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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

IMPERATIVE CARE, INC.,
Petitioner,

v.

INARI MEDICAL, INC.,
Patent Owner.

Case No. IPR2026-00215
Patent No. 12,239,333

**PETITION FOR *INTER PARTES* REVIEW OF
U.S. PATENT NO. 12,239,333**

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1003	Expert Declaration of Troy Thornton
1004	Resume of Troy Thornton
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1006	U.S. Patent Publication No. 2015/0173782 A1 to Garrison et al. (“Garrison”)
1007	U.S. Patent Publication US 2008/0097410 A1 to Lee (“Lee”)
1008	U.S. Patent Publication US 2003/0225379 A1 to Schaffer et al. (“Schaffer”)
1009	U.S. Patent Publication No. 2003/0116731 A1 to Hartley (“Hartley”)
1010	U.S. Patent No. 9,980,813 B1 to Eller (“Eller”)
1011	U.S. Patent Publication No. 2017/0043066 A1 to Laub (“Laub”)
1012	Certified File History of U.S. Patent Application 10/371,190 (Schaffer File History)
1013	U.S. Patent No. 8,734,374 B2 to Aklog et al. (“Aklog”)
1014	U.S. Patent No. 5,938,645 to Gordon (“Gordon”)
1015	U.S. Patent Publication No. 2014/0296868 A1 to Garrison et al.
1016	U.S. Patent No. 7,998,104 B2 to Chang (“Chang”)
1017	U.S. Patent No. 8,157,760 B2 to Criado et al. (“Criado”)
1018	U.S. Patent No. 6,481,439 B1 to Lewis et al. (“Lewis”)

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1025	U.S. Patent No. 5,197,485 to Grooters (“Grooters”)
1026	U.S. Patent No. 3,785,380 to Brumfield (“Brumfield”)
1027	U.S. Patent No. 3,863,624 to Gram (“Gram”)
1028	Merriam-Webster’s Collegiate Dictionary (11th ed. 2014), definition of “port”
1029	Dorland’s Illustrated Medical Dictionary, 32nd ed. (2012), definition of “Port”
1030	Harish Ram et al., “The AngioVac Device and Its Anesthetic Implications,” 31 J. Cardiothoracic and Vascular Anesthesia, 1091-1102 (2017) (“Ram”)
1031	U.S. Patent No. 3,939,078 to Servas (“Servas”)
1032	EP 1 084 722 A2 (“Flamer”)
1033	U.S. Patent No. 3,701,433 to Krakauer (“Krakauer”)
1034	U.S. Patent No. 4,572,724 to Rosenberg (“Rosenberg”)

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1048	Decision Granting Institution of <i>Inter Partes</i> Review for U.S. Patent No. 11,697,012 (Paper 6) in <i>Imperative Care, Inc. v. Inari Medical, Inc.</i> , IPR2025-00156 (P.T.A.B. Apr. 22, 2025)

IPR Petition – Patent No. 12,239,333
Imperative Care, Inc. v. Inari Medical Inc.

Exhibit No.	Description
1049	Decision Granting Institution of <i>Inter Partes</i> Review for U.S. Patent No. 11,554,005 (Paper 10) in <i>Imperative Care, Inc. v. Inari Medical, Inc.</i> , IPR2025-00289 (P.T.A.B. June 18, 2025)
1050	Decision Granting Institution of <i>Inter Partes</i> Review for U.S. Patent No. 11,844,921 (Paper 13) in <i>Imperative Care, Inc. v. Inari Medical, Inc.</i> , IPR2025-00728 (P.T.A.B. Oct. 10, 2025)
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1052	Decision Granting Institution of <i>Inter Partes</i> Review for U.S. Patent No. 11,969,333 (Paper 15) in <i>Imperative Care, Inc. v. Inari Medical, Inc.</i> , IPR2025-01021 (P.T.A.B. Dec. 11, 2025)
1053	Decision Granting Institution of <i>Inter Partes</i> Review for U.S. Patent No. 11,974,910 (Paper 15) in <i>Imperative Care, Inc. v. Inari Medical, Inc.</i> , IPR2025-01025 (P.T.A.B. Dec. 11, 2025)
1054	Notice of Decision Granting Institution of <i>Inter Partes</i> Review for U.S. Patent No. 12,016,580 (Paper 11) in <i>Imperative Care, Inc. v. Inari Medical, Inc.</i> , IPR2025-01264 (P.T.A.B. Dec. 11, 2025)

Petitioner Imperative Care, Inc. (“Petitioner”) requests *inter partes review* (“IPR”) of claims 1, 4-5, 7, 10-11, 13, and 15-28 of U.S. Patent 12,239,333 (“the 12-’333 patent”) assigned to Inari Medical, Inc. (“Patent Owner” or “PO”).

I. INTRODUCTION AND BACKGROUND

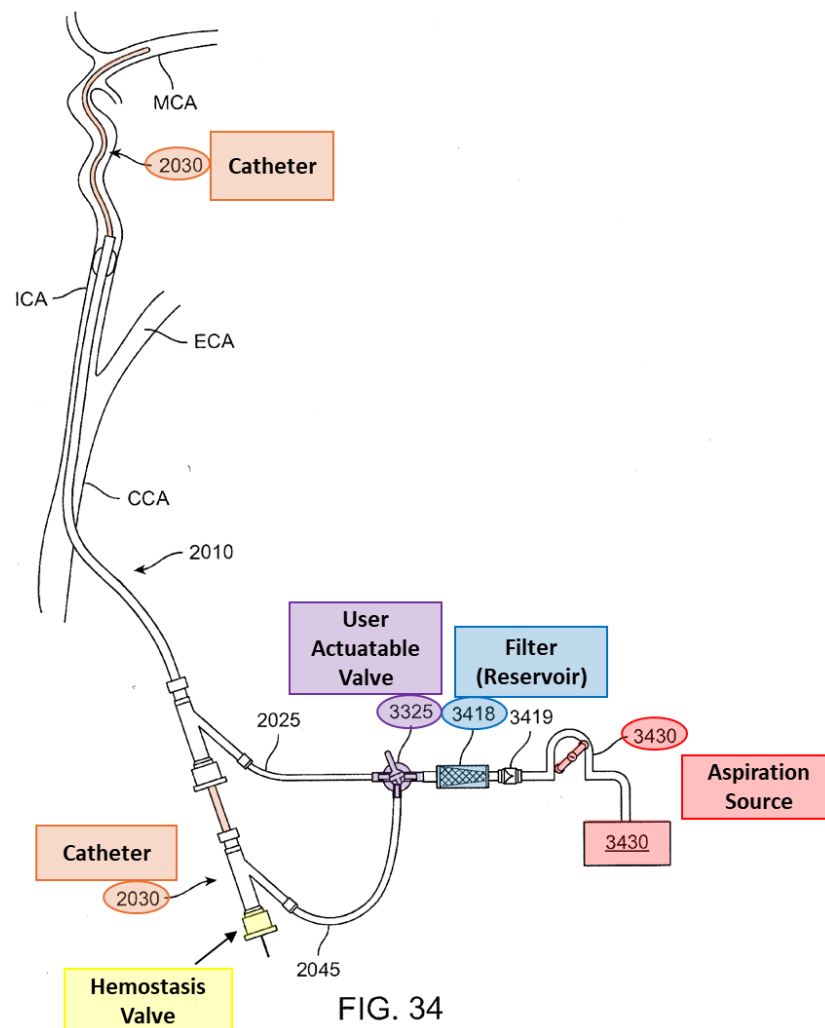
Patent Owner has asserted the challenged claims against Petitioner in co-pending district court litigation (“Litigation”). (Ex. 1021.) The Court stayed the Litigation until at least February 4, 2026, and will evaluate extending the stay based on the status of several pending IPRs. (Ex. 1024.) Given the stay, the newness of the 12-’333 patent, and the institution of eight related IPRs, Petitioner challenges the patentability of the challenged claims.

The accumulation of unwanted material, such as blood clots, in a patient’s vasculature can cause serious conditions, including stroke and death. Over the last several decades, medical device companies have developed methods and devices to remove clots from the vasculature, including catheter-based systems that aspirate (i.e., suction) the clot from the vessel. Many of these prior-art systems included clot collection reservoirs to filter unwanted material from aspirated blood.

The challenged claims focus on such clot collection reservoirs and combine the reservoirs with conventional aspiration components. Petitioner has filed several related IPRs addressing similar claims involving clot collection reservoirs. (Ex. 1049, 10, 28-32; Ex. 1052, 8, 23-39.) Those IPRs demonstrate that aspiration

systems having clot collection reservoirs and conventional aspiration components were well-known in the prior art.

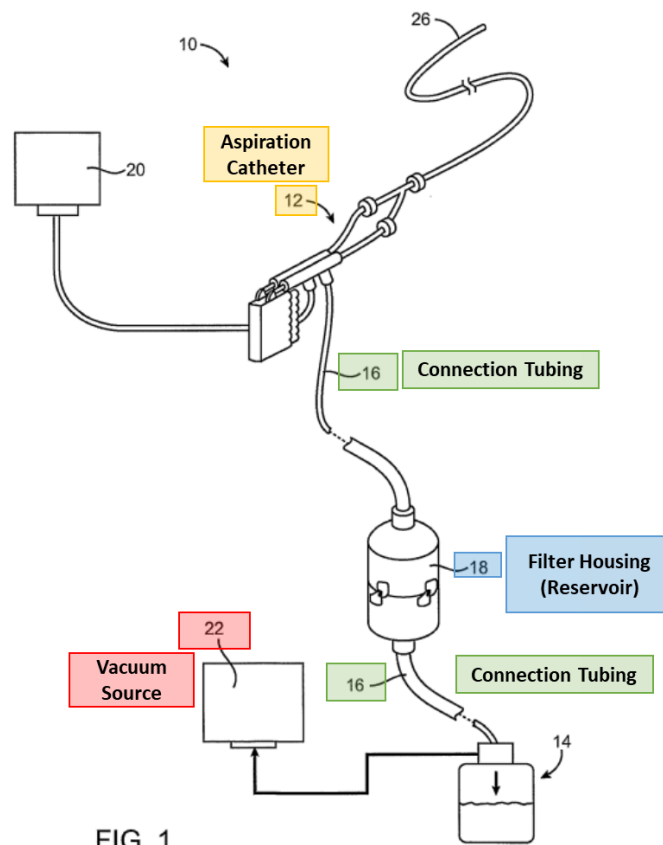
For example, **Garrison** describes aspiration systems for removing clots from a patient's vasculature. Garrison's system includes a clot collection reservoir with a filter to separate clots from blood. Garrison's system also includes conventional aspiration components, including an aspiration source, aspiration catheter, hemostasis valve, and user-actuable valve:



(Ex. 1006, Fig. 34.)¹

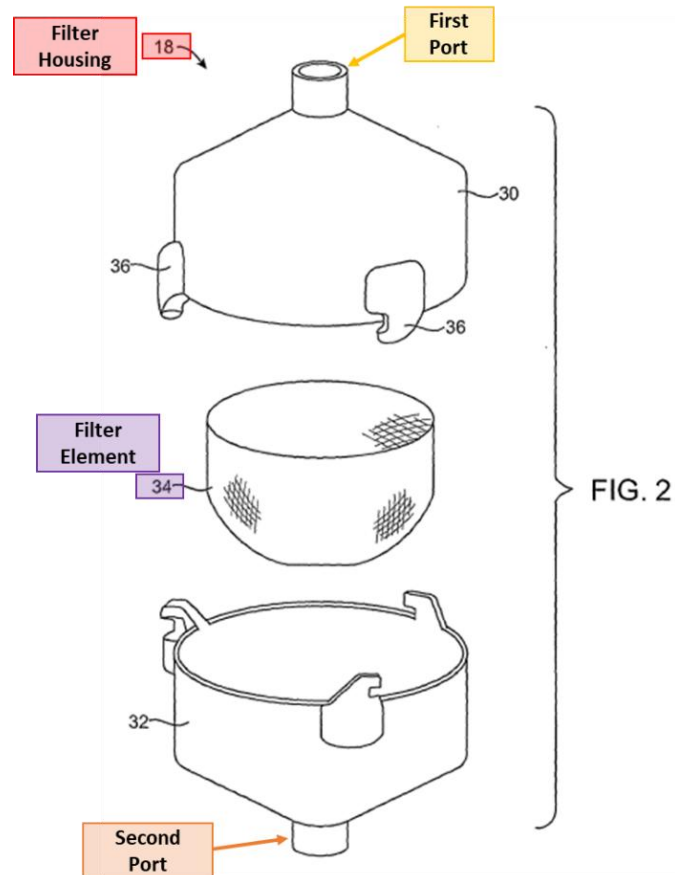
In the related, instituted IPRs, the Board preliminarily found that Garrison discloses such components. (Ex. 1049 at 28-32; Ex. 1052 at 23-39; Ex. 1053 at 23-40; Ex. 1054.)

Likewise, **Goff** discloses an aspiration system having a clot collection reservoir to separate clots from blood:



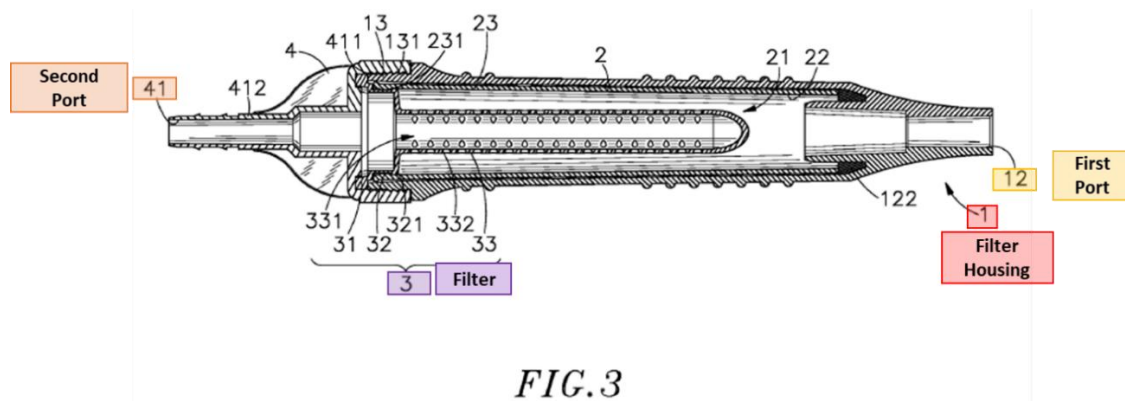
(Ex. 1005, Fig. 1.) Goff's reservoir includes specific features required by the challenged claims, including a filter, housing, and ports on the housing:

¹ Colors and annotations in figures herein have been added by Petitioner unless noted otherwise.



(*Id.*, Fig. 2.)

Lee also discloses an aspiration system having a collection reservoir with the claimed features, including a filter, housing, and ports on the housing:



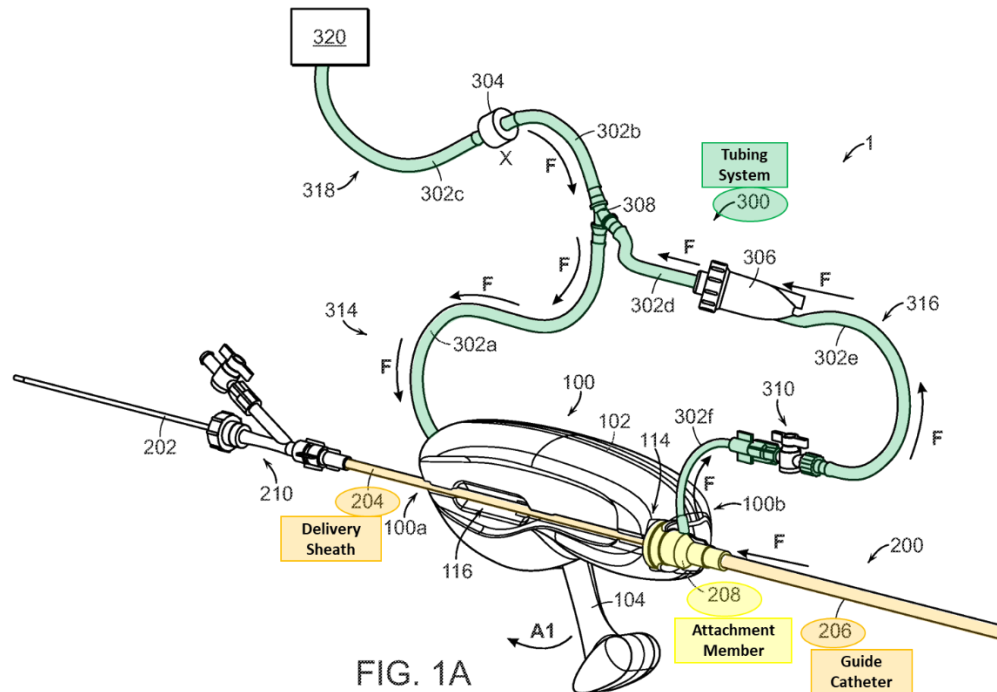
(Ex. 1007, Fig. 3.)

As demonstrated below, the challenged claims recite known features of clot collection reservoirs and aspiration systems, which are used according to their conventional functions to predictably separate unwanted material from a patient's blood. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007). The prior art grounds identified in this Petition raise a reasonable likelihood that one or more claims of the 12-'333 patent are unpatentable. Accordingly, Petitioner requests that the Board institute this IPR to reconsider the patentability of the 12-'333 patent.

II. THE 12-'333 PATENT

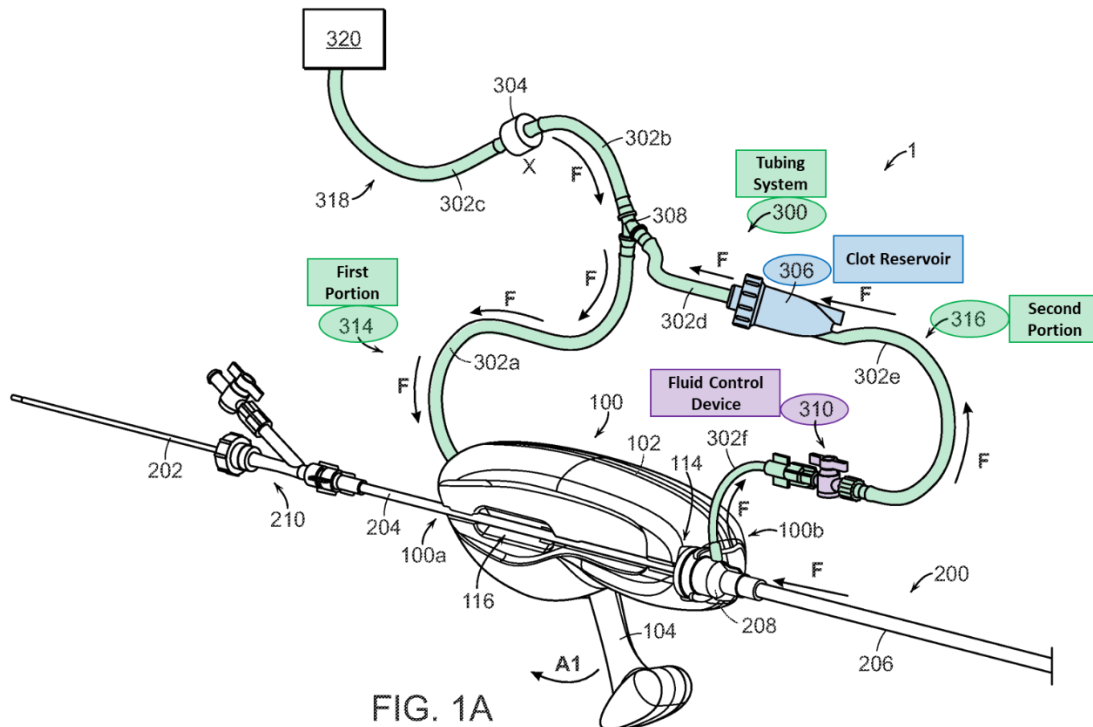
A. Overview

The 12-'333 patent describes a retrieval system for engaging and removing unwanted material from a blood vessel. (Ex. 1001, 3:53-56.) The patent alleges that the system can treat various clots, including pulmonary embolisms ("PE") and cerebral embolisms. (*Id.*, 4:4-10.) The "clot retrieval system 1" includes a "retraction and aspiration device 100 ('RA device 100')," "catheter system 200," and "tubing system 300." (*Id.*, 4:48-51.) The "catheter system 200" may comprise a "guide catheter 206" and "delivery sheath 204." (*Id.*, 5:10-22.) The system also includes an "attachment/valve member 208" [yellow] that can "secure the catheter 200 to the RA device 100" and "can fluidly couple an aspiration lumen of the catheter system 200 ... to the tubing system 300":



(*Id.*, 5:10-6:24; Fig. 1A.) The “tubing system 300” fluidly couples the pressure source to the aspiration lumen of the catheter system 200. (*Id.*, 6:55-57.) The pressure source is “obscured in FIGS. 1A and 1B,” but is for example, a syringe within the RA device. (*Id.*, 6:3-9.)

The tubing system 300 can comprise a “first portion 314” coupled to the pressure source, and a “second portion 316”. (*Id.*, 6:62-65.) Second portion 316 comprises “clot reservoir 306” and “second fluid control unit 310,” which may “be a stopcock or a clamp that is externally operated to regulate the flow of liquid through the second portion 316 of the tubing system 300”:



(*Id.*, 7:10-25, Fig. 1A.)

The “clot reservoir 306 includes a housing 322” and “a filter 321 ... positioned within the housing 322”:

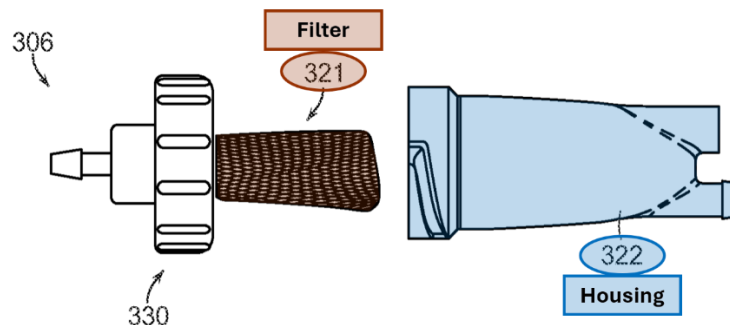


FIG. 3C

(*Id.*, 9:1-5; Fig. 3C.) The housing can also include a “port 324 configured to be removably, fluidly coupled to the catheter system 200” and a “fluid connector (e.g., barbed outlet) 322 for connecting to the tubing system 300”:

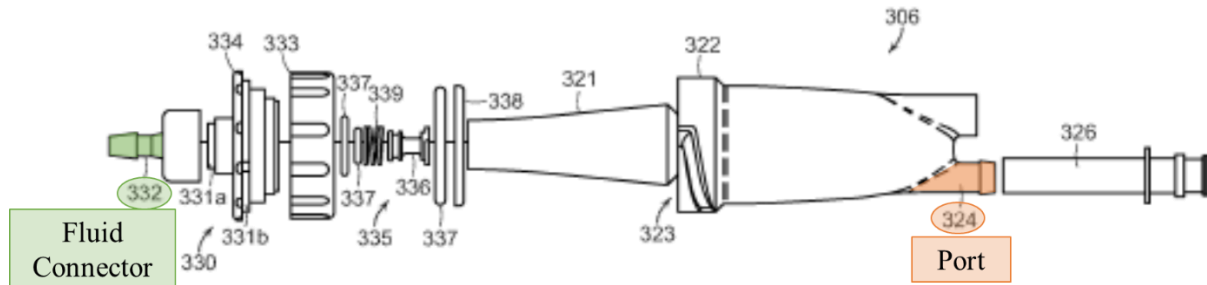


FIG. 3A

(*Id.*, 9:5-22, Fig. 3A.)

The attachment member 208 “can be, for example, a hemostasis valve configured to maintain hemostasis ... as the delivery sheath 204, ... and/or other components of the catheter system 200 are inserted through the valve 445.” (*Id.*, 11:3-13; Fig. 7A.) The hemostasis valve can have a tubular member 1372 extending through the valve:

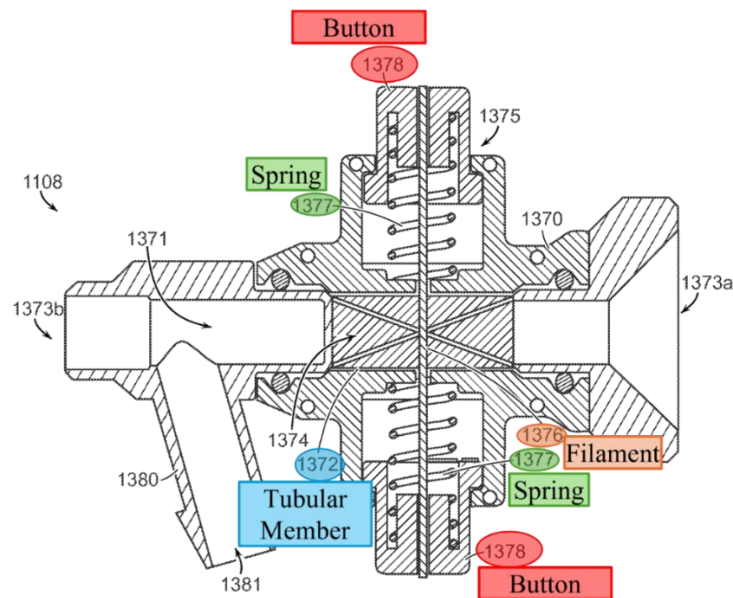


FIG. 13A

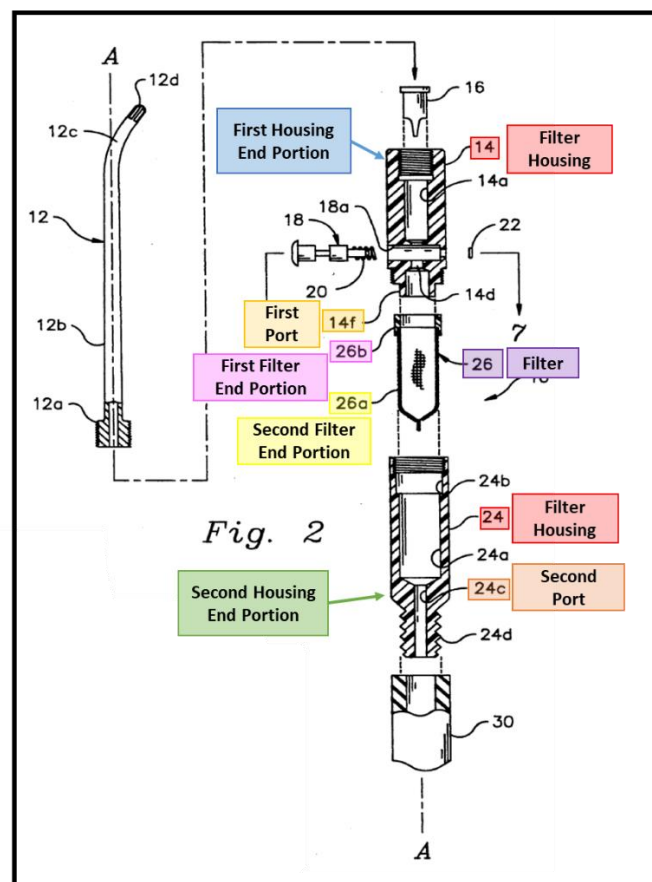
(*Id.*, 18:12-21, Fig. 13A.)

The valve also includes an “actuation mechanism 1375” that can “collapse and seal the tubular member 1372 via compression and/or constriction of one or more filaments 1376.” (*Id.*, 18:21-26.) The actuation mechanism can be “one or more buttons 1378.” (*Id.*, 18:27-29.) The valve also includes a bias feature, such as a spring, that biases the actuator toward the closed configuration. (*Id.*)

B. Prosecution History

The Examiner issued two rejections during prosecution. First, the Examiner rejected several claims as anticipated or obvious over Grooters (U.S. Patent 5,197,485 (Ex. 1025)):

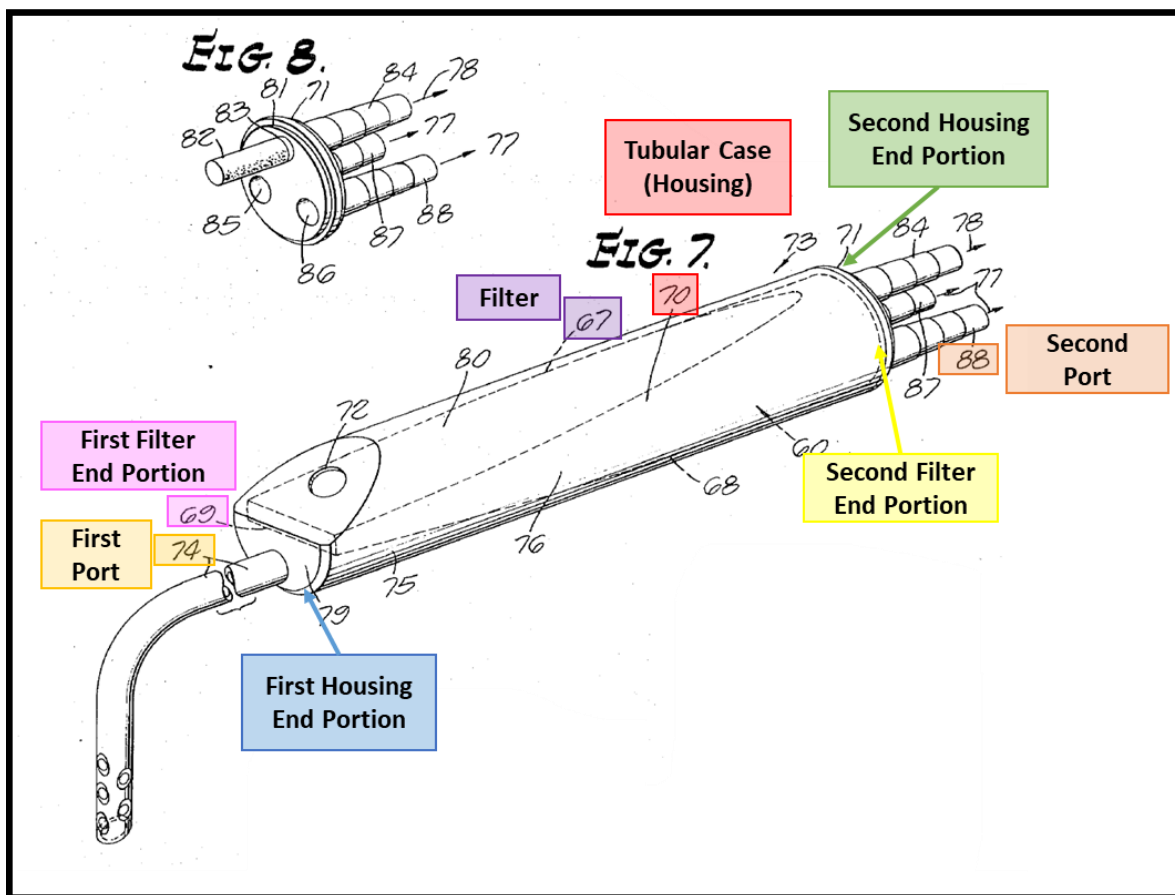
Grooters



(Ex. 1002, 260-268; Ex. 1025, Fig. 2.)

Applicant then conducted an interview and argued that “the orientation of the filter trap 26 of Grooters is opposite to the orientation as recited in the claims.” (Ex. 1002, 244.) In the Interview Summary, the Examiner agreed with applicant’s argument, but found that Brumfield’s Figures 7-8 (U.S. Patent 3,785,380 (Ex. 1026)) read on claims 1 and 11:

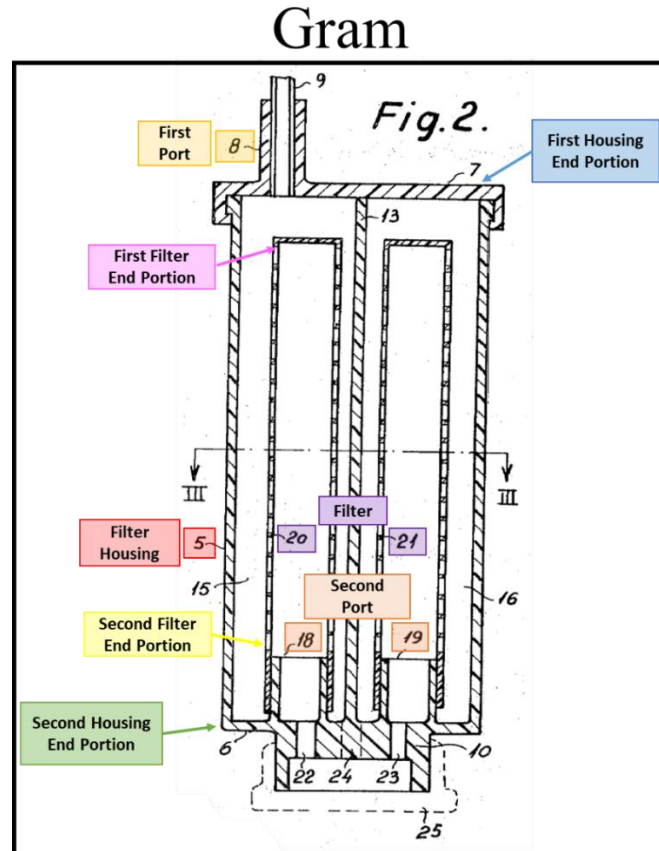
Brumfield



(*Id.*; Ex. 1026, Figs. 7-8.)

After the interview, applicant amended claims 1 and 11 to require that the first port “provides a first fluid path to the chamber” and the second port “provides a second fluid path from the chamber.” (Ex. 1002, 216-222.) Applicant represented that during the interview, “the Examiner provisionally agreed ... that independent claims 1 and 11 would patentably distinguish over Grooters and Brumfield if amended as set forth herein.” (*Id.*, 223.) Applicant did not otherwise address Brumfield. (*Id.*, 223-226.)

The Examiner issued a second rejection, rejecting claims 11 and 14 as anticipated by Gram (U.S. Patent No. 3,863,624 (Ex. 1027)) and claim 1 and others as obvious over Gram and Grooters:



(*Id.*, 192-198; Ex. 1027, Fig. 2.) The Examiner stated that claims 18-19 and 21-30 would be allowable if claim 18 were amended to change “the filter body” to “the filter,” and that claims 3, 5-6, and 13-17 would be allowable if rewritten in independent form. (Ex. 1002, 191, 199.) The Examiner did not explain how these amendments overcame the previously cited art. (*Id.*) Following this rejection, applicant cancelled claims 1 and 11, amended claim 18 as proposed by the Examiner, and rewrote claims 3, 5-6, 13, and 15-16 into independent form. (*Id.*, 174-187.) The Examiner then allowed the claims. (*Id.*, 109-120.)

C. Earliest Possible Priority Date

The 12-’333 patent claims priority to provisional application 62/622,691, filed January 26, 2018, which is the earliest possible priority date for the 12-’333 patent. (Ex. 1001.) Petitioner applies this earliest priority date in this Petition but reserves its right to challenge the priority date in subsequent proceedings.

III. LEVEL OF ORDINARY SKILL

POSITAs in January 2018 would have had an undergraduate degree in mechanical engineering or a related engineering discipline and 2-4 years of catheter or catheter system design experience and, where necessary, would have consulted with a physician regarding the methods of treatment. (Ex. 1003, ¶34.)

IV. CLAIM CONSTRUCTION

The claim terms should receive their ordinary and customary meaning as understood by POSITAs at the time of filing and in accordance with the specification and prosecution history. 37 C.F.R. §42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

Claims 18 and 22-25 require one or more “filaments.” In related IPRs, the parties disputed whether the claimed “filament” must be flexible. (*See, e.g.*, Ex. 1047, 12-18.) Here, however, a construction of “filament” is not necessary to resolve the controversy because Petitioner relies on Hartley and Eller for the filament. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019). PO has never disputed that Hartley and Eller disclose flexible filaments, and the Board has preliminarily found that both references disclose “flexible” filaments. (Ex. 1047, 35-36; Ex. 1048, 34; Ex. 1049, 15 n. 12; Ex. 1050, 14; Ex. 1051, 16.)

Petitioner does not believe any other terms require construction to resolve the patentability issues herein.

V. STATEMENT OF RELIEF REQUESTED

A. IPR Grounds

Petitioner asserts the following grounds of unpatentability:

Ground	Reference(s)	Basis	Challenged Claims
1	Goff	§102	1, 4-5, 7, 10-11, 13, 15
2	Goff	§103	1, 4-5, 7, 10-11, 13, 15
3	Garrison + Goff	§103	1, 4-5, 7, 10-11, 13, 15-17, 19-21
4	Garrison + Lee	§103	1, 4-5, 7, 10-11, 13, 15-17, 19-21
5	Garrison + Goff + Schaffer + Hartley	§103	18, 22-25
6	Garrison + Goff + Schaffer + Eller	§103	18, 22-25
7	Garrison + Lee + Schaffer + Hartley	§103	18, 22-25
8	Garrison + Lee + Schaffer + Eller	§103	18, 22-25
9	Garrison + Goff + Laub	§103	26-28
10	Garrison + Lee + Laub	§103	26-28

B. The Asserted References Are Prior Art

The following references are prior art under at least 35 U.S.C. §102(a)(1):

- (1) Goff (Ex. 1005) published November 23, 2006;
- (2) Garrison (Ex. 1006) published June 25, 2015;
- (3) Lee (Ex. 1007) published April 24, 2008;
- (4) Schaffer (Ex. 1008) published on December 4, 2003;
- (5) Hartley (Ex. 1009) published on June 26, 2003;

(6) Eller (Ex. 1010) published on October 29, 2015; and

(7) Laub (Ex. 1011) published on February 16, 2017.

C. The Asserted References Are Analogous Art

The asserted references are analogous art that is usable in an obviousness combination. *Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1000 (Fed. Cir. 2016). The references are from the same field as the 12-’333 patent, e.g., devices for aspirating unwanted material from a patient. (Ex. 1003, ¶38.) The references are also pertinent to the problem the inventor was focused on, e.g., aspirating blood and unwanted material from a patient and filtering material from the blood. (*Id.*) Accordingly, POSITAs are presumed to have been aware of these references, and their teachings may be combined to support an obviousness rejection. *In re Nilssen*, 851 F.2d 1401, 1403 (Fed. Cir. 1988).

VI. GROUNDS 1-2: CLAIMS 1, 4-5, 7, 10-11, 13, 15 ANTICIPATED OR RENDERED OBVIOUS BY GOFF

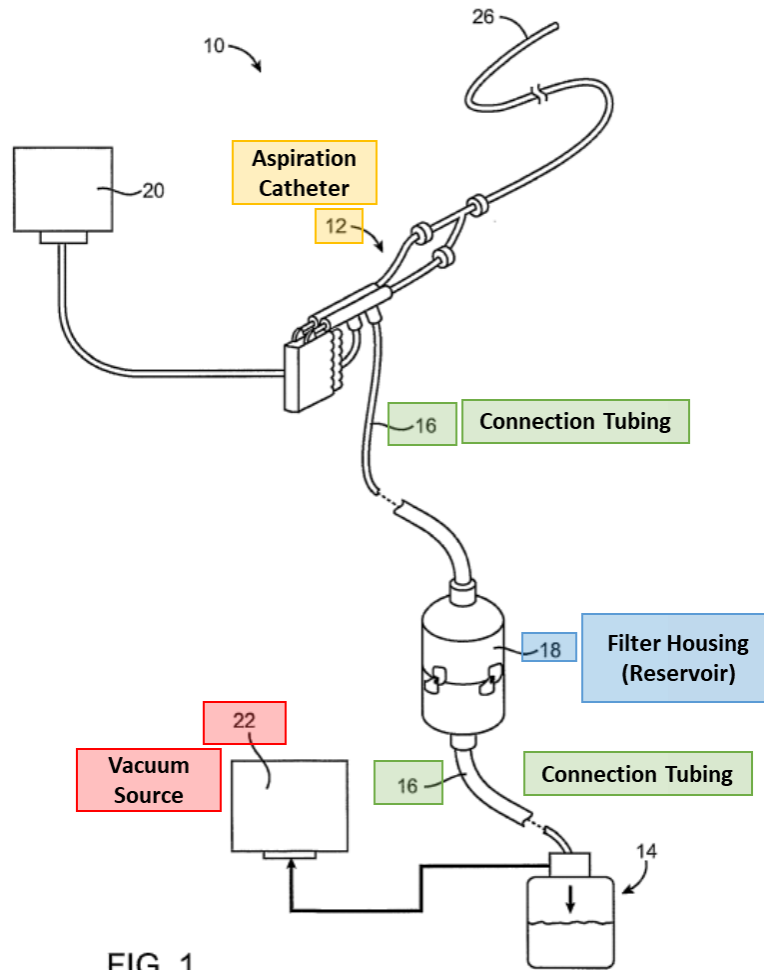
A. Claim 1

Claim 1 is anticipated or rendered obvious by Goff. (Ex. 1003, ¶¶59-97.)

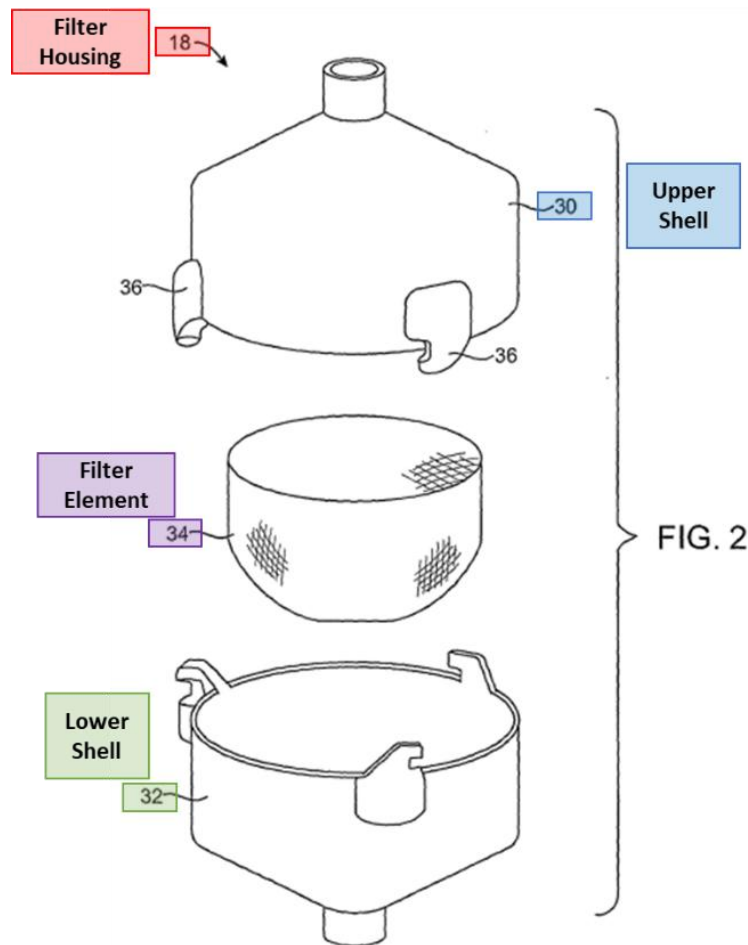
1. Preamble

If the preamble is limiting, Goff discloses a “clot collection reservoir.” (Ex. 1003, ¶¶60-61.)

Goff discloses “methods and systems for filtering aspirated materials”:



(Ex. 1005, Title, Fig. 1.) Goff's filter includes a housing with an upper and lower shell and a filter element within the housing:

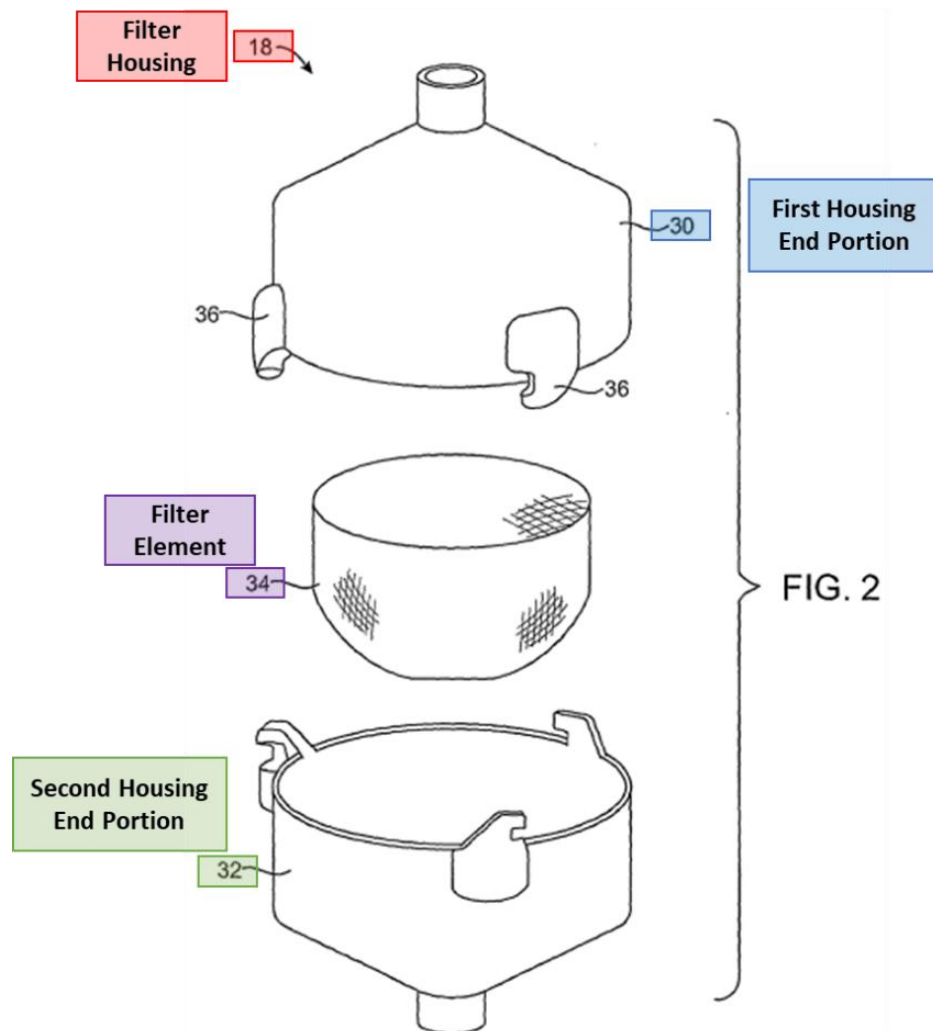


(*Id.*, [0015], [0025], Fig. 2.) Goff’s filter “remove[s] solid materials from the aspirate before the remaining liquid phase of the aspirate flows to the aspirate receptacle” and “collect[s] solids within the filter element 34 as the aspiration progresses.” (*Id.*, [0011], [0025].) “[T]he solid material aspirated by the catheter will frequently comprise disrupted clot, thrombus, and/ or plaque.” (*Id.*, [0024].) Goff’s filter is therefore a “clot collection reservoir.” (Ex. 1003, ¶61.)

2. Housing

Goff discloses a “housing defining a sealed chamber and having a first housing end portion and a second housing end portion opposite the first housing end portion.” (Ex. 1003, ¶¶62-64.)

Goff’s filter includes a sealed housing (chamber) with an upper shell (first housing end portion) opposite a lower shell (second housing end portion):

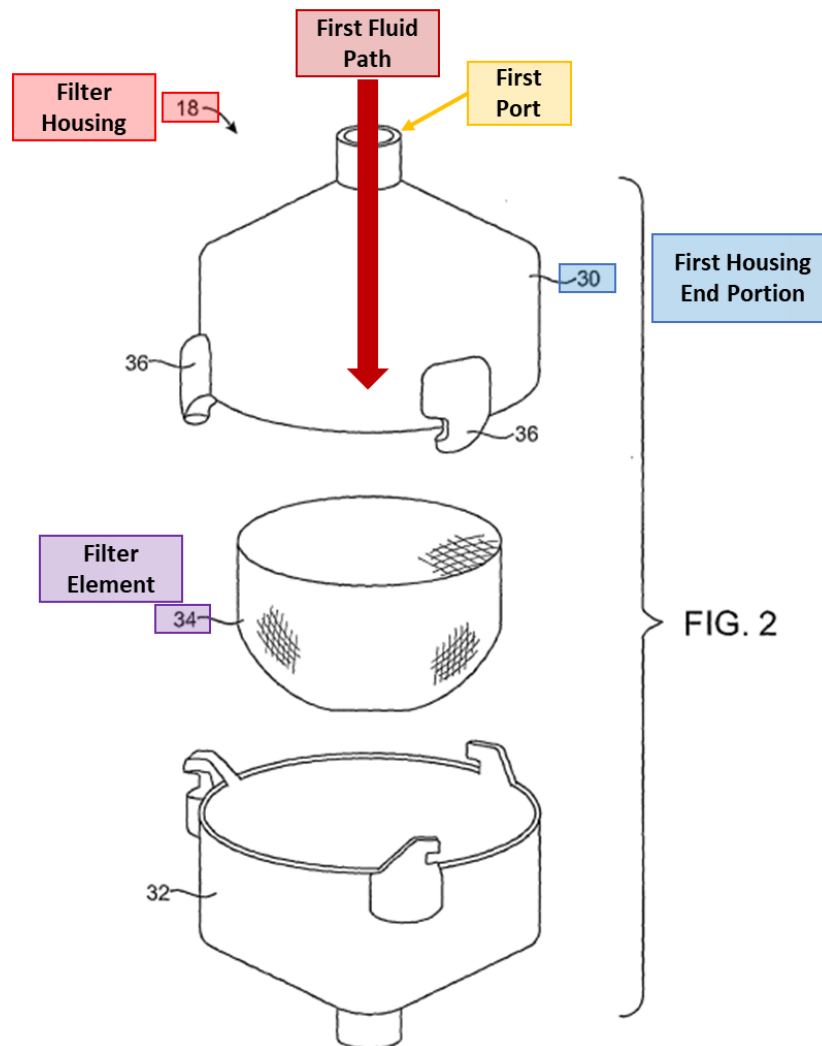


(Ex. 1005, [0015], [0025], Fig. 2.) Goff’s housing includes mating connectors 36 to secure the shell portions and form the sealed chamber. (*Id.*, [0025]; Ex. 1003, ¶64.)

3. First Port

Goff discloses “a first port configured to be fluidly coupled to an aspiration catheter, wherein the first port is positioned proximate to the first housing end portion and provides a first fluid path to the chamber.” (Ex. 1003, ¶¶65-67.)

Goff discloses that the “housing will further have conventional connectors to permit connection at an upper end to the aspiration catheter and at a lower end to the aspirate receptacle.” (Ex. 1005, [0015].) The connector on the upper shell (first port) is proximate to the first housing end portion and provides a first fluid path to the chamber:



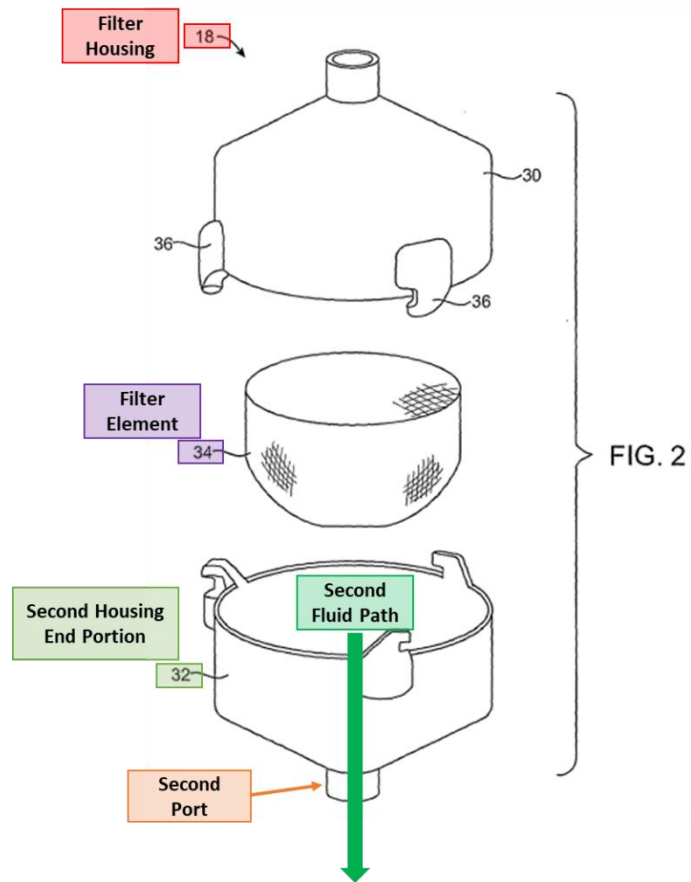
(*Id.*, Fig. 2.)

4. Second Port

Goff discloses “a second port configured to be fluidly coupled to an aspiration source, wherein the second port provides a second fluid path from the chamber.”

(Ex. 1003, ¶¶68-70.)

Goff’s connector on the lower shell (second port) provides a second fluid path from the chamber:



(Ex. 1005, [0015], Fig. 2)

Goff also includes “a separate vacuum source 22 which may be connected to or through the catheter 12 and/or aspirate receptacle 14.” (*Id.*, [0023].) Figure 1 discloses the aspiration source (vacuum source) fluidly coupled to the second port through the aspirate receptacle:

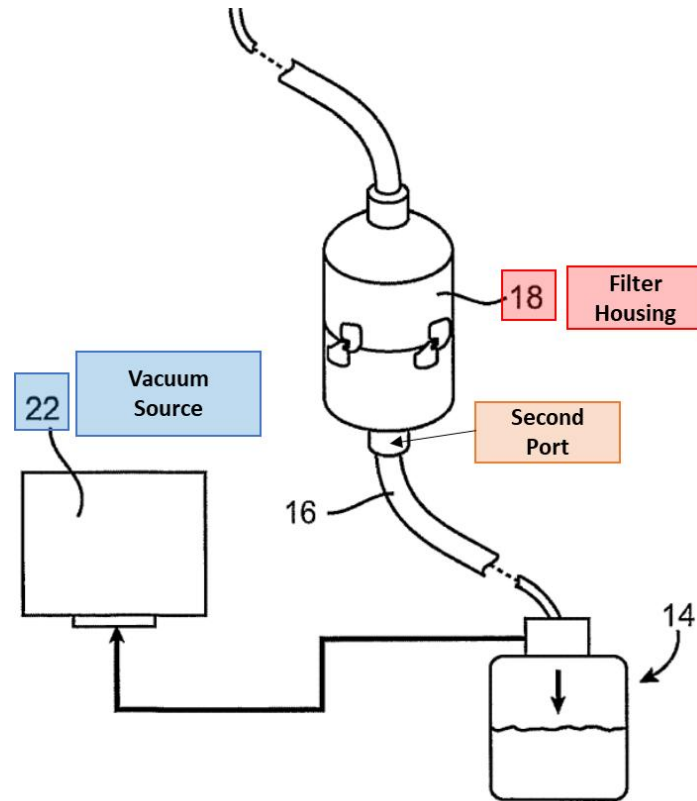


FIG. 1

(*Id.*, Fig. 1; Ex. 1003, ¶¶70.)

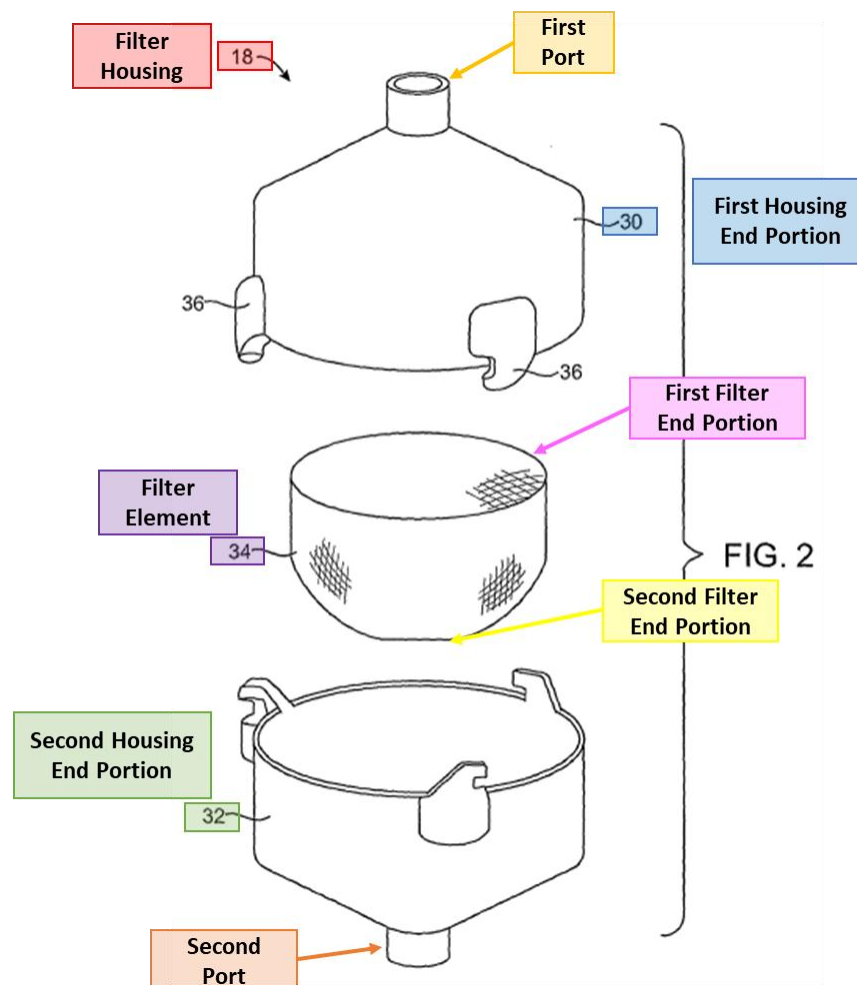
5. Filter

Goff discloses or renders obvious “a filter removably positioned within the chamber, wherein the filter has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion, and wherein the filter extends continuously about the first filter end portion such that the filter encloses an interior region around the second port.” (Ex. 1003, ¶¶71-91.)

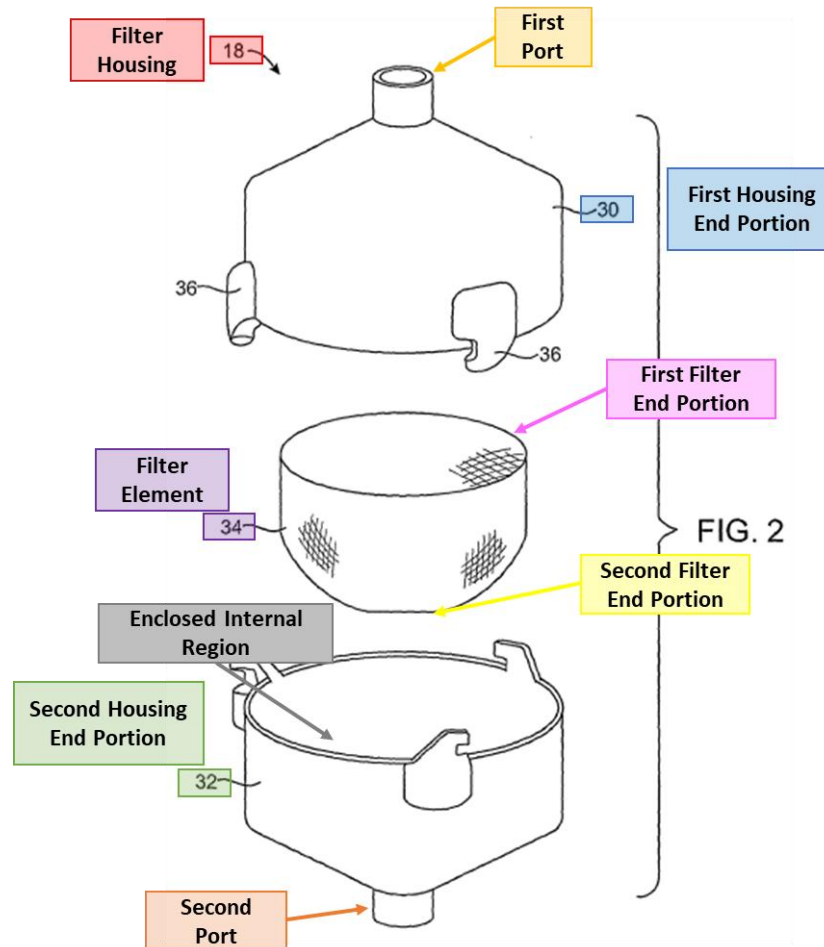
Goff’s filter includes “a filter element 34 that may be disposed within the interior of the shells.” (Ex. 1005, [0025].) Goff’s upper and lower shell “may be

taken apart to permit introduction, removal, and replacement of the filter element in the interior of the housing.” (*Id.*, [0015].)

Goff’s filter element “may have any one of a variety of geometries including cup-shaped, conical.” (*Id.*, [0011]; *see also id.*, [0026].) The exemplary filter element below has a substantially cylindrical shape extending from a first filter end portion to a second filter end portion:

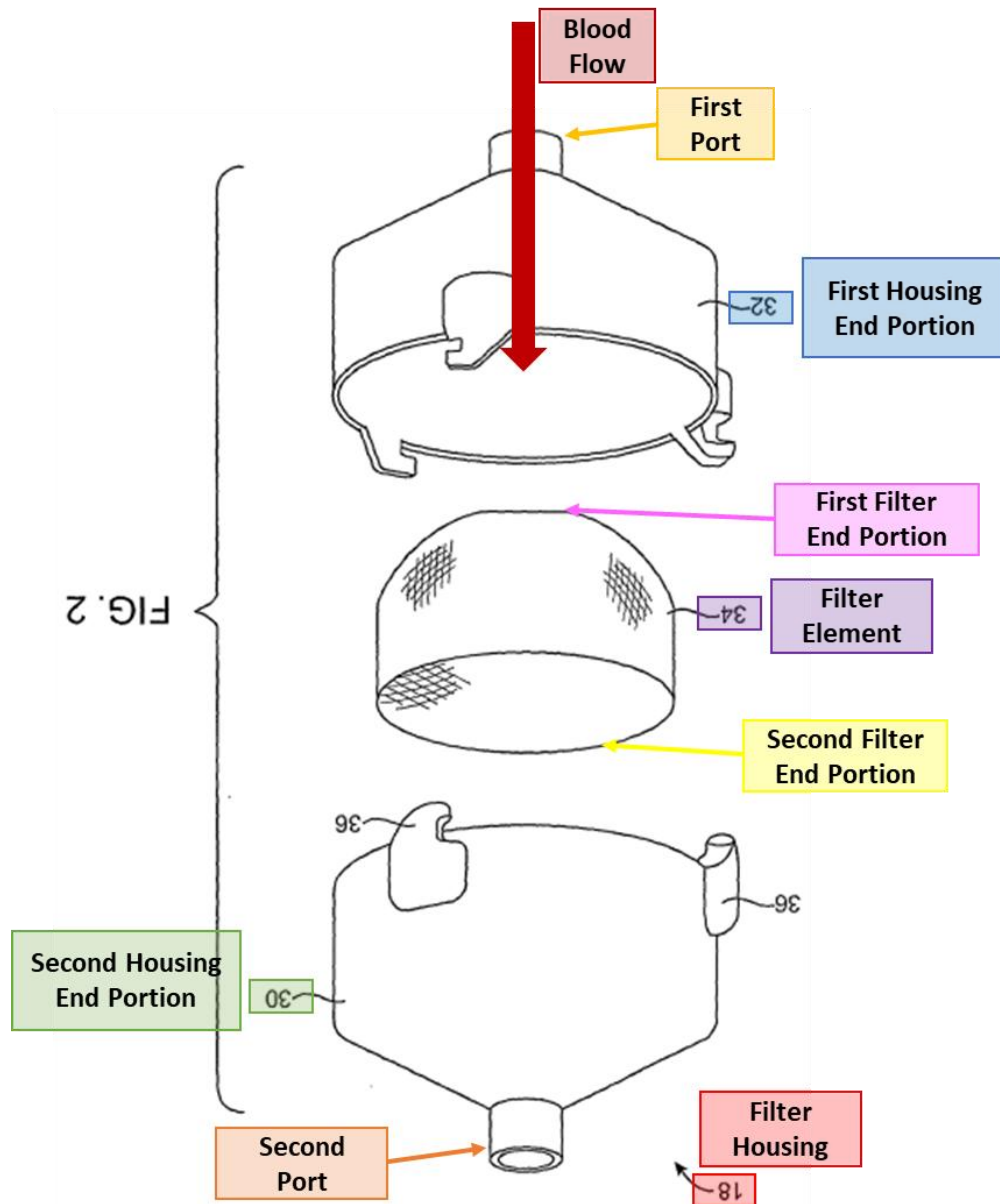


(*Id.*, Fig. 2.) The filter element extends continuously about the first filter end portion and encloses an interior region around the second port:



(*Id.*, Fig. 2; Ex. 1003, ¶75.)

If Goff’s filter element does not enclose an interior region around the second port, Goff renders this limitation obvious. POSITAs would have found it obvious to reverse Goff’s entire filter such that the port on the upper shell 30 connects to the aspiration source and the port on the lower shell 32 connects to the aspiration catheter. (*Id.*, ¶77.) In this configuration, Goff’s filter would “extend[] continuously about the first filter end portion” to “enclose an interior region around the second port”:



(Ex. 1005, Fig. 2; Ex. 1003, ¶77.) POSITAs would have reasonably expected success in making this simple modification because Goff describes the ports on the upper and lower shells as “conventional connectors” that are fluidly connected to the aspiration catheter and aspiration source via standard medical tubing 16:

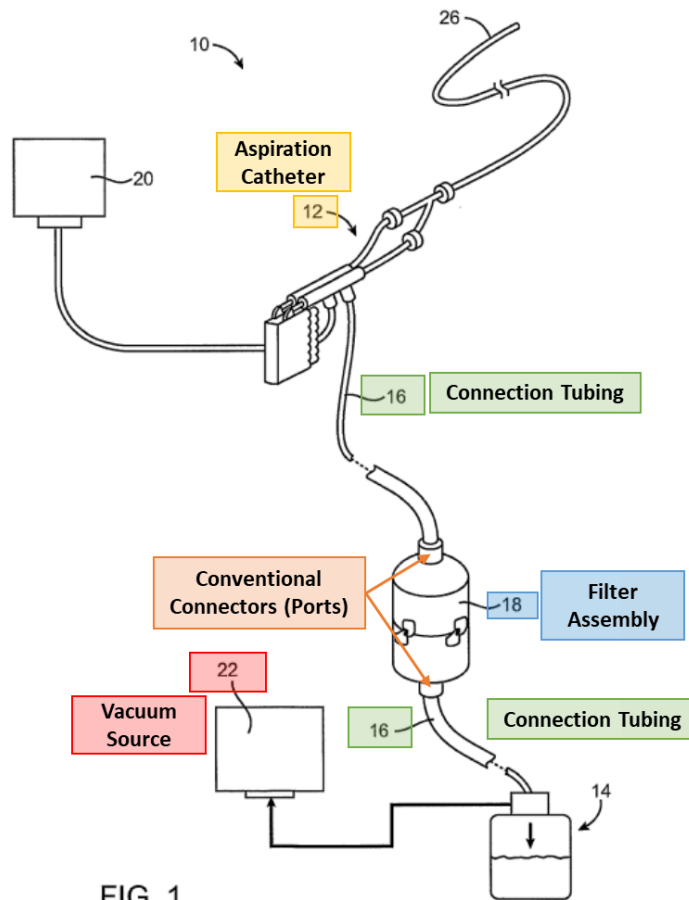
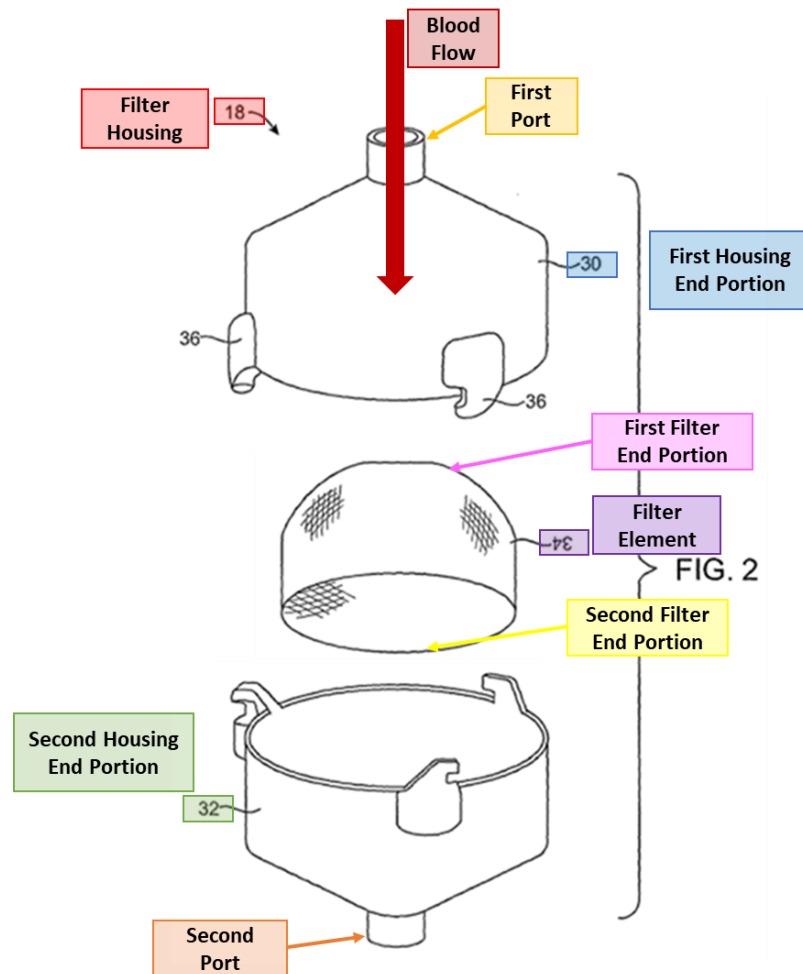


FIG. 1

(Ex. 1005, [0015], [0022], Fig. 1.) Goff does not identify any differences between the ports or tubing that would discourage this reversed configuration. (*Id.*; Ex. 1003, ¶78.) POSITAs would have therefore concluded that reversing the entire filter would not require any structural changes to the system. (Ex. 1003, ¶78.)

Alternatively, POSITAs could have reversed Goff's filter element 34 such that the filter element's closed end was nearest the first port:



(Ex. 1005, Fig. 2 (modified by Petitioner); Ex. 1003, ¶79.) POSITAs would have reasonably expected success in making this simple modification because Goff discloses that the “geometries in which the filter elements 34 are arranged will depend in large part on the construction of the remainder of the filter assembly” and that a “wide variety of other geometries would also be suitable.” (Ex. 1005, [0026]; Ex. 1003, ¶80.)

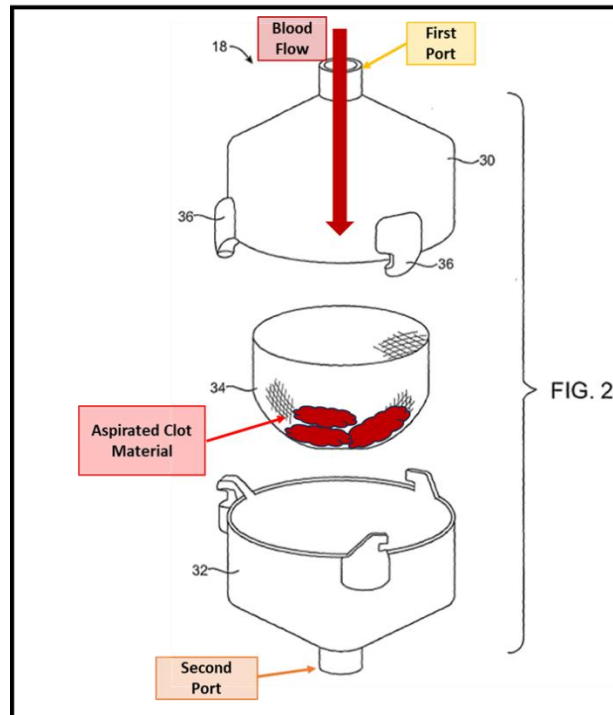
POSITAs would have been motivated to reverse Goff’s entire filter or Goff’s filter element for several reasons. (Ex. 1003, ¶¶81-91.) First, the orientation of

Goff's filter presented a binary choice – the enclosed end of the filter element can be oriented closer to the (1) inflow port or (2) outflow port. (*Id.*, ¶82.) POSITAs would have found it obvious to try either finite, predictable option, and would have reasonably expected success doing so. (*Id.*)

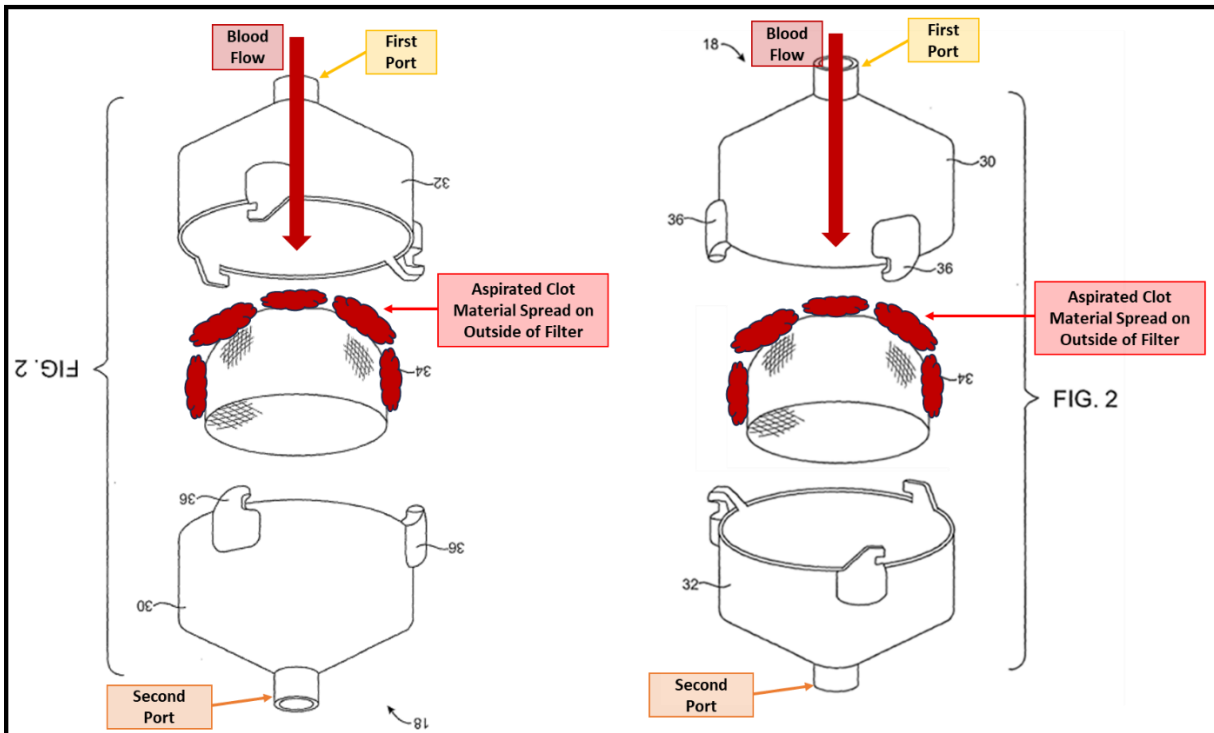
Filters having this configuration were used to filter particulates, including clots, from aspirated blood long before 2018. (*See e.g.*, Ex. 1030, Figs. 1, 3 (disclosing AngioVac System filter); Ex. 1031, 1:60-2:8, Fig. 1; Ex. 1032, Abstract, Fig. 1; Ex. 1033, 4:11-63, Fig. 4; Ex. 1034, 3:16-41, Fig. 4; Ex 1035, 4:1-5:12, Fig. 1; Ex. 1036, Abstract, Figs. 1-2; Ex. 1037, 2:41-56, Fig. 1; Ex. 1038, 7:33-8:10, Fig. 2.) The many examples of such prior-art filters would have further motivated POSITAs to use Goff's filter in either orientation and would have reinforced the POSITA's reasonable expectation of success. (Ex. 1003, ¶¶83-88.)

Second, POSITAs would have been motivated to position Goff's filter with the enclosed end nearest the inflow port to spread out the clot material:

Orientation 1



Orientation 2



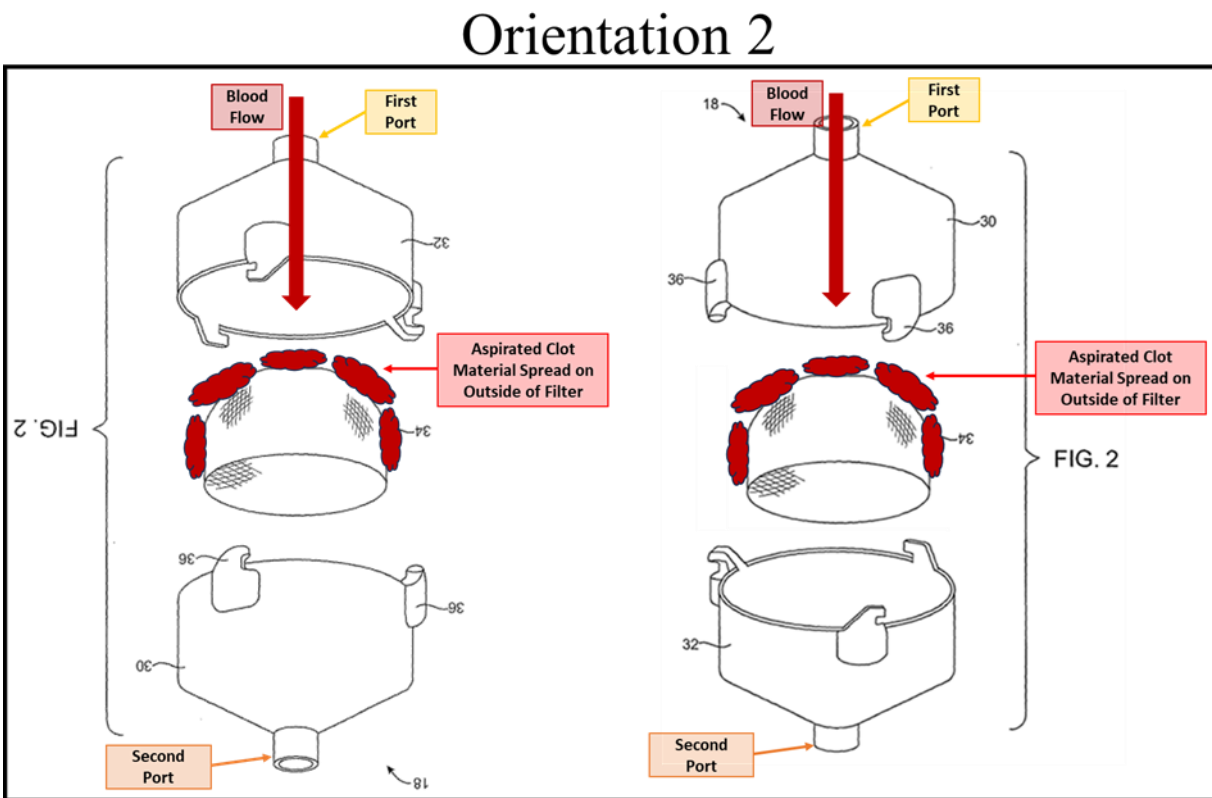
(*Id.*, ¶89.) This orientation disperses the clot material around the filter, making it easier to inspect. (*Id.*) The prior-art AngioVac System, which included a filter enclosing an interior region around the filter's outlet port, illustrates this configuration:



Fig 3. Procedure results, all demonstrating various intravascular material trapped by the inline filter.

(Ex. 1030, Fig. 3; Ex. 1003, ¶89.) Goff explains that visualizing aspirated clot material within the housing is beneficial, and POSITAs would have been motivated to orient the filter to achieve this benefit. (Ex. 1005, [0015]; Ex. 1003, ¶89.)

Third, POSITAs would have been motivated by Goff's disclosure that "the filter could be inclined or slanted in the filter-housing to spread the filtrate over the filter to permit differentiation of the filtrate material." (Ex. 1005, [0011].) Orienting Goff's filter with the open end nearest the second port would "spread the filtrate over the filter to permit differentiation of the filtrate material:"



(Ex. 1003, ¶90.)

Fourth, POSITAs would have been motivated by Goff's disclosure that "[p]referably, the filter element will allow the separated solid materials to collect on an exposed surface so that the solid materials will be easily removed and/or absorbed." (Ex. 1005, [0011]; Ex. 1003, ¶91.) Orienting Goff's filter with the open

end closest the second port would spread the clot material on the exposed filter surface, allowing it to be “easily removed and/or absorbed.” (Ex. 1003, ¶91.) Again, the AngioVac filter reflected this benefit:



Fig 3. Procedure results, all demonstrating various intravascular material trapped by the inline filter.

(Ex. 1030, Fig. 3; Ex. 1003, ¶91.)

6. Aspiration Source

Goff discloses “wherein the aspiration source is configured to generate negative pressure in the chamber via the second port to (a) draw blood and clot material from the aspiration catheter through the first port into the chamber and (b) draw blood through the filter into the interior region and through the second port.” (Ex. 1003, ¶¶92-93.)

Goff discloses that a “syringe, vacuum connection, or other conventional vacuum source may be connected at or through the catheter and/or the aspiration receptacle in order to aspirate the fluid from the hollow body structure, through the aspiration catheter, and into the aspirate receptacle.” (Ex. 1005, [0010].) Goff further discloses that “at least one filter assembly including a filter housing and a removable (and replaceable) filter element is placed between the aspiration catheter and the aspirate receptacle in order to remove solid materials from the aspirate before the remaining liquid phase of the aspirate flows to the aspirate receptacle.” (*Id.*, [0011].) Thus, Goff’s aspiration source generates negative pressure in the filter chamber to draw blood and clot material into the chamber through the inflow port and to draw the blood through the filter and out the outflow port. (Ex. 1003, ¶93.)

7. Inhibit Clot Material

Goff discloses “wherein the filter is configured to inhibit the clot material from passing through the filter into the interior region and through the second port.” (Ex. 1003, ¶¶94-95.)

Goff’s “filter assembly include[es] a filter housing and a removable (and replaceable) filter element [] placed between the aspiration catheter and the aspirate receptacle in order to remove solid materials from the aspirate before the remaining liquid phase of the aspirate flows to the aspirate receptacle.” (Ex. 1005, [0011].) Goff’s “filter element will have a pore size or screen size selected to separate solid particles at a desired particle size cutoff,” and discloses pore sizes from 1µm to 5mm. (*Id.*) Goff’s filter element is therefore “configured to inhibit the clot material from passing through the filter into the interior region and through the second port.” (Ex. 1003, ¶95.)

8. Partially Transparent Housing

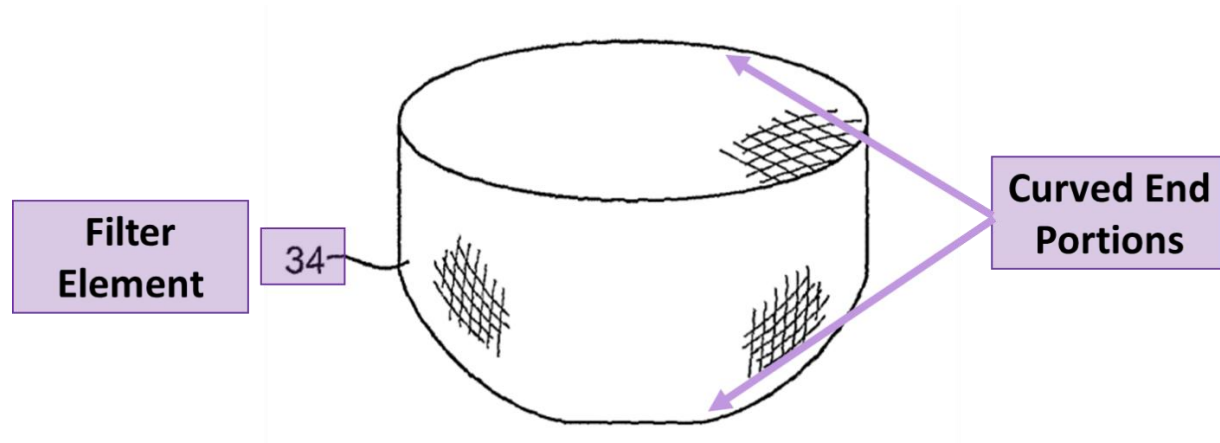
Goff discloses “wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region.” (Ex. 1003, ¶¶96-97.)

Goff’s “filter housing and optionally filter element may be at least partially transparent to permit observation of the solid materials as they collect.” (Ex. 1005, [0015].)

B. Claim 4

Claim 4 recites the “clot collection reservoir of claim 1 wherein the first filter end portion is curved.” Goff anticipates claim 4 or renders it obvious. (Ex. 1003, ¶¶98-99.)

Both end portions of Goff’s filter element are curved. The open end forms a substantially circular shape, which is curved. The closed end portion forms a cup-like shape, which is also curved:



(Ex. 1005, Fig. 2 (excerpt).) Thus, the “first end portion” of Goff’s cylindrical filter element is curved in both orientations discussed for claim 1. (Ex. 1003, ¶99.)

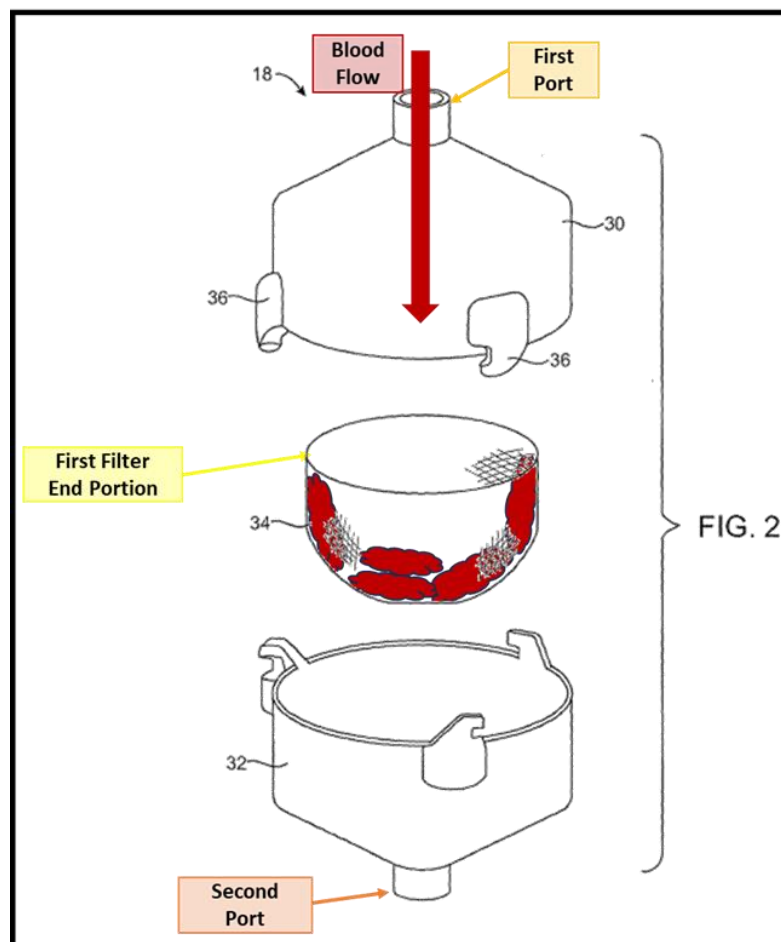
C. Claim 5

Claim 5 recites the “clot collection reservoir of claim 1 wherein the source of aspiration is configured to generate the negative pressure in the chamber via the second port to draw the clot material against the first filter end portion.” Goff anticipates claim 5 or renders it obvious. (Ex. 1003, ¶¶100-104.)

As previously explained, Goff's aspiration source is configured to generate negative pressure in the filter housing to draw aspirated blood through the housing while clots are collected on the filter element. (*Supra* §VI.A.6; Ex. 1005, [0011].) POSITAs would have understood that the aspirated clot material would be drawn against the first filter end portion of the filter element when Goff's system is operated in both orientations discussed for claim 1. (Ex. 1003, ¶101.)

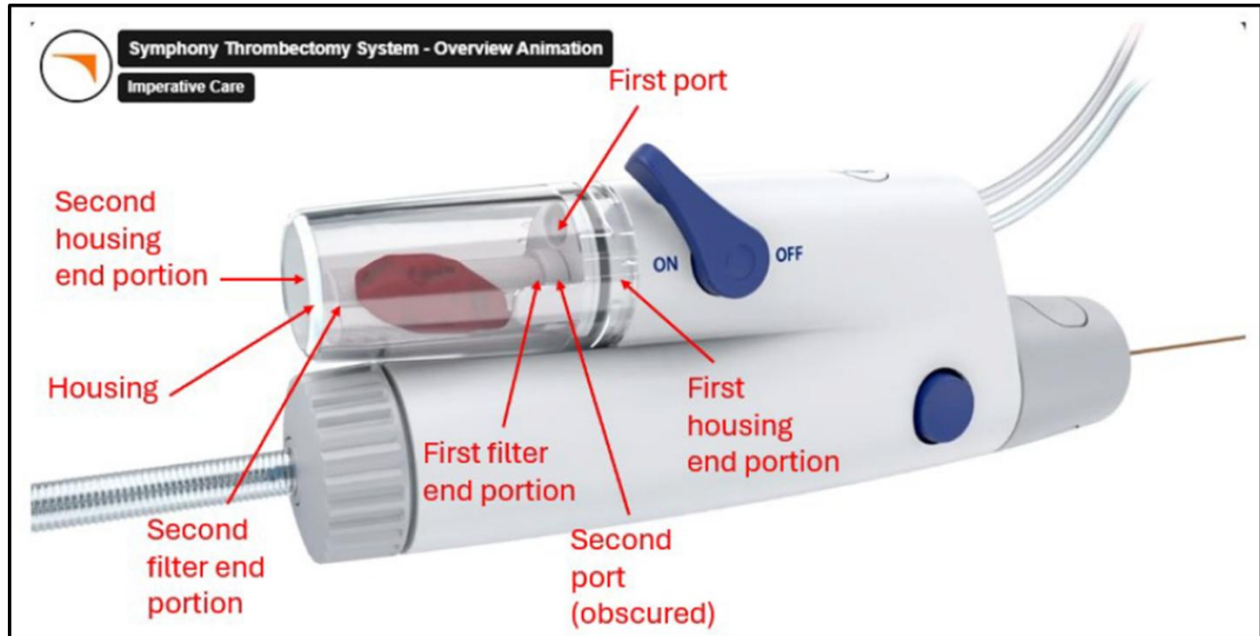
In the first orientation, aspirated clot would be drawn against the inside of Goff's filter element, including the first filter end portion:

Goff – Orientation 1



(Ex. 1005, Fig. 2; Ex. 1003, ¶102.) PO argued in the Litigation that such a result satisfies the claim. As shown below, PO alleges this limitation is met when a portion of clot material is drawn against the side of a cylindrical filter element:

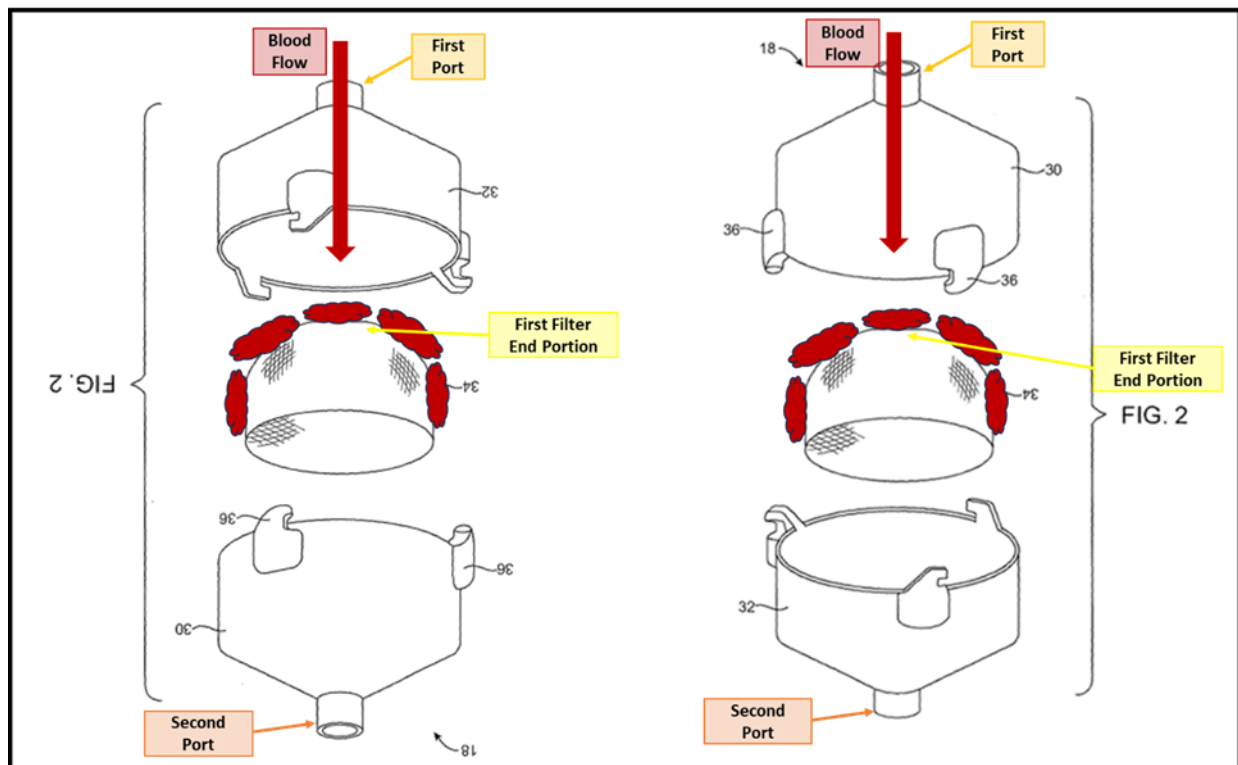
PO's Infringement Contentions



(Ex. 1021, 63-69.)

In the second orientation, clot material would be drawn against the enclosed end of the cylindrical filter element (first filter end portion):

Goff – Orientation 2



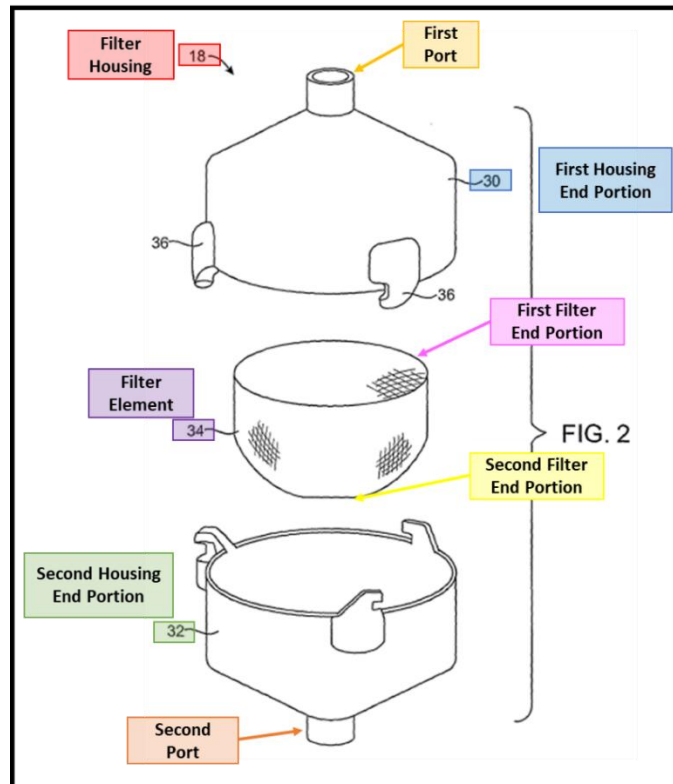
(Ex. 1005, Fig. 2; Ex. 1003, ¶103.)

D. Claim 7

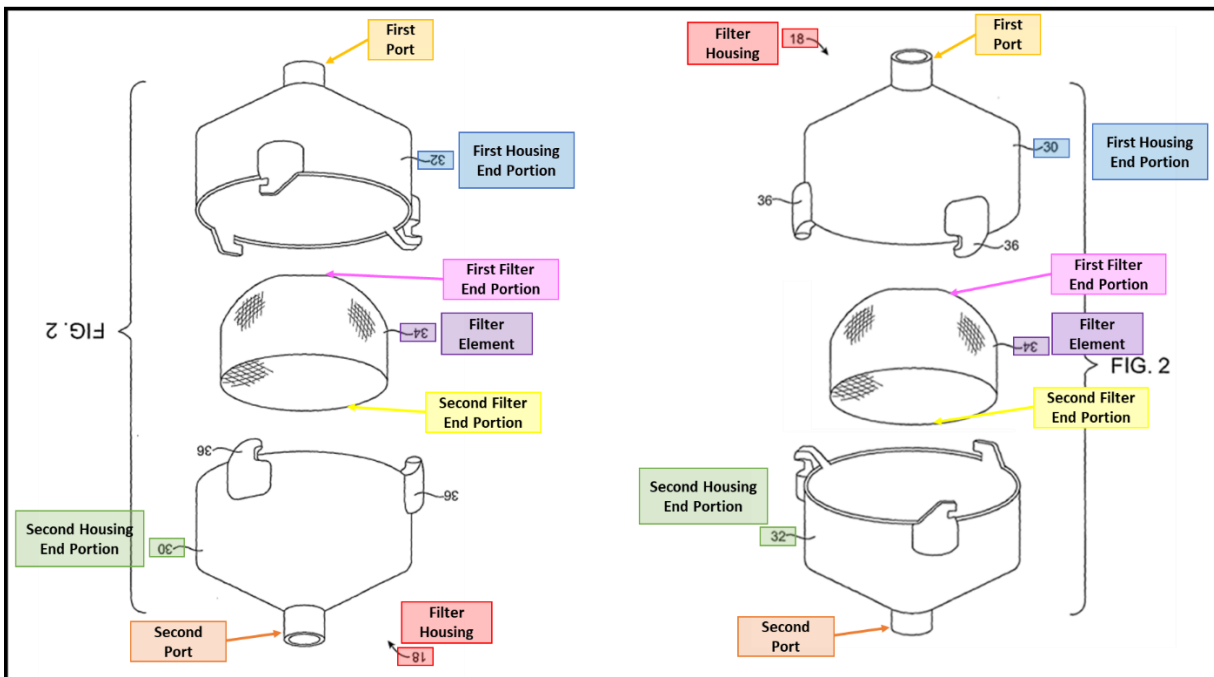
Claim 7 recites the “clot collection reservoir of claim 1 wherein the first filter end portion is positioned closer to the first housing end portion than the second filter end portion, and wherein the second filter end portion is positioned closer to the second housing end portion than the first filter end portion.” Goff anticipates claim 7 or renders it obvious. (Ex. 1003, ¶¶105-106.)

Goff discloses the limitations of claim 7 in both orientations:

Orientation 1



Orientation 2



(Ex. 1005, Fig. 2; Ex. 1003, ¶106.)

E. Claim 10

Goff anticipates claim 10 or renders it obvious. (Ex. 1003, ¶¶107-120.)

1. Preamble

If the preamble is limiting, Goff discloses a “clot treatment system.” (Ex. 1003, ¶¶108-109.)

Goff discloses systems and methods “for separating materials in fluid aspirates removed from a hollow body structure.” (Ex. 1005, [0007].) Goff further discloses that its system is “intended for introduction to a blood vessel for introducing a thrombolytic agent in order to disrupt clot.” (*Id.*, [0024].)

2. Aspiration Catheter

Goff discloses “an aspiration catheter configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient.” (Ex. 1003, ¶¶110-111.)

Goff’s aspiration catheter is “intended for introduction to a blood vessel for introducing a thrombolytic agent in order to disrupt clot” and then aspirate the “disrupted clot, thrombus, and/ or plaque, which is then discharged through the aspirate line 16 to the aspirate receptacle.” (Ex. 1005, [0024].) Goff’s aspiration catheter is therefore “configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient.” (Ex. 1003, ¶111.)

3. Remaining Limitations

The remaining limitations of claim 10 are substantively identical to those in claim 1. (*See* Ex. 1001, claims 1, 10; Ex. 1003, ¶¶112-120.) Goff discloses or renders those limitations obvious as previously explained. (*Supra* §§VI.A.)

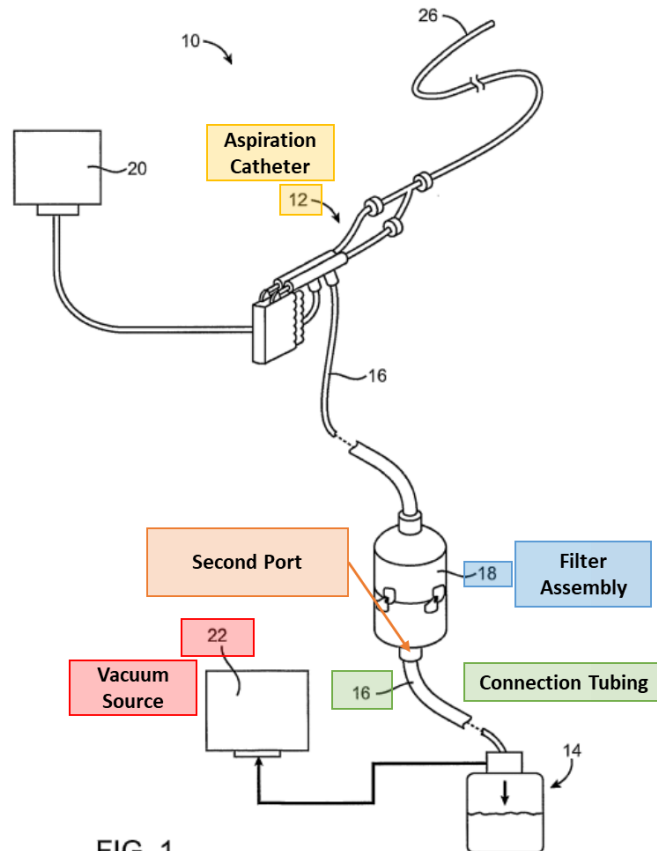
F. Claim 11

Claim 11 recites the “clot treatment system of claim 10 wherein the housing is at least partially transparent to permit visualization of the clot material in the chamber outside the interior region.” Goff anticipates claim 11 or renders it obvious as explained for claims 1 and 10. (*Supra* §§VI.A, E.)

G. Claim 13

Claim 13 recites the “clot treatment system of claim 10 wherein the clot collection reservoir is spaced apart from the aspiration source, and further comprising at least one tube fluidly coupling the second port to the aspiration source.” Goff anticipates claim 13 or renders it obvious. (Ex. 1003, ¶¶122-123.)

Goff’s clot collection reservoir is spaced apart from its aspiration source, and Goff includes connection tubing 16 that fluidly couples the second port of Goff’s filter to the aspiration source:

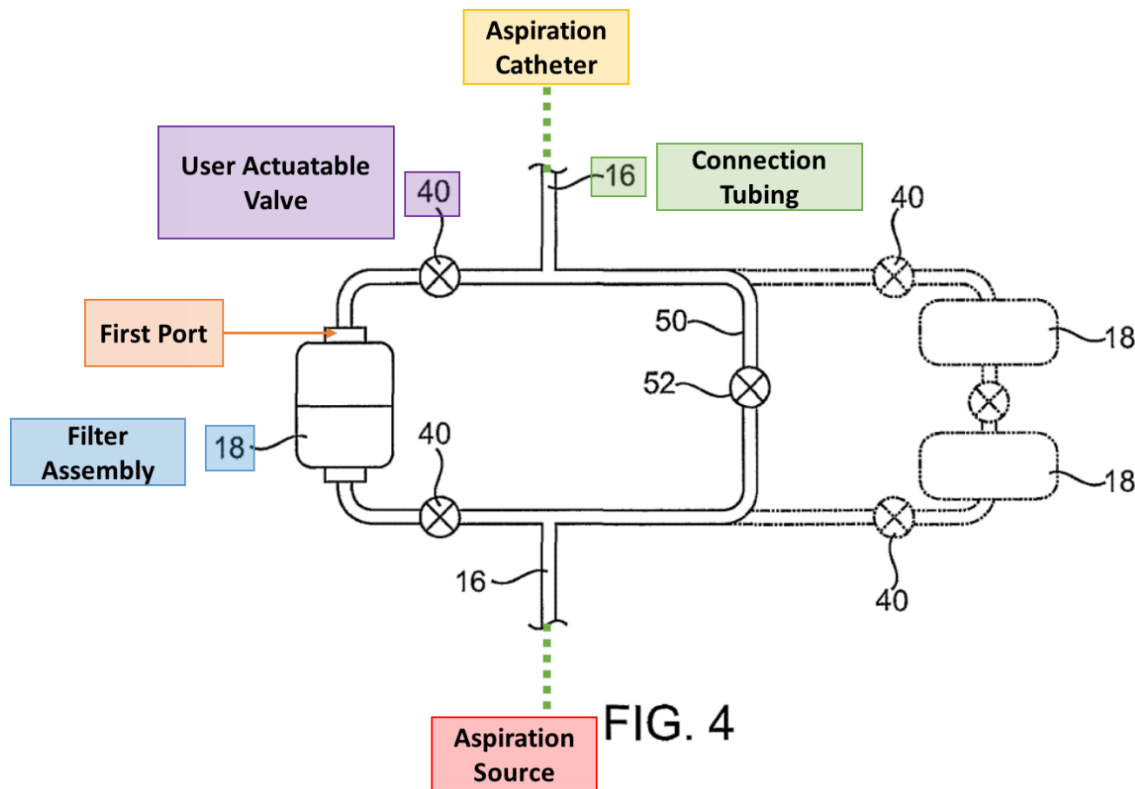


(Ex. 1005, [0022]-[0025], Fig. 1; Ex. 1003, ¶124.)

H. Claim 15

Claim 15 is an independent claim that recites the same limitations as claim 10 and additionally recites “a valve positioned between the clot collection reservoir and the aspiration catheter, wherein the valve is user-actuable to move between (a) an open position in which the first port is fluidly connected to the aspiration catheter and (b) a closed position in which the first port is fluidly disconnected from the aspiration catheter.” Goff anticipates claim 15 or renders it obvious. (Ex. 1003, ¶¶124-127.)

Goff discloses an embodiment with a “first filter assembly 18 ... provided and isolated by valves 40 in parallel with an unfiltered flow path 50 having a valve 52 therein”:



(Ex. 1005, [0028], Fig. 4.) Goff explains that “all flow could be directed through the filter assembly 18 with valve 52 being closed” and that “[s]hould it be desired to gain access to filter 18, the isolation valves 40 could be closed and the flow path valve 52 open.” (*Id.*) Thus, Goff’s valve 40 “is user actuable to move between (a) an open position in which the first port is fluidly connected to the aspiration catheter and (b) a closed position in which the first port is fluidly disconnected from the aspiration catheter.” (Ex. 1003, ¶126.)

**VII. GROUNDS 3-4: CLAIMS 1, 4-5, 7, 10-11, 13, 15-17, 19-21 OBVIOUS
OVER GARRISON AND GOFF OR LEE**

A. Claim 1

Garrison combined with Goff or Lee renders claim 1 obvious. (Ex. 1003, ¶¶128-178.)

1. Preamble

If the preamble is limiting, Garrison discloses a “clot collection reservoir.” (Ex. 1003, ¶¶129-130.)

Garrison discloses systems to aspirate (i.e., suction) clots from a patient’s vasculature. (Ex. 1006, abstract, [0007]; Ex. 1003, ¶130.) Garrison’s system includes a filter 3418 (clot collection reservoir) between the aspiration source and catheter:

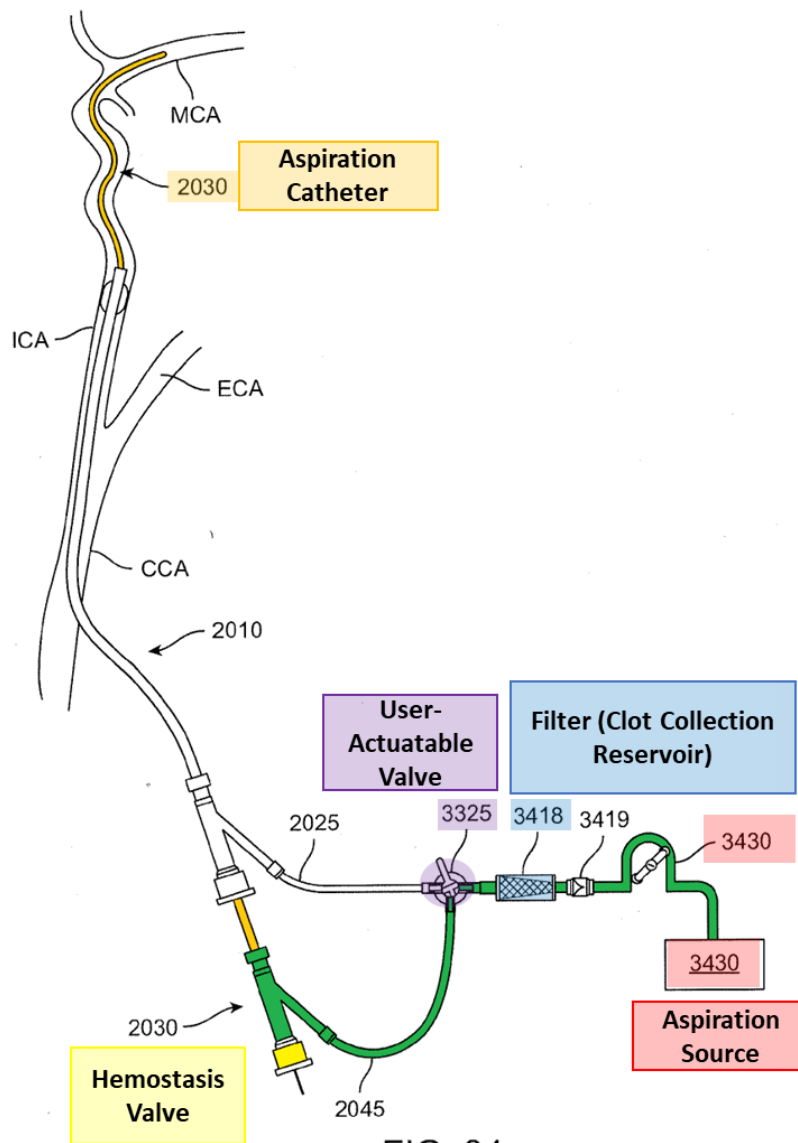


FIG. 34

(Ex. 1006, [0131], Fig. 34.) POSITAs would have understood Garrison’s filter is positioned to separate aspirated clot material from aspirated blood. (Ex. 1003, ¶130; Ex. 1039, 122:7-18.) Garrison’s filter is therefore a “clot collection reservoir.” (Ex. 1003, ¶130.)

2. Housing

Garrison and Goff or Lee renders this limitation obvious. (Ex. 1003, ¶¶131-144.)

a. Goff

Goff discloses this limitation as explained in Grounds 1-2. (*Supra* §VI.A.2.)

POSITAs would have been motivated to substitute Goff’s filter for Garrison’s filter 3418 for several reasons. (Ex. 1003, ¶133.) First, Goff’s filter serves the same purpose as Garrison’s filter 3418 – filtering clots from aspirated blood. (Ex. 1005, [0001].) Second, Goff’s filter is positioned between the aspiration catheter and vacuum source with standard medical tubing, just like Garrison’s filter. (*Id.*, [0025].) Thus, substituting Goff’s filter for Garrison’s filter would have merely entailed the substitution of one known element (Goff’s filter) for another (Garrison’s filter) to yield the predictable result of filtering aspirated blood. *KSR*, 550 U.S. at 416; (Ex. 1003, ¶133.) Third, POSITAs would have been motivated to use Goff’s filter because it beneficially permits “introduction, removal, and replacement of the filter element in the interior of the housing” and provides “a convenient structure or assembly to permit easy removal and observation” of aspirated clot material. (Ex. 1005, [0005], [0015]; Ex. 1003, ¶133.)

POSITAs would have reasonably expected success in substituting the filters due to their similarities. (Ex. 1003, ¶134.) Both filters separate clots from aspirated

blood. Goff’s “filter element will have a pore size or screen size selected to separate solid particles at a desired particle size cutoff,” the same requirement for Garrison’s filter. (Ex. 1005, [0011].) Further, Goff’s filter is fluidly coupled to the system using conventional connectors and medical tubing, just like Garrison. (*Id.*, [0015], [0023]-[0025], Fig. 1; Ex. 1006, Fig. 34; Ex. 1003, ¶134.) POSITAs would have been familiar with these conventional, predictable connectors and would have reasonably expected success in using them to couple Goff’s filter to Garrison’s flow lines (e.g., item 2045). (Ex. 1003, ¶134.)

b. Lee

Lee discloses this limitation. (Ex. 1003, ¶¶135-136.) Lee describes an aspiration device for filtering solid material from aspirated blood during surgical procedures. (Ex. 1007, [0002].) Lee’s filter assembly includes a barrel 1, which houses a cylindrical sleeve 2 with an inner filter tube 3:

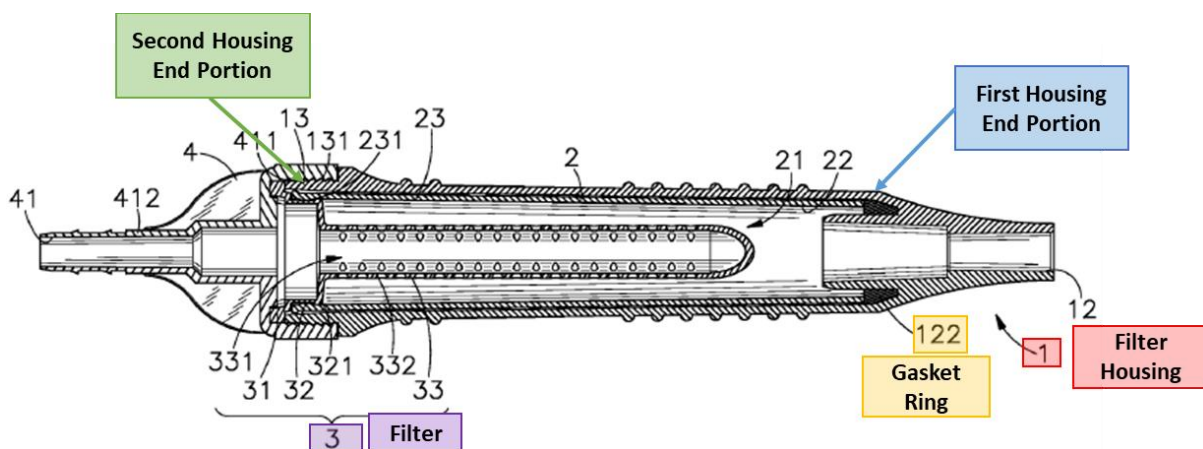


FIG. 3

(Ex. 1007, [0019]-[0021], Fig. 3.) As shown, Lee's barrel has a first housing end portion opposite a second housing end portion. (*Id.*)

Lee’s housing forms a “sealed chamber.” (Ex. 1003, ¶136.) The “front end of the isolation sleeve 2 is stopped against the gasket ring 122 so that waste fluid does not leak out of the isolation sleeve”:

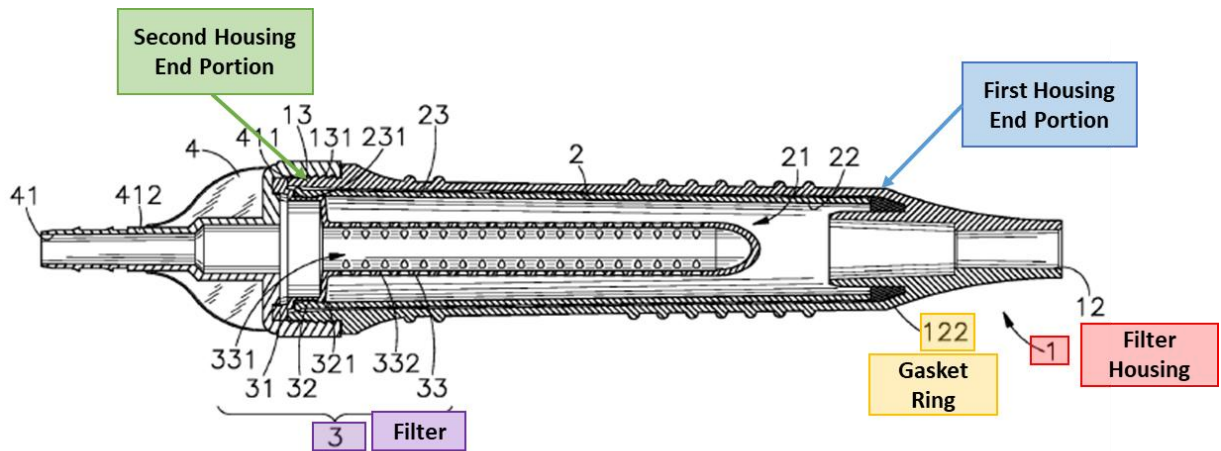


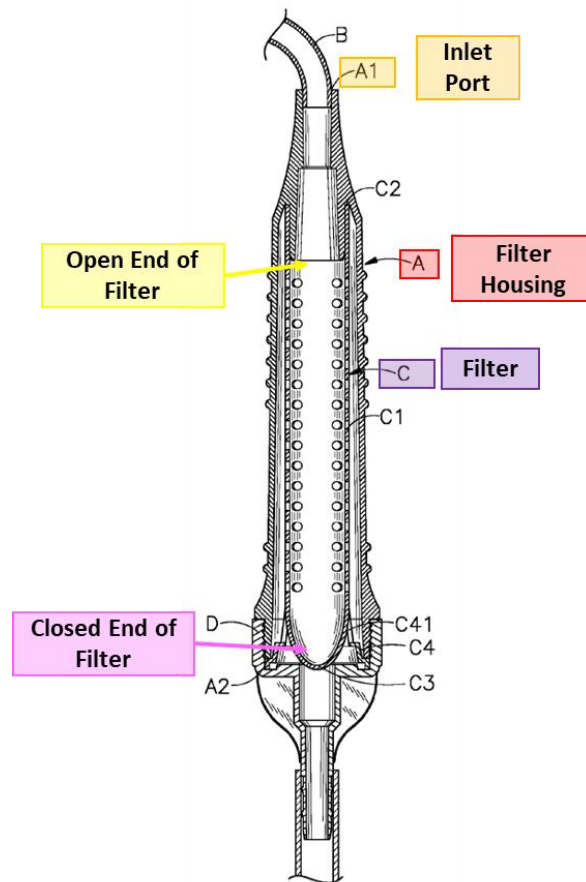
FIG. 3

(Ex. 1007, [0027]; Ex. 1003, ¶136.)

POSITAs would have been motivated to substitute Lee's filter assembly for Garrison's filter 3418 for several reasons. (Ex. 1003, ¶¶137-141.) First, POSITAs would have been motivated by Lee's disclosure that its filter assembly "remove[s] waste solid matters" from aspirated blood, "preventing block of the suction tube 5 and the suction pump by waste solid matters." (Ex. 1007, [0032]; Ex. 1003, ¶138.)

Second, POSITAs would have been motivated by Lee's disclosure that its filter tube and sleeve can be removed from the housing so that filtered solids may be

collected and disposed, and so the filter may be “washed and sterilized for a repeated use.” (Ex. 1007, [0028], [0032]; Ex. 1003, ¶139.) Lee explains that in prior filter assemblies (*see* Figures 8-9), the closed end of the filter faced the outflow port and the open end faced the inflow port:

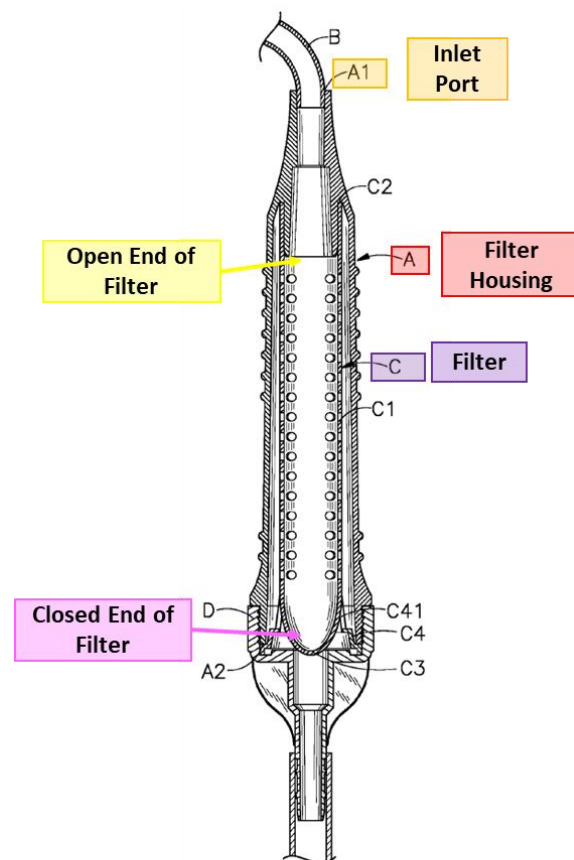


PRIOR ART
FIG. 8

(Ex. 1007, [0004], Fig. 8.) In this orientation, “waste fluid and waste solid matters may be scattered all over the floor” when the filter is removed. (*Id.*, [0006].) Lee solved this issue and allowed the filter to be removed without spills. (*Id.*, [0028],

[0032].) POSITAs would have recognized that this design would have also benefited Garrison's aspiration system. (Ex. 1003, ¶139.)

Third, POSITAs would have been motivated by Lee’s disclosure that the “gasket ring 122 seals the gap between the isolation sleeve 2 and the inside connection tube 111, preventing leakage.” (Ex. 1007, [0031]; Ex. 1003, ¶140.) Lee explains that with prior filter assemblies (*see* Figures 8-9), aspirated blood and solid material could leak through “a gap between the front open end C2 of the inner tube C and the inside extension tube of the barrel A”:



PRIOR ART
FIG.8

(Ex. 1007, [0005], Fig. 8.) Lee’s design prevents this leakage by creating a sealed chamber within the barrel. (*Id.*, [0031].) POSITAs would have recognized that this design would have also benefited Garrison’s aspiration system. (Ex. 1003, ¶140.)

Fourth, both Garrison’s filter and Lee’s filter assembly separate unwanted material from aspirated blood. (Ex. 1007, [0026].) POSITAs designing a clot filter for thrombectomy procedures would have considered similar filter assemblies for removing unwanted materials from fluid. (Ex. 1003, ¶141.) Moreover, like Garrison’s filter, Lee’s filter assembly is positioned between an aspiration source and aspiration catheter. (Ex. 1007, [0019]-[0023].) Thus, substituting Lee’s filter assembly for Garrison’s filter would have merely entailed the substitution of one known element (Lee’s filter assembly) for another (Garrison’s filter) to yield the predictable result of filtering aspirated blood. *KSR*, 550 U.S. at 416; (Ex. 1003, ¶141.)

POSITAs would have reasonably expected success in making the substitution due to the similarities between the systems. (Ex. 1003, ¶142.) Both Garrison and Lee filter unwanted material from aspirated blood with a filter coupled between an aspiration catheter and vacuum source. (Ex. 1007, [0019]-[0023]; Ex. 1006, Fig. 34; Ex. 1003, ¶142.) Lee’s filter tube has a plurality of filter holes 332 that “remove solid matters of diameter greater than the filter holes.” (Ex. 1007, [0022], [0026].) POSITAs would have recognized that Lee’s filter holes would similarly trap

aspirated clot material, if appropriately sized, and would have possessed the necessary skills to optimize the hole size. (Ex. 1003, ¶¶142-144; Ex. 1013 11:36-45; Ex. 1011, [0040]; Ex. 1005, [0011].) Indeed, the 12-'333 patent does not disclose any filter specifications but instead presumes that POSITAs would have understood to how appropriately size the filter pores/holes. (Ex. 1001, 9:37-49.)

3. First Port

a. Goff

Goff discloses this limitation as explained for Grounds 1-2. (*Supra* §VI.A.3.)

b. Lee

Lee discloses this limitation. (Ex. 1003, ¶¶147-148.) Lee's housing includes a front suction hole 12 located proximate to the first housing end portion, which is fluidly connected to suction tip 121 (aspiration catheter):

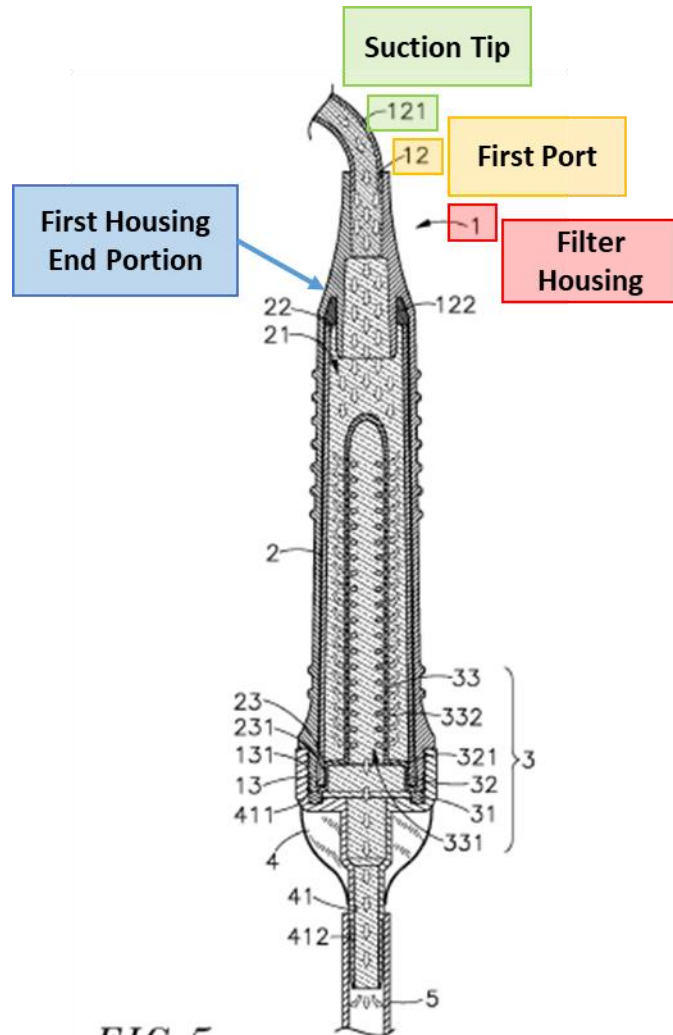


FIG. 5

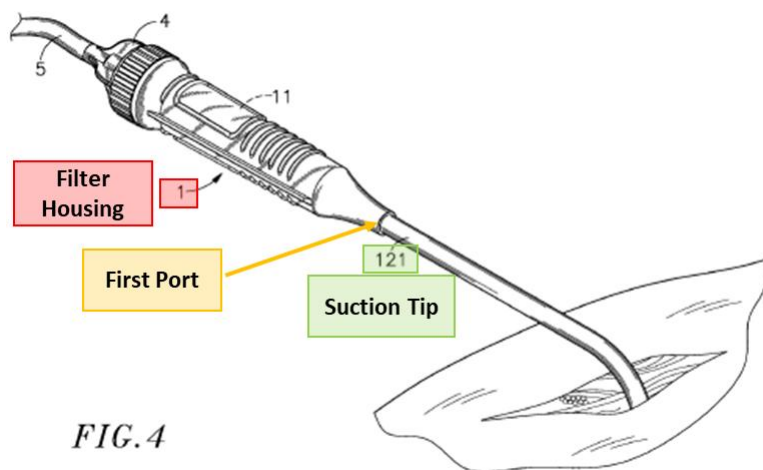


FIG. 4

(Ex. 1007, [0019]-[0020], Figs. 4-5; Ex. 1003, ¶148.) Lee's opening 12 provides a first fluid path into the housing chamber and is therefore a "first port" as recited in claim 1. (Ex. 1007, [0019]-[0020], [0026]; Ex. 1003, ¶148.)

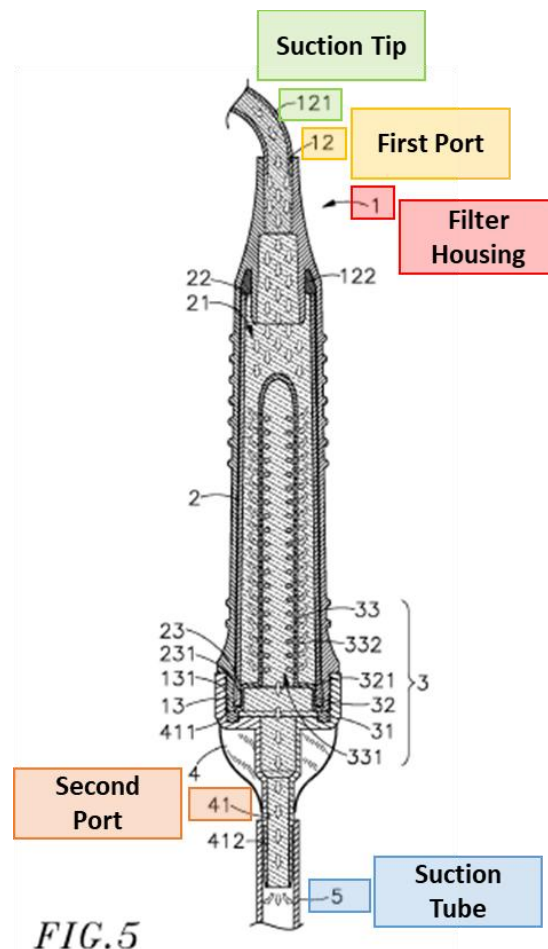
4. Second Port

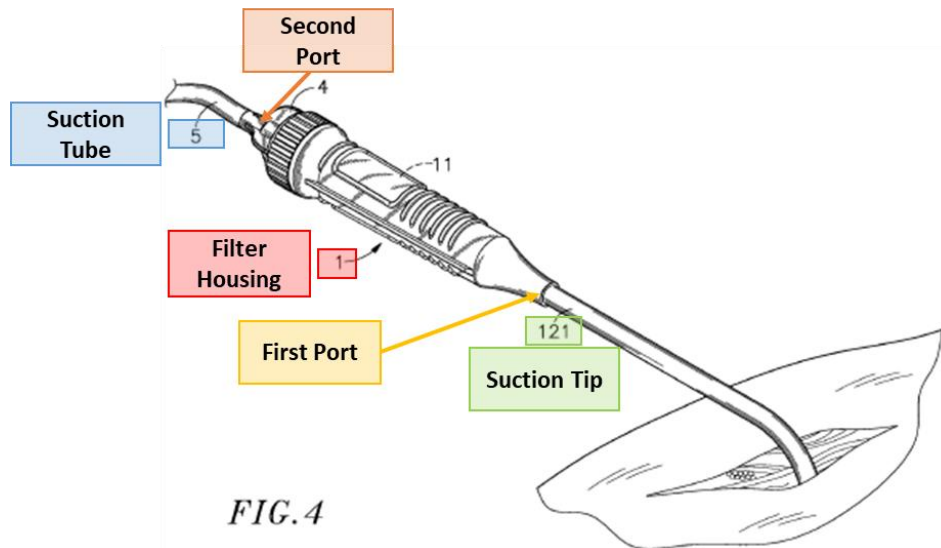
a. Goff

Goff discloses this limitation as explained for Grounds 1-2. (*Supra* §VI.A.4.)

b. Lee

Lee discloses this limitation. (Ex. 1003, ¶¶151-152.) Lee's housing includes a drainage hole 41 fluidly coupled to an aspiration source via tubing:





(Ex. 1007, [0019]-[0026], Figs. 4-5; Ex. 1003, ¶152.) Lee’s drainage hole 41 provides a second fluid path from the housing chamber and is therefore a “second port” as recited in claim 1. (*Id.*, [0026]; Ex. 1003, ¶152.)

5. Filter

a. Goff

Goff discloses this limitation or renders it obvious as explained for Grounds 1-2. (*Supra* §VI.A.5.)

b. Lee

Lee discloses this limitation. (Ex. 1003, ¶¶155-162.) Lee includes a cylindrical filter tube 3 with holes for filtering unwanted material from aspirated blood:

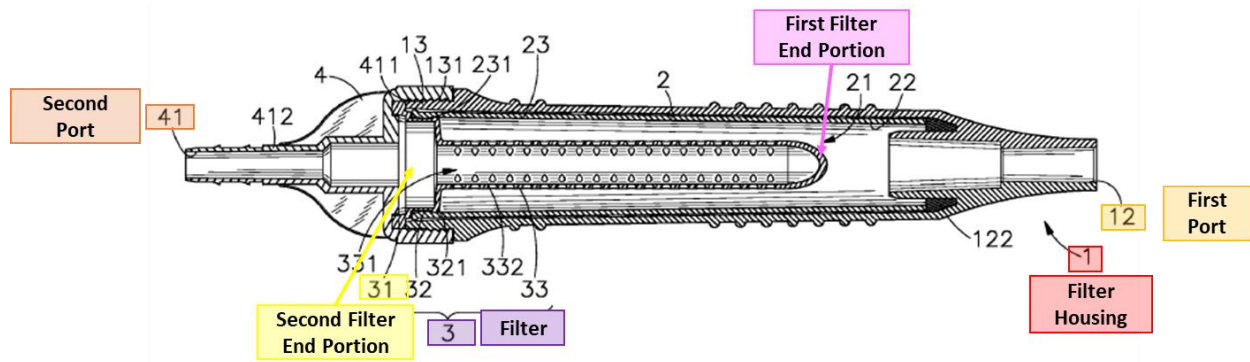


FIG. 3

(Ex. 1007, [0019]-[0026], Fig. 3.) The filter includes a closed end nearest the inflow port (first filter end portion) and a base 31 around the outflow port (second filter end portion) such that the filter encloses an interior region around the outlet port:

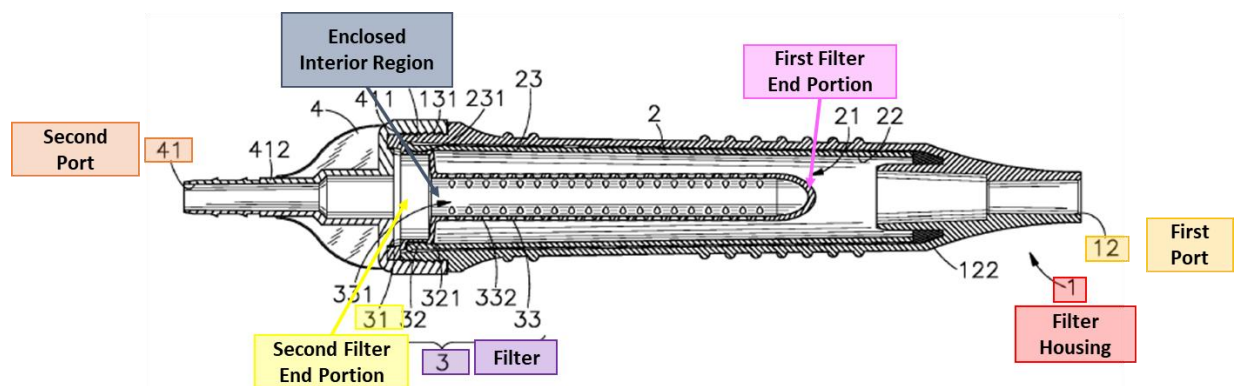


FIG. 3

(*Id.*) Lee discloses that its filter can be removed from the housing. (*Id.*, [0028].)

6. Aspiration Source

Garrison and Goff or Lee renders this limitation obvious. (Ex. 1003, ¶¶162-165.) Garrison’s aspiration source 3430 “may be an aspiration pump, a regular or locking syringe, a hand-held aspirator, hospital suction, or the like”:

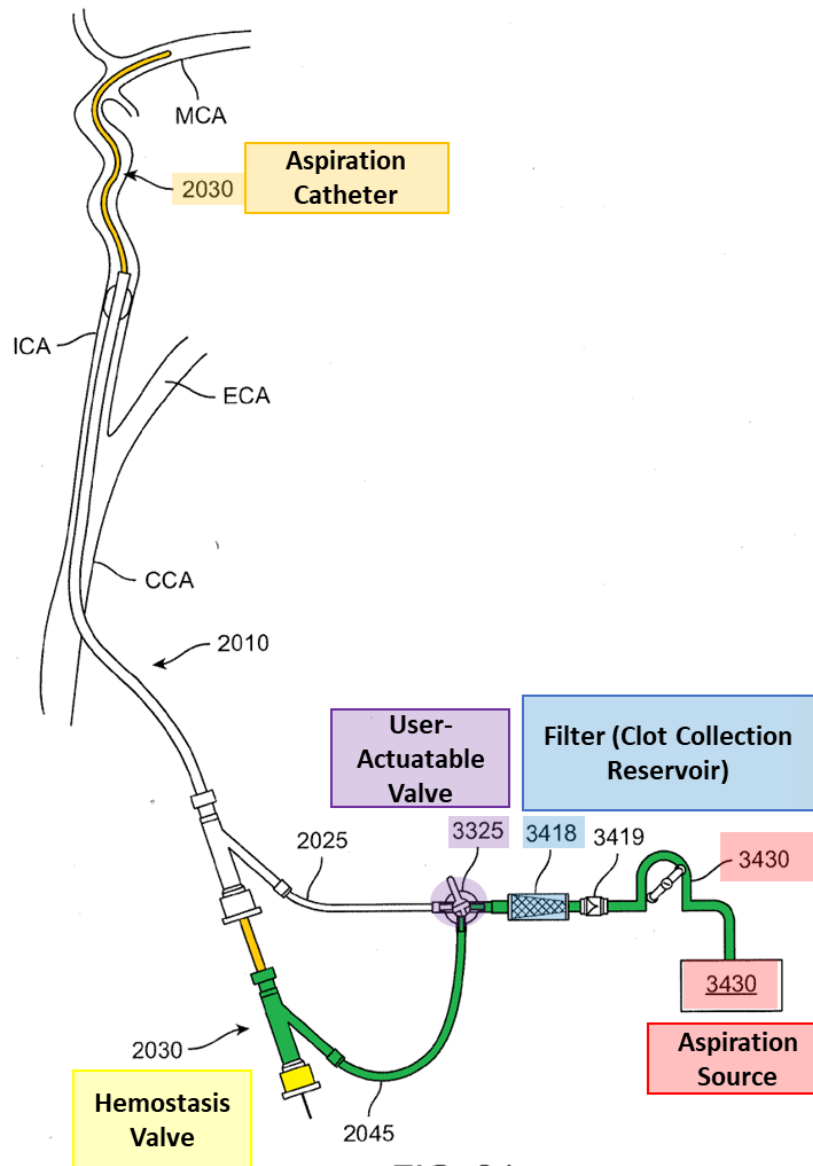


FIG. 34

(Ex. 1006, [0132], [0134], Fig. 34.) Garrison's aspiration source creates negative pressure that is applied to the aspiration catheter via the flow line tubing 2045. (*Id.*, [0130]-[0134], Fig. 34.) Because Garrison's filter is between the aspiration source and catheter 2030, Garrison's aspiration source necessarily generates negative pressure in the filter chamber. (Ex. 1003, ¶164.) This negative pressure draws blood into Garrison's filter (or Goff's or Lee's filter assemblies if they replace Garrison's

filter) via the first port and out of the chamber through the second port to separate aspirated clot material from blood. (*Id.*, ¶¶164-165.)

7. Inhibit Clot Material

a. Goff

Goff discloses this limitation as explained for Grounds 1-2. (*Supra* §VI.A.7.)

b. Lee

Lee discloses this limitation or renders it obvious. (Ex. 1003, ¶¶168-169.) Lee’s filter tube includes a plurality of filter holes 332, which “remove solid matters of diameters greater than the filter holes” from aspirated blood. (Ex. 1007, [0022], [0026].) POSITAs would have reasonably expected that Lee’s filter holes could similarly remove clot material if properly sized. (Ex. 1003, ¶169.) If necessary, POSITAs would have possessed the skills to modify the hole size on Lee’s filter tube for clot material, as reflected in the prior art. (*Id.*, ¶169; Ex. 1013, 11:36-45; Ex. 1011, [0040]; Ex. 1005, [0011].)

8. Partially Transparent Housing

a. Goff

Goff discloses this limitation as explained for Grounds 1-2. (*Supra* §VI.A.8.)

b. Lee

Lee renders this limitation obvious. (Ex. 1003, ¶¶172-174.) Lee does not describe the housing material, presuming instead that POSITAs would have

possessed the knowledge to select an appropriate material. (*See* Ex. 1007, [0019]-[0020].) However, POSITAs would have been motivated to use a transparent housing material, such as commonly available clear plastics, so the user could visualize the aspirated material. (Ex. 1003, ¶173.)

Further, POSITAs are presumed to be familiar with prior-art aspirators, like the Paco-Flow Orthopaedic Suction Set, sold by the assignee of Lee, which included a transparent housing:



(Ex. 1040; Ex. 1003, ¶174.) The Paco-Flow filter would have further motivated POSITAs to form the housing from transparent material, and the commercial availability and ubiquity of transparent plastics would have given POSITAs a reasonable expectation of success. (Ex. 1003, ¶174.)

B. Claim 4

Garrison and Goff or Lee renders claim 4 obvious. (Ex. 1003, ¶¶175-178.)

1. Goff

Goff discloses this limitation as explained in Grounds 1-2. (*Supra* §VI.B.)

2. Lee

The first filter end portion of Lee's filter tube is curved:

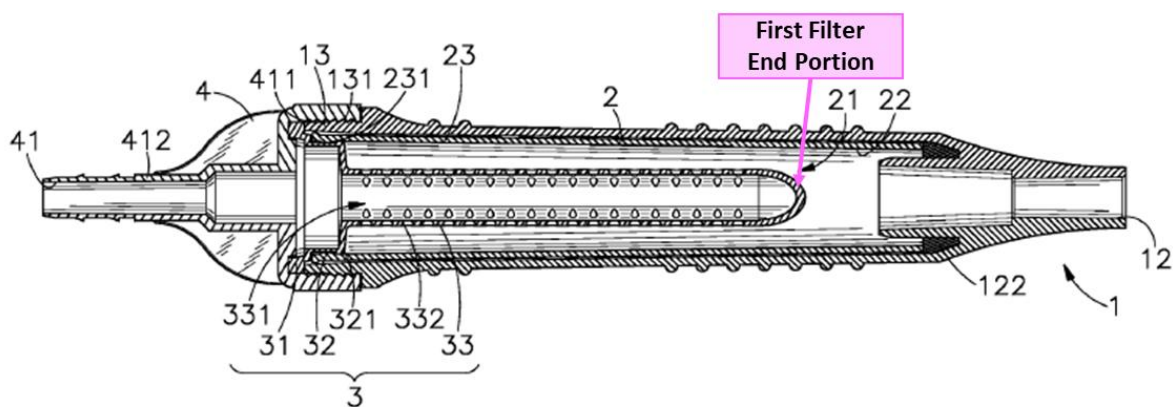


FIG. 3

(Ex. 1007, Fig. 3; Ex. 1003, ¶178.)

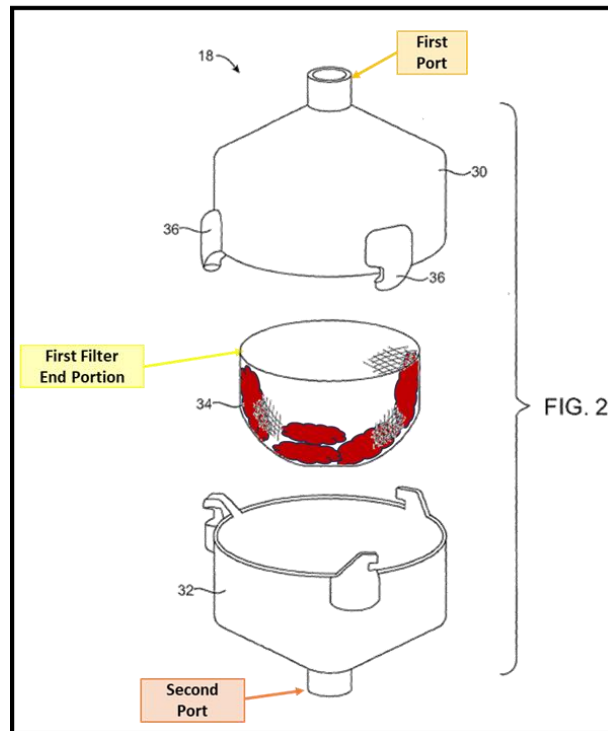
C. Claim 5

Garrison and Goff or Lee renders claim 5 obvious. (Ex. 1003, ¶¶179-183.)

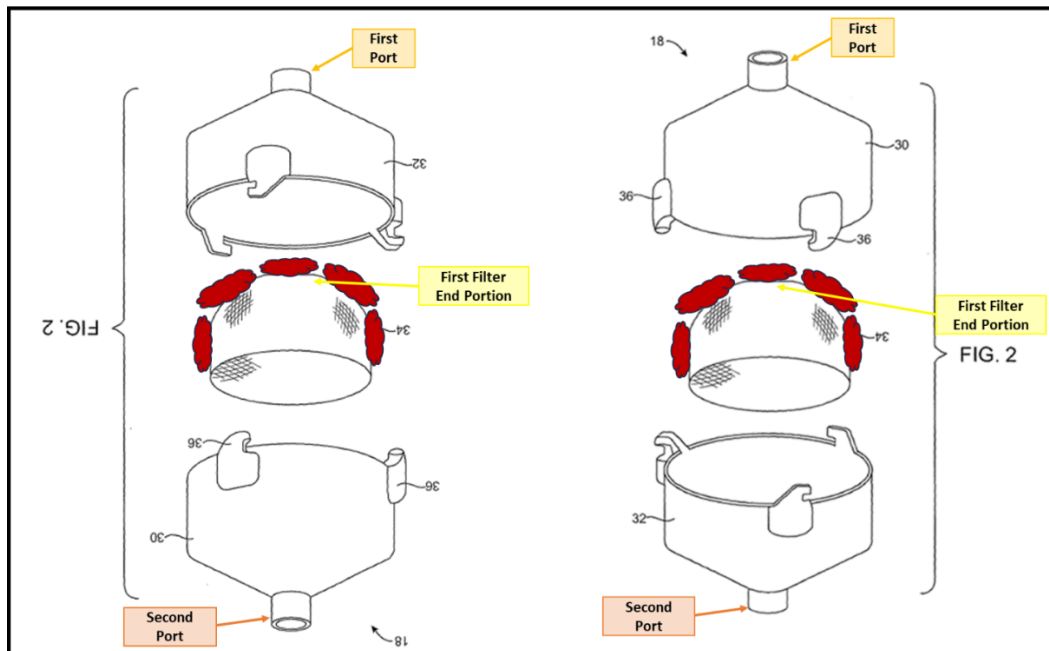
As explained for claim 1, Garrison's aspiration source would generate negative pressure in Goff's or Lee's filter assemblies via the second port, which would draw aspirated material into the filter via the first port. (*Supra* §VII.A.6.) POSITAs

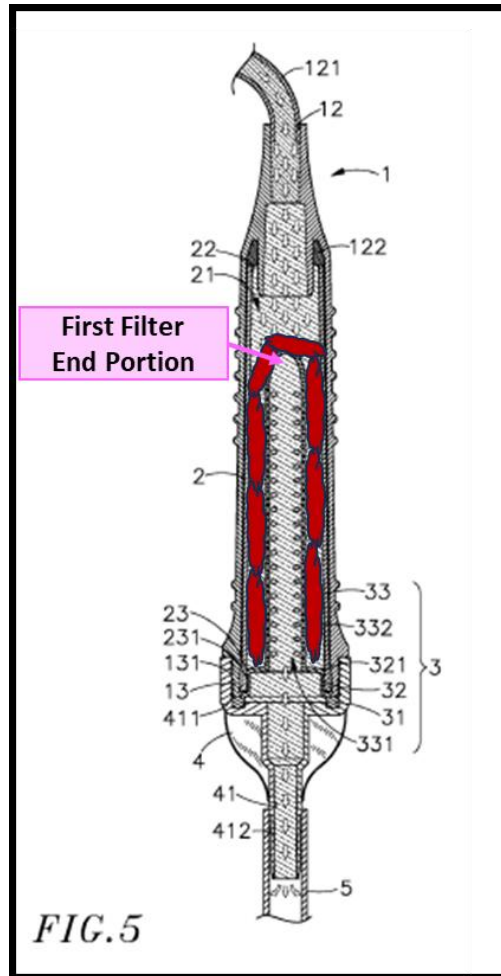
would have understood that the clot material would be drawn against the first filter end portion in Goff or Lee, as illustrated below:

Goff – Orientation 1



Goff – Orientation 2





(Ex. 1003, ¶¶181-183; Ex. 1005, Fig. 2; Ex. 1007, Fig. 5.)

D. Claim 7

Garrison and Goff or Lee renders claim 7 obvious. (Ex. 1003, ¶¶184-187.)

1. Goff

Goff discloses this limitation as explained in Grounds 1-2. (*Supra* §VI.D.)

2. Lee

Lee's first filter end portion is closer to the first housing end portion than the second housing end portion, and the second filter end portion is closer to the second housing end portion than the first housing end portion:

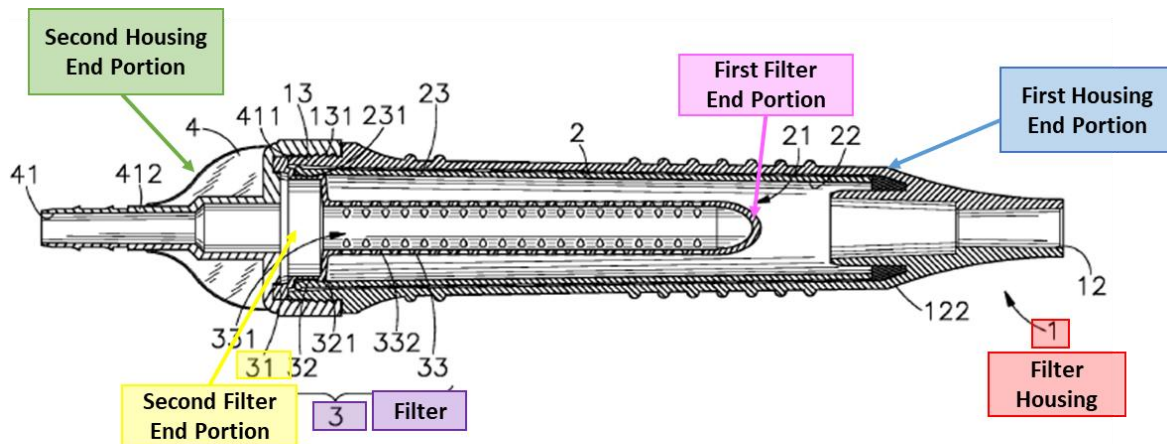


FIG. 3

(Ex. 1007, Fig. 3; Ex. 1003, ¶187.)

E. Claim 10

Garrison and Goff or Lee renders claim 10 obvious. (Ex. 1003, ¶¶188-201.)

1. Preamble

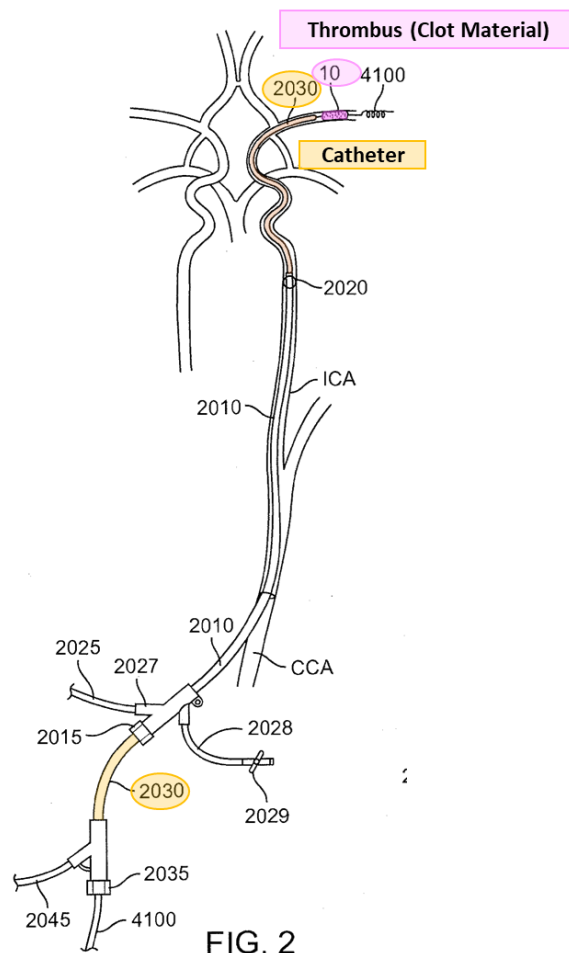
If the preamble is limiting, Garrison discloses a “clot treatment system.” (Ex. 1003, ¶¶189-190.)

Garrison discloses systems to aspirate clots from a patient’s vasculature, which are “clot treatment system[s].” (Ex. 1006, abstract, [0007]; Ex. 1003, ¶190.)

2. Aspiration Catheter

Garrison discloses an “an aspiration catheter configured to be intravascularly positioned proximate to clot material within a blood vessel of a patient.” (Ex. 1003, ¶¶191-192.)

Garrison’s aspiration catheter 2030 “is placed through the arterial access device 2010 or the guide catheter 2105 and positioned such that the distal tip reaches the treatment site.” (Ex. 1006, [0130]-[0134], [0164], Fig. 34.) In Figure 2, for example, Garrison illustrates positioning the distal portion of aspiration catheter 2030 proximate to clot material 10 within the blood vessel:



(*Id.*, Fig. 2, [0050]-[0051]; *see also* Figs. 25A-25B, 26-28, 33, 35.)

3. Remaining Limitations

The remaining limitations of claim 10 are substantively identical to those in claim 1. (*See* Ex. 1001, claims 1, 10; Ex. 1003, ¶¶193-201.) Garrison and Goff or Lee render those limitations obvious as explained for claim 1. (*Supra* §VII.A.)

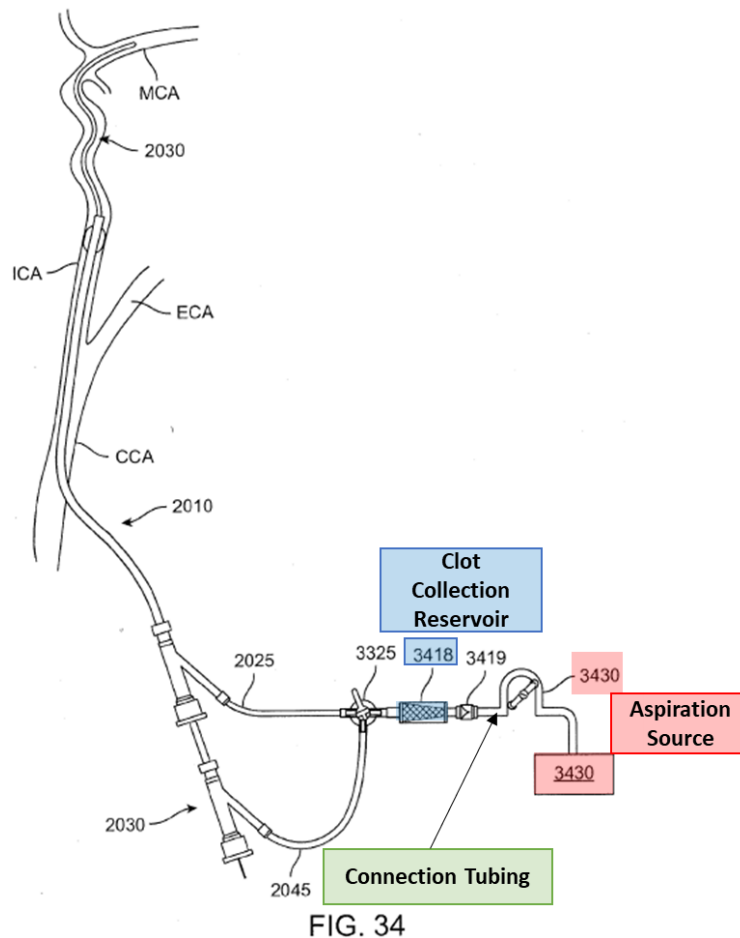
F. Claim 11

Garrison and Goff or Lee renders claim 11 obvious as explained for claims 1 and 10. (*Supra* §§VII.A, E.)

G. Claim 13

Garrison and Goff or Lee renders claim 13 obvious. (Ex. 1003, ¶¶203-204.)

Garrison's clot collection reservoir (filter 3418) is spaced apart from the aspiration source 3430 and is fluidly coupled to the aspiration source via tubing:



(Ex. 1006, [0130]-[0132], Fig. 34.) When Garrison’s filter is replaced with Goff’s or Lee’s filter assemblies, the tubing would fluidly couple the second port on Goff’s or Lee’s filter assembly to the aspiration source. (Ex. 1003, ¶204.)

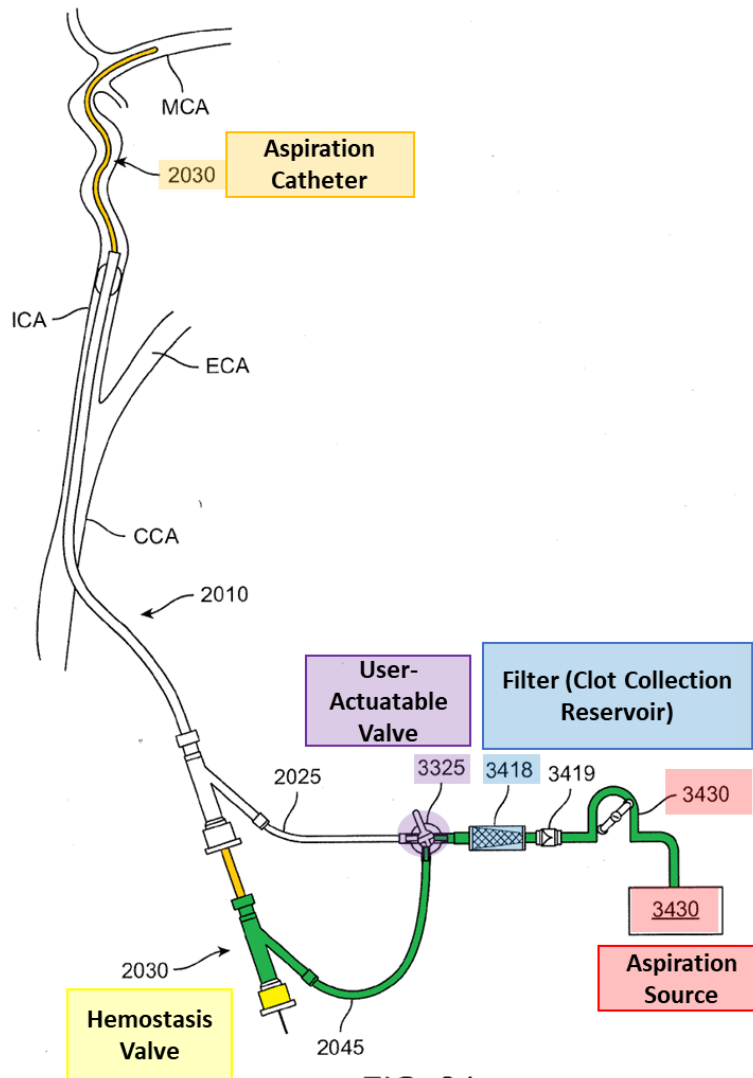
H. Claim 15

Garrison and Goff or Lee renders claim 15 obvious. (Ex. 1003, ¶¶205-210.)

1. Valve

Garrison discloses this limitation. (Ex. 1003, ¶¶206-209.)

Garrison’s system includes a valve 3325 [purple] along the fluid path between the filter [blue] and aspiration catheter [orange]:



(Ex. 1006, [0132], Fig. 34.) Garrison’s “valve 3325 controls which device is connected to the aspiration source 3430” and “enable[s] one device, the other device, both devices, or neither device to be connected to the aspiration source at any given time.” (*Id.*) Thus, the valve has an open position where the filter’s first port is fluidly connected to the catheter 2030 and a closed position where the first port is disconnected from the catheter. (Ex. 1003, ¶207.)

In some embodiments, the “valve may be a 3-way or 4-way stopcock.” (Ex. 1006, [0132].) A “3-way or 4-way stopcock” valve is “user-actuatable.” (Ex. 1003, ¶208.) The valve can also “be a flow controller with a simple actuation which selects the configuration as described above.” (Ex. 1006, [0132].) Garrison’s flow controller (e.g., item 3400) “may include one or more control interfaces that a user may actuate to regulate which device is being aspirated”:

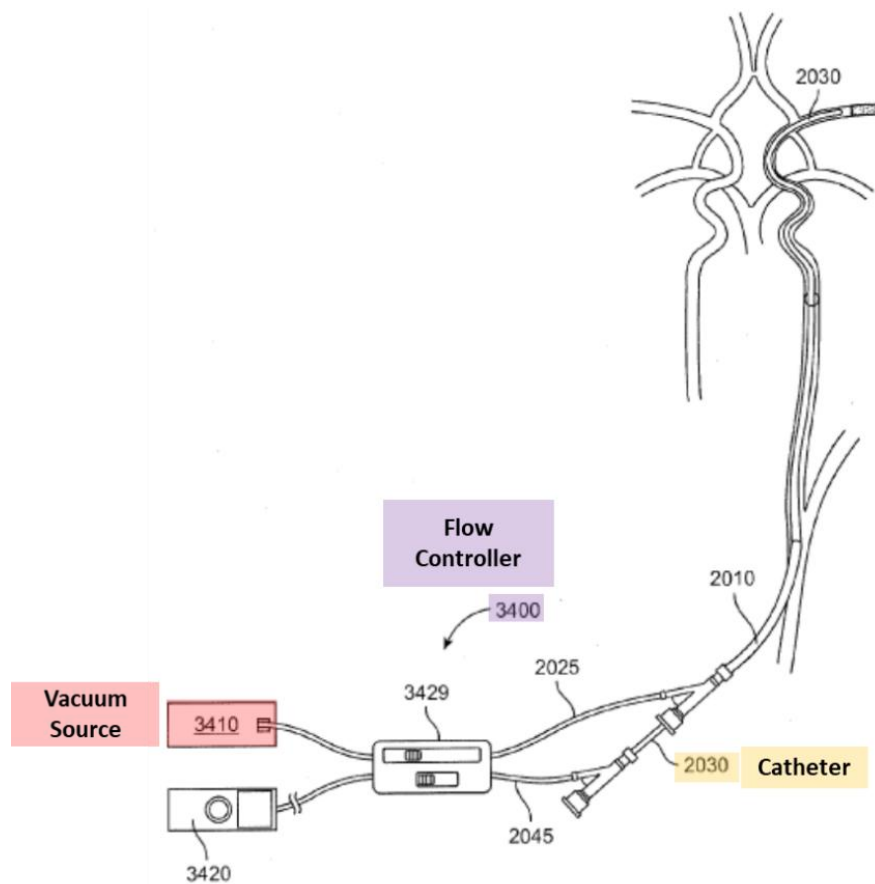


FIG. 35

(Ex. 1006, [0133], Fig. 35.) Thus, the flow controller is also a user-actuatable valve.
(Ex. 1003, ¶209.)

2. Remaining Limitations

Garrison and Goff or Lee renders the remaining limitations of Claim 15 obvious as explained for claims 1 and 10. (*Supra* §§VII.A, E.)

I. Claim 16

Garrison discloses “wherein the aspiration source is configured to generate the negative pressure in the chamber with the valve in the closed position, and wherein the valve is configured to be moved to the open position to apply the negative pressure to the aspiration catheter.” (Ex. 1003, ¶¶211-219.)

Garrison describes an embodiment in which “a locking syringe (for example a VacLok Syringe) is attached to the flow controller and the plunger is pulled back into a locked position by the user while the connection to the flow line is closed prior to the thrombectomy step of the procedure.” (Ex. 1006, [0134]; *see also* Ex. 1022, ¶23 (describing use of similar procedure since the early 2010s).) Once the catheter is proximate the thrombus, “the user may open the connection to the aspiration syringe” to “enable the maximum level of aspiration in a rapid fashion.” (Ex. 1006, [0134].) Because the filter is between the valve and pressure source, the vacuum pressure builds up in the filter canister via the pressure source. (*Id.*, Fig. 34; Ex. 1003, ¶213.) While this embodiment specifically includes a flow controller and a syringe, Garrison discloses replacing the controller with a stopcock and that the

aspiration source “may be an aspiration pump, a regular or locking syringe, a hand-held aspirator, hospital suction, or the like.” (Ex. 1006, [0132], [0134].)

PO has argued in other IPRs that Garrison’s description of generating negative pressure with the valve closed describes a different arrangement than the Figure 34 embodiment, and that this allegedly different system does not include a filter. (Ex. 1052, 31.) PO is wrong. Garrison describes using rapid aspiration with the systems in Figure 34. (Ex. 1006, [0132]-[0134]; Ex. 1039, 128:14-129:13 (PO’s expert admitting that Garrison builds up aspiration while Figure 34’s valve 3325 is closed).) As the Board preliminarily found in the ’333 Patent IPR, Garrison includes these disclosures “in a relatively short section” that “suggest[s] features of those embodiments may be combined.” (Ex. 1052, 31-32.) The Board further recognized that “Garrison’s disclosures ... suggest that flow controllers and syringes are example valves and aspiration sources, with stopcocks and aspiration pumps identified as respective alternatives to flow controllers and syringes.” (*Id.*, 32.)

PO also argued that the rapid aspiration method has a different arrangement than Figure 34 because the syringe is attached directly to a flow controller without an intervening filter. (*Id.*, 31.) However, Garrison never states that the syringe is attached *directly* to a flow controller, nor does Garrison preclude an intermediary clot canister (filter) as shown in Figure 34. (Ex. 1006, [0134].) PO’s argument is unsupported. (*See* 1052, 31-32 (rejecting argument).)

J. Claim 17

Claim 17 is an independent claim that recites the same limitations as claim 15 except claim 17 does not include the valve of claim 15, and claim 17 recites two additional limitations: (1) “a hemostasis valve coupled to a proximal portion of the aspiration catheter” and (2) “at least one tube fluidly coupling the first port to a portion of the aspiration catheter distal of the hemostasis valve.”² Garrison discloses both limitations, and therefore, Garrison and Goff or Lee renders claim 17 obvious. (Ex. 1003, ¶¶220-236.)

1. Hemostasis Valve

Garrison discloses an aspiration catheter 2030 having a “proximal hub 2065” or “proximal adaptor” and explains that “a separate hemostasis valve may be attached to proximal hub 2065” or “the hemostasis valve may be integral to the catheter proximal adaptor”:

² Claim 17 also requires that the housing defines a “chamber” rather than a “sealed chamber,” and claim 17 does not require that the first port “provides a first fluid path” or that the second port “provides a second fluid path.” The prior art discloses a chamber for the same reasons it discloses a sealed chamber.

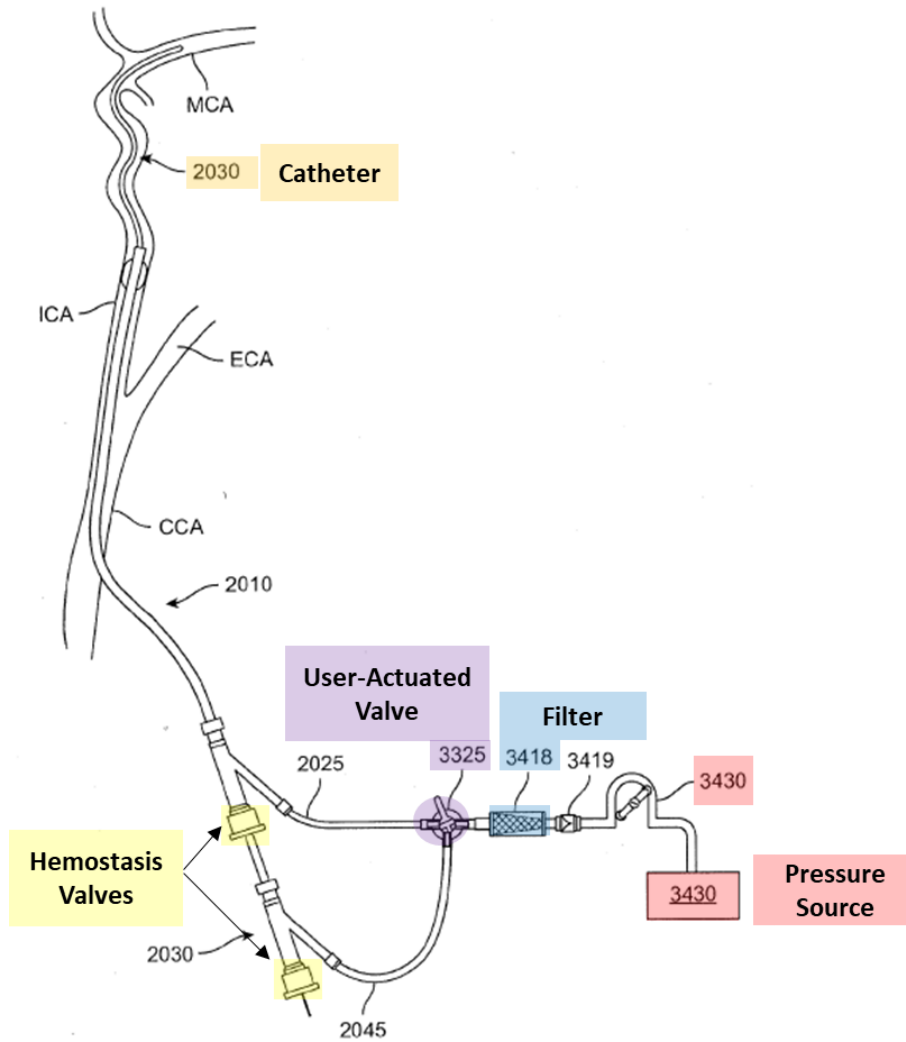
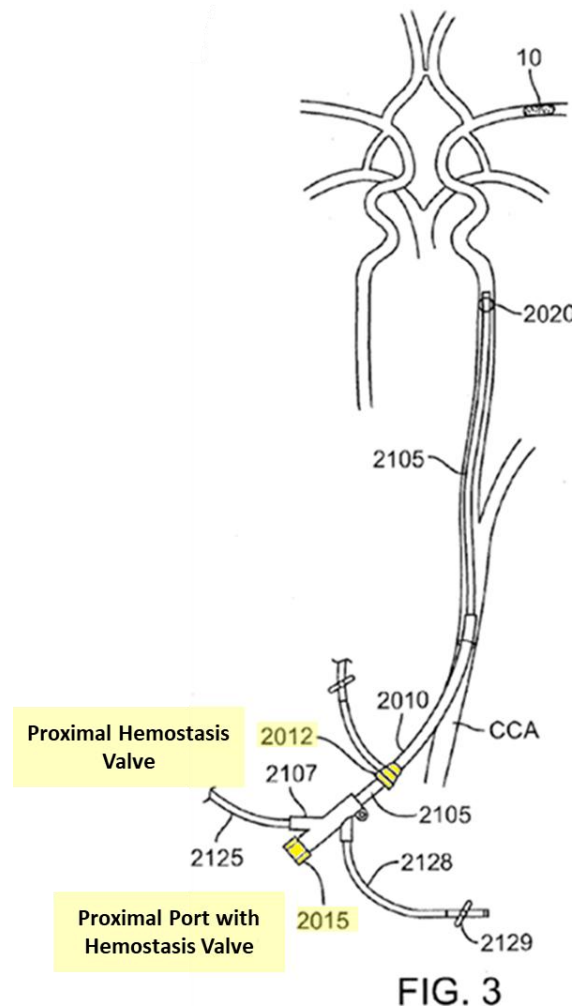


FIG. 34

(Ex. 1006, [0098], Fig. 34.) Garrison’s hemostasis valve allows “introduction of devices such as a microcatheter, guide wire, or thrombectomy device while preventing or minimizing blood loss during the procedure.” (*Id.*)

Figure 34 (above) does not expressly label the proximal adaptor and hemostasis valve, but other, related figures do. For example, Figures 2 and 3 identify a “proximal adaptor having a proximal port 2015 *with a hemostasis valve* to allow introduction of devices while preventing or minimizing blood loss during the

procedure.” (*Id.*, [0053] (emphasis added), Figs. 2-3; *see also id.* at [0050]-[0053], [0059], [0062], Figs. 1-3, 6 (Garrison also explains that the arterial access device also has a hemostasis valve 2012).) The location of the hemostasis valve in Figure 3 is the customary location for a hemostasis valve on a catheter:

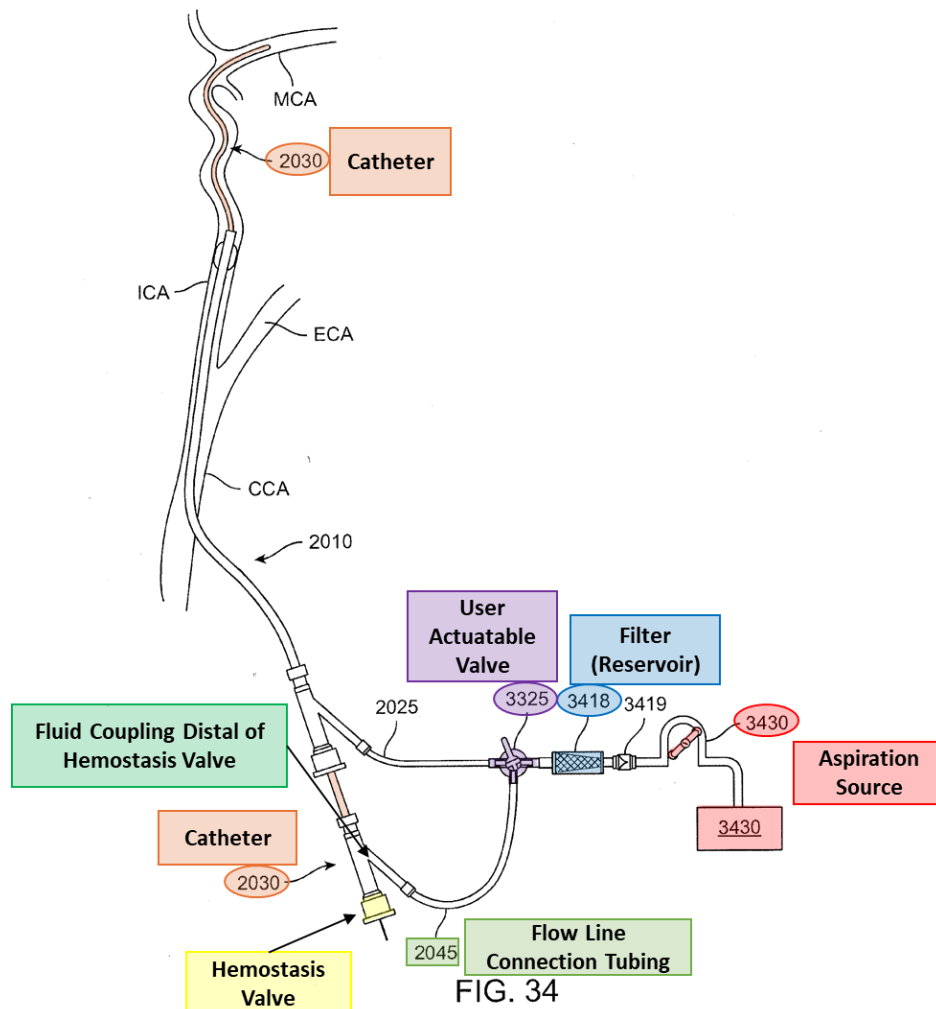


(*Id.*, Fig. 3; Ex. 1003, ¶225.)

Garrison therefore discloses “a hemostasis valve coupled to a proximal portion of the aspiration catheter.” (Ex. 1003, ¶¶223-226.)

2. Tube

Garrison's system includes a flow line 2045 (i.e., medical tubing) that fluidly couples the filter with the aspiration catheter 2030 at a location distal from the hemostasis valve:



(Ex. 1006, [0130]-[0132], Fig. 34; Ex. 1003, ¶228.) When Garrison's filter is replaced by Goff's or Lee's filter assemblies, Garrison's flow line 2045 would fluidly couple the first port of Goff's or Lee's filter assemblies with the aspiration catheter in the same way. (Ex. 1003, ¶228.)

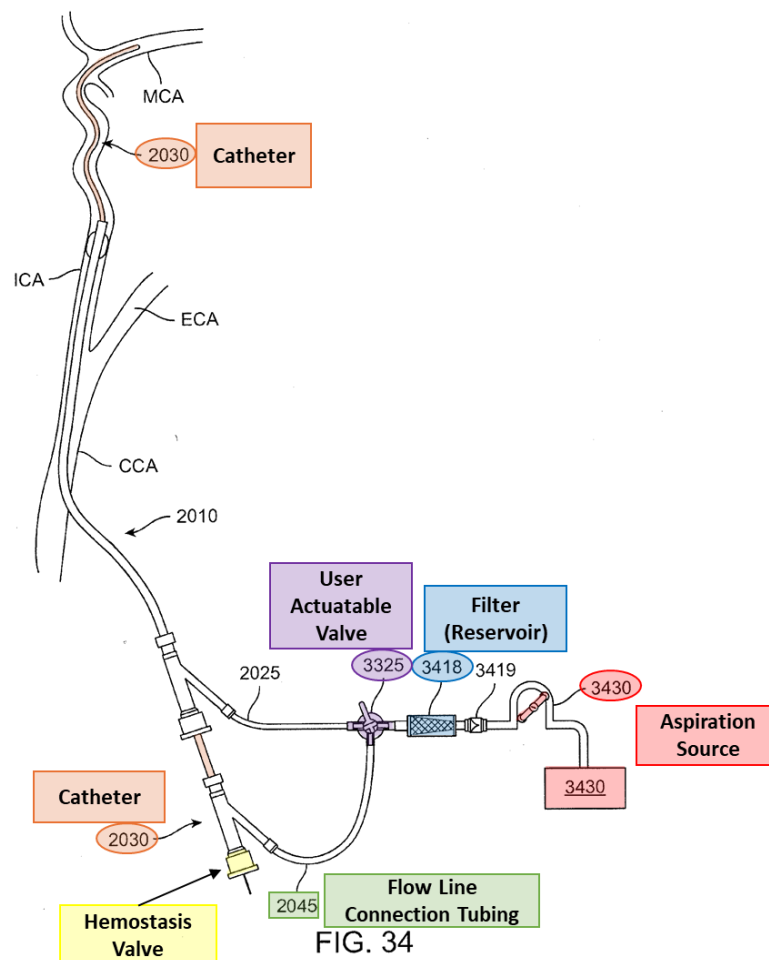
3. Remaining Limitations

Garrison and Goff or Lee renders the remaining limitations of claim 17 obvious as explained for claim 15. (*Supra* §VII.H.)

K. Claim 19

Claim 19 recites the “clot treatment system of claim 17 wherein the aspiration source is fluidly couplable to the at least one tube.” Garrison and Goff or Lee renders claim 19 obvious. (Ex. 1003, ¶¶237-238.)

Garrison’s aspiration source is fluidly coupled to the flow line 2045 (tubing):

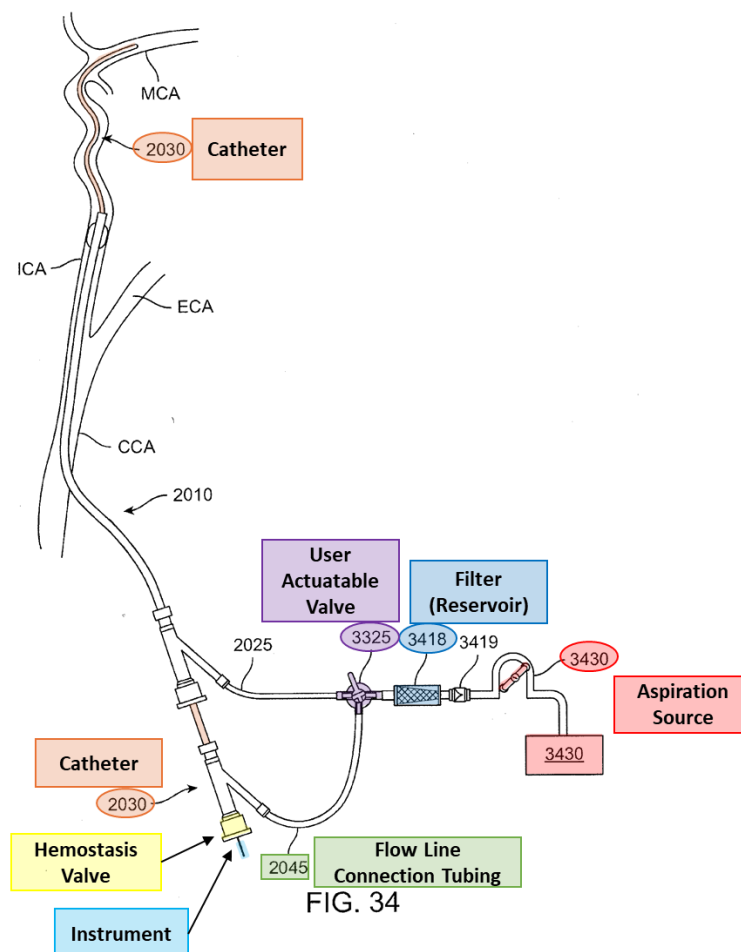


(Ex. 1006, [0130], [0132], Fig. 34.)

L. Claim 20

Claim 20 recites the “clot treatment system of claim 17 wherein the hemostasis valve is configured to receive an instrument therethrough.” Garrison and Goff or Lee renders claim 20 obvious. (Ex. 1003, ¶239-240.)

Garrison’s hemostasis valve allows “introduction of devices such as a microcatheter, guide wire, or thrombectomy device while preventing or minimizing blood loss during the procedure.” (Ex. 1006, [0098].) Figure 34 illustrates an instrument inserted through the hemostasis valve:



(*Id.*, Fig. 34; Ex. 1003, ¶240.)

M. Claim 21

Claim 21 recites the “clot treatment system of claim 17 wherein the hemostasis valve and the aspiration catheter are configured to receive and route an instrument therethrough.” Garrison and Goff or Lee renders claim 21 obvious. (Ex. 1003, ¶¶241-243.)

Garrison’s catheter 2030 may “provide distal access for additional devices, localized fluid or contrast delivery, or localized aspiration at a location distal of the distal-most end of the arterial access device 2010.” (Ex. 1006, [0054], Fig. 3.) Garrison’s hemostasis valve discloses this limitation as explained for claim 20. (*Supra* §VII.L.)

**VIII. GROUNDS 5-8: CLAIMS 18, 22-25 RENDERED OBVIOUS BY
GARRISON AND GOFF OR LEE COMBINED WITH SHAFFER AND
HARTLEY OR ELLER**

A. Claim 18

Claim 18 depends from claim 17 and recites additional limitations for the hemostasis valve. Garrison discloses a hemostasis valve, but does not describe the valve details, presuming that POSITAs would have been familiar with the available valves. Schaffer, Hartley, and Eller describe hemostasis valves that control the flow of fluid through a lumen by adjusting tension on filaments. POSITAs in January 2018 would have found it obvious to use the hemostasis valve resulting from the combination of Schaffer and Hartley or Eller in Garrison’s aspiration system. (Ex.

1003, ¶¶244-296.) Accordingly, Garrison and Goff or Lee combined with Schaffer and Hartley or Eller renders claim 18 obvious. (*Id.*)

1. Tubular Member

Schaffer discloses a hemostasis valve comprising a “tubular member.” (Ex. 1003, ¶¶245-246.)

Schaffer’s valve includes a “seal module 100” that comprises “a flexible, elongate tubular structure 101”:

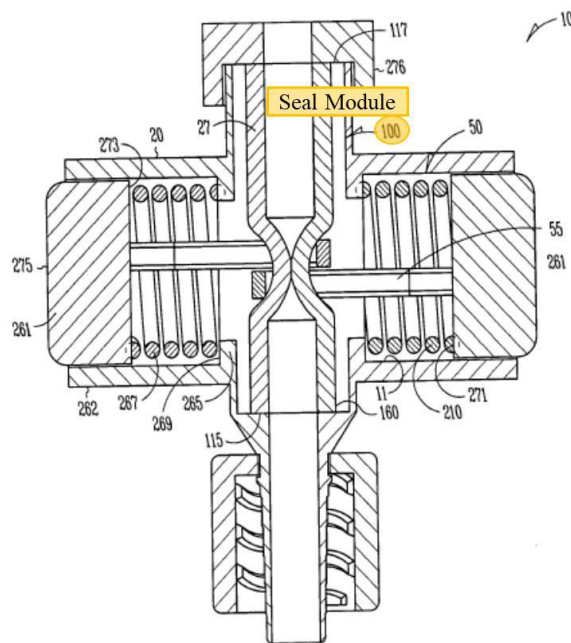


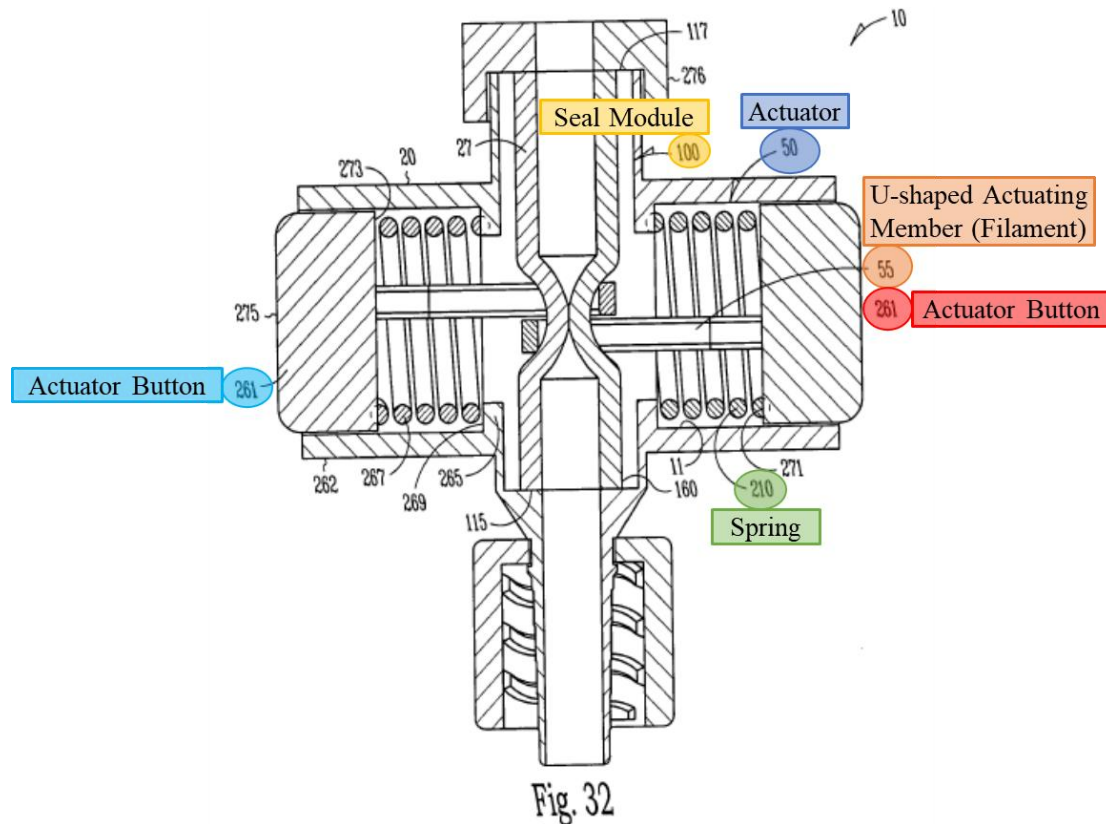
Fig. 32

(Ex. 1008, [0049], [0051], [0054], [0075], Fig. 32.) Schaffer’s seal module is a “tubular member.” (Ex. 1003, ¶246.)

2. Button

Schaffer discloses a hemostasis valve that comprises “a button.” (Ex. 1003, ¶¶247-248.)

Schaffer's valve includes two actuator buttons 261 “movable from a first position to a second position on opposing sides of the housing”:



(Ex. 1008, [0075]-[0076], Figs. 31-32.)

3. Filament

Schaffer and Hartley or Eller renders obvious “a filament coupled to the button and the tubular member, wherein the button is actuatable to loosen the filament to unseal the hemostasis valve.” (Ex. 1003, ¶249-290.)

Schaffer's valve includes two actuating members, which may be U-shaped, coupled to the actuator buttons:

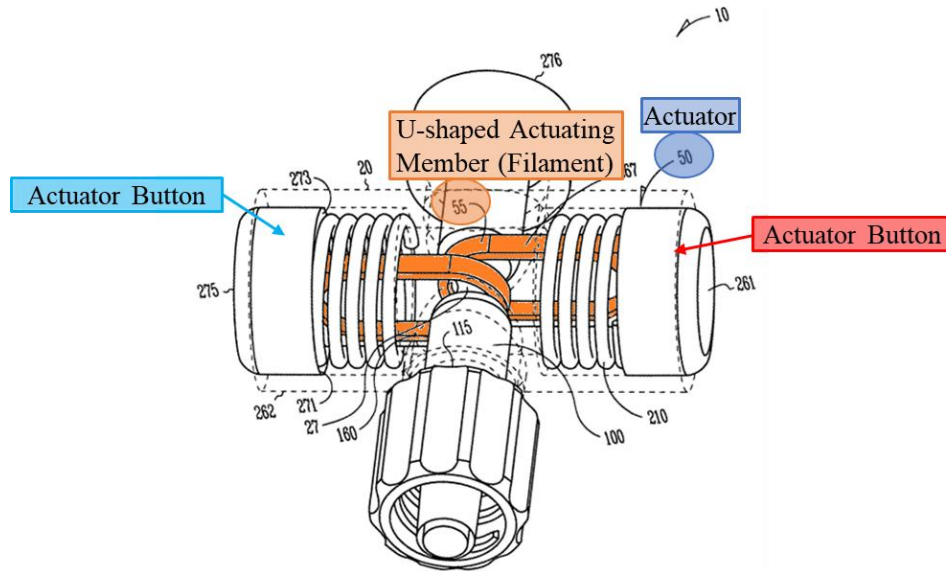


Fig. 31

(Ex. 1008, [0076], Fig. 31.) In a first position, Schaffer’s actuating members are “at least partially circumferentially disposed about the portion 108 of the seal module 100 depressing and at least partially collapsing a portion 108 of the containment structure 160 by a compressive force 67 (e.g. by a spring 210)”:

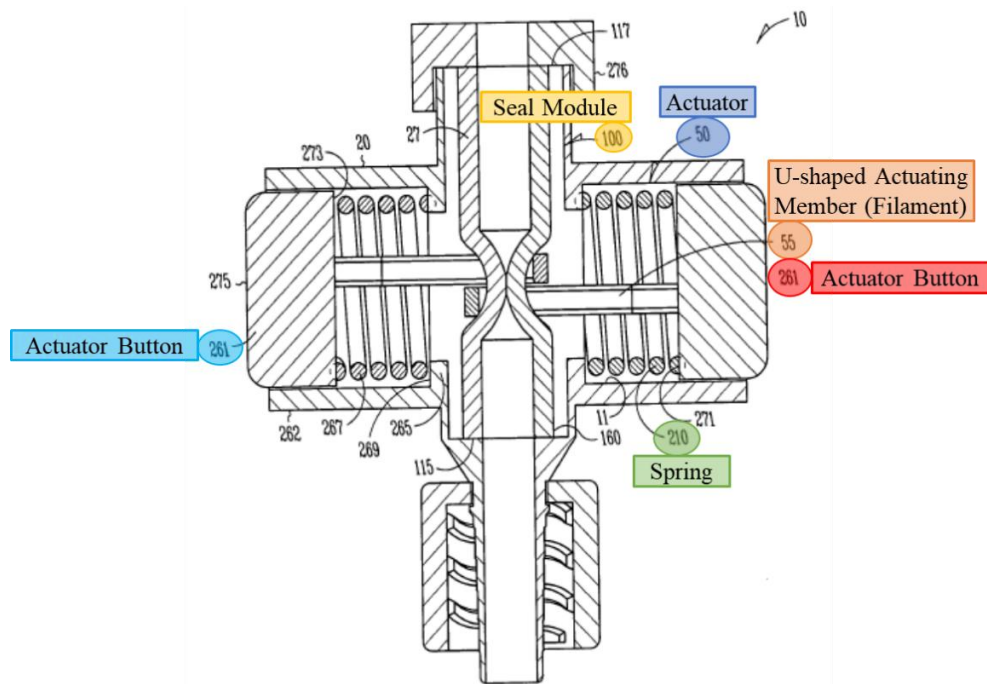
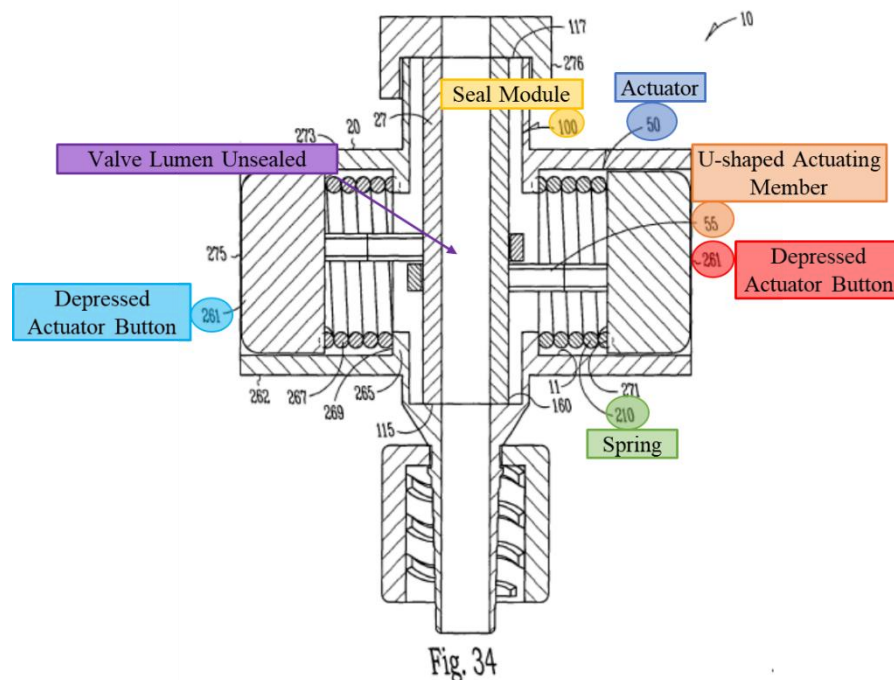


Fig. 32

(Ex. 1008, [0077], Fig. 32.) As shown above, the central lumen is constricted and sealed in this position. (*Id.*; Ex. 1003, ¶250.) In a second position, the actuator buttons are pressed inwardly, compressing the springs and allowing the actuating members to disengage from the seal module 100 so the module can return to its uncollapsed configuration:

Second Position – Actuator Buttons Depressed



(Ex. 1008, [0077], Fig. 34.) Schaffer’s actuator buttons are therefore “actuatable to loosen the filament to unseal the hemostasis valve.” (Ex. 1003, ¶250.)

a. **Hartley**

Hartley discloses a hemostasis valve having a cylindrical housing that holds a “cylindrical elastomeric diaphragm,” and a rotary actuator mounted to the housing:

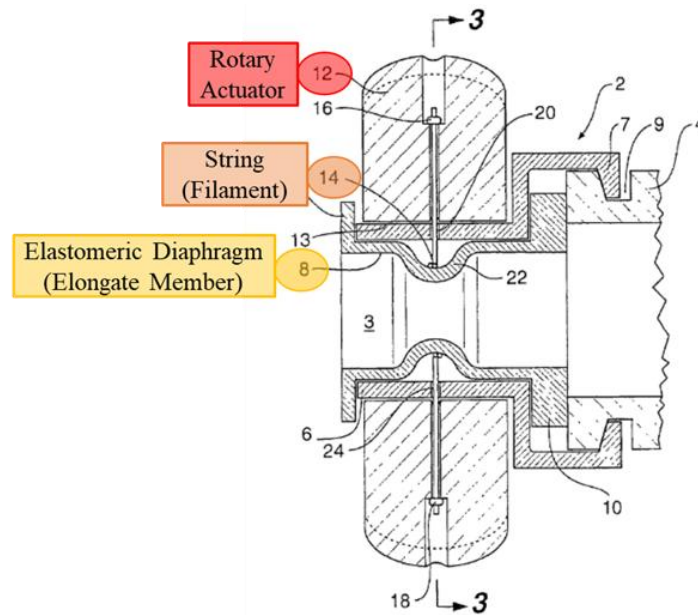


Fig 1

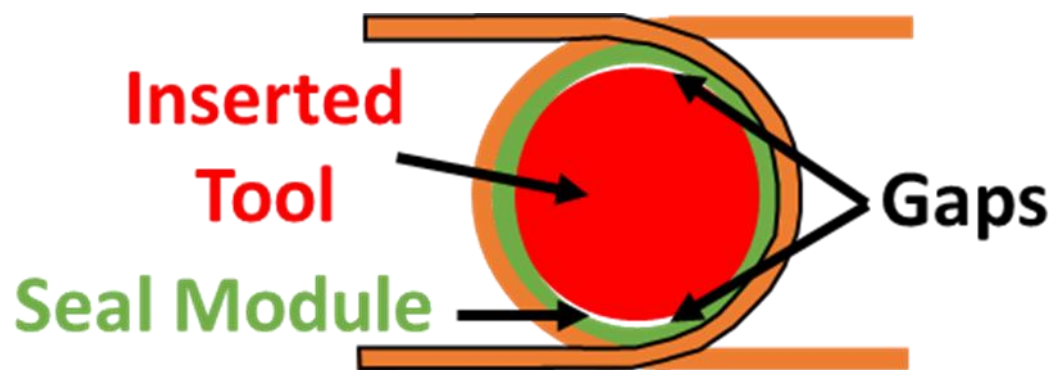
(Ex. 1009, [0031], Fig. 1.) Hartley’s valve includes a “string 14 ... mounted into the rotary actuator.” (*Id.*) In related IPRs, PO has not disputed that Hartley’s string 14 is a “filament.” (*Supra* §IV; Ex. 1003, ¶252.)

Hartley discloses that “[r]otation of the rotary actuator 12 with respect to the cylindrical housing 6 will cause the string 14 to be pulled in both directions at once and hence the cylindrical diaphragm 8 to be constricted.” (Ex. 1009, [0031], [0034], Fig. 4.) Hartley further discloses the valve “will close over a range of diameters of devices passed through the valve or can close completely down to be self sealing.” (*Id.*, [0037].)

POSITAs would have found it obvious to substitute Hartley’s string for Schaffer’s two actuating members. (Ex. 1003, ¶¶255-261, 281-290.) The combination of Hartley’s string and Schaffer’s valve would have merely entailed

substitution of one known element (Hartley’s string) for another (Schaffer’s actuating members) to yield the predictable result of sealing Schaffer’s valve. *KSR*, 550 U.S. at 416.

Hartley’s disclosure that its string can “close over a range of diameters of devices passed through the valve” would have further motivated POSITAs to substitute Hartley’s string for Schaffer’s actuating members. (Ex. 1009, [0037]; Ex. 1003, ¶256.) POSITAs would have recognized that Hartley’s string will seal more effectively across a wider range of tool diameters and shapes than Schaffer’s actuating members. (Ex. 1003, ¶256.) Schaffer’s actuating members will form small gaps between the valve’s seal module and some tools:



(*Id.*) Hartley’s string improves upon this potential issue because the string more precisely conforms to the tool diameters and shapes. (*Id.*)

POSITAs also had a finite number of predictable materials to use to constrict a tubular member in a hemostasis valve in January 2018. (Ex. 1003, ¶257.) Hartley and Schaffer disclose some materials: Hartley’s string and Schaffer’s actuating

members (which can be plastic or metal). (*Id.*) Eller discloses another material: wire members (which can be metals or polymers). (*Id.*) POSITAs would have found it obvious to select from these finite, predictable materials for constricting a valve and, as discussed below, would have had a reasonable expectation of success in implementing them. (*Id.*); *KSR*, 550 U.S. at 421.

POSITAs also would have had a finite number of predictable filament configurations to select from to constrict a tubular member in a hemostasis valve in January 2018. (Ex. 1003, ¶258.) Hartley discloses a string that runs from one side of the valve to the other and forms a loop around the tubular member, while Schaffer discloses two u-shaped members that collectively form a loop around the tubular member. (*See above* (describing Schaffer and Hartley).) Eller also discloses wire members that loop around a tubular member to constrict the valve. (*See infra* §VIII.A.3.b (describing Eller).) POSITAs would have found it obvious to select any of these finite, predictable configurations for constricting a valve and, as discussed below, would have had a reasonable expectation of success in implementing them. (Ex. 1003, ¶258); *KSR*, 550 U.S. at 421.

POSITAs would have reasonably expected success in substituting Hartley’s string for Schaffer’s two actuating members for several reasons. (Ex. 1003, ¶¶259-261.) Hartley teaches using simple knots to attach the string to Hartley’s rotary actuator. (Ex. 1009, [0031].) POSITAs would have reasonably expected that similar

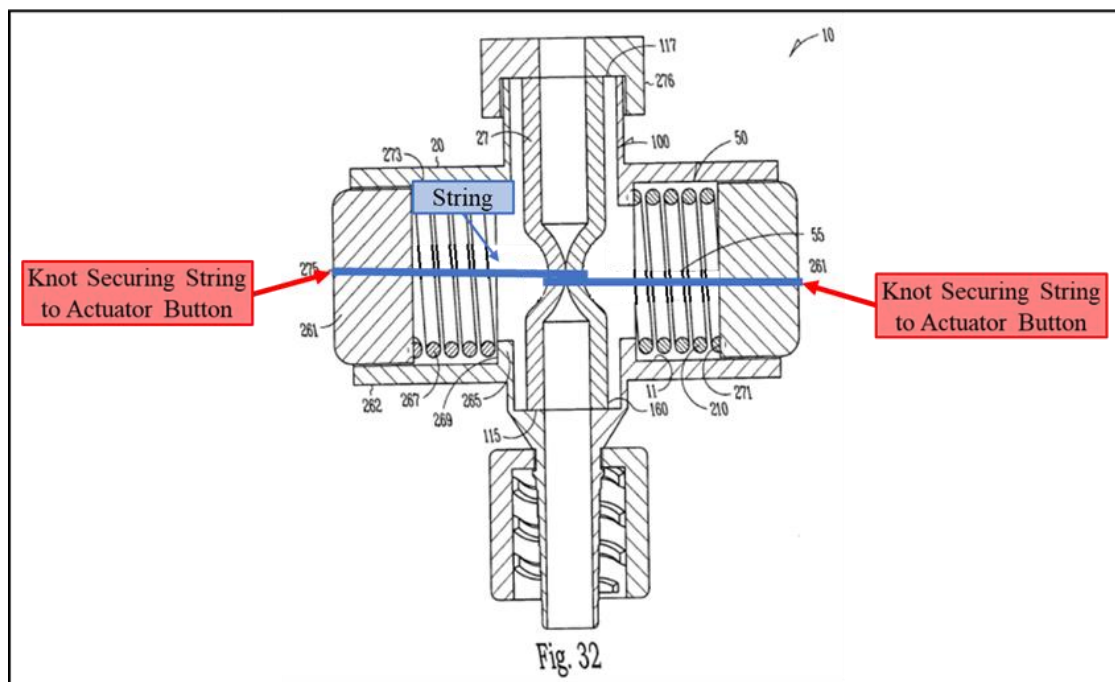
knots would secure Hartley's string to Schaffer's actuator buttons. (Ex. 1003, ¶259.)

For example, each end of Hartley's string could be threaded through small holes drilled or otherwise created in Schaffer's buttons and knotted on the other side. (*Id.*)

This simple modification would have been within a POSITA's skills:

Demonstrative Illustration

Schaffer + Hartley's String



(*Id.*)

Also, POSITAs would have recognized that Hartley's string and Schaffer's actuating members function in similar ways and, therefore, no other structural modifications to Schaffer's valve would be necessary. (*Id.*, ¶260.) Both valves collapse the tubular member's lumen by pulling the actuating members/string in opposite directions. (Ex. 1008, [0077]; Ex. 1009, [0031].) If Hartley's string were incorporated into Schaffer's valve, POSITAs would have reasonably expected

Schaffer's springs to pull the ends of the strings in opposite directions to constrict Schaffer's seal module. (Ex. 1003, ¶260.)

Likewise, POSITAs would have reasonably expected that pressing Schaffer's buttons inwardly (i.e., second position) would release tension on and loosen the string, allowing the lumen to open. (*See* Ex. 1008, [0077]; Ex. 1009 [0034]; Ex. 1003, ¶261.) Schaffer's seal module is made from a "highly deformable, non-compressible material 166 (e.g., plastic)" and is "configured to maintain an open lumen 193 when no compressive force 67 is applied." (Ex. 1008, [0054].) Thus, Schaffer's seal module has the resilience to open when the tension on the string is released. (Ex. 1003, ¶261.)

b. Eller

Eller also discloses a "filament." (Ex. 1003, ¶¶262-264.) Eller discloses hemostasis valves that include "a housing 16, an actuator 18, a sleeve 20, [and] a first wire member 22":

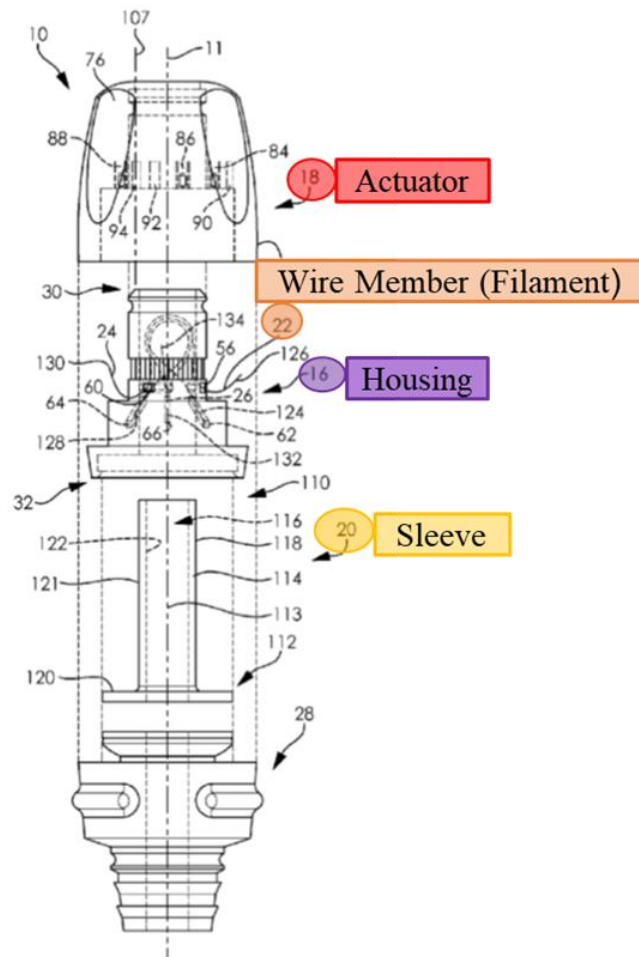


FIG. 2

(Ex. 1010, 5:1-6, 16:7-19, 21:37-22:31, 23:50-25:9, Fig. 2.) In related IPRs, PO has not disputed that Eller's wire member is a filament. (*Supra* §IV; Ex. 1003, ¶264.)

Eller's wire loops around the sleeve and has a first end 124 attached to the housing 16 and a second end 126 attached to the actuator 18:

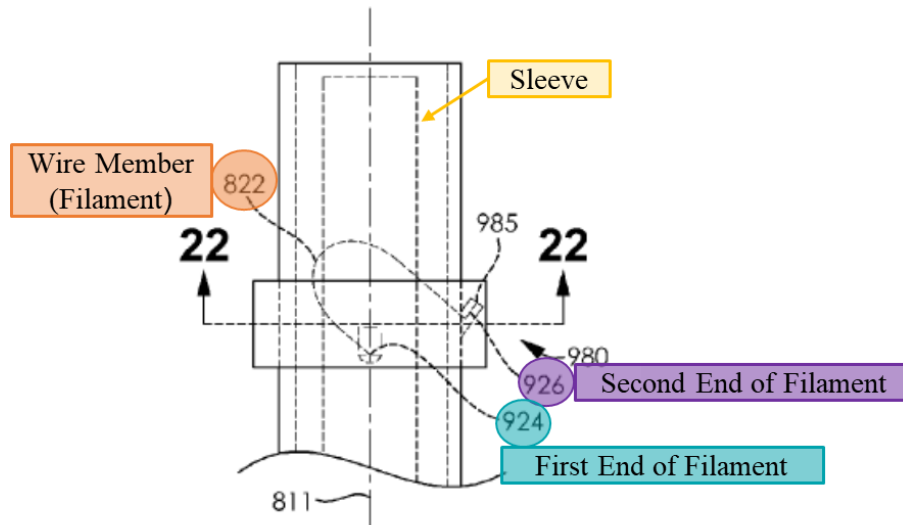


FIG. 21

(Ex. 1010, 12:52-64, 24:50-57, Fig. 21.) Eller’s wire is “moveable between a first configuration and a second configuration.” (*Id.*, 15:21-25.) In the first configuration, the wire is in a relaxed state and fluid is permitted to flow through the sleeve. (*Id.*, 15:21-40, 17:38-43.) In the second configuration, rotational force from the actuator places the wire in a tensioned state, causing it to constrict the sleeve and prevent fluid from passing therethrough. (*Id.* 15:21-40, 17:62–67, 18:3-8.)

POSITAs would have found it obvious to substitute Eller’s wire for Schaffer’s two actuating members by attaching one end of the wire to Schaffer’s first button, looping the wire around the seal module, and attaching the second end of the wire to Schaffer’s second button. (Ex. 1003, ¶¶267-274, 281-290.) The combination of Eller’s wire and Schaffer’s valve would have entailed merely substituting one known element (Eller’s wire) for another (Schaffer’s two actuating members) to yield the predictable result of constricting Schaffer’s valve. *KSR*, 550 U.S. at 416.

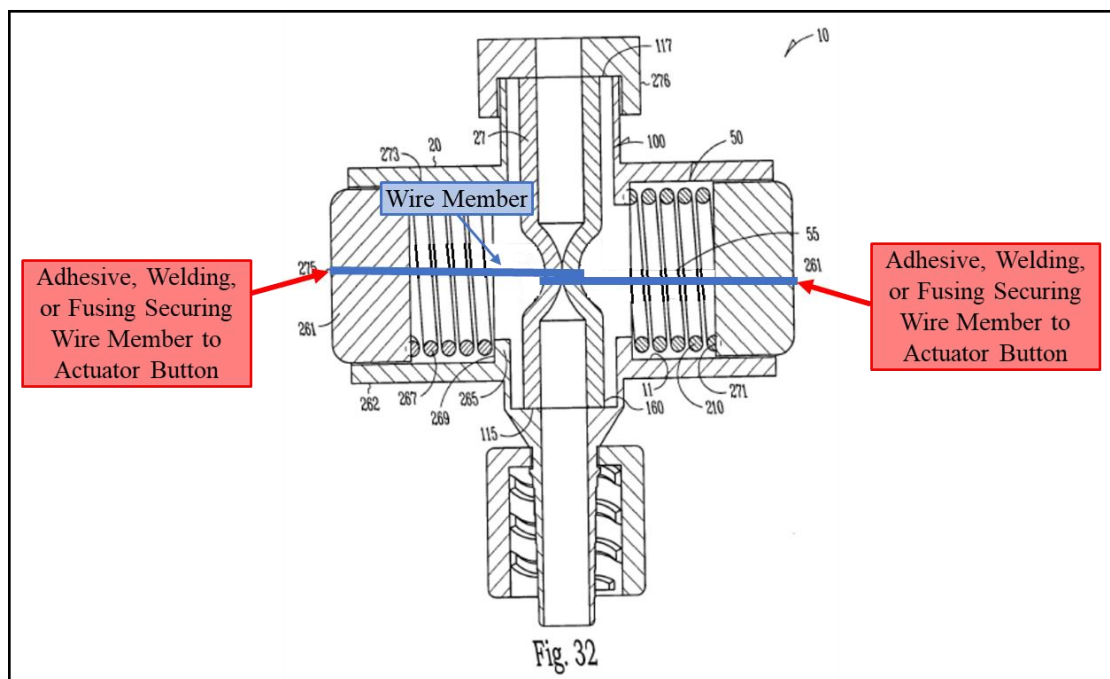
Eller's disclosure that the wire member can form a seal around one or more medical devices would have further motivated POSITAs to substitute Eller's wire for Schaffer's actuating members. (Ex. 1010, 15:21-40, 17:38-43, 18:3-8; Ex. 1003, ¶267.) POSITAs would have recognized that Eller's wire may seal more effectively across more device diameters and shapes than Schaffer's actuating members. (*Supra* §VIII.A.3.a; Ex. 1003, ¶268.) Like Hartley's string, Eller's wire will more closely conform to some devices. (Ex. 1003, ¶268.)

POSITAs also had a finite number of predictable materials and a finite number of predictable filament configurations to use for constricting a tubular member within a hemostasis valve in January 2018. (*Supra* §VIII.A.3.a; Ex. 1003, ¶270.) POSITAs would have found it obvious to select from these finite, predictable options, including Eller's wire, and would have reasonably expected success in implementing them, as discussed in the Schaffer-Hartley ground. (*Id.*)

POSITAs would have reasonably expected success in substituting Eller's wire for Schaffer's actuating members for several reasons. (Ex. 1003, ¶¶271-274.) First, Eller discloses that the "[a]ttachment between a wire member and a housing and/or an actuator can be accomplished using any suitable method or technique." (Ex. 1010, 14:37-43.) Eller further identifies means for securing a wire to an actuator, including "using adhesives, welding, fusing." (*Id.*, 14:43-49.) POSITAs would have

reasonably expected success in securing Eller’s wire to Schaffer’s buttons using these simple methods:

Demonstrative Illustration Schaffer + Eller’s Wire Member



(Ex. 1003, ¶271)

Second, Eller teaches that its wire may be used with “any suitable actuator capable of moving the selective fluid barrier valve device between a first configuration and a second configuration.” (Ex. 1010, 8:27–39.) Eller discloses that suitable actuators include “rotatable actuators, linear actuators, slidable actuators, pivotable actuators, levers, and any other actuator considered suitable for a particular embodiment.” (*Id.*, 8:39–44.) Given this disclosure, POSITAs would have

reasonably expected Eller’s wire to work with Schaffer’s buttons, which are linear and/or slidable actuators. (Ex. 1003, ¶272.)

Third, Eller’s wire and Schaffer’s actuating members function similarly to close the valves. (*Id.*, ¶273.) Both references disclose actuators that pull the wire/actuating members in opposite directions to constrict the valve. (Ex. 1008, [0077]; Ex. 1010, 15:21-40, 17:47-18:3.) POSITAs would have recognized that Eller’s wire would function the same way in Schaffer’s valve. (Ex. 1003, ¶¶273-274.) As explained above, POSITAs would have expected Schaffer’s seal module to have the resilience to return to its open configuration when “no compressive force [] is applied” to the seal. (*Supra* §VIII.A.3.a; Ex. 1003, ¶274.) Further, if Schaffer’s seal module required adjustment to function with Eller’s wires, POSITAs would have possessed the knowledge to make the necessary adjustments, as explained in the Schaffer-Hartley ground. (*Id.*)

4. Motivation To Combine

POSITAs would have been motivated, and found it obvious, to use Schaffer’s valve with Hartley’s or Eller’s filaments as the hemostasis valve on Garrison’s catheter for several reasons. (Ex. 1003, ¶¶291-296.)

First, Garrison teaches that one hemostasis valve used with its system “can be ... an adjustable-opening valve.” (Ex. 1006, [0062], [0065], [0098].) Schaffer discloses an adjustable-opening valve and, therefore, POSITAs would have been

motivated to combine, and reasonably expected success in combining, Schaffer’s valve with Garrison. (Ex. 1003, ¶292.)

Second, Schaffer discloses that its hemostasis valve is “for use with catheters” and “blocks the flow of gas or fluid completely and immediately with or without an instrument in place within the gas/fluid path.” (Ex. 1008, [0002], [0008], [0047], [0049].) Schaffer further discloses that a range of instruments can be used within the valve, such as “a catheter, guidewire, needle, or fiber.” (*Id.*, [0056], [0074].) Thus, Schaffer’s valve performs the stated function of Garrison’s “hemostasis valve” — to “allow introduction of devices ... while preventing or minimizing blood loss during the procedure.” (Ex. 1006, [0098].) That would be particularly true for Schaffer’s valve with Hartley’s string or Eller’s wire, which will form a better seal around more instrument shapes and diameters. (*Supra* §VIII.A.3.) For this added reason, POSITAs would have been motivated to combine, and reasonably expected success in combining, Schaffer’s valve with Garrison. (Ex. 1003, ¶293.)

Third, POSITAs would have recognized that Schaffer’s hemostasis valve could simplify operation of Garrison’s system. (*Id.*, ¶294.) For example, Schaffer’s springs bias the valve toward the closed position, eliminating the need to manually seal the valve during procedures as occurred with some prior-art valves, such as Tuohy-Borst rotating valves. (*Id.*)

Fourth, combining Schaffer’s valve with Garrison’s aspiration catheter would merely entail the combination of known elements (Schaffer’s valve and catheter 2030) according to known methods (attaching the valve to a catheter’s proximal hub or forming it integrally with the hub) to yield the predictable result of minimizing blood loss through the catheter. *See KSR*, 550 U.S. at 416; (Ex. 1003, ¶295.)

Fifth, POSITA’s in January 2018 had a finite number of predictable hemostasis valves to choose, including an “adjustable-opening valve,” RHV, or passive valve. (Ex. 1003, ¶296.) POSITAs would have found it obvious to try any of these hemostasis valves with Garrison’s catheter 2030. (*Id.*); *KSR*, 550 U.S. at 417. The known valves, like Schaffer’s adjustable-opening hemostasis valve, were simple mechanical structures that operate in a predictable way. (Ex. 1003, ¶296.) For this additional reason, POSITAs would have reasonably expected success in combining Schaffer’s valve (as modified by Hartley/Eller) with Garrison. (*Id.*)

B. Claim 22

Garrison and Goff or Lee combined with Schaffer and Hartley or Eller renders claim 22 obvious. (Ex. 1003, ¶¶297-329.) POSITAs would have been motivated to combine Schaffer’s hemostasis valve (with Hartley’s strings or Eller’s wires) with Garrison’s aspiration system as explained for claim 18. (*Supra* §VIII.A.4.)

1. Tubular Member

Schaffer discloses a “tubular member defining a lumen.” (Ex. 1003, ¶298.)

Schaffer's seal module 100 (tubular member) defines a lumen:

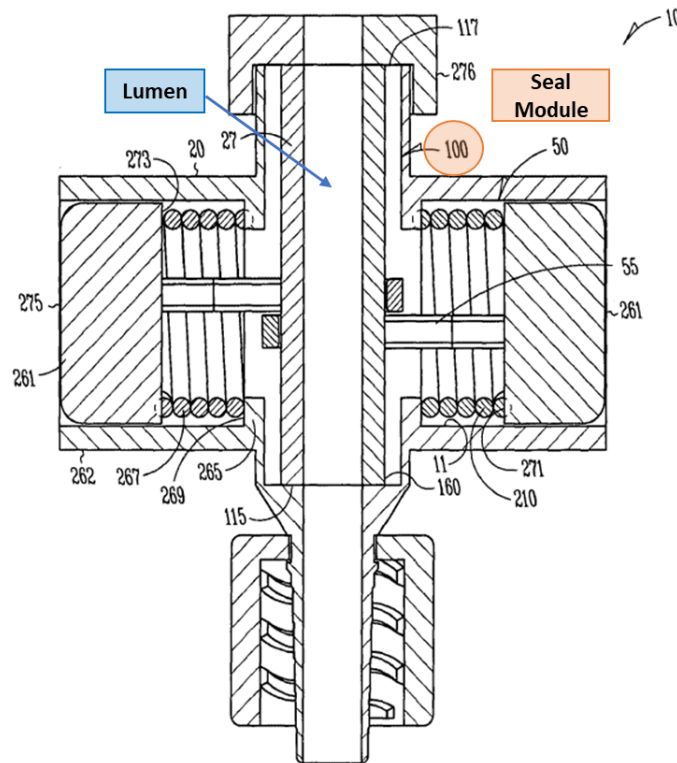


Fig. 34

(Ex. 1008, Fig. 34; Ex. 1003, ¶¶246, 298.)

2. First and Second Filaments

Schaffer and Hartley or Eller renders obvious a “first filament extending in a first loop around the tubular member” and “a second filament extending in a second loop around the tubular member.” (Ex. 1003, ¶¶299-323.)

a. Schaffer and Hartley

Schaffer combined with Hartley renders these limitations obvious in two ways.

First, Hartley discloses a “first filament” and “second filament” as recited in claim 22. (Ex. 1003, ¶¶303-306.) POSITAs would have understood that Hartley’s string 14 would be formed from at least two threads twisted together. (Ex. 1045 (definition of string: “material consisting of threads of cotton, hemp, or other material twisted together to form a thin length”); Ex. 1046.) While the string is a “filament,” each thread forming the string is also a “filament” as described by the ’12-333 patent. (Ex. 1003, ¶304; Ex. 1019, [0046] (stating that the filament “can comprise one or several threads, lines, cords, rope, ribbon, flat wire, sheet, or tape”); Ex. 1047, 12.) Thus, Hartley’s string comprises a “first filament” and a “second filament” as recited in claim 22. (Ex. 1003, ¶¶302-306.)

Hartley’s string is secured to the rotary actuator via knots 16 at the ends of the filament and “is wound preferably twice around the cylindrical diaphragm 8”:

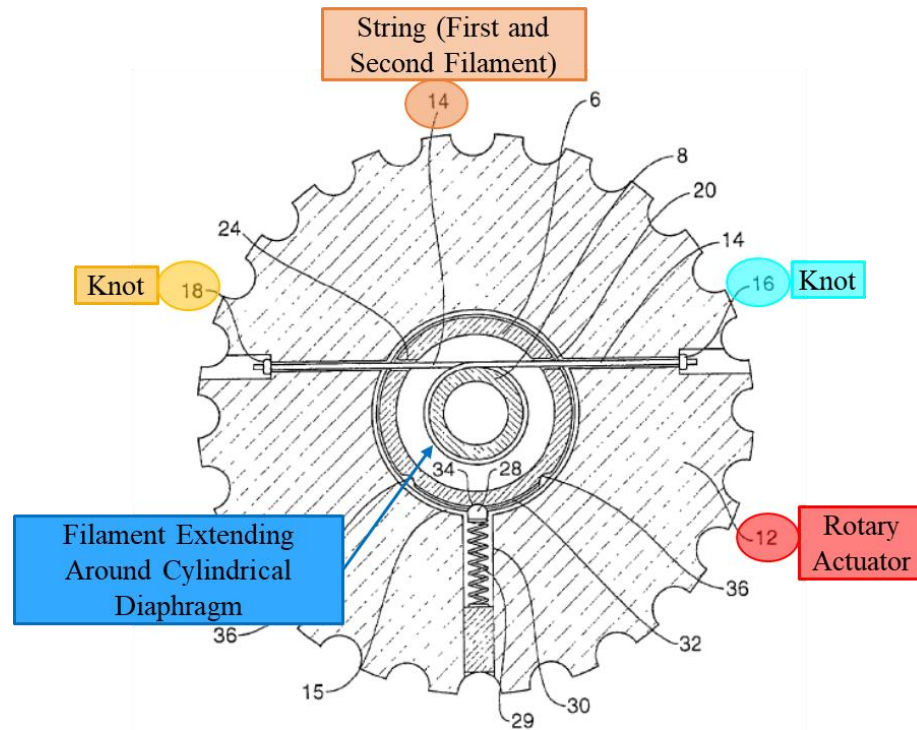


Fig 3

(Ex. 1009, [0031], Fig. 3.) Hartley’s string, and each of the filaments making up the string, therefore “extends in a loop around the tubular member.” (*Id.*; Ex. 1003, ¶305.) POSITA’s would have been motivated to replace Schaffer’s actuating members with Hartley’s string and would have reasonably expected success doing so as explained for claim 18. (*Supra* §VIII.A.3.a.)

Second, if Hartley’s string does not constitute first and second filaments as recited in claim 22, POSITAs would have found it obvious to substitute two of Hartley’s strings for Schaffer’s actuating members. (Ex. 1003, ¶¶307-313.)

POSITAs would have been motivated to use two strings with Schaffer’s valve to provide a more robust and reliable seal. (*Id.*, ¶308.) Hartley discloses that its string “is wound preferably twice around the cylindrical diaphragm.” (Ex. 1009,

[0031].) POSITAs exchanging Hartley’s string for Schaffer’s two actuating members would have recognized that another way to create two loops (or windings) around the tubular member would be to use two strings, each string forming a single loop. (Ex. 1003, ¶308.) While Hartley does not explain why the string would be “preferably” wound twice around the tubular member, POSITAs would have understood that two loops would apply constricting force along a greater length of the tubular member, thereby creating a larger sealing area and more robust seal. (*Id.*)

POSITAs would have been motivated to use two separate strings, each looped once around the tubular member, as opposed to a single string looped twice around the tubular member, for a few reasons. (*Id.*, ¶¶309-311.) First, a single string looped twice around the tubular member will create more friction because more of the string is in contact with the surface of the tubular member. (*Id.*, ¶309.) This increased friction means the springs will need to exert more pulling force on the string to constrict the tubular member, and the tubular member will need greater resiliency to overcome the friction and return to its expanded configuration. (*Id.*) POSITAs would have been motivated to use two separate strings to reduce the friction while still accomplishing a larger sealing area. (*Id.*)

Second, using two separate strings allows the manufacturer to optimally space the strings to achieve the maximum sealing force. (*Id.*, ¶310.) With only a single string, the loops formed by the string will tend to be immediately next to each other,

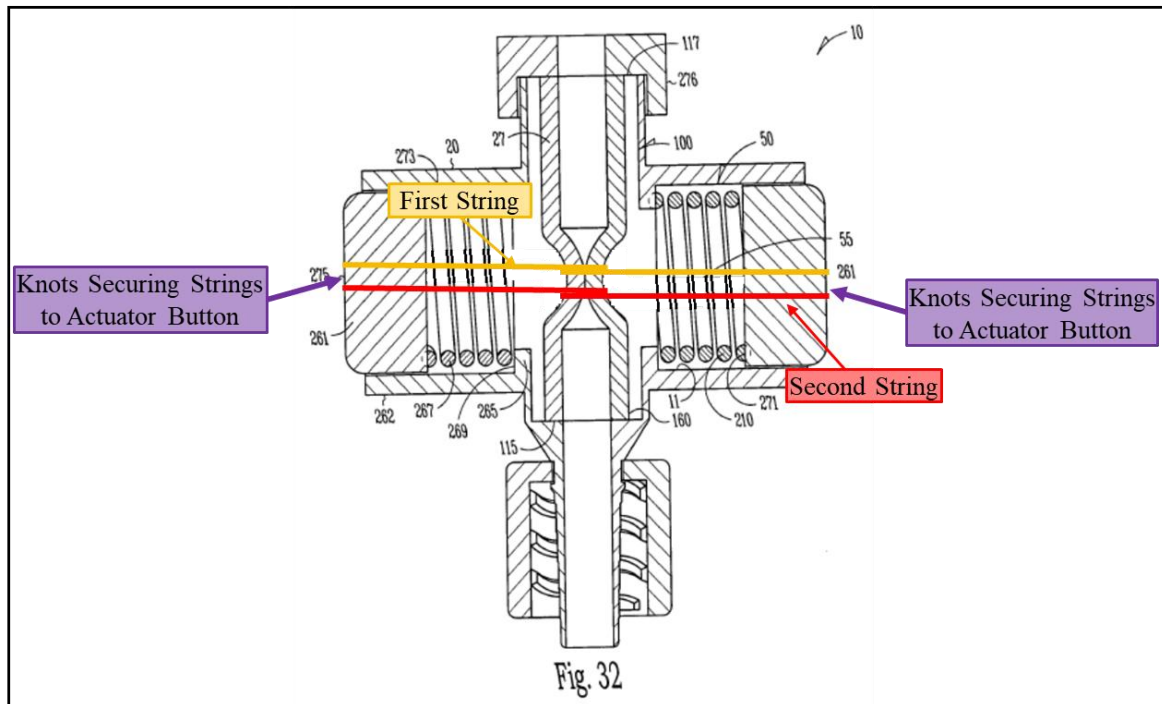
particularly after the buttons have been depressed once or twice. (*Id.*) However, with two strings, the manufacturer can design a small gap between the strings that remains after use to ensure that the sealing area is wider. (*Id.*)

Third, a second string provides a redundancy to the valve that cannot be accomplished with a single string. (*Id.*, ¶311.) Using a second string ensures that the valve seals even if one string fails to tighten around the tubular member. (*Id.*) Such a backup would not exist with a single string looped twice around the tubular member. (*Id.*)

POSITAs would have reasonably expected success in substituting Schaffer's two actuating members with two of Hartley's strings because Schaffer already discloses a method of attaching two filament ends to each button. (Ex. 1008, [0075]-[0077], Figs. 30-34; Ex. 1003, ¶312.) In Schaffer, both ends of each member are attached to the same button. (Ex. 1008, [0075]-[0077], Figs. 30-34; Ex. 1003, ¶312.) Similarly, one end of each of Hartley's strings would be attached to Schaffer's buttons for a total of two filament ends attached to each button. (Ex. 1003, ¶312.)

Further, Hartley teaches using simple knots to attach the string to Hartley's rotary actuator. (Ex. 1009, [0031].) POSITAs would have reasonably expected that similar knots would secure Hartley's strings to Schaffer's actuator buttons, as illustrated below:

Demonstrative Illustration Schaffer + Hartley's Strings



(Ex. 1003, ¶¶307, 313.) Thus, Schaffer combined with Hartley renders the first/second filaments recited in claim 22 obvious. (*Id.*)

b. Schaffer and Eller

Schaffer combined with Eller renders this limitation obvious in two ways.

First, Eller describes hemostasis valves having “a housing 16, an actuator 18, a sleeve 20, a first wire member 22, a second wire member 24, [and] a third wire member 26”:

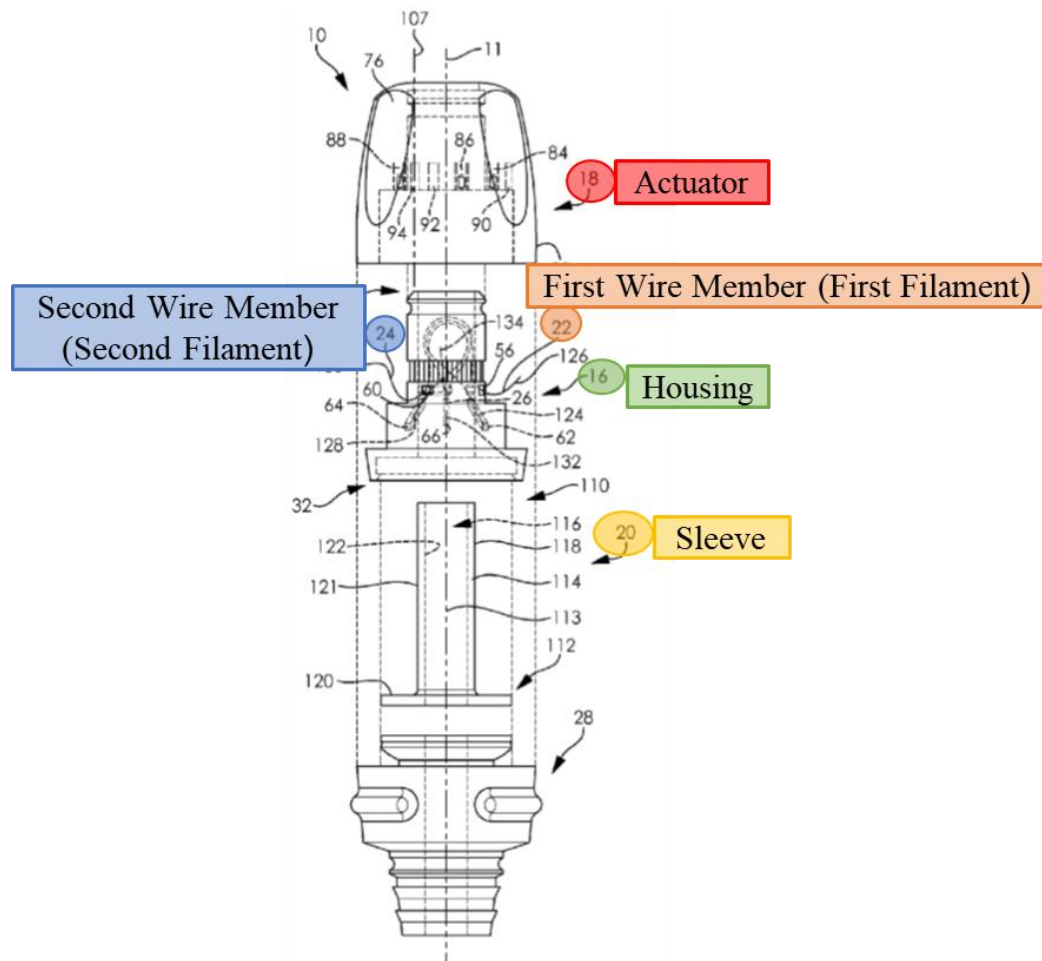
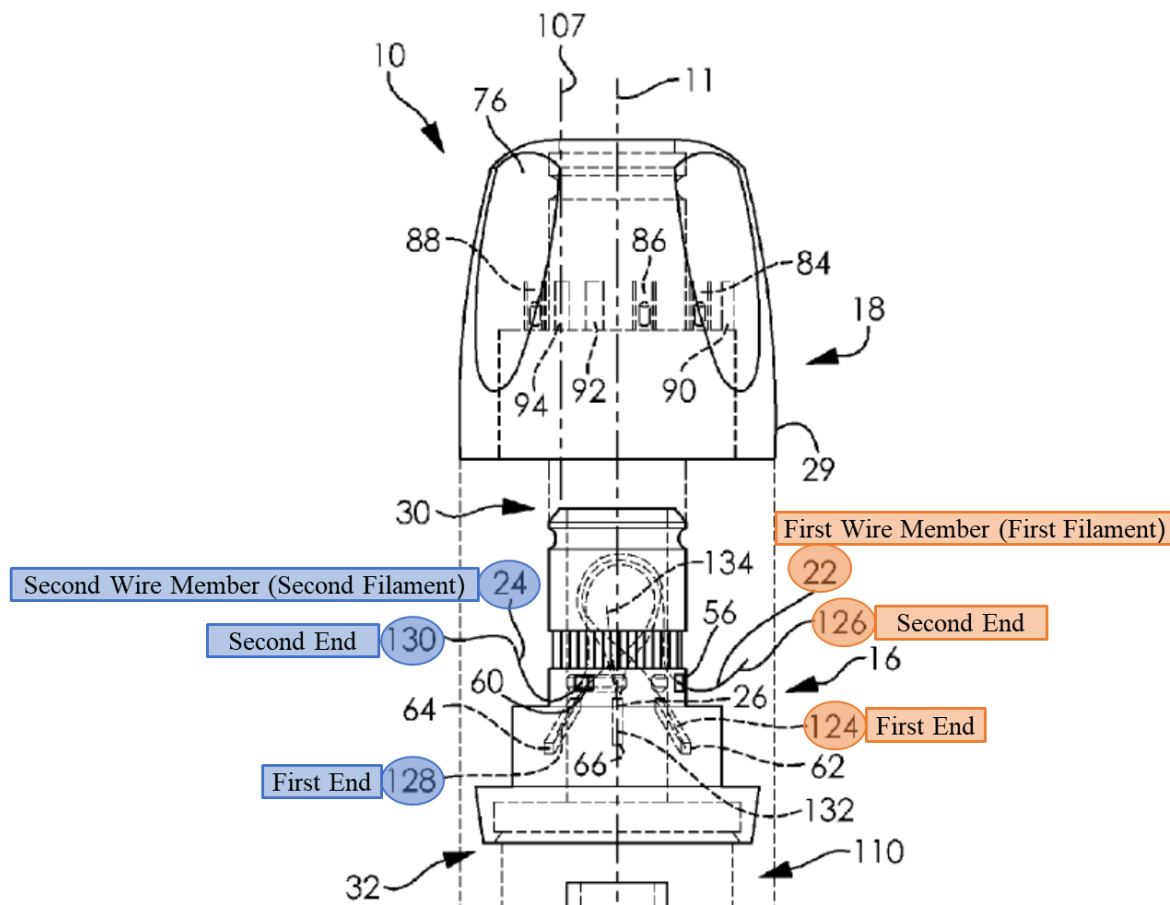


FIG. 2

(Ex. 1010, 5:1-6, 16:7-19, Fig. 2.) Eller states that the wire members may “comprise any suitable number of strands and/or fibers that are twisted, or otherwise interconnected to one another.” (*Id.*, 15:61-65.) POSITAs would have therefore understood that Eller’s wire member includes wires formed from at least two filaments twisted together. (Ex. 1003, ¶315.) Eller discloses that the wire member can be formed from various materials (e.g., “metals,” “polymers,” “polyester,” “[n]ylon,” “flexible materials”), and thus the twisted “strands and/or fibers” comprising Eller’s wire member are each a flexible filament. (Ex. 1010, 15:41-65;

Ex. 1003, ¶¶315-316; Ex. 1019, [0046] (stating that the filament “can comprise one or several threads, lines, cords, rope, ribbon, flat wire, sheet, or tape”); Ex. 1047, 12.) Eller’s wire member therefore comprises a “first filament” and a “second filament” as recited in claim 22. (Ex. 1003, ¶¶314-315.)

Eller’s wire members extend around the valve’s “sleeve” so that a first end can attach to the housing 16 and a second end can attach to the actuator 18:



members with Eller's wire member, POSITAs would have been motivated to loop Eller's wires at least one full revolution around Schaffer's seal module to ensure the wires formed a constrictive seal. (Ex. 1003, ¶317.) POSITAs would have reasonably expected success because Eller encourages looping the wires one revolution around the sleeve and discloses that such a configuration forms a seal. (*Id.*) POSITA's would have been motivated to replace Schaffer's actuating members with Eller's wire member and would have reasonably expected success doing so as explained for claim 18. (*Supra* §VIII.A.3.b.)

Second, if the Board were to find that one of Eller's wire members does not constitute first and second filaments as recited in claim 22, POSITAs would have found it obvious to substitute two of Eller's wire members for Schaffer's two actuator members. (Ex. 1003, ¶¶319-323.) POSITAs would have substituted two of Eller's wire members for Schaffer's two actuating members by attaching one end of the first and second wire members to Schaffer's first button, looping the wire members around the seal module, and attaching the second end of the first and second wire members to Schaffer's second button. (*Id.*, ¶319.)

POSITAs would have found it obvious to use two wire members with Schaffer's valve based on the teachings of Eller. (*Id.*, ¶320.) Eller discloses that a hemostasis valve "can include any suitable number of wire members," including "one, at least one, ***two***, a plurality, three, four, five, or any other number considered

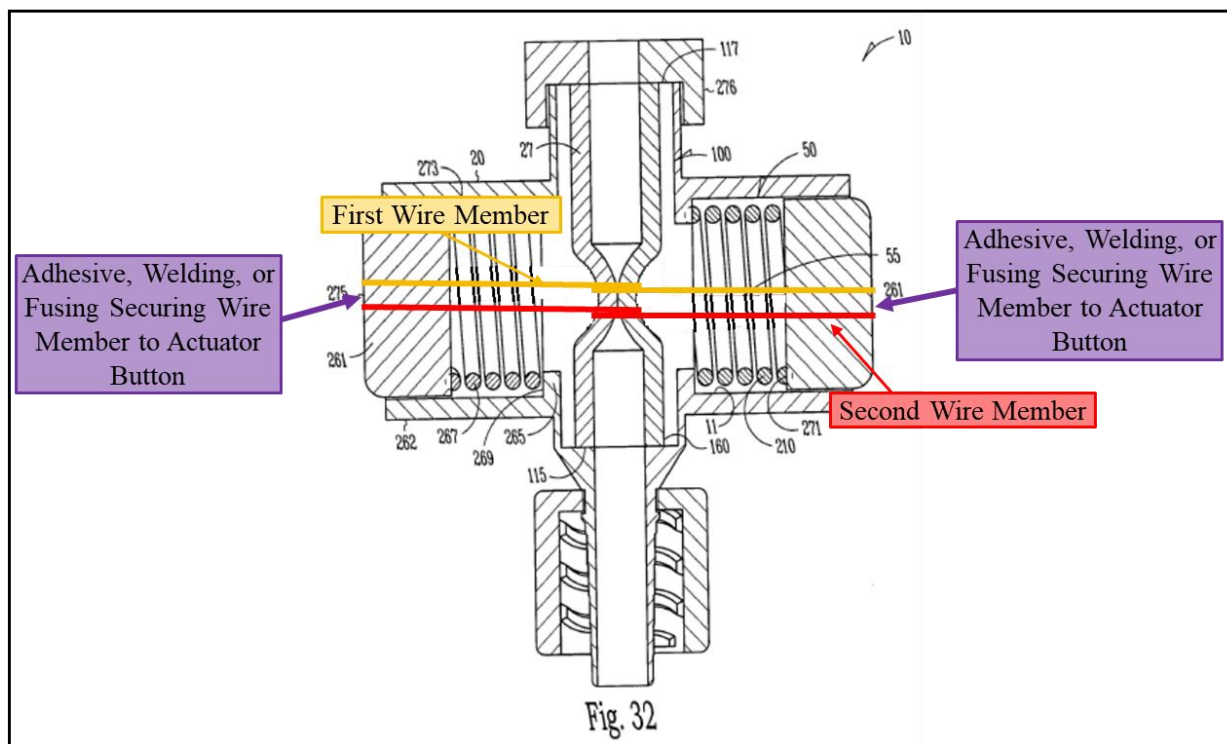
suitable for a particular embodiment. (Ex. 1010, 16:7-19 (emphasis added).) Eller also recognizes that “[s]killed artisans will be able to select a suitable number of wire members to include in a selective fluid barrier valve device according to a particular embodiment based on various considerations, including the material(s) that forms the sleeve of an embodiment.” (*Id.*) Thus, Eller suggests varying the number of wire members (i.e., filaments) in a valve given the conditions and confirms POSITAs would have possessed the skills to make such routine adjustments. (Ex. 1003, ¶320.)

Further, combining Eller’s wire members and Schaffer’s valve would have entailed merely substituting one known element (Eller’s two wire members) for another (Schaffer’s two actuating members) to yield the predictable results of constricting Schaffer’s valve. *KSR*, 550 U.S. at 416. Moreover, POSITAs would have been motivated to use two wire members with Schaffer’s valve to provide a more robust and reliable seal as explained above with respect to Hartley. (*Supra* §VIII.B.2.a.)

POSITAs would have reasonably expected success in substituting two of Eller’s wire members for Schaffer’s actuating members for several reasons. (Ex. 1003, ¶¶322-323.) First, as discussed for Hartley, Schaffer already discloses a method of attaching two ends of a filament with each button. (Ex. 1008, [0075]-[0077], Figs. 30-34; Ex. 1003, ¶322.)

Second, Eller discloses that the “[a]ttachment between a wire member and a housing and/or an actuator can be accomplished using any suitable method or technique” and identifies several simple methods. (Ex. 1010, 14:37-49.) POSITAs would have reasonably expected success in securing Eller’s wire members to Schaffer’s actuator buttons using these simple methods:

Demonstrative Illustration Schaffer + Eller’s Wire Member



(Ex. 1003, ¶319, 323.)

3. Actuators

Schaffer and Hartley or Eller renders obvious a “pair of actuators biased to circumferentially constrict the first loop and the second loop to elastically deform

the tubular member to a first position in which the lumen is constricted, wherein at least one the actuators is movable to decrease a level of tension in the first filament and a level of tension in the second filament to permit the tubular member to expand against the first loop and the second loop to a second position in which the lumen of the tubular member is at least partially open.” (Ex. 1003, ¶¶324-329.)

Schaffer discloses that its valve is biased to a first position, wherein the actuating members constrict and seal the valve, and is movable to a second position, wherein the actuator buttons are depressed to reduce constriction of the valve, as explained above. (*Supra* §VIII.A.)

Similarly, Hartley discloses that “[r]otation of the rotary actuator 12 with respect to the cylindrical housing 6 will cause the string 14 to be pulled in both directions at once and hence the cylindrical diaphragm 8 to be constricted.” (Ex. 1009, [0031], [0034], Fig. 4.) Thus, tension placed on Hartley’s string by the actuator reduces the dimension of the loop to constrict and seal the valve. (*Id.*, Figs. 3-4; Ex. 1003, ¶328.) Eller similarly discloses that rotation of its actuator places the wires under tension, reducing the dimension of the wire loops and causing the wires to constrict the sleeve and prevent fluid from passing therethrough. (Ex. 1010, 15:21-40, 17:62–67.)

Accordingly, when Schaffer’s actuating members are replaced with Hartley’s strings or Eller’s wires, Schaffer’s actuators and springs would apply tension to the

strings/wires to decrease the dimensions of the loops formed by the strings/wires to constrict and seal the valve. (Ex. 1003, ¶329.) When Schaffer’s actuators are depressed to the second position, the tension on the strings/wires would be relaxed, loosening the strings/wires and allowing Schaffer’s seal module to expand to an opened configuration. (*Id.*)

C. Claim 23

Claim 23 recites the “clot treatment system of claim 22 wherein the actuators each comprise a button.” Garrison and Goff or Lee combined with Schaffer and Hartley or Eller renders claim 23 obvious as explained for claims 18 and 22. (*Supra* §§VIII.A-B.)

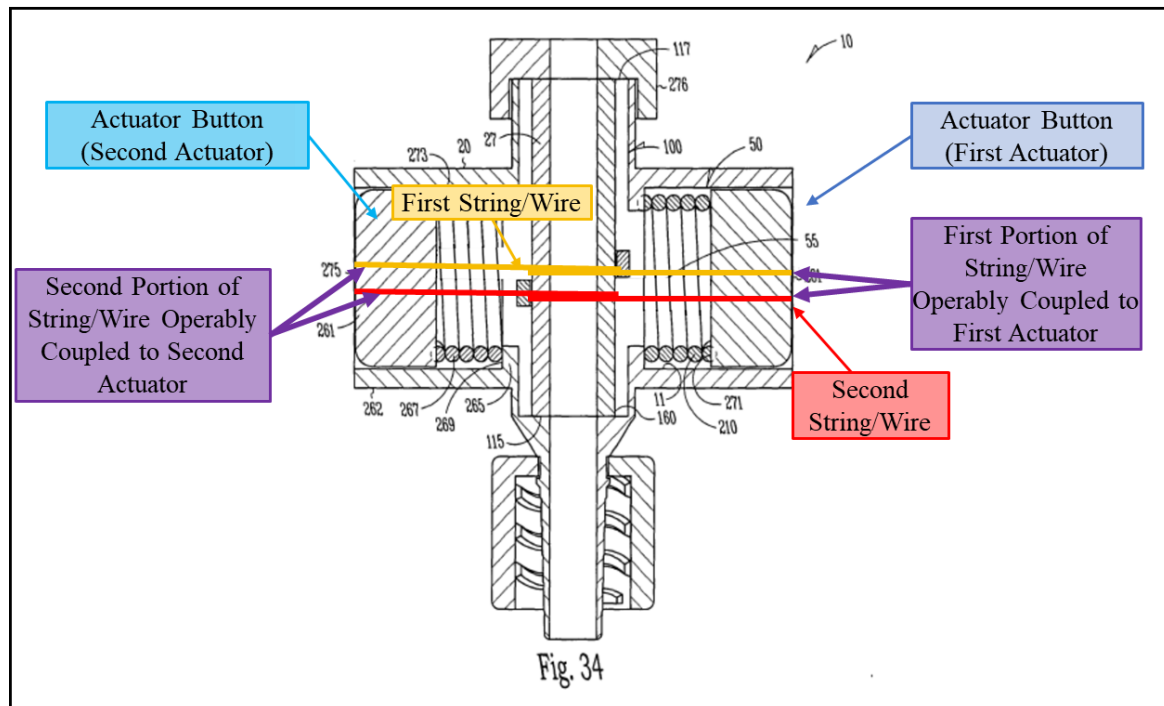
D. Claim 24

Claim 24 recites the “clot treatment system of claim 22 wherein the first filament includes a first portion operably coupled to a first one of the actuators and a second portion operably coupled to a second one of the actuators, and wherein the second filament includes a first portion operably coupled to the first one of the actuators and a second portion operably coupled to the second one of the actuators.” Garrison and Goff or Lee combined with Schaffer and Hartley or Eller renders claim 24 obvious. (Ex. 1003, ¶¶331-332.)

As explained above, POSITAs would have been motivated to secure the first end of Hartley’s strings or Eller’s wires to a first one of Schaffer’s buttons using the

conventional means disclosed in the references. (*Supra* §VIII.A.3.) POSITAs would have similarly been motivated to secure the second end of Hartley's strings or Eller's wires to Schaffers' second button using similar means:

Demonstrative Illustration Schaffer + Hartley's String/Eller's Wire



(Ex. 1003, ¶332.) Accordingly, a first portion of the strings/wires would be attached to and “operably coupled to” Schaffer’s first actuator, and a second portion of the strings/wires would be attached to and “operably coupled to” Schaffer’s second actuator. (*Id.*)

E. Claim 25

Claim 25 recites the “clot treatment system of claim 22 wherein the first filament is flexible, and wherein the second filament is flexible.” Garrison and Goff

or Lee combined with Schaffer and Hartley or Eller renders claim 25 obvious. (Ex. 1003, ¶¶333-335.)

Hartley describes its string as a “flexible member.” (Ex. 1009, [0017].) Eller’s wires may be formed from various materials such as “metals,” “polymers,” “polyester,” “[n]ylon,” and “flexible materials.” (Ex. 1010, 15:41-65.)

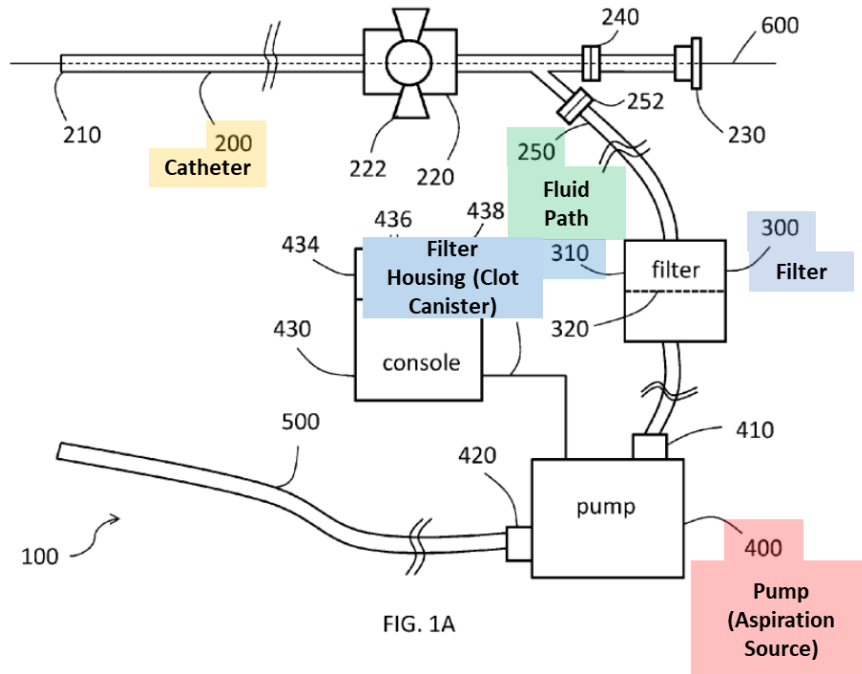
IX. GROUNDS 9-10: CLAIMS 26-28 RENDERED OBVIOUS BY GARRISON WITH GOFF OR LEE AND LAUB

A. Claim 26

Claim 26 recites the “clot treatment system of claim 17 wherein the aspiration catheter has a size of at least 16 French.” Garrison and Goff or Lee combined with Laub renders claim 26 obvious. (Ex. 1003, ¶¶336-346.)

Garrison focuses on the “treatment of cerebral occlusions” using catheters ranging from 5-10 French; however, POSITAs would have been motivated to use larger catheters with Garrison’s system, including catheters at least 16 French, to treat other types of clots, such as PE and deep vein thrombosis, based on Laub. (Ex. 1006, [0002]; Ex. 1003, ¶337.)

Like Garrison, Laub discloses “a system for removing thrombi and other unwanted material from the body of a patient, particularly from the patient’s vasculature”:



(Ex. 1011, [0005], Fig. 1A.) Laub discloses that its system may be used “to remove clots from patients suffering from or at risk of pulmonary embolisms” and discloses using aspiration catheters having a “French size of at least 16 Fr.” (*Id.*, [0005], [0028].)

POSITAs would have been motivated to use Laub’s 16 Fr. aspiration catheters with Garrison’s system to treat other blood clots, such as PE, because “[t]he general procedure for aspirating a blood clot from a blood vessel is similar regardless of whether the physician is removing the clot from the brain, lungs, legs, or any other part of the body.” (Ex. 1022, ¶21; Ex. 1003, ¶¶339-346.) “Generally, a physician inserts an aspiration catheter into the patient’s vasculature through a small incision in the skin.” (Ex. 1022, ¶21.) Garrison and Laub, for example, disclose inserting the catheter through an incision in the leg to access the transfemoral vein or artery.

(See Ex. 1006, [0048] (describing delivery through the “transfemoral or transcarotid access approaches”); Ex. 1011, [0024]-[0026] (describing inserting catheter “from a patient’s vein (e.g., right common femoral vein) during use”); *see also* Ex. 1001, 5:33-35.)

The physician then initiates aspiration (i.e., suction) by withdrawing a syringe or turning on an electric pump to aspirate the clot. (Ex. 1022, ¶22.) Garrison and Laub both disclose using a pump, in addition to other suction devices, to generate the necessary suction. (Ex. 1006, [0134]; Ex. 1011, abstract.) These references also confirm that aspiration systems for the brain and other parts of the vasculature, including the lungs (PE), use the same general components. In each reference, the aspiration system includes a pressure source connected by medical tubing to a filter, which is then connected to an aspiration catheter. (Ex. 1006, Figs. 33-34; Ex. 1011, Fig. 1A; Ex. 1022, ¶24.)

The similarities between the systems would have further motivated POSITAs to use Laub’s 16 Fr. catheters with Garrison’s system to treat clots in other parts of the vasculature, including PEs, and given the POSITA a reasonable expectation of success. (Ex. 1003, ¶340.) Using a 16 Fr. catheter with Garrison’s system to treat PEs would have been nothing more than the predictable use of prior art elements according to their established functions. *KSR*, 550 U.S. at 416.

Further, prior to 2018, POSITAs routinely upsized catheter systems initially intended for one part of the vasculature for another. (Ex. 1022, ¶¶26-37; Ex. 1003, ¶341.) For example, Penumbra, one of the market leaders in thrombectomy, and Petitioner both adapted their aspiration catheters designed to remove cerebral clots to treat other types of clots, including PE, by simply increasing the size of the catheters and related components and making routine modifications to the catheters such as adjusting flexibility. (Ex. 1022, ¶¶26-37.)

Garrison also discloses several sheath and catheter sizes for its system, further demonstrating that optimizing the size of a catheter was routine. (Ex. 1006, [0063] (describing 6 and 8 French sheaths); [0070] (describing 10 French sheaths).) POSITAs would have reasonably expected success in incorporating Laub’s larger catheters into Garrison’s system because this type of routine upsizing was common and because Laub describes such catheters as being effective for treating PE. (Ex. 1003, ¶¶340-341; Ex. 1022, ¶¶30-37 (describing real-world upsizing of neuro catheters for PE).)

Further, Garrison specifically suggests combining its aspiration system with components from systems for treating other parts of the vasculature. For example, Garrison incorporates by reference components from devices for treating the coronary, cerebral, cardiac, and peripheral vasculature. (Ex. 1006, [0070], [0144] (citing Exs. 1014, 1018); Ex. 1003, ¶344.) The combination of Garrison’s system

with Laub’s larger catheter components would have involved the simple substitution of one known element (Garrison’s catheter) for another (Laub’s catheter) to obtain the predictable result of aspirating blood clots. *KSR*, 550 U.S. at 416. Further, to the extent other components in Garrison’s system would require upsizing, like the valves, such upsizing was routine. Thus, the specific teachings in Garrison would have further motivated POSITAs to use Laub’s 16 Fr. catheter with Garrison’s system to treat PEs and would have given POSITAs a reasonable expectation of success in doing so. (Ex. 1003, ¶¶344-345.)

B. Claim 27

Claim 27 recites the “clot treatment system of claim 17 wherein the aspiration catheter has a size of at least 20 French.” Garrison and Goff or Lee combined with Laub renders claim 27 obvious. (Ex. 1003, ¶¶347-348.)

Laub discloses this limitation because Laub describes, “[i]n some embodiments, aspiration catheter 200 has a French size of at least 20 Fr.” (Ex. 1011, [0028].) POSITAs would have been motivated to use Laub’s 20 Fr. catheters with Garrison’s system, and reasonably expected success in doing so, as explained for claim 26. (*Supra* §IX.A.)

C. Claim 28

Claim 28 recites the “clot treatment system of claim 17 wherein the aspiration catheter has a size of at least 22 French.” Garrison and Goff or Lee combined with Laub renders claim 28 obvious. (Ex. 1003, ¶¶349-350.)

Laub discloses this limitation because Laub describes, “[i]n some embodiments, aspiration catheter 200 has a French size of *at least* 20 Fr,” which includes 22 Fr. catheters. (Ex. 1011, [0028].) POSITAs would have been motivated to use 22 Fr. catheters with Garrison’s system, and reasonably expected success in doing so, as explained for claim 26. (*Supra* §IX.A.)

X. SECONDARY CONSIDERATIONS

Petitioner is not aware of any evidence of secondary considerations. (Ex. 1003, ¶¶351-353.) If PO identifies evidence of secondary considerations, Petitioner respectfully requests an opportunity to respond.

XI. SOTERA STIPULATION

Petitioner hereby stipulates that if the Board institutes this IPR based on the grounds and claims raised in the Petition, Petitioner will not pursue in district court the grounds asserted in the Petition or any other ground that could have been reasonably raised in this IPR. Thus, there will be no “overlap between issues raised in the petition and in the parallel proceeding[.]” *Apple v. Fintiv*, IPR2020-00019, Paper 11 at 6 (PTAB Mar. 20, 2020) (precedential).

**XII. MANDATORY NOTICES, GROUNDS FOR STANDING,
AND FEE PAYMENT**

A. Real Parties-In-Interest (37 C.F.R. §42.8(b)(1))

Imperative Care, Inc. is the real party in interest for Petitioner.

B. Related Matters (37 C.F.R. §42.8(b)(2))

In the Litigation, PO filed a Third Amended Complaint alleging that Petitioner's Symphony system infringes the 12-'333 patent, as well as U.S. Patent Nos. 11,969,333; 11,554,005; 11,744,691; 11,697,012; 11,844,921, 11,865,291, 11,974,910; 12,109,384; 12,016,580; and 12,156,669. *Inari Medical, Inc. v. Imperative Care, Inc.*, No. 24-cv-3117 (N.D. Cal., filed May 22, 2024). In its Second Amended Complaint, Petitioner also dropped its infringement allegations regarding U.S. Patent No. 11,697,011, which is the subject of an instituted IPR. (Ex. 1047.) The Court stayed the Litigation in its entirety until February 4, 2026, at which point the Court will consider whether to extend the stay based on the status of the pending IPRs. (Ex. 1024.)

Petitioner has filed eleven IPRs against patents asserted by PO in the Litigation: (1) *Imperative Care, Inc. v. Inari Medical, Inc.*, IPR2024-01157 requesting review of U.S. Patent No. 11,697,011 (Filed July 8, 2024); (2) *Imperative Care, Inc. v. Inari Medical, Inc.*, IPR2024-01257 requesting review of U.S. Patent No. 11,744,691 (Filed August 12, 2024); (3) *Imperative Care, Inc. v. Inari Medical, Inc.*, IPR2025-00156 requesting review of U.S. Patent No. 11,697,012 (Filed

November 8, 2024); (4) *Imperative Care, Inc. v. Inari Medical, Inc.*, IPR2025-00289 requesting review of U.S. Patent No. 11,554,005 (Filed December 13, 2024); (5) *Imperative Care, Inc. v. Inari Medical, Inc.*, IPR2025-00728 requesting review of U.S. Patent No. 11,844,921 (Filed March 13, 2025); (6) *Imperative Care, Inc. v. Inari Medical, Inc.*, IPR2025-00989 requesting review of U.S. Patent No. 11,865,291 (Filed May 9, 2025); (7) *Imperative Care, Inc. v. Inari Medical, Inc.*, IPR2025-01021 requesting review of U.S. Patent No. 11,969,333 (Filed May 19, 2025); (8) *Imperative Care, Inc. v. Inari Medical, Inc.*, IPR2025-01025 requesting review of U.S. Patent No. 11,974,910 (Filed May 20, 2025); (9) *Imperative Care, Inc. v. Inari Medical, Inc.*, IPR2025-01264 requesting review of U.S. Patent No. 12,016,580 (Filed July 8, 2025); (10) *Imperative Care, Inc. v. Inari Medical, Inc.*, IPR2025-01562 requesting review of U.S. Patent No. 12,109,384 (Filed September 19, 2025); and (11) *Imperative Care, Inc. v. Inari Medical, Inc.*, IPR2026-00169 requesting review of U.S. Patent No. 12,156,669 (Filed December 16, 2025). To date, the Board has granted institution of eight IPRs challenging the '011, '012, '005, '921, '291, '333, '910, and '580 patents. The Board denied institution of the '691 patent IPR on grounds unrelated to this IPR.

C. Lead and Backup Counsel (37 C.F.R. §42.8(b)(3))

Petitioner provides the following designation of counsel, all of whom are included in Customer No. 20,995 identified in Petitioner's Power of Attorney.

Lead Counsel	Back-up Counsel
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D. Service Information (37 C.F.R. §42.8(b)(4))

Please direct all correspondence to lead counsel and back-up counsel at the addresses shown above. Petitioner also consents to electronic service by email to BoxImperative12-333@knobbe.com.

E. Grounds for Standing (37 C.F.R. §42.104)

Petitioner certifies that the 12-'333 patent is available for IPR and that Petitioner is not estopped from requesting IPR on the identified grounds. This Petition is being filed within one year of service of the complaint in the Litigation.

F. Payment of Fees (37 C.F.R. §42.15(a))

The fee for this petition has been paid. Additional fees may be charged to Deposit Account 11-1410.

XIII. CONCLUSION

For the reasons above, Petitioner has established a reasonable likelihood of prevailing in showing that at least one claim is unpatentable and, therefore, requests that the Board institute an IPR.

Dated: January 16, 2026

By: /Joshua J. Stowell/

Joshua J. Stowell (Reg. No. 64,096)

Joseph R. Re (Reg. No. 31,291)

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that this **PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 12,239,333** contains 13,904 words according to the word-processing program used to prepare this paper. The foregoing word count complies with the 14,000-word type-volume limit specified by 37 C.F.R. § 42.24(a)(1).

Dated: January 16, 2026 By: /Joshua J. Stowell/
Joshua J. Stowell (Reg. No. 64,096)
KNOBBE MARTENS OLSON & BEAR, LLP

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on the date below a copy of this
**PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO.
12,239,333 and Exhibit 1001-1054** are being served by USPS Priority Mail
Express on the Patent Owner at the correspondence address of record for the
subject patent as follows:

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A courtesy copy is being sent by email on this day to Patent Owner's counsel
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