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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IPR2020-00547
Patent 10,029,283 B2

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Before LYNNE H. BROWNE, JO-ANNE M. KOKOSKI, and
JAMES A. WORTH, *Administrative Patent Judges.*

BROWNE, *Administrative Patent Judge*.

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

I.   INTRODUCTION

A.   Background and Summary

On February 12, 2020, Nanocellect Biomedical, Inc. ("Petitioner") filed a Petition requesting *inter partes* review of claims 1, 2, 4–6, 9, and 11 of U.S. Patent No. 10,029,283 B2 (Ex. 1001, "the '283 patent"). Paper 2 ("Pet."). On June 1, 2020, Cytonome/ST, LLC ("Patent Owner") filed a

Preliminary Response. Paper 8 ("Prelim. Resp."). With authorization, on June 19, 2020, Petitioner filed a Preliminary Reply (Paper 9, "Prelim. Reply") and on June 26, 2020, Patent Owner filed a Preliminary Sur-Reply (Paper 10, "Prelim. Sur-Reply"). Also with authorization, on July 17, 2020, Petitioner filed Preliminary Supplement Briefing (Paper 14, "Prelim. Supp. Br.") and on July 22, 2020, Patent Owner filed a Response to Petitioner's Preliminary Supplemental Briefing (Paper 15, "Prelim. Resp. Supp. Br.").

Having considered the arguments and evidence of record, for the reasons explained below, we deny institution *inter partes* review.

B. Real Parties in Interest

Petitioner indicates that it is the real-party-in-interest. Pet. 2. Patent Owner indicates that it and Inguran, LLC are the real-parties-in-interest. Paper. 4, 2.

C. Related Matters

The parties identify the following matters related to the '283 patent:

Cytonome/ST, LLC v. NanoCellect Biomedical, Inc., No. 1:19-cv-00301-UNA (D. Del.) (the "parallel proceeding);

Inter partes review of US 6,877,528 B2 (IPR2020-00545);

Inter partes review of US 8,623,295 B2 (IPR2020-00548);

Inter partes review of US 9,011,797 B2 (IPR2020-00550);

Inter partes review of US 9,339,850 B2 (IPR2020-00546);

Inter partes review of US 10,029,263 B2 (IPR2020-00549); and

Inter partes review of US 10,065,188 B2 (IPR2020-00551).

Pet. 3, Paper 4, 1–2.

D. The '283 Patent

The '283 patent relates to "a method and apparatus for the sorting of particles in a suspension, where the input flow path of a sorting module can

be split into several output channels." Ex. 1001, 1:25–28. Figure 1,
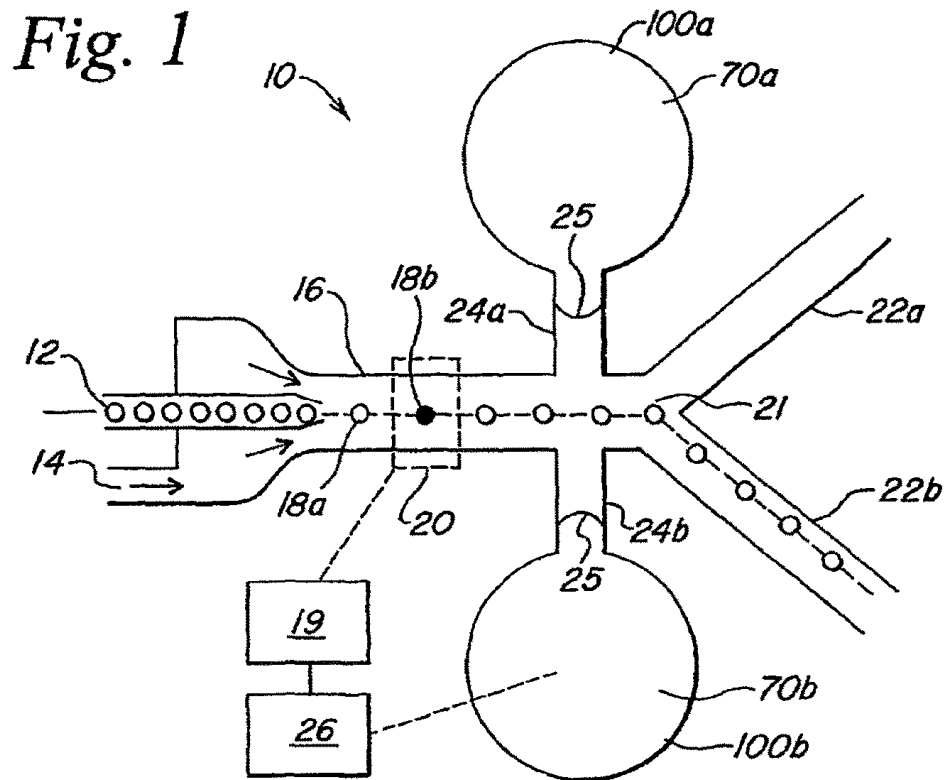reproduced below, shows the sorting apparatus.

Fig. 1

Figure 1 is "a schematic view of a particle sorting system [10] according to
an illustrative embodiment of the invention." *Id.* at 4:54–55. As shown in
Figure 1, "particle sorting system 10 comprises a closed channel system of
capillary size for sorting particles" including first supply duct 12 for
introducing stream of particles 18 and second supply duct 14 for supplying
carrier liquid. *Id.* at 6:2–3. First supply duct 12 forms nozzle 12a and, along
with second supply duct 14, is in fluid communication with measurement
duct 16. *Id.* at 6:6–10. Measurement duct 16 branches into first branch
channel 22a and second branch channel 22b at branch point 21. *Id.* at 6:11–
13. Measurement duct 16 includes measurement region 20 that is associated
with detector 19. *Id.* at 6:13–14. System 10 also includes two opposed

bubble valves 100a and 100b positioned relative to measurement duct 16 in fluid communication therewith via opposed side passages 24a and 24b. *Id.* at 6:16–23. Actuator 26 actuates either bubble valve to cause flow disturbance in measurement duct 16 to deflect flow therein. *Id.* at 6:27–30. Side passage 24b is hydraulically connected to compression chamber 70b in bubble valve 100b and side passage 24a is hydraulically connected to buffer chamber 70a in bubble valve 100a. *Id.* at 6:34–35, 39–41.

In operation, side passage 24b cooperates with side passage 24a to direct flow disturbance caused by pressurization of compression chamber 70b such that flow displacement has a component perpendicular to normal flow of stream of particles 18 through measurement duct 16. Ex. 1001, 6:42–47. Resiliency of side passage 24a results upon pressurized discharge, in a transient flow of liquid in measurement duct 16 into side passage 24a. *Id.* at 6:50–52. Cooperation of side passages 24a and 24b and the fluidic structures they interconnect causes flow through measurement duct 16 to be transiently moved sideways back and forth upon pressurizing and depressurizing compression chamber 70b induced by actuator 26 in response to a signal raised by detector 19. *Id.* at 6:53–58.

E. Illustrative Claim

Petitioner challenges claims 1, 2, 4–6, 9, and 11 of the '283 patent. Pet. 1. Independent claim 1 —the sole independent claim challenged— is reproduced below.

1. A particle sorting chip comprising:

a duct configured to convey particles in a stream, the duct including an inlet and a plurality of flow-through outlet channels formed in a substrate;

a first chamber formed in the substrate, the first chamber in fluid communication with the duct via a first side opening

and otherwise sealed, the first side opening positioned upstream of the plurality of flow-through outlet channels; and

an actuator provided on the substrate and associated with the first chamber, the actuator configured to increase a pressure within the first chamber and to discharge an amount of fluid from the first side opening into the duct during a switching operation.

F. Prior Art and Asserted Grounds

Petitioner asserts that claims 1, 2, 4–6, 9, and 11 would have been unpatentable based on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 5, 6	103(a)	Wada[1]
1, 2, 4–6	103(a)	Wada, Anderson[2]
9, 11	103(a)	Wada, Anderson, Riley[3]
11	103(a)	Wada, Anderson, Bargeron[4]

Petitioner also relies on a Declaration of Bernhard H. Weigl, Ph.D. Ex. 1002.

II. ANALYSIS

A. 35 U.S.C. § 314(a)

Patent Owner contends that we should exercise discretion under 35 U.S.C. § 314(a) to deny institution in the instant proceeding. Prelim. Resp. 14. Petitioner disagrees. Prelim. Reply 1. Because —based on the merits for the reasons discussed below— we deny institution, we do not address exercise of discretion under § 314(a).

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[1] WO 00/070080, published November 23, 2000 (Ex. 1006, "Wada").
[2] WO 97/002357, published January 23, 1997 (Ex. 1012, "Anderson").
[3] US 2002/0122167 A1, published September 5, 2002 (Ex. 1013, "Riley").
[4] US 4,148,585, issued April 10, 1979 (Ex. 1036, "Bargeron").

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