

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE**

CYTONOME/ST, LLC,

Plaintiff,

V.

NANOCELLECT BIOMEDICAL, INC.,

Defendant,

CASE NO.: 1:19-cv-00301-RGA

Assigned to Hon. Richard G. Andrews

**DEFENDANT NANOCELLECT BIOMEDICAL, INC.'S  
LETTER TO THE HONORABLE RICHARD G. ANDREWS**

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May 15, 2020

*Attorneys for Defendant NanoCollect  
Biomedical, Inc.*

Dear Judge Andrews:

Plaintiff Cytonome/ST, LLC's requested that this Court construe the term "buffer" in the '528 and '850 patents to mean "a reservoir of fluid that absorbs a pressure pulse." Cytonome's inclusion of the broad term "fluid" conflicts with a POSA's understanding of the claims in light of the specification and provides no meaningful guidance as to how the "reservoir" "absorbs a pressure pulse." Plaintiff's construction thus fails to address the essence of the buffer of the asserted patents—to absorb the pressure pulse, the "buffer" requires a reservoir of **compressible** fluid, *i.e.*, a gas.

**I. Plaintiff's expert: the commonly understood meaning of the term "buffer" is "a chamber structure used for retaining *air* to absorb vibration"**

As explained by *Phillips*, "The inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation. That starting point is based on the well-settled understanding that inventors are typically persons skilled in the field of the invention and that patents are addressed to and intended to be read by others of skill in the pertinent art." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (citing *Verve, LLC v. Crane Cams, Inc.*, 311 F.3d 1116, 1119 (Fed. Cir. 2002) ("patent documents are meant to be 'a concise statement for persons in the field'"). When providing evidence to establish the meaning of "buffer", as understood by a POSA, Plaintiff points the Court to prior art reference U.S. Patent No. 5,777,649 ("Otsuka") which was cited on the face of the '528 and '850 Patents. D.I. 67, Ex. H ¶ 38 ("Ex. A"). Plaintiff's expert explained that the prior art Otsuka patent illustrates that "the term 'buffer' had a commonly understood meaning in the field of microfluidics in 2002." Ex. A at ¶ 38. Specifically, Plaintiff's expert explained that the "buffer chamber" in Otsuka "is a chamber structure used 'for retaining air to absorb vibration of the ink' depicted as component 13 in Figures 1 and 2:" *Id.* According to Otsuka, the gas is necessary to absorb the

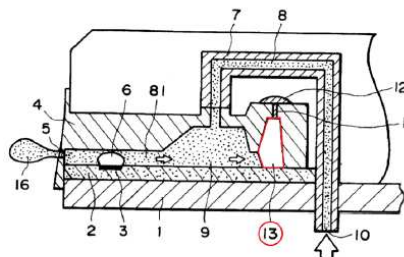


FIG. 1

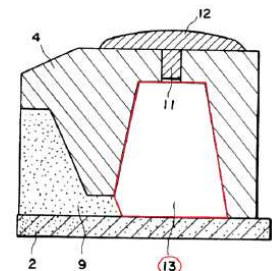


FIG. 2

vibration because when there are "hardly any gases in the buffering chamber 13 . . . the absorption of the pressure wave is not sufficient, and therefore, the function of the buffering chamber is not properly carried out." Otsuka at 6:50-55. Accordingly, even Plaintiff's own evidence for establishing a POSA's understanding of the term "buffer" confirms that a "buffer" is "a chamber structure used 'for retaining air to absorb vibration.'" (emphases added throughout). *See also* Ex. B, Plaintiff's Markman slide 18 (confirming that the "buffer chamber" is "filled with gasses . . . and the gasses function to absorb the pressure wave."). Plaintiff's proposed construction of "buffer" as "a reservoir of fluid that absorbs a pressure pulse" is unsupported by its own proffered evidence and improperly attempts to encompass non-compressible fluids. Plaintiff's "specification disclaimer" argument is inapposite where its own evidence shows a "buffer" understood as a reservoir of gas at the time of invention. Exs. A, B.

**II. The "buffer" of the *bubble* valve is a reservoir of gas**

The claimed “buffer” is a portion of the “bubble valve” used “for absorbing the pressure pulse.” Every example of a bubble valve in the specification includes a reservoir of gas. “Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Phillips*, 415 F.3d at 1313. “Usually, [the specification] is dispositive; it is the single best guide to the meaning of a disputed term.” *Id.*

Cytonome’s claimed invention is a “system for controlling liquid flow in a microchannel by the introduction of a *gas bubble* to a microfluidic system.” 1:19-21. An interface of gas and liquid, or a “bubble”, is consistently described throughout the specification and claims. The ’528 Patent states that “*The present invention provides a bubble valve for controlling, regulating or varying fluid flow through a microfluidic system.*” 2:54-56. The claimed system includes a “*gas-filled reservoir.*” 2:66-3:1. The ’850 Patent confirms that “The second *bubble valve* 100a serves as a buffer for absorbing the pressure pulse.” 6:24-26. Moreover, the description makes clear that “The meniscus defines an *interface* between the carrier *liquid* and another fluid, such as a *gas* in the reservoir of the associated bubble valve **100.**” See also ’528 Patent at 3:1-4 (“The *gas filled reservoir* has a movable wall and a meniscus formed by a *liquid in the microchannel* that forms an interface between the reservoir and the microchannel interior.”). Plaintiff’s made-for-litigation argument that the “buffer” in the *bubble valve* need not contain a compressible fluid, such as gas, does not survive scrutiny.

Plaintiff attempts to piece together a string citation to support its argument that “the specifications similarly describe a ‘buffer’ as . . . filled with ‘fluid,’” but even Plaintiff’s most cherry-picked citations include the requisite compressible fluid (*id.*): (citing ’850 Patent at 7:28–37 [describing “second *bubble valve*”] see also *id.* at 4:14–16 [same], 6:9–45 [describing “liquid” in the side passages and “a *gas* in the reservoir of the associated *bubble valve* 100 . . . [which] serves as a buffer”], 9:48–56 [describing the “buffer *bubble valve*”]; ’528 Patent at 12:27–34 [describing “second *bubble valve*”]). Finally, Cytonome argues that the ’850 Patent’s “*fluidically co-operate*” element “suggests that the buffer and actuator reservoirs contain ‘fluid’.” D.I. 82 at 2. Rather, “*fluidically co-operate*” strongly supports Defendant’s position as the specifications consistently describe a “liquid” in the microchannels and a “gas”/“bubble” in the buffers. The patent drafter’s intentional use of the term “fluidically co-operate” can include both substances. The term “buffer” requires a reservoir of compressible fluid, consistent with the use of the term “buffer” in Otsuka. No disclaimer is required to confirm this natural reading.

### III. Plaintiff’s arguments are divorced from the claims and specifications

Plaintiff provides zero affirmative support for its contention that the buffer can be filled with a non-compressible fluid, *i.e.*, a liquid.<sup>1</sup> Rather, Plaintiff makes three defensive arguments: (1) the reservoir of gas is a “single embodiment” of the claimed invention, (2) a “compressible fluid” construction excludes embodiments, and (3) a “compressible fluid” construction is inconsistent with the claims. Upon inspection, Plaintiff’s arguments fail.

First, Plaintiff argues that Defendant’s understanding relies on a “single” embodiment. Not so. The ’528 patent discloses twelve embodiments of the claimed invention (2:54-4:62) and seventeen figures (columns 5-13)—each and every instance discloses a reservoir of *gas* in a

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<sup>1</sup> Plaintiff (D.I. 82, n.1) contends that a buffer can comprise a “more compressible liquid”—to the extent such liquids exist, they are encompassed by the “compressible fluid” construction.

*bubble valve*.<sup>2</sup> Plaintiff concedes that the buffer is the reservoir of fluid in the bubble valve that absorbs the pressure pulse. Every embodiment confirms that such fluid must be compressible, consistent with Otsuka. For example, Fig. 1 describes a bubble valve with a reservoir of gas and various ways of filling the “gas pocket” or “air pocket”. Figure 13 explains that the “second”, i.e. *buffering*, “bubble valve” “comprises a compressible volume of gas” wherein the “compressed gas” from the buffer interacts with the “liquid” in the transfer column. ’528 Patent at 11:9-18; ’850 Patent at 3:53-56, 6:24-26. Because the patents uniformly describe the embodiments of the invention as absorbing a pressure pulse via a reservoir of gas, Plaintiff’s arguments concerning a “single embodiment” fall flat.

Second, no disclosed—much less claimed—embodiments are excluded under this proper understanding. Plaintiff reads a single phrase out of context to argue that the patent drafter *claimed* a near limitless buffer. The full quote, however, explicitly refers to a *bubble valve*: “Basically, the reservoir 70b of the *second bubble valve* 10b is a chamber having a resilient wall or contains a compressible fluid such as a gas.” The bubble valve necessarily includes the gas bubble; it is not optional, as Plaintiff contends. Moreover, this disclosure is within the context of Fig. 16 of the ’528 patent which confirms that the gas in bubble valve **10b** interfaces with the liquid via the meniscus **175**. 11:66-12:3 (“Liquid is allowed to *partly fill* these side passages **174a** and **174b** to form a meniscus.”).

Plaintiff also contends (D.I. 82 at 2) that the resilient wall is the “flexible membrane (reference **72** in FIG. 7) forming the buffer chamber 70b.” ’850 Patent at 9:51-56. The flexible wall **72** of Figure 7 is only described within the context of a reservoir of gas. Fig. 7 shows that the meniscus **25** forms a gas-liquid interface between the reservoir of gas **70** and a liquid-filled side channel **24**. *See also* 6:16-17 (“Liquid is allowed to partly fill these side passages 24[] to form a meniscus **25** therein.”). While Plaintiff contends that the spring constant can be further altered by the “flexible membrane” **72**, or via the volume of compressible fluid itself – each option involves a reservoir of compressible fluid **70**. Notably, a “flexible membrane” is only claimed with a buffer in *dependent* claim 24 of the ’528 patent. This is consistent with the resilient wall/flexible membrane being described as an optional feature of the buffer in independent claim 22.

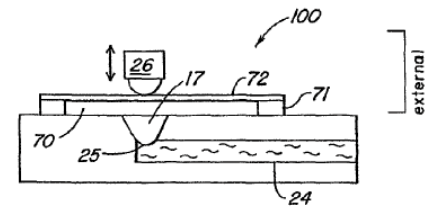


Fig. 7

Third, contrary to Plaintiff’s allegations, Defendant’s construction is wholly consistent with the claims. Plaintiff argues that unasserted “dependent claim 26 of the ’[528] Patent [sic] recites that ‘the buffer comprises air trapped in a sealed reservoir[,]’” as evidence that the drafter knew how to “limit the buffer reservoir to a particular fluid.” This argument is self-defeating. “Air” is a specific type of gas/compressible fluid. Further limiting to air fails to disprove that claim 22 requires a compressible fluid. Plaintiff’s argument concerning dependent claim 24 fares no better. While a resilient wall or “flexible membrane” may further alter the resiliency of the buffer, this does not make a flexible membrane a buffer absent the reservoir of compressible fluid. The claims themselves most naturally support a construction where the “buffer” is understood as requiring a reservoir of compressible fluid, i.e., gas.<sup>3</sup>

<sup>2</sup> Both patents consistently refer to the actuating and buffering reservoirs as structurally similar “bubble valves.” *See, e.g.*, ’528 Patent 11:1-18; 9:47-40; ’850 Patent 6:9-26; 8:54-59.

<sup>3</sup> Defendant reserves all appellate rights to previously proposed means-plus-function constructions. Such constructions similarly require a reservoir of compressible fluid.

Sincerely,

WILSON SONSINI GOODRICH & ROSATI  
Professional Corporation

/s/ Ian R. Liston

Ian R. Liston (#5507)