

5. A microfluidic device adapted to facilitate analysis or processing of a sample, the microfluidic device comprising:
a microfluidic flow channel formed in a substrate, the flow channel having a width and a length that exceeds the width;
and
a first reservoir in fluid communication with the flow channel adapted for dampening or absorbing a pressure pulse

propagated across the width of the flow channel, wherein the first reservoir is otherwise sealed from an exterior environment.

Ex. 1001, 14:1–10.

E. Prior Art Relied Upon

Petitioner relies on the references listed below (Pet. 14–17):

Reference	Date	Exhibit No.
WO 00/70080 (“Wada”)	Nov. 23, 2000	1006
WO 97/02357 (“Anderson”)	Jan. 23, 1997	1012
US 5,101,978 (“Marcus”)	Apr. 7, 1992	1005

The status of these references as prior art printed publications is not contested by Patent Owner. *See generally* Prelim. Resp.

F. The Asserted Grounds of Unpatentability

Petitioner challenges the patentability of the claims on the following grounds, relying on the Declaration from Bernhard H. Weigl, Ph.D. (Ex. 1002). Pet. 5, 19–76.

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 2, 5, 13, 16, 18, 19	103	Wada
1, 2, 5, 13, 16, 18, 19	103	Wada, Anderson
1, 2, 5, 13, 16, 18, 19	103	Marcus, Anderson

ANALYSIS

A. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art “would have had a bachelor’s or master’s degree in the field of bioengineering, mechanical engineering, chemical engineering, or analytical chemistry; or a bachelor’s or master’s degree in a related field and at least three years of

experience in designing or developing microfluidic systems.” Pet. 12 (citing Ex. 1002 ¶¶ 47–50).

Patent Owner reserves the right to dispute Petitioner’s proposed definition of the level of ordinary skill in the art, but applies Petitioner’s proposed definition “[s]olely for purposes of [the Patent Owner Preliminary Response].” Prelim. Resp. 25.

On this record, we have no reason to fault Petitioner’s definition of the level of ordinary skill and, therefore, adopt it for the purposes of this Decision. We further note that the prior art itself demonstrates the level of skill in the art at the time of the invention. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (explaining that “specific findings on the level of skill in the art . . . [are not required] ‘where the prior art itself reflects an appropriate level and a need for testimony is not shown’” (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985))).

B. Claim Construction

We apply the claim construction standard from *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). 37 C.F.R. § 42.100(b) (2019).

Claim terms are generally given their ordinary and customary meaning as would be understood by one with ordinary skill in the art in the context of the specification, the prosecution history, other claims, and even extrinsic evidence including expert and inventor testimony, dictionaries, and learned treatises, although extrinsic evidence is less significant than the intrinsic record. *Phillips*, 415 F.3d at 1312–1317. Usually, the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* at 1315.

Only those claim terms that are in controversy need to be construed and only to the extent necessary to resolve the controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *see also U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) (holding claim construction is not necessary when it is not “directed to, or has been shown reasonably to affect, the determination of obviousness”).

Petitioner contends that no “express claim constructions are required for the Board to conclude the asserted prior art renders the challenged claims unpatentable.” Pet. 10. Petitioner does, however, contend that Patent Owner has made relevant “admissions about the meanings of claim terms in the asserted patents.” *Id.* at 10–11. In particular, Petitioner maintains that Patent Owner’s declarant in the district court proceeding has maintained “that the term ‘reservoir’ as used in the challenged claims . . . should be understood as *a physical structure that contains fluid*” (*id.* at 11 (citing Ex. 1042, 20; Ex. 1043 ¶¶ 25–27, 31, 34, 44–48)), “that the term ‘absorbing’ as used in the challenged claims . . . means *to receive, take up, or take in the pressure pulse*” (*id.* (citing Ex. 1042, 13–14, 18–19; Ex. 1043 ¶¶ 50–52)), and “that the terms ‘dampen’ or ‘dampening’ . . . means *to meaningfully dissipate so as to prevent a pressure wave from affecting the flow of the remaining particles in the stream of particles*” (*id.* (citing Ex. 1043 ¶¶ 56–57; Ex. 1042, 13–14, 18–19)).

Patent Owner contends that the terms “pressure pulse” and “first reservoir” should be construed. Prelim. Resp. 25. Patent Owner contends that that “the plain and ordinary meaning [of ‘pressure pulse’] . . . is ‘a transient increase in pressure.’” *Id.* at 26. Patent Owner further contends that the express language of the claim, the specification, and prosecution

history supports its position that a “pressure pulse” is a transient increase in pressure. *Id.* at 26–29. Patent Owner contends that “the Board should confirm that the prior art must disclose the ‘functional’ language, . . . that [the first reservoir] must be [adapted] for ‘dampening or absorbing the pressure pulse’ . . . propagated across the flow channel.” *Id.* at 29.

Petitioner responds that a “pressure pulse” is a transient increase in pressure and that these claim terms do not “require that the flow stream (as opposed to the pressure pulse it generates) cross the entire channel and enter the buffer/reservoir.” Reply 3.

For the purposes of this Decision, based on the current record, we determine that the claim term “pressure pulse” is “a transient increase in pressure” because this is the plain and ordinary meaning of the term and is consistent with the use of this term in the ’797 patent. We further note that this construction is consistent with the district court’s determination that the claim term “pressure pulse” has its “plain and ordinary meaning.” Ex. 2012, 5–6.

We also determine, for the purposes of this Decision and based on the current record, that the claim term “reservoir” has its plain and ordinary meaning of “a physical structure that contains fluid.” We decline to reach any determination as to the nature or type of fluid, however, as it is not necessary to resolve the issues here. *Wellman*, 642 F.3d at 1361. This determination is consistent with the construction adopted by the district court. Ex. 2012, 4–5. As to the recited reservoir being “adapted for dampening or absorbing a pressure pulse” (claim 1), this and other limitations, are addressed to the limited extent necessary in reaching our Decision that Petitioner has not established a reasonable likelihood that it

would prevail in establishing the unpatentability of at least one challenged claim. *Wellman*, 642 F.3d at 1361.

C. Principles of Law

Petitioner has asserted that each of the challenged claims of the '797 patent is unpatentable as obvious under 35 U.S.C. § 103. A claim is unpatentable under § 103 if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) as “requiring *inter partes* review petitions to identify ‘with particularity . . . the evidence that supports the grounds for the challenge to each claim’”); *cf. Intelligent Bio-Systems, Inc. v. Illumina Cambridge, Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) (quoting 35 U.S.C. § 312(a)(3)) (addressing “the requirement that the initial petition identify ‘with particularity’ the ‘evidence that supports the grounds for the challenge to each claim’”). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d

1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review). Furthermore, Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

Thus, to prevail in an *inter partes* review, Petitioner must explain how the proposed combinations and/or alterations of the prior art would render them unpatentable as obvious. At this preliminary stage, we determine whether the information in the Petition shows there is a reasonable likelihood that Petitioner would prevail in establishing that at least one of the challenged claims would have been obvious over the proposed combinations and/or alterations of the prior art.

D. Overview of Prior Art

1. Wada (Ex. 1006)

Wada relates to microfluidic devices, and also describes “methods for providing substantially uniform flow velocity to flowing particles” and “[m]ethods of sorting members of particle populations, such as cells and various subcellular components.” Ex. 1006, at [57]. An example of a device described in Wada is depicted schematically in Figure 22, reproduced below:

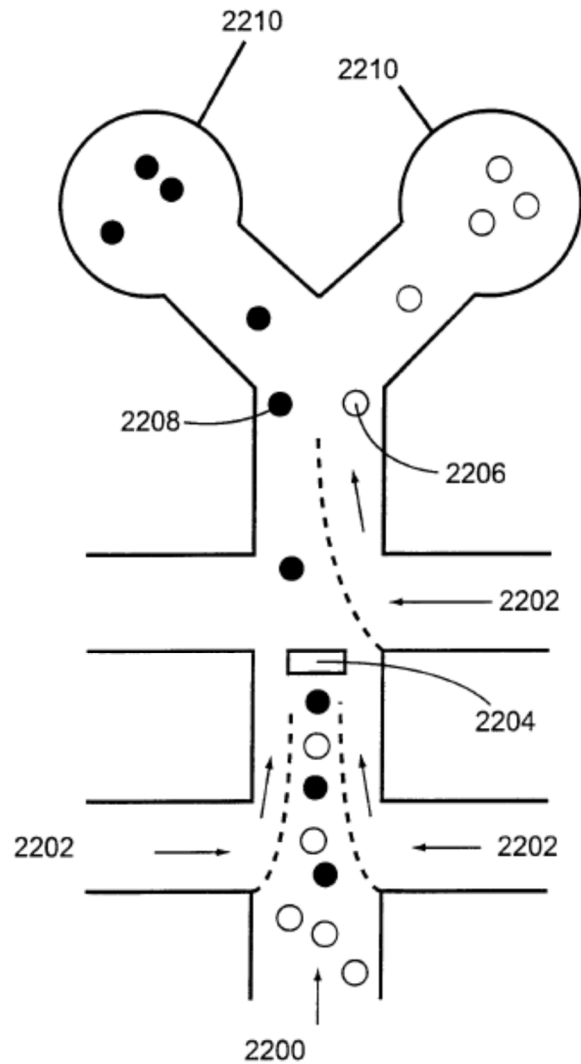


Fig. 22

SUBSTITUTE SHEET (RULE 26)

Id. at Fig. 22 (depicting a schematic representation of a particle sorting configuration). As disclosed in Wada, “cells 2200 are generally flowed into a main microchannel that includes . . . sets of opposing microchannels for focusing and/or otherwise directing the flow of cells 2200 using hydrodynamic flow 2202” and operation of the disclosed microchannels “direct[s] selected cells 2208 (e.g., fluorescently-labeled cells) and non-

selected cells 2206 into, in this case, one of two microchannels, each terminating in particular collection wells 2210.” *Id.* at 19:24–20:2, Fig. 22. Detector 2204 is used to identify cells so that they can be sorted as required. *Id.*

2. *Anderson (Ex. 1012)*

Anderson relates to “a miniaturized integrated nucleic acid diagnostic device and system (522),” which “device (522) . . . is generally capable of performing . . . sample acquisition and preparation operations in combination with . . . sample analysis operation.” Ex. 1012, at [57]. Anderson discloses the use of controllable microvalves and micropumps to direct fluid samples in a miniature fluidic system. *See, e.g.*, 2:30–34, 5:14–26, 9:24–27, 46:23–29, 63:1–13. Anderson sets forth that valves used “can employ a variety of structures, but [are] preferably . . . flexible diaphragm type valve[s] which may be displaced pneumatically, magnetically or electrically.” *Id.* at 53:6–10, *see also id.* at 38:23–27 (identifying different ways that a diaphragm valve may be deflected to actuate). Anderson also sets forth a number of different types of pumps, and alternatives to pumps, including providing pressure or motive force to the liquid sample external to the microfluidic device. *See, e.g., id.* at 46:23–29, 62:18–64:31. Among the pumps disclosed, Anderson sets forth that “pumps which hav[e] a bulging diaphragm” and those “powered by a piezoelectric” actuator “may be used to move the sample through the various operations of the device.” *Id.* at 62:18–63:13. Anderson further notes that such a “diaphragm pump will generally be fabricated from any one of a variety of flexible materials, e.g., silicon [sic], latex, teflon, mylar, and the like.” *Id.* at 45:8–12.

3. *Marcus (Ex. 1005)*

Marcus relates to “[a] fluidic sorting device for the separation of two or more visually different materials or materials which react differently to an externally applied force. . . . [that] are suspended in a fluid.” Ex. 1005, at [57]. The device includes a “machine vision apparatus” that decides whether a particle is to be sorted out, which “controls a fluidic logic element which facilitates the separation of the particles or materials.” *Id.* Such a device is depicted schematically in Figure 1, reproduced below:

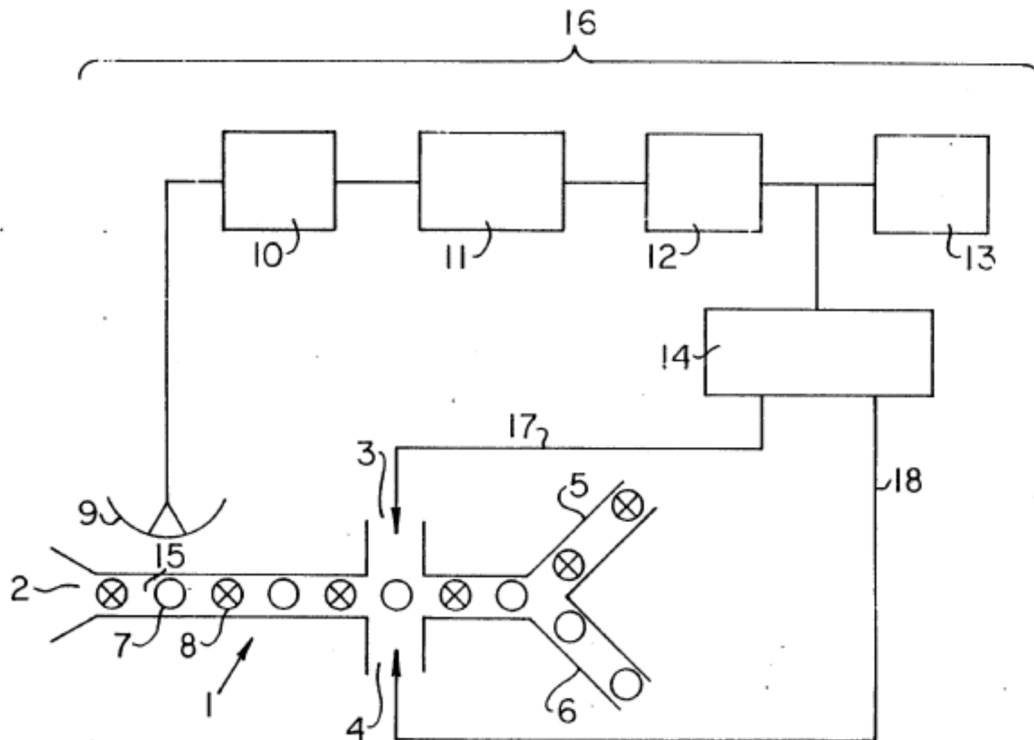


FIG. 1

Id. at Fig. 1 (depicting a schematic representation of a fluidic sorting device). The device is described as including: a machine vision apparatus 16, which includes a machine vision camera lens 9, an image capture device 10, an image interpretation device 11, and a decision control device 12, and

optionally a counter device 13; a fluidic controller device 14; and a fluidic logic element 1, which includes input flow port 2, control ports 3 and 4, and output ports 5 and 6. *Id.* at 3:29–48, Fig. 1. As described, the machine vision apparatus detects and arrives at a decision as to particulate matter 7 and 8, and relays that decision to fluidic controller device 14, which transmits signals via leads 17 and 18 to control ports 3 and 4 (of fluidic logic element 1) in order to sort particulate matter 7 and 8 into separate output ports 5 and 6 as required. *Id.* at 3:29–62.

E. Asserted Unpatentability Over Wada

Petitioner contends that claims 1, 2, 5, 13, 16, 18, and 19 are unpatentable under 35 U.S.C. § 103 over Wada. Pet. 5, 19–47. Patent Owner disagrees. Prelim. Resp. 40–61. We focus our discussion on the dispositive claim limitations of independent claims 1 and 5.

1. Petitioner’s Contentions

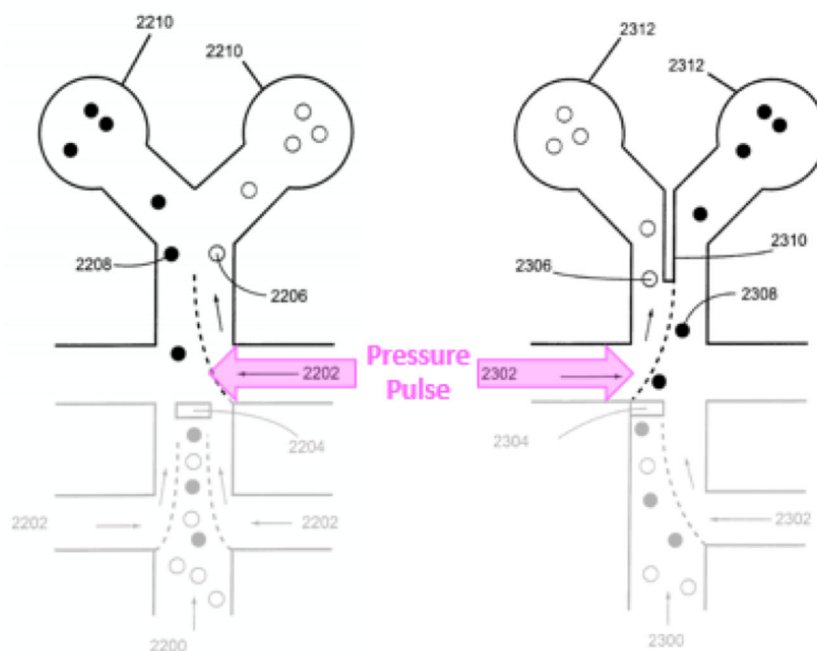
Petitioner first contends that “some of the embodiments [of Wada] . . . reasonably would have been viewed by a [person of ordinary skill in the art] as anticipating the claimed subject matter” and would, accordingly, render the claims obvious. Pet. 19 (citing Ex. 1002 ¶¶ 108–112; Ex. 1006, Figs. 22–23); *In re McDaniel*, 293 F.3d 1379, 1385 (Fed. Cir. 2002) (“anticipation is the epitome of obviousness”). Petitioner also contends that a person of ordinary skill in the art “would have arrived at the claimed subject matter with a reasonable expectation of success in view of Wada” and that “all aspects of the claimed subject matter are found in Wada.” Pet. 19 (citing Ex. 1002 ¶¶ 112, 123–151, 206).

Relying on Wada’s teaching of “the opposed sorting microchannel structures in Figures 22 and 23,” Petitioner contends that “Wada discloses and illustrates employing a reservoir opposite the sorting microchannel.” *Id.*

at 20 (citing Ex. 1002 ¶¶ 133–151; Ex. 1006, 8:6–23, 23:19–28, Figs. 22–23). Petitioner also relies on Dr. Weigl’s testimony that “it was conventional and well-known to use an opposing vent, chamber, passageway, or other compliance device to isolate the effects of the control flow characteristics.” *Id.* (citing Ex. 1002 ¶ 81, 137–138).

a) Independent Claim 1

Petitioner contends that Wada discloses the use of “fluid direction components to propagate a pressure pulse across the microfluidic flow channel in a crosswise direction.” Pet. 23–24 (citing Ex. 1006, 4:1–5, 18:5–9; Ex. 1002 ¶¶ 123–124). Petitioner uses an annotated version of Wada’s Figures 22 and 23, reproduced below, to depict its contentions:

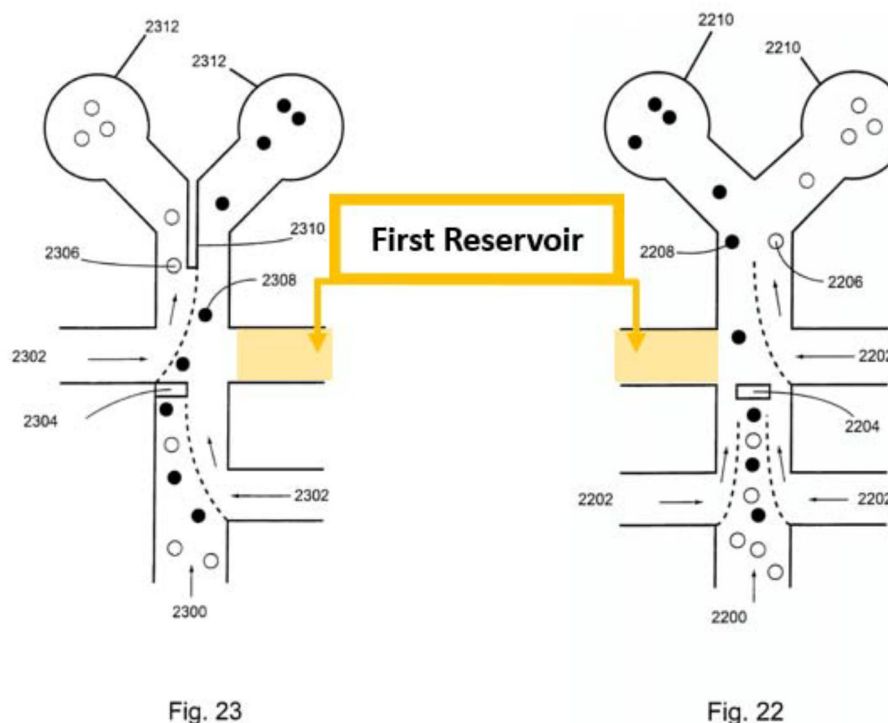


Id. at 24 (citing Ex. 1006, Figs. 22–24, Ex. 1002 ¶¶ 123–124) (depicting schematic representations of a particle sorting configuration with Petitioner’s additions of opposing colored arrows surrounding elements 2202 and 2302 separated by the phrase “Pressure Pulse”). Petitioner contends that Wada “explains[] [that] pressure-based flow can be provided

via a pressure pulse across the microfluidic flow channel in a crosswise direction,” and that this can “nudge materials across the width of a first channel,’ in order to ‘direct sample flow towards or away from’ a first flow channel, and ‘into, e.g., an additional intersecting channel or into a channel region.’” *Id.* at 24–25 (some internal quotations omitted) (citing Ex. 1006, 18:26–19:13; Ex. 1002 ¶¶ 123–124).

Petitioner contends “Wada also discloses using a first reservoir to dampen or absorb the pressure pulse” (*id.* at 27 (citing *id.* at 23–27; Ex. 1002 ¶¶ 133–142)) or, as recited in claim 1, “dampening or absorbing the pressure pulse using a first reservoir in fluid communication with the microfluidic flow channel.”

Petitioner reproduces Figures 22 and 23 of Wada, with annotation identifying what Petitioner contends is a “first reservoir.”



Pet. 27–28 (citing Ex. 1006, Figs. 22–23; Ex. 1002 ¶¶ 133–134) (depicting schematic representations of a particle sorting configuration of Figure 23 on

the left and Figure 22 on the right, with Petitioner’s annotations that highlight in yellow the areas it labels as “First Reservoir”). In each of the annotated figures, Petitioner has identified the “opposing microchannel structure disposed opposite of the actuated sorting microchannel” as a “reservoir,” where the actuated microchannel has within it an arrow, which Petitioner identifies as a “pressure pulse.” *Id.* (citing Ex. 1006, 19:23–20:14). Petitioner further contends that “Wada discloses that the opposed sorting microchannel structures may each comprise a reservoir or other cavity.” *Id.* at 28 (citing Ex. 1006, 20:23–25, 23:19–26; 37:29–32, 38:11–17; 39:19–33; Ex. 1002 ¶¶ 134–137). Petitioner further contends that “[e]ach of Figures 22 and 23 discloses a transient pressure pulse (*i.e.*, 2302 and 2202 . . .) flowing from an actuated sorting microchannel structure into the opposing sorting microchannel structure.” *Id.* at 29. Petitioner further contends that a person of ordinary skill in the art—in the context of Wada’s microfluidic devices and how Wada discloses they operate—“would have understood . . . [that the opposing] microchannel structure . . . includes a reservoir adapted for dampening or absorbing the transient pressure pulse propagated across the microfluidic channel.” *Id.* (citing Ex. 1002 ¶ 135). Dr. Weigl’s testimony is grounded on it being understood that the “opposed microchannel structure[s] . . . is configured to receive, dampen, and absorb the pressure pulse because the structure opening is aligned with the direction of the pressure pulse . . . so that fluid is allowed to flow into the opening and flow towards the reservoir.” Ex. 1002 ¶ 135.

Relying on Dr. Weigl’s testimony as support, Petitioner contends Wada’s microfluidic devices operate by allowing fluid “to flow into the opening [of non-actuated, opposed sorting microchannel structure] and flow towards the reservoir” (Pet. 30 (citing Ex. 1002 ¶¶ 135–139)), and “that the

pressure pulse is allowed to flow into the opening and be absorbed by the buffer (*id.* (Ex. 1002 ¶¶ 135, 138–139, 143)).

Petitioner also contends that Wada “suggests an embodiment of the microfluidic device of Figure 24 similarly comprising an opposed sorting microchannel structure” that, in addition to what is depicted, includes a “first reservoir” opposite branched particle sorting microchannel 2418. Pet. 29–30 (citing Ex. 1002 ¶ 140; Ex. 1006, 49:13–20, Fig. 24).

Petitioner also contends that “using a reservoir opposite to the source of the pressure pulse for absorbing said pressure pulse was well-known in the art.” *Id.* at 31 (citing Ex. 1002 ¶¶ 140–142).

b) Independent Claim 5

Petitioner contends that, as set forth for claim 1, “Wada discloses a first reservoir in fluid communication with the flow channel adapted for dampening or absorbing a pressure pulse propagated crosswise across the microfluidic flow channel.” Pet. 36 (citing *id.* at 23–31; Ex. 1002 ¶¶ 123–150). Petitioner again relies on Wada’s disclosure of “opposed sorting microchannel structures wherein one . . . comprises an actuator for propagating a pressure pulse” (*id.* at 36–37 (citing Ex. 1006, 20:23–25, 23:19–26, 37:29–32, 38:11–17, 39:19–33)), and that a person of ordinary skill in the art “would have understood [that] the non-actuated opposed sorting microchannel structure . . . contains a fluid and receives and absorbs the pressure pulse” (*id.* at 37 (citing Ex. 1002 ¶¶ 135, 186)). Petitioner also contends that Wada’s non-actuated opposed sorting microchannel structure would include a reservoir such that displaced fluid would flow through the opening and into that reservoir and, thus, dampen or absorb the pressure pulse. *Id.* (citing Ex. 1002 ¶¶ 169–172).

2. *Patent Owner's Contentions*

Patent Owner contends that Petitioner fails to show both that Wada discloses a “pressure pulse” (Prelim. Resp. 43–52) and a “reservoir” for “dampening or absorbing” the “pressure pulse” (*id.* at 52–58). Patent Owner further contends that modifying Wada to achieve the claimed invention would modify the operating principle of Wada’s device, and that Petitioner relies on impermissible hindsight. *Id.* at 58–61.

Patent Owner contends that Wada does not disclose a “pressure pulse” both because the “‘hydrodynamic flow’ that Petitioner identifies as the ‘pressure pulse’ fails to even *reach* any alleged ‘reservoir’” (*id.* at 43–44 (citing Ex. 2001 ¶¶ 117–119)), and because it “is a continuous flow of fluid that is increased/accelerated when a selected particle is detected, not a ‘pressure pulse’ that simply disrupts the flow in the channel without adding fluid” (*id.* at 44 (citing Ex. 2001 ¶¶ 73, 100, 119–123)). *See also id.* at 44–50.

Patent Owner contends that “there is no ‘reservoir’ for ‘dampening or absorbing’ th[e] pressure pulse as required in claims 1 and 5.” *Id.* at 52. Patent Owner highlights that Figure 24 of Wada, cited by Petitioner, “lacks *any* structure on the opposite side of the transport channel.” *Id.* at 52–53 (citing Pet. 27–31, 36–37; Ex. 1006, Fig. 24). Patent Owner further contends that there is no sufficient explanation provided by Petitioner for why Wada would be modified to include an opposing microchannel structure to the microchannels provided in Wada for dispensing fluid into the main microchannel. *Id.* at 53–56. As to Petitioner’s and Dr. Weigl’s reasoning grounded on “Wada’s opposed side channel as ‘non-actuated’ and ‘aligned’ with the actuated side channel,” such that “it therefore constitutes the claimed ‘reservoir’ or, alternatively, that a [person of ordinary skill in the

art] would simply know to attach a dampening or absorbing ‘reservoir,’” Patent Owner explains, with supporting testimony by Dr. Arnold, that “[n]o such teaching or suggestion is found in Wada.” *Id.* at 55–56 (citing Pet. 27–31, 37; Ex. 2001 ¶¶ 59, 97, 127–128).

Patent Owner contends that Petitioner fails to sufficiently establish that a person of ordinary skill in the art had reason to modify Wada, and that the modification necessary to achieve the claimed invention would be prohibited hindsight reconstruction. *Id.* at 58–61.

Patent Owner also addresses a number of “background references” cited in Dr. Weigl’s declaration—and in the citation to the portions of Dr. Weigl’s declaration—addressing both the contention that claimed “pressure pulse” was known in the art (*id.* at 51–52) and the contention that reservoirs adapted to dampen or absorb a pressure pulse were known in the art (*id.* at 57–58).

3. *Analysis*

On this record, Petitioner’s contentions that Wada discloses “dampening or absorbing the pressure pulse using a first reservoir in fluid communication with the microfluidic flow channel” (claim 1) or “a first reservoir in fluid communication with the flow channel adapted for dampening or absorbing a pressure pulse propagated across the width of the flow channel” (claim 5) amount to little more than assertions, and we find them lacking in support. Wada’s Figure 22 is illustrative, and depicts top and bottom pairs of opposing microchannels that introduce hydrodynamic flow into the main microchannel through which particles to be sorted pass. *See, e.g.*, Ex. 1006, 19:27–20:2. Specifically, Wada states that “[o]ne set of opposing microchannels is typically located, e.g., upstream from detector 2204 for simultaneously introducing hydrodynamic flow 2202 from both

microchannels to focus cells 2200.” *Id.* at 19:27–29. Wada also states that “[a] second set of opposing microchannels is typically located downstream from detector 2204 for introducing at least one hydrodynamic flow 2202 so as to direct selected cells 2208 . . . and non-selected cells 2206 into, in this case, one of two microchannels, each terminating in particular collection wells 2210.” *Id.* at 19:29–20:2. Thus, both microchannels are for providing such hydrodynamic flow into the main microchannel, as depicted in each of Figures 22 and 23.

Wada does not indicate that any of the side microchannels is a reservoir that absorbs or dampens a pressure pulse. The required function of the side microchannels is wholly different, and there is no showing that what is required to absorb or dampen a pressure pulse is included in the disclosed structure for introducing hydrodynamic flow into the central microchannel that cells to be sorted pass through. *See generally* Pet. Petitioner and Dr. Weigl rely on Wada describing that the “fluid direction components ‘nudge’ materials across the width of the first channel,” however, that is insufficient to support Petitioner’s contention that “the opposed microchannel structure in each of Figures 22 and 23 . . . includes a reservoir adapted for dampening or absorbing the transient pressure pulse.” Pet. 24–25, 27–29; Ex. 1002 ¶¶ 123–124, 135 (“One of ordinary skill in the art would have understood that the non-actuated opposed microchannel structure . . . is configured to receive, dampen, and absorb the pressure pulse because the structure opening is aligned with the direction of the pressure pulse (substantially perpendicular to the main microchannel).”). On the record before us, we do not see sufficient basis to conclude that Wada includes a reservoir adapted for dampening or absorbing a pressure pulse such as is recited in the claims. As to Dr. Weigl’s testimony to the contrary,

we find it conclusory, largely unsupported as applied to Wada, and entitled to little weight. Dr. Weigl contends that the orientation of opposing microchannels across from one another indicates that one, or both, of them function as a reservoir that is adapted to dampening or absorbing a pressure pulse, and then points to structures in other references that are not shown to be similar or to have the same function as support for his contentions. *See* Ex. 1002 ¶¶ 133–139. This position is not adequately supported, though, particularly where there is insufficient explanation as to why what Dr. Weigl contends is disclosed in the further “background references” is what is also present in Wada’s disclosed structure, and what would follow based on its function. *See generally* Pet.; Ex. 1002. For example, while Dr. Weigl contends that the use of microchannel structure geometry with a channel, chamber, or reservoir structure across the source of the transient pressure pulse for dampening or absorbing the transient pressure pulse was well known, and that it was understood that they can be used to mitigate undesirable flow fluctuations (*see, e.g.*, Ex. 1002 ¶¶ 126–139), it simply does not follow that a pair of oppositely-oriented microchannels as disclosed in Wada have similar structure or that they function in like manner. Petitioner fails to set forth clearly how the structures are sufficiently similar at a level of detail sufficient to establish like function. *See generally* Pet.

As discussed above, as to the “first reservoir . . . adapted for dampening or absorbing a pressure pulse propagated across the width of the flow channel” (claim 5) or “dampening or absorbing the pressure pulse using a first reservoir” (claim 1), what Wada discloses falls short, and Petitioner provides no reasonable basis for modifying what is, in fact, disclosed in Wada to arrive at the claimed invention. *See generally* Pet. Instead, Petitioner merely sets forth what one of ordinary skill in the art could have

done. This is not sufficient to reasonably support a ground of obviousness. *See Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (“[O]bviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.”). Further, “[c]are must be taken to avoid hindsight reconstruction by using ‘the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit.’” *Grain Processing Corp. v. American Maize-Prods. Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988) (quoting *Orthopedic Equip. Co. v. United States*, 702 F.2d 1005, 1012 (Fed. Cir. 1983)). Here, absent a sufficient explanation for why the relied on opposing microchannels actually function to dampen or absorb a pressure pulse, or would be adapted to do so, there is an insufficient showing that the ground set forth by Petitioner is not grounded on hindsight reconstruction. *See Grain Processing*, 840 F.2d at 907.

Petitioner fails, accordingly, to meet its burden for instituting *inter partes* review on the basis of Wada. *See Harmonic Inc.*, 815 F.3d at 1363.

F. Asserted Unpatentability Over Wada and Anderson

Petitioner contends that claims 1, 2, 5, 13, 16, 18, and 19 are unpatentable under 35 U.S.C. § 103 over Wada and Anderson. Pet. 5, 48–53. Petitioner contends that “Anderson provides additional disclosures regarding specific actuators, including the use of a reservoir or chamber suitable for generating or absorbing a pressure pulse.” *Id.* at 48. Patent Owner contends that Petitioner fails to establish that Anderson discloses the limitations missing from Wada, and why the two references would be combined. Prelim. Resp. 61–65. We focus our discussion on the dispositive claim limitations of independent claims 1 and 5.

1. Petitioner's Contentions

Petitioner contends that Wada would have directed a person of ordinary skill in the art “to Anderson to provide additional details on actuators useful to provide fluid flow in Wada’s ducts.” Pet. 48 (citing Ex. 1006, 43:13–14; Ex. 1002 ¶¶ 208–211). In particular, Petitioner relies on Wada “stat[ing]: Examples of microfabricated pumps have been widely described in the art. See, e.g., published international Application No. WO 97/02357 [Anderson].” *Id.* at 49 (citing Ex. 1012, 43:13–14).

On this basis, Petitioner contends that a person of ordinary skill in the art “would have been motivated to look to the combined teachings of Wada and Anderson with a reasonable expectation of success because she would have recognized that Anderson’s microfabricated pumps were useful . . . for actuating Wada’s fluid direction components for sorting the particles and were capable of generating pressure-based fluid flow in ducts.” *Id.* at 49–50 (citing Ex. 1002 ¶¶ 208–211).

Petitioner contends that “[i]n view of the teachings of Wada and Anderson, a [person of ordinary skill in the art] would have had good reason and a reasonable expectation of success to use the specific diaphragm pump, as taught by Anderson, in the method and microfluidic device of independent claims 1 and 5, as disclosed by Wada.” *Id.* at 51–52 (citing Ex. 1002 ¶¶ 208–211). Petitioner contends in particular that a person of ordinary skill in the art “would have had good reason to look to Anderson for further discussion regarding actuators for generating pressure pulses,” and that “specific embodiments utiliz[e] . . . features that further demonstrates the obviousness of independent claims 1 and 5.” *Id.* at 51 (citing Ex. 1002 ¶¶ 208–211). Petitioner contends that Anderson teaches “[p]umping devices that are particularly useful in a variety of

micromachined pumps,’ including those with ‘*a bulging diaphragm,*’” and provides an example that “incorporate[s] *a diaphragm pump as one surface of the chamber,*” while “noting that this ‘diaphragm pump will generally be fabricated from any one of a variety of flexible materials . . .’” *Id.* at 51 (citing Ex. 1012, 38:17–27, 45:3–12, 63:1–13).

2. Patent Owner’s Contentions

Patent Owner contends that the combination with Anderson fails to remedy the deficiencies of Wada as to both the claimed “pressure pulse” and “first reservoir” that dampens or absorbs it. Prelim. Resp. 61–62 (citing Ex. 2001 ¶¶ 79–86, 144–146, 162). Patent Owner also contends that attaching Anderson’s non-pulsating pumps to Wada’s side channels would be improper hindsight reconstruction of the claims. *Id.* at 62. Patent Owner also contends Petitioner fails to show that a person of ordinary skill in the art had reason to combine Wada and Anderson (*id.* at 62–65). Patent Owner’s arguments focus on its contention that the pumping function establishes a continuous flow through the transport channel, and that there would be no reason to look to references such as Anderson given Wada’s extensive disclosure on sorting. *Id.* at 63–64.

3. Analysis

On this record, Petitioner fails to sufficiently establish that it would have been obvious to modify Wada with the teachings of Anderson as would be required to meet the claims. As set forth above in its ground relying solely on Wada, Petitioner fails to sufficiently establish that Wada discloses or renders obvious a “first reservoir . . . adapted for dampening or absorbing a pressure pulse propagated across the flow channel” (claim 5), or “dampening or absorbing the pressure pulse using a first reservoir” (claim 1). Petitioner’s proposed combination with Anderson does not

remedy these deficiencies, in large part, because the actuators and micropumps in Anderson are not shown to be limited to those that would dampen or absorb a pressure pulse. *See generally* Pet.; Ex. 1012. Petitioner does identify actuators and pumps that include a diaphragm in Anderson, and that such diaphragm pumps include a flexible material as a diaphragm. Pet. 51. What is lacking, however, is a sufficient reason for a person of skill in the art to pick a diaphragm pump instead of any of the other micropumps disclosed in Anderson, and then include it in the device of Wada. *See, e.g.*, Ex. 1012, 2:30–34, 5:14–26, 9:24–27, 46:23–29, 63:1–13. Further, while Petitioner relies on the inclusion of a flexible element as meeting the limitation, it is not clear that even a micropump including a flexible diaphragm is adapted to dampen or absorb a pressure pulse simply because it includes a flexible element, as Anderson discloses that the deflectable diaphragm flexible elements can be deflected by a variety of methods, not all of which would appear to allow for deflection by a pressure pulse. *See, e.g., id.* at 38:23–27.

In sum, as above, Petitioner sets forth merely what the skilled artisan could have made, and not a sufficient basis for what they would have been motivated to make. *See Belden Inc.*, 805 F.3d at 1073. Also as above, there is an insufficient showing that the ground set forth by Petitioner is not grounded on hindsight reconstruction. *See Grain Processing*, 840 F.2d at 907.

Petitioner fails, accordingly, to meet its burden for instituting *inter partes* review on the basis of Wada and Anderson. *Harmonic Inc.*, 815 F.3d at 1363.

G. Asserted Unpatentability Over Marcus and Anderson

Petitioner contends that claims 1, 2, 5, 13, 16, 18, and 19 are unpatentable under 35 U.S.C. § 103 over Marcus and Anderson. Pet. 5, 53–76. Petitioner relies on Marcus’s description of a fluidic sorting device that combines conventional sensors, fluidic sorting devices, and fluidic logic elements produced using conventional micromachining technology, and on Anderson’s disclosure of conventional fluidic sorting components for use in microfluidic systems. *Id.* at 53–54. Patent Owner contends that Petitioner fails to establish that Marcus and Anderson disclose the recited “pressure pulse” and “first reservoir” that dampens or absorbs the “pressure pulse,” and that a person of ordinary skill in the art would have had reason to combine Marcus and Anderson to achieve the claimed invention. Prelim. Resp. 65–72. We again focus our discussion on the dispositive claim limitations of independent claims 1 and 5.

1. Petitioner’s Contentions

Petitioner contends that Marcus and Anderson disclose or suggest all limitations of claims 1, 2, 5, 13, 16, 18, and 19.

a) Claim 1

Petitioner relies on Marcus’s disclosure of a device that “deflect[s] a particle in [a] stream of particles to facilitate sorting” as depicted in Figure 1. Pet. 57–58. Petitioner contends that Marcus discloses “detection of a selected particle . . . [that] triggers the fluidic controller device 14 to signal fluidic control port (4) to redirect the selected particle . . . into a selected outlet channel (5)” and also the “detection of a non-selected particle . . . [that] triggers the fluidic controller device 14 to signal fluidic element control port (3) to direct the non-selected particles into the outlet for the non-

selected particles.” *Id.* (citing Ex. 1005, at [57], 2:49–66, 3:43–62, 5:13–6:2, Fig. 1; Ex. 1002 ¶¶ 227–230). Figure 1 of Marcus is reproduced below.

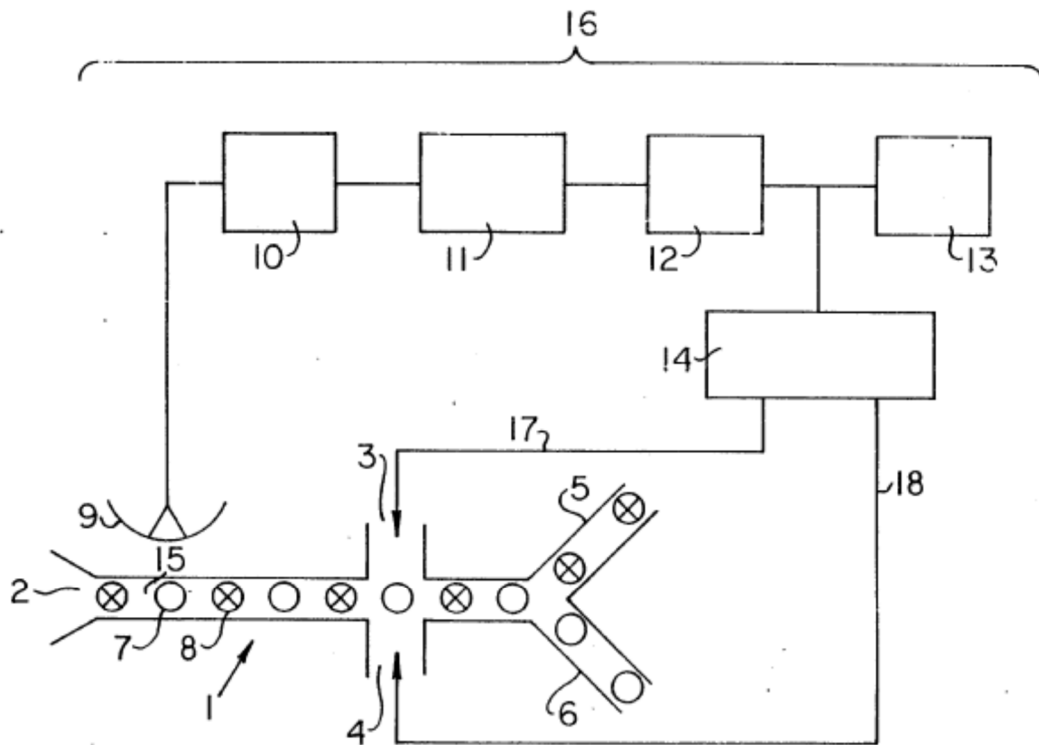


FIG. 1

Ex. 1005, Fig. 1 (depicting a schematic representation of a fluidic sorting device).

Petitioner contends that “Marcus teaches implementing its invention using conventional fluidic sorting components” and, relying on testimony from Dr. Weigl, that “it would have been conventional to implement Marcus’s invention using actuators that propagate a pressure pulse across the flow channel.” Pet. 58 (citing Ex. 1005, 2:7–10, 3:8–12; Ex. 1002 ¶¶ 232–234). Petitioner then relies on “Anderson disclos[ing] conventional actuator and pumps . . . [for] microfluidic devices during the relevant time” (*id.* at 59–60 (citing Ex. 1006, 43:14; Ex. 1012, 2:29–34, 28:1–29, 34:5–21, 37:13–

28)), identifies some specific examples that include chambers and diaphragms that are deflected to displace fluid (*id.* at 60 (citing Ex. 1012, 44:28–46:44)), and contends that a person of ordinary skill in the art “would have recognized these conventional actuators were suitable for implementing Marcus’s microsorter teachings” (*id.* (citing Ex. 1002 ¶¶ 228–229)).

Petitioner further relies on “Marcus disclos[ing] dampening or absorbing the pressure pulse using a first reservoir in fluid communication with the microfluidic flow channel,” with “Figure 1 depict[ing] a reservoir in the form of an opposing microchannel structure disposed opposite the actuated sorting microchannel structure (through which the actuator selectively applies a pressure pulse represented by the arrow associated with fluidic control port 4).” *Id.* at 60–61 (citing Ex. 1005, 3:28–62, Fig. 1; Ex. 1002 ¶¶ 237–239).

Petitioner asserts that a person of ordinary skill in the art “would recognize Marcus and Anderson as teaching a pressure pulse propagated from one of the opposed sorting microchannel structures . . . and toward the non-actuated, opposed sorting microchannel structure.” *Id.* at 61–62 (citing Ex. 1005, 3:28–62, Fig. 1; Ex. 1012, 5:11–31, 20:6–24, 28:3–29, 38:1–39:4, 46:25–51:30, 62:18–67:6; Ex. 1002 ¶ 240). Petitioner further asserts that “this symmetrical geometry, wherein opposing ends of a cross channel are adapted to individually actuate and individually dampen or absorb the resulting transient pressure pulse, was well-reported and well known in the art as allowing for more precise flow manipulations during particle sorting” (*id.* at 62–63 (citing Ex. 1002 ¶¶ 241–242)), and, on this basis, that a person of ordinary skill in the art “would thus recognize the disclosures of Marcus and Anderson as teaching dampening or absorbing the pressure pulse using a

first reservoir in fluid communication with the microfluidic flow channel” (*id.* at 63 (citing Ex. 1002 ¶¶ 237–243)).

b) Claim 5

Petitioner contends that, as set forth for claim 1, “Marcus and Anderson teach a first reservoir in fluid communication with the flow channel adapted for dampening or absorbing a pressure pulse propagated crosswise across the microfluidic flow channel.” Pet. 67 (citing *id.* at 55–64; Ex. 1002 ¶¶ 256–257; Ex. 1005, Fig. 1; Ex. 1012, 5:11–31, 20:6–24, 28:3–29, 38:1–39:4, 46:25–51:30, 62:18–67:6).

2. Patent Owner’s Contentions

Patent Owner highlights that Marcus “provides no specifics on its ‘sorting apparatus’” (Prelim. Resp. 66), and that the argument “that one of the two opposed control ports must dampen or absorb the pressure pulse simply because a control port is ‘disposed opposite the actuated’ port” is deficient (*id.* at 68–69 (citing Pet. 60; Ex. 2001 ¶ 167)). In particular, Patent Owner contends that “Marcus . . . certainly never describes employing a [cross-channel] ‘pressure pulse’ for sorting” (*id.* at 66 (citing Ex. 2001 ¶¶ 152–159)), and that there is no basis for control ports 3 or 4 in Marcus being adapted to dampen or absorb a pressure pulse (*id.* at 68–69). Patent Owner highlights that Marcus depicts both control port 3 and 4 as indicating supplied flow and argues that “the mere fact that control ports are opposite one another does not mean one of them ‘dampen[s] or absorb[s]’ fluid or pressure.” *Id.* (citing *id.* at 52–58; Ex. 2001 ¶ 167). Patent Owner further contends that Anderson does not address or remedy these deficiencies in Marcus (*id.* at 66–67, 69) and that Petitioner is “again endow[ing] structures with the claimed functions based on hindsight” (*id.* at 69). Patent Owner further contends that Petitioner’s rationale to combine Marcus and Anderson

falls short because “there was no reason to combine components from the prior art and arrange them as claimed.” *Id.* at 70. Patent Owner highlights that Petitioner argues that person of ordinary skill in the art “would have recognized the utility of using known actuators . . . to generate a pressure pulse to sort individual particles” (*id.* at 71 (citing Pet. 53)), but that “Petitioner does not specify *why* a [person of ordinary skill in the art] would incorporate such components into Marcus” (*id.* at 72).

3. *Analysis*

On this record, Petitioner fails to sufficiently establish that it would have been obvious to modify Marcus with the teachings of Anderson as would be required to meet the claims. As highlighted by Patent Owner, there is insufficient basis set forth by Petitioner for Marcus to reasonably constitute disclosure of a “first reservoir . . . adapted for dampening or absorbing a pressure pulse propagated across the flow channel” (claim 5), or “dampening or absorbing the pressure pulse using a first reservoir” (claim 1). Rather, as Patent Owner contends, control ports 3 and 4 in Marcus are only identified as ports to provide flow into the flow channel, and Petitioner’s argument that one of the two opposed control ports must dampen or absorb pressure pulse simply because it is disposed opposite the actuated port is deficient. Prelim. Resp. 68–69 (citing Pet. 60; Ex. 2001 ¶ 167)).

To the extent that Petitioner relies on the testimony of Dr. Weigl (*see* Pet. 61–63 (citing Ex. 1002 ¶¶ 240–242), 67 (citing Ex. 1002 ¶¶ 256–257)), we find it conclusory, largely unsupported as applied to Marcus, and entitled to little weight. Dr. Weigl contends, for example, that the orientation of opposing microchannels across from one another indicates that one, or both, of them function as a reservoir that is adapted to dampening or absorbing a

pressure pulse, and then points to differing structure in other references. Ex. 1002 ¶¶ 240–242. This is not adequate support for his contentions, particularly where there is insufficient explanation provided as to why what Dr. Weigl contends is disclosed in the further “background references” is what is also present in Marcus’ disclosed structure, and how it functions. *See generally* Pet.; Ex. 1002.

Anderson does not remedy the deficiency in Marcus, because Petitioner does not adequately explain why a person of ordinary skill in the art would have used the actuators and micropumps described in Anderson that would dampen or absorb a pressure pulse for control ports 3 and/or 4, instead of any of the other micropumps disclosed in Anderson that reasonably would not dampen or absorb a pressure pulse. Critically, even though Petitioner does identify actuators and pumps that include a diaphragm in Anderson, and that such diaphragm pumps include a flexible material as a diaphragm (Pet. 54, 59–60), Petitioner does not provide a sufficient reason as to why a person of skill in the art would have picked such a actuator or pump rather than any of the other micropumps disclosed in Anderson that is apparent from Anderson itself (*see, e.g.*, Ex. 1012, 2:30–34, 5:14–26, 9:24–27, 46:23–29, 63:1–13). Even if Anderson’s disclosure of a micropump with a flexible diaphragm was sufficient to motivate a person of ordinary skill on the art to include a micropump with a diaphragm in Marcus’s device as Petitioner proposes, even that would not be enough because it does not follow that it would be adapted to dampen or absorb a pressure pulse, as Anderson discloses that the deflectable diaphragm flexible elements can be deflected by a variety of methods. *See, e.g., id.* at 38:23–27.

In sum, as above, Petitioner sets forth merely what the skilled artisan could have made, and not a sufficient basis for what they would have been

motivated to make. *See Belden Inc.*, 805 F.3d at 1073. Also as above, there is an insufficient showing that the ground set forth by Petitioner is not grounded on hindsight reconstruction. *See Grain Processing*, 840 F.2d at 907.

Petitioner fails, accordingly, to meet its burden for instituting *inter partes* review on the basis of Marcus and Anderson. *Harmonic Inc.*, 815 F.3d at 1363.

CONCLUSION

Based on the arguments and evidence of record, we determine that Petitioner has not established a reasonable likelihood of prevailing on any of its assertions that claims 1, 2, 5, 13, 16, 18, and 19 of the '797 patent are unpatentable. Because of this, we need not reach the other issues raised by the parties, including the exercise of discretion under 35 U.S.C. § 314(a).

ORDER

For the reasons given, it is:

ORDERED that the Petition is denied as to all challenged claims of the '797 patent and no trial is instituted.

IPR2020-00550
Patent 9,011,797

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