

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

GCE GAS CONTROL EQUIPMENT, INC,

Plaintiff/Counter-Defendant,

v.

3B MEDICAL MANUFACTURING, LLC,

Defendant/Counter-Plaintiff

Case No. 8:22-cv-02550-TDC

JURY TRIAL DEMANDED

3B MEDICAL MANUFACTURING, LLC's
RESPONSIVE CLAIM CONSTRUCTION BRIEF

TABLE OF CONTENTS

TABLE OF AUTHORITIES ii

I. INTRODUCTION 1

II. CLAIM CONSTRUCTION LAW 1

III. THE DECLARATION OF DR. GEOFFREY DEANE, PH.D. 3

IV. RESPONSE TO GCE’S ARGUMENTS 3

 A. “Separation Cartridge” 4

 Improper Introduction of Multiple Beds of Adsorbent Material..... 6

 GCE’s Proposed Construction Renders Certain Claims Meaningless 8

 The Patent Prosecution History Does Not Support GCE’s Construction 9

 GCE’s Proposed Construction Is Inconsistent with the Rest of the Claim Language 10

 B. Addition of “Separation Cartridge” into Claim 13 of the ’614 Patent 11

 C. “Axis” / “Disposed Along [An]/[The] Axis” 15

 D. “Contact” / “Does Not Contact” 17

 E. “Receptacle” 22

 F. “Selectively Removable” 27

TABLE OF AUTHORITIES

Cases	Page(s)
<i>ACTV, Inc. v. Walt Disney Co.</i> , 346 F.3d 1082 (Fed. Cir. 2003).....	6
<i>Augustine Med., Inc. v. Gaymar Indus., Inc.</i> , 181 F.3d 1291 (Fed. Cir. 1999).....	2
<i>Aventis Pharma S.A. v. Hospira, Inc.</i> , 675 F.3d 1324 (Fed. Cir. 2012).....	25
<i>Beachcombers v. WildeWood Creative Products, Inc.</i> , 31 F.3d 1154 (Fed. Cir. 1994).....	9
<i>Cisco Sys. v. TQ Delta, LLC</i> , 928 F.3d 1359 (Fed. Cir. 2019).....	2
<i>DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.</i> , 567 F.3d 1314 (Fed. Cir. 2009).....	3
<i>GE Lighting Sols., LLC v. AgiLight, Inc.</i> , 750 F.3d 1304 (Fed. Cir. 2014).....	2
<i>In re Miller</i> , 441 F.2d 689 (CCPA 1971)	19
<i>Invitrogen Corp. v. Biocrest Mfg., L.P.</i> , 424 F.3d 1374 (Fed. Cir. 2005).....	18
<i>Kara Tech. Inc. v. Stamps.com Inc.</i> , 582 F.3d 1341 (Fed. Cir. 2009).....	25
<i>Liebel-Flarsheim Co. v. Medrad, Inc.</i> , 358 F.3d 898 (Fed. Cir. 2004).....	2
<i>Nature Simulation Sys. v. Autodesk, Inc.</i> , 50 F.4th 1358 (Fed. Cir. 2022).....	18, 19
<i>Nautilus, Inc. v. Biosig Instruments, Inc.</i> , 572 U.S. 898, (2014)	18, 19, 21
<i>Nevro Corp. v. Bos. Sci. Corp.</i> , 955 F.3d 35 (Fed. Cir. 2020).....	21

Cases	Page(s)
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005).....	1, 2, 6, 7, 25
<i>Pratt & Whitney Co. v. U.S.</i> , 345 F.2d 838 (Ct. Cl. 1965)	2
<i>Saunders Grp., Inc. v. Comfortrac, Inc.</i> , 492 F.3d 1326 (Fed. Cir. 2007).....	2
<i>Sonix Tech. Co. v. Publ'ns Int'l, Ltd.</i> , 844 F.3d 1370 (Fed. Cir. 2017).....	14, 18
<i>Thorner v. Sony Comput. Entm't Am. LLC</i> , 669 F.3d 1362 (Fed. Cir. 2012).....	1
<i>TMI Prods. v. Rosen Entm't Sys., L.P.</i> , 610 F. App'x 968 (Fed. Cir. 2015)	6
<i>Trs. of Columbia Univ. v. Symantec Corp.</i> , 811 F.3d 1359 (Fed. Cir. 2016).....	8, 13
<i>Vitronics Corp. v. Conceptoronic, Inc.</i> , 90 F.3d 1576 (Fed. Cir. 1996).....	1
<i>Whittaker Corp. v. UNR Indus., Inc.</i> , 911 F.2d 709 (Fed. Cir. 1990).....	18
 Other Authorities	 Page
35 U.S.C. §282	18
MPEP § 2173.04.....	19

I. INTRODUCTION

Across the board, 3B's proposals are straightforward and consistent with the plain and ordinary meaning of the disputed terms. On the other hand, GCE's proposed constructions are improper and violate basic tenets of claim construction. For example, GCE seeks to import limitations from the specification into the claims and offers constructions that make other claims in the patents meaningless.

GCE also relies on the declaration of Dr. Geoffrey Deane, which parrots GCE's positions in its Opening Claim Construction Brief. Yet, when deposed, Dr. Deane contradicted numerous GCE positions. For example, Dr. Deane admitted that he could understand the claim language when reviewing the claims in light of the specification, contradicting GCE's indefiniteness arguments. He also conceded that the Patents-in-Suit do, in fact, support at least some of the constructions proposed by 3B.

Here, the Court should adopt 3B's proposed constructions and reject GCE's improper attempts to rewrite the claims under the guise of claim construction.

II. CLAIM CONSTRUCTION LAW

The general rule is that each claim term is construed according to its ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the patent. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005). There are two exceptions to this general rule: "1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution." *Thorner v. Sony Comput. Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012), citing *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1580 (Fed. Cir. 1996). 3B provides the fundamental principles of claim construction in greater detail in its Opening Brief.

While GCE admits that “claims should not be limited to exemplary aspects of an alleged invention described in the specification,” it contends that “when a patent repeatedly describes its invention as including particular features, such as in every embodiment and example, the claims should be construed in view of that feature.” [Dkt. No. 38, pp. 4-5]. However, contrary to GCE’s position, “[a] patent that discloses only one embodiment is not necessarily limited to that embodiment.” *GE Lighting Sols., LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014), citing *Saunders Grp., Inc. v. Comfortrac, Inc.*, 492 F.3d 1326, 1332 (Fed. Cir. 2007). In fact, “it is improper to read limitations from a preferred embodiment described in the specification — even if it is the only embodiment — into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.” *Cisco Sys. v. TQ Delta, LLC*, 928 F.3d 1359, 1364 (Fed. Cir. 2019) (quoting *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004)); *see also Phillips*, 415 F.3d at 1323 (“[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.”).

While GCE presents several cases for its purported proposition that claims should be limited to a single embodiment, these cases are not applicable in view of the facts here, as discussed below. Further, GCE’s own descriptions of these cases acknowledges that the court only relied on this rationale “in part.” [See e.g. Dkt. No. 38, p. 5]. In other words, the decisions cited by GCE were often based on additional factors.

GCE further contends that “[c]laims in crowded art fields should not be afforded broad interpretations,” relying on *Pratt & Whitney Co. v. U.S.*, 345 F.2d 838, 841 (Ct. Cl. 1965) and *Augustine Med., Inc. v. Gaymar Indus., Inc.*, 181 F.3d 1291, 1301 (Fed. Cir. 1999). [See Dkt. No. 38, p. 7, fn. 2]. However, neither of these older cases actually involve construing patent claims. Instead, they relate to the determination of the scope of equivalents one would be entitled to if it is determined

(after claim construction) that there is no literal infringement. That is, the cases relate to the applicable scope of infringement under the doctrine of equivalents. It makes sense that in a crowded field one may have a narrower range of equivalents available, because equivalents cannot encroach, or ensnare, what is already known in the prior art. *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1322 (Fed. Cir. 2009) (“Ensnarement bars a patentee from asserting a scope of equivalency that would encompass, or ‘ensnare,’ the prior art.”) (citations omitted). Here the Court is conducting a claim construction analysis to construe disputed claim terms, and not an infringement analysis based on the doctrine of equivalents. Therefore, the cases cited by GCE do not support its positions.

III. THE DECLARATION OF DR. GEOFFREY DEANE, PH.D.

GCE relies heavily on the Declaration of Dr. Geoffrey Deane in support of its proposed constructions. While an expert is not required to construe these terms, it is interesting that GCE sought to use a different person of ordinary skill than it used in its IPR – perhaps because in the IPR GCE’s expert understood all of the claim language and did not propose some of the constructions now put forth by GCE.

GCE is attempting to manufacture constructions, using its new expert, to support its non-infringement and invalidity positions. This is not the purpose of claim construction.

Dr. Deane’s declaration largely regurgitates the arguments presented by GCE in its Opening Brief. Yet in Dr. Deane’s recent deposition, his testimony contradicted many positions presented by GCE and supported many of 3B’s positions, as will be discussed below. Dr. Deane also testified that there were no “special definitions” provided in the Patents-in-Suit. [Ex. 1, Excerpts of 6/14/23 Deposition Transcript of Deane (herein “Deane Dep.”), at 48:2-49:6].

IV. RESPONSE TO GCE’S ARGUMENTS

GCE was the only party that proposed terms for construction. However, GCE’s proposed constructions are not consistent with the plain and ordinary meaning of the disputed terms. 3B, on the

other hand, maintains that its proposed constructions reflect the plain and ordinary meaning of the disputed terms, and that the claims are not indefinite. 3B further submits that GCE's attempts at re-writing the claims by, in some cases, adding in entire new clauses should be rejected.

A. "Separation Cartridge"

Term	Patent / Asserted Claims	GCE's Proposed Construction	3B's Proposed Construction
"separation cartridge"	'628 Patent, claims 1, 11, 12 '614 Patent, claims 1-3, 8, 9, 12	"a housing/container that holds multiple adsorbent columns for gas separation and provides separate inlet and outlet ports for each adsorbent column"	Plain and ordinary meaning, which is "a cartridge configured to separate gas"

The plain and ordinary meaning of a "separation cartridge" is "a cartridge configured to separate gas." 3B's construction is consistent with the plain and ordinary meaning of the term. By way of example, the written description of the patents-in-suit explains that "[t]he cartridge is removable from an oxygen concentrator which separates oxygen from ambient air." [See Dkt. No. 36, Ex. 1 (herein "'628 Patent") at 2:54-58; *see also* 15:40-43 ("...links product control pump 154 to separation cartridge 206 through main valve 140 to transport oxygen rich gas separated by cartridge 206.")] Dr. Deane agrees that a separation cartridge is understood to separate gas and does not contend 3B's construction is inaccurate. [Deane Dep., at 129:14-20 ("It's a cartridge that separates gas, sure, yes.")] Further, the claims themselves support this plain and ordinary meaning and add additional detail to it. For instance, claim 1 of the '628 Patent recites, in part, "the separation cartridge comprising ... a bed of adsorbent material configured to preferentially adsorb nitrogen." [See *Id.*, claim 1].

While GCE attempts to fault 3B for defining the term "separation cartridge" for what it does rather than what it is, this is a red herring. [Dkt. No. 38, pp. 16-17]. 3B's construction does not "define the structure" of the "separation cartridge" because that structure is defined in the rest of the claim(s).

It is a cartridge for separating gas, and the claims later describe the structure – including an inlet, an outlet, a bed of adsorbent material, and so on. Dr. Deane agreed that the claims do recite structural elements of the “separation cartridge” without the addition of GCE’s improper construction. [Deane Dep. at 104:24-105:4 (“Q. You would agree with me that these claims do recite certain structural features of the cartridge, right, the inlet, the outlet, the adsorbent bed, that it’s removable? It does recite certain structural features of the separation cartridge; right? A. I believe that’s true”); *see also* 129:21-130:25.].

GCE’s construction seeks to improperly construe “separation cartridge” to add in multiple additional claim elements and structural requirements. GCE’s proposed construction is improper under a number of basic tenets of claim construction.

GCE contends “separation cartridge” should be construed to mean “a housing/container that holds multiple adsorbent columns for gas separation and provides separate inlet and outlet ports for each adsorbent column.” [Dkt. No. 38, p. 13]. GCE’s proposed construction is incorrect at least because it tries to add new structural elements (i.e., multiple adsorbent columns, inlets, outlets) into this disputed term. [See Dkt. No. 36, pp. 9-14.] Dr. Deane agreed that GCE’s construction adds multiple adsorbent beds, multiple inlets, and multiple outlets to the claim. [Deane Dep., at 105:22-25]. Moreover, Dr. Deane testified that prior to February 9, 2005 (the earliest priority date on the face of the Patents-in-Suit), it would have been known to have “a discrete container with a single bed of adsorbent material within a concentrator” and that he would have been aware of that in understanding the specification of the patents. [*Id.* at 102:5-15].

First, requiring multiple “inlets” and “outlets” in the construction of “separation cartridge” would be inappropriate at least because the claims of the Patents-in-Suit already separately claim that the “separation cartridge” has an “inlet” and an “outlet.” [See e.g. ’628 Patent at claims 1, 11, and Dkt.

No. 36, Ex. 2 (herein “’614 Patent”) at claims 1, 12, and 16]; *TMI Prods. v. Rosen Entm't Sys., L.P.*, 610 F. App'x 968, 971-72 (Fed. Cir. 2015) (rejecting construction of a term that would render other language in the claim redundant); *Phillips*, 415 F.3d at 1314; *see also ACTV, Inc. v. Walt Disney Co.*, 346 F.3d 1082, 1088 (Fed. Cir. 2003) (“the context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms”). That is, not only do the claims already recite an inlet and outlet, but they do not require multiple inlets and outlets. Construing “separation cartridge” to include multiple “inlets” or “outlets” would improperly render those same elements recited in other parts of the claims as redundant. *Id.*

Improper Introduction of Multiple Beds of Adsorbent Material

GCE also attempts to add to the claims to the requirement of “multiple adsorbent columns,” which is improper. The claims already recite a bed of adsorbent material – that is, though the claims can cover multiple adsorbent columns they do not require multiple adsorbent columns. Additionally, GCE’s construction is incorrect because it is improperly importing limitations from the specification into the claims, despite the claims specifically reciting “a” bed of adsorbent. [See ’628 Patent at claim 1 (“separation cartridge comprising ... a bed of adsorbent material configured to preferentially adsorb nitrogen.”), *see also* claim 11; ’614 Patent at claims 1, 12, and 16].

Moreover, GCE’s construction requires each of these new, multiple adsorbent columns to have its own inlet and outlet, which injects new, unclaimed structural relationships into the claims. This is improper because the claims as written already define the relationship between the inlet, outlet, and bed of adsorbent material. [See, e.g., ’628 Patent, claim 1 (defining the relative arrangement of these elements)]. The claims do not require the additional structural relationships proposed by GCE.

GCE, and its expert, repeatedly state that “*each and every* embodiment of the ’628 and ’614 patents consistently describes and illustrates *a single separation cartridge* holding *multiple adsorbent*

columns.” [Dkt. No. 38, pp. 14-15 (emphasis in original); Deane Dec., Dkt. No. 38-1, ¶¶ 51-54]. Yet, GCE’s position is contradicted, and the cases it relies on are distinguished, by the Specification of the Patents-in-Suit as well as the testimony of Dr. Deane. Contrary to GCE’s position, the Patents-in-Suit disclose an embodiment with only one adsorbent column while further explaining multiple columns, or a single column, can be used. [*See, e.g.*, ’628 Patent at 7:13-20].

Despite GCE’s contentions regarding “each and every embodiment” having multiple adsorbent columns in a single cartridge, Dr. Deane conceded during his deposition that the Patents-in-Suit do, in fact, describe a single column embodiment – that is an embodiment with a single bed/column of adsorbent material. [Deane Dep. at 123:16-124:15; 124:21-125:4].

Dr. Deane also testified that if the separation cartridge could “function with a single column” of adsorbent material, then GCE’s proposed construction would be incorrect. [Deane Dep. at 119:1-7]. While Dr. Deane may contend that the separation cartridge cannot function with a single column, such a contention would be at odds with the disclosure provided in the specifications of the Patents-in-Suit. [*See, e.g.*, ’628 Patent at 7:13-20 (explaining that the adsorption process can “be accomplished with a single column, or with a plurality of columns.”)]; *Phillips*, 415 F.3d at 1318 (“a court should discount any expert testimony that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history...” (internal citation and quotations omitted)).

Moreover, the Summary of the Invention contemplates that just one adsorbent column could be used. [’628 Patent at 2:52-56 (the cartridge includes “a housing having an inlet port, an outlet port, and a bed of absorbent material.”).] Dr. Deane agreed this describes “the invention” of the Patents-in-Suit. [Deane Dep. at 59:8-22].

For at least these reasons, GCE is incorrect when it alleges that “[t]here are no single-adsorbent-bed embodiments or alternatives discussed in, or even suggested by, the ’628 or ’614 patents.” [Dkt. No. 38, p. 15].

Notably, the Asserted Claims do not in any way preclude multiple adsorbent beds—they just do not *require* multiple adsorbent beds.

GCE’s Proposed Construction Renders Certain Claims Meaningless

GCE’s proposed construction is also improper because it renders dependent claims that expressly recite a plurality of adsorbent beds within the separation cartridge completely meaningless. *See Trs. of Columbia Univ. v. Symantec Corp.*, 811 F.3d 1359, 1370 (Fed. Cir. 2016) (dependent claims of a patent must be considered in properly construing the claims).

Specifically, claim 21 of the ’628 Patent depends from independent claim 11. The term “separation cartridge” is introduced in claim 11 and then further narrowed in claim 21. Claim 21 states, “wherein the bed of adsorbent material is one of a plurality of beds of adsorbent material within the separation cartridge.” [’628 Patent at Claim 21]. Dr. Deane did not address claim 21 in his declaration.

However, in his deposition, Dr. Deane agreed one should consider claim 21 in construing the claims and that if GCE’s proposed construction were adopted, he could not identify anything that claim 21 adds to claim 11. [Deane Dep. at 79:17-19, 80:2-8, and 81:1-25]. Thus, GCE’s proposed construction would render claim 21 meaningless, which is improper. *Trs. of Columbia*, 811 F.3d at 1370 (rejecting construction that was too limiting because “in a situation where dependent claims have no meaningful difference other than an added limitation, the independent claim is not restricted by the added limitation in the dependent claim.”) (citations omitted); *Beachcombers v. WildeWood*

Creative Products, Inc., 31 F.3d 1154, 1162 (Fed. Cir. 1994) (interpretation that renders dependent claim superfluous is “presumptively unreasonable” under doctrine of claim differentiation).

The Patent Prosecution History Does Not Support GCE’s Construction

GCE also incorrectly contends that 3B admitted during patent prosecution that a separation cartridge must have multiple adsorbent columns. [See Dkt. No. 38, p. 16]. This is not the case and, in his deposition, Dr. Deane agreed.

During the examination of a patent application in the same family as the patents-in-suit, the Examiner cited a reference, Warren, and alleged it would be obvious to modify Warren to include an outlet port and inlet port directed in a common direction towards the bottom of the gas separation cartridge as stated in the then pending claims. [Dkt. No. 38-14 (Ex. 12 to Dkt. No. 38), at Bates Nos. GCE0004404-4409]. In arguing against the Examiner’s rejection, Applicant noted “the Examiner does not even identify a ‘separation cartridge’ in Warren, and instead generally refers to Figures 7 and 8,” and therefore “there is no way to tell from Warren’s Figures 7 and 8 what is the bottom.” [Ex. 2, Excerpt of File History, at GCE0004364-4365]. This was because the element that the Examiner had pointed to as a separation cartridge was actually identified in Warren as a “sieve bed.”

GCE’s suggestion that the applicant argued that, as to Warren, a separation cartridge was not identified because “Warren had a cartridge with a single adsorber bed” is unfounded. Dr. Deane agreed. In his deposition, Dr. Deane testified that as to this portion of the file history, the patent applicant was simply pointing out that the examiner had not identified a cartridge because the Examiner was pointing to a sieve bed—as opposed to GCE’s contention that the patent applicant argued a cartridge with a single adsorber bed was not a separation cartridge. [Deane Dep. at 211:25-212:5; 213:20-214:3]. Dr. Deane stated that a sieve bed is not necessarily a cartridge. [*Id.* at 208:22-209:-3]. Moreover, Dr. Deane admitted that having reviewed all of the file histories in the family he

could not identify any statement by the patent applicant where the patent applicant stated the claimed separation cartridge must have multiple adsorbent beds, nor could he identify a statement where the patent applicant stated the claimed separation cartridge could not have a single adsorbent bed. [Deane Dep., at 207:5-11, 208:6-10]. That is, there was no disclaimer or disavowal of claim scope in the prosecution histories.

GCE's Proposed Construction Is Inconsistent with the Rest of the Claim Language

The independent claims of the '628 Patent both recite an axis, and the arrangement of the bed of adsorbent material, the inlet, and outlet relative to that axis. ['628 Patent, Claims 1 and 11]. However, under GCE's proposed construction, the claim would recite multiple beds, but would still only recite a single axis, making it unclear which of the multiple beds is being referenced as to the axis. Unless multiple axes were also added, which GCE does not propose, Dr. Deane concedes that GCE's construction could create some ambiguity regarding the relationship between the multiple beds that GCE has inserted into the claims and the singular-recited axis. [Deane Dep., at p. 149:3-18].¹ Yet, Dr. Deane agrees that claims should not be construed in a way that makes them unclear. [Deane Dep., at pp. 140:25-141:3]. Adding multiple beds into the claims could seemingly require the addition of multiple axes into the claims, which GCE has never proposed, and regardless would be improper because it would read even more limitations into the claim. Because GCE's proposed construction of separation cartridge makes other parts of the claim less clear and could require further additions to the claims (that not even GCE proposes), GCE's construction is improper.

¹ Dr. Deane referred to an ambiguity in the term "separation cartridge" but conceded that GCE does not contend the term is ambiguous. [Deane Dep. at 149:3-18]. The only ambiguity created would thus be later in the claim in view of GCE's proposed construction.

B. Addition of “Separation Cartridge” into Claim 13 of the ’614 Patent

Term	Patent / Asserted Claims	GCE’s Proposed Construction	3B’s Proposed Construction
“a first bed of adsorbent material configured to preferentially adsorb nitrogen; a first inlet oriented in a direction, wherein the first inlet is configured to direct a flow of ambient air to the first bed; a first outlet oriented in the direction, wherein the first outlet is configured to expel product gas flowing downstream of the first bed; a second bed of adsorbent material configured to preferentially adsorb nitrogen; a second inlet oriented in the direction, wherein the second inlet is configured to direct a flow of ambient air to the second bed; a second outlet oriented in the direction, wherein the second outlet is configured to expel product gas flowing downstream of the second bed;”	’614 Patent, claim 13	“a separation cartridge containing: (i) a first bed of adsorbent material configured to preferentially adsorb nitrogen; (ii) a first inlet oriented in a direction, wherein the first inlet is configured to direct a flow of ambient air to the first bed; (iii) a first outlet oriented in the direction, wherein the first outlet is configured to expel product gas flowing downstream of the first bed; (iv) a second bed of adsorbent material configured to preferentially adsorb nitrogen; (v) a second inlet oriented in the direction, wherein the second inlet is configured to direct a flow of ambient air to the second bed; and (vi) a second outlet oriented in the direction, wherein the second outlet is configured to expel product gas flowing downstream of the second bed”; or otherwise indefinite	No construction necessary. <i>“A separation cartridge containing:”</i> should not be added into claim 13, as GCE proposes; GCE does not attempt to construe any of the actual quoted claim language in the claim term GCE identified.

As explained in 3B’s Opening Brief, GCE identified this lengthy term for construction and is attempting to have it construed so GCE can add the language “a separation cartridge containing” to

the claim. This is not a construction at all. GCE is not trying to ask the Court to construe, or define, any terms here. GCE is simply trying to add limitations to a claim. This is not proper.

GCE's apparent intention with this proposed construction further supports that its proposed construction should be rejected. As the Court is aware, GCE also identified the term "separation cartridge" for construction. In its construction of that term, GCE attempts to import various limitations from the specification into the claims (e.g. multiple inlets, outlets, and beds of adsorbent, etc.) related to GCE's attempt to argue it does not infringe the Asserted Claims. However, Claim 13 does not recite a "separation cartridge." GCE is seeking to add the term into claim 13, so GCE's can then import its narrow construction of "separation cartridge" into claim 13.

Again, GCE's position is undermined by the other claims in the '614 Patent as well as the testimony of Dr. Deane.

When 3B intended to include a "separation cartridge," as part of a claim, it did so. For example, claim 1 of the '614 Patent specifically claims a portable oxygen concentrator that comprises a separation cartridge. ['614 Patent at claim 1]. The patentee did not require that feature in claim 13 of the '614 Patent.

Indeed, Dr. Deane confirmed that claim 13 as written (without GCE's construction) does not require the first bed and the second bed in "the same cartridge" [Deane Dep. at 69:18-22]. However, the claim is broad enough as written that the first bed and the second bed could be in the same cartridge. [*Id.*].

This makes sense in view of the language of another dependent claim. Under GCE's proposed construction, claim 13 would be construed as requiring, in part, "a separation cartridge containing: ... a first bed of adsorbent material ... [and] a second bed of adsorbent material." This means that a single separation cartridge would have to include a first bed and a second bed of adsorbent material.

However, dependent claim 16 of the '614 Patent – which depends from independent claim 13 – recites just that: “[t]he portable oxygen concentrator as recited in claim 13, wherein the first and second beds are contained within a common separation cartridge.” [‘614 Patent, Claim 16]. Under GCE’s proposed construction, claim 16 would be rendered meaningless as it would not add anything to claim 13. *Beachcombers*, 31 F.3d at 1162 (interpretation that renders dependent claim superfluous is “presumptively unreasonable” under doctrine of claim differentiation); *Trs. of Columbia Univ.*, 811 F.3d at 1370 (“in a situation where dependent claims have no meaningful difference other than an added limitation, the independent claim is not restricted by the added limitation in the dependent claim”) (citations omitted). Dr. Deane agrees. Dr. Deane did not address claim 16 in his declaration. However, in his deposition, he suggested that the requirements of claim 16 need to be combined into claim 13 under GCE’s construction and testified that if GCE’s construction were adopted, he could not identify anything that claim 16 added to claim 13. [Deane Dep. at 72:12-73:16, 74:14-21, 82:14-83:2; 84:3-9]. Thus, GCE’s proposed construction would render claim 16 meaningless. GCE’s proposed construction is incorrect.

GCE states that it identified this term for construction because it contends a person of ordinary skill in the art would not know “whether the terms ‘inlet[s],’ ‘outlet[s],’ and ‘bed[s] of adsorbent material’ recited in this claim are part of the ‘separation cartridge’ ... or are components of the [portable oxygen concentrator] independent of a separation cartridge.” [Dkt. No. 38, p. 18 (emphasis in original)]. GCE further contends that “it is unclear what ‘inlets’ and ‘outlets’ are being claimed because the ‘614 patent describes two different kinds of inlets and outlets: a system inlet (135) and outlet (103) and separation cartridge inlets (132a-c) and outlets (134a-c).” [*Id.* at p. 18]. GCE concludes that the Court must import a requirement of “a separation cartridge” into the claim because

“[t]he *only structure* in the ‘614 patent that provides both multiple beds of adsorbent material and multiple inlets and outlets is the separation cartridge.” [*Id.* (emphasis in original)].

While GCE’s proposed construction is improper as already discussed, this leads to GCE’s contention that the Court should either adopt its construction or find the claim to be indefinite. In short, GCE wants the Court to rewrite the claim in the arbitrary manner it suggests or find the claim to be indefinite. There is no basis for importing the requirement of a “separation cartridge” into the claim. It is clear that GCE, as well as GCE’s experts, understand what is being referred to in the claims when they refer to “inlet(s),” “outlet(s),” and a “bed(s) of adsorbent material.” This term is sufficiently definite and requires no further construction.

As to GCE’s alternative indefiniteness argument, a person of ordinary skill in the art would understand that the claims, without the need to import additional requirements into the claims, for at least the reasons provided above. In fact, even Dr. Deane explains that he understood what is being referred to in claim 13, as drafted. [Deane Dec., Dkt. No. 38-1, ¶70 (Dr. Deane agreed that a POSITA would understand which inlet, outlet, and bed is being referred to in the claims)]. Moreover, Dr. Deane further admitted that claim 13 already defines relationships between the inlets, outlets, and beds in the claim itself. [Deane Dep. at 85:11-88:10]. The relationship of these elements is clear and does not require the claim to be re-written to include a separation cartridge containing these elements or resolve any alleged ambiguity. Dr. Deane also agreed that claims do not need to recite every feature described in a specification. [Deane Dep. at 36:8-11]. He further testified as to this claim that “as an expert, I can go back to the [specification] and figure out what you mean.” [Deane Dep. at 91:17-92:1].

Moreover, GCE’s declarant in the ‘614 Patent IPR, Dr. Kent Knaebel, understood this term with reasonable certainty, further supporting that it is not indefinite. *Sonix Tech. Co. v. Publ’ns Int’l, Ltd.*, 844 F.3d 1370, 1380 (Fed. Cir. 2017) (reversing finding of indefiniteness where, among other

things, application of a term by an expert “provide[s] evidence that a skilled artisan did understand the scope of this invention with reasonable certainty.”). In fact, neither GCE nor Dr. Knaebel even suggested that this term required any construction in the ’614 Patent IPR. GCE’s proposed construction should be rejected.

C. “Axis” / “Disposed Along [An]/[The] Axis”

Term	Patent / Asserted Claims	GCE’s Proposed Construction	3B’s Proposed Construction
“axis”	’628 Patent, claims 1, 11	“the centerline of the bed of adsorbent material”	Plain and ordinary meaning, which is “a reference line”
“disposed along [an]/[the] axis”	’628 Patent, claims 1, 11	“arranged on the axis such that the axis passes through”	Plain and ordinary meaning, which is “arranged on the axis”

The plain and ordinary meaning of “axis” is “a reference line,” as supported by evidence cited in 3B’s Opening Brief. [See Dkt. No. 36, pp. 20-23 (citing Ex. 7 thereto)]. In deposition, Dr. Deane stated that the plain and ordinary meaning of “axis” is “a reference line relative to specific geometry.” [Deane Dep. at 140:11-21 (“I believe the plain and ordinary meaning of an axis is a reference line relative to specific geometry.”)]. This is consistent with 3B’s construction. Here, the axis provides a reference line for defining a relationship of the bed of adsorbent material, inlet, and outlet. Moreover, Dr. Deane testified that in the claims, the axis is used in relation to a geometric object – the “cylindrical column of adsorbent material.” [Deane Dep. at 137:10-22]. Given Dr. Deane’s testimony, there is no reason to depart from 3B’s construction.

Dr. Deane also agreed that “the design and manufacturing of portable oxygen concentrators” has “an extensive application of mathematics.” [Deane Dep. at 131:24-132:3]. As such, it would be proper to look at the plain and ordinary meaning in the mathematical context. Indeed, 3B’s extrinsic evidence supports 3B’s proposed construction. [Dkt. No. 36, Ex. 7, The Penguin Dictionary of Mathematics, Third Edition (2003) (defining “axis” as in general a “reference line”)]. Moreover,

extrinsic evidence relied on by GCE and Dr. Deane regarding the definition of axis with relation to mathematics is likewise consistent with 3B's proposed construction. [See e.g. Dkt. No. 38-17 (Ex. 15 to Dkt. No. 38), defining "axis" as "2. *Mathematics*. A. An unlimited line, half-line, or line segment serving to orient a space or a geometric object, especially a line about which the object is symmetric. B. A reference line from which distances or angles are measured in a coordinate system."].

GCE's construction, limiting "axis" to a "centerline," is improper because, while an axis *can* be a "centerline," it is not necessarily one. Indeed, Exhibit 19 to Dr. Deane's declaration (also attached as Exhibit 4 to 3B's Opening Brief (Dkt. No. 36)) is a patent in which Dr. Deane himself is a listed inventor and uses the term "axis" to refer to numerous non-central axes. [Dkt. No. 36, p. 22 and Ex. 4]. Finally, while an axis shown in the figures of the Patents-in-Suit may be a central axis, it is improper to limit the claims to the preferred embodiment.

Regarding "disposed along [an]/[the] axis," the parties are in partial agreement in their constructions. Both parties agree that the term "disposed along" should mean "arranged on the axis." GCE goes too far, however, arguing that "disposed along" means "arranged on the axis such that the axis passes through." The additional language, "such that the axis passes through," is yet another example of GCE injecting unnecessary language into the claims. An object can be disposed along, or arranged on, a reference line without the reference line "pass[ing] through" the object, as GCE suggests. [See Dkt. No. 36 at pp. 23-25].

GCE argues that 3B's construction is incorrect because "the axis must be an axis of *something*." [See Dkt. No. 38 at p. 20]. GCE then takes a logical leap to conclude that "the relevant axis is the centerline of the adsorbent material itself." [*Id.*].

GCE is incorrect. The claim introduces an "axis"—or reference line—to define the spatial relationship of the bed of adsorbent, the inlet, and the outlet. The claims do not use "axis" to mean

centerline. If the claims did intend to refer to a “centerline,” the claims would have used the term “central axis” or “centerline,” much like how the patents-in-suit and prior art emphasize the term “center” when referring to a “central axis.” [See Dkt. No. 36, pp. 20-22]. And, again, Dr. Deane agreed that an axis is merely “a reference line relative to specific geometry.” [Deane Dep. at 140:11-21].

D. “Contact” / “Does Not Contact”

Term	Patent / Asserted Claims	GCE’s Proposed Construction	3B’s Proposed Construction
(claims 1, 12) “fluid flowing along the first line contacts the adsorbent material of the bed” / “fluid flowing along the second line does not contact the adsorbent material of the bed” (claim 8) “when fluid flows through the separation cartridge, fluid flows along the first line in the second direction” / “when fluid flows through the separation cartridge . . . fluid flows along the second line in the first direction” (claim 13) “fluid flowing along the first line contacts the adsorbent material of the first bed” / “fluid flowing along the second line does not contact the adsorbent material of the first bed” / “fluid flowing along the third line contacts the adsorbent material of the second bed” / “fluid flowing along the fourth line does not contact the adsorbent material of the second bed”	’614 Patent, claims 1, 8, 12, 13	Indefinite	Plain and ordinary meaning. As to “contact” and “does not contact,” the plain and ordinary meanings are “touch” and “does not touch,” respectively. As to “fluid [flowing/flows] along,” the plain and ordinary meaning is “fluid [moving/moves] on.”

In light of GCE’s Opening Brief, the dispute here is to determine whether GCE has met the heightened clear and convincing standard for proving, as a matter of law, that the claim language is indefinite. *Sonix Tech.*, 844 F.3d at 1377 (citations omitted) (indefiniteness is a question of law and “must be proven by clear and convincing evidence”). Claims are to be construed, wherever possible, to preserve their validity. *Whittaker Corp. v. UNR Indus., Inc.*, 911 F.2d 709, 712 (Fed. Cir. 1990) (“claims are generally construed so as to sustain their validity, if possible”) (citation omitted); *see also* 35 U.S.C. §282 (“[a] patent shall be presumed valid.”). The Court must also bear in mind that the claim language does not stand alone. Rather, the relevant standard is whether one skilled in the art, reviewing the claims in light of the specification and prosecution history, can understand what is claimed. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898-99, (2014) (a patent is only indefinite “if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.”). Here, GCE cannot meet the heightened clear and convincing evidence standard for proving indefiniteness.

Until now, it was unclear why GCE contended these terms were indefinite.² GCE’s Opening Brief lays out their theories, but they are legally defective. GCE’s position boils down to the contention that the claims should have provided more detail as to how the fluid flows through the separation cartridge in various potential circumstances. Courts have rejected this type of argument. *Nature Simulation Sys. v. Autodesk, Inc.*, 50 F.4th 1358, 1362-63 (Fed. Cir. 2022) (reversing a district court decision which held a claim term indefinite because there were “unanswered questions” about the term); *see also Invitrogen Corp. v. Biocrest Mfg., L.P.*, 424 F.3d 1374, 1384 (Fed. Cir. 2005) (“[A] patentee need not define his invention with mathematical precision in order to comply with the definiteness requirement.”) (internal citations and quotations omitted).

² GCE’s theories of indefiniteness were not disclosed in GCE’s initial invalidity contentions.

Rather than review the claims in a vacuum, courts must review the patent claims “in light of the specification, the prosecution history, and other relevant evidence.” *Nature Simulation Sys.*, 50 F.4th at 1364 (reversing the district court, which applied a “[c]laim language, standing alone” standard, because the district court did not consider the manner in which the claims were understood in light of the specification). Further, the Manual of Patent Examining Procedure (MPEP) used by the patent office to govern how patent examiners examine patent applications, echoes these sentiments, and includes a chapter titled “Breadth Is Not Indefiniteness,” which explains that “[a] broad claim is not indefinite merely because it encompasses a wide scope of subject matter provided the scope is clearly defined.” See MPEP § 2173.04, citing *In re Miller*, 441 F.2d 689 (CCPA 1971). Here, the patent examiner allowed these claims understanding that the breadth of the claims does not equal indefiniteness.

While GCE believes that the claims are indefinite for lacking specificity, GCE admits that the ’614 Patent’s figures “provide some guidance” for interpreting the claim language. [See Dkt. No. 38, p. 24]. GCE then goes on to label the drawings of the ’614 Patent and explain how, with specificity, the invention of the ’614 Patent works. [*Id.* at pp. 24-26]. That is, GCE knows how the embodiments work and is able to explain it.

Moreover, Dr. Deane stated that GCE’s issue could be described as there being “too many unanswered questions in the claims” but conceded that he could understand the claims when considered in view of the specification, specifically stating that he could “work it out by going back and looking at the drawings and reading the specification and then we can understand it.” [Deane Dep. at 154:20-24; 159:10-24, 165:13-17; 166:15-167:2]; *Nature Simulation Sys.*, 50 F.4th at 1362-63 (improper to deem a claim indefinite merely because of “unanswered questions”); *Nautilus, Inc.*, 572 U.S. at 908 (“First, definiteness is to be evaluated from the perspective of someone skilled in the

relevant art.... Second, in assessing definiteness, claims are to be read in light of the patent's specification and prosecution history.”) (internal quotations and citations omitted). At least in view of Dr. Deane's testimony, these claim terms are not indefinite.

While the above establishes that GCE's indefiniteness theories fail because a person of ordinary skill can understand them with reasonable certainty, 3B addresses the two “ambiguities” that GCE alleges are present in the claims. Again, because the claim language is read from the perspective of one skilled in the art, and because claim language is to be read in light of the specification, GCE's arguments fail.

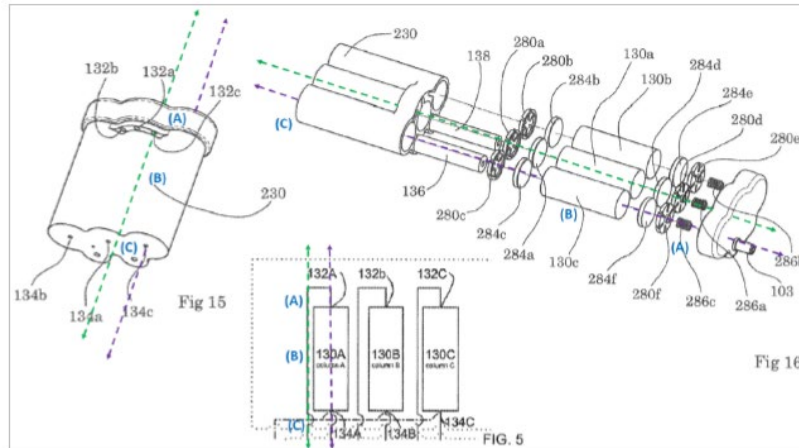
The first alleged issue GCE identifies is that “fluid flowing along the first/third... lines at sometimes [sic] contacts the adsorbent columns” but “at other times does not contact the adsorbent columns.” [See Dkt. No. 38, p. 26 (emphasis omitted)]. However, all fluid that flows along the first/third lines will contact adsorbent. Therefore, the claim language is not indefinite. The claims do not say, for example, fluid flowing along the entire length of the first/third lines contacts adsorbent “at all times.” Rather, the claims specify that there is a first/third line, and that when fluid is flowing through the separation cartridge, fluid flowing along those lines contacts adsorbent material. This was confirmed by GCE's expert Dr. Deane. [Deane Dep. at 172:2-7]. Moreover, during his deposition, Dr. Deane agreed that when reviewing the specification, he could understand this aspect of the claims. [*Id.* at 166:15-167:2 (“Q. Okay. But you're at least able to understand that language; right? A. I think when I go back to the -- go back to the specification and I read the drawings, I see the drawings, I can understand it.”)].

GCE carries on, arguing that the claims should have specified that the fluid contacts adsorbent “while the fluid is within the adsorbent column” or when the fluid is “between the ends of the adsorbent column.” [See Dkt. No. 38, p. 26]. Yet, GCE reasonably understands that the fluid contacts

the adsorbent material when GCE reads the claims in light of the specification, which is what one skilled in the art would do, and which is required for determining whether a claim is indefinite. Since GCE can understand the claims, they are not indefinite. Further, despite GCE’s argument to the contrary, the claims *do* define the spatial location of where the claimed “contact” occurs—it occurs at the bed of adsorbent material—which is claimed as being within the separation cartridge. Moreover, the claims do not require fluid to contact all of the time or some of the time—either will suffice. *See Nevro Corp. v. Bos. Sci. Corp.*, 955 F.3d 35, 39 (Fed. Cir. 2020) quoting *Nautilus*, 570 U.S. at 910 (“The test for indefiniteness is not whether infringement of the claim must be determined on a case-by-case basis. Instead, it is simply whether a claim ‘inform[s] those skilled in the art about the scope of the invention with reasonable certainty.’”). Moreover, the claims define a temporal component: they specify that the fluid contacts adsorbent “when fluid flows through the separation cartridge.” Specifically, “when” is a time constraint.

A person of ordinary skill reading the claim in view of the specification understands the claim with reasonable certainty, as GCE’s IPR declarant, Dr. Knaebel did, and Dr. Deane was able to do. [*Id.*; *see also* Dkt. No. 36, Ex. 9, Excerpt of Declaration of Kent Knaebel, Ph.D filed in IPR2023-00326 at pp. 162-167, 180-182, 200-203].

Second, GCE presents another, similar argument, in which GCE alleges an ambiguity because some fluid that is configured to flow along the “second/fourth” lines, where there is no contact with adsorbent material, later does contact adsorbent when it eventually flows along the above discussed “first/third” lines. [*See* Dkt. No. 38, pp. 26-27]. But when fluid that was originally flowing on the “second/fourth” lines leaves that line, changes direction, and later flows along the “first/third” lines, it would no longer be flowing on the “second/fourth” lines. This is supported in Dr. Deane’s own annotations of the figures from the specification and corresponding explanation:



[Deane Dec. at ¶¶ 90-92 (first/third lines shown in purple; second/fourth lines shown in green)]. Dr. Deane further stated that the fluid is not on the second line when it contacts the adsorbent material, but instead it is on the first line. [Deane Dep. at 237:8-13 (“Q. Well, is it your position that once it’s contacting the adsorbent material, like you say - - like you say it eventually does, it’s still on the second line? A. No. I think to contact adsorbent material, you’re on the first line.”)].

Finally, as to 3B’s proposed sub-constructions of “contact/do not contact” and “fluid [flowing/flows] along,” Dr. Deane does not dispute those constructions are correct. [Deane Dep. at 172:11-15; 174:5-11].

E. “Receptacle”

Term	Patent / Asserted Claims	GCE’s Proposed Construction	3B’s Proposed Construction
“receptacle”	’628 Patent, claims 1, 11 ’614 Patent, claim 1	<u>GCE’s Original Proposed Construction:</u> “a structure that releasably interfaces with the inlet(s) and outlet(s) of the separation cartridge and at least partially contains the separation cartridge,” or otherwise indefinite <u>GCE’s 5-22-23 Revised Proposed Construction:</u>	Plain and ordinary meaning, which is “a space configured to receive and contain something”

		“a structure that releasably interfaces with the inlet(s) and outlet(s) of the separation cartridge and at least partially contains the separation cartridge,” -or- “a structure configured to releasably receive and at least partially contain the separation cartridge”	
--	--	--	--

As 3B explained in its Opening Brief, the plain and ordinary meaning of “receptacle” is “a space configured to receive and contain something.” Figure 7 of the ’628 Patent, shown below, illustrates an example oxygen concentrator. In the figure, the power pack and adsorbent cartridge have been removed from their respective, associated receptacles 208 and 210. [’628 Patent].

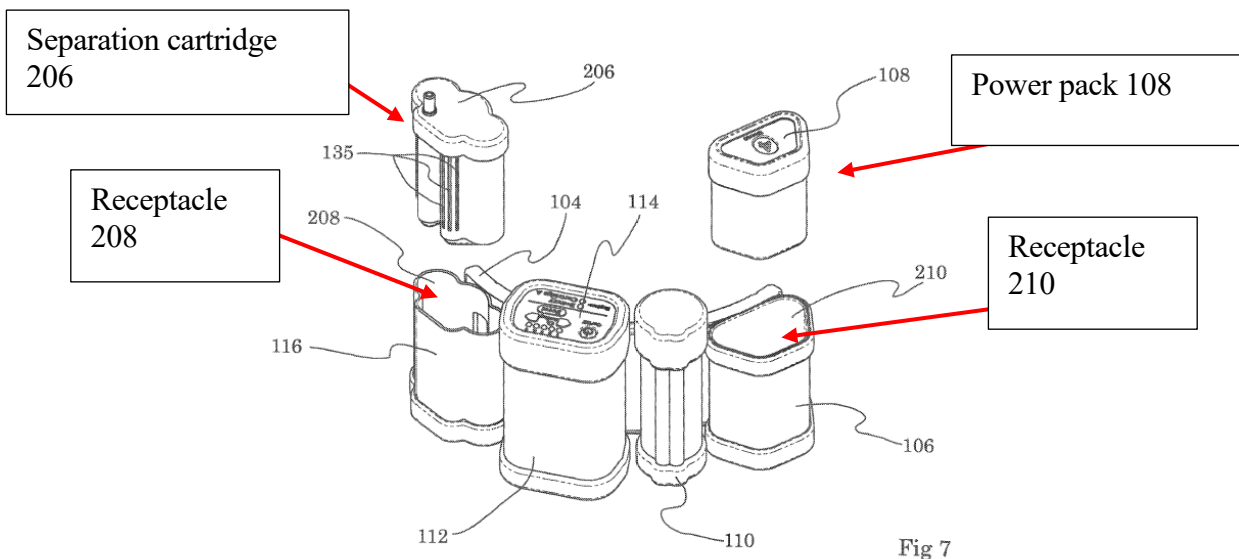


Figure 7 illustrates a “[p]ower pack 108 [that] has been removed from receptacle 210 of power module 106.” [’628 Patent at 11:65-66]. This drawing further shows an “[a]dsorbent cartridge 206 [that] has been removed from receptacle 208 of cartridge module 116.” [*Id.* at 11:66-12:1]. The specification explains that “[a]dsorbent cartridge 206 and power pack 108 are easily removable to facilitate replacement.” [*Id.* at 12:1-3].

Moreover, and by way of example, claim 1 of the '628 Patent recites, in relevant part, “a cartridge module comprising a housing, the housing defining a receptacle.” [*Id.*, claim 1]. Claim 1 further recites “a separation cartridge selectively removable from the receptacle...” [*Id.*, claim 1]. It is clear from at least these excerpts of the specification and claim 1 of the '628 Patent that the housing of the cartridge module defines a receptacle, or space, that receives and contains something. In the asserted claims, it is the separation cartridge that is received and contained in the receptacle. Unlike GCE's proposed construction, 3B's construction is also consistent with the specification which identifies a receptacle for receiving and containing the power module. That is, the term receptacle would be understood in a manner that is consistent with receiving and containing either a power module or a separation cartridge. 3B's proposed construction of “receptacle” takes into account the specification's consistent use of the term receptacle in both instances. Dr. Deane acknowledged that GCE's proposed construction of receptacle would not make sense with regards to that same term being used for a power pack. [Deane Dep. at 195:2-196:8].

The term “receptacle” is a well-known word, which means to receive and contain. [*See* Dkt. No. 36, Ex. 3, Webster's Third New International Dictionary (2002) (Defining “receptacle” as “one that receives and contains something”)]. The claims use the word “receptacle” consistent with its plain and ordinary meaning.

GCE on the other hand proposes two different constructions, both of which add limitations to the term and make specific reference to the separation cartridge only.

As to GCE's first proposed construction, it proposes that “receptacle” should be construed as “a structure that releasably interfaces with the inlet(s) and outlet(s) of the separation cartridge and at least partially contains the separation cartridge.” First, importing additional elements of the already separately claimed “inlet(s)” and “outlet(s)” into the construction of “receptacle” is inappropriate. The

independent claims that recite the term “receptacle” separately identify the separation cartridge. The separation cartridge is selectively removable from the receptacle. The claims recite that the separation cartridge also includes an inlet and an outlet and defines the required structural arrangement of these elements. [See ‘628 Patent, claims 1, 11 and their dependent claims; ‘614 Patent, Claim 1 and its dependent claims].

There is nothing about the plain and ordinary meaning of the term “receptacle” that would mean “releasably interfaces.” GCE is attempting to import features described in the specification into the claims even though they are not claimed. This is not proper. *Aventis Pharma S.A. v. Hospira, Inc.*, 675 F.3d 1324, 1330-31 (Fed. Cir. 2012) (“general descriptions of the characteristics of embodiments [in the specification] do not suffice to limit the claims”); *see also Phillips*, 415 F.3d at 1323 (“[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.”); *Kara Tech. Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1347-48 (Fed. Cir. 2009) (“we will not limit [the patentee] to [the] preferred embodiment or import a limitation from the specification into the claims.”). And while the plain and ordinary meaning of the term “receptacle” does not in any way require something that “releasably interfaces,” it further does not require releasably interfacing with the specific inlet or outlet of the separation cartridge. The receptacle, separation cartridge, inlet, and outlet are separately recited in the claims, as is the relationship between the receptacle and separation cartridge. [See, e.g. ‘628 Patent, Claim 1 (“a separation cartridge selectively removable from the receptacle...”)].

GCE’s alternative construction likewise improperly requires the receptacle to “releasably receive” the separation cartridge. The requirement of “releasably receive” is improper for the same reasons that “releasably interfaces” is improper. Moreover, the fact that GCE is now proposing two different constructions, each with different requirements, demonstrates that GCE attempting to find a

construction that fits its own theories of its case, as opposed to applying the correct construction to this term—the plain and ordinary meaning.

GCE contends that the claims do not provide any guidance for the meaning of “receptacle” “other than it being defined by a housing ... and that the separation cartridge is removed from the ‘receptacle’ in a first direction.” [Dkt. No. 38, p. 28]. However, in the instance where the “receptacle” is referred to as “being defined by a housing,” the housing defines a space that receives and contains something. That is, the housing is the “structure” defining the space. Further, the fact that the “separation cartridge” is “removable” from the receptacle further supports that the receptacle is a space that receives and contains something – it receives and contains the structure (the separation cartridge) which is removable from the receptacle (the space).

GCE also makes the conclusory statements that: (1) the claims “require the ‘receptacle’ to provide interface with the separation cartridge such that the separation cartridge may be removable in a first direction,” and (2) the specification “describes its receptacle(s) as at least partially containing a separation cartridge 206 (or power pack 108) and providing gas (or electrical) connections to the separation cartridge and as a removable housing containing multiple adsorber columns, each having a dedicated inlet and outlet port in the housing.” [Dkt. No. 38, p. 29]. As explained above, these conclusory statements provide no basis for one to import limitations into the claims to require a “receptacle,” to have the additional requirements GCE proposes. Here, GCE continues its consistent, improper attempts to add unclaimed features from the specification into the claims.

Finally, GCE contends that during prosecution 3B “acquiesced to the Examiner’s comparisons of ‘receptacle’ to structures falling within the scope of GCE’s proposed constructions.” [Dkt. No. 38, p. 29 (citations omitted)]. Yet, GCE fails to specifically explain how 3B acquiesced to any construction—much less how it acquiesced to the two different constructions proposed by GCE.

Moreover, GCE seems to point to the Examiner defining housings as receptacles. Yet, as noted, at least claim 1 of the '628 Patent says as much—the housing defines a receptacle.

GCE generally concludes that 3B's construction is improper because: (1) "a space . . ." is not structural and theoretically includes any three-dimensional space unrelated to the claimed configuration"; and (2) "'contain something' both provides no guidance as to what is being contained or what 'receptacle' means in the claimed configuration and, to the extent 3B intends 'contain' to mean 'fully contain,' is not supported by the '628 and '614 patents' exemplary embodiments, which do not show full containment of a separation cartridge in a receptacle." [Dkt. No. 38, p. 29]. As to the first point, a "receptacle" is not just any three-dimensional space that receives and contains something. It is further characterized by the rest of the claim—that is, for example, the housing defines the receptacle. The same is true for the language "contain something." It is not the role of this disputed term to define the entire scope of the claim. The "receptacle" is a space that receives and contains something. It is the rest of each claim that defines what is received and contained in the space—the separation cartridge. The term "receptacle" should be construed in accordance with the rest of the claim language as a space that receives and contains something.

F. "Selectively Removable"

Term	Patent / Asserted Claims	GCE's Proposed Construction	3B's Proposed Construction
"selectively removable [from a receptacle]"	'628 Patent, claims 1, 11 '614 Patent, claim 1	<u>GCE's Original Proposed Construction:</u> "withdrawable or separable as a whole from a receptacle," or otherwise indefinite <u>GCE's 5-22-23 Revised Proposed Construction:</u> "withdrawable or separable as a whole from a receptacle," -or-	Plain and ordinary meaning, which is "can be chosen to be removed" [from a receptacle]

		“can be individually chosen to be withdrawn” [from the receptacle]	
--	--	--	--

The plain and ordinary meaning of “selectively removable” is “can be chosen to be removed.”³ 3B’s construction is consistent with the specification, which shows components such as a separation cartridge or a power pack that can be chosen to be removed, and the well-known dictionary definitions of the terms “selectively” and “removable.” [See Dkt. No. 36, pp. 18-19]. On the other hand, GCE’s original proposed construction reads out the term “selectively” from the phrase “selectively removable,” which is improper, and GCE also attempts to import into the claim a requirement of “as a whole” without any basis. [*Id.*]. GCE’s second, alternative construction is likewise still improper at least because it is importing a different new requirement (“individually chosen”) without any basis.

GCE states in its Opening Brief that “the disputed term is best understood to be a component that is capable of being chosen (i.e., selected) for removal.” [See Dkt. No. 38, p. 31]. 3B essentially agrees with the language of capable of being chosen for removal. GCE’s proposed constructions, however, then deviate from their own explanation of the claim language.

Regarding GCE’s first proposed construction, “withdrawable or separable as a whole from a receptacle,” it is unclear why “removable” needs to be replaced with “withdrawable or separable.” While there is overlap in the definitions of these terms, one could possibly withdraw a component without removing it. [Deane Dep. at 204:10-13]. Indeed, Dr. Deane confirmed there are subtle differences between GCE’s two proposed constructions, but contends they are interchangeable.

³ In the proposed construction, 3B includes the words “from a receptacle” in brackets because it is not actually part of the construction but simply follows the term “selectively removable” in the cited claims. GCE proposed the term in this manner so 3B provides its construction in that context though the construction of “selectively removable” comes before the bracketed portion.

[Deane Dep. at 198:15-199:11; 200:9-15]. Further, it is unclear why GCE believes that “selectively removable” denotes “as a whole.” This aspect of the construction is not based on anything in the record. Not to mention, GCE’s first proposed construction completely reads out the term “selectively.” The term “selectively” relates to choice, but that is not contemplated by GCE’s original construction.

GCE’s second proposed construction comes closer to 3B’s, by addressing the fact that “selectively” relates to the concept of choice. GCE proposes a second alternative of “can be individually chosen to be withdrawn.” But again, withdrawn may be different than “removable” and does not necessarily mean removed. [Deane Dep. at 204:10-13]. Moreover, what is the difference between “individually chosen” and “chosen?” GCE’s proposal needlessly injects words into the claims.

Finally, GCE states that “3B’s proposed construction would appear to permit part-by-part removal.” [See Dkt. No. 38, p. 34]. This is a red herring. It is unclear why GCE seeks to raise this issue, which would in essence be a construction of a construction. It was GCE that raised this disputed term for construction. 3B’s position is the plain and ordinary meaning of this term should be applied, which is “can be chosen to be removed.”

CARLSON, GASKEY & OLDS, P.C.

Dated: June 21, 2023

/s/David L. Atallah
 David L. Atallah (pro hac vice)
 Timothy J. Murphy (pro hac vice)
 Brian S. Tobin (pro hac vice)
 400 West Maple Road, Suite 350
 Birmingham, MI 48009
 Telephone: (248) 988-8360
 Facsimile: (248) 988-8363
 datallah@cgolaw.com
 tmurphy@cgolaw.com
 btobin@cgolaw.com

SIMMS SHOWERS LLP
J. Stephen Simms (Bar No. 4269)
201 International Circle
Baltimore, MD 21030
Telephone: (443) 290-8704
Facsimile: (410) 510-1789
jssimms@simmsshowers.com

Attorneys for Defendant/Counter-Plaintiff
3B Medical Manufacturing, LLC

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on June 21, 2023, I filed the foregoing document with the Clerk of the Court using the Court's CM/ECF system, which will serve a copy on all counsel of record.

Dated: June 21, 2023

/s/David L. Atallah
David L. Atallah (pro hac vice)
CARLSON, GASKEY & OLDS, P.C.
400 West Maple Road, Suite 350
Birmingham, MI 48009
Telephone: (248) 988-8360
Facsimile: (248) 988-8363
datallah@cgolaw.com

EXHIBIT 1

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND

GCE GAS CONTROL EQUIPMENT INC.,)
)
Plaintiff and Counter-Defendant,) Civil Action No.
) 8:22-cv-02550-TDC
vs.)
)
3B MEDICAL MANUFACTURING, LLC,)
)
Defendant and Counter-Plaintiff.)

DEPOSITION UPON ORAL EXAMINATION OF
GEOFFREY DEANE

June 14, 2023
8:44 a.m.
421 W. Riverside Avenue
Spokane, Washington

TAKEN AT THE INSTANCE OF THE DEFENDANT

REPORTED BY:
AMY J. BROWN, RMR, CRR, WA CCR NO. 2133, ID CCR NO. 700

1 BE IT REMEMBERED that on Wednesday,
2 June 14, 2023, at 8:44 a.m., at 421 W. Riverside Avenue,
3 Suite 1010, Spokane, Washington, the deposition of
4 GEOFFREY DEANE was taken before Amy J. Brown, Certified
5 Court Reporter. The following proceedings took place:

6
7 GEOFFREY DEANE, being first duly sworn to tell
8 the truth, the whole truth and
9 nothing but the truth,
10 testified as follows:

11
12 EXAMINATION

13 BY MR. ATALLAH:

14 Q. Good morning, Mr. Deane.

15 A. Good morning.

16 Q. My name is David Atallah. I'm here on behalf
17 of 3B. We met before we got started here, but could you
18 just state your full name for the record?

19 A. Sure. Geoffrey Frank Deane.

20 Q. Okay. Have you had your deposition taken
21 before?

22 A. Yes, I have.

23 Q. About how many times?

24 A. Once, that I can recall.

25 Q. Okay. Been awhile?

1 A. I believe the claim should describe it and it
2 should be supported in the specification.

3 Q. Sure. But -- but you're not -- when you
4 write -- when you are -- when you're drafting or you're
5 putting together a claim for your patent or for a
6 patent -- let me just back up so I have a clear
7 question.

8 In a claim of a patent, that claim does not
9 need to include every single feature described in the
10 specification; right?

11 A. That's correct.

12 Q. Okay. In light -- keeping that in mind, you
13 would agree that it's not proper to add elements into a
14 claim that are not written in the claim just because
15 they're mentioned in the specification; right?

16 MR. GILL: Objection to the extent it calls for
17 a legal conclusion.

18 MR. ATALLAH: Go ahead.

19 THE WITNESS: I understand that there is a
20 principle that says "Do not add information into a claim
21 that's not there." I also understand that you can't
22 read claims without the specification. And insofar as
23 the specification defines the invention and not
24 permutations, not different embodiments, it defines the
25 invention as a singular entity, you have to read the

1 BY MR. ATALLAH:

2 Q. Sure. So one of the legal principles you said
3 you applied are -- or is that in determining whether a
4 term has a special meaning, one thing that may show that
5 is an inventor gave a term a particular definition.

6 That's from your --

7 A. That's a general principle, yes.

8 Q. From your declaration. So what I'm asking is,
9 can you identify any specific particular definition in
10 the '628 patent that was applied here or that you
11 believe exists?

12 A. Are you asking me if the patent defines
13 something, or if you're looking for a single sentence
14 defining a term?

15 Q. Well, I mean, I'm just -- I'm just going off of
16 your declaration. So you said "a special meaning can be
17 shown by an inventor giving a term a particular
18 definition."

19 A. That's not linked to what I'm talking about
20 inside the patent. That's just saying it's a
21 general -- a general observation that I can understand
22 when a special definition has been given if someone says
23 that that's the case.

24 Q. Right. No. And what I'm asking is, is that
25 the case here? Did you -- did you --

1 A. I don't -- I don't believe there are special
2 definitions being provided in this application.

3 Q. In the patent?

4 A. In the patent. Sorry.

5 Q. The patent referring --

6 A. In the patents that we're reviewing.

7 Q. Okay.

8 A. Exhibit 2.

9 Q. Okay. So, okay, and how about -- what about
10 where the inventors -- and if you want to go back to
11 paragraph 131 just so we're on the same page.

12 What about where the inventors intentionally
13 disclaimed claim scope, do you have -- can you
14 point -- are you -- is there anything in the '628 patent
15 that you believe shows that that occurred?

16 A. Intentionally disclaimed claim scope. I'm not
17 sure that I can point to one right now, but it may come
18 up in our discussion as we move forward. As we bring up
19 something, I can point to it as I see it.

20 Q. Well, and if it comes up later in discussion,
21 that's fine, but what I want -- what I -- I mean, and if
22 you need to take time to look through it, that's fine.

23 I just -- but I would like to know if you are
24 pointing to anything that you believe is an
25 intentional -- where the inventors are intentionally

1 A. In my opinion, when the patent says, "the
2 invention is," "the concentrator is," "the concentrator
3 has," it's "the," it's a singular. It's not an example
4 because there is no variability offered. I can't
5 interpret this in the realm of all things that could be
6 built in a concentrator. I have to interpret it in
7 terms of what's described.

8 Q. Sir, can you look at column 2 --

9 A. Sure.

10 Q. -- of the of the '628 patent?

11 A. Sure.

12 Q. See where it says, "Brief Summary of the
13 Invention"?

14 A. I do see where it says, "Brief Summary of the
15 Invention."

16 Q. Okay. And it describes a removable gas
17 separation cartridge includes a housing having an inlet
18 port, an outlet port, and a bed of absorbent material.

19 Do you see that?

20 A. I do.

21 Q. That's describing the invention; correct?

22 A. It is.

23 Q. Okay. And so I want to go back to the question
24 I was asking you before. We were talking about, in
25 paragraph 131 of your declaration, some language around

1 take a look at claim 13.

2 A. Claim 13. Sorry.

3 Q. All right. You've seen claim 13 before?

4 A. Yes. Uh-huh. Correct.

5 Q. Okay. So this claim requires a first bed of
6 absorbent material configured to preferentially absorb
7 nitrogen; right?

8 A. You're asking me to confirm what you're
9 reading? Sure.

10 Q. I'm just saying that's --

11 A. Yes. Yes, that's where it starts.

12 Q. Okay. And then it says -- it also has, further
13 down, "a second bed of absorbent material configured to
14 preferentially absorb nitrogen." I'll try to slow down.
15 Sorry.

16 Correct?

17 A. Correct.

18 Q. Claim 13 does not say that they need to be in
19 the same cartridge; correct?

20 A. As written it does not say that.

21 Q. Okay. They could be; correct?

22 A. They could be, correct.

23 Q. But they don't have to be?

24 A. I would defer on my opinion on that.

25 Q. So you think they do have to be?

1 understand what your answer is to my question, which is,
2 is it your opinion that the appropriate construction of
3 claim 13 requires the first bed and the second bed to be
4 in the same separation cartridge?

5 A. I want to answer your question clearly, so let
6 me try. I believe that my interpretation of how that
7 claim should be written requires some connective
8 structure. So --

9 Q. Is that a yes?

10 A. When I then connect that thought to the next
11 thought, I do come to the answer yes.

12 Q. Okay. Okay. And so now let's take a look at
13 claim 16. Claim 16 depends from claim 13, and having
14 patents you understand what that means; correct?

15 A. Sure.

16 Q. That claim 16 will add something to claim 13,
17 but includes all of claim 13. Is that consistent with
18 your understanding?

19 A. I understand.

20 Q. Okay. So claim 16 says, "The portable oxygen
21 concentrator as recited in claim 13, wherein the first
22 and second beds are contained within a common separation
23 cartridge." Do you see that?

24 A. I do see that.

25 Q. So you wouldn't require claim 13 to have the

1 first and second beds in a common separation cartridge
2 because claim 16 says explicitly that; correct?

3 A. I would require them to be combined.

4 Q. Meaning you would require -- you would move the
5 requirements of claim 16 into claim 13?

6 A. I believe that claim 13 is not specific enough
7 without including that. I can't interpret the bounds of
8 claim 13 on its own, and so it's either too unclear or
9 it needs to have the modification for how the pieces go
10 together.

11 Q. Okay. So let me back up for a second.

12 A. Please.

13 Q. We talked earlier about one of the ways that we
14 determine correct claim scope is looking at other
15 claims; correct?

16 A. I agree.

17 Q. Okay. And you're saying that even though claim
18 16 says -- further says that the first and second beds
19 would be within a common separation cartridge, that
20 needs -- that limitation needs to be put into claim 13?

21 A. I believe that what I said earlier was that one
22 way of interpreting claims was to look at other claims.
23 I also said that another way of looking at claims is to
24 read the specification, and when the specification has
25 been consistent, almost redundant in how it describes

1 what's being placed in here in terms of giving the
2 connective tissue between elements of a claim, and
3 without that -- without that specification, I can't
4 interpret what this claim means. I don't know where the
5 bounds are.

6 I look at this and say I think the repetitive
7 consistency of the specification outweighs the fact that
8 I've got two claims here that appear to be -- it's -- it
9 outweighs the fact that I've got two claims. I believe
10 when I read claim 13, it doesn't have meaning without
11 other elements added to it.

12 Q. And we can come back to that.

13 A. Okay.

14 Q. But you would agree with me that at least on
15 its face the fact that claim 16 says -- adds the
16 requirement of the first and second beds contained
17 within a common separation cartridge, would suggest that
18 claim 13 doesn't require that; correct?

19 A. Per the words that are on here, there's nothing
20 in claim 13 requiring a -- the first and second beds to
21 be in a separation cartridge.

22 Q. Okay. And let's take a look at the '628 patent
23 that's Exhibit 2.

24 A. Okay.

25 Q. Actually, we'll look at two things here,

1 say there was a single -- a single separation column
2 inside of a cartridge?

3 Consistently and throughout the entire
4 disclosure, it says the invention is a device having a
5 separation cartridge with three columns.

6 Q. Okay. So, but getting back to my question,
7 does claim 21 suggest to you that claim 11 would not
8 require multiple absorbent beds within a separation
9 cartridge because claim 21 adds that limitation?

10 A. Again, I don't feel like I'm in a place where I
11 can evaluate what that means. What I say is I can look
12 at what 11 says, I can read what 21 says, and I can
13 think that 21 is additive and informative about the
14 invention. But when I look at claim 11, I can't read
15 claim 11 without believing that that is a multiple bed
16 cartridge.

17 Q. Well, but you have to look at claim 21 as well,
18 right, when interpreting claims?

19 A. Sure.

20 Q. So --

21 A. And I also have to look at the specification.

22 Q. All right. So, I mean, I understand you
23 are -- your opinion is that you look at the
24 specification and there must be multiple beds. I
25 understand that.

1 A. Okay.

2 Q. But what I'm asking is, does claim 21 suggest
3 that you wouldn't limit claim 11 that way?

4 A. Claim 21 adds a thought, yes.

5 Q. What does that mean?

6 A. It suggests that the portable oxygen
7 concentrator has a separation cartridge with multiple
8 beds.

9 Q. And looking at -- so your -- you've offered an
10 opinion regarding the term "separation cartridge";
11 correct?

12 A. Uh-huh. Yes.

13 Q. And if we're looking at claim 11, right,
14 you're --

15 A. Sorry.

16 Q. Oh, sure. You need a second?

17 A. No. I thought we were going back to the other
18 document. Forgive me. Forgive me. I'm just --

19 Q. No, no problem.

20 A. I jumped without paying attention.

21 Q. No problem.

22 A. Claim 11, okay.

23 Q. If we look at -- let's just take a look
24 at -- we're looking at 21 and 11; right?

25 A. I am.

1 Q. And your construction of "separation cartridge"
2 is that the separation cartridge has to
3 have -- actually, let's just read it so I don't
4 misparaphrase it here.

5 On page -- right above paragraph 41 in your
6 declaration, which is Exhibit 1; right? You offer a
7 construction for GCE's construction of "separation
8 cartridge"; correct?

9 A. I do.

10 Q. And it says, "A housing container that holds
11 multiple absorbent columns for gas separation and
12 provides separate inlet and outlet ports for each
13 absorbent column." Correct?

14 A. That is what it says.

15 Q. Okay. So tell me, and I am -- let's just
16 assume for a second that that construction were adopted;
17 okay?

18 A. Yes.

19 Q. You with me?

20 A. Uh-huh.

21 Q. What does claim 21 then add to claim 11, if
22 anything?

23 A. I don't know.

24 Q. Okay. Nothing you can identify right now?

25 A. No.

1 Q. Okay. And if we go back to the '614 patent, I
2 wanted to ask you one more question there, so, and
3 actually crossing with your declaration.

4 If we look at paragraph 43 again in your
5 declaration, this is where you list the claims that
6 recite "separation cartridge"; correct?

7 A. 43. Yes.

8 Q. Here you did not list claim 16; correct?

9 A. I did not.

10 Q. Of the '614 patent?

11 A. Did not.

12 Q. Okay. And if we go just briefly to -- so if we
13 go to page -- bear with me.

14 All right. If we go to just below paragraph 66
15 of your declaration.

16 A. Just below 66, yes.

17 Q. Okay. And here -- here we're looking at
18 claim -- I believe this is claim 13 of the '614 patent,
19 the construction that was being proposed by you for that
20 claim.

21 A. Okay.

22 Q. All right. And what you're doing here is
23 adding the words "a separation cartridge containing" at
24 the beginning, right, to suggest that each of those
25 elements has to be within the same separation cartridge?

1 Is that right?

2 A. Appears to be that, yes.

3 Q. So kind of -- same thing, can you identify for
4 me, looking now at '614 patent, can you identify
5 anything for me that claim 16 would add to -- to claim
6 13 if your construction were adopted?

7 A. Again, my interpretation is based on how I'm
8 reading the claim itself and I look at that claim and I
9 don't think it's -- let me take a moment.

10 Q. Sure.

11 A. Okay. As I discussed earlier, when I read the
12 first claim, which in this case was claim -- is it 13 on
13 the '614 patent? Okay. When I read that, you know, I
14 read that as not having enough structure in the way that
15 claim is written to understand it. And so in order to
16 understand that claim, I go back to the specification to
17 understand what that means.

18 The fact that you've got a claim 16 later that
19 further defines something that should have been defined
20 in claim 13 is, you know, it's informative that you
21 believe that the invention needs to have multiple beds,
22 but I think that without that part in claim 13, I don't
23 think that that claim describes an invention. I think
24 that that claim needs to have the specificity added into
25 it in order for it to be well-defined, otherwise I think

1 it's indefinite.

2 Q. Okay. So we can come back to indefiniteness.
3 But, just to get back to my question, is there anything
4 you can identify, assuming your construction for claim
5 13 in the '614 patent were adopted, is there anything
6 you can identify in claim 16?

7 Is there anything that claim 16 adds if that
8 construction is adopted?

9 A. No.

10 Q. Okay. All right. So you were talking -- let's
11 talk a little more about claim 13. Now, now, bear with
12 me.

13 A. Sure.

14 Q. Okay. Okay. Now, you were just talking a
15 minute ago about -- and I don't mean to paraphrase you
16 here, so feel free to correct me.

17 A. No, please. Yeah.

18 Q. You threw out the term "indefinite." You've
19 thrown you the term "ambiguous." Right? And I think
20 you refer to not understanding some of the structural
21 relationships in claim 13.

22 Is that generally what you're referring to?

23 A. Yes.

24 Q. Okay. And if we -- I think -- I think in your
25 declaration you say or you allege that there is a lack

1 of connective or supportive structure.

2 Do you see that in paragraph 69?

3 A. I do.

4 Q. Is that kind of what you're referring to?

5 A. It is.

6 Q. So let's maybe take a closer look at claim 13.
7 So your declaration says, no connective or supportive
8 structure with regards to inlets, outlets, and beds of
9 absorbent material; correct?

10 A. Correct.

11 Q. All right. Now, claim 13, let's just use the
12 first bed as an example; okay?

13 A. Okay.

14 Q. It introduces a first bed of absorbent material
15 configured to preferentially absorb nitrogen; correct?

16 A. That's correct.

17 Q. Okay. You understand what a -- what a bed of
18 absorbent material is; correct?

19 A. Yes, I do.

20 Q. All right. Now, it then goes on and says, "a
21 first inlet oriented in a direction"; right?

22 A. Yes.

23 Q. And it says, "The first inlet is configured to
24 direct a flow of ambient air to the first bed"; right?

25 A. Correct.

1 Q. So there, that phrase "a first inlet" all the
2 way to "the first bed," do you see where I'm reading?
3 Sorry, the second -- I'm going to back up here.

4 That phrase that I just read, where "a first
5 inlet" is introduced, do you see that?

6 A. I do see the paragraph.

7 Q. Sorry. I'm just trying to make sure --

8 A. I'm following you. I'm trying to figure out --
9 yeah.

10 Q. Okay. So that phrase actually describes a
11 relationship between the first inlet and the bed, first
12 bed; correct?

13 A. A bed of zeolite would implicitly have an
14 inlet, yes.

15 Q. Okay. And it's saying that there's a first
16 inlet to direct a flow of ambient air to that first bed;
17 right?

18 A. Correct.

19 Q. So, minimally, we know that the first inlet has
20 to direct ambient air to the bed or be configured to do
21 that; right?

22 A. Okay.

23 Q. Okay. So there is some relationship there
24 between the two; correct?

25 A. Correct.

1 Q. It's not -- the claim doesn't just say "a first
2 inlet"; correct? It has more?

3 A. It talks to half of it, yes.

4 Q. Okay. And then we go -- let's go to the next
5 phrase: "A first outlet oriented in a direction wherein
6 the first outlet is configured to expel product gas
7 flowing downstream of the first bed."

8 Do you see that?

9 A. I do.

10 Q. So again, the claim puts a relationship between
11 the first bed and the outlet; correct?

12 A. It does.

13 Q. And that relationship is that the outlet has to
14 be configured to expel the air from that bed?

15 A. Okay.

16 Q. Is that right?

17 A. That's what it reads.

18 Q. And it has to be -- it's expelling product gas.
19 Do you understand what product gas is?

20 A. I do.

21 Q. Is that gas where nitrogen has been removed?

22 A. Most of the nitrogen, yes.

23 Q. Okay. Flowing downstream of the first bed. So
24 it also orients it downstream of the first bed; correct?

25 A. Yes.

1 Q. Okay. So, minimally, you would agree with me
2 that the claim itself defines relationships between the
3 first bed, the first inlet, and the first outlet;
4 correct?

5 A. There's an inlet and an outlet to that bed,
6 yes.

7 Q. And it describes how they interact, at least in
8 part?

9 A. Sure. Gas flows into one and flows out of the
10 other.

11 Q. Okay. So then what exactly is -- can
12 you -- well, let me back up. So isn't that connective
13 structure between those elements?

14 A. No. That's a description of what the element
15 is. The element has an inlet and an outlet, and an
16 inlet from where? Outlet to where?

17 Q. Well, doesn't the claim tell you that?

18 A. No.

19 Q. It's an inlet to send flow to the bed?

20 A. If I had this bed by itself, can you tell me
21 how it's connected to the concentrator? Can you tell me
22 how it's connected to a set of valves? How would
23 it -- how is this oriented? How is it -- how is it
24 disposed?

25 None of -- all of this talks about generalized

1 top and a bottom and gas flowing through it. It doesn't
2 talk about how it interfaces or how it's a part of a
3 concentrator. It just says it's there. And because of
4 that, I don't know -- I can't look at another
5 concentrator and say, does that concentrator do this, or
6 does this concentrator not do this?

7 There are many ways of designing that system.
8 I have a very hard time understanding whether this would
9 be -- would this read on another design, and without
10 talking about how those parts are unique in some way or
11 how they are -- what is it that the invention describes.

12 Q. Well, you're not -- you're not opining on
13 whether these are unique; correct?

14 What you're opining on is the interpretation of
15 this claim; right?

16 A. Whether I understand the bounds.

17 Q. Okay. And so are you saying to me, with all of
18 your experience, that you don't understand a claim that
19 recites an oxygen concentrator having a bed with a
20 related inlet and outlet and some other components?

21 A. What I'm saying as an expert, I can go back to
22 the disclosure and figure out what you mean.

23 Q. And I think we already talked about this
24 but --

25 A. Not the disclosure, the specification. I'm

1 using the wrong term.

2 Q. No, I understand.

3 A. I'm sorry. Engineer.

4 Q. It's okay.

5 So I guess I'm -- we agree that the
6 specification discloses these features, so I'm trying to
7 understand why you would not be able to understand a
8 claim that lists these elements as part of an oxygen
9 concentrator and defines the flow relationship between
10 them, what they are configured to do, and also lists
11 additional components of the oxygen concentrator that
12 are separate from those.

13 A. I'm looking at it and trying to understand how
14 can I -- you know, what is this defining that -- if I
15 look at another concentrator, I pick another product off
16 the market and I look at this claim, can I tell where
17 the lines are that limit this -- that limit this? And I
18 have a hard time doing it.

19 I need to go back and -- again, what I do is I
20 go back and I look at the specification and I use the
21 specification to define it, and that's why I suggest a
22 modification to the -- to the construction of that
23 claim, is because I don't think that a configuration
24 with these elements, without that removable cartridge,
25 is supported in the specification.

1 Q. Okay. So that's a good, I think -- maybe
2 "discrete" is the way we can --

3 A. Sure.

4 Q. -- communicate the same thing.
5 So it would have been known to have a discrete
6 container with a single bed of absorbent material within
7 a concentrator prior to February 9th, 2005?

8 A. True.

9 Q. Okay. So that's something -- that's something,
10 as you're reading these patents, that's something you
11 would have been aware of --

12 A. Absolutely.

13 Q. -- in creating your understanding of the
14 specification of the patents in suit; correct?

15 A. Correct.

16 Q. Okay.

17 A. I'm sorry. I really was trying to help.

18 Q. You're fine. You're fine.

19 Okay. All right. So let's go to -- and let me
20 just ask you this. Generally, in the patents in suit,
21 what does the separation cartridge do?

22 A. It exchanges nitrogen.

23 Q. So when you say "exchanges," does that mean
24 removes or separates?

25 A. It absorbs it and releases it based on the

1 A. Yes. Yes.

2 Q. Okay. So let's take a look at paragraph 44.

3 And this is referring to the '628 patent.

4 A. Sure.

5 Q. You say -- you describe some elements of
6 the -- of some of the '628 claims; right?

7 A. I do.

8 Q. And then you have a sentence about the '614
9 patent; correct?

10 A. I do.

11 Q. Okay. And then you say, "The claim language
12 does not otherwise clarify the structure of the
13 separation cartridge and/or whether it includes other
14 absorbent columns and associated inlets/outlets beyond
15 that recited."

16 Do you see that?

17 A. Read that just to be sure. Okay.

18 Q. Uh-huh.

19 A. I do see that.

20 Q. Okay. You -- and we looked at these claims a
21 little bit already, right, that recite "separation
22 cartridge"?

23 A. We did, yes.

24 Q. You would agree with me that these claims do
25 recite certain structural features of the cartridge,

1 right, the inlet, the outlet, the absorbent bed, that
2 it's removable?

3 It does recite certain structural features of
4 the separation cartridge; right?

5 A. I believe that's true.

6 Q. Okay. Is it your understanding that if a claim
7 doesn't actually claim something you should try to add
8 that language to the claim?

9 A. If a claim doesn't actually claim something?
10 Can you explain that more?

11 Q. Sure. Well, you say, in your last sentence
12 here, "it doesn't otherwise clarify the structure."
13 Right?

14 A. Uh-huh.

15 Q. And your proposed construction is to add
16 limitations as to the understanding or construction of
17 separation cartridge; right?

18 A. My suggestion is that I can't tell enough about
19 what the separation cartridge is without looking at
20 what -- how it's described in the -- in the
21 remainder -- remainder of the patent body.

22 Q. Sure. But so your construction is adding
23 multiple absorbent beds and it's adding multiple inlets
24 and multiple outlets; right?

25 A. It is.

1 If it could function with a single column, then
2 GCE's proposed construction would be incorrect; right?

3 A. If there was only one column in the
4 device -- in the device, then there's one column in the
5 separation cartridge.

6 Q. Is that a yes?

7 A. Yes.

8 Q. Okay. And when we look at the claim language,
9 you would agree it doesn't say there can't be two
10 cartridges, right -- sorry.

11 It doesn't say there can't be two cartridges
12 each with a column; correct? It doesn't exclude that.

13 A. Again, I don't know where it would ever say
14 plural -- plural cartridges. The drawings don't show
15 it. The specification doesn't show it.

16 Q. So, but again, if we look at the claim
17 language, right, there's nothing that says you can't
18 have a second cartridge. Meaning it doesn't say -- none
19 of the claims say, for example --

20 A. It doesn't claim a --

21 Q. -- only one separation cartridge.

22 A. Okay. So you're now talking about a cartridge
23 module versus -- okay. Separation cartridge.

24 It doesn't, but neither does it describe
25 multiple separation cartridges, either in the claims or

1 A. Yes.

2 Q. And all the way down to 54, for example,
3 saying, "A POSITA" -- P-O-S-I-T-A -- "would have
4 understood that a single-bed cartridge would not have
5 been able to provide the functionality required for
6 continuous operation in '628 and '614 patents' POCs" --
7 P-O-C-S -- and so on.

8 Do you see that?

9 A. I do.

10 Q. Okay. And actually in that paragraph you go on
11 to say, "And if the inventors had contemplated
12 embodiments that differ from the multi-bed operation
13 described by the '628 and '614 patents and normally used
14 in the art, they would have mentioned it"; right?

15 A. Okay.

16 Q. Okay. Sir, let's take a look at Exhibit 2,
17 just for an example, for the specification, and that's
18 the '628 patent.

19 A. I have it.

20 Q. Okay.

21 A. What reference?

22 Q. Let's go to -- let's go to column 7. Okay. Do
23 you see -- do you see, starting at line 13, that
24 paragraph?

25 A. I see line 13, yes.

1 Q. It says, "This constitutes the general
2 principles of vacuum swing absorption (VSA) for gas
3 separation. All phases can be accomplished with a
4 single column or with a plurality of columns. If a
5 plurality of columns are used, it is preferable to have
6 a multiple of three (illustrated as 130a-130c in FIG.
7 5) that are sequenced out of the phase for the different
8 cycle phases in order to maintain constant product
9 flow."

10 Do you see that?

11 A. I do.

12 Q. So this paragraph describes a single column
13 embodiment; correct?

14 A. It certainly describes that all phases can be
15 described with a single column, yes.

16 Q. So that would be using a single column
17 to obtain what is being described here; correct?

18 MR. GILL: Objection. Vague and ambiguous.

19 BY MR. ATALLAH:

20 Q. Sure. Let me ask a better question.

21 This paragraph says you can use multiple
22 columns; correct?

23 A. Yes.

24 Q. And it also says you can use a single column;
25 correct?

1 A. Yes.

2 Q. And it's referring to absorbent columns or
3 beds; right?

4 A. Correct.

5 Q. Okay. Now, in your declaration, if we take a
6 look at paragraph 54, you also say, in that second to
7 last sentence, you say that -- that differ from the
8 multi bed operation described by the 628 and 614 patents
9 and normally used in the art.

10 Do you see that, that portion?

11 A. I do, yes.

12 Q. Okay. So when you say, "normally used in the
13 art," that means that there are uses in the art that are
14 not multi-bed; right?

15 A. Repeat the question after I've read this.

16 Q. Sure. Yeah. Yeah.

17 So in your declaration when you say "normally
18 used in the art," in that sentence, right, that means
19 that multi-bed operations are normally used in the art,
20 but there are non-multi-bed operations, single-bed
21 operations, they're just not as prevalent?

22 A. If they had seen something that wasn't normally
23 used in the art, they would have mentioned it.

24 Q. No. No. I'm sorry. Maybe I'm -- yeah, no,
25 no.

1 A. Sure.

2 Q. -- is you're not saying that construction is
3 inaccurate; correct?

4 A. I'm saying that I have a hard time interpreting
5 it without understanding more.

6 Q. Okay. So --

7 A. And to extend, I -- the language as proposed
8 doesn't -- well, let me stop there. Just I have a hard
9 time understanding it as written.

10 Q. The construction as written?

11 A. "A separation cartridge containing," as 3B's
12 proposed --

13 Q. Oh, you're in a different claim.

14 A. I thought you said 6 -- I'm sorry. "A
15 cartridge configured to separate gas." Forgive me. I
16 think that there are multiple ways to interpret it and I
17 think we can do better.

18 Q. But you're not saying it's inaccurate, the
19 separation --

20 A. It's a cartridge that separates gas, sure, yes.

21 Q. Okay. And I think in paragraph 65 you say
22 something about it describing what it does instead of
23 what it is; right?

24 A. Uh-huh. Yes, I do.

25 Q. Would you agree with me -- the "what it is," I

1 think you're referring to structure; correct?

2 A. Yes.

3 Q. Okay. And would you agree with me that it's
4 used -- let's use claim 1 of the '628 patent again as an
5 example -- that the structural features of the
6 separation cartridge are actually in the claim?

7 And I can break it down. Actually, we won't
8 change that.

9 Would you agree that the structural features
10 are actually in the claim?

11 A. I think we discussed that there are some
12 structural features in that claim around the separation
13 cartridge.

14 Q. Okay. So the "what it is" is defined by the
15 rest of the claim language there; right?

16 A. Again, it's my opinion that it's incomplete,
17 that it's -- it doesn't describe enough for me to
18 understand it, and I go back to -- I go back to the
19 specification to understand.

20 Q. Okay. So -- and even if you disagree that
21 there's enough structural elements in there, you would
22 agree with me that there are structural elements in the
23 claim?

24 A. There are structural elements in the claim.

25 Q. Okay. All right. So let's turn back to

1 paragraph 38 of your declaration. And actually, you can
2 look at 37 and 38. I'm going to focus on 38, but maybe
3 take a quick read of 37 and 38.

4 A. Sure. Okay.

5 Q. So in these paragraphs you're describing your
6 opinion as to what a person of a skill in the art,
7 what -- what level of education or competency they would
8 have; correct?

9 A. That's correct.

10 Q. Okay. And you say, in paragraph 38, you say,
11 "A bachelor's degree or equivalent degree in mechanical
12 engineering, chemical engineering, or a related field,
13 and two to three years of experience in the research,
14 design or development of portable oxygen concentrators
15 and related hardware, software, and firmware, or
16 equivalent experience"; right?

17 A. It does say that.

18 Q. So putting aside whether that's correct or not,
19 you would agree with me that everything you described
20 there in terms of what constitutes someone being of
21 ordinary skill in the art would include a heavy degree
22 of mathematics being involved; right?

23 A. For sure.

24 Q. Okay. And that kind of goes likewise with the
25 design and manufacturing of portable oxygen

1 concentrators, that likewise has an extensive
2 application of mathematics; correct?

3 A. Yes.

4 Q. Now, let's take a look at paragraph 76. So in
5 paragraph 76 you're talking about the term "axis"?

6 A. Oh, okay. Yes, I am.

7 Q. And you're familiar with that term?

8 A. Yes.

9 Q. And in this paragraph you cite some dictionary
10 definitions about "axis"?

11 A. Yes.

12 Q. And one of those, down near the end of this
13 paragraph, it's labeled as Exhibit 15, American
14 Heritage; do you see that?

15 A. I do.

16 (Exhibit 4 marked for identification.)

17 BY MR. ATALLAH:

18 Q. Okay. I'm going to mark as Exhibit 4 what was
19 exhibit -- or what is Exhibit 15 to your declaration.

20 A. Great.

21 Q. Have you seen that document before?

22 A. I have.

23 Q. Okay. And just for identification purposes, it
24 has a cover page, Exhibit 15, and some Bates numbers
25 starting on the next page, GCE0005901 through 5965.

1 Q. Well --

2 A. That's what it says.

3 Q. It says, "with regard to a geometric object";
4 correct?

5 A. It is a line relevant to a specific geometry,
6 whether it's a three-dimensional space, whether it's a
7 three-dimensional object. It is a reference line used
8 that is -- has significance. It becomes an axis because
9 of the presence of the geometric object.

10 Q. Okay. Would you agree that if we look
11 at -- let's take a look at claim 1 of the '628 patent
12 again, just as an example.

13 A. I have it in front of me.

14 Q. Okay. Near the end where I believe "axis" is
15 first introduced, would you agree that "axis" there is
16 in relation to a geometric object?

17 A. The object that it's in relationship to is a
18 cylindrical column of absorbent material.

19 Q. So it is -- in the claim, it is in reference to
20 a geometric object; right?

21 A. Right. And that object then defines the access
22 based on the geometry.

23 (Exhibit 5 marked for identification.)

24 BY MR. ATALLAH:

25 Q. Okay. All right. Let me mark as

1 Q. In your opinion, when I -- actually, let me
2 back up. When I say, "Plain and ordinary meaning," do
3 you know what I mean?

4 A. I do.

5 Q. You've heard that phrase before?

6 A. I have.

7 Q. Sorry. We're talking over each other.

8 Okay. And that's just a meaning a term would
9 ordinarily have; right?

10 A. Uh-huh. Uh-huh.

11 Q. Can you give me your basis, if you have one,
12 for saying that the plain and ordinary meaning of an
13 axis is not a reference line?

14 A. I believe the plain and ordinary meaning of an
15 axis is a reference line relative to specific geometry.
16 It does not become an axis line until it's taken in the
17 context of specific geometry.

18 Q. Okay. Okay. So in -- but you would agree that
19 it is a -- it is a reference line in the context of a
20 geometry?

21 A. Yes.

22 Q. Okay. All right. Now, let's go -- I hate
23 backtracking here, but I'm going to backtrack a little
24 bit. All right.

25 So you would agree that claims should not

1 be -- should not be construed in a way that makes them
2 indefinite or unclear; right?

3 A. I do.

4 Q. Okay. And I want to go back to your definition
5 of -- or the proposed construction of "separation
6 cartridge."

7 A. Okay.

8 Q. We can find that on page 16.

9 A. 16. I'm on page 16.

10 Q. And you have the proposed constructions there;
11 right?

12 A. I do.

13 Q. Okay. So if GCE's proposed construction is
14 adopted, and let's assume that for a second --

15 A. Okay.

16 Q. -- and then let's go back to -- and I hate to
17 jump around here for you, but let's look at claim 1 of
18 the '628 patent again.

19 A. Yes.

20 Q. You see where "Wherein the bed of absorbent
21 material is disposed along an axis," and it goes on. Do
22 you see that near the end of the claim?

23 A. Yes.

24 Q. Okay. So if GCE's proposed construction of
25 "separation cartridge" is adopted, which -- which of the

1 A. I think you would argue that it adds ambiguity
2 and I would argue it doesn't.

3 Q. And how -- so, okay, then if there are
4 multiple -- again, if we don't add a bunch of additional
5 language requiring each -- each of the multiple beds to
6 have an axis, if we don't add that, then which bed is
7 the axis referring to?

8 A. I understand what you're saying and okay.

9 Q. What does that mean?

10 A. It means that I feel the ambiguity at the top
11 is more severe than the ambiguity that would create, and
12 you don't, so I understand your -- I understand your
13 argument and I concede that that is an argument. I know
14 the question is is one problem worse than the other. I
15 don't know.

16 Q. GCE is not proposing here that "separation
17 cartridge" is ambiguous; correct?

18 A. They are not proposing it's ambiguous.

19 Q. So the ambiguity of the two that was just
20 described is really with regards to axis, right, in
21 terms of what we were just discussing?

22 A. If you choose to feel it's ambiguous. I think
23 the bed of absorbent material has an axis. And I
24 understand your comment that says which bed, but I -- I
25 look at this and say okay.

1 the '614 patent --

2 A. Okay.

3 Q. -- so after it defines, you know, the -- after
4 it defines the lines, that last clause is what I'm
5 looking at; do you see that?

6 A. Yes.

7 Q. It says, "So wherein the separation cartridge
8 is configured such that when fluid flows through the
9 separation cartridge, fluid flowing along the first line
10 contacts absorbent material of the bed, and fluid
11 flowing along the second line does not contact absorbent
12 of the bed"; right?

13 A. I do see that.

14 Q. All right. So this is all qualified by when
15 fluid is flowing; correct?

16 A. Yes.

17 Q. Okay. Now, you've alleged two ambiguities;
18 correct?

19 A. That's correct.

20 Q. Okay. Is it your position that the claim
21 language as written just has too many unanswered
22 questions?

23 A. In reviewing what I have here, I believe that's
24 not an inaccurate way to represent what I'm saying.

25 Q. Okay. Now, let's turn to what you phrase as

1 first line, it's unclear whether it does or doesn't
2 contact absorbent material; correct?

3 A. Are you referring to ambiguity 1 or number 2?

4 Q. Number 2.

5 A. Thank you. Speed things up. So can you repeat
6 your question?

7 MR. ATALLAH: Can you repeat it for me?

8 THE WITNESS: Thanks.

9 (Requested material read back.)

10 THE WITNESS: I'm still not entirely sure I
11 understand the question. I will try.

12 I understand that fluid flows along the purple
13 line, the first line, contacts the material, and fluid
14 that flows along the green line does not contact the
15 absorbent material. I think there's an awful lot of
16 other flows going on and at some times, the way that
17 this reads is true and at some times it's not so sure.
18 And again, I think we can work it out by going back and
19 looking at the drawings and reading the specification
20 and then we can understand it.

21 BY MR. ATALLAH:

22 Q. Okay. So with the specification, you're able
23 to understand it; correct?

24 A. I think so.

25 Q. Okay. And you said "other flows going in."

1 talking about that when fluid is flowing through the
2 separation cartridge, that fluid, it's configured so
3 that that fluid will flow through the bed and contact
4 material along that line?

5 MR. GILL: Objection. Vague and ambiguous.

6 THE WITNESS: I'm struggling because what I'm
7 saying back is that, yes, by design the gas is supposed
8 to contact the bed, and then there are other elements
9 that are put in plain words not contacting the bed but
10 still remaining on that line. So I'm just saying that
11 it's not clear.

12 BY MR. ATALLAH:

13 Q. But you at least understand that flowing along
14 that line it will contact the bed?

15 A. I think I can go back to the drawings inside
16 the document and observe what's written and how it is to
17 see that's what's going on.

18 Q. Okay. And you would agree with me that there's
19 nothing in the claim that says -- that says it can't
20 pass through other elements; right? It just says that
21 when it's flowing --

22 A. It's in contact with the bed, which it's not.

23 Q. It contacts the bed, not that it's in contact.

24 A. Well, contacts is an active verb.

25 Q. Well, but it's, again, qualified by when fluid

1 is flowing to the separation cartridge, that cartridge
2 is configured so that.

3 A. So that the gas is in contact with the bed when
4 it's on that line, and I'm just saying I could
5 design -- I could design a concentrator where -- it just
6 feels very unclear to me.

7 Q. So you were going to say you can design a
8 concentrator where that doesn't occur? Or I don't want
9 to put words in your mouth. What were you going to say
10 there?

11 A. Well, I'm trying to understand where the bounds
12 of it are, and the way I read this is the gas always has
13 to be in contact with the bed and it certainly isn't in
14 the design.

15 Q. Does the -- does the claim say that the gas
16 must always be in contact with the bed along -- along
17 the first line?

18 A. "Fluid flowing along the first line
19 contacts" -- active -- "the absorbent material of the
20 bed." You can read that as contacts once or you can
21 read that as contacts the entire time, and that to me is
22 an ambiguity.

23 Q. Okay. But you're at least able to understand
24 that language; right?

25 A. I think when I go back to the -- go back to the

1 specification and I read the drawings, I see the
2 drawings, I can understand it.

3 Q. Okay. Now, let's take a look at claim 8.

4 A. Okay.

5 Q. Claim 8 is the pending claim.

6 A. Yes.

7 Q. Correct?

8 A. I can see claim 8.

9 Q. And again, we have the language of "separation
10 cartridges configured such that"; right?

11 "When fluid flows through the separation
12 cartridge, fluid flows along the first line in a second
13 direction and flows along the second line in a first
14 direction."

15 Do you see that?

16 A. Yes.

17 Q. Okay. So -- so this actually provides more
18 detail about where the fluid is flowing and in what
19 direction; right?

20 A. When I'm operating an oxygen concentrator, gas
21 flows in both directions at different points in time.
22 So the same bed that will be flowing in one direction at
23 one point in time will be flowing in the opposite
24 direction in another point in time, and that's how the
25 cycle is operated.

1 which you're absorbing gas. It's very temporal.

2 Q. Okay. So but for gas to -- if the gas is
3 coming into the bed and going through the bed and then
4 to a head space, it would have to have contacted that
5 absorbent before it gets to that --

6 A. It did contact it at some point in time. I
7 think we established that.

8 Q. Okay. Let's take a look at paragraph 96 real
9 quick.

10 A. Sure.

11 Q. And I just -- my question is, the focus there
12 is just 3B had proposed or had said these are the plain
13 and ordinary meanings of a couple of these terms.

14 Do you see that?

15 A. I do.

16 Q. Is there anything about 3B's construction of
17 "contact/do not contact" that you disagree with?

18 A. I have to look. I don't think it matters. I
19 think it's fine.

20 Q. Okay. And same question with regards to 3B's
21 proposed construction of "fluid" and it's "flowing" or
22 "flows," depending on where you're finding it, "along,"
23 any issue with that construction?

24 A. Ask that again, if you would.

25 Q. Yeah.

1 the differences were.

2 Q. Let me ask it a different way then.

3 A. Okay. Please.

4 Q. Maybe I can simplify this.

5 With the caveat that in your declaration you
6 say that 3B's constructions do not resolve the alleged
7 ambiguities that you're putting forth, with that caveat,
8 do you otherwise disagree that 3B's constructions are
9 the plain and ordinary meaning of those sub-terms?

10 A. Okay. Thank you. I don't have a problem with
11 the way those are described.

12 Q. Okay.

13 A. Thank you for clarifying.

14 MR. ATALLAH: Got to ask it the right way
15 sometimes to get on the same page. Okay. Let's take a
16 quick break.

17 (A brief recess was had.)

18 BY MR. ATALLAH:

19 Q. All right. So let's turn to -- we're going
20 back to your declaration, which is Exhibit 1, I believe,
21 that we now have clipped. Let's look at page 40. And
22 there's a term here, "receptacle."

23 Do you see that?

24 A. Sure. Yes.

25 Q. Okay. Now, there are, in your table here,

1 they're holding?

2 Q. No. I'm asking, "receptacle"
3 should -- "receptacle" is described both as something
4 that would potentially go with a separation cartridge
5 and with a power pack, right, in the spec?

6 A. Okay.

7 Q. I mean, that's I think what you're saying --

8 A. No. Okay. Yeah.

9 Q. -- put in your declaration.

10 A. Yes.

11 Q. So don't we need a definition of "receptacle"
12 that would encompass both of those?

13 A. You know, quick answer would be sure. Longer
14 answer would be the word "receptacle" has different
15 meanings in each of those two cases, so I
16 understand -- I understand the conflict.

17 I'm not sure what the resolution is other than
18 to say the receptacle as referred to for the separation
19 cartridge and the receptacle as referred to the battery
20 pack are different entities because they interface with
21 different things.

22 Q. But your declaration refers to both of them as
23 that receptacle being described in that paragraph we
24 just looked at; right?

25 A. My declaration refers to the fact that the

1 patent refers to both as receptacles.

2 Q. Yep.

3 A. Yep.

4 Q. Okay. And you would agree with me that
5 GCE -- either of GCE's constructions are adopted, they
6 would not make sense with regards to a receptacle for a
7 power pack; correct?

8 A. Certainly.

9 Q. Okay. But if we look at 3B's proposed
10 constructions, it would work for either one, correct,
11 for either a power pack or a separation cartridge?

12 A. Rather than -- so my quick answer is I don't
13 know, but I would also say they could both then be
14 called containers or bags.

15 Q. Well, but --

16 A. But the word "receptacle" means something more,
17 and so maybe the word is being misused.

18 Q. Well, let's look at 3B's proposed construction,
19 because we are referring to the term "receptacle."

20 A. Okay.

21 Q. 3B says that it should be its plain and
22 ordinary meaning, which is, "A space configured to
23 receive or contain something."

24 So as to a separation cartridge, I think we
25 talked about it, that would work; right?

1 Q. Section F, "Selectively removable [from a
2 receptacle]."

3 A. Sure.

4 Q. Do you see that term?

5 A. I do.

6 Q. And again, here GCE proposes two constructions
7 and 3B proposes a different one; correct?

8 A. I do see that, yes.

9 Q. Okay. So again, can you tell me the difference
10 between GCE's two constructions?

11 A. Okay. I've scanned through what I wanted to
12 read. Can you repeat what my question was?

13 Q. Yeah. I think my --

14 A. Sorry. I know.

15 Q. I think my question -- my question was, can you
16 tell me what the difference is between GCE's two
17 constructions?

18 A. The way it reads is one says, "Withdrawable or
19 separable as a whole from the receptacle," and the other
20 one says, "Can be individually chosen to be withdrawn
21 from the receptacle."

22 Q. Is there a difference?

23 A. Not a substantial one.

24 Q. Are they saying the same things in different
25 words?

1 Is that -- when you say "not a substantial
2 one," is that what you mean?

3 A. No. It means I -- it's subtle. The first one
4 says I'm going to take something out of something else,
5 I'm going to grab it and remove it, separate it,
6 presumably in this case for service or replacement.

7 The second one would be it's an item that
8 isn't -- again, I can pick it to be picked and taken
9 out, removed, again, presumably from service, and just
10 separate it from the -- how it's interfacing with the
11 receptacle. And -- yeah. Okay.

12 Q. And the phrase "from a receptacle" in all of
13 these constructions, they're for context?

14 A. I understand.

15 Q. Is that right?

16 A. I understand that's what the bracket means
17 here, yes.

18 Q. Okay. So you believe there's a subtle
19 difference between them?

20 A. "Inseparable as a whole" versus "individually
21 chosen" depends on the context in which I'm reviewing
22 that, but I think that they both refer to taking the
23 separation cartridge out of the separation cartridge
24 receptacle, differentiated from the battery receptacle,
25 and taking it out to be replaced, serviced, handled in

1 some other way.

2 Q. Okay.

3 A. I'm not sure what else you're looking for.

4 Q. Just to understand what the difference is.

5 A. Yeah. Okay.

6 Q. Which one of these two is the correct
7 construction according to GCE? Actually, let me
8 rephrase that.

9 In your opinion, which one of these two GCE
10 constructions is the correct one?

11 A. In my opinion, they're interchangeable. And I
12 think that GCE has proposed either/or as acceptable.
13 I'm not sure that necessitates a determination of
14 correct. It was -- we think this -- either of these is
15 good construction.

16 Does one have to be better than the other? One
17 was rejected another one was proposed. I don't
18 know -- that doesn't necessarily mean that it was
19 preferred, it just means it felt like it's okay.

20 Q. Well, I can understand the procedure that
21 occurred here, but I'm just trying to get to an
22 understanding, so that we know on 3B's side, which of
23 these constructions GCE actually thinks is the correct
24 one, as opposed to either one with subtle differences is
25 okay.

1 Let me see. If we look at paragraph 126 --

2 A. Right.

3 Q. -- I think you're saying because it uses
4 "removed" that's not okay.

5 A. Defining the term "removable" with the term
6 "removed" is sort of circular.

7 Q. Okay. And that's not the case if you use the
8 word "withdrawn" or -- "withdrawn," for example?

9 A. Again, it's subtle.

10 Q. Okay. So let me -- maybe I can ask it this
11 way. Can you withdraw something without removing it?

12 A. Interesting question to think about, the
13 etymology, but I suppose yes.

14 Q. So there is a difference between the two
15 constructions?

16 A. Sure. The -- yes.

17 Q. Okay. And the claim says "removable" not
18 "withdrawable," correct, the claim term itself?

19 A. What's that?

20 Q. The claim term we're talking --

21 A. Sorry.

22 Q. That's okay. I'll ask it again.

23 The claim term we're talking about says
24 "removable" not "withdrawable"?

25 A. Yes, selectively removable, which can be

1 Q. Okay. You're not aware. Okay. Now, can
2 you -- you've looked at, it looks like, one, two, three,
3 six file histories?

4 A. Yes, that's what's reflected.

5 Q. Can you -- are you able to identify even a
6 single spot in any of those file histories where the
7 patent applicant explicitly argued that a separation
8 cartridge must have more than one bed?

9 A. Sorting all of the things I've read becomes
10 challenging. Here, while sitting at the table, no, I
11 cannot -- I cannot recall that.

12 Q. Okay. And how about the inverse? Can you
13 point me to anything in any of those file histories
14 where the patent owner explicitly said that a separation
15 cartridge can only have one bed?

16 A. Except as I have argued, that the inventors
17 have repetitively said that the invention is as
18 described. I don't recall enough of the specifics of
19 these to be able to recall that right now.

20 Q. So you're talking about specification in terms
21 of repetitively?

22 A. And how they argue it in --

23 Q. What you were just referring to, though, in
24 your answer was with regard to the specification,
25 though?

1 A. And also in terms of how they -- how they argue
2 it. They describe -- and how they describe it and
3 what's being referred to in the comments.

4 Q. Are you talking about file histories?

5 A. Yes.

6 Q. Okay. So can you point me to where the patent
7 owner has explicitly said a separation cartridge can
8 only have one bed in any file history in this patent
9 family?

10 A. I cannot.

11 Q. Okay. Now, let's take a look at paragraph 59.
12 You see paragraph 59?

13 A. Yes.

14 Q. And I think you made a -- I don't recall
15 offhand. I don't mean to like -- but you made some
16 reference to something like this, I want to say,
17 earlier, perhaps.

18 A. I believe that's what I was referencing, yes.

19 Q. So you're familiar with -- with that file
20 history?

21 A. I have reviewed that file history.

22 Q. Okay. And you suggest in this declaration that
23 the examiner compared the separation cartridge to a
24 sieve bed in Warren; right?

25 A. Yes.

1 Q. And is a sieve bed a cartridge, in your
2 opinion?

3 A. Not necessarily.

4 Q. Okay. And what -- and you go on to say, "This
5 time, applicant did argue the examiner had not
6 identified a separation cartridge in Warren."

7 Do you see that?

8 A. I do.

9 Q. Do you remember seeing that -- do you remember
10 specifically seeing that in the file history?

11 A. I do.

12 Q. All right. So what was written was the
13 examiner has not even identified a separation cartridge;
14 right?

15 A. I don't have it in front of me but I will
16 accept that that's true.

17 MR. ATALLAH: All right. So
18 let's -- let's -- don't hate me.

19 Go off the record for one second?

20 (A brief recess was had.)

21 BY MR. ATALLAH:

22 Q. Okay. Sir, you have, as Exhibit 12 to your
23 declaration, it's the -- one of the file histories we
24 were just talking about; correct?

25 A. Yes.

1 A. I'll accept that.

2 Q. And so let me read -- actually, 4364 to 4365, I
3 think, is actually correct, and I'll show you that page
4 right here. You can kind of see that's the argument
5 being made about Warren.

6 Do you see that?

7 A. I do see that.

8 Q. Now, I'm going to read a quote from this
9 argument that I think you're referring to.

10 A. Uh-huh.

11 Q. "It is worth noting that the examiner does not
12 even identify a 'separation cartridge' in Warren and
13 instead generally refers to Figures 7 and 8. See final
14 at 8." Okay. And --

15 A. Yes.

16 Q. -- if you'd like to.

17 A. Uh-huh.

18 Q. So what the applicant was saying there is that
19 the examiner's reduction didn't even identify the
20 separation cartridge, which was the send point to the
21 sieve bed; right?

22 A. Okay.

23 Q. Is that right?

24 A. I think so.

25 Q. Okay. And so where -- did you see anywhere in

1 that argument or those arguments where the applicant was
2 saying that a cartridge with a single absorber bed was
3 not a separation cartridge, or was the applicant just
4 saying "you've pointed to a sieve bed, you're not even
5 identifying the separation cartridge"?

6 A. So in looking at the histories and looking at
7 the interchanges beyond here, this is one page out of
8 600, going through. I'd have to read it again and read
9 it more carefully.

10 MR. ATALLAH: All right. How about I do this.
11 I'm going to just mark as -- and, Eric, I can copy
12 exhibits if you want it. But maybe this. I'm just
13 going to try to mark as Exhibit 7, okay, I'm going to
14 mark a sub-piece of your Exhibit 12 to your declaration.

15 THE WITNESS: Correct.

16 (Exhibit 7 marked for identification.)

17 BY MR. ATALLAH:

18 Q. And that is going to be marked from pages
19 GCE4359 through -- through 43 -- it's 4374, but it
20 really ends at 4373. It's just front and back printed.
21 So I'm going to mark this as Exhibit 7. I'm going to
22 hand you that.

23 Now, if you could take a look at that. That
24 should encompass the pieces of the file history with the
25 pages you cited in paragraph 59.

1 A. It's certainly familiar, yes.

2 MR. ATALLAH: So my question before, could you
3 reread it?

4 Why don't you take -- why don't you review that
5 and then let me have it reread.

6 THE WITNESS: Please. Is there a particular --

7 MR. ATALLAH: Portion?

8 THE WITNESS: -- portion you'd like me to focus
9 on? If you do, it makes it more --

10 MR. ATALLAH: Sure. Read whatever you want but
11 I think the piece that my understanding of what you're
12 referring to in your declaration starts right here.

13 THE WITNESS: Okay. Trying to look at what
14 you're directing me to look at, so you tell me where you
15 want me to read. I've read this page. Is that what --

16 MR. ATALLAH: You can keep going until that
17 section ends. Review the rest of it as you need.

18 THE WITNESS: Thanks.

19 Okay. I've read that.

20 MR. ATALLAH: Okay. So may I have you read the
21 question then?

22 (Question beginning at page 211, line 25,
23 read back.)

24 THE WITNESS: I think that's an accurate
25 statement, that -- you're going to correct me if I'm

1 wrong in how I'm reading this, but I think they're
2 saying you just identified the sieve bed and not a
3 separation cartridge.

4 Q. Okay. Okay. I'm done with that one.

5 Now, okay, so I want to go back now, early part
6 of your declaration, paragraph 15, just for a second.

7 And --

8 A. Uh-huh.

9 Q. -- you talk about -- this is kind of some
10 background I think you did.

11 A. Yeah. Sure.

12 Q. Is that fair?

13 A. Comfortable.

14 Q. All right. So in paragraph 15, you talked
15 about some background about oxygen concentrators.

16 A. I do.

17 Q. Okay. And you say, "Prior to 2002, POCS" --
18 P-O-C-S, which are portable oxygen concentrators?

19 A. Correct.

20 Q. "Were not considered technically viable
21 products by the established industry"; right?

22 A. Yes.

23 Q. And you go on to say, "The market dramatically
24 changed in 2004 when the Inogen One product I invented
25 (see Exhibit 5) was released"; right?

1 And what I'm expressing is that gas flowing along the
2 second line where there is no zeolite does at some point
3 in time flow where there is zeolite. It does move.
4 It's not on that line anymore, but the gas was
5 first -- those molecules were defined as being on the
6 line, and at some point in time later it's not required
7 that they still be on the line.

8 Q. Well, is it your position that once it's
9 contacting the absorbent material, like you say -- like
10 you say it eventually does, it's still on the second
11 line?

12 A. No. I think to contact the absorbent material,
13 you're on the first line.

14 Q. Okay. Now I want to go back to the
15 paragraph -- I think you were referring to that
16 conference --

17 A. Yes.

18 Q. -- in the specification.

19 A. Have you found it?

20 Q. Yeah. So pick one of the patents.

21 A. Yes. Thank you.

22 Q. I think if you take a look at the paragraph of
23 column 2 right above "A Brief Summary of the Invention,"
24 is that what you're referring to?

25 A. One, two.

EXHIBIT 2

EAST Search History

			USPAT; USOCR; FPRS			
S327	1	S325 and ("21")	US- PGPUB; USPAT; USOCR; FPRS	OR	ON	2019/12/23 17:02
S328	1	S325 and ("21" hot melt\$3)	US- PGPUB; USPAT; USOCR; FPRS	OR	ON	2019/12/23 17:04

EAST Search History (Interference)

< This search history is empty >

12/ 23/ 2019 7:47:25 PM

C:\Users\pvasat\Documents\EAST\Workspaces\14193504--Removable Cartridge for
Oxygen Concentrator.wsp



67853-012 PUS2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Theodore W. Jagger
Serial Number: 14/193,504
Filed: February 28, 2014
Group Art Unit: 3782
Examiner: Vasat, Peter S.
Confirmation No.: 8773
Title: REMOVABLE CARTRIDGE FOR OXYGEN CONCENTRATOR

CORRECTED APPEAL BRIEF

In response to the Notice of Non-Compliance dated August 30, 2019, Appellant hereby submits this Corrected Appeal Brief which includes paragraph references for claim 15.

I. Real Party in Interest

VBOX, Incorporated (assignee) and 3B Medical Manufacturing, LLC (licensee) are the real parties in interest of the present application.

II. Related Appeals and Interferences

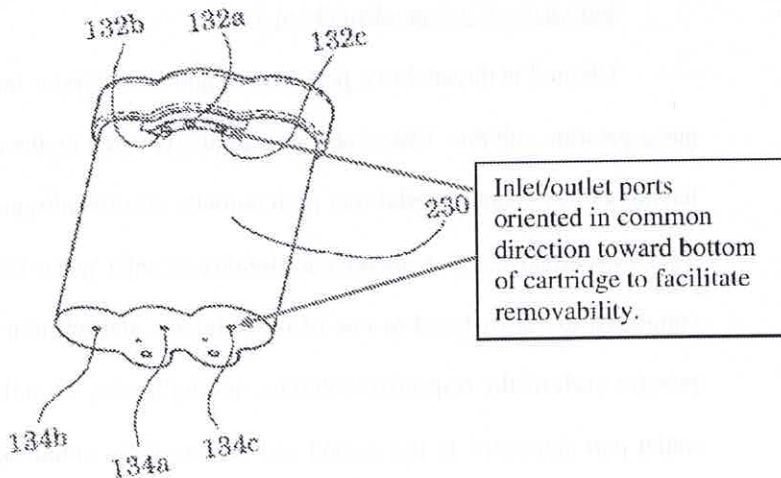
Appellant is unaware of any appeals or interferences which may be related to, directly affect or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. Summary of Claimed Subject Matter

This disclosure relates to a removable cartridge for a portable oxygen. Among other features, the cartridge includes inlet and outlet ports 132a-c, 134a-c oriented in the same

67853-012 PUS2

direction—toward the bottom of the cartridge—to increase the ease of connecting the cartridge to the oxygen concentrator. *See, e.g.*, Figure 15.



Summary of independent claim 1

Claim 1 is directed to a gas separation cartridge 206 for use in an oxygen concentrator which separates oxygen from ambient air by using an adsorption process, the gas separation cartridge having a top and a bottom, and at least one column 130a-c in a case 230, the at least one column including an inlet side, an outlet side opposite the inlet side, and a bed of adsorbent material. The cartridge further includes an inlet port 132a-c in the case adjacent one of the top and the bottom of the gas separation cartridge and configured to connect to a valve, an outlet port 134a-c in the case adjacent the other of the top and the bottom of the gas separation cartridge and configured to connect to the valve. Further, the inlet port is adjacent the inlet side of the at least one column, the outlet port is adjacent the outlet side of the at least one column, and the case includes only one inlet port and only one outlet port corresponding to the at least one column,

67853-012 PUS2

and the outlet port and the inlet port are directed in a common direction towards the bottom of the gas separation cartridge. *See, e.g.*, ¶¶ [0041]-[00113].

Summary of independent claim 8

Claim 8 is directed to a portable oxygen concentrator including a case 230, a plurality of gas separation columns 130a-c at least partially covered by the case, each gas separation column having an adsorbent material that preferentially adsorbs nitrogen, a first end, and a second end. The concentrator further includes a plurality of inlet ports 132a-c in the case, each inlet port connected to the first end of one of the columns, and wherein the case includes only one inlet port for each of the respective columns, and a plurality of outlet ports 134a-c in the case, each outlet port connected to the second end of one of the columns, wherein the case includes only one outlet port for each of the respective columns. Further, the plurality of inlet ports are not in axial alignment with the plurality of outlet ports, and the inlet ports and the outlet ports are directed in a common direction towards a bottom of the portable oxygen concentrator. *See, e.g.*, ¶¶ [0041]-[00113].

Summary of independent claim 15

Claim 15 is directed to a removable gas separation cartridge for use in an oxygen concentrator, the gas separation cartridge comprising an adsorbent column 130 having a bed of adsorbent material disposed along an axis, a case 230 for containing the adsorbent column, the case including a housing portion and a cap attached to a first end of the housing portion. Further, the case is configured to be removable from the oxygen concentrator by movement in a first direction relative to the remainder of the oxygen concentrator. A first port 134a-c is in the case

67853-012 PUS2

and a second port 132a-c is in the case. The first and second ports are the only ports in the case corresponding to the adsorbent column. The first port and the second port are both oriented in a second direction opposite the first direction, and the first port is concentrically aligned with the axis and is disposed adjacent a second end of the housing portion opposite the first end, and the second port is spaced-apart from the axis and is disposed adjacent the first end of the housing portion. *See, e.g.*, ¶¶ [0041]-[00113].

IV. Argument

Double patenting

Without conceding to the double patenting rejections (*see* Final Office Action dated May 8, 2019, hereinafter “Final” at pages 2-5), Appellant has submitted a terminal disclaimer relative to U.S. Patent Application No. 16/006,915. The double patenting rejections are now moot and should be withdrawn. The rejections should be reversed if the Examiner does not withdraw them in the Answer.

§ 112

The Examiner rejects claim 15 under § 112 because the term “the remainder” is allegedly indefinite. *See* Final at 5, 6.

Claim 15 recites the term “the remainder” as in “wherein the case is configured to be removable from the oxygen concentrator by movement in a first direction relative to the remainder of the oxygen concentrator.” The remainder of means the rest of. Perhaps the claim could have been written to refer to “a remainder” rather than “the remainder.” But such a minor issue does not rise to the level of an indefiniteness rejection. The standard for definiteness is

67853-012 PUS2

“whether those skilled in the art would understand what is claimed when the claim is read in light of the specification.” *See* MPEP § 2173.02. Here, “the remainder” does not render the claims indefinite. Not every minor antecedent basis issue rises to the level of indefiniteness. The rejection should be reversed.

Independent claim 1 is not obvious over Warren in view of Bassine

Independent claim 1 stands rejected under § 103 for allegedly being obvious over Warren (U.S. 2002/0033095) in view of Bassine (U.S. Patent No. 5,275,642). *See* Final at 8. Appellant traverses this ground of rejection.

Claim 1 recites, among other things, an inlet port and an outlet port, and that “the outlet port and the inlet port are directed in a common direction towards the *bottom* of the gas separation cartridge.” (emphasis added).

The Examiner admits Warren lacks this feature (among others). Warren discloses a bed 12 which does not include inlet and outlet ports oriented in a common direction, let alone towards a bottom of the gas separation cartridge. If anything, Warren’s inlet and outlet ports are arranged along a common axis, and one cannot tell which direction Warren’s inlets and outlet face (i.e., toward the top, toward the sides, etc.). It is worth noting that the Examiner does not even identify a “separation cartridge” in Warren, and instead generally refers to Figures 7 and 8. *See* Final at 8.

First, there is no reason to modify Warren’s inlet and outlet such that they face in a common direction. Second, even if one modified Warren’s inlet and outlet such that they faced a common direction, there is no indication that the modified inlet/outlet would face the bottom of Warren’s separation cartridge, as claimed. Again, the Examiner does not identify a separation

67853-012 PUS2

cartridge in Warren, and there is no way to tell from Warren's Figures 7 and 8 what is the bottom (or top or sides, for that matter). Regardless, there is certainly no reason, other than hindsight, to orient Warren's inlet/outlet such they face the bottom of a separation cartridge. Accordingly, there is no *prima facie* case of obviousness because the Examiner has not addressed all claim elements (namely, the "bottom") and there is otherwise no reason to make the modification. *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (Rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness); *In re Kotzab*, 217 F.3d 1365, 1370 (Fed. Cir. 2000) (in order to establish a *prima facie* case of obviousness, all the claim limitations must be taught or suggested in the references cited by the Examiner). Accordingly, there is no *prima facie* case of obviousness.

Claim 8 is not obvious over Cole in view of Bassine

Independent claim 8 stands rejected under § 103 for allegedly being obvious over Cole (U.S. Patent No. 5,578,115) in view of Bassine. *See* Final at 13. Appellant traverses this ground of rejection.

Claim 8 recites, among other things, "wherein the plurality of inlet ports are not in axial alignment with the plurality of outlet ports, and the inlet ports and the outlet ports are directed in a common direction towards a *bottom* of the portable oxygen concentrator."

Cole is not truly a portable oxygen concentrator. Neither is Bassine. There is no indication as to what is that bottom of either Cole or Bassine. The Examiner admits that Cole does not disclose the above-quoted claim language, and argues that it would have been obvious to modify Cole in view of Bassine. However, even if one modified Cole such that its inlet and

67853-012 PUS2

outlet were oriented in a common direction, there is still no indication that the resultant modification would exhibit inlets and outlets directed towards a *bottom* of a portable oxygen concentrator, as claimed. With reference to Cole's Figure 2, for example, there is no indication that the unit 30 would be oriented up-and-down, as shown, when in use in an oxygen concentrator. The unit could be oriented sideways, for example. In truth, since Cole is not a portable oxygen concentrator it does not matter whether its inlets and outlets are directed toward the bottom of a unit, as claimed. In this way, there is no *prima facie* case of obviousness because the Examiner has not addressed all claim elements and because is no reason to modify Cole as claimed. *See Kahn and Kotzab cited supra.*

Claim 15 is not anticipated by or obvious over Bassine

Independent claim 15 stands rejected for allegedly being anticipated by or obvious over Bassine. *See* Final at 17. Appellant traverses both grounds of rejection.

Claim 15 recites "wherein the case is configured to be removable from the oxygen concentrator by movement in a first direction relative to the remainder of the oxygen concentrator," and "wherein the first port and the second port are both oriented in a second direction opposite the first direction." In other words, the ports are oriented opposite of the direction of removal.

Bassine is not a portable oxygen concentrator and, as such, does not discuss the claimed removability. Thus, it is not possible for Bassine to anticipate the claimed feature of "wherein the first port and the second port are both oriented in a second direction opposite" the direction of removability (i.e., the "first direction"). The Examiner appears to be relying on inherency, but the Examiner has not met the strict requirements for inherency. *See* MPEP § 2112 and *In re*

67853-012 PUS2

Oelrich, 666 F.2d 578, 581 (CCPA 1981) (The fact that a certain result or characteristic *may* occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. The allegedly inherent characteristic must be established with certainty—probabilities are not sufficient.). Accordingly, the claims are not anticipated by Bassine.

Regarding obviousness, Bassine does not teach a direction of removability and thus it is hindsight to orient Bassine's inlet/outlet in a direction opposite this (non-existent) direction. The Examiner's rationale in the Office Action is not grounded in the prior art, is a bridge too far, and, simply, is hindsight. *See Kahn and Kotzab*, cited *supra*.

Dependent claims

Each of the pending dependent claims should be allowed for at least the reason that they depend from an allowable base claim (without regard to the other patentable features recited therein). Appellant does not concede to any rejections not specifically addressed herein.

Reservation of rights

Appellant does not waive any arguments not raised herein.

V. Conclusion

Based on the foregoing, the Examiner's decision to reject the claims should be reversed.

Respectfully Submitted,
CARLSON, GASKEY & OLDS, P.C.

/Timothy J. Murphy/
Timothy J. Murphy
Registration No. 64,613
400 West Maple, Suite 350
Birmingham, MI 48009
Telephone: (248) 283-0732

67853-012 PUS2

VI. Appendix of Claims

1. A gas separation cartridge for use in an oxygen concentrator which separates oxygen from ambient air by using an adsorption process, the gas separation cartridge having a top and a bottom, and comprising:

at least one column in a case, the at least one column including an inlet side, an outlet side opposite the inlet side, and a bed of adsorbent material;

an inlet port in the case adjacent one of the top and the bottom of the gas separation cartridge and configured to connect to a valve; and

an outlet port in the case adjacent the other of the top and the bottom of the gas separation cartridge and configured to connect to the valve,

wherein the inlet port is adjacent the inlet side of the at least one column, the outlet port is adjacent the outlet side of the at least one column, and the case includes only one inlet port and only one outlet port corresponding to the at least one column, and the outlet port and the inlet port are directed in a common direction towards the bottom of the gas separation cartridge.

2. An oxygen concentrator comprising:

the gas separation cartridge of claim 1;

a housing defining a receptacle configured to receive the gas separation cartridge;

an inlet air filter connected to the at least one column;

a product gas filter connected to the at least one column.

3. The oxygen concentrator of claim 2 wherein the outlet port is connected to the product gas filter.

67853-012 PUS2

4. The gas separation cartridge of claim 1 further comprising:
a spring for retaining the at least one column in the case.
5. The gas separation cartridge of claim 1 wherein each of the bed of adsorbent material comprises a bed of zeolite which provides preferential adsorption of nitrogen.
6. The gas separation cartridge of claim 5 wherein the zeolite is a lithium molecular sieve adsorbent.
8. A portable oxygen concentrator comprising:
a case;
a plurality of gas separation columns at least partially covered by the case, each gas separation column having an adsorbent material that preferentially adsorbs nitrogen, a first end, and a second end;
a plurality of inlet ports in the case, each inlet port connected to the first end of one of the columns, and wherein the case includes only one inlet port for each of the respective columns;
and
a plurality of outlet ports in the case, each outlet port connected to the second end of one of the columns, wherein the case includes only one outlet port for each of the respective columns,
wherein the plurality of inlet ports are not in axial alignment with the plurality of outlet ports, and the inlet ports and the outlet ports are directed in a common direction towards a

67853-012 PUS2

bottom of the portable oxygen concentrator.

9. The portable oxygen concentrator of claim 8 wherein the adsorbent columns each further comprise a spring for retaining the adsorbent column in the case.

10. The portable oxygen concentrator of claim 8 wherein the beds of adsorbent material comprise beds of zeolite which provide preferential adsorption of nitrogen.

11. The portable oxygen concentrator of claim 10 wherein the zeolite is a lithium molecular sieve adsorbent.

12. The portable oxygen concentrator of claim 8 wherein each inlet port is concentrically aligned with an axis of each respective gas separation column.

15. A removable gas separation cartridge for use in an oxygen concentrator, the gas separation cartridge comprising:

an adsorbent column having a bed of adsorbent material disposed along an axis;

a case for containing the adsorbent column, the case including a housing portion and a cap attached to a first end of the housing portion;

wherein the case is configured to be removable from the oxygen concentrator by movement in a first direction relative to the remainder of the oxygen concentrator;

a first port in the case; and

a second port in the case;

67853-012 PUS2

wherein the first and second ports are the only ports in the case corresponding to the adsorbent column,

wherein the first port and the second port are both oriented in a second direction opposite the first direction, and

wherein the first port is concentrically aligned with the axis and is disposed adjacent a second end of the housing portion opposite the first end, and the second port is spaced-apart from the axis and is disposed adjacent the first end of the housing portion.

21. The oxygen concentrator of claim 2 wherein the case is selectively removable from the receptacle by moving relative to the housing in a direction opposite the common direction.

22. The gas separation cartridge of claim 1 wherein the bed of adsorbent material contains between five and twenty-five cubic centimeters of adsorbent material.

23. The gas separation cartridge of claim 22 wherein the bed of adsorbent material contains between fourteen and sixteen cubic centimeters of adsorbent material.

Electronic Acknowledgement Receipt	
EFS ID:	37059630
Application Number:	14193504
International Application Number:	
Confirmation Number:	8773
Title of Invention:	REMOVABLE CARTRIDGE FOR OXYGEN CONCENTRATOR
First Named Inventor/Applicant Name:	Theodore W. Jagger
Customer Number:	26096
Filer:	Timothy J. Murphy/Carolyn Hannenberg
Filer Authorized By:	Timothy J. Murphy
Attorney Docket Number:	67853-012 PUS2
Receipt Date:	04-SEP-2019
Filing Date:	28-FEB-2014
Time Stamp:	12:00:13
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no				
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Appeal Brief Filed	012PUS2_Corrected_Appeal_Brief_09-04-19.pdf	73498 d99a4a11f13c821f3d64dc3becdd3ade71085817	no	12
Warnings:					

Information:	
Total Files Size (in bytes):	73498
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EQ/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.	



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/193,504	02/28/2014	Theodore W. Jagger	67853-012 PUS2	8773
26096 7590 08/30/2019 CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009				
EXAMINER				
ART UNIT			PAPER NUMBER	
MAIL DATE			DELIVERY MODE	
08/30/2019				

Please find below and/or attached an Office communication concerning this application or proceeding.