

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Champion Laboratories, Inc.,
First Brands Group, LLC
Petitioners

v.

Hengst SE
Patent Owner

IPR2024-00603
Patent 9,023,203 B2

PETITION FOR *INTER PARTES* REVIEW

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Exhibit	Description
1001	U.S. Patent No. 9,023,203 B2
1002	File History for U.S. Patent No. 9,023,203 B2
1003	Declaration of Mr. Michael Nranian
1004	European Patent No. 1,714,688
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1007	JP Application 2002-303171
1008	Certified Translation of JP Application 2002-303171 (“Yokoyama”)
1009	U.S. Patent Pub. No. 20040232063 (“Cline”)
1010	U.S. Patent Pub. No. 20120261326 (“Deschamps”)
1011	<i>Curriculum Vitae</i> of Mr. Michael Nranian
1012	Plaintiff’s Final Infringement Contentions, <i>Hengst SE v. Champion Laboratories, Inc.</i> , No. 23-cv-00794 (Jan. 16, 2024)

LIST OF CHALLENGED CLAIMS

Claim	U.S. Patent No. 9,023,203
1[pre]	A liquid filter, comprising:
1[a]	a filter housing,
1[b]	a ring filter insert, replaceably arranged in the filter housing, and
1[c]	a removable cover arranged to close the filter housing during operation,
1[d]	the filter housing including at least one inlet for raw liquid to be filtered, which inlet leads into a raw side of the filter housing, and
1[e]	a return extending from a clean side of the filter housing for filtered clean liquid,
1[f]	an eccentric opening arranged in a bottom of the filter housing,
1[g]	the ring filter insert comprising a hollow-cylindrical filter material body, surrounded on front sides by top and bottom front panels, the ring filter insert separating the raw side of the filter housing and the clean side of the filter housing from each another,
1[h]	an eccentric blocking element for the eccentric opening arranged on the bottom front panel,
1[i]	first and second interacting positioning means each on one of the ring filter insert and the filter housing and arranged to bring the blocking element into engagement with the eccentric opening when the ring filter insert is inserted into the filter housing,
1[j]	the first positioning means comprising an inclined plane,
1[k]	the second positioning means comprising a protruding nose which is arranged opposite the inclined plane, and
1[l]	the inclined plane and the nose arranged to be movable in relation to each other in such a way that they slide along each other and bring the blocking element into engagement with the eccentric opening, by rotating the ring filter insert relative to the filter housing,
1[m]	the inclined plane being one of embodied and arranged on one of the inner circumference of the ring filter insert and the outer circumference of a filter housing part arranged inside the ring filter insert and the protruding nose being one of embodied and arranged on the other of the inner circumference of the ring filter insert and the outer circumference of the filter housing part,
1[n]	the inclined plane comprising an incline which excludes a self-locking and

1[o]	the eccentric opening being an outlet for emptying the filter housing when the filter insert is removed.
[2]	The liquid filter according to claim 1, wherein the inclined plane is formed by two partial planes which run towards each other in opposite directions and which in each case extend across half of one of an inner circumference of the ring filter insert and an outer circumference of the filter housing part arranged inside the ring filter insert.
[3]	The liquid filter according to claim 1, including a guide for the nose which runs in an axial direction and is connected to a lower end of the inclined plane.
[5]	The liquid filter according to claim 1, wherein the inclined plane is formed by one of a radially protruding rib and step, which forms a contact surface for the nose on one of an upper and lower side thereof.
[6]	The liquid filter according to claim 1, wherein the inclined plane is formed integrally with one of the filter housing and the ring filter insert.
[8]	The liquid filter according to claim 1, wherein the nose is formed integrally with one of the filter housing and the ring filter insert.
[9]	The liquid filter according to claim 1, wherein the blocking element is one of a radially sealing valve element, an axially sealing valve element and a radially sealing plug which is one of rigidly connected to and rigidly arranged on the bottom front panel.
[10]	The liquid filter according to claim 1, wherein the blocking element is an axially sealing valve element which is elastically arranged on the bottom front panel.
[11]	The liquid filter according to claim 1, wherein the outlet comprises a seat which is one of incorporated on a side of the

	filter housing and is inserted as a separate part and which conforms to a shape of the blocking element.
[12]	The liquid filter according to claim 1, wherein the filter housing part arranged on the inside of the ring filter insert comprises a pipe nozzle which includes the return and which is one of rigidly connected to the remaining filter housing, integrally formed with the remaining filter housing and guided so as to be movable in the remaining filter housing in axial direction, and is prestressed with a spring force in the direction of the cover.
15[pre]	A ring filter insert for a liquid filter, comprising
15[a]	A hollow-cylindrical filter material body surrounded on front sides by top and bottom front panels and which can be replaceably arranged in a filter housing,
15[b]	an eccentric blocking element arranged on the bottom front panel for engaging an eccentric opening in the filter housing,
15[c]	first positioning means on the ring filter insert, which interact with second positioning means on the filter housing when the ring filter insert is inserted into the filter housing and which are arranged to bring the blocking element into engagement with the eccentric opening,
15[d]	the first positioning means being one of an inclined plane and a protruding nose, with the second positioning means being the other of the inclined plane and the protruding nose,
15[e]	the inclined plane and the nose arranged to be moved in relation to each other in such a way that they slide along each other and bring the blocking element into engagement with the eccentric opening, by rotating the ring filter insert relative to the filter housing,
15[f]	the first positioning means being one of embodied and arranged on an inner circumference of the ring filter insert.
[16]	The ring filter insert according to claim 15, wherein the inclined plane is formed by two partial planes which run towards each other in opposite directions and which in each case extend across half of an inner circumference of the ring filter insert.

[17]	The ring filter insert according to claim 15, including a guide for the nose which runs in an axial direction and is connected to a lower end of the inclined plane.
[19]	The ring filter insert according to claim 15, wherein the inclined plane is formed by one of a radially protruding rib and step which forms a contact surface for the nose on one of an upper or lower side thereof.
[23]	The ring filter insert according to claim 15, wherein the nose is formed integrally with the bottom front panel of the ring filter insert.
[24]	The ring filter insert according to claim 15, wherein the blocking element is one of a radially sealing valve element, an axially sealing valve element, and a radially sealing plug which is one of rigidly connected to the lower front panel and rigidly arranged on the lower front panel.
[25]	The ring filter insert according to claim 15, wherein the blocking element is an axially sealing valve element which is elastically arranged on the bottom front panel.
[28]	The ring filter insert according to claim 15, wherein the blocking element is formed from two parts, the two parts of the blocking element being engaged with each other in a manner allowing a compensation of radial dimension tolerances and angle errors.
[29]	The liquid filter according to claim 1, wherein the protruding nose protrudes radially.
[30]	The ring filter insert according to claim 15, wherein the protruding nose protrudes radially.

I. INTRODUCTION

Champion Laboratories, Inc. and First Brands Group, LLC (“Petitioners”) respectfully request *inter partes* review of claims 1, 3, 5, 8-11, 15-17, 19, 23-25 and 28-30 (the “Challenged Claims”) of U.S. Patent No. 9,023,203 (the “’203 patent”).

The ’203 patent is directed to a replaceable oil filter insert that can be installed in a filter housing. The replaceable filter insert is hollow-cylindrical and is installed by pushing it into a corresponding cylindrical part of the filter housing. Within the hollow area of filter insert, a protruding “nose” slides along an inclined plane of the housing to the correct position.

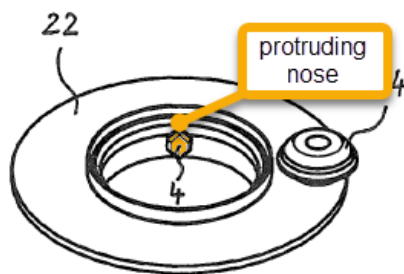


Fig. 30

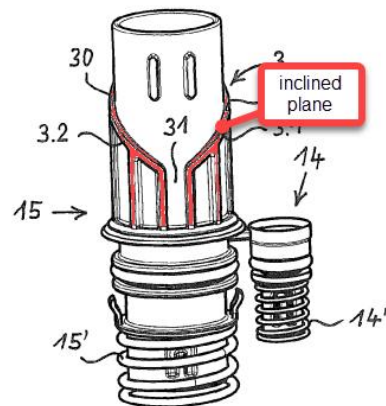
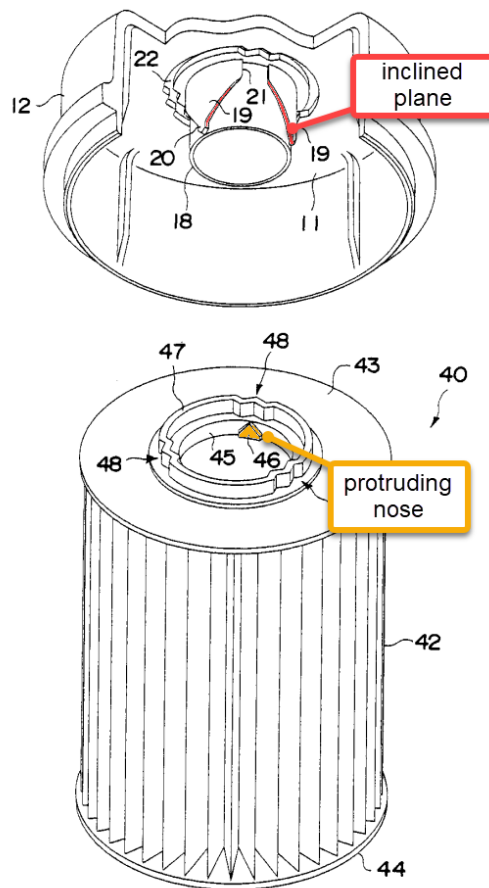


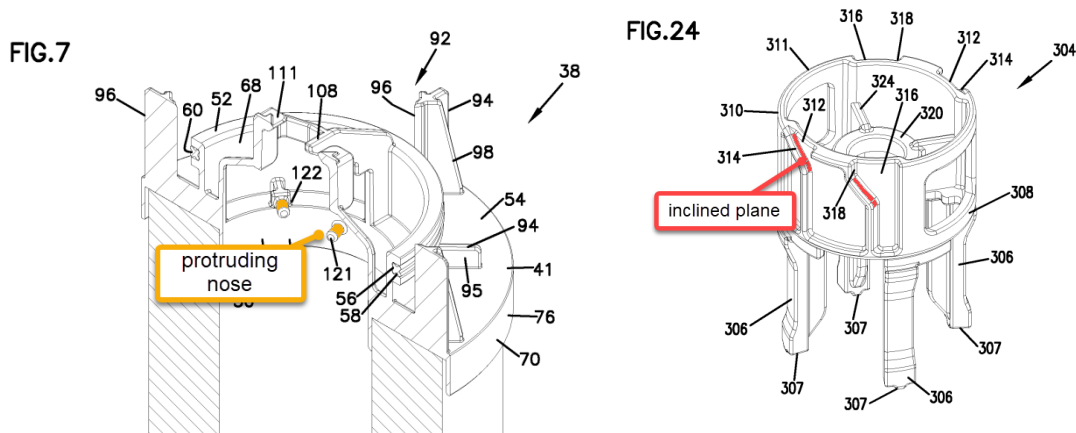
Fig. 29

The claims mirror this unremarkable configuration, simply requiring a “liquid filter” with structural limitations that are similar to the figures.

Multiple prior art references expressly disclose this configuration, two of which—Yokoyama and Honermann—are relied upon in this Petition. Both references disclose the claimed protruding nose and inclined plane on the inside of the filter insert. This is illustrated, for example, in Yokoyama's Figure 1:



Honermann likewise discloses an assembly protruding from the middle of a filter housing that has slide surfaces on a grooved wall that guide protrusions on the inside of the filter insert. This is shown in Figures 7 and 24:



Petitioners thus request that the Board institute *inter partes* review and cancel the Challenged Claims.

II. MANDATORY DISCLOSURES

Pursuant 37 C.F.R. § 42.8(a)(1), the following mandatory notices are provided as part of this Petition.

A. Grounds for Standing

Petitioners respectfully request *inter partes* review (“IPR”) of Claims 1, 3, 5, 6, 8-11, 15, 17, 19, 23-25, and 28-30 (“Challenged Claims”).

Petitioners certify that the ’203 Patent is available for *inter partes* review and Petitioners are not barred or estopped from requesting review of the Challenged Claims on the grounds identified in this Petition.

B. Real Party in Interest

The real parties-in-interest are Champion Laboratories, Inc. and First Brands Group, LLC.

C. Related Matters

The '203 patent has been asserted against Petitioner Champion Laboratories in: *Hengst SE v. Champion Laboratories, Inc.*, No. 23-cv-00794 (N.D. Ill. February 8, 2023).

D. Lead and Back-Up Counsel (37 C.F.R. § 42.8(b)(3)) and Service Information (37 C.F.R. § 42.8(b)(3)-(4))

Petitioners provide the following counsel and service information. Pursuant to 37 C.F.R. § 42.10(b), a Power of Attorney accompanies this Petition. Petitioners agree to accept electronic service at the email addresses listed below.

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	Tel: (212) 849-7000 Fax: (212) 849-7100
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E. Payment of Fees (37 C.F.R. § 42.15(a))

The undersigned authorizes the Office to charge the fee required for this Petition for *Inter Partes* Review to Deposit Account No. 50-5708. Any additional fees that might be due are also authorized.

III. IDENTIFICATION OF GROUNDS

Petitioners request cancellation of the Challenged Claims on the following grounds:

Ground	Reference(s)	Basis	Claims
1	Yokoyama	§103	15-17, 19, 23, 25, 30
2	Yokoyama, Cline	§103	15-17, 19, 23-25, 28, 30
3	Honermann, Cline	§103	1, 3, 5, 8-11, 15, 17, 19, 23-25, 28-30

IV. LEVEL OF SKILL IN THE ART

Petitioners propose that a Person of Ordinary Skill in the Art would have at least a master's degree in chemical, electrical, mechanical, or automotive engineering, and at least two or more years of experience in the automotive industry designing, developing, testing, and engineering automotive components or practical experience servicing, assembling, repairing, and/or developing internal combustion engines and/or engine oil

filters (or equivalent experience). Ex. 1003, ¶50. Petitioners further propose that more education could compensate for less experience and vice versa. *Id.* Petitioners' expert Michael Nranian exceeds this level of skill. *Id.*

V. OVERVIEW OF THE '203 PATENT

U.S. Patent No. 9,023,203 (the "'203 patent") is directed to "a liquid filter including a filter housing, a ring filter inserts and a cover." Ex. 1001, Abstract. More specifically, "the invention relates to a liquid filter, in particular an oil filter for an internal combustion engine, comprising a filter housing and ring filter" that when arranged can be replaceable. *Id.*, 1:5-10.

The '203 patent states that its filter uses "a reliable automatic engagement-compatible positioning of blocking element and outlet" to ensure in response to the installation of the ring filter installation. To accomplish this, the '203 patent describes a particular configuration for the filter housing and filter insert, where a protruding nose is on the inner circumference of the filter insert and slides along an inclined plane of a nozzle attached to the filter housing. Ex. 1003, ¶¶51-52. This is illustrated in the below figures:

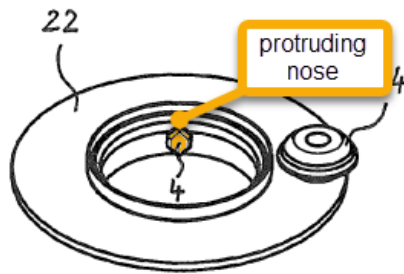


Fig. 30

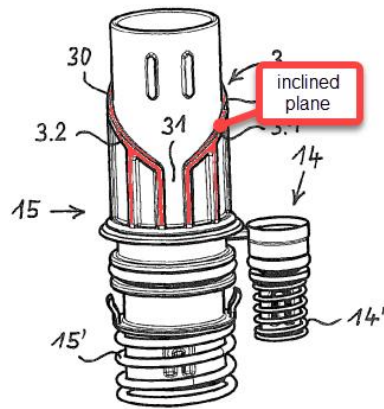


Fig. 29

VI. CLAIM CONSTRUCTION

Petitioners submit that express interpretations of the non-“means” terms in the challenged claims are not required to resolve this petition and they should be given their plain and ordinary meaning. Petitioners reserve its right to respond to any claim constructions raised by the Patent Owner or the Board in the future. Ex. 1003, ¶¶56-57.

Claims 1 and 15 recite two similar limitations that contain the phrase “means.” However, these claims should not be construed as means-plus-function terms pursuant to §112(6) because the claim limitations include structural limitations that remove the phrase from the ambit of §112(6). Ex. 1003, ¶¶58-59. Further, the claims do not recite a function corresponding to the recited means. *Id.* However, in the event PO argues that these terms should be construed pursuant to §112(6), Petitioners identify below the only

portions of the specification that describe structure that corresponds to the claim.

Specifically, claim 1 requires a “first and second interacting positioning means,” and claim 15 requires a “first” and “second” “positioning means.” Ex. 1003, ¶60.

Claim 1, however, goes on to recite that the “first interacting positioning means” comprises an “***inclined plane***” that is “on one of the ring filter insert and the filter housing.” Likewise, the “second interacting positioning means” includes “***a protruding nose***” that is “arranged opposite the inclined plane.” Claim 1 further explains that these “inclined plane and nose” are “arranged to be movable in relation to each other in such a way that they slide along each other ... [when] rotating the ring filter insert relative to the filter housing.” Claim 1 goes on to recite that the blocking element engages with the opening when the nose and inclined plane “slide along each other,” which makes clear that the arrangement of the first and second interacting positioning means is a structural arrangement, and not a matter of function requiring structure defined in the specification. Either the inclined plane or nose is on the “inner circumference of the ring filter insert” and the other is on the “outer circumference of a filter housing part arranged inside the ring filter insert.” Finally, Claim 1 recites that the inclined plane “excludes

a self-locking.” All of these limitations “elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited function, “ and are therefore “not in means-plus-function format.” *Sage Prods., Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1427 (Fed. Cir, 1997); Ex. 1003, ¶61.

Moreover, the claims do not recite any function for either the first or second interacting positioning means. Ex. 1003, ¶62. This also removes these limitations from the ambit of §112(6). *York Prods., Inc. v. Central Tractor Farm*, 99 F.3d 1568, 1574 (Fed. Cir. 1996) (“Nowhere does the claim language following ‘means’ state that function. Instead, the claim recites structure. Without an identified function, the term ‘means’ in this claim cannot invoke 35 U.S.C. § 112, ¶6. Without a ‘means’ sufficiently connected to a recited function, the presumption in use of the word ‘means’ does not operate.”). The claims simply state that the means are “arranged to bring the blocking element into engagement with the eccentric opening when the ring filter insert is inserted into the filter housing.” This is not function, it is simply additional structure. Ex. 1003, ¶62.

Claim 15 specifies similar structure for the “first” and “second” positioning means—that the first positioning means is “on the ring filter insert” and “interact[s] with second positioning means on the filter housing when the ring filter insert is inserted into the filter housing.” The first

positioning means is either an inclined plane or a protruding nose, and the second positioning means is the other. Like in Claim 1, they are “arranged to be moved in relation to each other in such a way that they slide along each other ... by rotating the ring filter insert relative to the filter housing.” The first positioning means is also “embodied [or] arranged on an inner circumference of the ring filter insert.” As with Claim 1, all of these limitations provide structure to the first and second positioning means and a POSITA would have considered them sufficient structure. Ex. 1003, ¶63. And just like in Claim 1, neither positioning means has any recited function. *Id.* That the first positioning means is “arranged to bring the blocking element into engagement with the eccentric opening ... by rotating the ring filter insert relative to the filter housing” would be understood by a POSITA to be a structural arrangement, not a functional one. *Id.*

Likewise, Claim 15 does not recite a function for the claimed the second positioning means because Claim 15[c]’s recitation of an arrangement to bring the blocking element into engagement with the opening only applies to the “first positioning means,” not the “second positioning means”: “first positioning means ... **which interact** with second positioning means ... and **which are** arranged to bring the blocking element ...” Thus, neither term should be construed pursuant to §112(6). *Id.*, ¶64.

However, out of an abundance of caution, and to the extent Patent Owner argues that these limitations are means-plus-function terms, Petitioners provide, pursuant to 37 CFR § 42.104(b)(3), “the specific portions of the specification that describes the structure, material, or acts corresponding to each claimed function” (to the extent the claims can be interpreted to recite a function) (Ex. 1003, ¶¶65-69):

- ***“first interacting positioning means . . .” (claim 1)***
 - ***Function:***¹ “to bring the blocking element into engagement with the eccentric opening when the ring filter insert is inserted into the filter housing”

¹ By specifying a “function,” Petitioner is identifying the words in the claims following the “means” language, and not conceding that this language adequately identifies a function for performing the claimed “means.” *Philip Morris Products, S.A. v. Rai Strategic Holdings, Inc.*, IPR2020-00921, Paper 13 at 42-44 (Aug. 5, 2021) (“[n]umerous decisions have held that [Section 42.104(b)(3)] does not require a petitioner to express a subjective belief in the correctness of its proffered claim constructions. . . . Petitioner can “rely[] on claim constructions that it believes are incorrect.”)

- **Structure:** 7:9-12, 7:17-22, 7:40-61, 8:10-15, 8:27-51, 8:63-67, 12:14-26, 12:41-45, 14:34-51, 14:60-64, Figs. 3, 4, 6, 7, 29, 37, and equivalents
- ***Second interacting positioning means . . .” (claim 1)***
 - **Function:** same as the first interacting positioning means
 - **Structure:** 3:40-42, 7:12-14, 7:17-22, 8:33-51, 8:63-67, 12:36-45, 14:12-20, 14:60-64, Figs. 8, 30, 35, and equivalents
- ***First positioning means (Claim 15)***
 - **Function:** “to bring the blocking element into engagement with the eccentric opening”
 - **Structure:** (if inclined plane) 7:9-12, 7:17-22, 7:40-61, 8:10-15, 8:27-51, 12:14-21, 14:42-51, Figs. 3, 4, 6, 7, 29, 37, and equivalents, (if protruding nose), 3:40-42, 7:12-14, 7:17-22, 8:33-51, 12:36-45, 14:12-20, Figs. 8, 26, 30, 35, and equivalents
- ***Second positioning means (Claim 15)***
 - **Function:** no recited function, however to the extent Patent Owner argues otherwise, the same function as the “first positioning means”

- **Structure:** (if inclined plane) 7:9-12, 7:17-22, 7:40-61, 8:10-15, 8:27-51, 12:14-21, 14:42-51, Figs. 3, 4, 6, 7, 29, 37, and equivalents, (if protruding nose), 3:40-42, 7:12-14, 7:17-22, 8:33-51, 12:36-45, 14:12-20, Figs. 8, 26, 30, 35, and equivalents

VII. OVERVIEW OF THE PRIOR ART

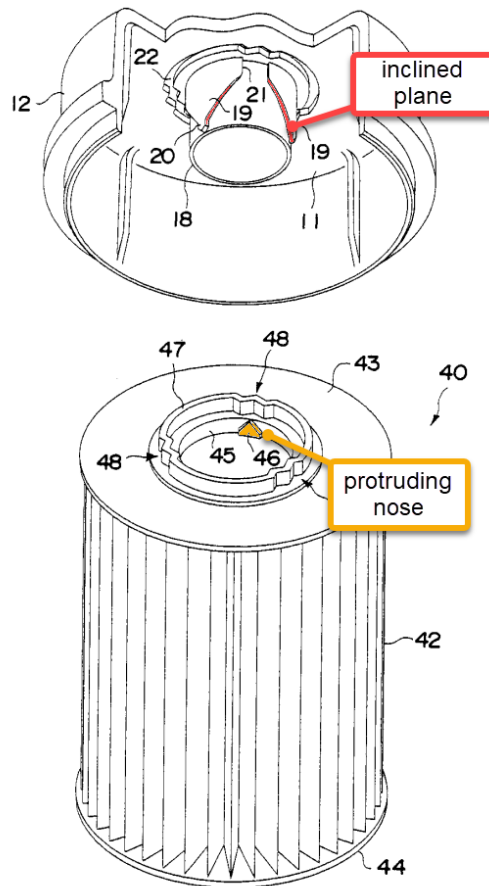
All of the below references relate to oil filters, and in particular, for use in internal combustion engines, such as vehicles. Ex. 1003, ¶70. Thus, all of these references would be obvious sources that a POSITA would have considered when seeking to improve upon prior oil filtration designs.

A. Yokoyama (Ex. 1009)

Japanese Application No. 2002-313171 to Yokoyama *et al.* (“Yokoyama”) was published on May 13, 2004 with publication number 2004-136203. Ex. 1007. A certified translation of Yokoyama is provided at Exhibit 1008.

Yokoyama provides “a filter device having a structure in which a filter element can be easily assembled into a filter case.” Ex. 1008, Abstract. It provides “[o]ne or more locking protrusions 46” on the inside of a filter insert, and “pleated portions 19” on the “outer periphery of the pipe portion 10” of the filter housing. *Id.* The protrusions slide along the pleated portions to

properly orient the filter insert, and a sealing element enters a groove to seal the two. *Id.*, ¶20; Ex. 1003, ¶¶71-72.



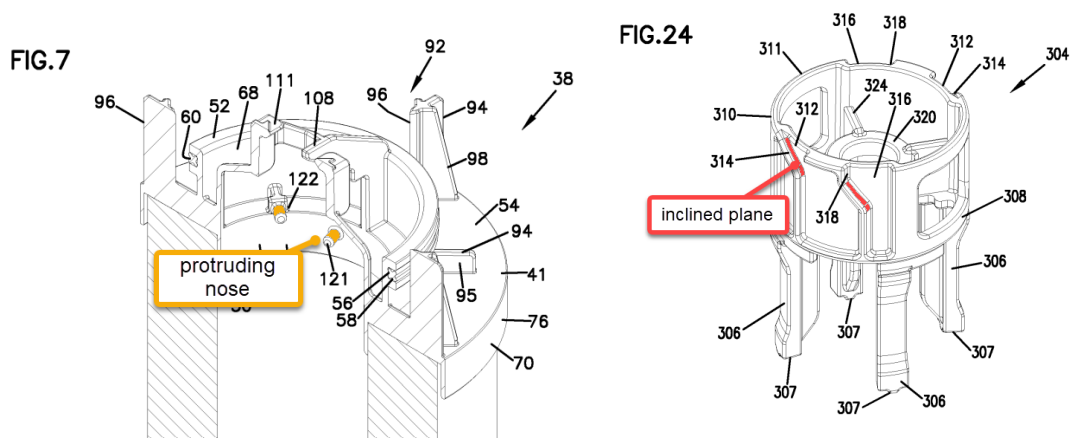
B. Honermann (Ex. 1006)

U.S. Patent Pub. No. 2010/0044295 to Honermann *et al.* (“Honermann”) was filed on April 25, 2008 as PCT/US2008/061539. Ex. 1003, ¶73.

Honermann discloses “filter assemblies and methods for use in liquid filtration, such as lube filters, hydraulic filters, and fuel filters.” Ex. 1006, 1:12-14. In particular, Honermann discloses “a removable and replaceable

filter cartridge 38” that is “operably oriented within the filter bowl 36. *Id.*, ¶¶78, 81.

On the inner circumference of the filter cartridge is a “protrusion arrangement 118” which slides along an inclined plane of a basket that is part of the filter housing. *Id.*, ¶¶98, 141. This properly orients the filter cartridge as it is inserted into the filter housing. Ex. 1003, ¶74.



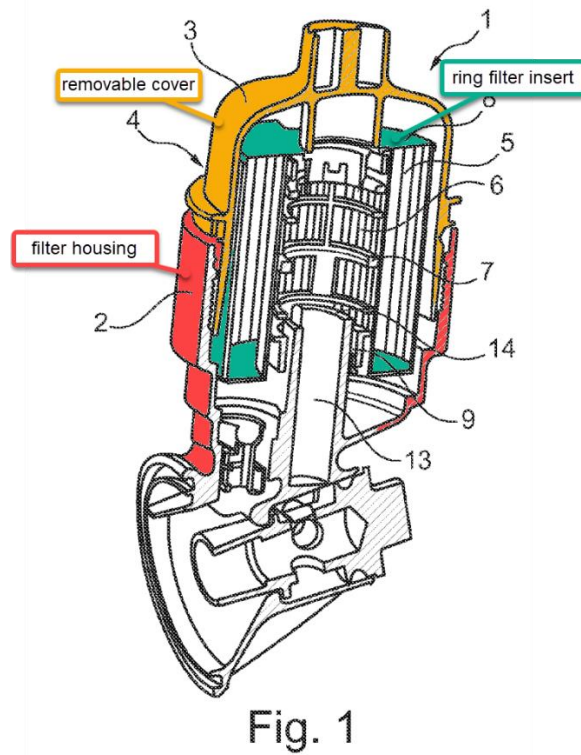
When the cartridge is operably positioned in the filter bowl 36 ... the drain-valve assembly 236 is in a sealed position 238,” where “plug 244 block[s] fluid flow between the interior volume 152 of the bowl 36 and the drainage aperture arrangement 160.” Ex. 1006, ¶¶124, 126; Ex. 1003, ¶75.

C. Deschamps (Ex. 1010)

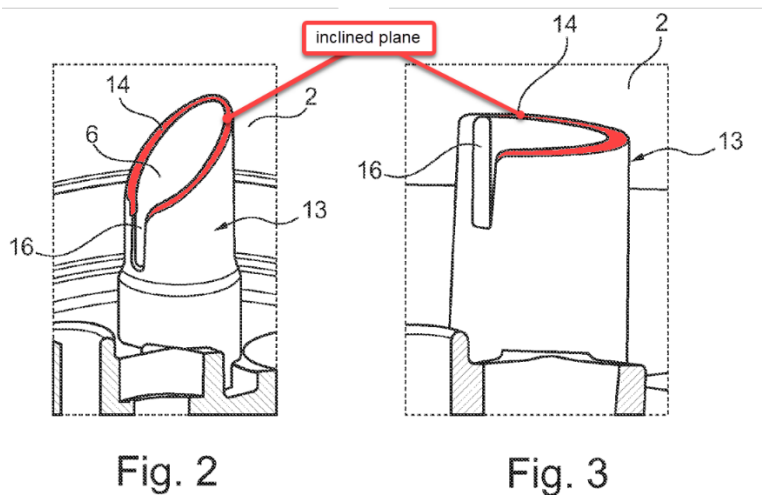
U.S. Pat. Pub. No. 2012/0261326 to Deschamps *et al.* (“Deschamps”) was filed on August 31, 2010 and claimed priority to a German application

filed on October 20, 2009, several months before the filing of the ‘203 patent’s earliest priority application (German application 10 2009 054 523). Ex. 1010.

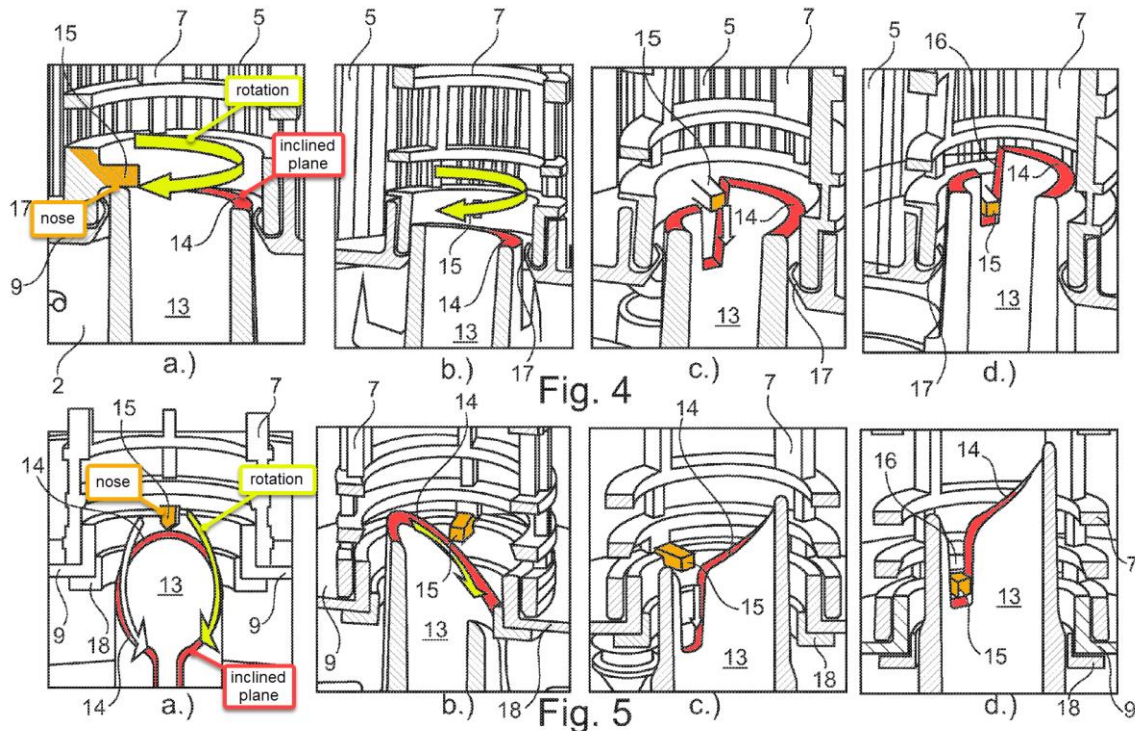
Although Petitioners do not rely on Deschamps as a prior art reference, Petitioners provide a summary of Deschamps to illustrate how the ’203 patent was known and obvious—and, in particular, the inner protruding nose and inclined planes that were the purported improvement over the prior art. *National Steel Car Ltd. v. Canadian Pacific Railway Ltd.*, 357 F.3d 1319, 1338, 69 USPQ2d 1641, 1656 (Fed. Cir. 2004) (holding that a drawing made by an engineer that was not prior art may nonetheless “be used to demonstrate a motivation to combine implicit in the knowledge of one of ordinary skill in the art”); Ex. 1003, ¶¶76-79. Deschamps discloses “a filter device, in particular an oil or fuel filter,” which has a filter housing and a ring filter element that is inserted into the housing and rotated. Ex. 1010, ¶¶2, 33; Fig. 1; Ex. 1003, ¶80.



Protruding from the center of the housing is a “tube-shaped dome 13,” and a “guide contour 14” (*i.e.* inclined plane) is provided “on a free end of the said tube-shaped dome 13,” as depicted below in the two alternative embodiments of Figures 2 and 3. Ex. 1010, ¶34; Ex. 1003, ¶81.



Protruding radially from the inner circumference of the ring filter element is a guide element 15 (*i.e.* protruding nose), and as the ring filter element is rotated, the guide element 15 slides along the inclined plane until it reaches the axial groove 16. Ex. 1010, ¶¶35-36. The ring filter element can then be pushed, causing a pin 10 to seal a channel 11. *Id.* This mechanism is depicted in Figures 4 and 5 for the two different embodiments of the guide contour 14. Ex. 1003, ¶82.



Based on these disclosures, Mr. Nranian opines that, under the assumption that Deschamps is prior art, it would have anticipated or at least rendered obvious independent claims 1 and 15 of the '203 patent. Ex. 1003,

¶¶248-94. However, although Deschamps predates the '203 patent, Petitioners are not able to firmly establish that Deschamps is prior art and thus Petitioners do not use Deschamps as a ground of challenge.

VIII. DISCRETIONARY FACTORS

A. 35 U.S.C. § 325(d) Does Not Favor Denial

The Board uses a two-part framework to analyze denial under 325(d). *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, Paper 6 at 7 (PTAB Feb. 13, 2020).

The Office was not presented with Honermann, the primary reference for Ground 3. Thus, there is no basis to deny the Petition under Section 325(d) given this new art.

Grounds 1 and 2 rely on Yokoyama, a Japanese application, which was cited in an IDS that accompanied the applicant's petition to withdraw from issue. Ex. 1002, 16, 26. However, the examiner did not request nor did the applicant provide a certified translation of Yokoyama. One week following the petition, the examiner issued a renewed notice of allowance, but did not provide any explanation as to why the claims were allowed over Yokoyama.

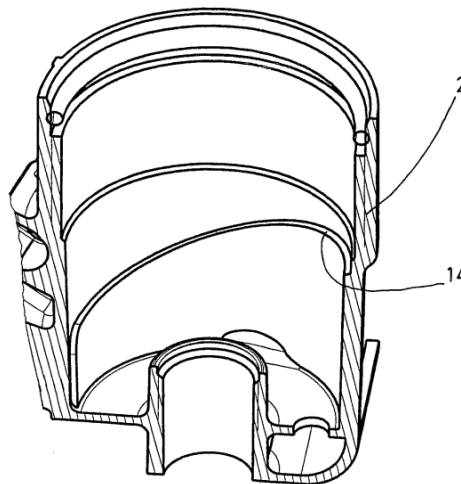
In addition, Grounds 2 and 3 rely on Cline. While Cline was cited in an IDS and briefly mentioned in the examiner's notice of allowance, the

examiner expressly stated that Cline was “not relied upon” but “is considered pertinent to applicant’s disclosure.” Ex. 1002, 132.

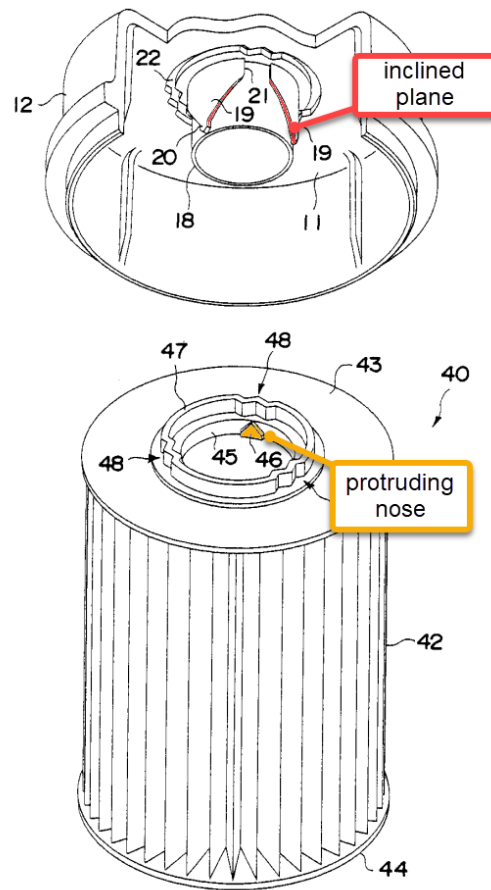
Thus, both Yokoyama and Cline were not expressly addressed by the examiner (and given Yokoyama was not provided in English, it was unlikely to have even been considered), which weighs in favor of institution. *See, e.g., Digital Check Corp. d/b/a ST Imaging v. E-Imagedata Corp.*, IPR2017-00178, Paper 6 at 12-13 (PTAB. April 25, 2017) (instituting where: “[T]here is no indication in the record that the Examiner rejected any claims based on either reference or that the Examiner or applicant substantively discussed either reference during prosecution[.]”).

Even if Yokoyama and Cline are considered to be presented to the Office, the Office made material errors. During prosecution of the ’203 patent, the examiner did not issue any rejection. Ex. 1003, ¶54. Instead, the examiner stated in the notice of allowance that German application DE202007001227 (“DE-227”), an earlier foreign patent filed by Patent Owner Hengst, is “the closest prior art.” Ex. 1002, 131. The examiner further stated that while DE-227 taught a nose and inclined plane, that it “does not teach the inclined plane or nose being arranged on either of the inner circumference of the ring filter insert or the outer circumference of a filter housing part arranged inside the ring filter insert nor would it have been

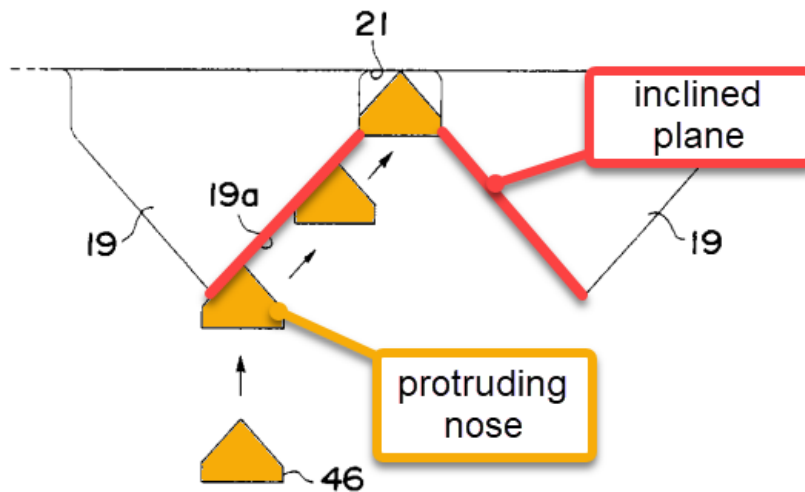
obvious to one of ordinary skill in the art.” Ex. 1002, 131; see limitation 1[l] and 1[m] (and corresponding analysis in the Grounds). Certainly, in DE-227, the inclined plane is on the inner circumference of the shell of filter housing and the nose is on the outer circumference of the filter insert, essentially the opposite of what the ’203 claims. *Id.*, 305; Ex. 1003, ¶55. For example, Figure 3 below from DE-227 shows the inclined plane 14 being on the inner circumference of the shell filter housing.



However, the examiner made a material error in allowing the ’203 patent over Yokoyama, which discloses a nose on the inner circumference of the filter insert and an inclined plane on the outer circumference of a housing part (e.g. a central nozzle) that goes into the hollow center of the insert. Ex. 1008, Fig. 1.



For example, and as discussed in more detail herein, Yokoyama depicts a nose on the inner circumference of an insert, and that it slides along an inclined plane on the outer circumference of a housing part that is inside the hollow insert. This sliding mechanism is illustrated in Figure 6. Indeed, given that the examiner was not provided with a translation of Yokoyama, it is likely that the examiner was unaware of these disclosures in Yokoyama, thereby compounding his error.



For these reasons, the Board should not deny institution under Section 325(d).

A. *Fintiv* Does Not Favor Denial

1. Factor 1

The Court has not granted a stay, nor has a request for a stay been filed and it is unclear whether the Court would grant a stay in view of institution. Accordingly, this factor weighs in favor of institution or is at best neutral.

2. Factor 2

The Court has not set a trial date. Accordingly, this factor heavily weighs in favor of institution.

3. Factor 3

The district court litigation is in its infancy. No depositions have been taken. The parties have also not begun the process of claim construction. The

Court has already granted a joint stipulation to extend all deadlines by three months and would likely grant further extensions. Thus, there have been no significant investments by the Court or the parties in this case. Accordingly, this factor weighs in favor of institution.

4. Factor 4

Of the 17 claims that Petitioners challenge, 8 of them are not asserted in the underlying litigation: specifically, claims 1, 3, 5, 8-11, and 29. Thus, the Board will need to resolve several issues that the district court will not resolve.

Petitioners further stipulate herein that, if this IPR proceeding is instituted, then Petitioners will not pursue in the Litigation the specific grounds identified above in connection with the referenced patents and claim.² See 35 U.S.C. §315(2). This waiver eliminates any overlap in invalidity grounds between the Litigation and an IPR instituted based on this Petition, and thus mitigates any concerns of duplicative efforts. See, e.g., *Sotera*

² This stipulation is not intended, and should not be construed, to limit Petitioner's ability to assert invalidity of the asserted claim of the '203 patent in the Litigation on any other ground (*i.e.*, invalidity under §§ 101, 112), regardless of whether *inter partes* review is instituted.

Wireless, Inc. v. Masimo Corporation) as precedential. IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential) (“*Sotera*”); *Sand Revolution II, LLC v. Continental Intermodal Grp.-Trucking LLC*, IPR2019-01393, Paper 24 at 11-12 (PTAB June 16, 2020) (informative) (“*Sand Revolution*”); *Google LLC et al v. Parus Holdings, Inc.*, IPR2020-00846, Paper 9 at 22 (PTAB October 21, 2020).

5. Factor 5

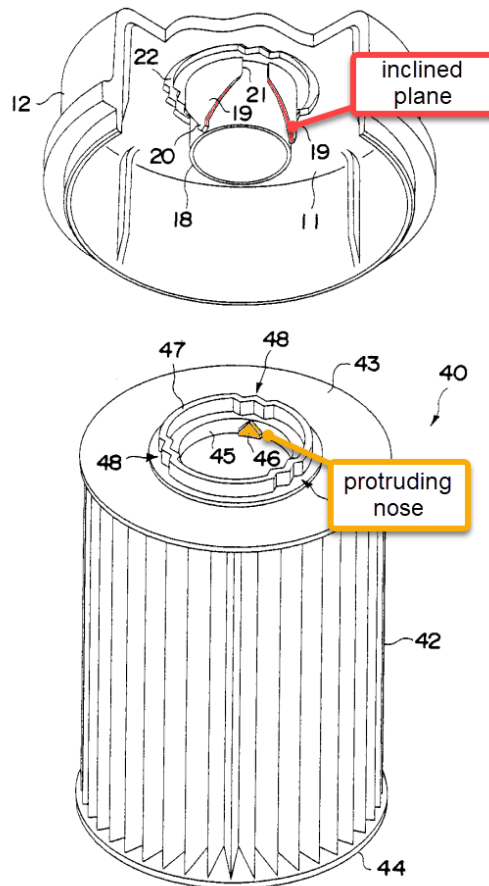
One of the Petitioners is the same party as the defendant in the district court case. While this factor may weigh slightly in favor of institution, it does not outweigh the remaining factors.

6. Factor 6

The merits of the petition also support institution. As discussed in more detail below, the prior art teaches each and every element of the Challenged Claims. In addition, numerous prior art patents teach the same concept of having an oil filter for an internal combustion engine that has a filter housing and a ring filter. Thus, the challenged claims merely recite well-known concepts. Accordingly, the challenged claims should be held unpatentable. The merits of the petition weigh strongly in favor of institution.

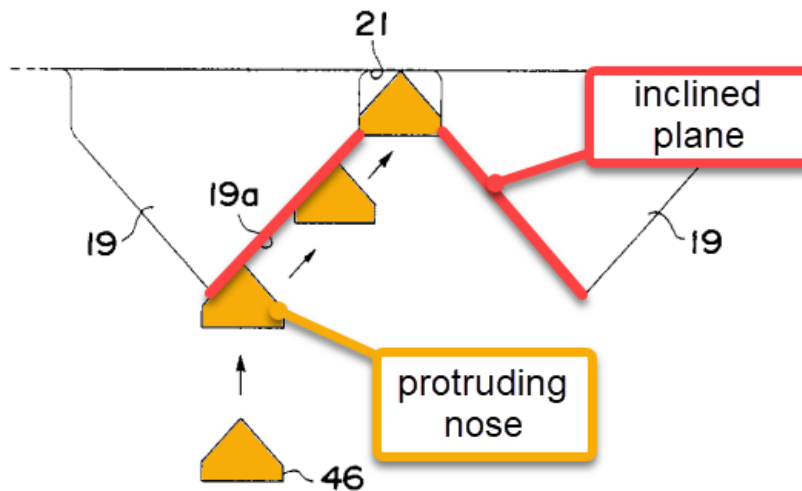
IX. GROUND 1: YOKOYAMA RENDERS OBVIOUS CLAIMS 15-17, 19, 23, 25, 30

Yokoyama discloses a “filter element 40” that is inserted into a filter housing to filter liquids such as oil or fuel. In order to properly orient the filter element within the filter housing, Yokoyama describes “locking protrusions” (*i.e.* protruding noses) that are in the inner circumference of the filter element. Yokoyama also describes “pleated portions 19” (*i.e.* inclined planes) which are on the outer circumference of a “pipe portion 18” in the filter housing. These components are shown below in the annotated Figure 1. Ex. 1003, ¶83.

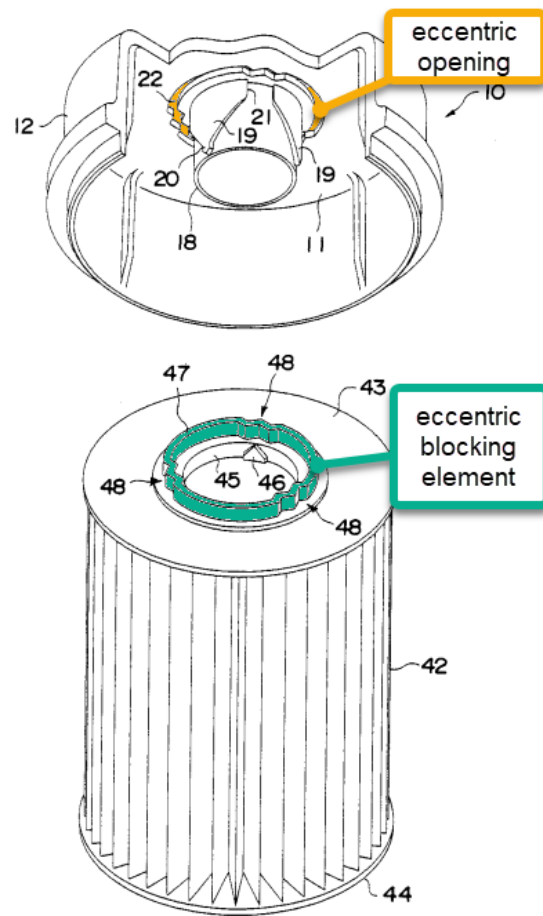


When the filter element is inserted, the protruding nose slides along the inclined plane in order to guide the filter element to the correct orientation.

Ex. 1003, ¶84. This sliding mechanism is illustrated in Figure 6.



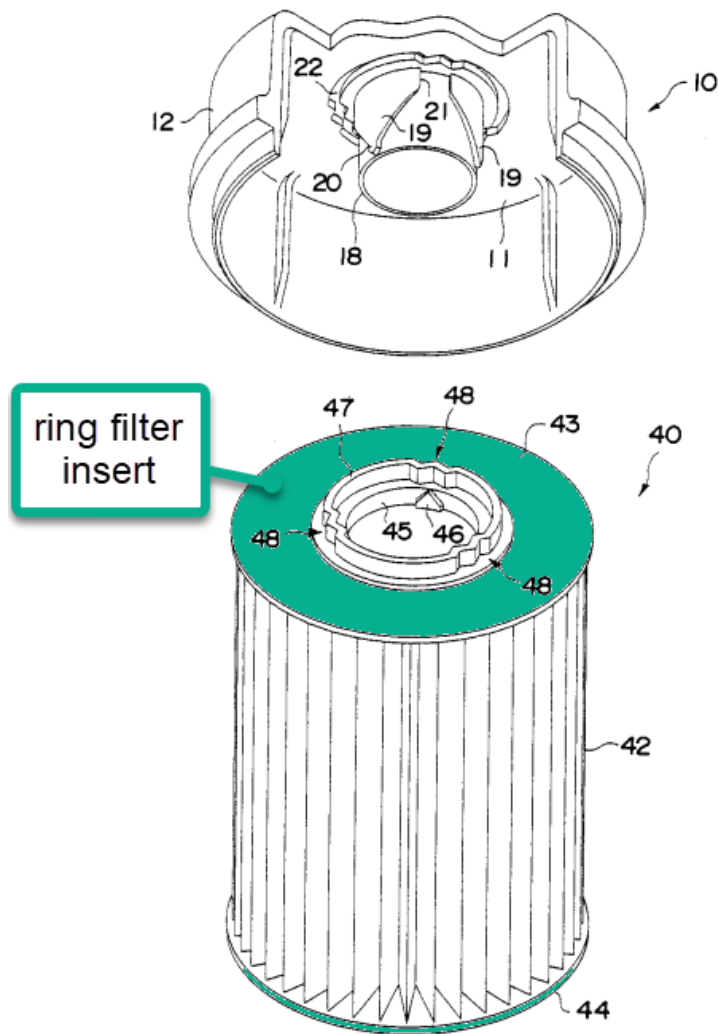
When the filter element is properly inserted into the filter housing, a “sealing member 47” (*i.e.* blocking element) on the filter element engages with “grooves 22” (*i.e.* opening) in the filter housing to provide a seal to keep the filter element and filter housing attached. Ex. 1003, ¶85.



A. Claim 15

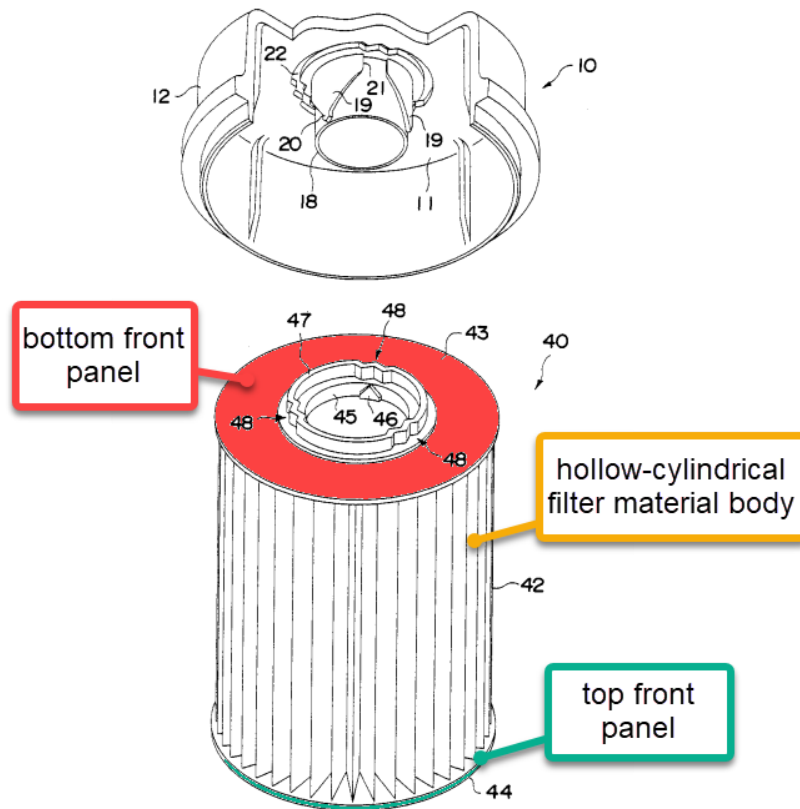
1. 15[pre]: A ring filter insert for a liquid filter, comprising

Yokoyama discloses a “filter element 40” which as shown below from Figure 1 is a *ring filter insert for a liquid filter*. Ex. 1008, ¶19. The filter element 40 can be inserted into a “filter device.” *Id.*, ¶13; Ex. 1003, ¶86.



2. 15[a]: A hollow-cylindrical filter material body surrounded on front sides by top and bottom front panels and which can be replaceably arranged in a filter housing,

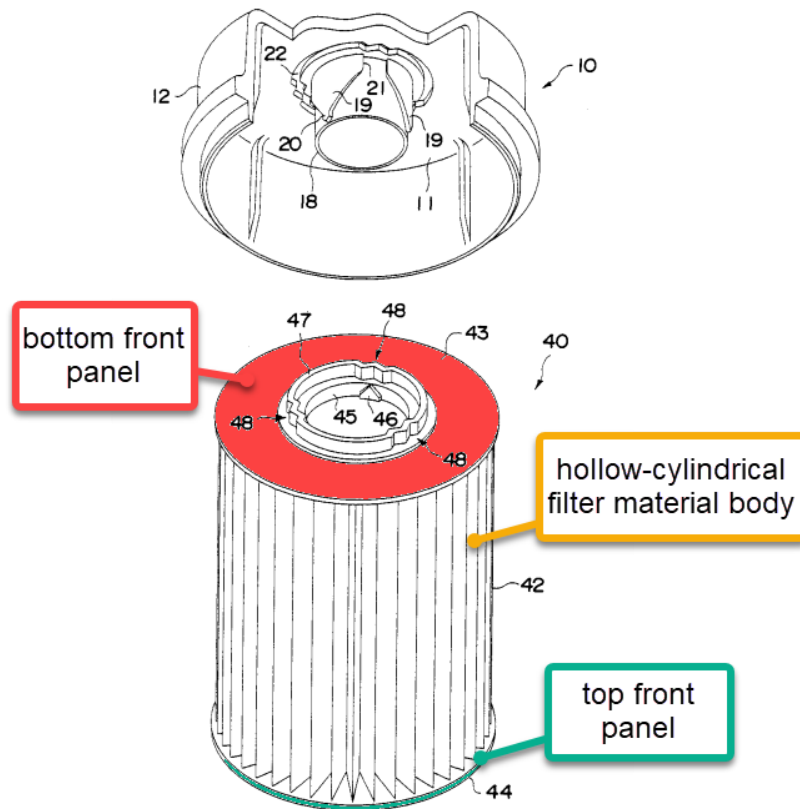
“A hollow-cylindrical filter material body surrounded on front sides by top and bottom front panels”: As shown in the below annotated Figure, Yokoyama discloses a hollow-cylindrical filter material body surrounded on front sides by top and bottom front panels. Ex. 1003, ¶¶87-88.



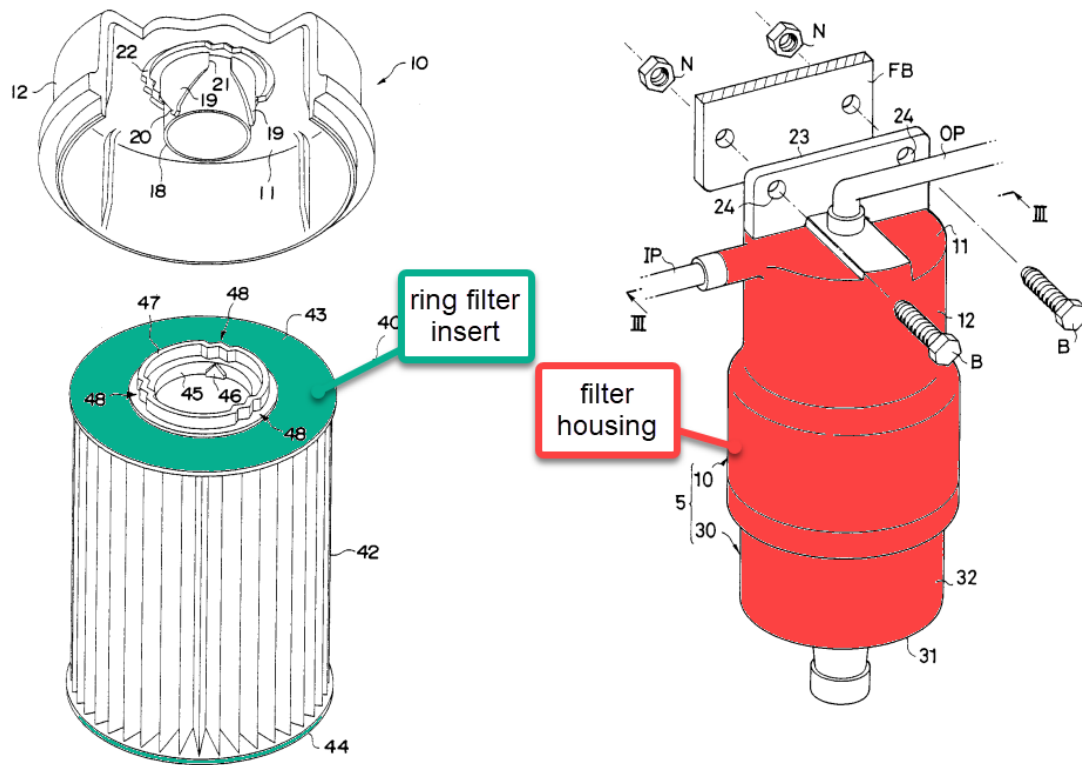
Specifically, Yokoyama discloses that the filter element is “*cylindrical*” and has a *hollow* space. Ex. 1008, ¶13 (“cylindrical filter element”), ¶18 (“cylindrical inner cylinder”); Fig. 1; Ex. 1003, ¶89.

Yokoyama further discloses that the filter element has a *filter material body*, specifically “a filter medium 42 bent in a bellows shape.” Ex. 1008, ¶18. This filter medium is made of *filter material* because “[d]irt, dust, fine iron chips, etc. contained in the fuel are filtered when passing through this filter medium 42.” *Id.*, ¶28; Ex. 1003, ¶90.

Yokoyama also discloses that the filter medium has ***top front panel***, *i.e.* “a disc-shaped lower plate 44 ... attached to its lower end,” and a ***bottom front panel***, *i.e.* “a disc-shaped upper plate 43 ... attached to its upper end.” Ex. 1008, ¶18. Although Yokoyama depicts the ***top front panel*** on the bottom of the filter medium and the ***bottom front panel*** on the top of the filter medium, a POSITA would understand that this merely reflects the orientation of the filter medium as depicted, and the orientation of the insertable filter medium could be upside-down. Ex. 1003, ¶91. Moreover, a POSITA would understand that the entire filter device would operate in an identical manner if upside-down. *Id.*



“which can be replaceably arranged in a filter housing”: Yokoyama discloses that the filter element 40 (*i.e.* ***ring filter insert***) is ***replaceable***. Ex. 1008, ¶26 (“The filter element 40 is a consumable item, and when the filter medium 42 becomes clogged or a predetermined period of time has elapsed, it is necessary to ... ***replace it***.”). Yokoyama also discloses that the filter element is ***arranged in the filter housing***, specifically that it is “installed ... in the filter case 5” of the filter device, which comprises “case halves 10 and 30.” *Id.*, ¶13; Ex. 1003, ¶92.



3. 15[b]: an eccentric blocking element arranged on the bottom front panel for engaging an eccentric opening in the filter housing,

Yokoyama discloses that “sealing member 47” is *an eccentric blocking element* that engages with “grooves 22,” which is *an eccentric opening*, as shown in the below annotated figures. Ex. 1003, ¶93.

Figure 3 depicts the blocking element and opening as eccentric. Ex. 1003, ¶94.

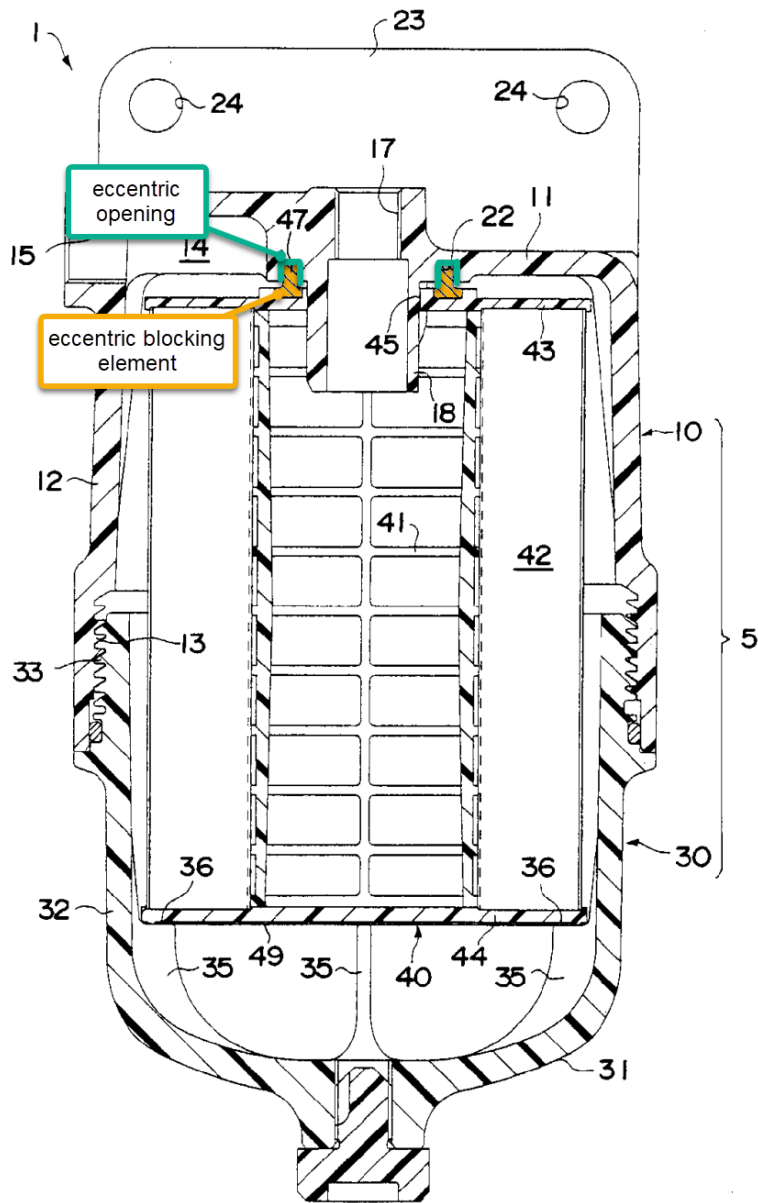
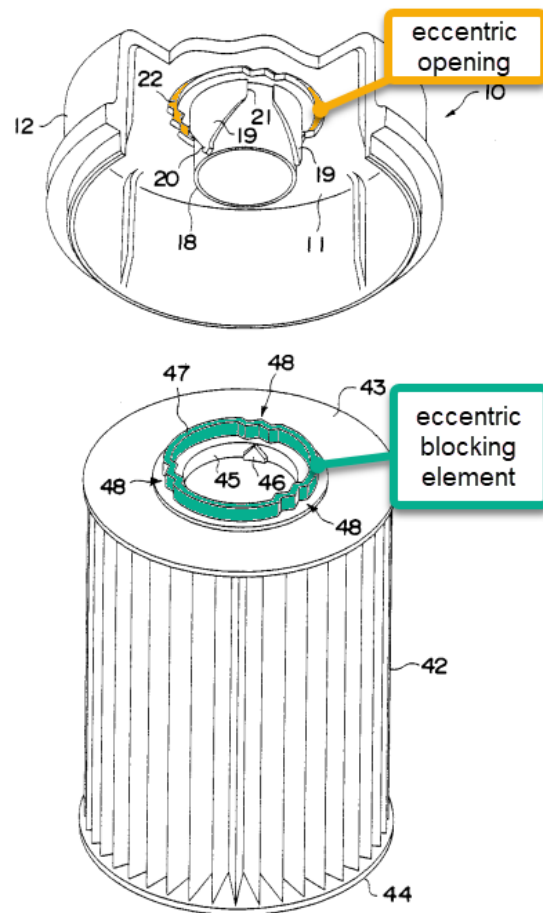


Figure 1 also depicts these elements. Ex. 1003, ¶95.



A POSITA would understand that the blocking element and opening are **eccentric** because they are not located at the center of the filter insert or housing. Ex. 1003, ¶96. To the extent Patent Owner argues that they are not eccentric because the axis of those elements is in the center of the housing, that argument fails. For example, if the blocking element only consisted of the “W-shaped portions 48” and the opening only consisted of the corresponding W-shaped portions, then each W-shaped portion would undeniably be eccentric. *Id.* The presence of additional portions of the

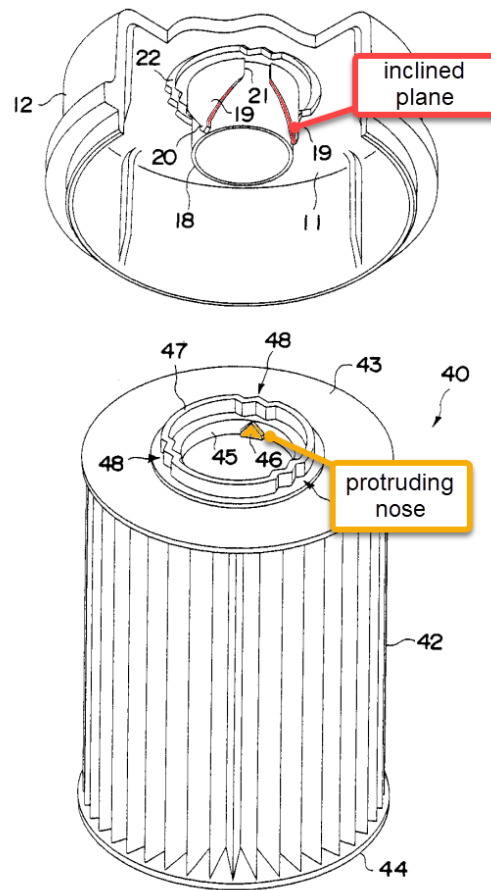
blocking element/opening does not change this property of the W-shaped portions. *Id.*

Yokoyama discloses that “a ring-shaped sealing member 47 is provided on the upper surface side of the upper plate 43,” *i.e. arranged on the bottom front panel*. Ex. 1008, ¶20. Ex. 1003, ¶97. The grooves are “provided on the lower surface side of the ceiling portion 11 in the upper case half 10,” *i.e. in the filter housing*. *Id.* Yokoyama teaches that “when the filter element 40 is attached to the upper case half 10, the sealing member 47 ... is fitted into the grooves 22,” *i.e. the blocking element engages with the opening*. *Id.*

4. **15[c]: first positioning means on the ring filter insert, which interact with second positioning means on the filter housing when the ring filter insert is inserted into the filter housing and which are arranged to bring the blocking element into engagement with the eccentric opening,**

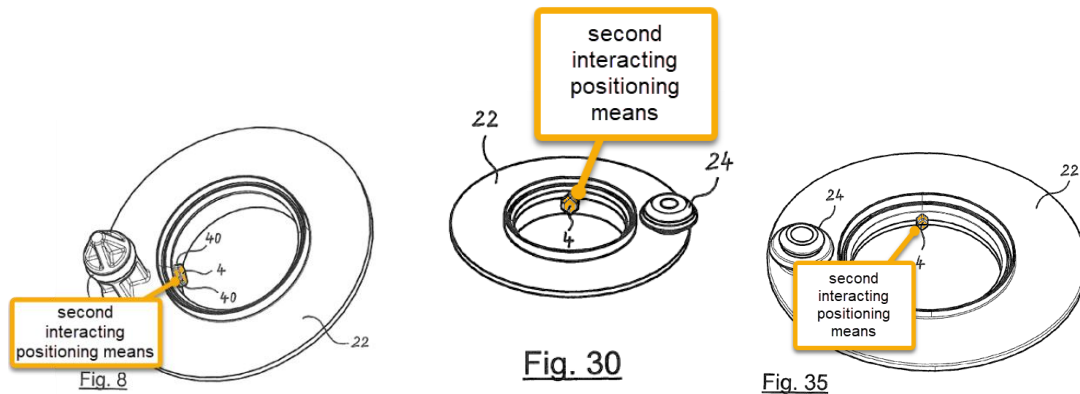
15[d]: the first positioning means being one of an inclined plane and a protruding nose, with the second positioning means being the other of the inclined plane and the protruding nose,

Yokoyama discloses a first positioning means in the form of a protruding nose on the ring filter insert, and a second positioning means in the form of an inclined plane on the filter housing. Ex. 1003, ¶¶98-99. These are depicted below in the annotated figures.



“first positioning means on the ring filter insert ... being ... a protruding nose”: Yokoyama discloses a *protruding nose on the ring filter insert*, specifically a “locking protrusion[] 46 ... provided on the inner periphery of the opening 45 of the upper plate 43,” which are “guided by the side surfaces 19a,” *i.e. the inclined plane*. Ex. 1008, ¶¶19, 21; Ex. 1003, ¶100. This causes the filter element 30 to “rotate slightly in the twisting direction.” Ex. 1008, ¶21. The protrusion “fits into the depressions 21 formed between the two adjacent pleated portions 19.” *Id.*

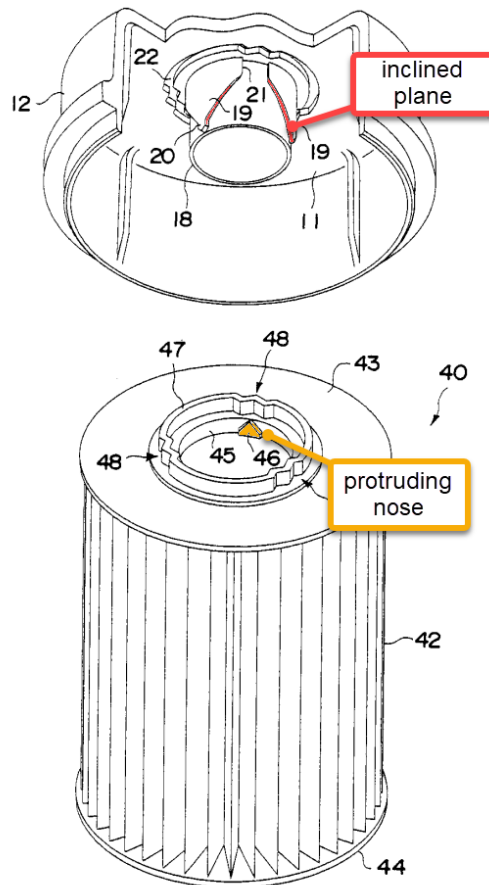
As discussed above, the first positioning means is not a means-plus-function term. Ex. 1003, ¶101. However, to the extent Patent Owner argues that it is a means-plus-function term, the corresponding structure of a first positioning means comprising a protruding nose on a filter insert is 8:33-51, 8:63-67, 12:36-45, 14:12-20, 14:60-64, Figs. 8, 30, 35, and their equivalents. *Id.* These descriptions describe the noses depicted in Figures 8, 30, and 35 below:



The descriptions describe a nose structure that is on the inner circumference of a filter insert, that slides on the surface of an inclined plane, that allows a filter insert to rotate, and that as it enters the axial guide 31, a blocking element enters a channel. Ex. 1003, ¶102. As discussed, Yokoyama discloses such a structure.

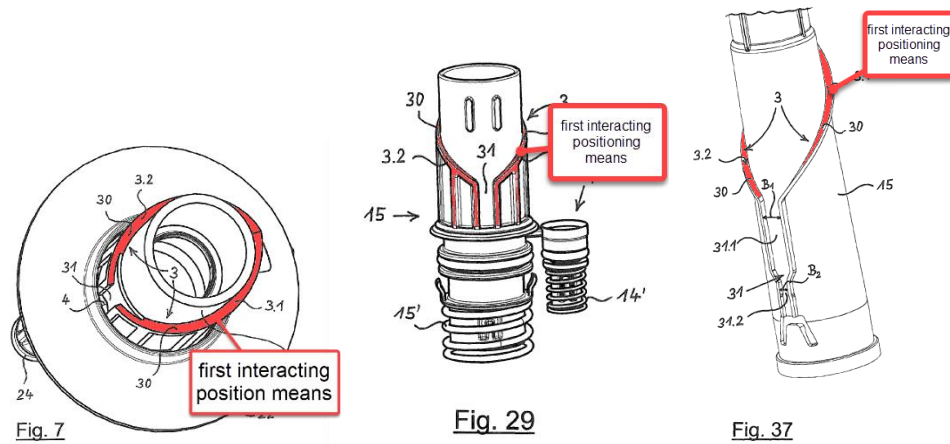
“second positioning means on the filter housing ... being ... the inclined plane”: Yokoyama discloses an ***inclined plane on the filter housing***, specifically “pleated portions 19,” *i.e.* ***inclined plane***, which are on “the outer

circumferential portion of the pipe portion 18 provided in the upper case half 10,” *i.e. filter housing*. Ex. 1008, ¶21; Ex. 1003, ¶103. The “locking protrusions 46” slide along these inclined planes, causing the filter element 30 to “rotate slightly in the twisting direction.” Ex. 1008, ¶21.



As discussed above, the second positioning means is not a means-plus-function term. Ex. 1003, ¶104. However, to the extent Patent Owner argues that it is, the corresponding structure of a second positioning means comprising an inclined plane on a filter housing is 8:27-51, 12:14-26, 14:34-

51, Figs. 7, 29, 37, and their equivalents. Ex. 1003, ¶104. These descriptions describe the inclined planes depicted in Figures 7, 29, and 37 below:

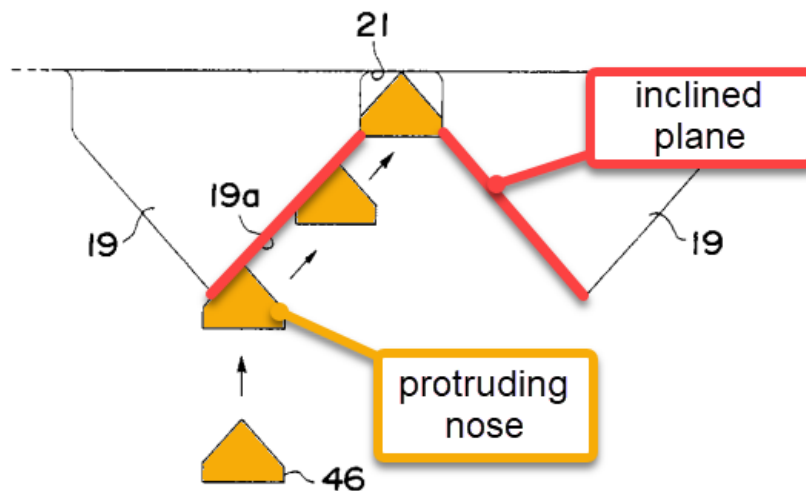


The descriptions describe an inclined plane structure that is on the outer circumference of a pipe nozzle, that forms a sliding surface for nose 4, that allows a filter insert to rotate, and that as the nose enters the axial guide 31, a blocking element enters a channel. Ex. 1003, ¶105. As discussed, this structure is disclosed by Yokoyama. *Id.*

“first positioning means ... which interact with second positioning means ... when the ring filter insert is inserted into the filter housing”:

Yokoyama discloses that when the filter insert is inserted into the filter housing, the protrusion will interact with the inclined plane by sliding along it. Ex. 1003, ¶106. Specifically, when the “filter element 30 [*i.e. ring filter insert*] is pushed upward [*i.e. inserted*] so that the pipe portion 18 (and the three pleated portions 19 [*i.e. inclined planes*]) of the upper case half 10 [*i.e.*

filter housing] passes through the opening 45 of the ... filter element 40 from above,” “the three locking protrusions 46 [*i.e. protruding noses*] ... are guided by the side surfaces 19a of the three pleated portions 19 [*i.e. inclined planes*].” Ex. 1008, ¶21. Figure 6 depicts how the protruding nose slides along the inclined plane.



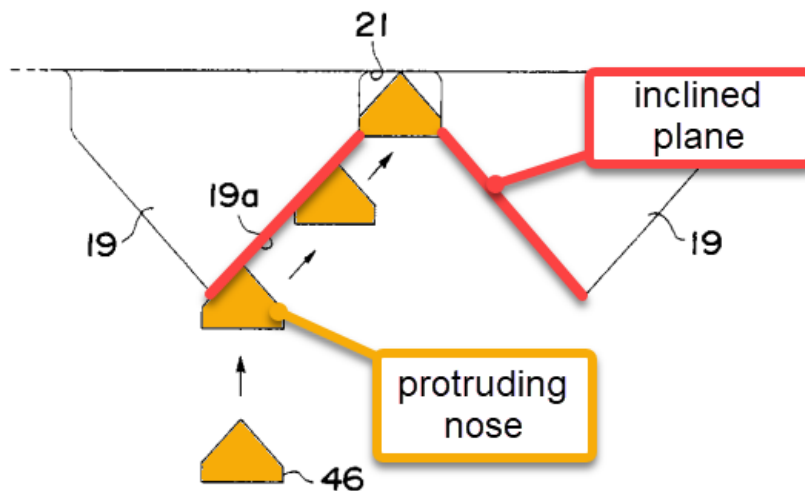
“which are arranged to bring the blocking element into engagement with the eccentric opening”: Yokoyama discloses that when the protruding nose slides along the inclined plane into position, this causes the sealing member (*i.e. blocking element*) to engage with grooves (*i.e. eccentric opening*.” Ex. 1003, ¶107. Specifically, when “locking protrusions 46 [*i.e. protruding nose*]... is inserted into depressions 21 formed between the adjacent pleated portions 19 [*i.e. inclined plane*],” “a sealing member 47 [*i.e. blocking element*] ... fits into grooves 22 [*i.e. eccentric opening*].” Ex. 1008,

¶22. This allows the filter element 40 to be “fixed to the upper case half 10.”

Id.

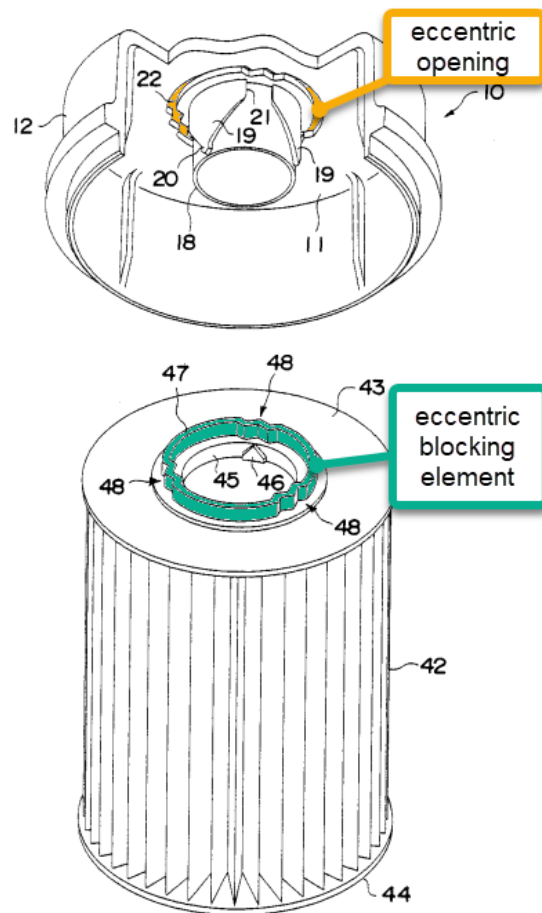
5. 15[e]: the inclined plane and the nose arranged to be moved in relation to each other in such a way that they slide along each other and bring the blocking element into engagement with the eccentric opening, by rotating the ring filter insert relative to the filter housing,

“the inclined plane and the nose arranged to be moved in relation to each other in such a way that they slide along each other”: Yokoyama discloses that the “locking protrusions” *slide along* the “side surfaces 19a” until they “fit into depressions 21,” as shown by annotated Figure 6 below. Ex. 1008, ¶21; Fig. 1; Fig. 6. Thus, they are *arranged to be moved in relation to each other in such a way that they slide along each other*. Ex. 1003, ¶¶108-09.



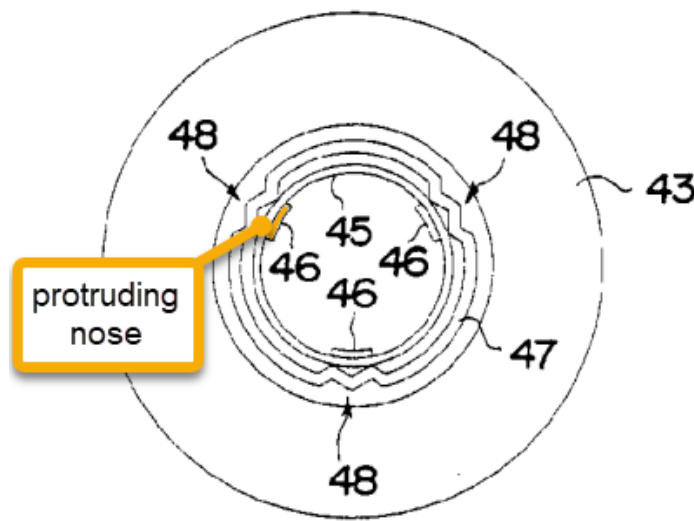
“bring the blocking element into engagement with the eccentric opening, by rotating the ring filter insert relative to the filter housing”:

Yokoyama discloses that after the protrusion slides along the inclined plane and enters the depression 21, “sealing member 47 [*i.e.* **blocking element**]” engages with “grooves 22 [*i.e.* **eccentric opening**],” and that “the filter element 30 [*i.e.* **ring filter insert**] will rotate slightly in the twisting direction” relative to the filter housing. Ex. 1008, ¶21. A POSITA would understand that because of the positioning of the W-shaped portions of the sealing member and grooves, as well as the shape of the inclined plane, the rotation causes the filter insert to be oriented correctly so that the sealing member properly engages with the groove. Ex. 1003, ¶110.



6. 15[f]: the first positioning means being one of embodied and arranged on an inner circumference of the ring filter insert.

Yokoyama discloses that the locking protrusions [*i.e. first positioning means/protruding nose*] are in the “inner periphery of the opening,” *i.e. the inner circumference*, of the filter element (*i.e. ring filter insert*). Ex. 1008, ¶19; Fig. 4B; Ex. 1003, ¶111.

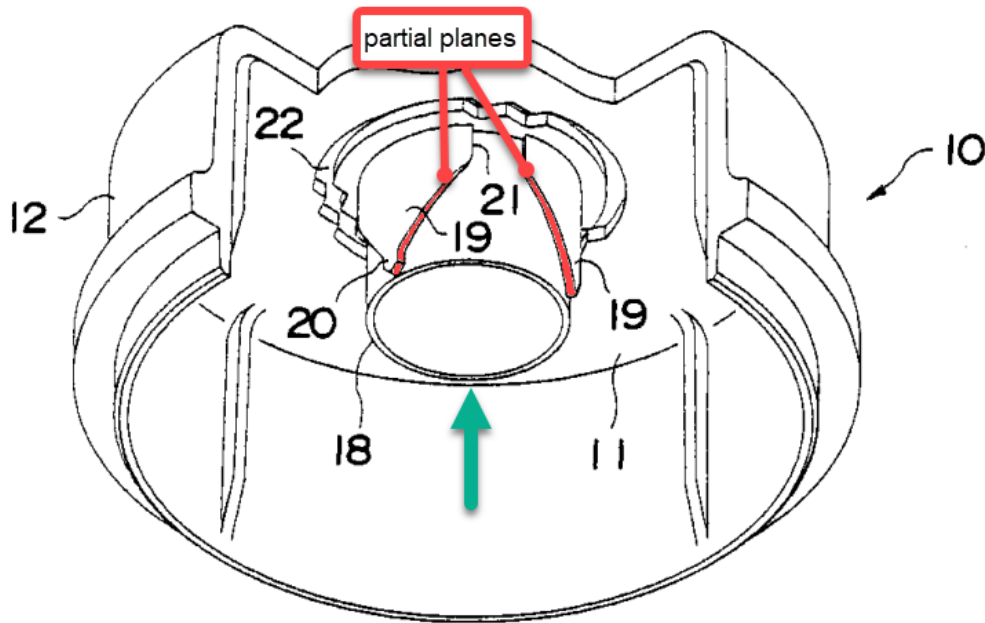


B. Claim 16: The ring filter insert according to claim 15, wherein the inclined plane is formed by two partial planes which run towards each other in opposite directions and which in each case extend across half of an inner circumference of the ring filter insert.

Although this claim requires that the inclined plane be part of the ***inner circumference of the ring filter insert***, Patent Owner has asserted infringement of this claim based on an alleged inclined plane that is “of the ***outer circumference of the filter housing part***.” Ex. 1012, 9. Plainly, such an infringement read is not consistent with the plain meaning of the claims. Ex. 1003, ¶¶112-13. However, Yokoyama teaches Patent Owner’s reading of this claim. Ex. 1003, ¶114.

Yokoyama depicts that the inclined plane is *formed by two partial planes which run towards each other in opposite directions*. Ex. 1008, Fig. 1, ¶31 (“left and right side surfaces 19a of ... the pleated portions 19 ... are

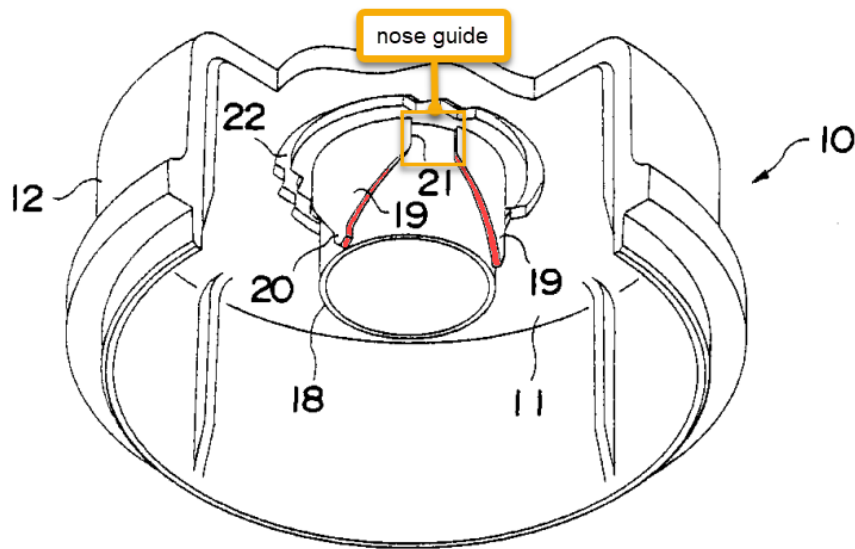
formed in a tapered shape that narrows downward”). Yokoyama further teaches that there may be “one ... pleated portion[] 19,” instead of the three that is depicted in the figures. Ex. 1008, ¶33. A POSITA would understand from these disclosures that when there is only one pleated portion 19, its left and right side surfaces ***extend across half of the outer circumference of the filter housing portion*** in order to form a tapered shape. Ex. 1003, ¶115. Thus, in the below Figure 1, if there was only one pleated portion 19, then the two planes would meet at the point on the opposite side as indicated with the green arrow. *Id.*



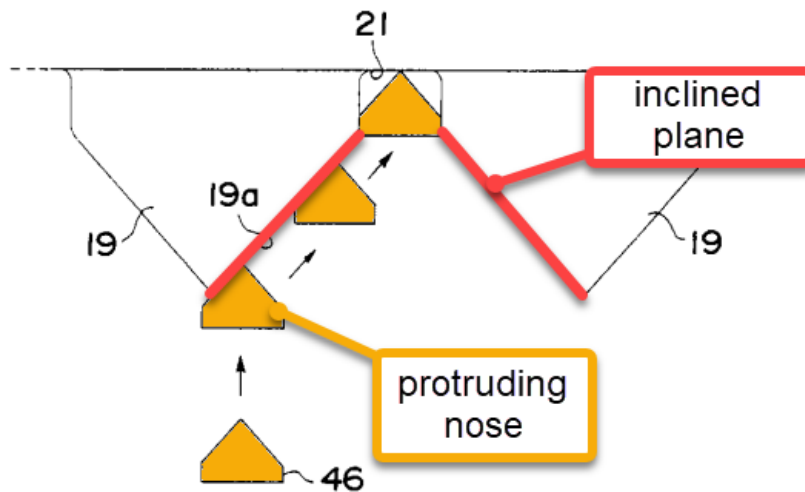
A POSITA would understand that if these side surfaces did not meet at a point, then the corresponding protrusion would not be able to slide along the side surfaces for some orientations of the filter insert. Ex. 1003, ¶116.

- C. **Claim 17: The ring filter insert according to claim 15, including a guide for the nose which runs in an axial direction and is connected to a lower end of the inclined plane.**

Yokoyama discloses that the protrusion slides along the side surfaces and enters a “depression[] 21” which is a ***nose guide***. Ex. 1008, ¶21; Ex. 1003, ¶117.



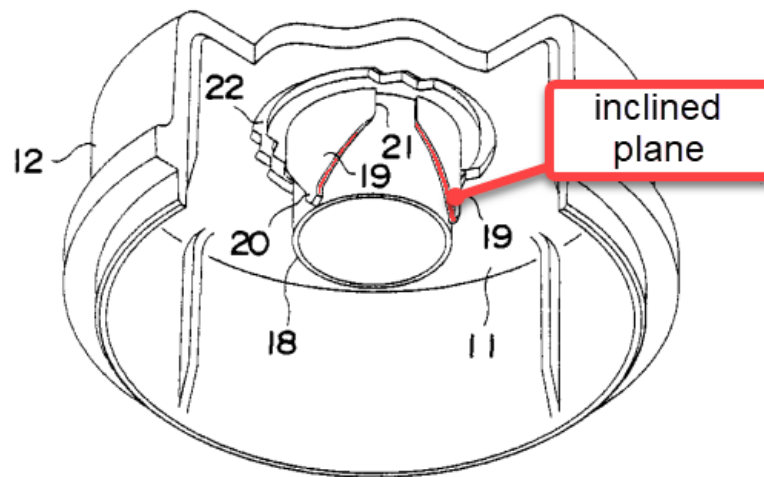
The depression 21 runs in an ***axial direction*** because the protrusion enters it from an ***axial direction***, and as depicted in Figures 1 and 6, is ***connected to a lower end of the inclined plane***. Ex. 1008, Fig. 6; Ex. 1003, ¶118.



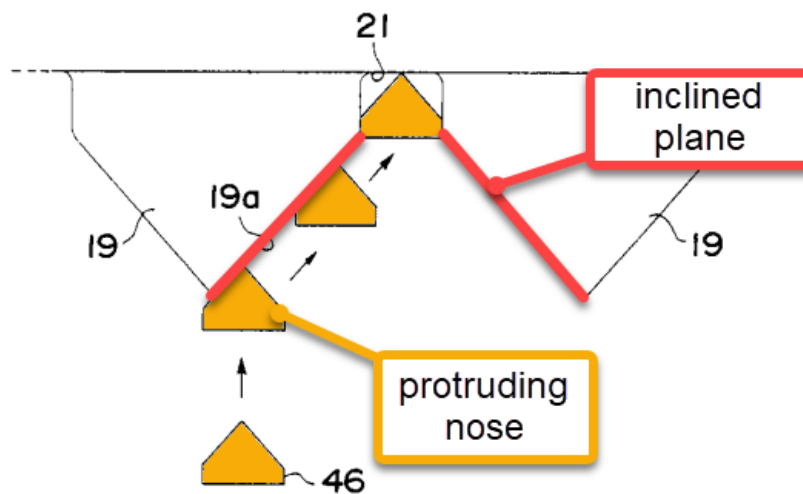
To the extent Patent Owner argues that the depression is connected to the upper end of the inclined plane, and not the lower end, such an argument is merely contingent on the orientation of the filter device and makes no functional difference. Ex. 1003, ¶119. In any case, the filter device would work properly if it was oriented upside-down. *Id.*

D. Claim 19: The ring filter insert according to claim 15, wherein the inclined plane is formed by one of a radially protruding rib and step which forms a contact surface for the nose on one of an upper or lower side thereof.

As depicted in Figure 1, the inclined plane is a *radially protruding rib or step*, as it protrudes radially outward of the pipe portion 18. Ex. 1008, ¶21; Ex. 1003, ¶120.

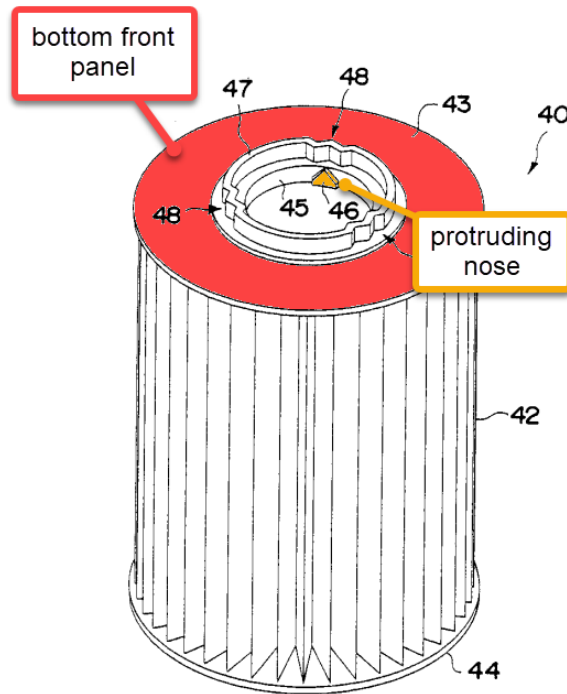


As shown in Figure 6, the inclined plane *forms a contact surface for the protruding nose* on the upper or lower side of the nose (depending on its orientation). Ex. 1008, ¶21 (“locking protrusions 46 ... are guided by the side surfaces ... and move upward”); Ex. 1003, ¶121.



- E. **Claim 23:** The ring filter insert according to claim 15, wherein the nose is formed integrally with the bottom front panel of the ring filter insert.

Yokoyama discloses that the protrusions (*i.e.* ***protruding nose***) is formed integrally “on the inner periphery ... of the upper plate 43,” *i.e.* ***bottom front panel of the ring filter insert***. Ex. 1008, ¶19; Ex. 1003, ¶122.



- F. Claim 25: The ring filter insert according to claim 15, wherein the blocking element is an axially sealing valve element which is elastically arranged on the bottom front panel.**

In Patent Owner’s infringement contentions, Patent Owner asserts that “axially sealing” refers to the “axial movement of the eccentric blocking element.” Ex. 1012, 15. Without conceding that Patent Owner’s contention is consistent with the plain and ordinary meaning of “axially sealing,” Yokoyama discloses that its “sealing member 47” moves in an axial direction

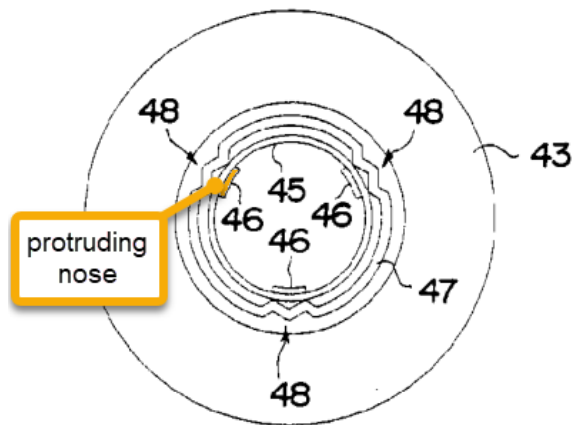
into “grooves 22” to form a seal, and is therefore ***axially sealing*** under Patent Owner’s interpretation. Ex. 1008, ¶24 (“sealing member 47 ... is pressed upward within the grooves 22”); Ex. 1003, ¶¶123-24.

Yokoyama discloses that “sealing member 47” is a ***sealing valve element*** because it forms a seal between “upper case half 10” and “filter element 40.” Ex. 1008, ¶24. As a result, liquid from “inflow pipe IP” can be filtered and flow out through “outflow pipe OP.” *Id.*, ¶28. In other words, when the sealing member forms a seal, it allows liquid to flow through the filter, thereby acting as a ***valve element***. Ex. 1003, ¶125.

Yokoyama discloses that sealing member 47 “is made of an elastic material such as rubber” and is therefore ***elastically arranged on the bottom front panel***. Ex. 1003, ¶126.

G. Claim 30: The ring filter insert according to claim 15, wherein the protruding nose protrudes radially.

Yokoyama discloses that the locking protrusions (*i.e. protruding nose*) ***protrude radially***, that is, they “protrud[e] toward the center of the opening 45.” Ex. 1008, ¶19; Fig. 4B; Ex. 1003, ¶127.

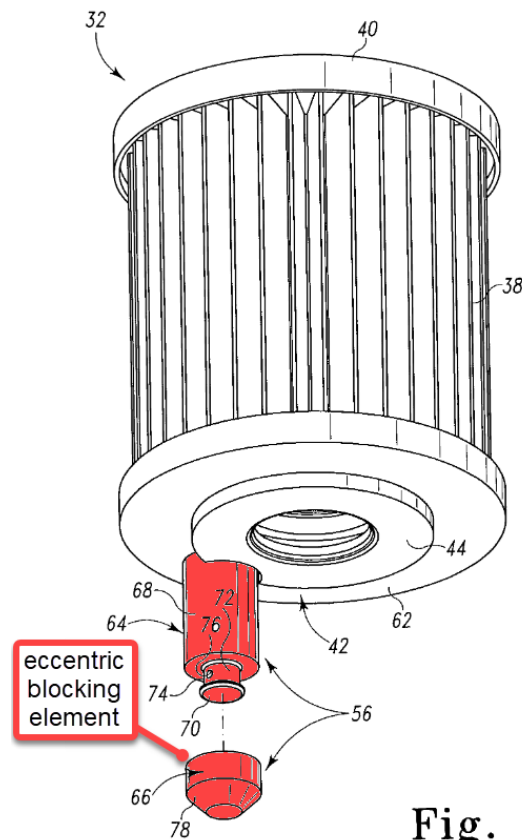


X. GROUND 2: YOKOYAMA AND CLINE RENDER OBVIOUS CLAIMS 15-17, 19, 23-25, 28-30

As discussed above, Yokoyama discloses or renders obvious every limitation of independent claim 15, including the eccentric blocking element and eccentric opening. However, in the '203 patent, the eccentric blocking element and opening provide an outlet to drain the filter housing when the insert is removed. Such a mechanism is disclosed in Cline, and it would have been obvious to combine Yokoyama with Cline's eccentric blocking element and opening to provide a draining mechanism. Ex. 1003, ¶128.

A. Motivation to Combine Yokoyama and Cline

A POSITA would have been motivated to combine Yokoyama's filter with Cline's eccentric drain valve. Ex. 1003, ¶129. Cline teaches a filter insert that has an eccentric "flow blocker" which blocks an eccentric quick-drain outlet for draining the filter housing, as shown in Figure 5 below. See also Ex. 1009, ¶21.



Yokoyama does not disclose any such draining mechanism. A POSITA would have been motivated to use Cline's eccentric draining mechanism because of its well-known benefits. Ex. 1003, ¶130. For example, Brisson discloses that “[w]hen an operator wants to change the filtering element, it is desirable that he does not receive any oil splashes and that the oil does not flow onto the outer walls of the filter housing and onto the other engine components. It is also desirable that a minimum amount of oil be lost when changing the filter element.” Ex. 1005, ¶¶2-3. Brisson teaches that it was known such things could be accomplished by “draining the housing when

changing the filter cartridge.” *Id.*, ¶9. In view of these well-known benefits, a POSITA would have looked to Cline’s draining mechanism. Ex. 1003, ¶130.

A POSITA would have also been motivated to make this modification because of the known benefits from Cline’s relatively simple design for draining. Ex. 1003, ¶131. Cline’s design uses a “flow blocker” which is “molded onto the post 64.” Ex. 1009, ¶27. Because the flow blocker is removable and replaceable, it can be made of any size or shape to better fit the quick-drain outlet. Ex. 1003, ¶131. Cline’s simpler design allows for easy replacement of the blocking element. *Id.*

In addition, Cline’s eccentric drain valve had the well-known benefit of minimizing the amount of oil that is lost when changing the filter element. Ex. 1003, ¶132. This would provide some environmental protection, as it would avoid the disposal of a large amount of material. *Id.* Indeed, a POSITA would be motivated by Yokoyama itself, which states that the “filter element 40 is a consumable item” and is to be “replace[d].” Ex. 1008, ¶26. Thus, as well understood to a POSITA and as stated in Yokoyama, the upper and lower casings of these filters have to be disassembled (such as for example, by unscrewing the lower case half from the upper case half) to remove and replace the filter element. Ex. 1003, ¶132. A POSITA would also understand that Yokoyama recognizes that these filter elements have to be replaced and

serviced, and one of the goals of Yokoyama is ease of assembly (prevent wobble) and to prevent wear and/or damage of the seals during replacement (e.g. which can be caused by misalignment and/or friction during replacement, assembly and/or disassembly). *Id.* A POSITA would understand that an eccentric drain valve would facilitate such desired improvements. *Id.*

A POSITA would have understood that Cline's simpler design would be more reliable and less prone to damage compared to other designs. *Ex.* 1003, ¶133. Repairs would also be easier using Cline's design due to the significant reduction in parts. *Id.* Thus, given these known benefits, a POSITA would be motivated to use Cline's flow blocker and quick-drain outlet. *Id.*

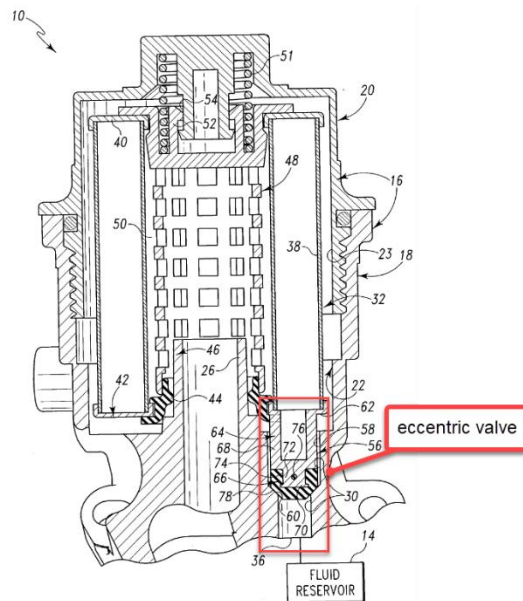
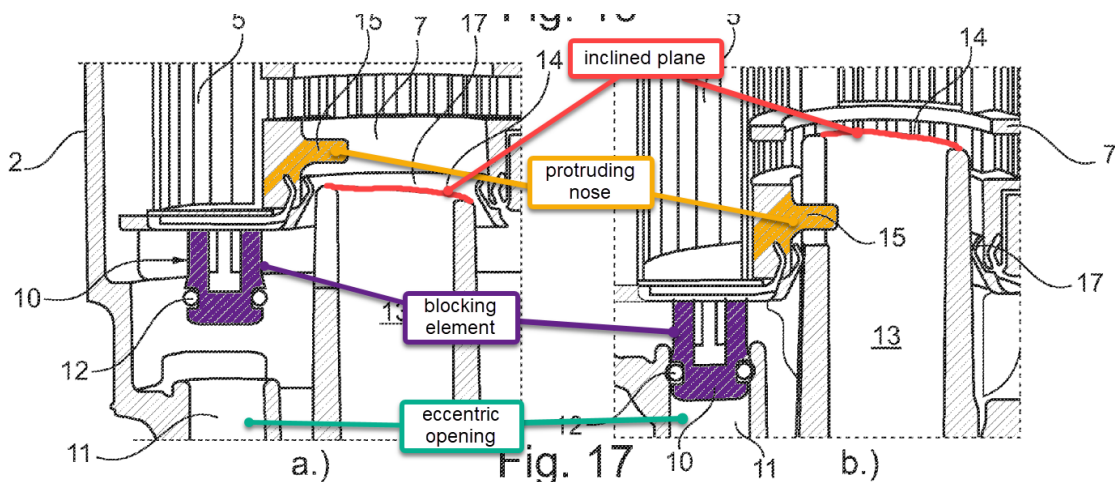
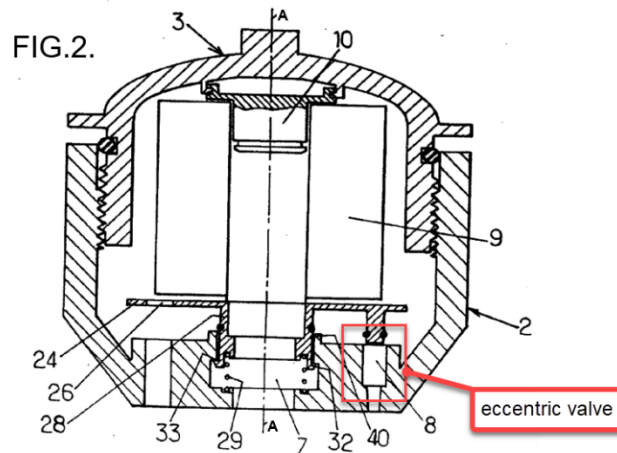


Fig. 6

Another factor that would have motivated a POSITA to make this change was the fact that eccentric drain valves were very common and well-known in the art. Ex. 1003, ¶134. Beyond Cline, an eccentric drain valve is also disclosed in Deschamps and Brisson. *Id.* For example, Deschamps discloses a “pin 10” that “is aligned coaxially flush with the channel 11,” and that the pin engages with the channel to form a seal as a filter insert rotates in the filter housing via a “guide element 15” (*i.e. a protruding nose*) “slid[ing] along guid contour 14” (*i.e. an inclined plane*).” Ex. 1010, ¶35. This mechanism is illustrated in the below annotated figure. A POSITA, knowing that an eccentric drain mechanism works reliably with a nose/inclined plane guiding mechanism, would have been motivated to provide a similar mechanism in Yokoyama. Ex. 1003, ¶135.



Similarly, Brisson discloses a “protrusion 27 which extends axially from the plate 24 to close the drain channel 8,” the protrusion and the channel being eccentric as shown below. Ex. 1005, ¶50; Figs. 1, 2; Ex. 1003, ¶136.



This modification would have also been obvious because it is the application of a known technique (eccentric drain valve) to a known device (Yokoyama’s filter) ready for improvement (the addition of an eccentric drain plug and orifice/port to drain the liquid/fluid in the filter during for example, service, maintenance, and/or replacement) to yield predictable results. Ex. 1003, ¶137. Yokoyama does not describe a drain valve, and so including Cline’s valve design would obtain the predictable result of Yokoyama’s filter using Cline’s valve design. *Id.*

A POSITA would have known that Cline’s valve design could be placed in such a way as to be sealed and engaged when Yokoyama’s filter

insert is properly oriented, such as on the “upper plate 43” next to the “sealing member 47.” Ex. 1008, ¶20; Ex. 1003, ¶138. A POSITA would be motivated to use such a design (which as shown by Deschamps was a known design) because it would prevent the draining of fluid until the filter needs to be replaced. Ex. 1003, ¶138. Yokoyama’s filter could be re-oriented so that removal of the filter insert opens the valve and allows liquid to flow out for safe disposal via the pull of gravity. *Id.*

In addition, a POSITA would have understood that having a drain plug / blocking element in an eccentric location is just a matter of simple design choice and just the substitution of one known element for another. Ex. 1003, ¶139. This choice would depend on packaging space available as well as the surrounding area and operator/tool/hand access for assembly and disassembly for routine regular service and replacement of the filter element. *Id.* For example, a POSITA would have readily recognized that vehicle engine compartments contain multiple components, and packaging these components in the limited space available is constraining. *Id.* A POSITA would also have readily understood and recognized the need for accessibility for service (for example, the need for a technician/mechanic to access by hand and tools the service plug and filter assembly for replacement and service, ideas known in the field as “Design for Service” and “Design for Assembly”). *Id.* Thus it

would have been a simple matter of design choice to a POSITA to have the drain plug / blocking element in an eccentric location depending on vehicle component packaging and accessibility for service. *Id.*

A POSITA would have also reasonably expected the combination to succeed. Ex. 1003, ¶140. Cline’s valve design is a typical valve design and modifying Yokoyama to use such a valve design would have been well within the capabilities of a POSITA. *Id.* Moreover, a POSITA would have been aware of similar designs where an eccentric valve is engaged as a filter rotates into position within a filter housing, such as described in Deschamps. *Id.* Such designs would have allowed a POSITA to expect the combination of Yokoyama and Cline to be successful. *Id.*

Finally, Yokoyama, Cline and the ’203 patent are analogous art because all three are directed to the same field of endeavor: the field of liquid filter systems with a removable filter insert. Ex. 1001, Abstract (“A liquid filter including a filter housing, a ring filter insert and a cover.”); Ex. 1008, Abstract (“To provide a filter device having a structure in which a filter element can be easily assembled into a filter case.”); Ex. 1009, Abstract (“A filter apparatus comprises a filter element to be positioned in an interior region defined by a housing.”); Ex. 1003, ¶141.

B. Claim 15

Aside from the claim limitations discussed below, Yokoyama discloses or renders obvious claim 15 for the same reasons discussed above in Ground 1. Ex. 1003, ¶142.

1. 15[b]: an eccentric blocking element arranged on the bottom front panel for engaging an eccentric opening in the filter housing,

In the Yokoyama-Cline combination, a “flow blocker 66” is an *eccentric blocking element*, as shown in the annotated Figure 5 from Cline below. Ex. 1003, ¶143.

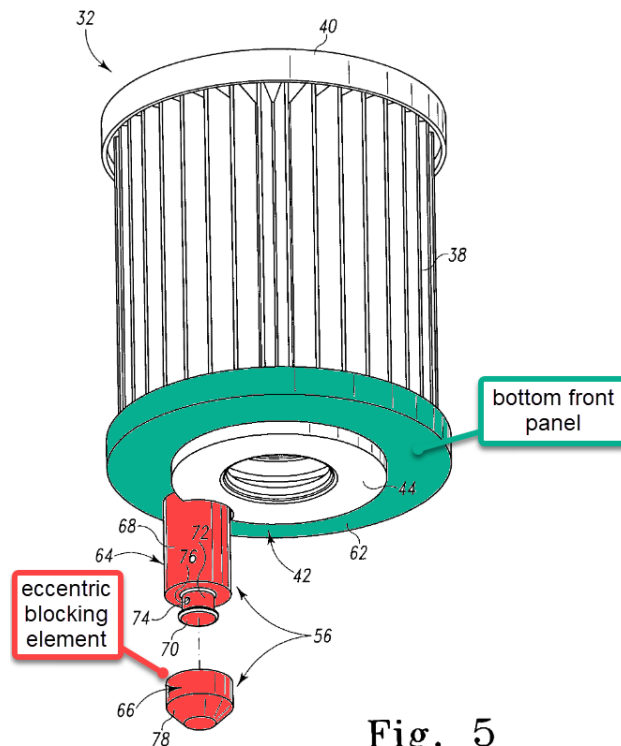


Fig. 5

Cline also discloses a “quick-drain outlet 36” (*i.e. eccentric opening*) which is depicted in Figure 6 at the bottom of cover 20 (*i.e. filter housing*).

Ex. 1009, ¶¶20-21; Fig. 6. Cline discloses that the flow blocker “engages a valve seat 60 ... to block a flow of fluid from the interior region 22 through the quick-drain outlet 36,” thus the flow blocker is a block element **for engaging the eccentric opening**. *Id.*, ¶25; Ex. 1003, ¶¶144-45.

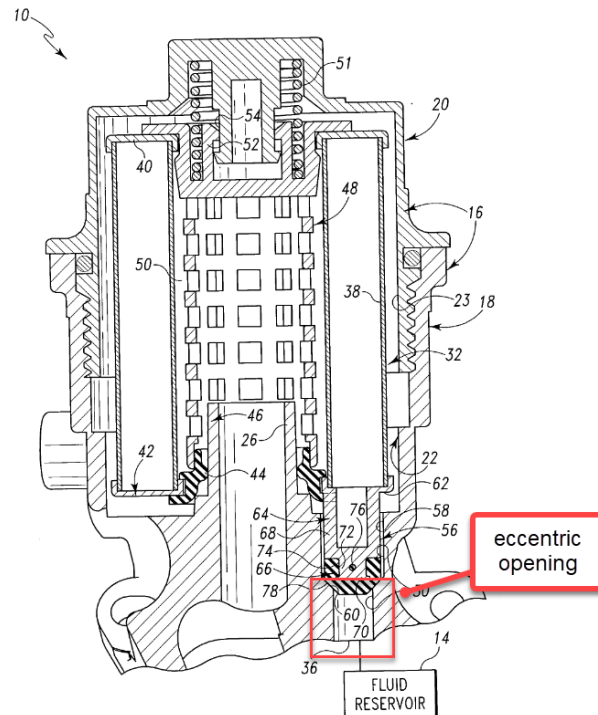


Fig. 6

2. 15[c]: first positioning means on the ring filter insert, which interact with second positioning means on the filter housing when the ring filter insert is inserted into the filter housing and which are arranged to bring the blocking element into engagement with the eccentric opening,

As discussed above for claim 1, Yokoyama discloses “**first positioning means on the ring filter insert, which interact with second positioning means on the filter housing when the ring filter insert is inserted into the**

filter housing,” and specifically protrusions that slide along side walls of a pleated portion. Ex. 1003, ¶¶146-47.

In the Yokoyama-Cline combination, when the protrusions have slid along the pleated portion and entered depressions 21, Cline’s flow blocker “engages a valve seat 60 ... to block a flow of fluid from the interior region 22 through the quick-drain outlet 36,” and thus the positioning means are ***arranged to bring the blocking element into engagement with the eccentric opening***. Ex. 1009, ¶25; Ex. 1003, ¶148.

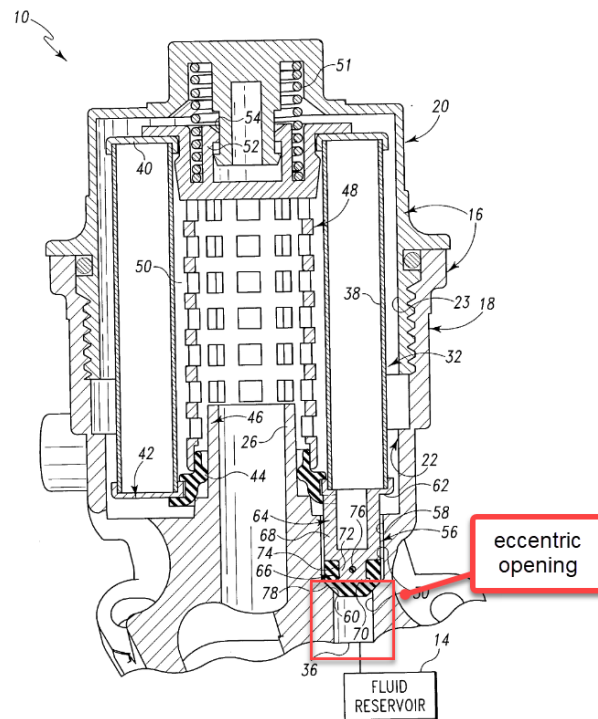


Fig. 6

3. 15[e]: the inclined plane and the nose arranged to be moved in relation to each other in such a way that they slide along each other and bring the blocking element into engagement with the eccentric opening

As discussed above for limitation 15[d], when Yokoyama's protrusion slides along the inclined plane and enters depressions 21, Cline's flow blocker "engages a valve seat 60 ... to block a flow of fluid from the interior region 22 through the quick-drain outlet 36," thereby **bringing the blocking element into engagement with the eccentric opening**. Ex. 1009, ¶25; Ex. 1003, ¶¶149-50.

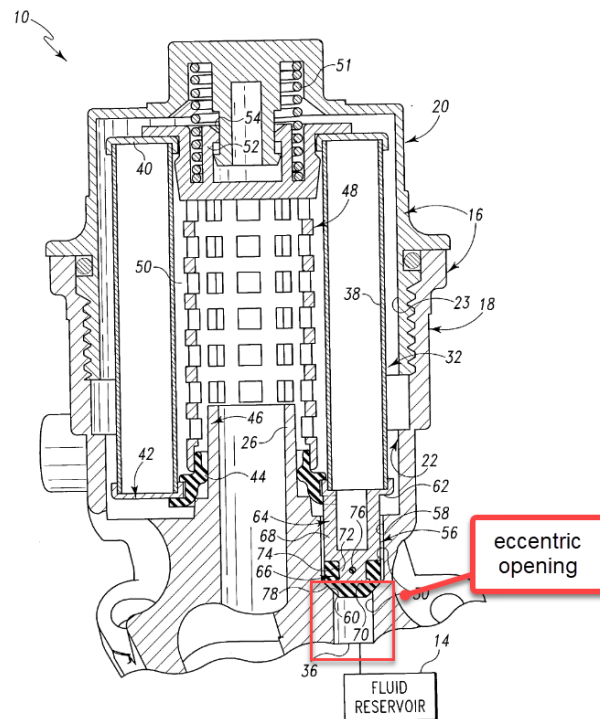
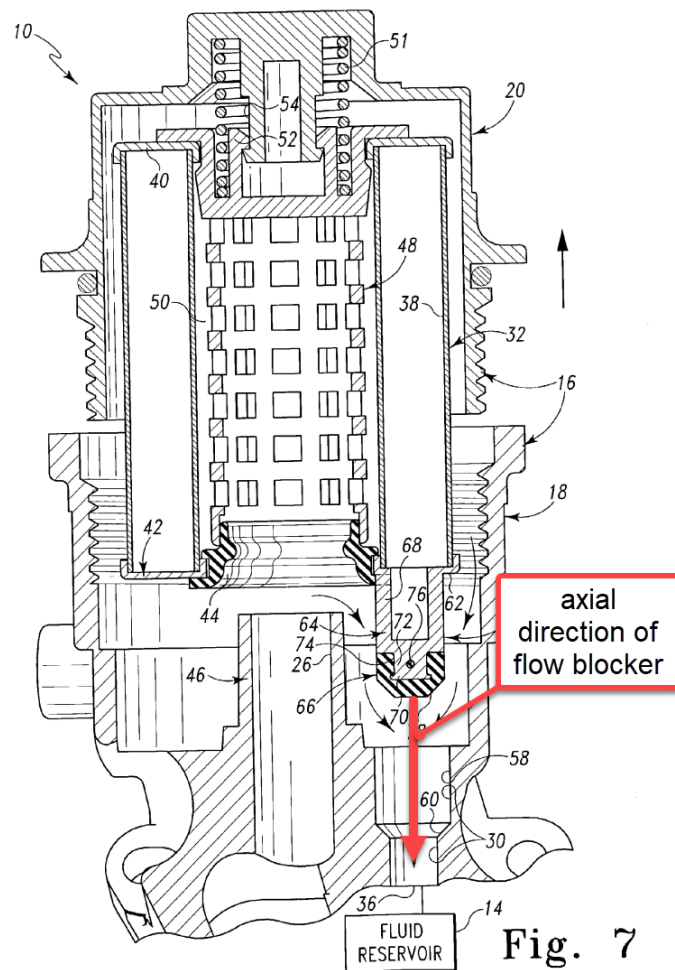


Fig. 6

- C. **Claim 24: The ring filter insert according to claim 15, wherein the blocking element is one of a radially sealing valve element, an axially sealing valve element, and a radially sealing plug which is one of rigidly connected to the lower front panel and rigidly arranged on the lower front panel.**

As discussed above, Patent Owner’s apparent construction of “axially sealing” means a sealing element that moves in an axial direction. See Ex. 1012, 15. Under this construction, Cline discloses that valve element “flow blocker 66” (**blocking element**) moves in an axial direction, as shown below in annotated Figure 7, and is therefore **an axially sealing valve element**. Ex. 1003, ¶151.



In the alternative, Cline discloses a **radially sealing plug** because when “flow blocker 66” seals the valve seat 60, the direction of the sealing pressure is in a radial direction, as depicted in Figure 6 below. Ex. 1003, ¶152. Specifically, Cline discloses that “flow blocker 66 comprises a surface 78 ... for engaging the valve seat 60” and that “surface 78 and the valve seat 60 are ... frusto-conical in shape.” Ex. 1009, ¶29.

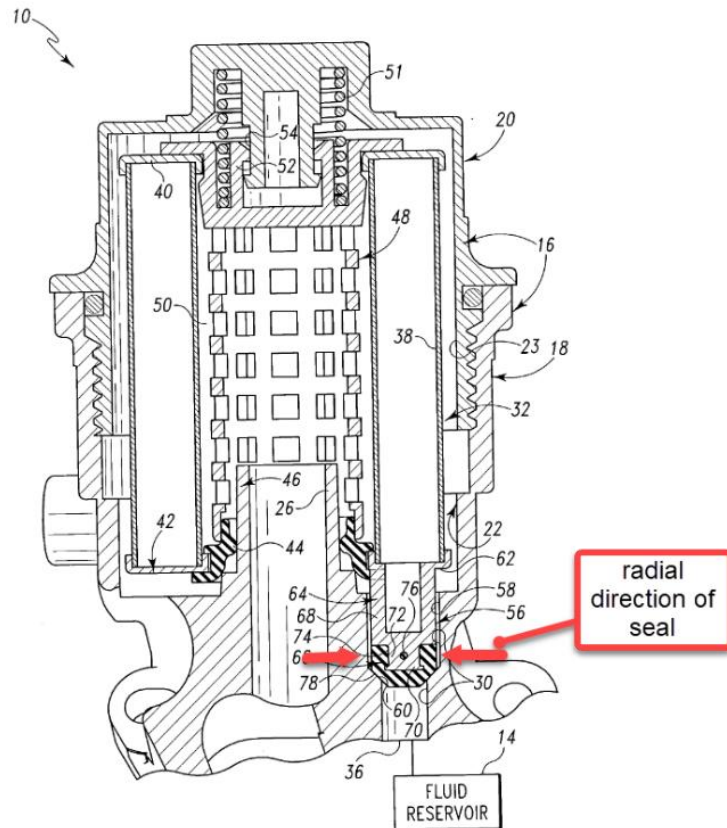
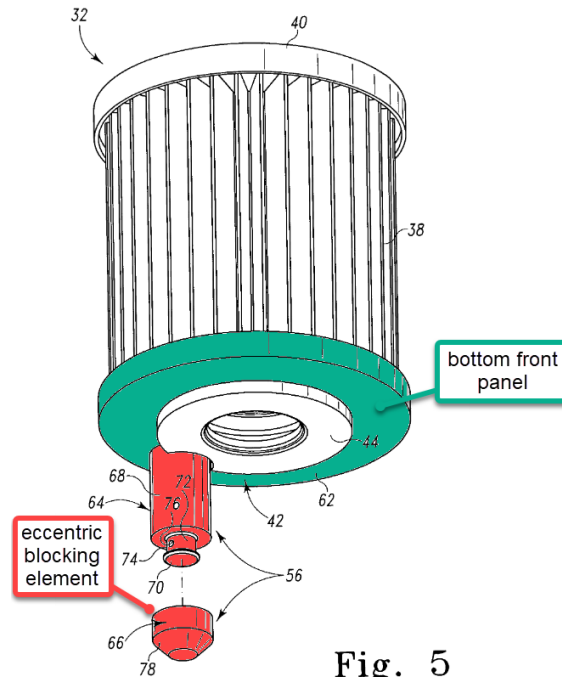


Fig. 6

Cline further discloses that the flow blocker is **rigidly arranged on the bottom panel** because it is “secured to the post 64” which is “made of a plastic

material” and is “monolithic with” the “end cap 42” of the filter element 32.

Ex. 1009, ¶27; Fig. 5; Ex. 1003, ¶153.



The Yokoyama-Cline combination uses the Cline blocking element and drain, and thus renders obvious this claim. Ex. 1003, ¶154.

D. Claim 25: The ring filter insert according to claim 15, wherein the blocking element is an axially sealing valve element which is elastically arranged on the bottom front panel.

As discussed above for Claim 24, under Patent Owner’s apparent construction, Cline discloses an *axially sealing valve element*. Cline further discloses that the flow blocker is *elastically arranged on the bottom front panel* because it is “made of an elastomeric material and molded onto the post.” Ex. 1009, ¶27; Ex. 1003, ¶155. The post is “made of a plastic material” and

is “monolithic with” the “end cap 42” of the filter element 32, and thus is part of the bottom front panel. Ex. 1009, ¶127.

In the alternative, Cline discloses an *axially sealing valve element* because the direction of sealing pressure is in an *axial direction*. Ex. 1003, ¶156.

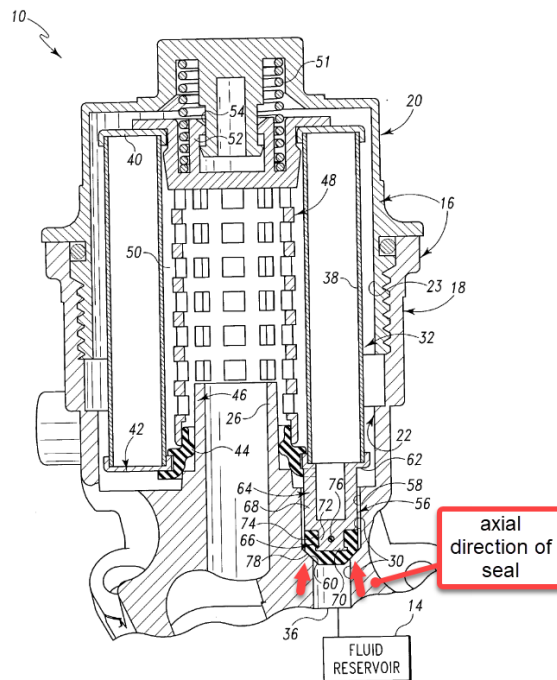


Fig. 6

The Yokoyama-Cline combination uses the Cline blocking element and drain and thus renders this claim obvious. Ex. 1003, ¶157.

- E. **Claim 28: The ring filter insert according to claim 15, wherein the blocking element is formed from two parts, the two parts of the blocking element being engaged with each other in a manner allowing a compensation of radial dimension tolerances and angle errors.**

Cline discloses that its **blocking element** is **formed from two parts**: a “flow blocker 66” which is secured to a “post 64.” Ex. 1009, ¶25. Because the “flow blocker 66” is “made of an elastomeric material and molded onto the post 64,” a POSITA would understand that the flexibility of the elastomeric material **compensates for slight differences in the radial dimension and angle error of the blocking element**. Ex. 1003, ¶158. The Yokoyama-Cline combination has this blocking element.

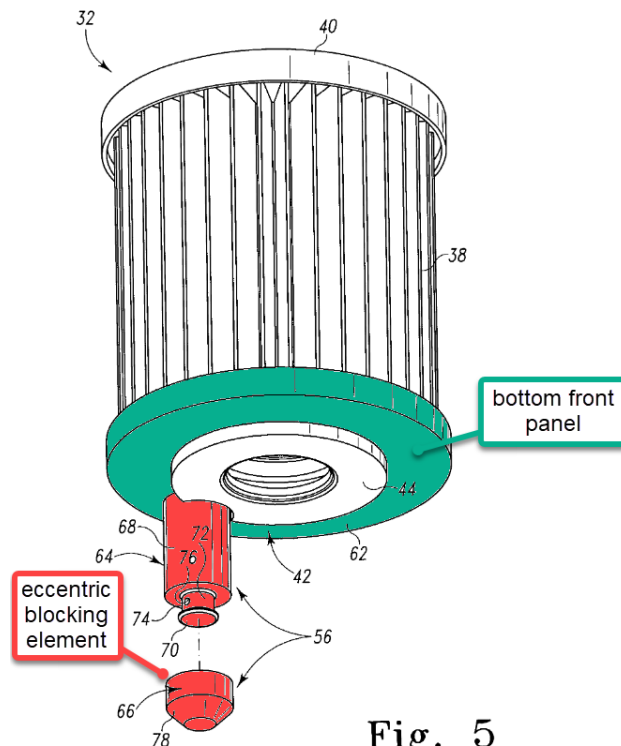


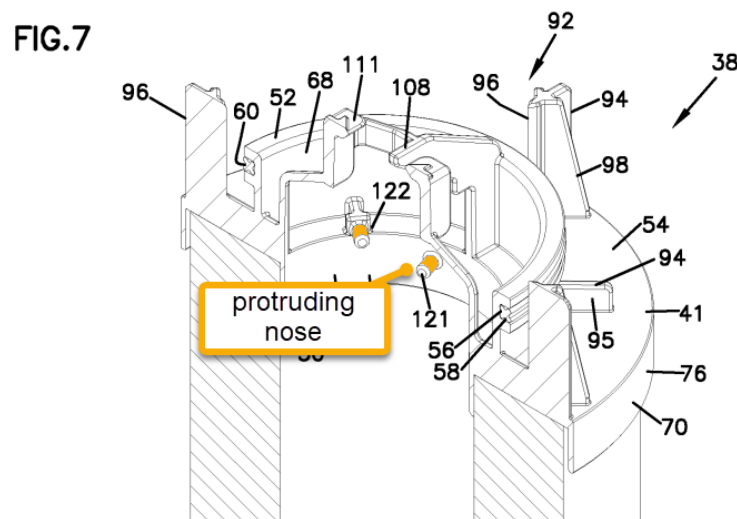
Fig. 5

F. Claims 16, 17, 19, 23, 30

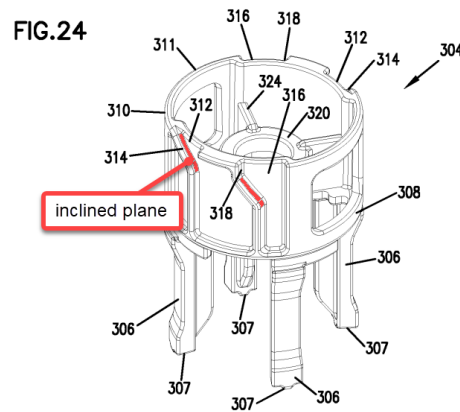
The Yokoyama-Cline combination renders obvious these claims for the same reasons discussed above in Ground 1. Ex. 1003, ¶159.

XI. GROUND 3: HONERMANN AND CLINE RENDER CLAIMS 1, 3, 5, 8-11, 15, 17, 19, 23-25, 28-30

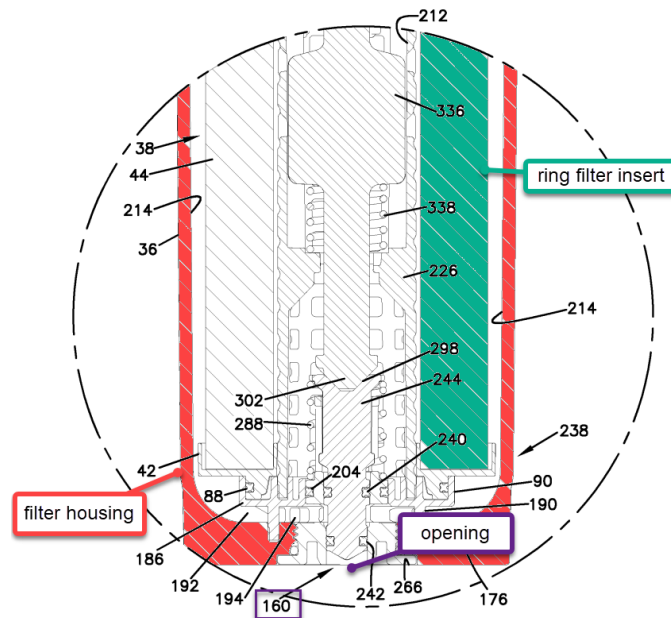
As with Yokoyama, Honermann also discloses a replaceable filter cartridge that is inserted into a filter housing. In order to guide the cartridge to the proper orientation within the filter housing, Honermann also provides a protruding nose and inclined plane guide mechanism. Specifically, within the inner circumference of the filter cartridge are several protruding noses, as shown below:



These protruding noses slide along inclined planes on the outer circumference of a basket which is part of the filter housing. Below is a figure of the basket with inclined planes:



When the cartridge is properly oriented and inserted into the filter housing, a “drain-valve assembly” at the bottom of the filter is sealed, as shown in the below figure:



While Honermann alone discloses or renders obvious most limitations, it does not expressly disclose an eccentric blocking element or eccentric opening. Honermann does disclose a blocking element and opening, but does

not expressly disclose that they are eccentric. However, it would have been obvious to combine Honermann with Cline's blocking element and opening. Ex. 1003, ¶¶160-63.

A. Motivation to Combine Honermann and Deschamps

A POSITA would have been motivated to combine Honermann's filter with Cline's eccentric drain valve. Ex. 1003, ¶164. Cline teaches a filter insert that has an eccentric "flow blocker" which blocks an eccentric quick-drain outlet for draining the filter housing, as shown in Figure 5 below. *See also* Ex. 1009, ¶21. While Honermann also discloses a plug and opening (though not eccentric), Honermann's plug and opening is a complicated valve system, and a POSITA would have found it obvious to modify Honermann to use Cline's simpler eccentric plug and opening instead. Ex. 1003, ¶164.

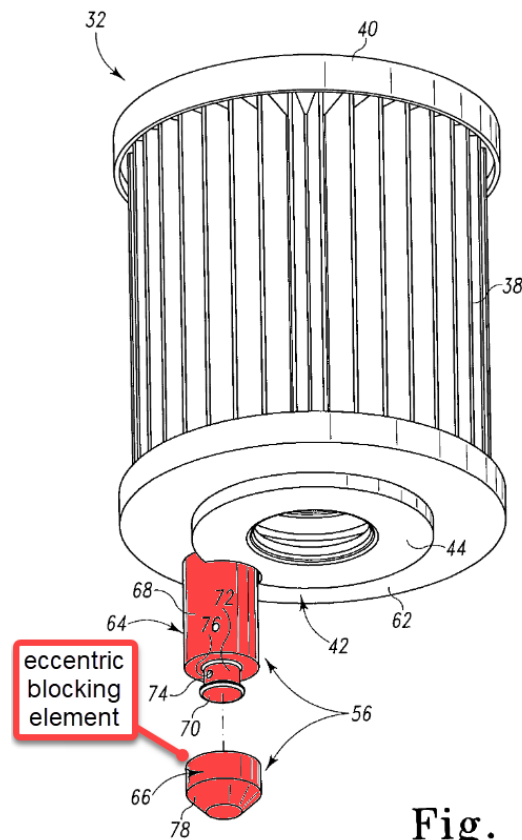


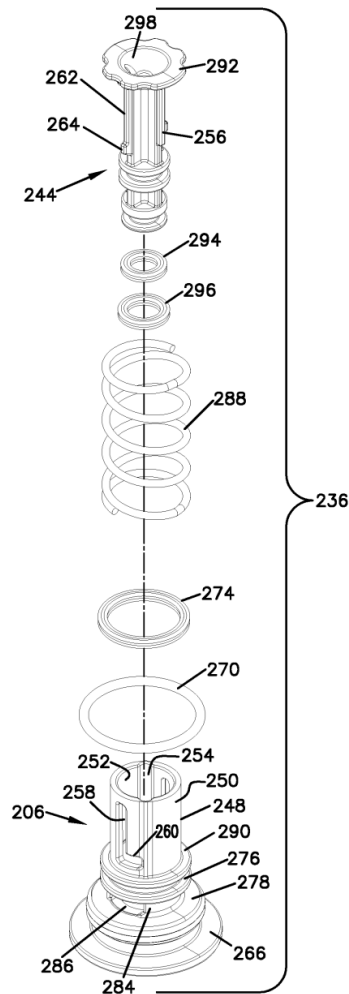
Fig. 5

A POSITA would have been motivated to make this modification because of the known benefits from Cline’s simpler design. Ex. 1003, ¶165. Cline’s design uses a “flow blocker” which is “molded onto the post 64.” Ex. 1009, ¶27. Because the flow blocker is removable and replaceable, it can be made of any size or shape to better fit the quick-drain outlet. Ex. 1003, ¶165. Cline’s simpler design allows for easy replacement of the blocking element. *Id.*

By contrast, Honermann’s plug 244 is a complicated design which requires the use of a “valve spring to move the plug into the sealed position.”

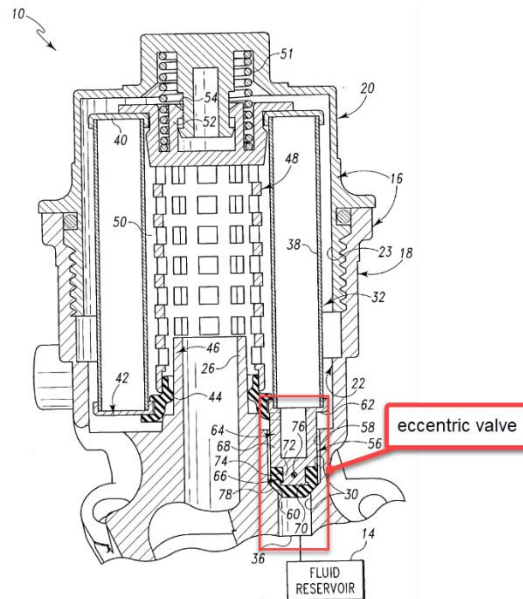
Ex. 1006, ¶188. Indeed, as shown in Figure 13, Honermann's design uses numerous parts in a complicated fashion to create an entire drain valve assembly. Ex. 1006, ¶¶124-127.

FIG.13



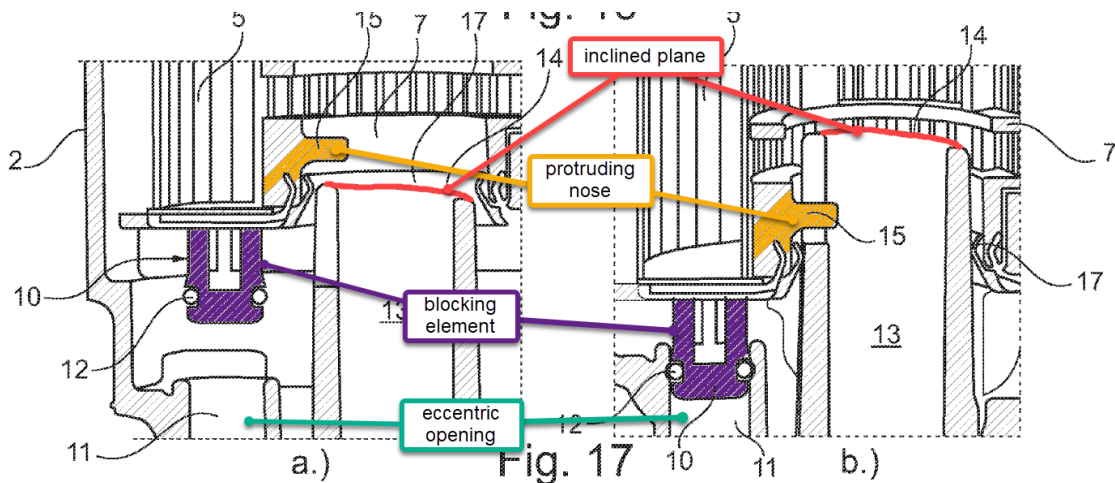
A POSITA would have understood that Cline's much simpler design would be more reliable and less prone to damage. Ex. 1003, ¶¶166-67. Repairs would also be easier using Cline's design due to the significant

reduction in parts. *Id.* Thus, given these known benefits, a POSITA would be motivated to use Cline's flow blocker and quick-drain outlet.



A POSITA would have also been motivated because Cline's flow blocker has the same function as Honermann's plug, which is to seal a valve for draining liquid when the filter insert is properly inserted, and of course to release the valve when the filter insert is removed. *See* Ex. 1010, ¶45; Ex. 1009, ¶34 ("The flow blocker 184 is secured to the flow blocker carrier 182 and comprises a frusto-conical surface 178 to engage the valve seat 60 when the filter element 132 is positioned in the interior region 22 and to disengage the valve seat 60 when the filter element 132 is removed from the interior region 22."). Given these similarities, a POSITA seeking to simplify Honermann's valve would therefore look to Cline's design. Ex. 1003, ¶168.

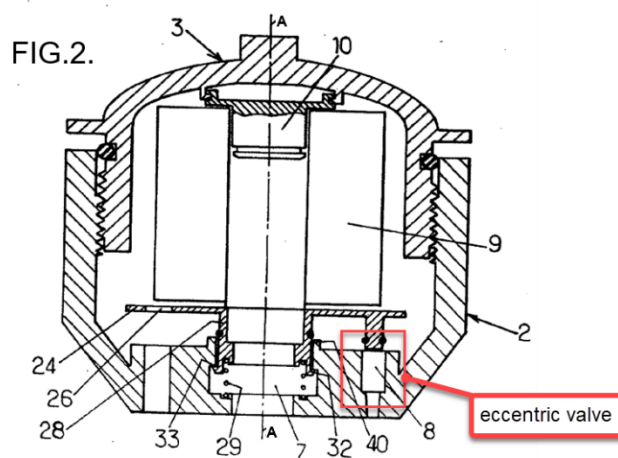
Another factor that would have motivated a POSITA to make this change was the fact that eccentric drain valves were very common and well-known in the art. Ex. 1003, ¶169. Beyond Cline, an eccentric drain valve is also disclosed in Deschamps and Brisson. For example, Deschamps discloses a “pin 10” that “is aligned coaxially flush with the channel 11,” and that the pin engages with the channel to form a seal as a filter insert rotates in the filter housing via a “guide element 15” (*i.e. a protruding nose*) “slid[ing] along guid contour 14” (*i.e. an inclined plane*).” Ex. 1010, ¶35. This mechanism is illustrated in the below annotated figure.



Deschamps also discloses that its blocking element and eccentric opening are engaged as a protruding nose slides along an inclined plane, as shown above. Ex. 1003, ¶170. This is precisely what is claimed in the '203 patent and a POSITA would have been motivated by such disclosures to

incorporate Cline's similar eccentric blocking element/opening with Honermann's similar inclined plane and nose guiding mechanism. *Id.*

Similarly, Brisson discloses a "protrusion 27 which extends axially from the plate 24 to close the drain channel 8," the protrusion and the channel being eccentric as shown below. Ex. 1005, ¶50; Figs. 1, 2; Ex. 1003, ¶171.



This modification would have also been obvious because it is the simple substitution of one known element for another to obtain predictable results. Ex. 1003, ¶172. Again, both Honermann's plug and Cline's flow blocker serve the same purpose of blocking flow when the filter insert is engaged, and draining the filter housing when the filter insert is removed. Thus, the substitution would obtain the predictable result of Honermann's filter using Cline's valve design. Honermann also teaches that its "drain-valve assembly 236 can be implemented independently of other features in the example

embodiment,” indicating that Honermann’s filter system does not require the specific drain-valve assembly disclosed in Honermann and that other valve designs, such as the simpler design in Cline, would work just as well. Ex. 1006, ¶124.

In addition, a POSITA would have understood that having a drain plug / blocking element in an eccentric location is just a matter of simple design choice and just the substitution of one known element for another. Ex. 1003, ¶173. This choice would depend on packaging space available as well as the surrounding area and operator/tool/hand access for assembly and disassembly for routine regular service and replacement of the filter element. For example, a POSITA would have readily recognized that vehicle engine compartments contain multiple components, and packaging these components in the limited space available is constraining. A POSITA would also have readily understood and recognized the need for accessibility for service (for example, the need for a technician/mechanic to access by hand and tools the service plug and filter assembly for replacement and service, ideas known in the field as “Design for Service” and “Design for Assembly”). Thus it would have been a simple matter of design choice to a POSITA to have the drain plug / blocking element in an eccentric location depending on vehicle component packaging and accessibility for service.

A POSITA would have also reasonably expected the combination to succeed. Ex. 1003, ¶174. Again, Honermann teaches that its drain-valve assembly is “independent[]” of other components and therefore can be replaced with another system. Given the discussed similarities between Honermann and Cline, a POSITA would expect the combination to successfully result in Honermann’s filter system using Cline’s flow blocker and outlet.

Finally, Honermann, Cline and the ’203 patent are analogous art because all three are directed to the same field of endeavor: the field of liquid filter systems with a removable filter insert. Ex. 1001, Abstract (“A liquid filter including a filter housing, a ring filter insert and a cover.”); Ex. 1006, Abstract (“The filter cartridge is mountable in a filter bowl 36 ...”), ¶2 (“In particular, this disclosure relates to filter assemblies and methods for use in liquid filtration, such as lube filters, hydraulic filters, and fuel filters.”); Ex. 1009, Abstract (“A filter apparatus comprises a filter element to be positioned in an interior region defined by a housing.”); Ex. 1003, ¶175.

B. Claim 1

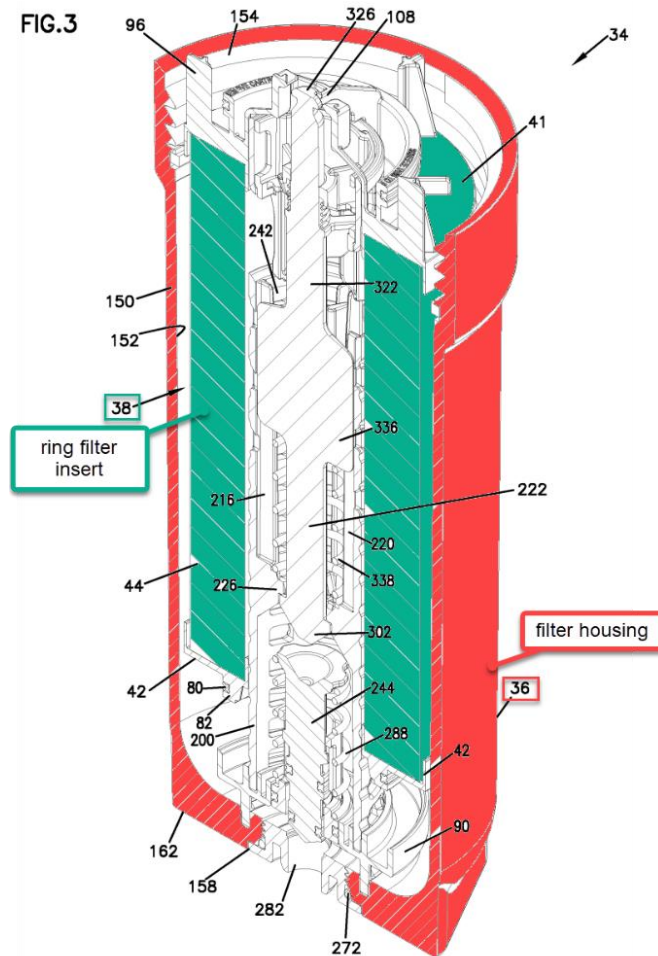
1. 1[pre]: A liquid filter, comprising:

Honermann discloses a “[l]iquid filter assembly,” “for use in liquid filtration, such as lube filters, hydraulic filters, and fuel filters.” Ex. 1006,

Title, ¶2. In Figure 1, Honermann discloses “filter assemblies 34,” which are “full-flow filters.” *Id.*, ¶77. Figure 3 depicts a filter assembly 34. Ex. 1003, ¶176.

1. 1[a]: a filter housing,

Honermann discloses that the filter assembly 34 includes “filter bowl 36 [*i.e.* **filter housing**].” Ex. 1006, ¶78; Figs. 3, 8. Honermann also discloses an “inner assembly 364” that is also part of the filter housing. *Id.*, ¶110; Ex. 1003, ¶177.



2. 1[b]: a ring filter insert, replaceably arranged in the filter housing,

Honermann discloses “a removable and *replaceable* filter cartridge 38” *i.e. ring filter insert*. Ex. 1006, ¶78; Figs 3, 6, 7. The filter cartridge 38 is “operably oriented within the filter bowl 36 [*i.e. filter housing*],” and thus *replaceably arranged in the filter housing*. *Id.*, ¶81; Fig. 3. Specifically, filter bowl 36 has a “surrounding wall 150” which defines “an open interior volume 152 for receiving and holding filter cartridge 38.” *Id.*, ¶112; Ex. 1003, ¶178.

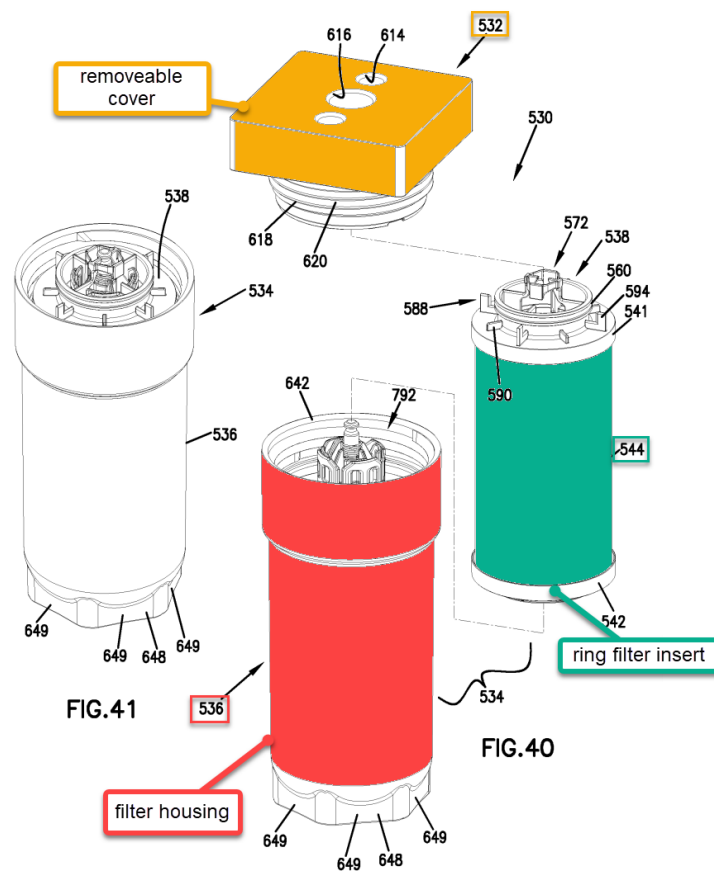
3. 1[c]: a removeable cover arranged to close the filter housing during operation,

Honermann discloses a “filter head 32” (*i.e. removeable cover*) to which one or more filter assemblies are attached. Ex. 1006, ¶¶77, 106; Fig. 1; Ex. 1003, ¶179.

filter head 32 (and thus the filter bowl is closed) during operation of the filter.

Ex. 1006, ¶106; Ex. 1003, ¶180.

Honermann also describes another embodiment using a “filter head 532” that is attached to a single filter assembly 534, which operates similar to the first embodiment. Ex. 1006, ¶197; Figs. 40-41; Ex. 1003, ¶181.

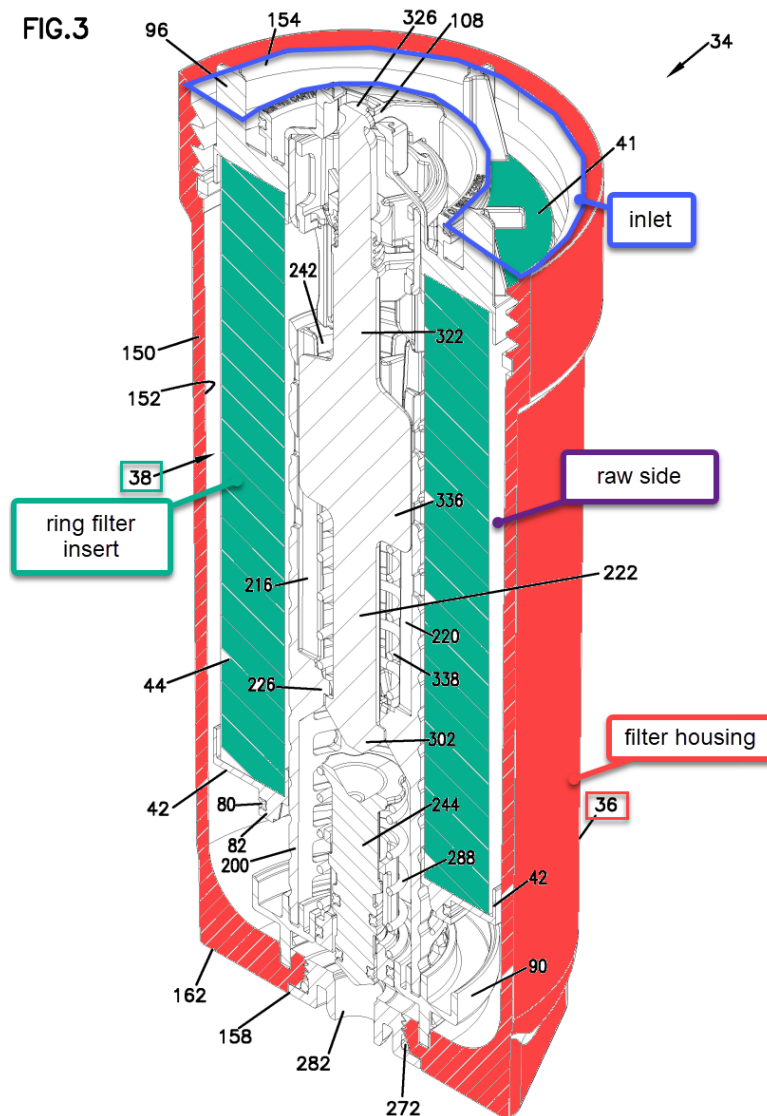


Although the filter head provides inlet conduit and outlet conduit to the filter bowl, a POSITA would understand that the plain meaning of “close the filter housing” does not require that the filter housing be completely sealed

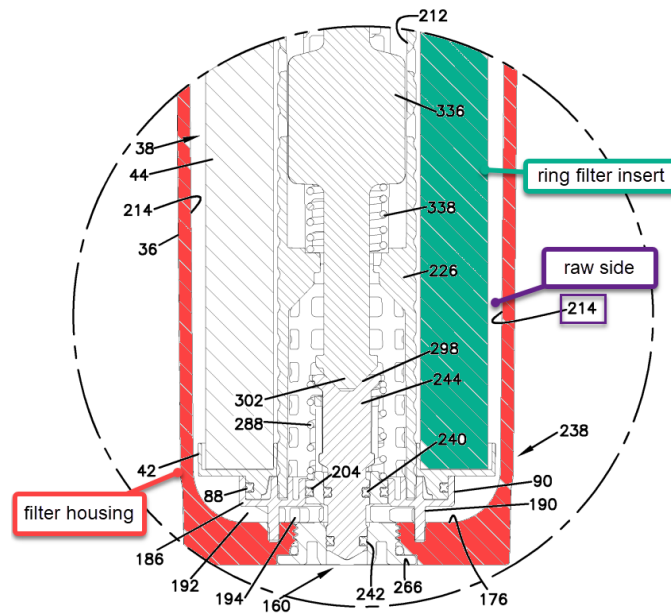
off—indeed, the filter housing would be unable to filter any liquid if it was sealed off by the removeable cover. Ex. 1003, ¶182.

4. **1[d]: the filter housing including at least one inlet for raw liquid to be filtered, which inlet leads into a raw side of the filter housing, and**

Honermann discloses this limitation as illustrated below. Ex. 1003, ¶183.

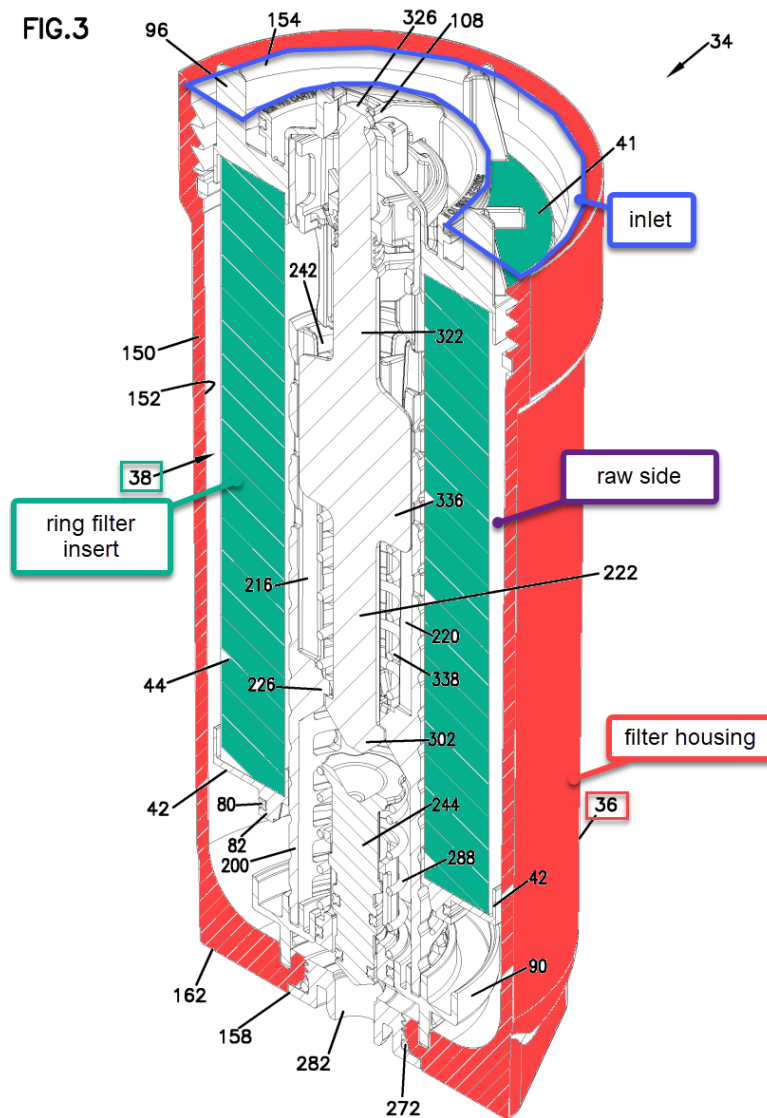


Specifically, Honermann discloses that “filter head 32 ... has an inlet conduit 128” and that “**liquid to be filtered** flows into the filter head 32 through the inlet conduit 128.” Ex. 1006, ¶106, Fig. 1; *see also* ¶215 (describing inlet conduit 614). Honermann also explains that the unfiltered liquid flows from the inlet conduit to “the unfiltered liquid volume” within the filter bowl (*i.e. raw side of the filter housing*), and “then flows through the filter media” to be filtered. Ex. 1006, ¶282; Figs. 12 (unfiltered liquid volume 214), 50 (unfiltered liquid volume 598); Ex. 1003, ¶184.



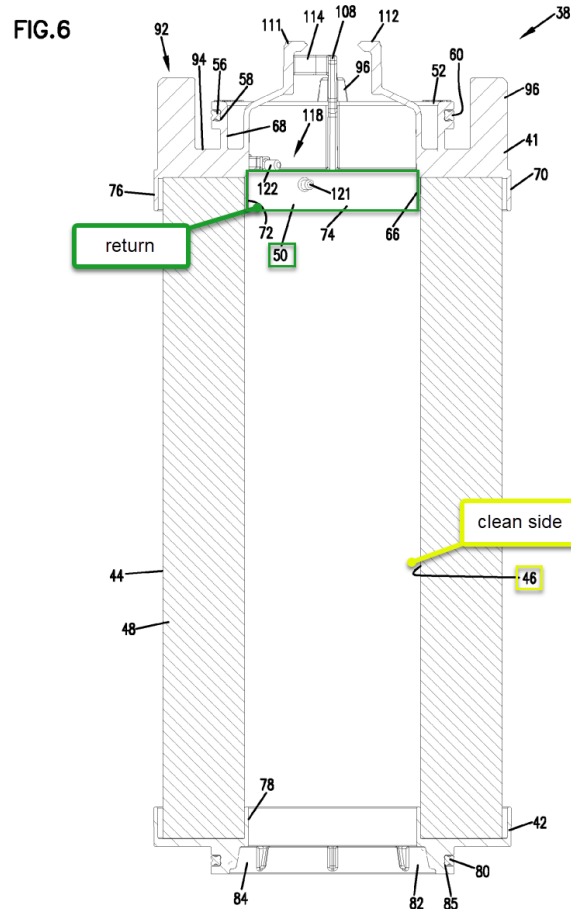
Although the inlet conduit is on the filter head (*i.e. removeable cover*) and not the filter bowl (*i.e. filter housing*), a POSITA would understand that unfiltered liquid flowing from the inlet conduit to the unfiltered liquid volume

would pass through the inlet at the top of the filter housing, as shown in the annotated Figure 3 below. Ex. 1003, ¶185.



5. 1[e]: a return extending from a clean side of the filter housing for filtered clean liquid,

As shown in the annotated Figure 6 below, Honermann discloses *a return extending from a clean side of the filter housing for filtered clean liquid*. Ex. 1003, ¶186.

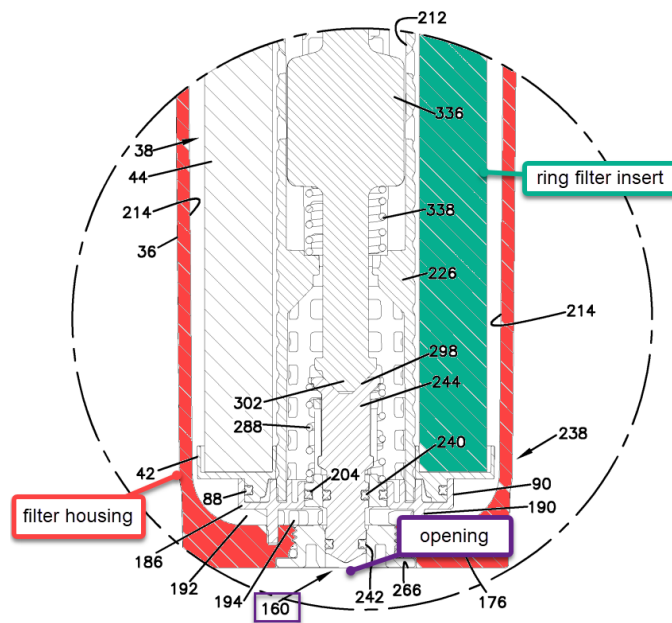


Specifically, Honermann discloses that after the unfiltered liquid flows through the filter media, it then flows “into the filtered liquid volume” (*i.e.* ***clean side***) then “through the first open aperture” (*i.e.* ***return***) then “through the open aperture ... of the adaptor and then through the outlet conduit ... of the filter head.” Ex. 1006, ¶282; *see also* ¶86 (“[F]luid to be filtered flows through the media 44, which functions to remove particulate or other debris from the fluid before flowing into the open filter [interior] 46.”); Fig. 6

(depicting open filter interior 46 and first open aperture 50); Fig. 50 (depicting filtered liquid volume 674 and first open aperture 550); Ex. 1003, ¶187.

6. 1[f]: an eccentric opening arranged in a bottom of a filter housing,

Honermann discloses a “fluid outlet port 282” that is part of a “drainage aperture arrangement 160” (*i.e. opening*) that is at the bottom of the filter bowl (*i.e. filter housing*). Ex. 1006, ¶126; Fig. 12. When the drainage aperture arrangement is not plugged, liquid will flow from “the interior volume 152 of the bowl 36 through the drainage aperture arrangement 160.” *Id.* Thus, it is an opening. Ex. 1003, ¶¶188-89.



Honermann does not expressly disclose that the opening is eccentric. However, eccentric drain openings were well-known in the art. Ex. 1003,

¶190. For example, Cline discloses *an eccentric opening arranged in a bottom of a filter housing*. Cline discloses a “quick-drain outlet 36” which is depicted in Figure 6 at the bottom of cover 20 (*i.e. filter housing*). Ex. 1009, ¶¶20-21; Fig. 6.

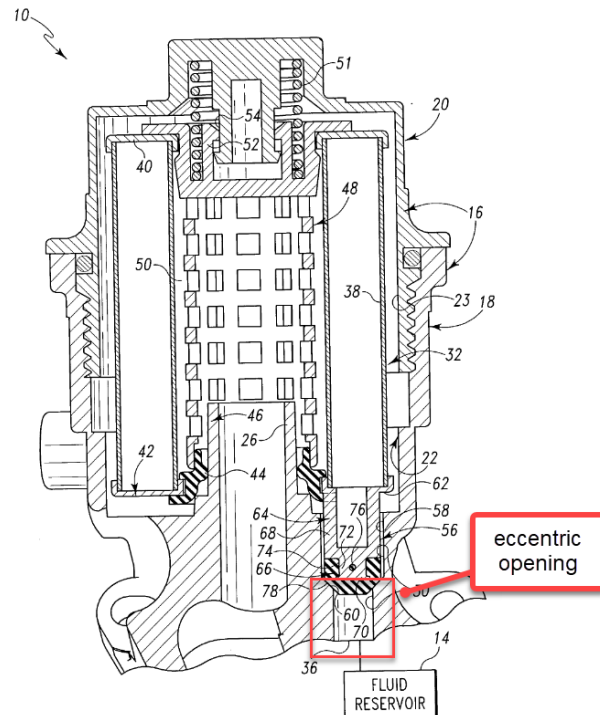


Fig. 6

As discussed above, it would have been obvious to modify Honermann’s opening to be eccentric in accordance with Cline’s teachings. Ex. 1003, ¶191.

7. 1[g]: the ring filter insert comprising a hollow-cylindrical filter material body, surrounded on the front sides by top and bottom from panels, the ring filter insert separating the raw side of the filter housing and the clean side of the filter housing from each another,

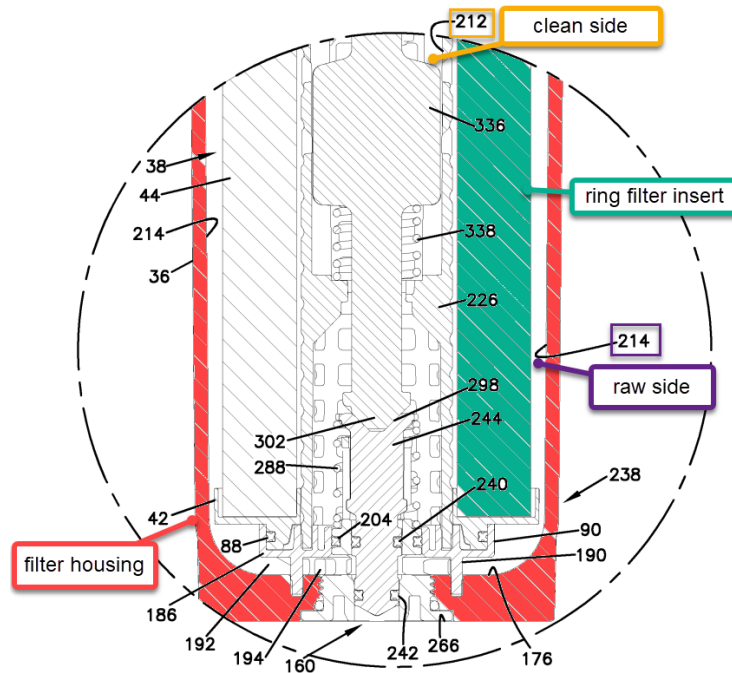
“the ring filter insert comprising a hollow-cylindrical filter material body”: Honermann discloses that the filter cartridge (*i.e.* ***ring filter insert***) includes “a ***tubular*** construction of filter media 44,” which “is cylindrical in construction and defines an open filter interior 46,” *i.e.* is ***hollow***. Ex. 1006, ¶85. The filter media “functions to remove particulate or other debris.” *Id.*, ¶86. This media can be “pleated media” and includes “cellulose, synthetic, and blends of synthetic and cellulose.” *Id.*, ¶85; Ex. 1003, ¶¶192-93.

“the ring filter insert ... surrounded on front sides by top and bottom front panels”: Honermann discloses that the filter cartridge (*i.e.* ***ring filter insert***) includes “first and second opposite endcaps 41, 42,” and that the media extends “between the first and second endcaps,” such as shown in Figure 6. Thus, the filter material body is ***surrounded on front sides by top and bottom front panels***. Ex. 1003, ¶194.



“the ring filter insert separating the raw side of the filter housing and the clean side of the filter housing from each another”: As depicted in the annotated Figure 12 below, the filter cartridge (i.e. **ring filter insert**) separates unfiltered liquid volume 214 (i.e. **raw side**) and filtered liquid volume 212 (i.e. **clean side**) from each other. See Ex. 1006, ¶282 (“[L]iquid flows into the unfiltered liquid volume [and] is prevented from bypassing the filter media

[and] then flows through the filter media ..., and then into the filtered liquid filter volume.”); Ex. 1003, ¶195.



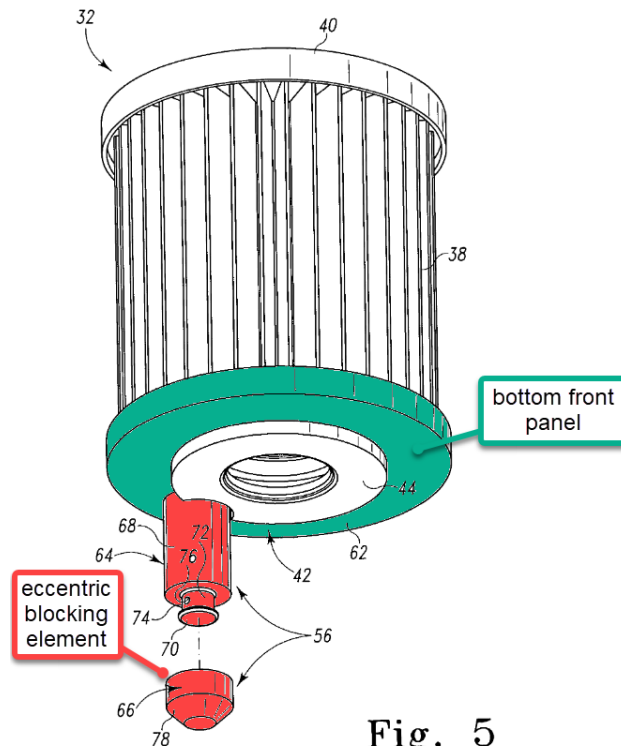
8. 1[h]: an eccentric blocking element for the eccentric opening arranged on the bottom front panel,

Honermann discloses a “plug 244,” i.e. **blocking element**, that “is movably oriented between the sealed position 238 ... and a drainage position 246.” Ex. 1006, ¶126; Figs. 10, 12. As depicted in Figure 12, in the sealed position, the plug “block[s] fluid flow between the interior volume 152 of the bowl 36 and the drainage aperture arrangement 160,” i.e. **eccentric opening**. Ex. 1003, ¶¶196-97.

Honermann does not expressly disclose that the plug is eccentric or that it is arranged on the bottom front panel. However, eccentric plugs arranged

on the bottom of a filter insert were well-known in the art. Ex. 1003, ¶198. For example, Cline discloses an *eccentric blocking element for the eccentric opening arranged on the bottom front panel*.

Specifically, Cline discloses a “flow blocker 66” which is secured to a “post 64” that is arranged on the bottom front panel of filter element 32. Ex. 1009, ¶25; Fig. 5. Cline discloses that the flow blocker “engages a valve seat 60 ... to block a flow of fluid from the interior region 22 through the quick-drain outlet 36,” thus the flow blocker is a block element *for the eccentric opening*. *Id.*, ¶25; Ex. 1003, ¶199.



As discussed above, it would have been obvious to a POSITA to modify Honermann to use an eccentric blocking element at the bottom of the filter insert in accordance with Cline. Ex. 1003, ¶200.

9. **1[i]: first and second interacting positioning means each on one of the ring filter insert and the filter housing and arranged to bring the blocking element into engagement with the eccentric opening when the ring filter insert is inserted into the filter housing,**

1[j]: the first positioning means comprising an inclined plane,

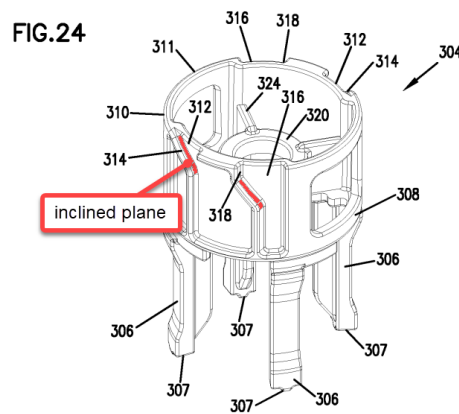
1[k]: the second positioning means comprising a protruding nose which is arranged opposite the inclined plane, and

As discussed herein, in Honermann, the first positioning means (inclined plane) is on the filter housing and the second positioning means (protruding nose) is on the ring filter insert. Ex. 1003, ¶¶201-03.

“first ... interacting positioning means ... on ... the filter housing [and] comprising an inclined plane”: As discussed above, the first interacting position means is not a means-plus-function term. However, to the extent Patent Owner argues that it is, the corresponding structure of a first interacting position means comprising an inclined plane on a filter housing is 8:27-51, 12:14-26, 14:34-51, Figs. 7, 29, 37, and their equivalents. Ex. 1003,

¶204. As discussed below, this structure is disclosed by Honermann. Ex. 1003, ¶¶205-06.

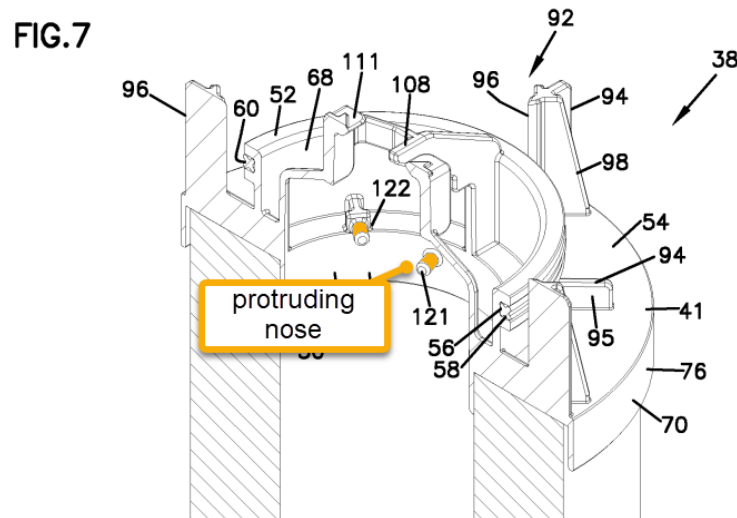
Honermann discloses a “basket 304,” *i.e. first interacting positioning means*. Ex. 1006, ¶138. The basket 304 is part of the filter housing as depicted in Figure 8. The basket 304 has a “grooved wall 310” which has “a first groove 312 with a first slide surface 314,” *i.e. an inclined plane*. *Id.*, ¶141. The grooved wall has other slide surfaces as well.



“second interacting positioning means ... on ... the ring filter insert [and] comprising a protruding nose which is arranged opposite the inclined plane”: As discussed above, the second interacting position means is not a means-plus-function term. However, to the extent Patent Owner argues that it is, the corresponding structure of a second interacting position means comprising an inclined plane on a filter housing is 8:33-51, 8:63-67, 12:36-45, 14:12-20, 14:60-64, Figs. 8, 30, 35, and their equivalents. Ex. 1003, ¶207.

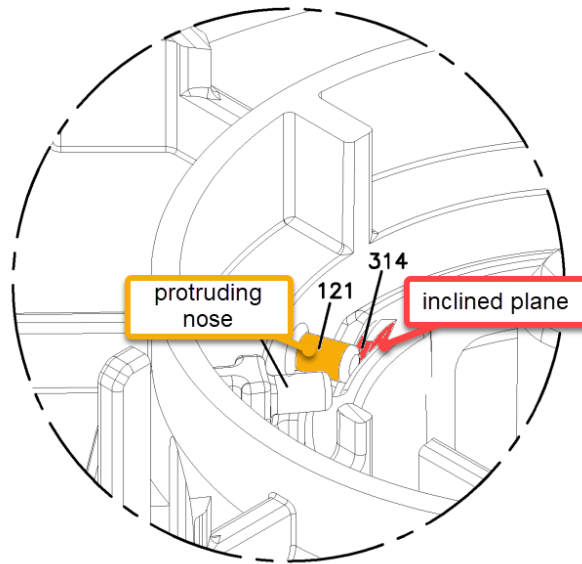
As discussed below, this structure is disclosed by Honermann. Ex. 1003, ¶¶208-10.

Honermann discloses that “filter cartridge 38 [*i.e.* **ring filter insert**] ... includes a protrusion arrangement 118 [*i.e.* **second interacting positioning means**],” which includes “first and second protrusions 121, 122 [*i.e.* **protruding nose**] extending from the aperture wall 66” of the filter cartridge. Ex. 1006, ¶98.



These protrusions engage with the slide surfaces, and thus are **arranged opposite the inclined plane**. Ex. 1006, ¶143. Figure 30 depicts this arrangement.

FIG.30



“arranged to bring the blocking element into engagement with the eccentric opening when the ring filter insert is inserted into the filter housing”: Honermann teaches that the protrusions and slide surfaces operate as a “lock-out mechanism” that “ensures that the filter system 30 cannot be operated unless the filter cartridge 38 [*i.e. ring filter insert*] has been operably assembled within the filter bowl 36 [*i.e. filter housing*].” Ex. 1006, ¶¶174, 178; Ex. 1003, ¶211. Thus, “[w]hen the filter cartridge 38 is properly and operably positioned in the filter bowl 36, the first protrusion 121 comes in contact or engages the ramped first slide surface 314 of the basket 304.” *Id.*, ¶178.

Honermann also teaches that when “the filter cartridge 38 is operably positioned in the filter bowl 36 ... the drain-valve assembly 236 is in a sealed

position 238,” where “plug 244 [*i.e. blocking element*] block[s] fluid flow between the interior volume 152 of the bowl 36 and the drainage aperture arrangement 160 [*i.e. eccentric opening*].” Ex. 1006, ¶¶124, 126. In other words, the protrusion and slide surfaces are arranged to properly position the filter cartridge into the filter bowl (*i.e. when the ring filter insert is inserted into the filter housing*), which also results in *bringing the blocking element into engagement with the eccentric opening*. Ex. 1003, ¶212.

Moreover, in the Honermann-Cline combination, the blocking element enters the eccentric opening when the filter cartridge has been properly rotated and inserted into the filter bowl. Ex. 1003, ¶213.

10. 1[l]: the inclined plane and the nose arranged to be movable in relation to each other in such a way that they slide along each other and bring the blocking element into engagement with the eccentric opening, by rotating the ring filter insert relative to the filter housing,

Honermann discloses that “[a]s the first protrusion 121 [*i.e. nose*] engages this first slide surface 314 [*i.e. inclined plane*], it causes the basket 304 to *rotate*.” Ex. 1006, ¶178. This rotation puts the basket in a “second locked position,” which allows the “second protrusion 122 [to] engage the second slide surface 318,” which further causes the basket to rotate to an

unlocked position. *Id.*, ¶179. Because the basket is part of the filter housing, the ring filter insert has rotated ***relative to the filter housing***. Ex. 1003, ¶214.

Once the basket is in the unlocked position, this allows “additional movement of the filter cartridge 38 in a downwardly axial direction toward the closed end 156.” Ex. 1006, ¶180. And, as discussed above, this puts the drain-valve assembly 236 in a sealed position 238,” where “plug 244 [*i.e.* ***blocking element***] block[s] fluid flow between the interior volume 152 of the bowl 36 and the drainage aperture arrangement 160 [*i.e.* ***eccentric opening***].” Ex. 1006, ¶¶124, 126. In the Honermann-Cline combination, the proper insertion of the filter cartridge results in Cline’s blocking element entering its eccentric opening. Ex. 1003, ¶215.

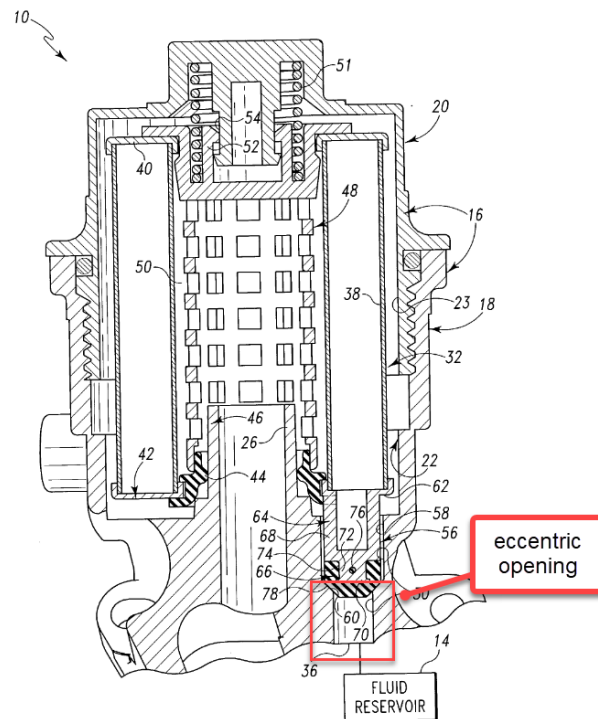


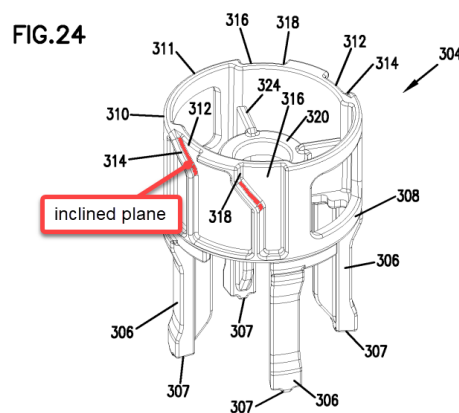
Fig. 6

Thus, the inclined plane and nose are *arranged to be movable in relation to each other in such a way that they slide along each other and bring the blocking element into engagement with the eccentric opening*. Ex. 1003, ¶216.

11. 1[m]: the inclined plane being one of embodied and arranged on one of the inner circumference of the ring filter insert and the outer circumference of a filter housing part arranged inside the ring filter insert and the protruding nose being one of embodied and arranged on the other of the inner circumference of the ring filter insert and the outer circumference of the filter housing part,

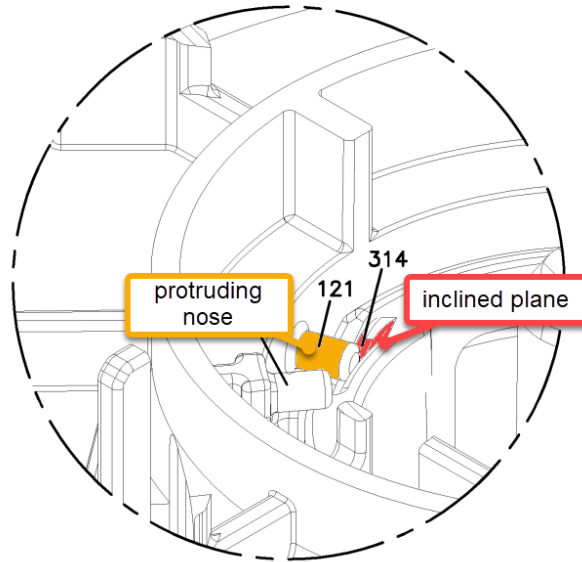
“inclined plane ... embodied and arranged on ... the outer circumference of a filter housing part arranged inside the ring filter insert”:

Ex. 1003, ¶¶217-18.



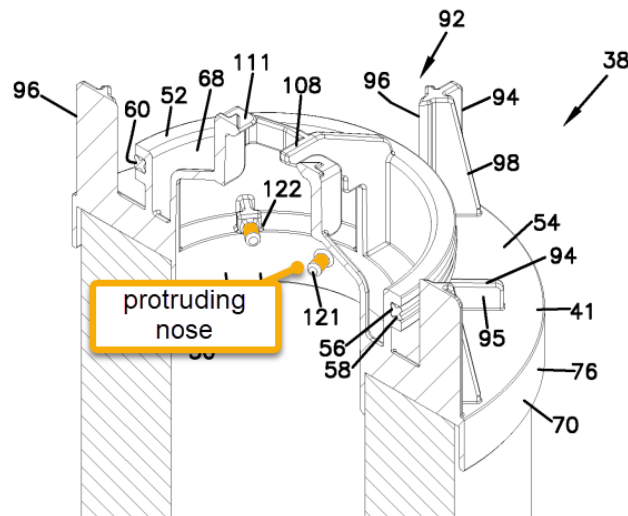
1006, ¶143; Ex. 1003, ¶219.

FIG.30



“the protruding nose ... embodied and arranged on ... the inner circumference of the ring filter insert”: Honermann discloses that “first and second protrusions 121, 122 [i.e. **protruding nose**] extend[] from the aperture wall 66” of the filter cartridge, i.e. **ring filter insert**. Ex. 1006, ¶98. As depicted in Figure 7, they are arranged on the inner circumference of the filter cartridge. Ex. 1003, ¶220.

FIG.7

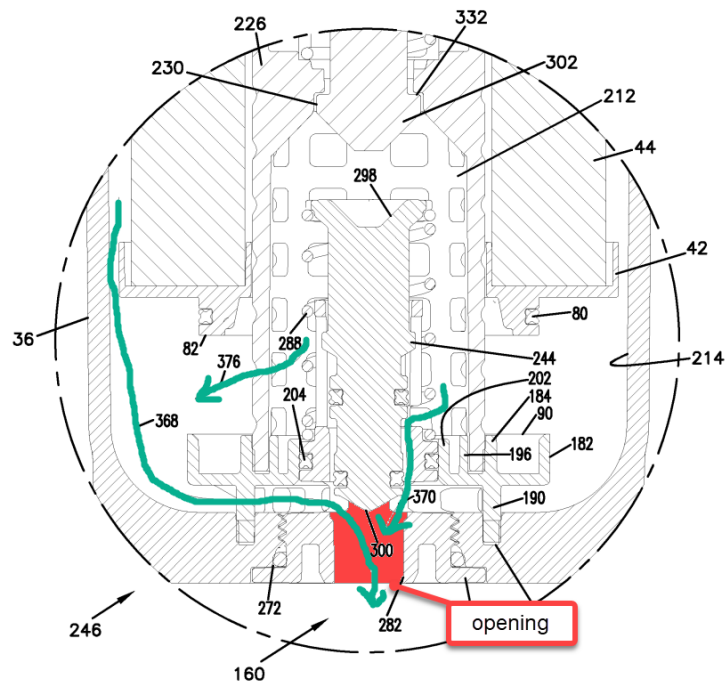


12. 1[n]: the inclined plane comprising an incline which excludes a self-locking and

Honermann discloses that as the protrusions engage with the slide surfaces, the basket rotates to an “unlocked position” which allows “additional movement of the filter cartridge 38 in a downwardly axial direction toward the closed end 156.” Ex. 1006, ¶¶179-180. Thus, the incline *excludes a self-locking mechanism*. Ex. 1003, ¶221.

13. 1[o]: the eccentric opening being an outlet for emptying the filter housing when the filter insert is removed.

Honermann discloses that a “drainage aperture arrangement 160” (*i.e. eccentric opening*) that is part of a drain-valve assembly. Ex. 1006, ¶126. Honermann further teaches that “[w]hen it is time to service the filter cartridge 38,” the cartridge is removed, causing “the plug 244 to move away ... from drain port 282,” which is part of the drainage aperture arrangement. Ex. 1006 ¶189. As a result, “[t]his allows liquid to drain from both the unfiltered liquid volume 214, shown by drain path arrow 368, as well as drain from the filtered liquid volume 212 shown by drain path arrow 370,” which *empties the filter housing*. *Id.*; Fig. 10; Ex. 1003, ¶222.



The Honermann-Cline combination uses Cline’s eccentric opening, and Cline likewise discloses that its opening is *an outlet for emptying the filter housing when the filter insert is removed*. Specifically, Cline discloses that “[t]he quick-drain valve member 56 [which includes the flow blocker] is removed from the valve chamber 58 and disengages the valve seat 60 to allow a flow of fluid from the interior region 22 through the quick-drain outlet 36 [i.e. *eccentric opening*] to the fluid reservoir 14 when the filter element 32 [i.e. *filter insert*] is *removed from the interior region 22*.” Ex. 1009, ¶25, Fig. 7; Ex. 1003, ¶223.

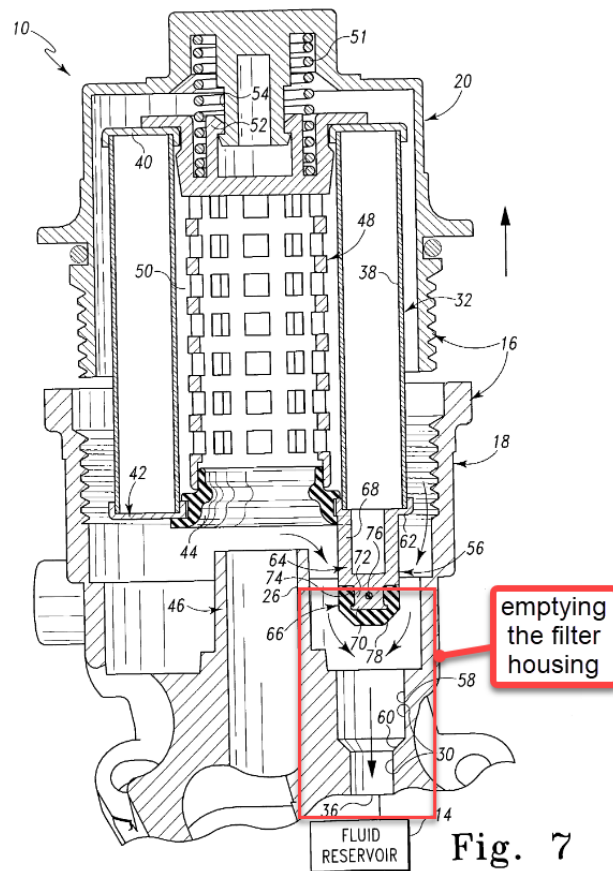
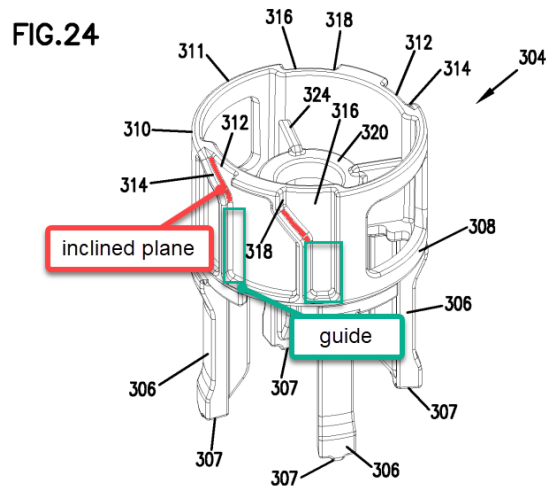


Fig. 7

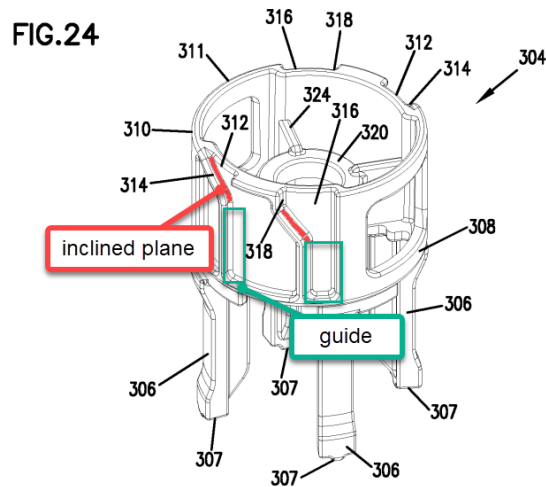
- C. **Claim 3. The liquid filter according to claim 1, including a guide for the nose which runs in an axial direction and is connected to a lower end of the inclined plane.**

Honermann discloses that as the protrusions slide on slide surfaces 314 and 318, this will “eventually allow *axial* sliding of the ... protrusion ... downwardly.” Ex. 1006, ¶179; see also ¶178 (“eventually allow the first protrusion 121 to slide down”). Figure 24 depicts the *guide for the nose* that allows the protrusion to slide down, and it runs in an *axial direction* and *is connected to a lower end of the inclined plane*. Ex. 1003, ¶224.



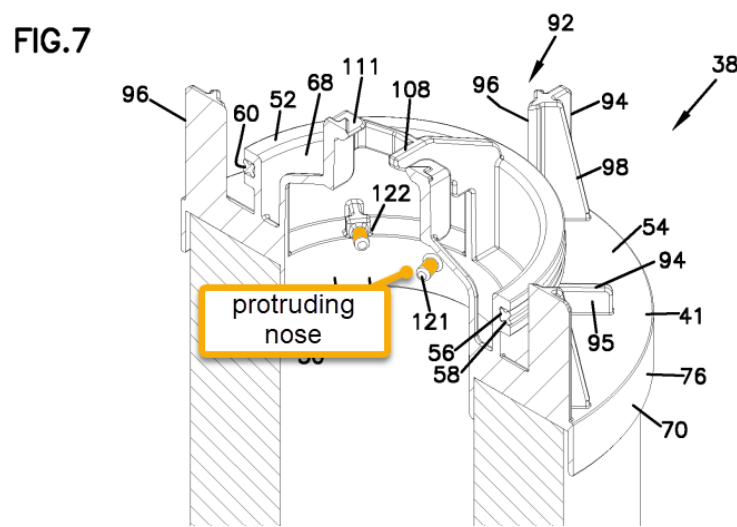
- D. Claim 5: The liquid filter according to claim 1, wherein the inclined plane is formed by one of a radially protruding rib and step, which forms a contact surface for the nose on one of an upper and lower side thereof.**

Honermann teaches that the inclined planes of basket 304 are formed by grooves within a grooved wall. Ex. 1006, ¶142. As depicted in Figure 24, the inclined planes are formed by a *radially protruding rib*, because the inclined plane protrudes radially from the grooved wall and is rib-shaped. Ex. 1003, ¶225.



E. Claim 8: The liquid filter according to claim 1, wherein the nose is formed integrally with one of the filter housing and the ring filter insert.

Honermann discloses that “filter cartridge 38 [*i.e. ring filter insert*] ... includes a protrusion arrangement 118,” which includes “first and second protrusions 121, 122 [*i.e. protruding nose*] extending from the aperture wall 66” of the filter cartridge. Ex. 1006, ¶98. Thus, a POSITA would understand that the protrusions are *formed integrally with the ring filter insert*. Ex. 1003, ¶226.



- F. **Claim 9:** The liquid filter according to claim 1, wherein the blocking element is one of a radially sealing valve element, an axially sealing valve element and a radially sealing plug which is one of rigidly connected to and rigidly arranged on the bottom front panel.

As discussed above in Ground 2, Cline discloses an *axially sealing valve element* under Patent Owner's apparent construction. Cline also discloses a *radially sealing plug*. And Cline further discloses that the blocking element is *rigidly arranged on the bottom front panel*. The Honermann-Cline combination uses the Cline blocking element and drain. Ex. 1003, ¶227.

- G. **Claim 10:** The liquid filter according to claim 1, wherein the blocking element is an axially sealing valve element which is elastically arranged on the bottom front panel.

As discussed above in Ground 2, Cline discloses an *axially sealing valve element*. Cline also discloses that the blocking element is *elastically*

arranged on the bottom front panel. The Honermann-Cline combination uses the Cline blocking element and drain. Ex. 1003, ¶228.

H. Claim 11: The liquid filter according to claim 1, wherein the outlet comprises a seat which is one of incorporated on a side of the filter housing and is inserted as a separate part and which conforms to a shape of the blocking element.

The Honermann-Cline combination renders obvious this limitation. Cline discloses that “flow blocker 66 [*i.e. blocking element*] comprises a surface 78 ... for engaging the valve seat 60 [*i.e. seat*]” and that “surface 78 and the valve seat 60 are ... frusto-conical in shape.” Ex. 1009, ¶29; Fig. 6. The valve seat therefore *conforms to a shape of the blocking element*, as also shown in Figure 6. Ex. 1003, ¶229. The seat is *incorporated on a side of the filter housing* as shown in Figure 6. These elements in Cline would have been obvious to incorporate into Honermann as explained above. *Id.*

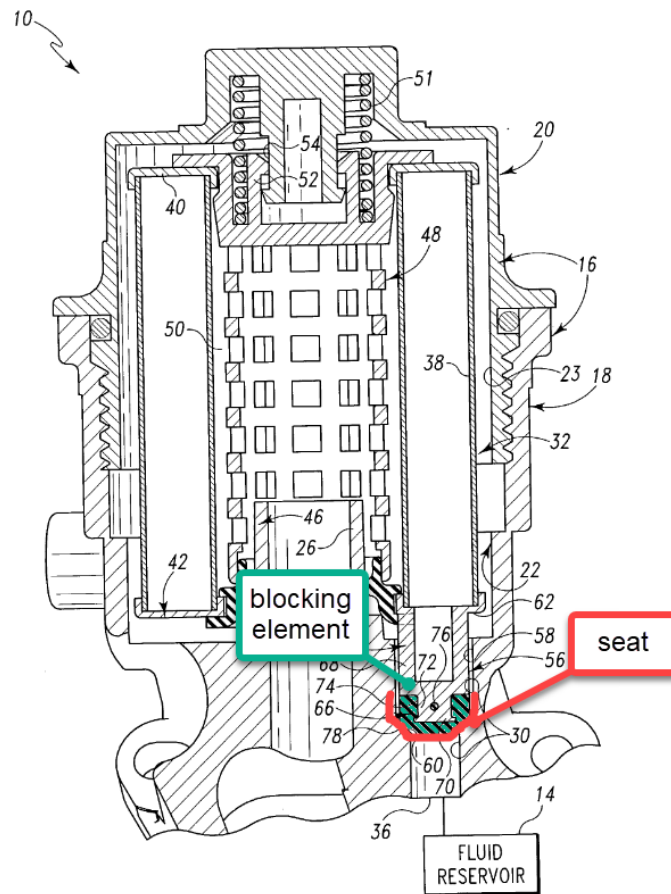
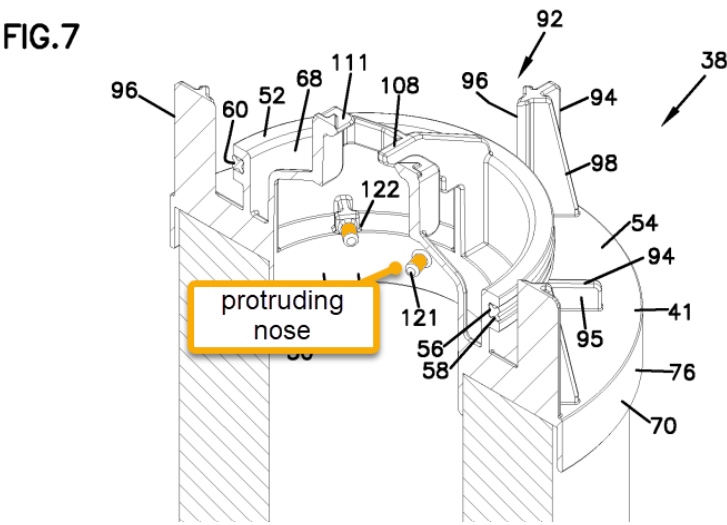


Fig. 6

I. Claim 29: The liquid filter according to claim 1, wherein the protruding nose protrudes radially.

Honermann discloses that the protrusions “extend[] from the aperture wall 66 and into the first open aperture 50,” i.e. they **protrude radially**. Ex. 1006, ¶98; Fig. 7; Ex. 1003, ¶230.



J. Claims 15, 17, 19, 23-25, 30

Claims 15, 17, 19, 23-25, and 30 mirror the above claims as set forth in the following chart. Honermann in view of Cline renders these claims obvious for the same reasons as set forth above. Ex. 1003, ¶¶231-245, 247.

Claim Limitation	Corresponding Claim Limitation(s)
15[pre]	1[pre],1[b]
15[a]	1[b],1[g]
15[b]	1[f],1[h],1[i]
15[c]	1[i]
15[d]	1[j],1[k]
15[e]	1[l]
15[f]	1[m]
17	3
19	5

Claim Limitation	Corresponding Claim Limitation(s)
23	8
24	9
25	10
30	29

K. Claim 28

As explained in Ground 2, Cline discloses this limitation. The Honermann-Cline combination uses this blocking element. Ex. 1003, ¶246.

XII. CONCLUSION

For at least the foregoing reasons, the instant petition should be instituted.

Date: February 22, 2024

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CERTIFICATE OF LENGTH (37 C.F.R. §§ 42.24(D))

The undersigned hereby certifies that, according to the word-processing system used to prepare the foregoing document, this document has 13,892 words and thus complies with the applicable word limit.

Date: February 22, 2024

By: /s/ James Glass

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CERTIFICATE OF SERVICE (37 C.F.R. §§ 42.6(E), 42.105(A))

The undersigned hereby certifies that on February 22, 2024 two copies of this petition and supporting exhibits were served on counsel of record at the mailing address below via Federal Express Standard Overnight mail, and a courtesy copy was served via email on litigation counsel at the email address below:

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CHICAGO, IL
UNITED STATES

Date: February 22, 2024

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