

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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NANOCELLECT BIOMEDICAL, INC.,  
Petitioner,

v.

CYTONOME/ST, LLC,  
Patent Owner.

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IPR2020-00548  
Patent 8,623,295

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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 1–3, 9, 17, and 18 of U.S. Patent No. 8,623,295 B2 (“the ’295 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 1–3, 9, 17, and 18.

## 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 ’295 patent is one of a number of patents asserted in that

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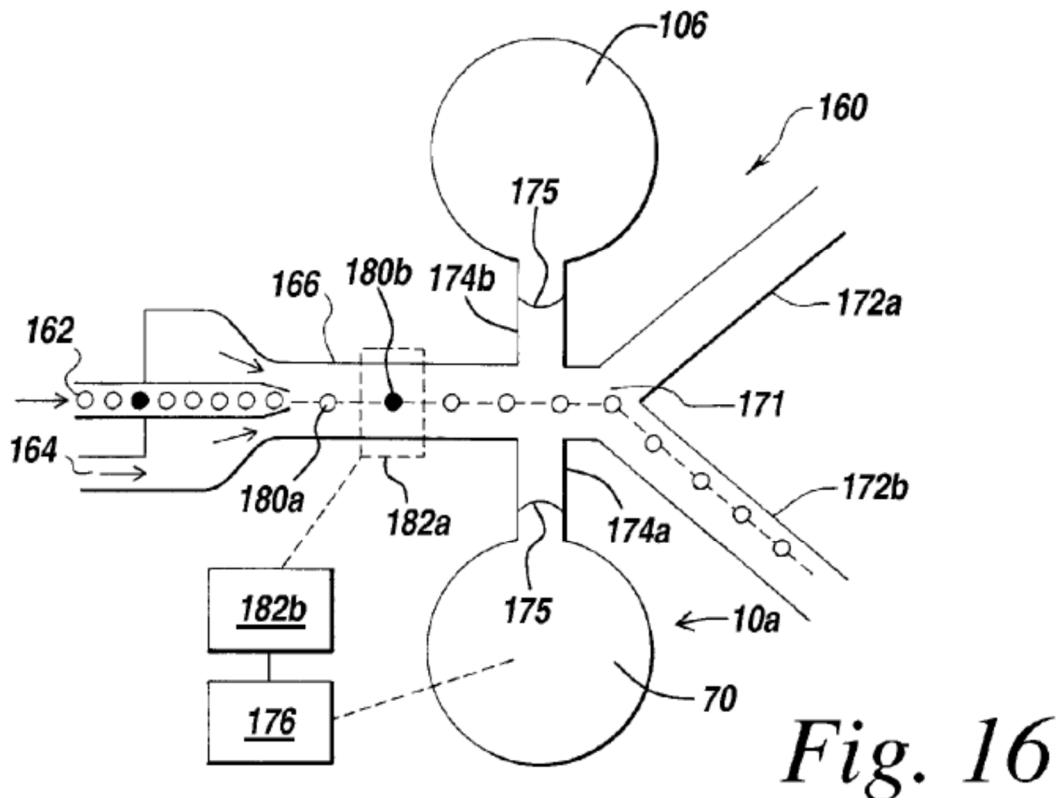
district court proceeding. Pet. 3; Paper 4, 1. Other patents asserted are also subject to filed *inter partes* review petitions, and are identified by Petitioner as related proceedings: IPR2020-00545 (US 6,877,528 B2); IPR2020-00546 (US 9,339,850 B2); IPR2020-00547 (US 10,029,283 B2); IPR2020-00549 (US 10,029,263 B2); IPR2020-00550 (US 9,011,797 B2); and IPR2020-00551 (US 10,065,188 B2). Pet. 3; Paper 4, 1.

*C. The '295 Patent (Ex. 1001)*

The '295 patent is titled “Microfluidic System Including a Bubble Valve for Regulating Fluid Flow Through a Microchannel,” and issued on January 7, 2014, from an application filed on September 26, 2011.

Ex. 1001, at [22], [45], [54]. The '295 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 '295 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.



*Fig. 16*

*Id.*, Fig. 16 (depicting a schematic of a particle sorting system). As disclosed in the '295 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 branch 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 '295 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 Claim*

Claim 1—the sole independent claim—is illustrative of the claimed subject matter.

1. A microfluidic system comprising:

a microfluidic flow channel formed in a substrate and adapted to facilitate analysis or processing of a sample having one or more particles suspended in a suspension medium flowing through the flow channel;

a first reservoir operatively associated with the flow channel and adapted for dampening or absorbing a pressure pulse propagated across the flow channel; and

a second reservoir operatively associated with the flow channel and adapted for generating the pressure pulse based on a change in volume or pressure in the second reservoir;

wherein the flow channel defines a first aperture for connecting the flow channel relative to the first reservoir and a second aperture for connecting the flow channel relative to the second reservoir, wherein the first aperture is substantially opposite the second aperture.

Ex. 1001, 13:42–14:3.

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