UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

HENGST SE, Plaintiff, v. CHAMPION LABORATORIES, INC., Defendant.	Case No. 23-cv-00794 Judge Sara L. Ellis Magistrate Judge Heather K. McShain

CHAMPION LABORATORIES, INC.'s INITIAL LPR 2.3 CONTENTIONS

Exhibit 2001 Page 001

Defendant Champion Laboratories, Inc. ("Champion") submits the following initial non-infringement and invalidity contentions pursuant to Local Patent Rule 2.3 and in response to Plaintiff Hengst SE's ("Hengst") LPR 2.2 Initial Infringement Contentions ("Infringement Contentions"). "Patent-in-Suit" herein refers to U.S. Patent No. 9,023,203 ("'203 Patent").

Champion's answers are based on information currently known to it. Champion reserves the right to supplement these contentions as provided by the Northern District of Illinois Local Patent Rules, orders of this Court, or as is otherwise appropriate in the course of discovery.

Moreover, discovery is ongoing and Champion reserves the right to pursue all other defenses that may be available to it, including but not limited to defenses that the Patents-in-Suit are unenforceable based on laches, estoppel, waiver, acquiescence, patent exhaustion, unfair competition, unclean hands, express or implied license, or any other grounds.

I. LOCAL PATENT RULE 2.3(a): INITIAL NON-INFRINGEMENT CONTENTIONS

Attached as Exhibit 1 is a non-infringement chart for the '203 Patent, responsive to the chart provided by Hengst with its Local Rule 2.2 contentions, that identifies as to each identified element in each asserted claim, to the extent now known by Champion, whether such element is present literally or under the doctrine of equivalents in each Accused Instrumentality and, if not, the reason the element is not present and the relevant distinctions. As discussed in Exhibit 1 at Claim elements 1[l] and 15[d], Champion notes that Hengst's doctrine of equivalents analysis is insufficient under Local Rule 2.2(d).

Champion's accused product cannot infringe the asserted claims for the additional reason that Plaintiff's relevant patent rights have been exhausted. Specifically, on information and belief, Plaintiff sells a product embodying the asserted claims to auto manufacturers (*i.e.*, the claimed apparatus with a filter housing and a replaceable filter insert), and therefore that sale exhausts Plaintiff's patent rights in the apparatus. Downstream users are permitted to replace used filter components in the patented apparatus under well-trodden law. *See, e.g., Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 346 (1961) (replacing the worn fabric cover of a patented convertible top was permissible repair); *FMC Corp. v. Up–Right, Inc.*, 21 F.3d 1073, 1077–79 (Fed. Cir. 1994) (replacing the worn "picking heads" of a harvester was permissible repair). Accordingly, Plaintiff's infringement contentions fail for this additional reason.

II. HENGST'S CONTENTIONS DO NOT COMPLY WITH THE PATENT LOCAL RULES

Local Rule 2.2(b) requires the identification of each accused apparatus "separately for each asserted claim" and "[e]ach Accused Instrumentality must be identified." Local Rule 2.2(c) further requires the identification of "specifically where each element of each asserted claim is found within each accused instrumentality." Hengst has not satisfied these requirements.

Hengst first identifies "Defendant's filter insert with the part identification number LP6044" as the Accused Product. Hengst's Initial Infringement Contentions at 1. However, at times, Hengst's claim charts include photographs of filter housing and filter housing parts that are "are made or authorized by Plaintiff." Hengst's Initial Infringement Contentions Ex. A at 1.

These photographs of filter housing and filter housing parts also include annotations that are often not comprehensible, leaving Champion uncertain as to how Hengst contends each claim limitation is met by the Accused Product. For example, in its infringement contentions chart, Hengst alleges that the Accused Product includes, among other things, "a filter housing" and "a removable cover." Yet, Hengst only includes a photograph of a filter housing "made or authorized by Plaintiff" that is not part of the Accused Product, and never identifies "a filter housing" and "a removable cover" in the Accused Product. *Id.* at 1-2. In another example, Hengst alleges that the Accused Product includes "an inclined plane." *Id.* at 5. However, the only thing Hengst points to in the claim chart is a photograph of a filter housing part that is, again, "made or authorized by Plaintiff" and not a part of the Accused Product, leaving it completely unclear how Hengst contends that the Accused Product satisfies this limitation. *Id.* Champion states that none of the above-mentioned limitations are in fact met by the LP6044 filter insert.

III. LOCAL PATENT RULE 3.1: INITIAL INVALIDITY CONTENTIONS

A. LPR 2.3(b)(1)

Exhibit A includes a list of prior art references that anticipate or render obvious the asserted claims of the Patent-in-Suit.

B. LPR 2.3(b)(2)

Attached as Exhibits B-E are charts identifying for each prior art reference whether it anticipates or renders obvious the asserted claim, including for combination references the reasons for combination of the references. In addition to the motivation stated within the charts, it would have been obvious to one of ordinary skill in the art to combine the references listed in the charts for one or more of the following reasons:

(A) Combining prior art elements according to known methods to yield predictable results;

(B) Simple substitution of one known element for another to obtain predictable results;

(C) Use of known technique to improve similar devices (methods, or products) in the same way;

(D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;

(E) "Obvious to try" – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;

(F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;

(G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

C. LPR 2.3(b)(3)

Attached as Exhibits B-E are charts identifying where specifically in each prior art reference each element of each asserted claim is found.

Champion reserves the right to rely on any combination of the references listed in Exhibits B-F. Champion may rely on any possible combination (or subcombination) of the primary and secondary references identified in each exhibit. For example, Champion may expressly rely on certain references while using other references to illustrate the state of the art.

D. LPR 2.3(b)(4)

The following asserted claims of the Patent-in-Suit that are invalid pursuant to indefiniteness under 35 U.S.C. § 112(2)/112(b) or enablement or written description under 35 U.S.C. § 112(1)/112(a) for the reasons stated thereof.

1[n] the inclined plane comprising an incline which excludes a self-locking and	The claim limitation "which excludes a self-locking" is indefinite and lacks adequate written description support and/or is not enabled, as the POSA would not understand the scope of such term and what is included or excluded therein.
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,	The claim limitation "the inner circumference of the ring filter insert" is indefinite. The claim limitation "the outer circumference of the filter housing part" is indefinite.
[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.	The claim limitation "the lower front panel" is indefinite.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on the 5th day of June, 2023, I electronically served the foregoing document on all counsel of record for the parties in this matter via email at the below email addresses:

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EXHIBIT 1 – Non-Infringement Chart

U.S. Patent No. 9,023,203	
Claim	**Accused Product (LP6044)**
Claim 1	
1[pre] A liquid filter, comprising:	To the extent limiting, the accused product is not a "liquid filter" as claimed for the below reasons.
1[a] a filter housing,	Not present literally or under the doctrine of equivalents (or "DOE"). The accused product does not include "a filter housing." Plaintiff's infringement contentions fail to identify any filter housing in the accused product. Plaintiff points to an alleged filter housing in Fig. 2. However, the alleged filter housing in Fig. 2 is not a part of the accused product and is not manufactured or sold by Defendant. Plaintiff does not identify or provide any details on the filter housing as shown in Fig. 2. Plaintiff does not assert that this limitation is met under the DOE.
1[b] a ring filter insert, replaceably arranged in the filter housing, and	Not present literally or under the doctrine of equivalents. The accused product does not include "a filter housing." *See* Claim 1[a]. Moreover, the accused product does not include any ring filter insert arranged in a filter housing.
1[c] a removable cover arranged to close the filter housing during operation,	Not present literally or under the doctrine of equivalents. The accused product does not include "a filter housing." *See* Claim 1[a]. Nor does it include a "cover" arranged close to the filter housing, during operation or otherwise. Plaintiff's infringement contentions fails to identify any removable cover and does not assert that this limitation is met under the DOE.

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	Not present literally or under the doctrine of equivalents. The accused product does not include "a filter housing." *See* Claim 1[a]. Further, the "at least one inlet for raw liquid to be filtered" is also not present in the accused product. Plaintiff's infringement contentions fail to identify any inlet for raw liquid to be filtered in the accused product. Plaintiff's infringement contentions point to an "Inlet" in Fig. 2. However, the filter housing in Fig. 2 is not a part of the accused product and is not manufactured or sold by Defendant. Plaintiff does not identify or provide any details on the filter housing or the inlet as shown in Fig. 2. Plaintiff does not assert that this limitation is met under the DOE. Further, the "a raw side of the filter housing" is also not present in the accused product. Plaintiff's infringement contentions fail to identify any raw side of the filter housing. Plaintiff does not assert that this limitation is met under the DOE.
1[e] a return extending from a clean side of the filter housing for filtered clean liquid,	Not present literally or under the doctrine of equivalents. The accused product does not include "a filter housing." *See* Claim 1[a]. Further, there is no "return" present in the accused product. Plaintiff's infringement contentions fail to identify any return in the accused product. Plaintiff's infringement contentions point to an alleged "return" in Fig. 2. However, the alleged filter housing in Fig. 2 is not a part of the accused product and is not manufactured or sold by Defendant. Plaintiff does not identify or provide any details on the filter housing or the return as shown in Fig. 2. Plaintiff does not assert that this limitation is met under the DOE. Further, there is no "clean side of the filter housing" present in the accused product. Plaintiff's infringement contentions fail to identify any clean side of

	the filter housing. Plaintiff does not assert that this limitation is met under the DOE.
1[f] an eccentric opening arranged in a bottom of the filter housing,	Not present literally or under the doctrine of equivalents. The accused product does not include "the filter housing." *See* Claim 1[a]. Further, the accused product does not include "an eccentric opening." Plaintiff's infringement contentions fail to identify any eccentric opening in the accused product. Plaintiff's infringement contentions point to an alleged "eccentric opening " in Fig. 2. However, the filter housing in Fig. 2 is not a part of the accused product and is not manufactured or sold by Defendant. Plaintiff does not identify or provide any details on the filter housing or the eccentric opening as shown in Fig. 2. Plaintiff does not assert that this limitation is met under the DOE. Further, the accused product does not include "a bottom of the filter housing." Plaintiff's infringement contentions fail to identify any bottom of the filter housing. Plaintiff does not assert that this limitation is met under the DOE.
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,	Not present literally or under the doctrine of equivalents. The accused product does not include "the filter housing." *See* Claim 1[a]. Further, the "raw side of the filter housing" is also not present in the accused product. *See* Claim 1[d]. Further, the "clean side of the filter housing" is also not present in the accused product. *See* Claim 1[e]. Plaintiff does not sufficiently identify what it considers the "bottom front panel". What Plaintiff appears to point to in Fig. 3 of the infringement contentions as the "Bottom Front Panel" does not meet the claim requirements.

	This portion of the accused product has at least two separate components. The component with printed text thereon (the "cover") is not in contact with any filter material and does not surround any material body and cannot be deemed a "bottom front panel" as claimed. The cover is not part of any alleged filter insert but rather maintained in proximity thereto. There is no "bottom front panel" as claimed, but to the extent Plaintiff could contend there is one, it could be only the component of the filter insert without the printed text on it (referred to as a "top cover" in certain technical documents) (*see* CL000001, CL000003).
1[h] an eccentric blocking element for the eccentric opening arranged on the bottom front panel,	Not present literally or under the doctrine of equivalents. At least the "eccentric opening" is not present in the accused product. *See* Claim 1[f]. At least the "arranged on the bottom front panel" is not present in the accused product. Plaintiff's infringement contentions point to an alleged "Eccentric Blocking Element" that is on the cover shown in Fig. 3. However, as explained above for Claim 1[g], the cover is not a "bottom front panel." Thus, the "Eccentric Blocking Element" as identified by Plaintiff is not arranged on any "bottom front panel." Plaintiff does not assert that this limitation is met under the DOE.
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,	Not present literally or under the doctrine of equivalents. At least the "the filter housing" is not present in the accused product. *See* Claim 1[a]. Further, the "eccentric opening" is also not present in the accused product. *See* Claim 1[f]. At least one of the "first and second interacting positioning means" is also not present in the accused product. Plaintiff's infringement contentions fail to

	identify both of the first and second interacting positioning means in the accused product. Plaintiff's infringement contentions point to a "First Positioning Means" in Fig. 4. However, the filter housing part in Fig. 4 is not a part of the accused product and is not manufactured or sold by Defendant. Plaintiff does not identify or provide any details on the filter housing part or the "First Positioning Means" as shown in Fig. 4. Plaintiff does not assert that this limitation is met under the DOE.
1[j] the first positioning means comprising an inclined plane,	Not present literally or under the doctrine of equivalents. At least the "first positioning means" is not present in the accused product. *See* Claim 1[i]. Further, "an inclined plane" as claimed is not present in the accused product. Plaintiff's infringement contentions fail to identify any inclined plane in the accused product. Plaintiff's infringement contentions point to Fig. 4 for a inclined plane. However, the filter housing part in Fig. 4 is not a part of the accused product and is not manufactured or sold by Defendant. Plaintiff does not identify or provide any details on the filter housing part or the "First Positioning Means" as shown in Fig. 4. Plaintiff does not assert that this limitation is met under the DOE.
1[k] the second positioning means comprising a protruding nose which is arranged opposite the inclined plane, and	Not present literally or under the doctrine of equivalents. At least the "the inclined plane" is not present in the accused product. *See* Claim 1[j]. Further, there is "no protruding nose" on any bottom front panel, as required by the corresponding structure for this element.
1[l] the inclined plane and the nose arranged to be movable in relation to each other in such a way	Not present literally or under the doctrine of equivalents.

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,	At least the "the filter housing" is not present in the accused product. *See* Claim 1[a]. Further, the "eccentric opening" is also not present in the accused product. *See* Claim 1[f]. Further, the limitation "by rotating the ring filter insert relative to the filter housing" is also not present in the accused product. Plaintiff's infringement contentions point to Fig. 6A and 6B as showing the Accused Product including its filter material body being rotated from a "Position 1" to a "Position 2." This claim specifically states that "the ring filter insert comprising a hollow-cylindrical filter material body, surrounded on front sides by top and bottom front panels." That ring filter insert comprising those claimed components is what is required to rotate by this limitation. However, none of the filter material body, the top front panel, and or any bottom front panel of the Accused Product rotates during an installation. Although Plaintiff asserts that this limitation is met under the DOE, Plaintiff's argument failed to address the substantial differences between the Accused Product and what is required by this limitation. Specifically, Plaintiff argues that this limitation is met under the DOE because the rotation of the alleged bottom front panel is an equivalent to rotation of the entire ring filter insert. But, as explained in Claim 1[g], the cover is not a bottom front panel, and further it functions in a substantially different way. There is only one component of the Accused Product that could possibly be considered as the bottom front panel and it does not rotate while the filter insert is being installed. Plaintiff also wrongly asserts in performing a function, way, result analysis that the rotation of the alleged bottom front panel is an equivalent to rotation of the entire ring filter insert. Plaintiff's description of the function as "rotation to align" and result as "proper alignment" are so ambiguous as to be rendered meaningless. Further, Plaintiff's description of the way as "nose and

	inclined planes slidingly engaged" ignores that the ring filter insert must be rotated relative to the filter housing and that the ring filter insert comprises comprising a filter material body, a top front panel, as well as a bottom front panel. Moreover, the function of the accused product with respect to this limitation – where only the cover rotates and not the whole of the alleged ring filter insert – is materially different including to the user that installs the insert. Rather than having to twist the whole of the alleged ring filter insert around during installation, the user need only press down while the cover self-aligns. This is a benefit of the accused product over the ring filter insert of the claims.
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,	Not present literally or under the doctrine of equivalents. At least the "the filter housing" is not present in the accused product. *See* Claim 1[a]. Further, the "eccentric opening" is also not present in the accused product. *See* Claim 1[f]. Further, the "outer circumference of a filter housing" is also not present in the accused product. Plaintiff's infringement contentions fails to identify any outer circumference of a filter housing. The reasons elements 1[k-l] are not present in the accused product are further equally applicable to this limitation as well. Plaintiff does not assert that this limitation is met under the DOE.
1[n] the inclined plane comprising an incline which excludes a self-locking and	Not present literally or under the doctrine of equivalents. At least the "the inclined plane" is not present in the accused product. *See* Claim 1[j].

	The term "excludes a self-locking" is indefinite, however to the extent Plaintiff is able to articulate a contention for what this is, Defendant reserves the right to supplement these contentions as appropriate.
1[o] the eccentric opening being an outlet for emptying the filter housing when the filter insert is removed.	Not present literally or under the doctrine of equivalents. At least the "the filter housing" is not present in the accused product. *See* Claim 1[a]. Further, the "eccentric opening" is also not present in the accused product. *See* Claim 1[f]. Further, the "outlet for emptying the filter housing" is also not present in the accused product. Plaintiff's infringement contentions point to the "eccentric opening shown in Fig. 2" as "outlet for emptying the filter housing." However, as explained in Claim 1[a] and 1[f], both "the filter housing" and the "eccentric opening" are not present in the accused product. Thus, the "outlet for emptying the filter housing" is also not present in the accused product. Plaintiff does not assert that this limitation is met under the DOE.
Claim 2	
[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.	Not present literally or under the doctrine of equivalents. Because the accused product does not infringe Claim 1, it cannot infringe this claim dependent therefrom. At least the "the inclined plane" is not present in the accused product. *See* Claim 1[j].
Claim 3	
[3] The liquid filter according to claim 1, including a guide for the nose which runs in an	Not present literally or under the doctrine of equivalents. Because the accused product does not infringe Claim 1, it cannot infringe this claim dependent therefrom.

axial direction and is connected to a lower end of the inclined plane.	At least the "the inclined plane" is not present in the accused product. *See* Claim 1[j].
Claim 5	
[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.	Not present literally or under the doctrine of equivalents. Because the accused product does not infringe Claim 1, it cannot infringe this claim dependent therefrom. At least the "the inclined plane" is not present in the accused product. *See* Claim 1[j].
Claim 6	
[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.	Not present literally or under the doctrine of equivalents. Because the accused product does not infringe Claim 1, it cannot infringe this claim dependent therefrom. At least the "the inclined plane" is not present in the accused product. *See* Claim 1[j].
Claim 8	
[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.	Not present literally or under the doctrine of equivalents. Because the accused product does not infringe Claim 1, it cannot infringe this claim dependent therefrom. At least the "the filter housing" is not present in the accused product. *See* Claim 1[a].
Claim 9	
[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.	Not present literally or under the doctrine of equivalents. Because the accused product does not infringe Claim 1, it cannot infringe this claim dependent therefrom. At least the "arranged on the bottom front panel" is not present in the accused product. *See* Claim 1[h].

Claim 10	
[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.	Not present literally or under the doctrine of equivalents. Because the accused product does not infringe Claim 1, it cannot infringe this claim dependent therefrom. At least the "arranged on the bottom front panel" is not present in the accused product. *See* Claim 1[h].
Claim 11	
[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.	Not present literally or under the doctrine of equivalents. Because the accused product does not infringe Claim 1, it cannot infringe this claim dependent therefrom. At least the "the filter housing" is not present in the accused product. *See* Claim 1[a]. Further, the "outlet" is not present in the accused product. *See* Claim 1[o]. Further, the "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" is also not present in the accused product. Plaintiff's infringement contentions point to a "Outlet Seat" in Fig. 10. However, the filter housing in Fig. 10 is not a part of the accused product and is not manufactured or sold by Defendant. Plaintiff does not identify or provide any details on the filter housing as shown in Fig. 10. Plaintiff does not assert that this limitation is met under the DOE.
Claim 12	
[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	Not present literally or under the doctrine of equivalents. Because the accused product does not infringe Claim 1, it cannot infringe this claim dependent therefrom.

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.	At least the "the filter housing" is not present in the accused product. *See* Claim 1[a]. Thus, "the filter housing part arranged on the inside of the ring filter insert" and "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" are also not present in the accused product. Further, the "a return" is also not present in the accused product. *See* Claim 1[e]. Further, "a pipe nozzle" is also not present in the accused product. Plaintiff's infringement contentions point to a "Pipe Nozzle" in Fig. 11. However, the filter housing in Fig. 11 is not a part of the accused product and is not manufactured or sold by Defendant. Plaintiff does not identify or provide any details on the filter housing as shown in Fig. 11. Plaintiff does not assert that this limitation is met under the DOE.
Claim 15	
[15.pre] 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,	The preamble is not present literally or under the doctrine of equivalents. At least the "a filter housing" is not present in the accused product. Plaintiff's infringement contentions fails to identify any filter housing. Plaintiff does not assert that this limitation is met under the DOE.
[15.a] an eccentric blocking element arranged on the bottom front panel for engaging an eccentric opening in the filter housing,	Not present literally or under the doctrine of equivalents. At least the "a filter housing" is not present in the accused product. *See* Claim 15[pre]. Further, the "an eccentric opening" is also not present in the accused product. Plaintiff's infringement contentions fails to identify any eccentric opening. Plaintiff does not assert that this limitation is met under the DOE.

	Further, the "an eccentric blocking element arranged on the bottom front panel" is not present in the accused product. To the extent there is an eccentric blocking element in the accused product, it is not arranged on a bottom front panel. Plaintiff's infringement contentions point to a "Eccentric Blocking Element" that is on the cover in Fig. 3. However, as explained, the cover is not a "bottom front panel." Thus, the "Eccentric Blocking Element" as identified by Plaintiff is not arranged on any "bottom front panel" and "an eccentric blocking element arranged on the bottom front panel" is not present in the accused product. Plaintiff does not sufficiently identify what it considers the "bottom front panel". What Plaintiff appears to point to in Fig. 3 of the infringement contentions as the "Bottom Front Panel" does not meet the claim requirements. This portion of the accused product has at least two separate components. The component with printed text thereon (the "cover") is not in contact with any filter material and does not surround any filter material body and cannot be deemed a "bottom front panel" as claimed. There is no "bottom front panel" as claimed in the Accused Product, but to the extent Plaintiff could contend there is one, it could be only the component of the filter insert without the printed text on it (referred to as a "top cover" in certain technical documents) (*see* CL000001, CL000003). Plaintiff does not assert that this limitation is met under the DOE.
[15.b] 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,	Not present literally or under the doctrine of equivalents. At least the "a filter housing" is not present in the accused product. *See* Claim 15[pre]. Further, the "blocking element" is not present in the accused product. *See* Claim 15[a].

	Further, the "second positioning means on the filter housing" is also not present in the accused product. Plaintiff's infringement contentions fails to identify any "second positioning means on the filter housing." Plaintiff does not assert that this limitation is met under the DOE. Further, the "the eccentric opening" is not present in the accused product. *See* Claim 15[b].
[15.c] 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,	Not present literally or under the doctrine of equivalents. At least the "second positioning means being the other of the inclined plane and the protruding nose" is not present in the accused product. *See* Claim 15[b]. Further, the "inclined plane" is not present in the accused product. Plaintiff's infringement contentions fails to identify any inclined plane. Plaintiff does not assert that this limitation is met under the DOE.
[15.d] 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,	Not present literally or under the doctrine of equivalents. At least the "inclined plane" is not present in the accused product. *See* Claim 15[c]. Further, the "blocking element" is not present in the accused product. *See* Claim 15[a]. Further, the "the eccentric opening" is not present in the accused product. *See* Claim 15[b]. Further, the limitation "by rotating the ring filter insert relative to the filter housing" is also not present in the accused product. Plaintiff's infringement contentions point to Fig. 6A and 6B as showing the Accused Product including its filter material body being rotated from a "Position 1" to a "Position 2." This

	claim specifically states that "the ring filter insert comprising a hollow-cylindrical filter material body, surrounded on front sides by top and bottom front panels." However, none of the alleged filter material body, the top front panel, and the bottom front panel of the Accused Product is rotated relative to a filter housing as claimed. Although Plaintiff asserts that this limitation is met under the DOE, Plaintiff's argument failed to address the substantial differences between the Accused Product and this limitation. Specifically, Plaintiff argues that this limitation is met under the DOE because the rotation of the alleged bottom front panel is an equivalent to rotation of the entire ring filter insert. But, as explained in Claim 15[a], the cover is not a bottom front panel, and further it functions in a substantially different way. There is only one component of the Accused Product that could possibly be considered as the bottom front panel and it does not rotate while the filter insert is being installed. Plaintiff also wrongly asserts in performing a function, way, result analysis that the rotation of the alleged bottom front panel is an equivalent to rotation of the entire ring filter insert. Plaintiff's description of the function as "rotation to align" and result as "proper alignment" are so ambiguous as to be rendered meaningless. Further, Plaintiff's description of the way as "nose and inclined planes slidingly engaged" ignores that the ring filter insert must be rotated relative to the filter housing. The ring filter insert comprises all of a filter material body, a top front panel, as well as a bottom front panel—and none of these rotate as claimed in the Accused Product. Moreover, the function of the accused product with respect to this limitation – where only the cover rotates and not the alleged ring filter insert – is materially different including to the user that installs the insert. Rather than having to twist the whole of the alleged ring filter insert around during installation, the user need only press down while the cover self-aligns. This is a benefit of the accused product over the ring filter insert of the claims.

[15.e] the first positioning means being one of embodied and arranged on an inner circumference of the ring filter insert.	
Claim 16	
[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.	Not present literally or under the doctrine of equivalents. Because the accused product does not infringe Claim 15, it cannot infringe this claim dependent therefrom. At least the "inclined plane" is not present in the accused product. *See* Claim 15[c]. Further, the "two partial planes which run towards each other in opposite directions" is also not present in the accused product. Plaintiff's infringement contentions point to "Two Partial Planes" in Fig. 7. However, the filter housing part in Fig. 7 is not a part of the accused product and is not manufactured or sold by Defendant. Plaintiff does not identify or provide any details on the filter housing part as shown in Fig. 7. Plaintiff does not assert that this limitation is met under the DOE. Further, "which in each case extend across half of an inner circumference of the ring filter insert" is not present in the accused product. Plaintiff's infringement contentions fails to identify any "inner circumference of the ring filter insert" let alone "which in each case extend across half of an inner circumference of the ring filter insert." Plaintiff does not assert that this limitation is met under the DOE.
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.	Not present literally or under the doctrine of equivalents. Because the accused product does not infringe Claim 15, it cannot infringe this claim dependent therefrom.

	At least the "inclined plane" is not present in the accused product. *See* Claim 15[c]. Thus the "is connected to a lower end of the inclined plane" is also not present in the accused product. Further, the "a guide for the nose which runs in an axial direction" is not present in the accused product. Plaintiff's infringement contentions point to a "Nose Guide" in Fig. 8. However, the filter housing part in Fig. 8 is not a part of the accused product and is not manufactured or sold by Defendant. Plaintiff does not identify or provide any details on the filter housing part as shown in Fig. 8. Plaintiff does not assert that this limitation is met under the DOE.
Claim 19	
[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.	Not present literally or under the doctrine of equivalents. Because the accused product does not infringe Claim 15, it cannot infringe this claim dependent therefrom. At least the "inclined plane" is not present in the accused product. *See* Claim 15[c]. Thus, the "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" is also not present in the accused product.
Claim 23	
[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.	Not present literally or under the doctrine of equivalents. Because the accused product does not infringe Claim 15, it cannot infringe this claim dependent therefrom. Plaintiff only points to a "Fig. 5A." However, there is no Fig. 5A corresponding to Claim 15 or Claim 23. At least the "the nose is formed integrally with the bottom front panel of the ring filter insert" is not present in the accused product. Plaintiff's infringement contentions in Claim 15[c] point to a "First Positioning Means" on the cover in Fig. 5B as the nose. As explained in Claim 15[d], the cover is not a "bottom

	front panel." Thus, the nose as identified by Plaintiff is not "formed integrally with the bottom front panel of the ring filter insert." Plaintiff does not assert that this limitation is met under the DOE.
Claim 24	
[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.	Not present literally or under the doctrine of equivalents. Because the accused product does not infringe Claim 15, it cannot infringe this claim dependent therefrom. At least the "blocking element" is not present in the accused product. *See* Claim 15[a]. Plaintiff's infringement contentions point to a "Two-Part Blocking Element" on the cover in Fig. 9. As explained in Claim 15[d], the cover is not a "bottom front panel." Further, the "which is one of rigidly connected to the lower front panel and rigidly arranged on the lower front panel" is also not present in the accused product. Plaintiff's infringement contentions fails to identify either "rigidly connected to the lower front panel" or "rigidly arranged on the lower front panel." Plaintiff does not assert that this limitation is met under the DOE. The term "the lower front panel" is indefinite. however to the extent Plaintiff is able to articulate a contention for what this is, Defendant reserves the right to supplement these contentions as appropriate.
Claim 25	
[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.	Not present literally or under the doctrine of equivalents. Because the accused product does not infringe Claim 15, it cannot infringe this claim dependent therefrom. At least the "the blocking element" is not present in the accused product. *See* Claim 15[a] and Claim 24.

	Further, the "arranged on the bottom front panel" is also not present in the accused product. *See* Claim 15[a].
Claim 28	
[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.	Not present literally or under the doctrine of equivalents. Because the accused product does not infringe Claim 15, it cannot infringe this claim dependent therefrom. At least the "blocking element" is not present in the accused product. *See* Claim 15[a].
Claim 29	
[29] The liquid filter according to claim 1, wherein the protruding nose protrudes radially.	Because the accused product does not infringe Claim 1, it cannot infringe this claim dependent therefrom.
Claim 30	
[30] The ring filter insert according to claim 15, wherein the protruding nose protrudes radially.	Because the accused product does not infringe Claim 15, it cannot infringe this claim dependent therefrom.

EXHIBIT A - List of Invalidating Prior Art

Prior Art Publications for U.S. Patent No. 9,023.203						
Prior Art	**Country**	**Date of Filing**	**Date of Issue/Publication**	**Claims Applied To**	**Basis of Invalidity**	**Cited in Ex(s).**
DE102007062102	Germany	December 21, 2007	June 25, 2009	1, 9, 10-11, 15, 24-25, 28	35 U.S.C. § 103	B-D
DE9215351	Germany	November 11, 1992	December 24, 1992	All	35 U.S.C. § 103	E
EP1555058	European Patent	January 5, 2005	July 20, 2005	All	35 U.S.C. § 103	E
EP1714688	European Patent	April 11, 2006	January 2, 2008	1, 9, 10-11, 15, 24-25, 28	35 U.S.C. § 103	B-D
JP2004136203	Japan	October 17, 2002	May 13, 2004	All	35 U.S.C. § 103	B
US20040232063	United States	May 21, 2003	November 25, 2004	1, 9, 10-11, 15, 24-25, 28	35 U.S.C. § 103	B-D
US20060054547	United States	September 13, 2004	March 16, 2006	All	35 U.S.C. § 103	E
US20060219621	United States	February 15, 2006	October 5, 2006	All	35 U.S.C. § 103	C
US20070000830	United States	June 30, 2005	January 4, 2007	All	35 U.S.C. § 103	E
US20080053886	United States	September 6, 2006	March 6, 2008	All	35 U.S.C. § 103	E
US20080245719	United States	June 16, 2008	October 9, 2008	All	35 U.S.C. § 103	E
US20080277327	United States	May 9, 2007	November 13, 2008	All	35 U.S.C. § 103	E
US6554139	United States	June 1, 2000	April 29, 2003	All	35 U.S.C. § 103	E
US7022228	United States	August 2, 2002	April 4, 2006	All	35 U.S.C. § 103	E
WO2008134494	WIPO (PCT)	April 25, 2008	November 6, 2008	All	35 U.S.C. § 103	D

Exhibit B – Invalidity of U.S. Patent No. 9,023,203 Based on Japan Patent Application Publication No. 2004136203 to Yokoyama et al. ("Yokoyama") in View of U.S. Patent Application Publication No. 20040232063 to Cline et al. ("Cline")

Japan Patent Application Publication No. 2004136203 to Yokoyama et al. ("Yokoyama") was filed on October 17, 2002 and published on May 13, 2004. U.S. Patent Application Publication No. 20040232063 to Cline et al. ("Cline"), filed May 21, 2003 and published November 25, 2004. Accordingly, Yokoyama, alone based on the state of the art, or in combination with Cline constitutes prior art and invalidates the asserted claims of the U.S. Patent No. 9,023,203 (the "'203 patent") under at least pre-AIA 35 U.S.C. § 103.

Yokoyama in combination with Cline, including any material incorporated by reference into Yokoyama and Cline, renders all asserted claims invalid as obvious under 35 U.S.C. §103, alone based on the state of the art, or further in combination with one or more of the references cited in Exhibits C to E, including:

- Germany Patent Publication No. 10,2007,062,102 to Grass et al. ("Grass"), filed December 21, 2007 and published June 25, 2009.
- European Patent No. 1,714,688 to Brisson ("Brisson"), filed April 11, 2006 and January 2, 2008.

A Person of Skill in the Art ("POSA") would have been motivated to combine these references, because they are in the same field, they are aimed at solving the same perceived problems in the art, the nature of the problem to be solved was the same, and there is express motivation in these references. Known design incentives and market forces would have also motivated one of ordinary skill to combine these references. Furthermore, one of skill in the art would understand that each limitation not expressly disclosed in Yokoyama would be was a standard implementation and an obvious design choice in the design of a filter by the priority date of the asserted patent. Such an implementation simply reflects one of a finite number of well-known techniques (*e.g.*, whether to use an eccentric blocking element or not, or the particular means of ensuring only a certain type of filter insert is installable on a given housing) implemented in a predictable manner, to achieve well-known, predictable results.

The use of claim terms in the below chart is based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, as well as the plain and ordinary meaning of the claim terms. This chart should not be construed as consenting to or agreeing with Hengst's construction of claim terms. Because discovery is ongoing and the claims have not yet been construed, Champion reserves all rights to amend its invalidity contentions based on discovery or on the Court's constructions.

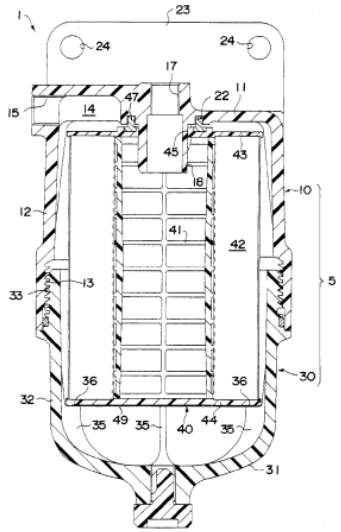
Claim Element	Exemplary Disclosures
Claim 1	
1[pre] A liquid filter, comprising:	To the extent it is a limitation, Yokoyama discloses a liquid filter. *See, e.g.,* Yokoyama at [0013]:

DETAILED DESCRIPTION OF THE INVENTION

Hereinafter, preferred embodiments of the present invention will be described with reference to the drawings. 2 is a perspective view of a filter device 1 as a fuel filter according to an embodiment of the present invention as viewed obliquely from above, and FIG. 3 is a cross-sectional view of the filter device 1 as viewed from the direction of arrows III-III in FIG. is there. As shown in both the drawings, the filter device 1 has a horizontal case portion 10 having a horizontal ceiling portion 11 and a side wall portion 12 and opened downward, a bottom surface portion 31 and a side wall portion 32. A filter case 5 comprising a lower case half 30 opened upward, and is installed in a filter element holding space 7 formed in the filter case 5 and extends up and down held by both case halves 10 and 30. And a cylindrical filter element 40. 4A, 4B, and 4C respectively show a side view, a plan view, and a bottom view of the filter element 40 alone, and FIG. 1 is a perspective view of the upper case half 10 viewed from below and the filter. The element 40 is shown together with a perspective view of the element 40 as viewed obliquely from above.

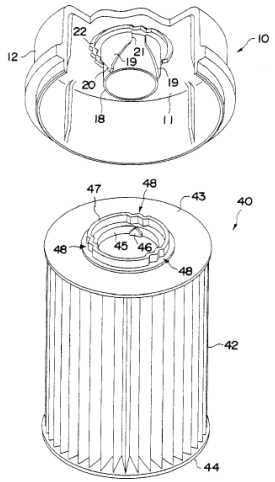
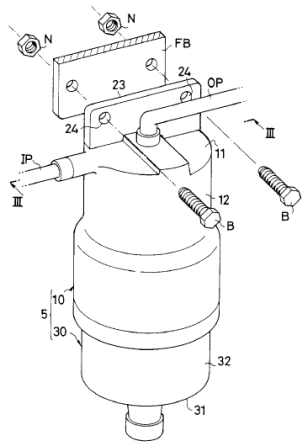
Yokoyama at Fig. 3:

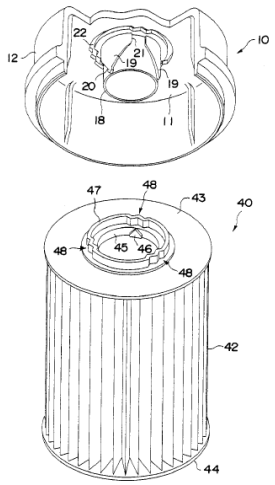
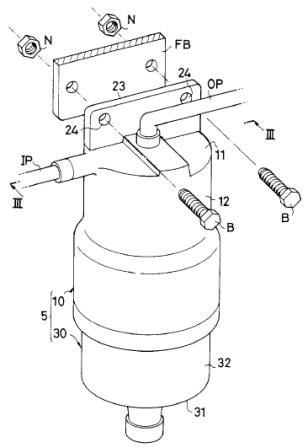
【図３】



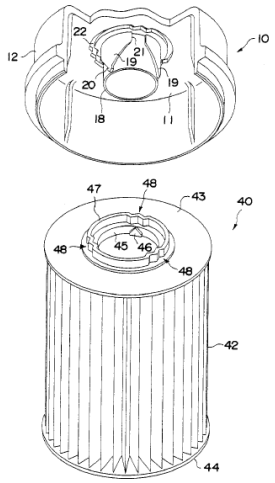
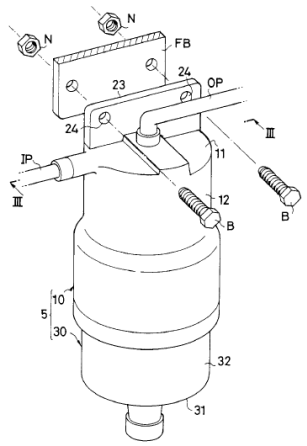
For example, Yokoyama discloses a liquid filter (1).

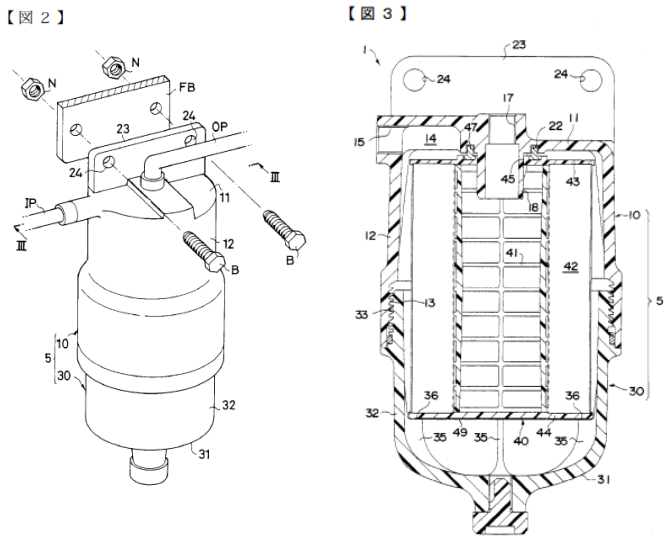
1[a] a filter housing,	Yokoyama discloses a filter housing. *See, e.g.,* Yokoyama at [0013]: DETAILED DESCRIPTION OF THE INVENTION Hereinafter, preferred embodiments of the present invention will be described with reference to the drawings. 2 is a perspective view of a filter device 1 as a fuel filter according to an embodiment of the present invention as viewed obliquely from above, and FIG. 3 is a cross-sectional view of the filter device 1 as viewed from the direction of arrows III-III in FIG. is there. As shown in both the drawings, the filter device 1 has a horizontal case portion 10 having a horizontal ceiling portion 11 and a side wall portion 12 and opened downward, a bottom surface portion 31 and a side wall portion 32. A filter case 5 comprising a lower case half 30 opened upward, and is installed in a filter element holding space 7 formed in the filter case 5 and extends up and down held by both case halves 10 and 30. And a cylindrical filter element 40. 4A, 4B, and 4C respectively show a side view, a plan view, and a bottom view of the filter element 40 alone, and FIG. 1 is a perspective view of the upper case half 10 viewed from below and the filter. The element 40 is shown together with a perspective view of the element 40 as viewed obliquely from above. Yokoyama at Figs. 1-2:

	【図１】  【図２】  For example, Yokoyama discloses a filter housing (5).
1[b] a ring filter insert, replaceably arranged in the filter housing, and	Yokoyama discloses a ring filter insert, replaceably arranged in the filter housing. *See, e.g.,* Yokoyama at [0002]: [Prior art] The filter device has a configuration in which a replaceable filter element is held in the filter case. After the fluid flowing in from the fluid inflow path formed in the filter case passes through the filter element, the filter device is also formed in the filter case. Dust and dust contained in the fluid can be removed by flowing out from the fluid outflow passage. Yokoyama at [0018]: As shown in FIGS. 1, 3 and 4, the filter element 40 has a structure in which a filter medium 42 bent in a bellows shape is attached around an inner cylinder 41 formed in a thin cylindrical shape in a lattice shape. A disk-shaped upper plate 43 is attached to the upper end portion, and a disk-like lower plate 44 is attached to the lower end portion.

	Yokoyama at Figs. 1-2: 【図１】  【図２】  For example, Yokoyama discloses a ring filter insert (40), replaceably arranged in the filter housing (5).
1[c] a removable cover arranged to close the filter housing during operation,	Yokoyama discloses a removable cover arranged to close the filter housing during operation. *See, e.g.,* Yokoyama at [0001]: BACKGROUND OF THE INVENTION The present invention relates to a filter device in which a cylindrical filter element is held in a filter case provided with a fluid inlet and outlet, and in particular, the filter case case is composed of two case halves, A filter device having a structure in which a filter element is assembled in a filter case by screwing the other case half into one case half and coupling both case halves with the filter element attached to one case half About. Yokoyama at [0013]:

	DETAILED DESCRIPTION OF THE INVENTION Hereinafter, preferred embodiments of the present invention will be described with reference to the drawings. 2 is a perspective view of a filter device 1 as a fuel filter according to an embodiment of the present invention as viewed obliquely from above, and FIG. 3 is a cross-sectional view of the filter device 1 as viewed from the direction of arrows III-III in FIG. is there. As shown in both the drawings, the filter device 1 has a horizontal case portion 10 having a horizontal ceiling portion 11 and a side wall portion 12 and opened downward, a bottom surface portion 31 and a side wall portion 32. A filter case 5 comprising a lower case half 30 opened upward, and is installed in a filter element holding space 7 formed in the filter case 5 and extends up and down held by both case halves 10 and 30. And a cylindrical filter element 40. 4A, 4B, and 4C respectively show a side view, a plan view, and a bottom view of the filter element 40 alone, and FIG. 1 is a perspective view of the upper case half 10 viewed from below and the filter. The element 40 is shown together with a perspective view of the element 40 as viewed obliquely from above. Yokoyama at [0014]: As shown in Figures 2 and 3, the upper case half body 10 and the lower case half body 30 are detachably joined by screwing together the female screw 13 formed on the lower peripheral edge of the side wall part 12 of the upper case half body 10 and the male screw 33 formed on the upper peripheral edge of the side wall part 32 of the lower case half body 30. On the upper surface side of the bottom part 31 of the lower case half body 30, multiple ribs 35 extending vertically and arranged radially are provided, and the upper surfaces of these multiple ribs 35 are formed horizontally, constituting the filter element placement part 36. Here, the filter element placement part 36 does not necessarily have to be formed on the upper surface of the part formed radially like the ribs 35, and may be formed on the upper surface of a simple disc-shaped part. Yokoyama at Figs. 1-2:

	【図１】  【図２】  For example, Yokoyama discloses a removable cover (10) arranged to close the filter housing (5) 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	Yokoyama discloses 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. *See, e.g.,* Yokoyama at [0015]: As shown in Figure 3, a cavity 14 is provided on the upper left side of the upper case half body 10, and a fuel inflow path 15, which communicates with this cavity 14, is provided extending in the left-right direction in the ceiling part 11. Also, at the center of the ceiling part 11 of the upper case 10, a cylindrical tube part 18, which protrudes downward from its lower surface side and extends into the filter element holding space 7, is formed. Its inner space communicates with the fuel outflow path 17, which is provided extending up and down at the center of the ceiling part 11. Yokoyama at [0017]:

	As shown in FIGS. 2 and 3, a plate-like filter device fixing bracket 23 is provided on the upper portion of the upper case half 10 so as to extend upward, and bolt mounting holes 24 are formed at both ends thereof. Yes. The upper case half 10 is fixed to the filter device fixing portion FB (for example, a part of the engine case when the filter device 1 is an engine oil filter) by bolts B and nuts N through the bolt mounting holes 24. Is done. Further, as shown in FIG. 2, a fuel inflow pipe IP is connected to the fuel inflow path 15 of the upper case half 10, and a fuel outflow pipe OP is connected to the fuel outflow path 17. Yokoyama at Figs. 2-3:  For example, Yokoyama discloses the filter housing including at least one inlet (15) for raw liquid to be filtered, which inlet (15, IP) leads into a raw side (14) of the filter housing (5).
1[e] a return extending from a clean side of the filter housing for filtered clean liquid,	Yokoyama discloses a return extending from a clean side of the filter housing for filtered clean liquid. *See, e.g.,* Yokoyama at [0015]:

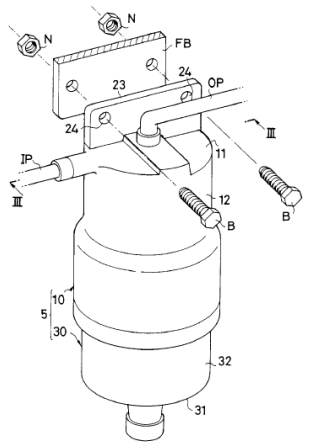
As shown in Figure 3, a cavity 14 is provided on the upper left side of the upper case half body 10, and a fuel inflow path 15, which communicates with this cavity 14, is provided extending in the left-right direction in the ceiling part 11. Also, at the center of the ceiling part 11 of the upper case 10, a cylindrical tube part 18, which protrudes downward from its lower surface side and extends into the filter element holding space 7, is formed. Its inner space communicates with the fuel outflow path 17, which is provided extending up and down at the center of the ceiling part 11.

Yokoyama at [0017]:

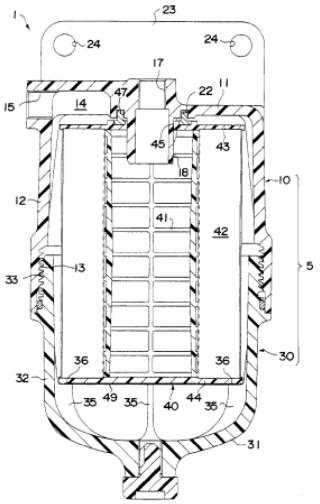
As shown in FIGS. 2 and 3, a plate-like filter device fixing bracket 23 is provided on the upper portion of the upper case half 10 so as to extend upward, and bolt mounting holes 24 are formed at both ends thereof. Yes. The upper case half 10 is fixed to the filter device fixing portion FB (for example, a part of the engine case when the filter device 1 is an engine oil filter) by bolts B and nuts N through the bolt mounting holes 24. Is done. Further, as shown in FIG. 2, a fuel inflow pipe IP is connected to the fuel inflow path 15 of the upper case half 10, and a fuel outflow pipe OP is connected to the fuel outflow path 17.

Yokoyama at Figs. 2-3:

【図２】

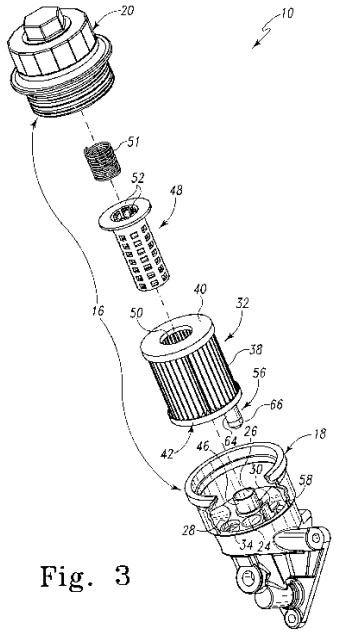


【図３】



	For example, Yokoyama discloses a return (17, OP) extending from a clean side (7) of the filter housing (5) for filtered clean liquid.
1[f] an eccentric opening arranged in a bottom of the filter housing,	Yokoyama in combination with Cline, and/or the background knowledge of a POSA, discloses an eccentric opening arranged in a bottom of the filter housing. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an opening (*e.g.*, 58) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding this feature to Yokoyama and/or incorporating the teachings of Yokoyama into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0020]-[0021]: The filter apparatus 10 comprises a housing 16, as shown in FIGS. 1-3 and 6-7. A base 18 of the housing 16 is configured to be secured to the engine 12. A cover 20 of the housing 16 is configured to be secured to the base 18 via a threaded connection or other suitable connection. Together, the base 18 and the cover 20 define an interior region 22 (see FIG. 6) when the cover 20 is secured to the base 18. The base 18 comprises passageways of the interior region 22 to admit fluid into and discharge fluid from a filter chamber 23 (see FIG. 6) of the interior region 22. The base 18 comprises an inlet passageway 24 (see FIG. 3), a filtered fluid outlet passageway 26 (see FIGS. 3, 6, and 7), a bypass passageway 28 (see FIG. 3), and a quick-drain passageway 30 (see FIGS. 3, 6, and 7). The inlet passageway 24 admits unfiltered fluid into the filter chamber 23. The filtered fluid outlet passageway 26 discharges fluid filtered by the filter element 32 from the filter chamber 23. The bypass passageway 28 contains a bypass valve 34 (see FIG. 3) to discharge unfiltered fluid from the filter chamber 23 when, for example, the filter element 32 becomes clogged with contaminants and/or the fluid is somewhat thick due to, for example, cold weather. The quick-drain passageway 26 discharges fluid from the filter chamber 23 through a quick-drain outlet 36 (see FIGS. 6-7) when the filter element 32 is removed from the filter chamber 23.

	Cline at [0025]: The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. Cline at [0027]-[0029]: The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64. The post 64 comprises a body 68, a head 70, and a neck 72 interconnecting the body 68 and the head 70, as shown in FIGS. 5-7. The body 68 is secured to and extends from the outwardly facing surface 62. The head 70 has a diameter less than a diameter of the body 68. The neck 72 has a diameter less than the diameters of the body 68 and the head 70. The body 68, the head 70, and the neck 72 cooperate to define an annular groove 74. The neck 72 defines a channel 76 extending through the neck 72. The flow blocker 66 surrounds the head 70 and the neck 72 and extends into the annular groove 74 and through the channel 76 to mount the flow blocker 66 to the post 64. The flow blocker 66 comprises a surface 78, as shown in FIGS. 4-7, for engaging the valve seat 60. The surface 78 and the valve seat 60 are, for example, frusto-conical in shape. The surface 78 engages the valve seat 60 when the filter element 32 is positioned in the interior region 22, as

	shown in FIG. 6, and disengages the valve seat 60 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. Cline at Fig. 3:  Fig. 3 Cline at Figs. 6-7:

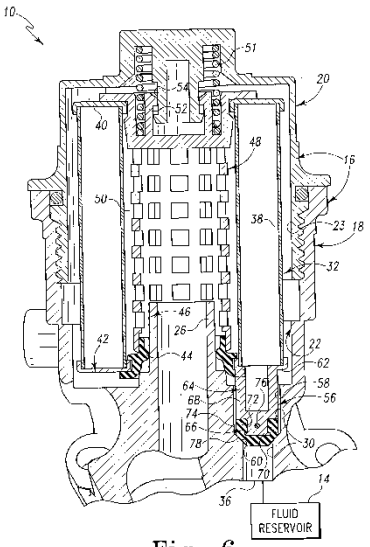


Fig. 6

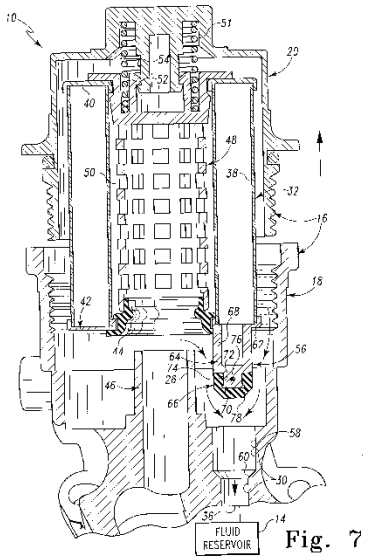


Fig. 7

For example, Yokoyama in combination with Cline discloses an eccentric opening (Cline 58) arranged in a bottom (Cline 18) of the filter housing (Cline 16, 18).

Moreover, it would have been obvious to combine Yokoyama with one or more of the other references identified by Defendant as disclosing this limitation including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading.

A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding these features to Yokoyama and/or incorporating the

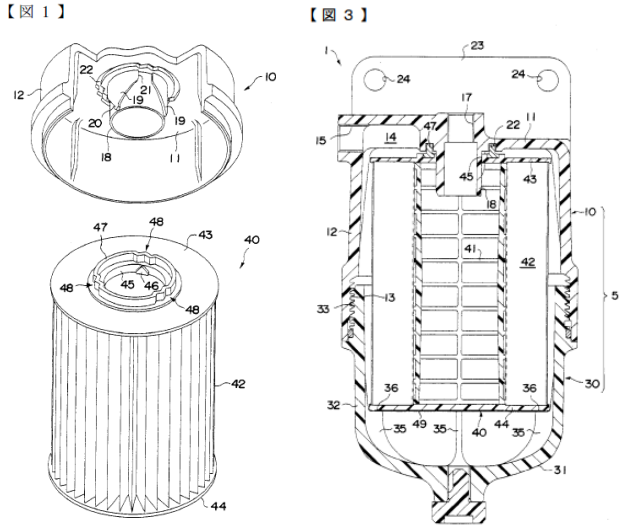
	teachings of Yokoyama into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding these features to Yokoyama and/or incorporating the teachings of Yokoyama into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing. Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine.

	The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Grass at [0033]-[0036]: According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified.

	If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function. To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid

	communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]:

	The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
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,	Yokoyama discloses 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. *See, e.g.,* Yokoyama at [0018]: As shown in FIGS. 1, 3 and 4, the filter element 40 has a structure in which a filter medium 42 bent in a bellows shape is attached around an inner cylinder 41 formed in a thin cylindrical shape in a lattice shape. A disk-shaped upper plate 43 is attached to the upper end portion, and a disk-like lower plate 44 is attached to the lower end portion. Yokoyama at Figs. 1, 3:

	 For example, Yokoyama discloses the ring filter insert (40) comprising a hollow-cylindrical filter material body (42), surrounded on front sides by top (43) and bottom (44) front panels, the ring filter insert (40) separating the raw side (14) of the filter housing (5) and the clean side (7) of the filter housing (5) from each another.
1[h] an eccentric blocking element for the eccentric opening arranged on the bottom front panel,	Yokoyama in combination with Cline, and/or the background knowledge of a POSA, discloses an eccentric blocking element for the eccentric opening arranged on the bottom front panel. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding this feature to Yokoyama and/or incorporating the teachings of Yokoyama into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0020]-[0021]:

	The filter apparatus 10 comprises a housing 16, as shown in FIGS. 1-3 and 6-7. A base 18 of the housing 16 is configured to be secured to the engine 12. A cover 20 of the housing 16 is configured to be secured to the base 18 via a threaded connection or other suitable connection. Together, the base 18 and the cover 20 define an interior region 22 (see FIG. 6) when the cover 20 is secured to the base 18. The base 18 comprises passageways of the interior region 22 to admit fluid into and discharge fluid from a filter chamber 23 (see FIG. 6) of the interior region 22. The base 18 comprises an inlet passageway 24 (see FIG. 3), a filtered fluid outlet passageway 26 (see FIGS. 3, 6, and 7), a bypass passageway 28 (see FIG. 3), and a quick-drain passageway 30 (see FIGS. 3, 6, and 7). The inlet passageway 24 admits unfiltered fluid into the filter chamber 23. The filtered fluid outlet passageway 26 discharges fluid filtered by the filter element 32 from the filter chamber 23. The bypass passageway 28 contains a bypass valve 34 (see FIG. 3) to discharge unfiltered fluid from the filter chamber 23 when, for example, the filter element 32 becomes clogged with contaminants and/or the fluid is somewhat thick due to, for example, cold weather. The quick-drain passageway 26 discharges fluid from the filter chamber 23 through a quick-drain outlet 36 (see FIGS. 6-7) when the filter element 32 is removed from the filter chamber 23. Cline at [0025]: The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. Cline at [0027]-[0029]:

	The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64. The post 64 comprises a body 68, a head 70, and a neck 72 interconnecting the body 68 and the head 70, as shown in FIGS. 5-7. The body 68 is secured to and extends from the outwardly facing surface 62. The head 70 has a diameter less than a diameter of the body 68. The neck 72 has a diameter less than the diameters of the body 68 and the head 70. The body 68, the head 70, and the neck 72 cooperate to define an annular groove 74. The neck 72 defines a channel 76 extending through the neck 72. The flow blocker 66 surrounds the head 70 and the neck 72 and extends into the annular groove 74 and through the channel 76 to mount the flow blocker 66 to the post 64. The flow blocker 66 comprises a surface 78, as shown in FIGS. 4-7, for engaging the valve seat 60. The surface 78 and the valve seat 60 are, for example, frusto-conical in shape. The surface 78 engages the valve seat 60 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6, and disengages the valve seat 60 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. Cline at Fig. 3:

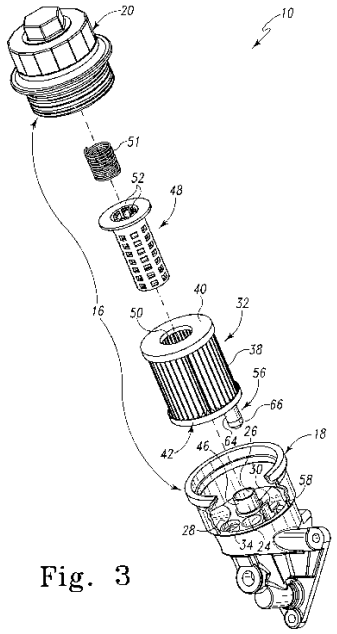


Fig. 3

Cline at Figs. 4-5:

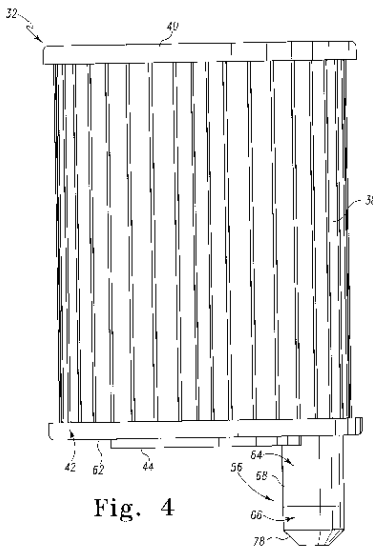


Fig. 4

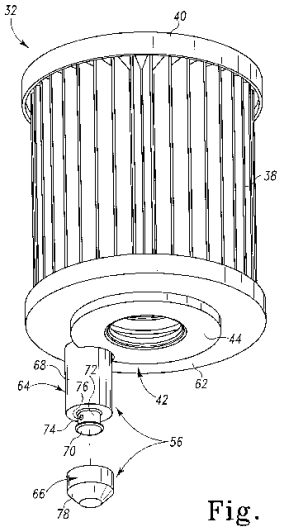


Fig. 5

For example, Yokoyama in combination with Cline discloses an eccentric blocking element (Cline 56) for the eccentric opening (Cline 58) arranged on the bottom front panel (Cline 42).

Moreover, it would have been obvious to combine Yokoyama with one or more of the other references identified by Defendant as disclosing this limitation including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading.

A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding these features to Yokoyama and/or incorporating the teachings of Yokoyama into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts.

	See, e.g., Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing. Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be

plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

Grass at [0033]-[0036]:

According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified.

If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function.

To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle

	14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends

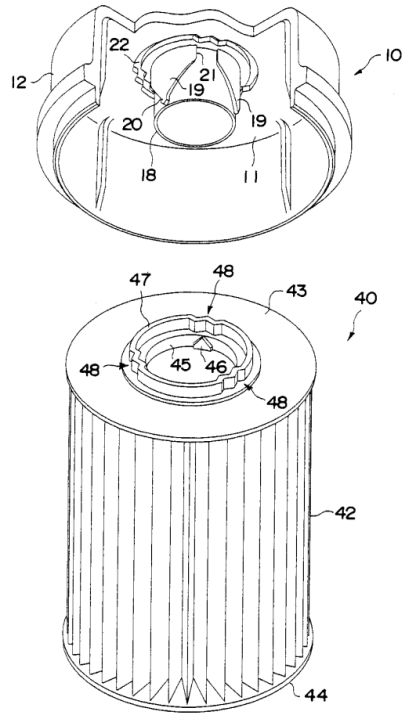
	axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
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	Yokoyama in combination with Cline, and/or the background knowledge of a POSA, discloses 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.

eccentric opening when the ring filter insert is inserted into the filter housing,	A POSA would have motivation to make this combination for numerous reasons. For example, it was well known in the art to use a positioning means to ensure proper alignment of components in a filter assembly and/or that only the proper filter insert is installed on a filter housing. *See, e.g.*, US 2006/0219621, [0003] ("Published German patent application no. DE 4402836, for example, describes an arrangement in which the correct use of Suitable replacement parts is ensured by the fact that the respective part for attachment can be attached to the unit only according to a lock-and-key principle."), [0006] ("Another object of the invention is to provide a filter device which establishes a definitive correlation between the filter housing and an installed filter element."), [0007] ("A further object of the invention is to provide a filter device which prevents installation of an incorrect filter element."), [0028] ("If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24."). Such a positioning means also ensures a user need not visually align or guess at proper alignment through trial and error, potentially damaging the blocking element or incorrectly installing it. Thus there was common sense—and express—motivation in the art to use a positioning means to ensure proper alignment of components such as an eccentric blocking element within the filter housing. Moreover, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding this feature to Yokoyama and/or incorporating the teachings of Yokoyama into Cline as doing so involves no more than routine techniques well established in the mechanical arts. Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below. For example: Yokoyama at [0016]: As shown in FIG. 1, three hook-shaped portions 19 extending downward are provided on the outer peripheral portion of the pipe portion 18 provided in the upper case half 10 (in FIG. 1, the hook-shaped portion 19 is Only two of the three are visible). FIG. 5 is a developed view of the

	pipe portion 18 provided in the upper case half body 10, and as shown in this figure, the left and right side surface portions 19a of each of the bowl-shaped portions 19 are parallel to the vertical direction. Although it may extend, it is preferably formed in a tapered shape that narrows downward as shown in this figure. Moreover, it is preferable that the lower end part of each hook-shaped part 19 has the shape pointed downward, Furthermore, the lower end part of one hook-shaped part 19 is below the lower end part of the other hook-shaped part 19. It is preferable that the protrusion extends (see the protrusion 20 shown in FIG. 5). Yokoyama at [0019]: As shown in FIGS. 1 and 4, three locking protrusions 46 that protrude toward the center of the opening 45 are provided on the inner peripheral portion of the opening 45 of the upper plate 43. As will be described later, these three locking projections 46 are attached to the upper case half 10 so that the tube portion 18 of the upper case half 10 is inserted into the opening 45 of the filter element 40. In this case, it enters into a recess 21 formed between adjacent ones of the three bowl-shaped portions 19 provided on the upper case 10 side (the engagement shown by a broken line in FIG. 5). (See projection 46). In addition, it is preferable that the front-end | tip (upper end) part of these three latching protrusions 46 has a shape pointed upward as shown in FIG. 1. Yokoyama at [0021]-[0023]: In order to assemble the filter element 40 in the filter case 5, first, the tube portion 18 (and the three hook-shaped portions 19) of the upper case half 10 is inserted through the opening 45 of the upper plate 43 in the filter element 40 from above. The filter element 40 is pushed upward. As a result, the three locking projections 46 provided on the upper plate 43 are guided upward by the side surface portions 19a of the three hook-shaped portions 19 provided on the upper case half 10 (at this time, the filter element 40). Is slightly rotated in the twisting direction), and enters into the recess 21 formed between two adjacent flanges 19. FIG. 6 shows an example of a path followed by the locking projection 46 that contacts the side surface portion 19a of the bowl-shaped portion 19 when the filter element 40 is pushed up toward the upper case half 10. The projection 46 advances in the direction indicated by the arrow in the figure and fits into a recess 21 formed between two adjacent flanges 19. In addition, in this state where each locking projection 46 of the filter element 40 enters the recess 21 formed between the adjacent flanges 19 of the upper case half 10, the upper protrusion 43 of the filter element 40 is placed on the upper plate 43. The provided seal member 47 is fitted into the groove portion 22 of the upper case half 10. At this time, the three W-shaped portions 48 provided on the seal member 47 are fitted into the portions of the groove portion 22 that are

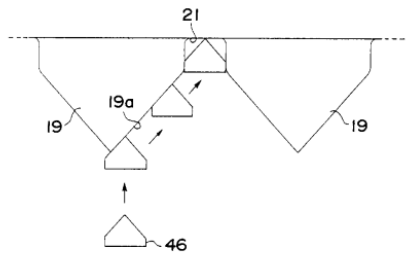
	inverted from the W-shaped portions 48. As a result, the filter element 40 is temporarily fixed to the upper case half 10. Here, as described above, the three hook-shaped portions 19 provided in the upper case half 10 each have a shape in which the lower end portion is pointed downward, and each of the locking protrusions 46 provided in the filter element 40. If the upper end portion has an upwardly sharp shape, when the filter element 40 is to be attached to the upper case half 10, the tip (upper end) portion of the locking projection 46 on the filter element 40 side is exactly Even if it is at a position facing the tip (lower end) portion of the hook-shaped portion 19, the locking protrusion 46 is displaced to either the left or right when contacting the hook-shaped portion 19. Therefore, the filter element 40 is mounted on the upper case half 10 smoothly. Moreover, in this filter apparatus 1, since the lower end part of one hook-shaped part 19 has protruded and extended below the lower end part of the other hook-shaped part 19, the effect is very big. It has become. Yokoyama at [Brief description of the drawings]: FIG. 1 is a view showing a perspective view of an upper case half of a fuel filter according to an embodiment of the present invention viewed from below and a perspective view of a filter element viewed obliquely from above. … FIG. 6 is a diagram showing a path followed by a locking projection that comes into contact with the side surface of the hook-shaped portion when the filter element is pushed up toward the upper case half. Yokoyama at Fig. 1:

【図１】



Yokoyama at Fig. 6:

【図６】



Cline at [0025]:

	The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. As one example, Yokoyama in combination with Cline discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: first (Yokoyama 19, 19a) and second (Yokoyama 46) interacting positioning means each on one of the ring filter insert (Yokoyama 40) and the filter housing (Yokoyama 5) and arranged to bring the blocking element (Cline 56) into engagement with the eccentric opening (Cline 58) when the ring filter insert is inserted into the filter housing, Moreover, it would have been obvious to combine Yokoyama with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding these features to Yokoyama and/or incorporating the teachings of Yokoyama into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts.

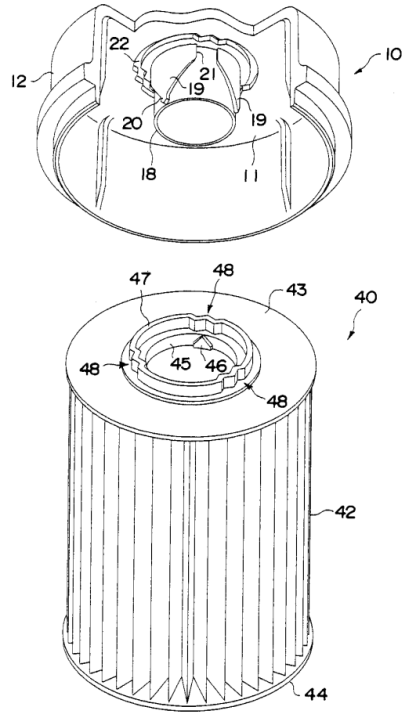
	See, e.g., Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing. Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean

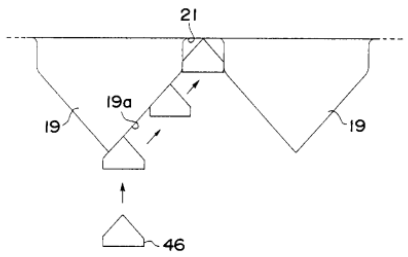
	room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Grass at [0033]-[0036]: According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified. If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function. To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the

	respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to

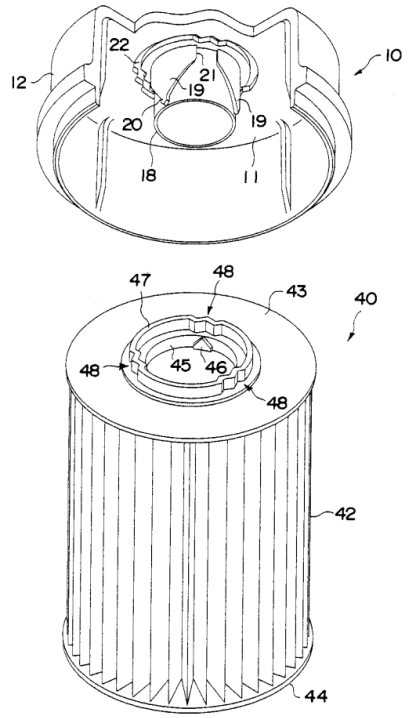
	unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
1[j] the first positioning means comprising an inclined plane,	Yokoyama in combination with Cline, and/or the background knowledge of a POSA, discloses the first positioning means comprising an inclined plane,. Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs

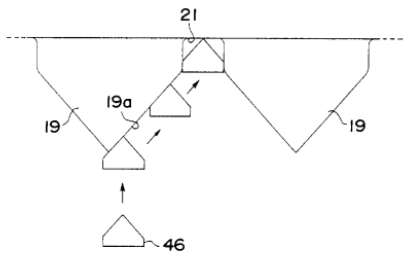
	the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding this feature to Yokoyama and/or incorporating the teachings of Yokoyama into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.*, Yokoyama at [0016]: As shown in FIG. 1, three hook-shaped portions 19 extending downward are provided on the outer peripheral portion of the pipe portion 18 provided in the upper case half 10 (in FIG. 1, the hook-shaped portion 19 is Only two of the three are visible). FIG. 5 is a developed view of the pipe portion 18 provided in the upper case half body 10, and as shown in this figure, the left and right side surface portions 19a of each of the bowl-shaped portions 19 are parallel to the vertical direction. Although it may extend, it is preferably formed in a tapered shape that narrows downward as shown in this figure. Moreover, it is preferable that the lower end part of each hook-shaped part 19 has the shape pointed downward, Furthermore, the lower end part of one hook-shaped part 19 is below the lower end part of the other hook-shaped part 19. It is preferable that the protrusion extends (see the protrusion 20 shown in FIG. 5). Yokoyama at [0021]: In order to assemble the filter element 40 in the filter case 5, first, the tube portion 18 (and the three hook-shaped portions 19) of the upper case half 10 is inserted through the opening 45 of the upper plate 43 in the filter element 40 from above. The filter element 40 is pushed upward. As a result, the three locking projections 46 provided on the upper plate 43 are guided upward by the side surface portions 19a of the three hook-shaped portions 19 provided on the upper case half 10 (at this time, the filter element 40). Is slightly rotated in the twisting direction), and enters into the recess 21 formed between two adjacent flanges 19. FIG. 6 shows an example of a path followed by the locking projection 46 that contacts the side surface portion 19a of the bowl-shaped portion 19 when the filter element 40 is pushed up toward the upper case half 10. The projection 46

	advances in the direction indicated by the arrow in the figure and fits into a recess 21 formed between two adjacent flanges 19. Yokoyama at Fig. 1: 【図１】  Yokoyama at Fig. 6:

	【図６】  Cline at [0025]: The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. As one example, Yokoyama in combination with Cline discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: the first positioning means comprising an inclined plane (Yokoyama 19, 19a).
1[k] the second positioning means comprising a protruding nose which is arranged opposite the inclined plane, and	Yokoyama in combination with Cline, and/or the background knowledge of a POSA, discloses the second positioning means comprising a protruding nose which is arranged opposite the inclined plane.

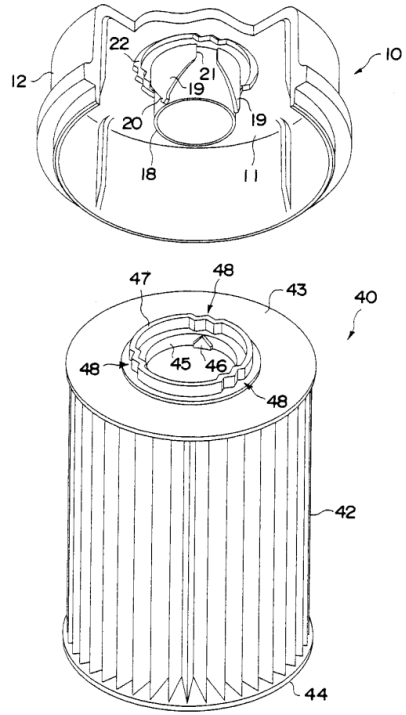
	Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding this feature to Yokoyama and/or incorporating the teachings of Yokoyama into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Yokoyama at [0016]: As shown in FIG. 1, three hook-shaped portions 19 extending downward are provided on the outer peripheral portion of the pipe portion 18 provided in the upper case half 10 (in FIG. 1, the hook-shaped portion 19 is Only two of the three are visible). FIG. 5 is a developed view of the pipe portion 18 provided in the upper case half body 10, and as shown in this figure, the left and right side surface portions 19a of each of the bowl-shaped portions 19 are parallel to the vertical direction. Although it may extend, it is preferably formed in a tapered shape that narrows downward as shown in this figure. Moreover, it is preferable that the lower end part of each hook-shaped part 19 has the shape pointed downward, Furthermore, the lower end part of one hook-shaped part 19 is below the lower end part of the other hook-shaped part 19. It is preferable that the protrusion extends (see the protrusion 20 shown in FIG. 5). Yokoyama at [0021]: In order to assemble the filter element 40 in the filter case 5, first, the tube portion 18 (and the three hook-shaped portions 19) of the upper case half 10 is inserted through the opening 45 of the upper plate 43 in the filter element 40 from above. The filter element 40 is pushed upward. As a result, the three locking projections 46 provided on the upper plate 43 are guided upward by the side surface portions 19a of the three hook-shaped portions 19 provided on the upper case half 10 (at this time, the filter element 40). Is slightly rotated in the twisting direction), and enters into the recess 21 formed between two adjacent flanges 19. FIG. 6 shows an example of a path followed

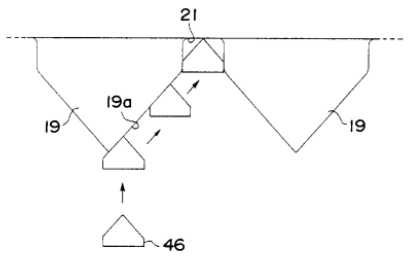
	by the locking projection 46 that contacts the side surface portion 19a of the bowl-shaped portion 19 when the filter element 40 is pushed up toward the upper case half 10. The projection 46 advances in the direction indicated by the arrow in the figure and fits into a recess 21 formed between two adjacent flanges 19. Yokoyama at Fig. 1: 【図 1】  Yokoyama at Fig. 6:

	【図６】  Cline at [0025]: The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. As one example, Yokoyama in combination with Cline discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: the second positioning means comprising a protruding nose (Yokoyama 46) which is arranged opposite the inclined plane (Yokoyama 19, 19A).
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	Yokoyama in combination with Cline, and/or the background knowledge of a POSA, discloses 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.

eccentric opening, by rotating the ring filter insert relative to the filter housing,	A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding this feature to Yokoyama and/or incorporating the teachings of Yokoyama into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Yokoyama at [0016]: As shown in FIG. 1, three hook-shaped portions 19 extending downward are provided on the outer peripheral portion of the pipe portion 18 provided in the upper case half 10 (in FIG. 1, the hook-shaped portion 19 is Only two of the three are visible). FIG. 5 is a developed view of the pipe portion 18 provided in the upper case half body 10, and as shown in this figure, the left and right side surface portions 19a of each of the bowl-shaped portions 19 are parallel to the vertical direction. Although it may extend, it is preferably formed in a tapered shape that narrows downward as shown in this figure. Moreover, it is preferable that the lower end part of each hook-shaped part 19 has the shape pointed downward, Furthermore, the lower end part of one hook-shaped part 19 is below the lower end part of the other hook-shaped part 19. It is preferable that the protrusion extends (see the protrusion 20 shown in FIG. 5). Yokoyama at [0019]: As shown in FIGS. 1 and 4, three locking protrusions 46 that protrude toward the center of the opening 45 are provided on the inner peripheral portion of the opening 45 of the upper plate 43. As will be described later, these three locking projections 46 are attached to the upper case half 10 so that the tube portion 18 of the upper case half 10 is inserted into the opening 45 of the filter element 40. In this case, it enters into a recess 21 formed between adjacent ones of the three bowl-shaped portions 19 provided on the upper case 10 side (the engagement shown by a broken line in FIG. 5). (See projection 46). In addition, it is preferable that the front-end | tip (upper end) part of these three latching protrusions 46 has a shape pointed upward as shown in FIG. 1. Yokoyama at [0021]-[0023]:

	In order to assemble the filter element 40 in the filter case 5, first, the tube portion 18 (and the three hook-shaped portions 19) of the upper case half 10 is inserted through the opening 45 of the upper plate 43 in the filter element 40 from above. The filter element 40 is pushed upward. As a result, the three locking projections 46 provided on the upper plate 43 are guided upward by the side surface portions 19a of the three hook-shaped portions 19 provided on the upper case half 10 (at this time, the filter element 40). Is slightly rotated in the twisting direction), and enters into the recess 21 formed between two adjacent flanges 19. FIG. 6 shows an example of a path followed by the locking projection 46 that contacts the side surface portion 19a of the bowl-shaped portion 19 when the filter element 40 is pushed up toward the upper case half 10. The projection 46 advances in the direction indicated by the arrow in the figure and fits into a recess 21 formed between two adjacent flanges 19. In addition, in this state where each locking projection 46 of the filter element 40 enters the recess 21 formed between the adjacent flanges 19 of the upper case half 10, the upper protrusion 43 of the filter element 40 is placed on the upper plate 43. The provided seal member 47 is fitted into the groove portion 22 of the upper case half 10. At this time, the three W-shaped portions 48 provided on the seal member 47 are fitted into the portions of the groove portion 22 that are inverted from the W-shaped portions 48. As a result, the filter element 40 is temporarily fixed to the upper case half 10. Here, as described above, the three hook-shaped portions 19 provided in the upper case half 10 each have a shape in which the lower end portion is pointed downward, and each of the locking protrusions 46 provided in the filter element 40. If the upper end portion has an upwardly sharp shape, when the filter element 40 is to be attached to the upper case half 10, the tip (upper end) portion of the locking projection 46 on the filter element 40 side is exactly Even if it is at a position facing the tip (lower end) portion of the hook-shaped portion 19, the locking protrusion 46 is displaced to either the left or right when contacting the hook-shaped portion 19. Therefore, the filter element 40 is mounted on the upper case half 10 smoothly. Moreover, in this filter apparatus 1, since the lower end part of one hook-shaped part 19 has protruded and extended below the lower end part of the other hook-shaped part 19, the effect is very big. It has become. Yokoyama at [Brief description of the drawings]: FIG. 1 is a view showing a perspective view of an upper case half of a fuel filter according to an embodiment of the present invention viewed from below and a perspective view of a filter element viewed obliquely from above. …

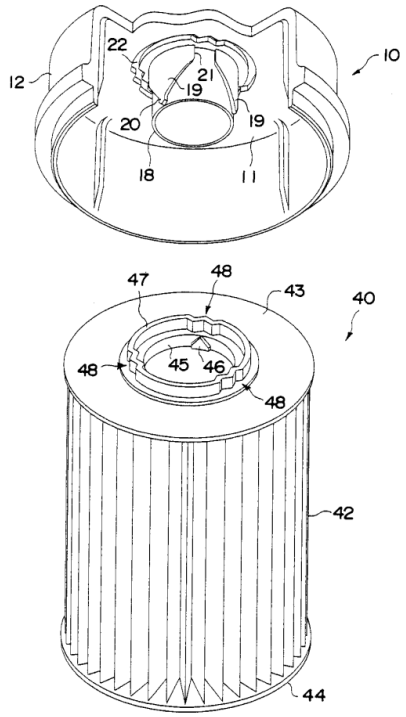
	FIG. 6 is a diagram showing a path followed by a locking projection that comes into contact with the side surface of the hook-shaped portion when the filter element is pushed up toward the upper case half. Yokoyama at Fig. 1: 【図１】  Yokoyama at Fig. 6:

	【図６】  Cline at [0025]: The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. For example, Yokoyama discloses the inclined plane (Yokoyama 19, 19a) and the nose (Yokoyama 46) arranged to be movable in relation to each other in such a way that they slide along each other (*see* Yokoyama fig. 6, showing the inclined plane and the nose sliding along each other) and bring the blocking element (Cline 56) into engagement with the eccentric opening (Cline 58), by rotating the ring filter insert relative to the filter housing (*see* Yokoyama at [0021], “at this time, the filter element 40 is slightly rotated in the twisting direction”).
1[m] the inclined plane being one of embodied and arranged on one of the inner circumference of the ring filter insert and the	Yokoyama discloses 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

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,	other of the inner circumference of the ring filter insert and the outer circumference of the filter housing part,. *See, e.g.,* Yokoyama at [0016]: As shown in FIG. 1, three hook-shaped portions 19 extending downward are provided on the outer peripheral portion of the pipe portion 18 provided in the upper case half 10 (in FIG. 1, the hook-shaped portion 19 is Only two of the three are visible). FIG. 5 is a developed view of the pipe portion 18 provided in the upper case half body 10, and as shown in this figure, the left and right side surface portions 19a of each of the bowl-shaped portions 19 are parallel to the vertical direction. Although it may extend, it is preferably formed in a tapered shape that narrows downward as shown in this figure. Moreover, it is preferable that the lower end part of each hook-shaped part 19 has the shape pointed downward, Furthermore, the lower end part of one hook-shaped part 19 is below the lower end part of the other hook-shaped part 19. It is preferable that the protrusion extends (see the protrusion 20 shown in FIG. 5). Yokoyama at [0019]: As shown in FIGS. 1 and 4, three locking protrusions 46 that protrude toward the center of the opening 45 are provided on the inner peripheral portion of the opening 45 of the upper plate 43. As will be described later, these three locking projections 46 are attached to the upper case half 10 so that the tube portion 18 of the upper case half 10 is inserted into the opening 45 of the filter element 40. In this case, it enters into a recess 21 formed between adjacent ones of the three bowl-shaped portions 19 provided on the upper case 10 side (the engagement shown by a broken line in FIG. 5). (See projection 46). In addition, it is preferable that the front-end | tip (upper end) part of these three latching protrusions 46 has a shape pointed upward as shown in FIG. 1. Yokoyama at [0021]-[0023]: In order to assemble the filter element 40 in the filter case 5, first, the tube portion 18 (and the three hook-shaped portions 19) of the upper case half 10 is inserted through the opening 45 of the upper plate 43 in the filter element 40 from above. The filter element 40 is pushed upward. As a result, the three locking projections 46 provided on the upper plate 43 are guided upward by the side surface portions 19a of the three hook-shaped portions 19 provided on the upper case half 10 (at this time, the filter element 40). Is slightly rotated in the twisting direction), and enters into the

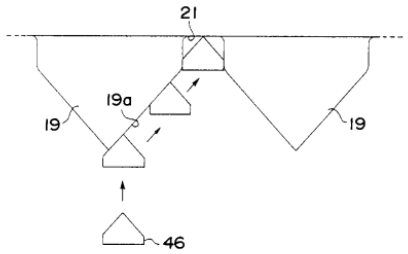
	recess 21 formed between two adjacent flanges 19. FIG. 6 shows an example of a path followed by the locking projection 46 that contacts the side surface portion 19a of the bowl-shaped portion 19 when the filter element 40 is pushed up toward the upper case half 10. The projection 46 advances in the direction indicated by the arrow in the figure and fits into a recess 21 formed between two adjacent flanges 19. In addition, in this state where each locking projection 46 of the filter element 40 enters the recess 21 formed between the adjacent flanges 19 of the upper case half 10, the upper protrusion 43 of the filter element 40 is placed on the upper plate 43. The provided seal member 47 is fitted into the groove portion 22 of the upper case half 10. At this time, the three W-shaped portions 48 provided on the seal member 47 are fitted into the portions of the groove portion 22 that are inverted from the W-shaped portions 48. As a result, the filter element 40 is temporarily fixed to the upper case half 10. Here, as described above, the three hook-shaped portions 19 provided in the upper case half 10 each have a shape in which the lower end portion is pointed downward, and each of the locking protrusions 46 provided in the filter element 40. If the upper end portion has an upwardly sharp shape, when the filter element 40 is to be attached to the upper case half 10, the tip (upper end) portion of the locking projection 46 on the filter element 40 side is exactly Even if it is at a position facing the tip (lower end) portion of the hook-shaped portion 19, the locking protrusion 46 is displaced to either the left or right when contacting the hook-shaped portion 19. Therefore, the filter element 40 is mounted on the upper case half 10 smoothly. Moreover, in this filter apparatus 1, since the lower end part of one hook-shaped part 19 has protruded and extended below the lower end part of the other hook-shaped part 19, the effect is very big. It has become. Yokoyama at [Brief description of the drawings]: FIG. 1 is a view showing a perspective view of an upper case half of a fuel filter according to an embodiment of the present invention viewed from below and a perspective view of a filter element viewed obliquely from above. … FIG. 6 is a diagram showing a path followed by a locking projection that comes into contact with the side surface of the hook-shaped portion when the filter element is pushed up toward the upper case half. Yokoyama at Fig. 1:

【図１】



Yokoyama at Fig. 6:

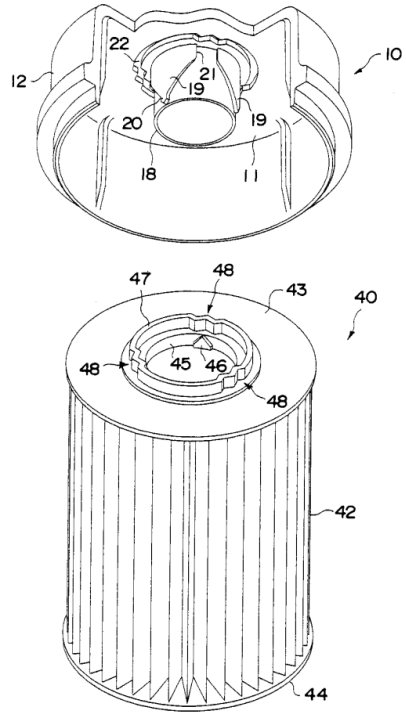
【図６】

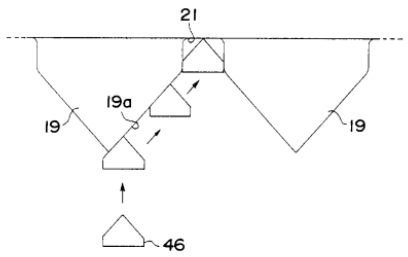


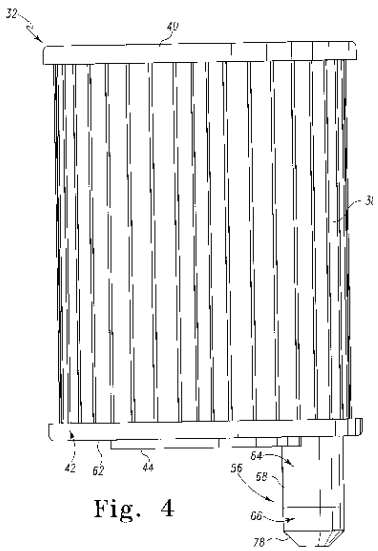
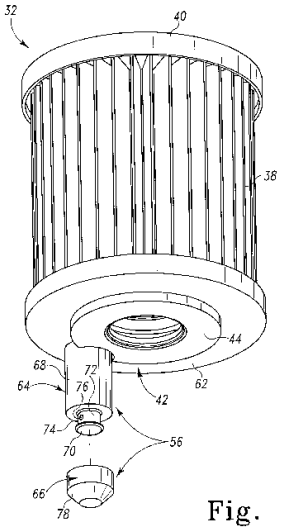
As one example, Yokoyama discloses the inclined plane (19, 19a) being one of embodied and arranged on the outer circumference of a filter housing part (18) arranged inside the ring filter

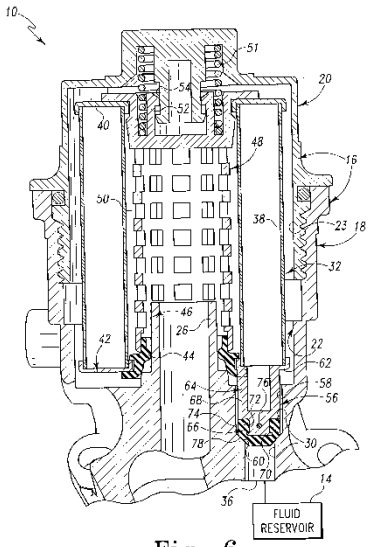
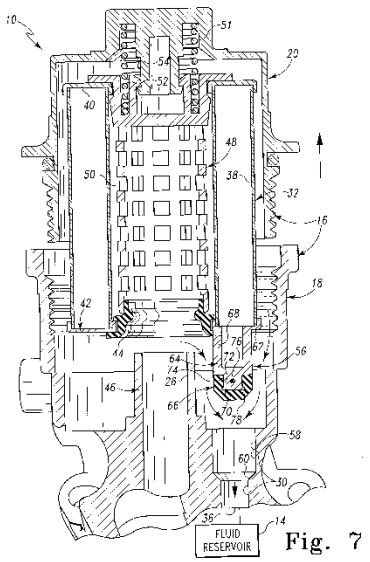
	insert (40) and the protruding nose (46) being one of embodied and arranged on the inner circumference (45) of the ring filter insert (40).
1[n] the inclined plane comprising an incline which excludes a self-locking and	The specification lacks adequate written description support for and does not enable the POSA to practice the limitation "excludes a self-locking." The term is further indefinite as the POSA would not understand the scope of such term and what is included or excluded therein. Applying Hengst's apparent construction however, Yokoyama discloses the inclined plane comprising an incline which excludes a self-locking. *See, e.g.,* Yokoyama at [0016]: As shown in FIG. 1, three hook-shaped portions 19 extending downward are provided on the outer peripheral portion of the pipe portion 18 provided in the upper case half 10 (in FIG. 1, the hook-shaped portion 19 is Only two of the three are visible). FIG. 5 is a developed view of the pipe portion 18 provided in the upper case half body 10, and as shown in this figure, the left and right side surface portions 19a of each of the bowl-shaped portions 19 are parallel to the vertical direction. Although it may extend, it is preferably formed in a tapered shape that narrows downward as shown in this figure. Moreover, it is preferable that the lower end part of each hook-shaped part 19 has the shape pointed downward, Furthermore, the lower end part of one hook-shaped part 19 is below the lower end part of the other hook-shaped part 19. It is preferable that the protrusion extends (see the protrusion 20 shown in FIG. 5). Yokoyama at [0019]: As shown in FIGS. 1 and 4, three locking protrusions 46 that protrude toward the center of the opening 45 are provided on the inner peripheral portion of the opening 45 of the upper plate 43. As will be described later, these three locking projections 46 are attached to the upper case half 10 so that the tube portion 18 of the upper case half 10 is inserted into the opening 45 of the filter element 40. In this case, it enters into a recess 21 formed between adjacent ones of the three bowl-shaped portions 19 provided on the upper case 10 side (the engagement shown by a broken line in FIG. 5). (See projection 46). In addition, it is preferable that the front-end | tip (upper end) part of these three latching protrusions 46 has a shape pointed upward as shown in FIG. 1. Yokoyama at [0021]-[0023]:

	In order to assemble the filter element 40 in the filter case 5, first, the tube portion 18 (and the three hook-shaped portions 19) of the upper case half 10 is inserted through the opening 45 of the upper plate 43 in the filter element 40 from above. The filter element 40 is pushed upward. As a result, the three locking projections 46 provided on the upper plate 43 are guided upward by the side surface portions 19a of the three hook-shaped portions 19 provided on the upper case half 10 (at this time, the filter element 40). Is slightly rotated in the twisting direction), and enters into the recess 21 formed between two adjacent flanges 19. FIG. 6 shows an example of a path followed by the locking projection 46 that contacts the side surface portion 19a of the bowl-shaped portion 19 when the filter element 40 is pushed up toward the upper case half 10. The projection 46 advances in the direction indicated by the arrow in the figure and fits into a recess 21 formed between two adjacent flanges 19. In addition, in this state where each locking projection 46 of the filter element 40 enters the recess 21 formed between the adjacent flanges 19 of the upper case half 10, the upper protrusion 43 of the filter element 40 is placed on the upper plate 43. The provided seal member 47 is fitted into the groove portion 22 of the upper case half 10. At this time, the three W-shaped portions 48 provided on the seal member 47 are fitted into the portions of the groove portion 22 that are inverted from the W-shaped portions 48. As a result, the filter element 40 is temporarily fixed to the upper case half 10. Here, as described above, the three hook-shaped portions 19 provided in the upper case half 10 each have a shape in which the lower end portion is pointed downward, and each of the locking protrusions 46 provided in the filter element 40. If the upper end portion has an upwardly sharp shape, when the filter element 40 is to be attached to the upper case half 10, the tip (upper end) portion of the locking projection 46 on the filter element 40 side is exactly Even if it is at a position facing the tip (lower end) portion of the hook-shaped portion 19, the locking protrusion 46 is displaced to either the left or right when contacting the hook-shaped portion 19. Therefore, the filter element 40 is mounted on the upper case half 10 smoothly. Moreover, in this filter apparatus 1, since the lower end part of one hook-shaped part 19 has protruded and extended below the lower end part of the other hook-shaped part 19, the effect is very big. It has become. Yokoyama at [Brief description of the drawings]: FIG. 1 is a view showing a perspective view of an upper case half of a fuel filter according to an embodiment of the present invention viewed from below and a perspective view of a filter element viewed obliquely from above. …

	FIG. 6 is a diagram showing a path followed by a locking projection that comes into contact with the side surface of the hook-shaped portion when the filter element is pushed up toward the upper case half. Yokoyama at Fig. 1: 【図１】  Yokoyama at Fig. 6:

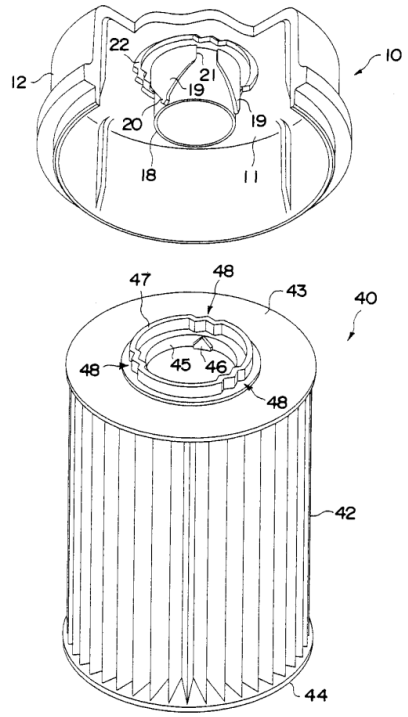
	【図６】  For example, Yokoyama discloses the inclined plane (19, 19a) comprising an incline (19a) which excludes a self-locking.
1[o] the eccentric opening being an outlet for emptying the filter housing when the filter insert is removed.	Yokoyama in combination with Cline, and/or the background knowledge of a POSA, discloses the eccentric opening being an outlet for emptying the filter housing when the filter insert is removed. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding this feature to Yokoyama and/or incorporating the teachings of Yokoyama into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0025]: The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to

	block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. Cline at Figs. 4-7:  Fig. 4  Fig. 5

	 Fig. 6  Fig. 7 For example, Yokoyama in combination with Cline discloses the eccentric opening (Cline 58) being an outlet for emptying the filter housing when the filter insert (Cline 32) is removed (*see* Cline [0025] "[t]he quick-drain valve member 56 is removed from the valve chamber 58 … to allow a flow of fluid from the interior region 22 through the quick-drain outlet 36 … when the filter element 32 is removed").
Claim 2	
[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.	The subject matter of claim 2 as a whole would have been obvious in light of Yokoyama and the general background knowledge of the POSA. The POSA would have understood that implementing the inclined planes of Yokoyama by forming 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 was a simple design option and choice for implementing the inclines planes.

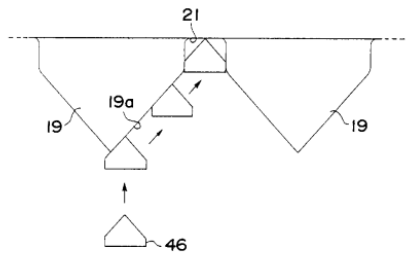
Claim 3	
[3] The liquid filter according to claim 1, including a guide for the nose which runs in an axial direction and is connected to a lower end of the inclined plane.	Yokoyama discloses a guide for the nose which runs in an axial direction and is connected to a lower end of the inclined plane. *See, e.g.,* Yokoyama at [0019]: As shown in FIGS. 1 and 4, three locking protrusions 46 that protrude toward the center of the opening 45 are provided on the inner peripheral portion of the opening 45 of the upper plate 43. As will be described later, these three locking projections 46 are attached to the upper case half 10 so that the tube portion 18 of the upper case half 10 is inserted into the opening 45 of the filter element 40. In this case, it enters into a recess 21 formed between adjacent ones of the three bowl-shaped portions 19 provided on the upper case 10 side (the engagement shown by a broken line in FIG. 5). (See projection 46). In addition, it is preferable that the front-end | tip (upper end) part of these three latching protrusions 46 has a shape pointed upward as shown in FIG. 1. Yokoyama at [0021]: In order to assemble the filter element 40 in the filter case 5, first, the tube portion 18 (and the three hook-shaped portions 19) of the upper case half 10 is inserted through the opening 45 of the upper plate 43 in the filter element 40 from above. The filter element 40 is pushed upward. As a result, the three locking projections 46 provided on the upper plate 43 are guided upward by the side surface portions 19a of the three hook-shaped portions 19 provided on the upper case half 10 (at this time, the filter element 40). Is slightly rotated in the twisting direction), and enters into the recess 21 formed between two adjacent flanges 19. FIG. 6 shows an example of a path followed by the locking projection 46 that contacts the side surface portion 19a of the bowl-shaped portion 19 when the filter element 40 is pushed up toward the upper case half 10. The projection 46 advances in the direction indicated by the arrow in the figure and fits into a recess 21 formed between two adjacent flanges 19. Yokoyama at Fig. 1:

【図１】



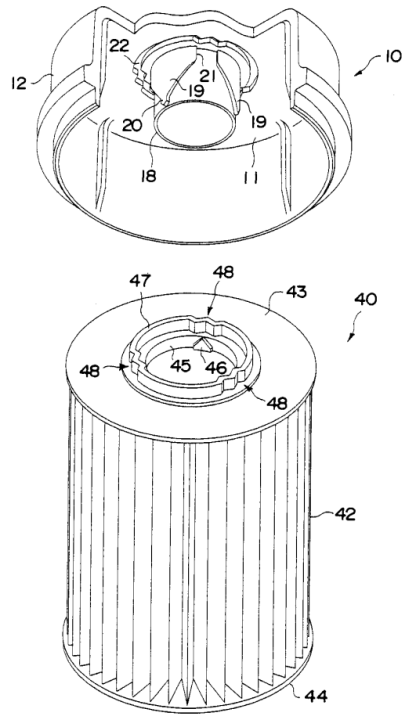
Yokoyama at Fig. 6:

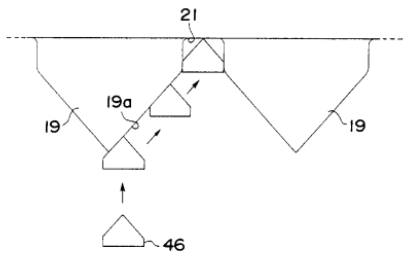
【図６】



For example, Yokoyama discloses a guide (21) for the nose (46) which runs in an axial direction and is connected to a lower end of the inclined plane (19, 19a).

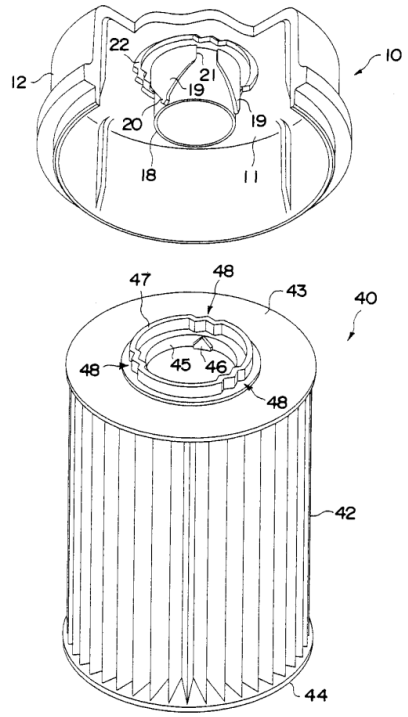
Claim 5	
[5] The liquid filter according to claim 1, wherein the inclined plane is formed by one of a radially protruding rib and step, which forms a contact surface for the nose on one of an upper and lower side thereof.	Yokoyama discloses the inclined plane is formed by one of a radially protruding rib and step, which forms a contact surface for the nose on one of an upper and lower side thereof. *See, e.g.,* Yokoyama at [0016]: As shown in FIG. 1, three hook-shaped portions 19 extending downward are provided on the outer peripheral portion of the pipe portion 18 provided in the upper case half 10 (in FIG. 1, the hook-shaped portion 19 is Only two of the three are visible). FIG. 5 is a developed view of the pipe portion 18 provided in the upper case half body 10, and as shown in this figure, the left and right side surface portions 19a of each of the bowl-shaped portions 19 are parallel to the vertical direction. Although it may extend, it is preferably formed in a tapered shape that narrows downward as shown in this figure. Moreover, it is preferable that the lower end part of each hook-shaped part 19 has the shape pointed downward, Furthermore, the lower end part of one hook-shaped part 19 is below the lower end part of the other hook-shaped part 19. It is preferable that the protrusion extends (see the protrusion 20 shown in FIG. 5). Yokoyama at [0019]: As shown in FIGS. 1 and 4, three locking protrusions 46 that protrude toward the center of the opening 45 are provided on the inner peripheral portion of the opening 45 of the upper plate 43. As will be described later, these three locking projections 46 are attached to the upper case half 10 so that the tube portion 18 of the upper case half 10 is inserted into the opening 45 of the filter element 40. In this case, it enters into a recess 21 formed between adjacent ones of the three bowl-shaped portions 19 provided on the upper case 10 side (the engagement shown by a broken line in FIG. 5). (See projection 46). In addition, it is preferable that the front-end | tip (upper end) part of these three latching protrusions 46 has a shape pointed upward as shown in FIG. 1. Yokoyama at [0021]: In order to assemble the filter element 40 in the filter case 5, first, the tube portion 18 (and the three hook-shaped portions 19) of the upper case half 10 is inserted through the opening 45 of the upper plate 43 in the filter element 40 from above. The filter element 40 is pushed upward. As a result, the three locking projections 46 provided on the upper plate 43 are guided upward by the side surface portions 19a of the three hook-shaped portions 19 provided on the upper case half 10

	(at this time, the filter element 40). Is slightly rotated in the twisting direction), and enters into the recess 21 formed between two adjacent flanges 19. FIG. 6 shows an example of a path followed by the locking projection 46 that contacts the side surface portion 19a of the bowl-shaped portion 19 when the filter element 40 is pushed up toward the upper case half 10. The projection 46 advances in the direction indicated by the arrow in the figure and fits into a recess 21 formed between two adjacent flanges 19. Yokoyama at Fig. 1: 【図 1】  Yokoyama at Fig. 6:

	【図６】  As one example, Yokoyama discloses the inclined plane (19, 19a) is formed by a radially protruding step, which forms a contact surface (19a) for the nose (46) on a lower side thereof.
Claim 6	
[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.	Yokoyama discloses the inclined plane is formed integrally with one of the filter housing and the ring filter insert. *See, e.g.,* Yokoyama at [0015]: As shown in Figure 3, a cavity 14 is provided on the upper left side of the upper case half body 10, and a fuel inflow path 15, which communicates with this cavity 14, is provided extending in the left-right direction in the ceiling part 11. Also, at the center of the ceiling part 11 of the upper case 10, a cylindrical tube part 18, which protrudes downward from its lower surface side and extends into the filter element holding space 7, is formed. Its inner space communicates with the fuel outflow path 17, which is provided extending up and down at the center of the ceiling part 11. Yokoyama at [0019]: As shown in FIGS. 1 and 4, three locking protrusions 46 that protrude toward the center of the opening 45 are provided on the inner peripheral portion of the opening 45 of the upper plate 43. As will be described later, these three locking projections 46 are attached to the upper case half 10 so that the tube portion 18 of the upper case half 10 is inserted into the opening 45 of the filter element 40. In this case, it enters into a recess 21 formed between adjacent ones of the three

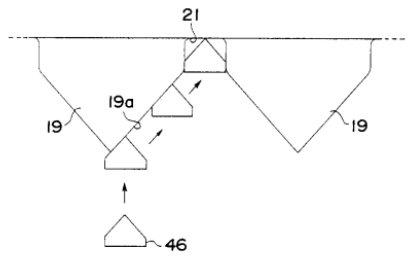
	bowl-shaped portions 19 provided on the upper case 10 side (the engagement shown by a broken line in FIG. 5). (See projection 46). In addition, it is preferable that the front-end | tip (upper end) part of these three latching protrusions 46 has a shape pointed upward as shown in FIG. 1. Yokoyama at [0021]: In order to assemble the filter element 40 in the filter case 5, first, the tube portion 18 (and the three hook-shaped portions 19) of the upper case half 10 is inserted through the opening 45 of the upper plate 43 in the filter element 40 from above. The filter element 40 is pushed upward. As a result, the three locking projections 46 provided on the upper plate 43 are guided upward by the side surface portions 19a of the three hook-shaped portions 19 provided on the upper case half 10 (at this time, the filter element 40). Is slightly rotated in the twisting direction), and enters into the recess 21 formed between two adjacent flanges 19. FIG. 6 shows an example of a path followed by the locking projection 46 that contacts the side surface portion 19a of the bowl-shaped portion 19 when the filter element 40 is pushed up toward the upper case half 10. The projection 46 advances in the direction indicated by the arrow in the figure and fits into a recess 21 formed between two adjacent flanges 19. Yokoyama at Fig. 1:

【図１】



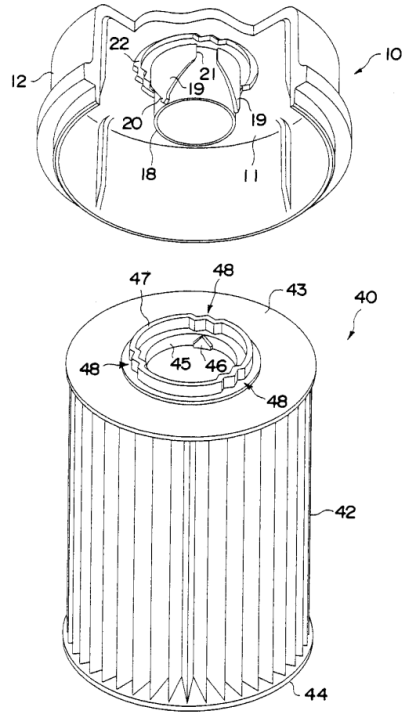
Yokoyama at Fig. 6:

【図６】



As one example, Yokoyama discloses the inclined plane (19, 19a) is formed integrally with the filter housing (18, 10).

Claim 8	
[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.	Yokoyama discloses the nose is formed integrally with one of the filter housing and the ring filter insert. *See, e.g.,* Yokoyama at [0015]: As shown in Figure 3, a cavity 14 is provided on the upper left side of the upper case half body 10, and a fuel inflow path 15, which communicates with this cavity 14, is provided extending in the left-right direction in the ceiling part 11. Also, at the center of the ceiling part 11 of the upper case 10, a cylindrical tube part 18, which protrudes downward from its lower surface side and extends into the filter element holding space 7, is formed. Its inner space communicates with the fuel outflow path 17, which is provided extending up and down at the center of the ceiling part 11. Yokoyama at [0019]: As shown in FIGS. 1 and 4, three locking protrusions 46 that protrude toward the center of the opening 45 are provided on the inner peripheral portion of the opening 45 of the upper plate 43. As will be described later, these three locking projections 46 are attached to the upper case half 10 so that the tube portion 18 of the upper case half 10 is inserted into the opening 45 of the filter element 40. In this case, it enters into a recess 21 formed between adjacent ones of the three bowl-shaped portions 19 provided on the upper case 10 side (the engagement shown by a broken line in FIG. 5). (See projection 46). In addition, it is preferable that the front-end | tip (upper end) part of these three latching protrusions 46 has a shape pointed upward as shown in FIG. 1. Yokoyama at [0021]: In order to assemble the filter element 40 in the filter case 5, first, the tube portion 18 (and the three hook-shaped portions 19) of the upper case half 10 is inserted through the opening 45 of the upper plate 43 in the filter element 40 from above. The filter element 40 is pushed upward. As a result, the three locking projections 46 provided on the upper plate 43 are guided upward by the side surface portions 19a of the three hook-shaped portions 19 provided on the upper case half 10 (at this time, the filter element 40). Is slightly rotated in the twisting direction), and enters into the recess 21 formed between two adjacent flanges 19. FIG. 6 shows an example of a path followed by the locking projection 46 that contacts the side surface portion 19a of the bowl-shaped portion

	19 when the filter element 40 is pushed up toward the upper case half 10. The projection 46 advances in the direction indicated by the arrow in the figure and fits into a recess 21 formed between two adjacent flanges 19. Yokoyama at Fig. 1: 【図１】  As one example, Yokoyama discloses the nose (46) is formed integrally with the ring filter insert (45, 40).
Claim 9	
[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	Yokoyama in combination with Cline, and/or the background knowledge of a POSA, discloses 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.

plug which is one of rigidly connected to and rigidly arranged on the bottom front panel.	A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding this feature to Yokoyama and/or incorporating the teachings of Yokoyama into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0020]-[0021]: The filter apparatus 10 comprises a housing 16, as shown in FIGS. 1-3 and 6-7. A base 18 of the housing 16 is configured to be secured to the engine 12. A cover 20 of the housing 16 is configured to be secured to the base 18 via a threaded connection or other suitable connection. Together, the base 18 and the cover 20 define an interior region 22 (see FIG. 6) when the cover 20 is secured to the base 18. The base 18 comprises passageways of the interior region 22 to admit fluid into and discharge fluid from a filter chamber 23 (see FIG. 6) of the interior region 22. The base 18 comprises an inlet passageway 24 (see FIG. 3), a filtered fluid outlet passageway 26 (see FIGS. 3, 6, and 7), a bypass passageway 28 (see FIG. 3), and a quick-drain passageway 30 (see FIGS. 3, 6, and 7). The inlet passageway 24 admits unfiltered fluid into the filter chamber 23. The filtered fluid outlet passageway 26 discharges fluid filtered by the filter element 32 from the filter chamber 23. The bypass passageway 28 contains a bypass valve 34 (see FIG. 3) to discharge unfiltered fluid from the filter chamber 23 when, for example, the filter element 32 becomes clogged with contaminants and/or the fluid is somewhat thick due to, for example, cold weather. The quick-drain passageway 26 discharges fluid from the filter chamber 23 through a quick-drain outlet 36 (see FIGS. 6-7) when the filter element 32 is removed from the filter chamber 23. Cline at [0025]: The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in

	the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. Cline at [0027]-[0029]: The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64. The post 64 comprises a body 68, a head 70, and a neck 72 interconnecting the body 68 and the head 70, as shown in FIGS. 5-7. The body 68 is secured to and extends from the outwardly facing surface 62. The head 70 has a diameter less than a diameter of the body 68. The neck 72 has a diameter less than the diameters of the body 68 and the head 70. The body 68, the head 70, and the neck 72 cooperate to define an annular groove 74. The neck 72 defines a channel 76 extending through the neck 72. The flow blocker 66 surrounds the head 70 and the neck 72 and extends into the annular groove 74 and through the channel 76 to mount the flow blocker 66 to the post 64. The flow blocker 66 comprises a surface 78, as shown in FIGS. 4-7, for engaging the valve seat 60. The surface 78 and the valve seat 60 are, for example, frusto-conical in shape. The surface 78 engages the valve seat 60 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6, and disengages the valve seat 60 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. Cline at [0030]-[0035]: Another filter element 132 for use with the filter apparatus 10 is shown in FIGS. 8-11. The filter element 132 is similar in structure and function to the filter element 32, except as otherwise noted, so that identical reference numbers refer to similar structures.

	The filter element 132 is secured to a center tube 148, as shown in FIGS. 10-11. An end cap 142 of the filter element 132 is secured to, for example, a lower portion of the center tube 148 which extends in the filtered fluid region 50 to provide internal support to the filter media 38. Fingers 52 of the center tube 148 extend in the annular groove 54 formed in the cover 20 for movement therein during assembly and disassembly of the filter apparatus 10. A seal 144 is secured to the end cap 142 for engagement with the outlet post 46 to block flow of fluid between the end cap 142 and the outlet post 46. A quick- drain valve member 156 shown in FIGS. 8-11 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 156 extends in the valve chamber 58 and engages the valve seat 60 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 132 is positioned in the interior region 22, as shown in FIG. 10. In particular, when the filter element 132 is positioned in the filter chamber 23, the quick-drain valve member 156 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 156 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 to the fluid reservoir 14 when the filter element 132 is removed from the interior region 22, as shown in FIG. 11. In particular, when the filter element 132 is removed from the filter chamber 23, the quick-drain valve member 156 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. The quick- drain valve member 156 is secured to and extends from the an outwardly facing surface 162 of the end cap 142, as shown in FIGS. 8-11. The quick-drain valve member 156 is axially spaced apart from the center tube 148. The quick- drain valve member 156 comprises a retainer 180, a flow blocker carrier 182, and a flow blocker 184, as shown in FIGS. 9-11. The retainer 180 is secured to and extends from the outwardly facing surface 162. The flow blocker carrier 182 is secured to the retainer 180 for movement relative thereto. 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. The flow blocker 184 is made of, for example, an elastomeric material. The retainer 180 and the flow blocker 184 define a proximal end portion and a distal end portion, respectively, of the quick-drain valve member 156. A biasing element such as a spring 186 (see FIGS. 9-11) is captured within the retainer 180 and the flow blocker carrier 182. The spring 186 biases the flow blocker carrier 182 away from the outwardly facing surface 162 to press the flow blocker 184 against the valve seat 60. The spring 186 is configured to compress in response to engagement between the flow blocker 184 and the valve seat 60. In this way, the spring 186 accommodates dimensional variations between

components of the filter apparatus 10 due to, for example, manufacturing tolerances and thermal expansion. The spring 51 is thus omitted from the filter apparatus 10 when the spring 186 is present.

Cline at Fig. 3:

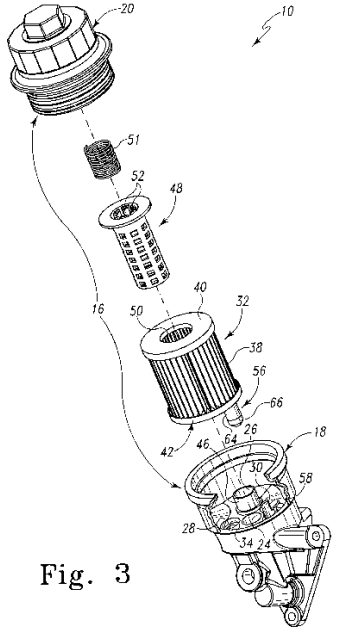


Fig. 3

Cline at Figs. 4-5:

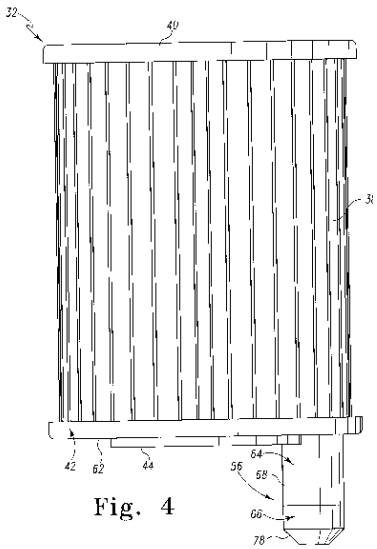


Fig. 4

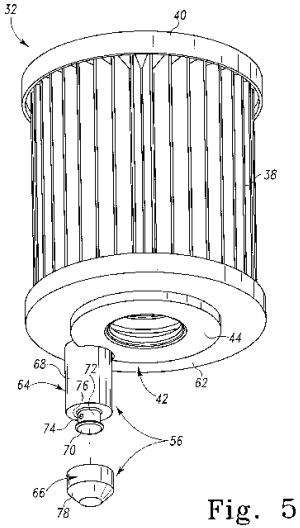


Fig. 5

Cline at Figs. 8-9:

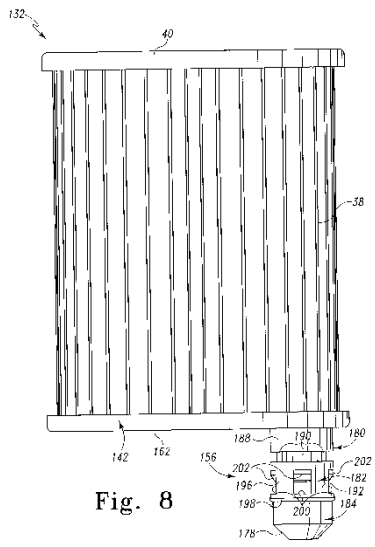


Fig. 8

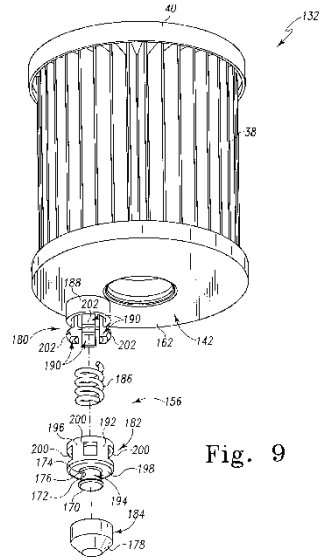


Fig. 9

	As one example, Yokoyama in combination with Cline discloses the blocking element (Cline 56) is a radially sealing plug which is rigidly arranged on the bottom front panel (Cline 42). Moreover, it would have been obvious to combine Yokoyama with one or more of the other references identified by Defendant as disclosing this limitation including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding these features to Yokoyama and/or incorporating the teachings of Yokoyama into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing. Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine,

which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine.

The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

Grass at [0033]-[0036]:

According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3

	is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified. If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function. To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the

	oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the

	risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
Claim 10	
[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.	Yokoyama in combination with Cline, and/or the background knowledge of a POSA, discloses the blocking element is an axially sealing valve element which is elastically arranged on the bottom front panel. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding this feature to Yokoyama and/or incorporating the teachings of Yokoyama into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0027]: The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made

	discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64. For example, Yokoyama in combination with Cline discloses the blocking element (Cline 56) is an axially sealing valve element (Cline 66) which is elastically arranged on the bottom front panel (Cline 42) (*see* Cline [0027] "[t]he flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64"). Moreover, it would have been obvious to combine Yokoyama with one or more of the other references identified by Defendant as disclosing this limitation including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding these features to Yokoyama and/or incorporating the teachings of Yokoyama into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing.

	Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

	Grass at [0033]-[0036]: According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified. If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function. To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 .

	Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]:

	It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
Claim 11	
[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.	Yokoyama in combination with Cline, and/or the background knowledge of a POSA, discloses 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. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding this feature to Yokoyama and/or incorporating the teachings of Yokoyama into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0025]:

	The quick- drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. For example, Yokoyama in combination with Cline discloses the outlet (Cline 36) comprises a seat (Cline 60) which is one of incorporated on a side of the filter housing (Cline 18) and is inserted as a separate part and which conforms to a shape of the blocking element (Cline 66, 56). Moreover, it would have been obvious to combine Yokoyama with one or more of the other references identified by Defendant as disclosing this limitation including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding these features to Yokoyama and/or incorporating the teachings of Yokoyama into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0006]:

The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing.

Grass at [0018]-[0021]:

According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine.

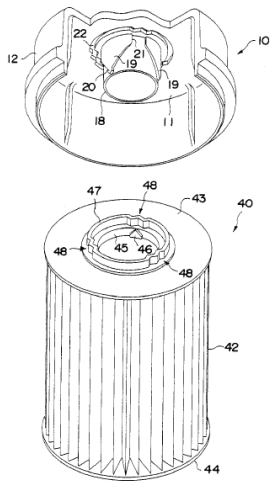
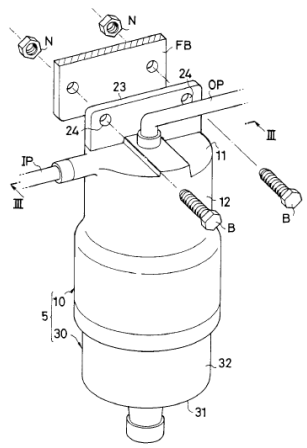
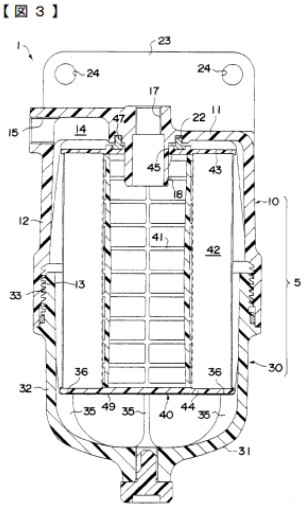
The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

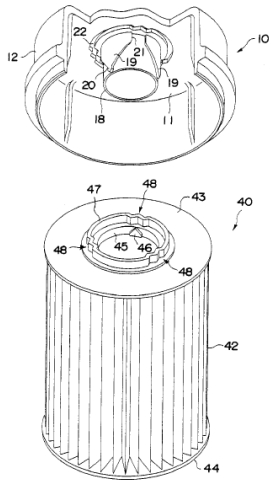
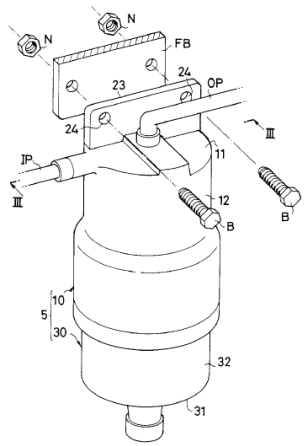
	The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Grass at [0033]-[0036]: According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified. If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function. To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This

	means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.

	Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
Claim 12	
[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	Yokoyama discloses 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. *See, e.g.,*

in the remaining filter housing in axial direction, and is prestressed with a spring force in the direction of the cover.	Yokoyama at [0016]-[0017]: As shown in FIG. 1, three hook-shaped portions 19 extending downward are provided on the outer peripheral portion of the pipe portion 18 provided in the upper case half 10 (in FIG. 1, the hook-shaped portion 19 is Only two of the three are visible). FIG. 5 is a developed view of the pipe portion 18 provided in the upper case half body 10, and as shown in this figure, the left and right side surface portions 19a of each of the bowl-shaped portions 19 are parallel to the vertical direction. Although it may extend, it is preferably formed in a tapered shape that narrows downward as shown in this figure. Moreover, it is preferable that the lower end part of each hook-shaped part 19 has the shape pointed downward, Furthermore, the lower end part of one hook-shaped part 19 is below the lower end part of the other hook-shaped part 19. It is preferable that the protrusion extends (see the protrusion 20 shown in FIG. 5). As shown in FIGS. 2 and 3, a plate-like filter device fixing bracket 23 is provided on the upper portion of the upper case half 10 so as to extend upward, and bolt mounting holes 24 are formed at both ends thereof. Yes. The upper case half 10 is fixed to the filter device fixing portion FB (for example, a part of the engine case when the filter device 1 is an engine oil filter) by bolts B and nuts N through the bolt mounting holes 24. Is done. Further, as shown in FIG. 2, a fuel inflow pipe IP is connected to the fuel inflow path 15 of the upper case half 10, and a fuel outflow pipe OP is connected to the fuel outflow path 17. Yokoyama at [0019]: As shown in FIGS. 1 and 4, three locking protrusions 46 that protrude toward the center of the opening 45 are provided on the inner peripheral portion of the opening 45 of the upper plate 43. As will be described later, these three locking projections 46 are attached to the upper case half 10 so that the tube portion 18 of the upper case half 10 is inserted into the opening 45 of the filter element 40. In this case, it enters into a recess 21 formed between adjacent ones of the three bowl-shaped portions 19 provided on the upper case 10 side (the engagement shown by a broken line in FIG. 5). (See projection 46). In addition, it is preferable that the front-end | tip (upper end) part of these three latching protrusions 46 has a shape pointed upward as shown in FIG. 1. Yokoyama at Figs. 1-3:

	【図１】  【図２】  【図３】  As one example, Yokoyama discloses the filter housing part (18, 10) arranged on the inside of the ring filter insert (40) comprises a pipe nozzle (18) which includes the return (17, OP) and which is integrally formed with the remaining filter housing (10).
Claim 15	
[15.pre] 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,	To the extent it is a limitation, Yokoyama discloses 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. *See, e.g.*, Yokoyama at [0002]: [Prior art] The filter device has a configuration in which a replaceable filter element is held in the filter case. After the fluid flowing in from the fluid inflow path formed in the filter case passes through the filter element, the filter device is also formed in the filter case. Dust and dust contained in the fluid can be removed by flowing out from the fluid outflow passage. Yokoyama at [0018]:

	As shown in FIGS. 1, 3 and 4, the filter element 40 has a structure in which a filter medium 42 bent in a bellows shape is attached around an inner cylinder 41 formed in a thin cylindrical shape in a lattice shape. A disk-shaped upper plate 43 is attached to the upper end portion, and a disk-like lower plate 44 is attached to the lower end portion. Yokoyama at Figs. 1-2: 【図１】  【図２】  For example, Yokoyama discloses a hollow-cylindrical filter material body (42) surrounded on front sides by top (43) and bottom (44) front panels and which can be replaceably arranged in a filter housing (5) (*see* figure 2 showing filter housing).
[15.a] an eccentric blocking element arranged on the bottom front panel for engaging an eccentric opening in the filter housing,	Yokoyama in combination with Cline, and/or the background knowledge of a POSA, discloses an eccentric blocking element arranged on the bottom front panel for engaging an eccentric opening in the filter housing. It would have been obvious to combine Yokoyama with Cline for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the

	filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding this feature to Yokoyama and/or incorporating the teachings of Yokoyama into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0020]-[0021]: The filter apparatus 10 comprises a housing 16, as shown in FIGS. 1-3 and 6-7. A base 18 of the housing 16 is configured to be secured to the engine 12. A cover 20 of the housing 16 is configured to be secured to the base 18 via a threaded connection or other suitable connection. Together, the base 18 and the cover 20 define an interior region 22 (see FIG. 6) when the cover 20 is secured to the base 18. The base 18 comprises passageways of the interior region 22 to admit fluid into and discharge fluid from a filter chamber 23 (see FIG. 6) of the interior region 22. The base 18 comprises an inlet passageway 24 (see FIG. 3), a filtered fluid outlet passageway 26 (see FIGS. 3, 6, and 7), a bypass passageway 28 (see FIG. 3), and a quick-drain passageway 30 (see FIGS. 3, 6, and 7). The inlet passageway 24 admits unfiltered fluid into the filter chamber 23. The filtered fluid outlet passageway 26 discharges fluid filtered by the filter element 32 from the filter chamber 23. The bypass passageway 28 contains a bypass valve 34 (see FIG. 3) to discharge unfiltered fluid from the filter chamber 23 when, for example, the filter element 32 becomes clogged with contaminants and/or the fluid is somewhat thick due to, for example, cold weather. The quick-drain passageway 26 discharges fluid from the filter chamber 23 through a quick-drain outlet 36 (see FIGS. 6-7) when the filter element 32 is removed from the filter chamber 23. Cline at [0025]: The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14

	when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. Cline at [0027]-[0029]: The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64. The post 64 comprises a body 68, a head 70, and a neck 72 interconnecting the body 68 and the head 70, as shown in FIGS. 5-7. The body 68 is secured to and extends from the outwardly facing surface 62. The head 70 has a diameter less than a diameter of the body 68. The neck 72 has a diameter less than the diameters of the body 68 and the head 70. The body 68, the head 70, and the neck 72 cooperate to define an annular groove 74. The neck 72 defines a channel 76 extending through the neck 72. The flow blocker 66 surrounds the head 70 and the neck 72 and extends into the annular groove 74 and through the channel 76 to mount the flow blocker 66 to the post 64. The flow blocker 66 comprises a surface 78, as shown in FIGS. 4-7, for engaging the valve seat 60. The surface 78 and the valve seat 60 are, for example, frusto-conical in shape. The surface 78 engages the valve seat 60 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6, and disengages the valve seat 60 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. Cline at Fig. 3:

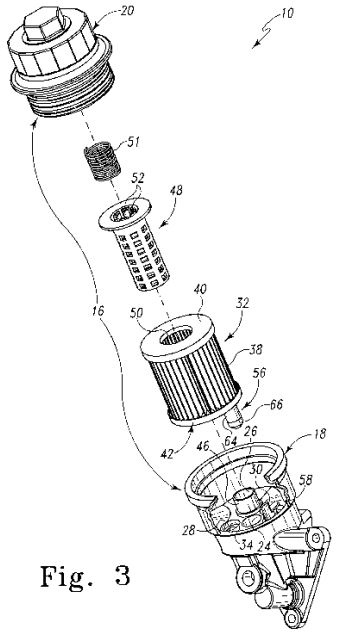


Fig. 3

Cline at Figs. 4-7:

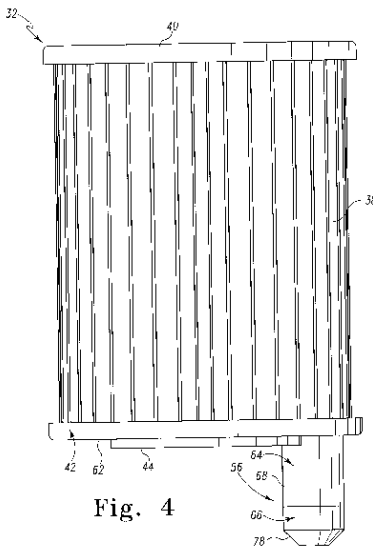


Fig. 4

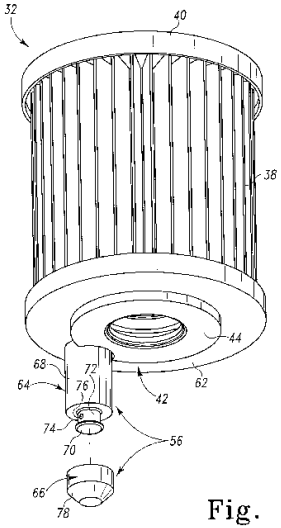


Fig. 5

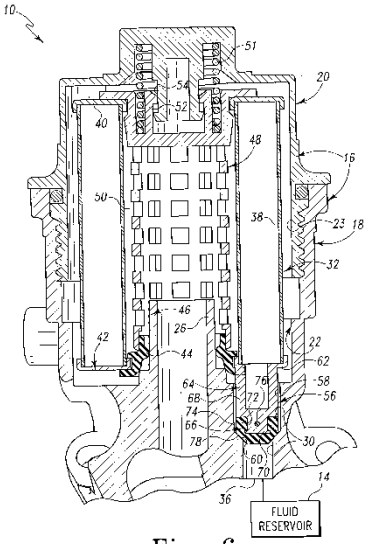


Fig. 6

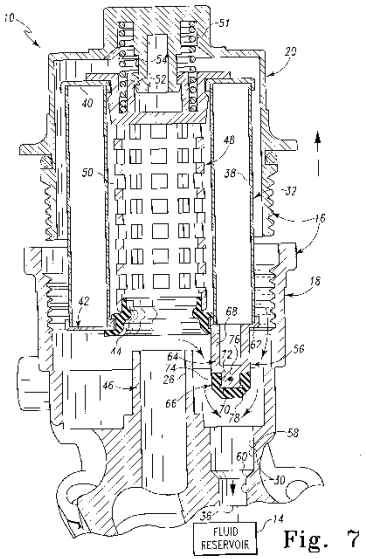


Fig. 7

For example, Cline discloses an eccentric blocking element (56) arranged on the bottom front panel (42) for engaging an eccentric opening (58) in the filter housing (16, 18).

Moreover, it would have been obvious to combine Yokoyama with one or more of the other references identified by Defendant as disclosing this limitation including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading.

A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding these features to Yokoyama and/or incorporating the

	teachings of Yokoyama into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing. Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the

example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

Grass at [0033]-[0036]:

According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified.

If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function.

	To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]:

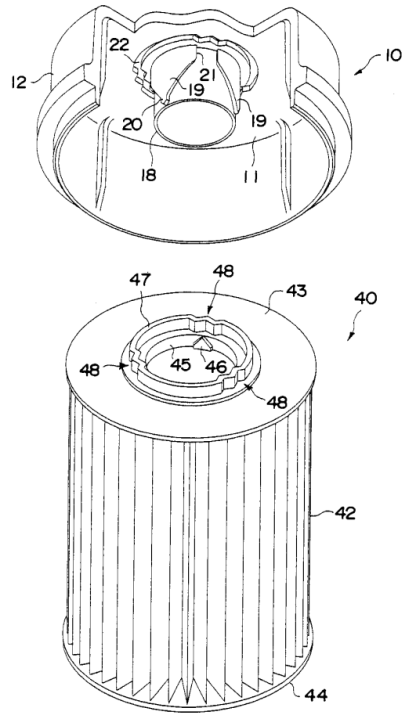
	Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
[15.b] first positioning means on the ring filter insert, which interact with second positioning means on the filter housing when the ring filter	Yokoyama in combination with Cline, and/or the background knowledge of a POSA, 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 which are

insert is inserted into the filter housing and which are arranged to bring the blocking element into engagement with the eccentric opening,	arranged to bring the blocking element into engagement with the eccentric opening. It would have been obvious to combine Yokoyama with Cline for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make this combination for numerous reasons. For example, it was well known in the art to use a positioning means to ensure proper alignment of components in a filter assembly and/or that only the proper filter insert is installed on a filter housing. *See, e.g.*, US 2006/0219621, [0003] ("Published German patent application no. DE 4402836, for example, describes an arrangement in which the correct use of Suitable replacement parts is ensured by the fact that the respective part for attachment can be attached to the unit only according to a lock-and-key principle."), [0006] ("Another object of the invention is to provide a filter device which establishes a definitive correlation between the filter housing and an installed filter element."), [0007] ("A further object of the invention is to provide a filter device which prevents installation of an incorrect filter element."), [0028] ("If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24."). Such a positioning means also ensures a user need not visually align or guess at proper alignment through trial and error, potentially damaging the blocking element or incorrectly installing it. Thus there was common sense—and express—motivation in the art to use a positioning means to ensure proper alignment of components such as an eccentric blocking element within the filter housing. Moreover, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding this feature to Yokoyama and/or incorporating the teachings of Yokoyama into Cline as doing so involves no more than routine techniques well established in the mechanical arts. Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below. For example: Yokoyama at [0016]:

	As shown in FIG. 1, three hook-shaped portions 19 extending downward are provided on the outer peripheral portion of the pipe portion 18 provided in the upper case half 10 (in FIG. 1, the hook-shaped portion 19 is Only two of the three are visible). FIG. 5 is a developed view of the pipe portion 18 provided in the upper case half body 10, and as shown in this figure, the left and right side surface portions 19a of each of the bowl-shaped portions 19 are parallel to the vertical direction. Although it may extend, it is preferably formed in a tapered shape that narrows downward as shown in this figure. Moreover, it is preferable that the lower end part of each hook-shaped part 19 has the shape pointed downward, Furthermore, the lower end part of one hook-shaped part 19 is below the lower end part of the other hook-shaped part 19. It is preferable that the protrusion extends (see the protrusion 20 shown in FIG. 5). Yokoyama at [0019]: As shown in FIGS. 1 and 4, three locking protrusions 46 that protrude toward the center of the opening 45 are provided on the inner peripheral portion of the opening 45 of the upper plate 43. As will be described later, these three locking projections 46 are attached to the upper case half 10 so that the tube portion 18 of the upper case half 10 is inserted into the opening 45 of the filter element 40. In this case, it enters into a recess 21 formed between adjacent ones of the three bowl-shaped portions 19 provided on the upper case 10 side (the engagement shown by a broken line in FIG. 5). (See projection 46). In addition, it is preferable that the front-end | tip (upper end) part of these three latching protrusions 46 has a shape pointed upward as shown in FIG. 1. Yokoyama at [0021]-[0023]: In order to assemble the filter element 40 in the filter case 5, first, the tube portion 18 (and the three hook-shaped portions 19) of the upper case half 10 is inserted through the opening 45 of the upper plate 43 in the filter element 40 from above. The filter element 40 is pushed upward. As a result, the three locking projections 46 provided on the upper plate 43 are guided upward by the side surface portions 19a of the three hook-shaped portions 19 provided on the upper case half 10 (at this time, the filter element 40). Is slightly rotated in the twisting direction), and enters into the recess 21 formed between two adjacent flanges 19. FIG. 6 shows an example of a path followed by the locking projection 46 that contacts the side surface portion 19a of the bowl-shaped portion 19 when the filter element 40 is pushed up toward the upper case half 10. The projection 46 advances in the direction indicated by the arrow in the figure and fits into a recess 21 formed between two adjacent flanges 19.

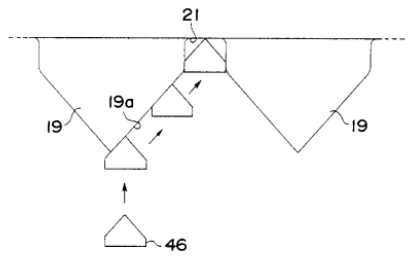
	In addition, in this state where each locking projection 46 of the filter element 40 enters the recess 21 formed between the adjacent flanges 19 of the upper case half 10, the upper protrusion 43 of the filter element 40 is placed on the upper plate 43. The provided seal member 47 is fitted into the groove portion 22 of the upper case half 10. At this time, the three W-shaped portions 48 provided on the seal member 47 are fitted into the portions of the groove portion 22 that are inverted from the W-shaped portions 48. As a result, the filter element 40 is temporarily fixed to the upper case half 10. Here, as described above, the three hook-shaped portions 19 provided in the upper case half 10 each have a shape in which the lower end portion is pointed downward, and each of the locking protrusions 46 provided in the filter element 40. If the upper end portion has an upwardly sharp shape, when the filter element 40 is to be attached to the upper case half 10, the tip (upper end) portion of the locking projection 46 on the filter element 40 side is exactly Even if it is at a position facing the tip (lower end) portion of the hook-shaped portion 19, the locking protrusion 46 is displaced to either the left or right when contacting the hook-shaped portion 19. Therefore, the filter element 40 is mounted on the upper case half 10 smoothly. Moreover, in this filter apparatus 1, since the lower end part of one hook-shaped part 19 has protruded and extended below the lower end part of the other hook-shaped part 19, the effect is very big. It has become. Yokoyama at [Brief description of the drawings]: FIG. 1 is a view showing a perspective view of an upper case half of a fuel filter according to an embodiment of the present invention viewed from below and a perspective view of a filter element viewed obliquely from above. … FIG. 6 is a diagram showing a path followed by a locking projection that comes into contact with the side surface of the hook-shaped portion when the filter element is pushed up toward the upper case half. Yokoyama at Fig. 1:

【図１】



Yokoyama at Fig. 6:

【図６】



Cline at [0025]:

	The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. As one example, Yokoyama in combination with Cline discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: first positioning means (Yokoyama 46) on the ring filter insert (Yokoyama 40), which interact with second positioning means (Yokoyama 19, 19a) on the filter housing (Yokoyama 5) when the ring filter insert (Yokoyama 40) is inserted into the filter housing (Yokoyama 5) and which are arranged to bring the blocking element (Cline 56) into engagement with the eccentric opening (Cline 58). Moreover, it would have been obvious to combine Yokoyama with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding these features to Yokoyama and/or incorporating the

	teachings of Yokoyama into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing. Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the

example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

Grass at [0033]-[0036]:

According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified.

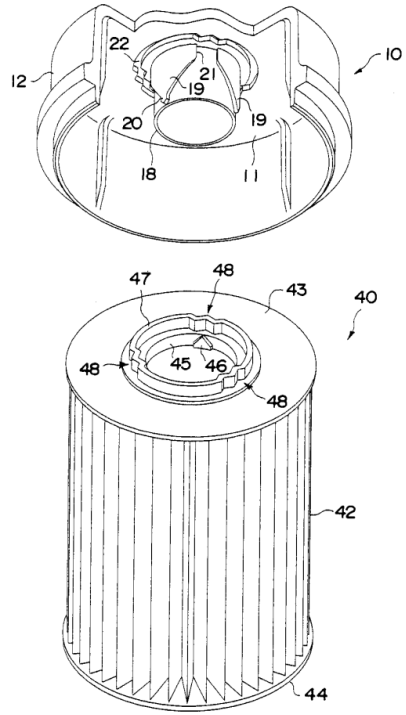
If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function.

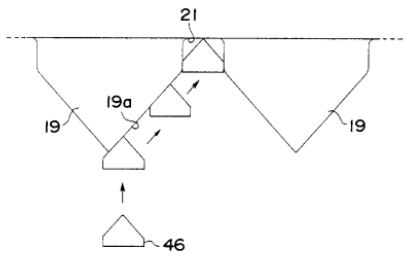
	To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]:

	Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.

[15.c] 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 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. Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below. *See, e.g.,* Yokoyama at [0016]: As shown in FIG. 1, three hook-shaped portions 19 extending downward are provided on the outer peripheral portion of the pipe portion 18 provided in the upper case half 10 (in FIG. 1, the hook-shaped portion 19 is Only two of the three are visible). FIG. 5 is a developed view of the pipe portion 18 provided in the upper case half body 10, and as shown in this figure, the left and right side surface portions 19a of each of the bowl-shaped portions 19 are parallel to the vertical direction. Although it may extend, it is preferably formed in a tapered shape that narrows downward as shown in this figure. Moreover, it is preferable that the lower end part of each hook-shaped part 19 has the shape pointed downward, Furthermore, the lower end part of one hook-shaped part 19 is below the lower end part of the other hook-shaped part 19. It is preferable that the protrusion extends (see the protrusion 20 shown in FIG. 5). Yokoyama at [0019]: As shown in FIGS. 1 and 4, three locking protrusions 46 that protrude toward the center of the opening 45 are provided on the inner peripheral portion of the opening 45 of the upper plate 43. As will be described later, these three locking projections 46 are attached to the upper case half 10 so that the tube portion 18 of the upper case half 10 is inserted into the opening 45 of the filter element 40. In this case, it enters into a recess 21 formed between adjacent ones of the three bowl-shaped portions 19 provided on the upper case 10 side (the engagement shown by a broken line in FIG. 5). (See projection 46). In addition, it is preferable that the front-end | tip (upper end) part of these three latching protrusions 46 has a shape pointed upward as shown in FIG. 1. Yokoyama at [0021]-[0023]:

	In order to assemble the filter element 40 in the filter case 5, first, the tube portion 18 (and the three hook-shaped portions 19) of the upper case half 10 is inserted through the opening 45 of the upper plate 43 in the filter element 40 from above. The filter element 40 is pushed upward. As a result, the three locking projections 46 provided on the upper plate 43 are guided upward by the side surface portions 19a of the three hook-shaped portions 19 provided on the upper case half 10 (at this time, the filter element 40). Is slightly rotated in the twisting direction), and enters into the recess 21 formed between two adjacent flanges 19. FIG. 6 shows an example of a path followed by the locking projection 46 that contacts the side surface portion 19a of the bowl-shaped portion 19 when the filter element 40 is pushed up toward the upper case half 10. The projection 46 advances in the direction indicated by the arrow in the figure and fits into a recess 21 formed between two adjacent flanges 19. In addition, in this state where each locking projection 46 of the filter element 40 enters the recess 21 formed between the adjacent flanges 19 of the upper case half 10, the upper protrusion 43 of the filter element 40 is placed on the upper plate 43. The provided seal member 47 is fitted into the groove portion 22 of the upper case half 10. At this time, the three W-shaped portions 48 provided on the seal member 47 are fitted into the portions of the groove portion 22 that are inverted from the W-shaped portions 48. As a result, the filter element 40 is temporarily fixed to the upper case half 10. Here, as described above, the three hook-shaped portions 19 provided in the upper case half 10 each have a shape in which the lower end portion is pointed downward, and each of the locking protrusions 46 provided in the filter element 40. If the upper end portion has an upwardly sharp shape, when the filter element 40 is to be attached to the upper case half 10, the tip (upper end) portion of the locking projection 46 on the filter element 40 side is exactly Even if it is at a position facing the tip (lower end) portion of the hook-shaped portion 19, the locking protrusion 46 is displaced to either the left or right when contacting the hook-shaped portion 19. Therefore, the filter element 40 is mounted on the upper case half 10 smoothly. Moreover, in this filter apparatus 1, since the lower end part of one hook-shaped part 19 has protruded and extended below the lower end part of the other hook-shaped part 19, the effect is very big. It has become. Yokoyama at [Brief description of the drawings]: FIG. 1 is a view showing a perspective view of an upper case half of a fuel filter according to an embodiment of the present invention viewed from below and a perspective view of a filter element viewed obliquely from above. …

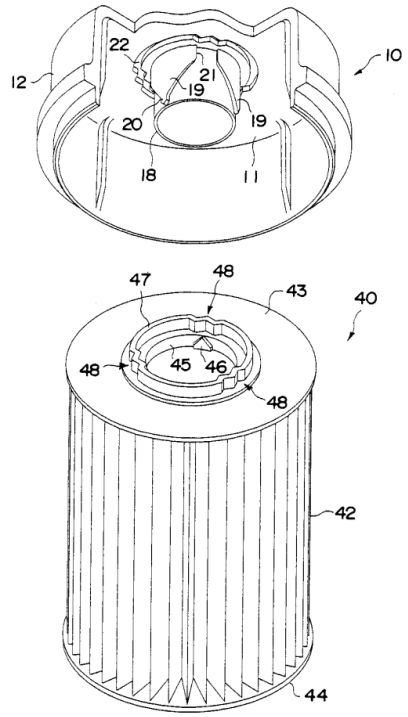
	FIG. 6 is a diagram showing a path followed by a locking projection that comes into contact with the side surface of the hook-shaped portion when the filter element is pushed up toward the upper case half. Yokoyama at Fig. 1: 【図１】  Yokoyama at Fig. 6:

	【図６】  As one example, Yokoyama discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: the first positioning means being a protruding nose (46), with the second positioning means being an inclined plane (19, 19a).
[15.d] 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,	Yokoyama in combination with Cline, and/or the background knowledge of a POSA, discloses 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. It would have been obvious to combine Yokoyama with Cline for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding this feature to Yokoyama and/or incorporating the teachings of Yokoyama into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Yokoyama at [0016]: As shown in FIG. 1, three hook-shaped portions 19 extending downward are provided on the outer peripheral portion of the pipe portion 18 provided in the upper case half 10 (in FIG. 1, the

	hook-shaped portion 19 is Only two of the three are visible). FIG. 5 is a developed view of the pipe portion 18 provided in the upper case half body 10, and as shown in this figure, the left and right side surface portions 19a of each of the bowl-shaped portions 19 are parallel to the vertical direction. Although it may extend, it is preferably formed in a tapered shape that narrows downward as shown in this figure. Moreover, it is preferable that the lower end part of each hook-shaped part 19 has the shape pointed downward, Furthermore, the lower end part of one hook-shaped part 19 is below the lower end part of the other hook-shaped part 19. It is preferable that the protrusion extends (see the protrusion 20 shown in FIG. 5). Yokoyama at [0019]: As shown in FIGS. 1 and 4, three locking protrusions 46 that protrude toward the center of the opening 45 are provided on the inner peripheral portion of the opening 45 of the upper plate 43. As will be described later, these three locking projections 46 are attached to the upper case half 10 so that the tube portion 18 of the upper case half 10 is inserted into the opening 45 of the filter element 40. In this case, it enters into a recess 21 formed between adjacent ones of the three bowl-shaped portions 19 provided on the upper case 10 side (the engagement shown by a broken line in FIG. 5). (See projection 46). In addition, it is preferable that the front-end | tip (upper end) part of these three latching protrusions 46 has a shape pointed upward as shown in FIG. 1. Yokoyama at [0021]-[0023]: In order to assemble the filter element 40 in the filter case 5, first, the tube portion 18 (and the three hook-shaped portions 19) of the upper case half 10 is inserted through the opening 45 of the upper plate 43 in the filter element 40 from above. The filter element 40 is pushed upward. As a result, the three locking projections 46 provided on the upper plate 43 are guided upward by the side surface portions 19a of the three hook-shaped portions 19 provided on the upper case half 10 (at this time, the filter element 40). Is slightly rotated in the twisting direction), and enters into the recess 21 formed between two adjacent flanges 19. FIG. 6 shows an example of a path followed by the locking projection 46 that contacts the side surface portion 19a of the bowl-shaped portion 19 when the filter element 40 is pushed up toward the upper case half 10. The projection 46 advances in the direction indicated by the arrow in the figure and fits into a recess 21 formed between two adjacent flanges 19. In addition, in this state where each locking projection 46 of the filter element 40 enters the recess 21 formed between the adjacent flanges 19 of the upper case half 10, the upper protrusion 43 of the filter element 40 is placed on the upper plate 43. The provided seal member 47 is fitted into the groove portion 22 of the upper case half 10. At this time, the three W-shaped portions 48

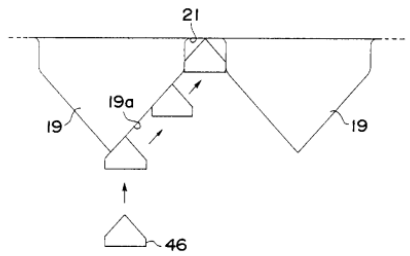
	provided on the seal member 47 are fitted into the portions of the groove portion 22 that are inverted from the W-shaped portions 48. As a result, the filter element 40 is temporarily fixed to the upper case half 10. Here, as described above, the three hook-shaped portions 19 provided in the upper case half 10 each have a shape in which the lower end portion is pointed downward, and each of the locking protrusions 46 provided in the filter element 40. If the upper end portion has an upwardly sharp shape, when the filter element 40 is to be attached to the upper case half 10, the tip (upper end) portion of the locking projection 46 on the filter element 40 side is exactly Even if it is at a position facing the tip (lower end) portion of the hook-shaped portion 19, the locking protrusion 46 is displaced to either the left or right when contacting the hook-shaped portion 19. Therefore, the filter element 40 is mounted on the upper case half 10 smoothly. Moreover, in this filter apparatus 1, since the lower end part of one hook-shaped part 19 has protruded and extended below the lower end part of the other hook-shaped part 19, the effect is very big. It has become. Yokoyama at [Brief description of the drawings]: FIG. 1 is a view showing a perspective view of an upper case half of a fuel filter according to an embodiment of the present invention viewed from below and a perspective view of a filter element viewed obliquely from above. … FIG. 6 is a diagram showing a path followed by a locking projection that comes into contact with the side surface of the hook-shaped portion when the filter element is pushed up toward the upper case half. Yokoyama at Fig. 1:

【図１】



Yokoyama at Fig. 6:

【図６】



Cline at [0025]:

	The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. For example, Yokoyama in combination with Cline discloses the inclined plane (Yokoyama 19, 19a) and the nose (Yokoyama 46) arranged to be moved in relation to each other in such a way that they slide along each other (see Yokoyama fig. 6, showing the inclined plane and the nose sliding along each other) and bring the blocking element (Cline 56) into engagement with the eccentric opening (Cline 58), by rotating the ring filter insert relative to the filter housing (see Yokoyama at [0021], “at this time, the filter element 40 is slightly rotated in the twisting direction”). Moreover, it would have been obvious to combine Yokoyama with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant’s cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding these features to Yokoyama and/or incorporating the

	teachings of Yokoyama into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing. Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the

example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

Grass at [0033]-[0036]:

According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified.

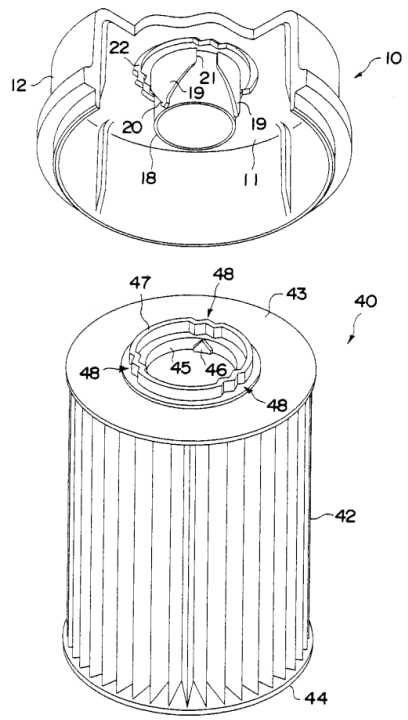
If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function.

	To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]:

	Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
[15.e] the first positioning means being one of embodied and arranged on an inner circumference of the ring filter insert.	Yokoyama in combination with Cline, and/or the background knowledge of a POSA, discloses the first positioning means being one of embodied and arranged on an inner circumference of the ring filter insert.

	Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding this feature to Yokoyama and/or incorporating the teachings of Yokoyama into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Yokoyama at [0019]: As shown in FIGS. 1 and 4, three locking protrusions 46 that protrude toward the center of the opening 45 are provided on the inner peripheral portion of the opening 45 of the upper plate 43. As will be described later, these three locking projections 46 are attached to the upper case half 10 so that the tube portion 18 of the upper case half 10 is inserted into the opening 45 of the filter element 40. In this case, it enters into a recess 21 formed between adjacent ones of the three bowl-shaped portions 19 provided on the upper case 10 side (the engagement shown by a broken line in FIG. 5). (See projection 46). In addition, it is preferable that the front-end | tip (upper end) part of these three latching protrusions 46 has a shape pointed upward as shown in FIG. 1. Yokoyama at [Brief description of the drawings]: FIG. 1 is a view showing a perspective view of an upper case half of a fuel filter according to an embodiment of the present invention viewed from below and a perspective view of a filter element viewed obliquely from above. Yokoyama at Fig. 1:

【図１】



Cline at [0025]:

The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain

	valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. As one example, Yokoyama in combination with Cline discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: the first positioning means being a protruding nose (Yokoyama 46) and arranged on an inner circumference (Yokoyama 45) of the ring filter insert (Yokoyama 40). Moreover, it would have been obvious to combine Yokoyama with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding these features to Yokoyama and/or incorporating the teachings of Yokoyama into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing.

	Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

	Grass at [0033]-[0036]: According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified. If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function. To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 .

	Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]:

	It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
Claim 16	
[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.	Yokoyama discloses 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. *See, e.g.*, claims 2, *supra*.
Claim 17	
[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 a guide for the nose which runs in an axial direction and is connected to a lower end of the inclined plane. *See, e.g.*, claims 3, *supra*.
Claim 19	
[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	Yokoyama discloses 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.

forms a contact surface for the nose on one of an upper or lower side thereof.	*See, e.g.*, claims 5, *supra*.
Claim 23	
[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 the nose is formed integrally with the bottom front panel of the ring filter insert. *See, e.g.*, claims 8, *supra*.
Claim 24	
[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.	Yokoyama in combination with Cline, and/or the background knowledge of a POSA, discloses 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. *See, e.g.*, claims 9, *supra*.
Claim 25	
[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.	Yokoyama in combination with Cline, and/or the background knowledge of a POSA, discloses the blocking element is an axially sealing valve element which is elastically arranged on the bottom front panel. *See, e.g.*, claims 10, *supra*.
Claim 28	
[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.	Yokoyama in combination with Cline, and/or the background knowledge of a POSA, discloses 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. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding this feature to Yokoyama and/or incorporating the teachings of Yokoyama into Cline as doing so involves no more than routine techniques well established in the mechanical arts.

	See, e.g., Cline at [0027]-[0029]: The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64. The post 64 comprises a body 68, a head 70, and a neck 72 interconnecting the body 68 and the head 70, as shown in FIGS. 5-7. The body 68 is secured to and extends from the outwardly facing surface 62. The head 70 has a diameter less than a diameter of the body 68. The neck 72 has a diameter less than the diameters of the body 68 and the head 70. The body 68, the head 70, and the neck 72 cooperate to define an annular groove 74. The neck 72 defines a channel 76 extending through the neck 72. The flow blocker 66 surrounds the head 70 and the neck 72 and extends into the annular groove 74 and through the channel 76 to mount the flow blocker 66 to the post 64. The flow blocker 66 comprises a surface 78, as shown in FIGS. 4-7, for engaging the valve seat 60. The surface 78 and the valve seat 60 are, for example, frusto-conical in shape. The surface 78 engages the valve seat 60 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6, and disengages the valve seat 60 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. Cline at [0030]-[0035]: Another filter element 132 for use with the filter apparatus 10 is shown in FIGS. 8-11. The filter element 132 is similar in structure and function to the filter element 32, except as otherwise noted, so that identical reference numbers refer to similar structures. The filter element 132 is secured to a center tube 148, as shown in FIGS. 10-11. An end cap 142 of the filter element 132 is secured to, for example, a lower portion of the center tube 148 which extends in the filtered fluid region 50 to provide internal support to the filter media 38. Fingers 52 of the center tube 148 extend in the annular groove 54 formed in the cover 20 for movement therein during assembly and disassembly of the filter apparatus 10. A seal 144 is secured to the

	end cap 142 for engagement with the outlet post 46 to block flow of fluid between the end cap 142 and the outlet post 46. A quick- drain valve member 156 shown in FIGS. 8-11 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 156 extends in the valve chamber 58 and engages the valve seat 60 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 132 is positioned in the interior region 22, as shown in FIG. 10. In particular, when the filter element 132 is positioned in the filter chamber 23, the quick-drain valve member 156 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 156 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 to the fluid reservoir 14 when the filter element 132 is removed from the interior region 22, as shown in FIG. 11. In particular, when the filter element 132 is removed from the filter chamber 23, the quick-drain valve member 156 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. The quick- drain valve member 156 is secured to and extends from the an outwardly facing surface 162 of the end cap 142, as shown in FIGS. 8-11. The quick-drain valve member 156 is axially spaced apart from the center tube 148. The quick- drain valve member 156 comprises a retainer 180, a flow blocker carrier 182, and a flow blocker 184, as shown in FIGS. 9-11. The retainer 180 is secured to and extends from the outwardly facing surface 162. The flow blocker carrier 182 is secured to the retainer 180 for movement relative thereto. 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. The flow blocker 184 is made of, for example, an elastomeric material. The retainer 180 and the flow blocker 184 define a proximal end portion and a distal end portion, respectively, of the quick-drain valve member 156. A biasing element such as a spring 186 (see FIGS. 9-11) is captured within the retainer 180 and the flow blocker carrier 182. The spring 186 biases the flow blocker carrier 182 away from the outwardly facing surface 162 to press the flow blocker 184 against the valve seat 60. The spring 186 is configured to compress in response to engagement between the flow blocker 184 and the valve seat 60. In this way, the spring 186 accommodates dimensional variations between components of the filter apparatus 10 due to, for example, manufacturing tolerances and thermal expansion. The spring 51 is thus omitted from the filter apparatus 10 when the spring 186 is present.

Cline at Figs. 4-5:

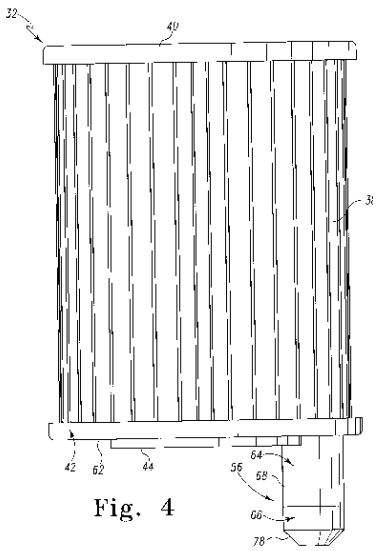


Fig. 4

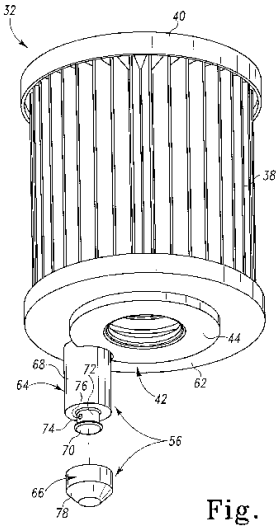


Fig. 5

Cline at Figs. 8-9:

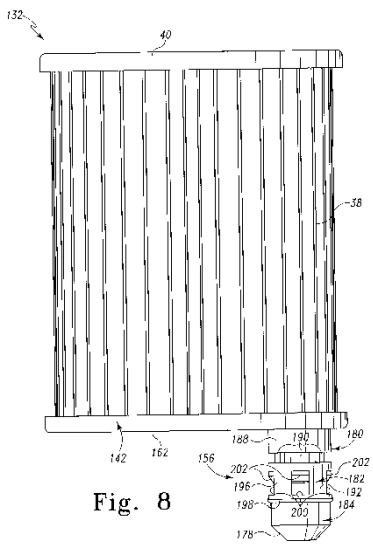


Fig. 8

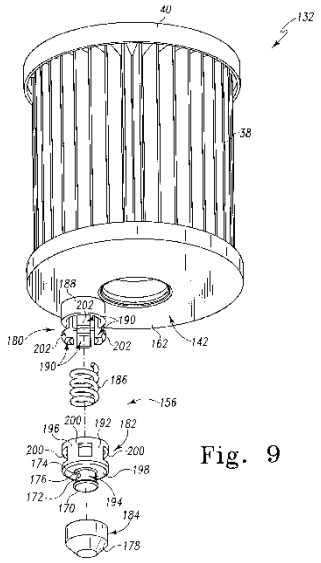


Fig. 9

	For example, Yokoyama in combination with Cline discloses the blocking element (Cline 156) is formed from two parts (Cline 180, 184), 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 (*see* Cline [0035] "for example, manufacturing tolerances and thermal expansion"). Moreover, it would have been obvious to combine Yokoyama with one or more of the other references identified by Defendant as disclosing this limitation including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Yokoyama. A POSA would have a reasonable expectation of success in adding these features to Yokoyama and/or incorporating the teachings of Yokoyama into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing. Grass at [0018]-[0021]:

	According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Grass at [0033]-[0036]:

	According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified. If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function. To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]:

	To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover

	3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
Claim 29	
[29] The liquid filter according to claim 1, wherein the protruding nose protrudes radially.	Yokoyama discloses the protruding nose protrudes radially. *See, e.g.,* Yokoyama at [0019]: As shown in FIGS. 1 and 4, three locking protrusions 46 that protrude toward the center of the opening 45 are provided on the inner peripheral portion of the opening 45 of the upper plate 43. As will be described later, these three locking projections 46 are attached to the upper case half 10 so that the tube portion 18 of the upper case half 10 is inserted into the opening 45 of the filter element 40. In this case, it enters into a recess 21 formed between adjacent ones of the three bowl-shaped portions 19 provided on the upper case 10 side (the engagement shown by a broken line in FIG. 5). (See projection 46). In addition, it is preferable that the front-end | tip (upper end) part of these three latching protrusions 46 has a shape pointed upward as shown in FIG. 1. Yokoyama at Fig. 1:

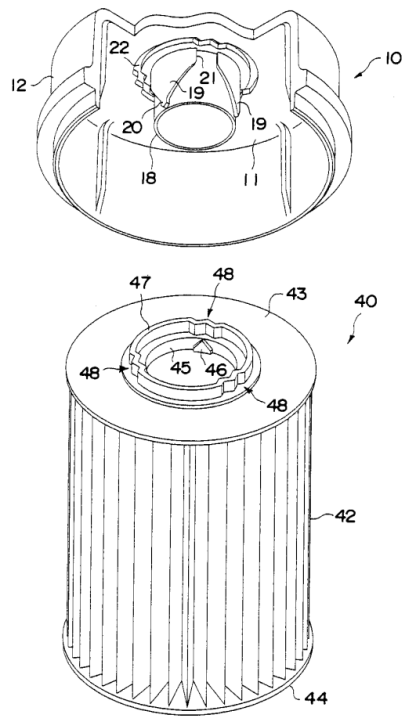
	【図１】  For example, Yokoyama discloses the protruding nose (46) protrudes radially.
Claim 30	
[30] The ring filter insert according to claim 15, wherein the protruding nose protrudes radially.	Yokoyama discloses the protruding nose protrudes radially. *See, e.g.*, claims 29, *supra*.

Exhibit C – Invalidity of U.S. Patent No. 9,023,203 Based on U.S. Patent Application Publication No. 20060219621 to Dworatzek et al. ("Dworatzek") in View of U.S. Patent Application Publication No. 20040232063 to Cline et al. ("Cline")

U.S. Patent Application Publication No. 20060219621 to Dworatzek et al. ("Dworatzek") was filed on February 15, 2006 and published on October 5, 2006. U.S. Patent Application Publication No. 20040232063 to Cline et al. ("Cline"), filed May 21, 2003 and published November 25, 2004. Accordingly, Dworatzek, alone in light of the knowledge of a POSA, or in combination with Cline constitutes prior art and invalidates the asserted claims of the U.S. Patent No. 9,023,203 (the "'203 patent") under at least pre-AIA 35 U.S.C. § 103.

Dworatzek in combination with Cline, including any material incorporated by reference into Dworatzek and Cline, renders all asserted claims invalid as obvious under 35 U.S.C. §103, alone based on the state of the art, or further in combination with one or more of the references cited in Exhibits B and D to E, including:

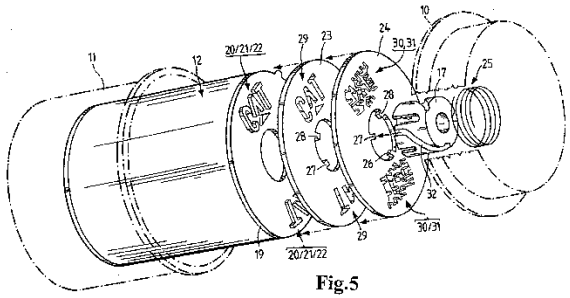
- Germany Patent Publication No. 10,2007,062,102 to Grass et al. ("Grass"), filed December 21, 2007 and published June 25, 2009.
- European Patent No. 1,714,688 to Brisson ("Brisson"), filed April 11, 2006 and January 2, 2008.

A Person of Skill in the Art ("POSA") would have been motivated to combine these references, because they are in the same field, they are aimed at solving the same perceived problems in the art, the nature of the problem to be solved was the same, and there is express motivation in these references. Known design incentives and market forces would have also motivated one of ordinary skill to combine these references. Furthermore, one of skill in the art would understand that each limitation not expressly disclosed in Dworatzek would be was a standard implementation and an obvious design choice in the design of a filter by the priority date of the asserted patent. Such an implementation simply reflects one of a finite number of well-known techniques implemented in a predictable manner, to achieve well-known, predictable results.

The use of claim terms in the below chart is based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, as well as the plain and ordinary meaning of the claim terms. This chart should not be construed as consenting to or agreeing with Hengst's construction of claim terms. Because discovery is ongoing and the claims have not yet been construed, Champion reserves all rights to amend its invalidity contentions based on discovery or on the Court's constructions.

Claim Element	Exemplary Disclosures
Claim 1	
1[pre] A liquid filter, comprising:	To the extent it is a limitation, Dworatzek discloses a liquid filter. *See, e.g.,* Dworatzek at Abstract:

	A filter device having a filter element which has at least one end disk (19) having axially extending elevations (20) configured in the form of at least one recognizable character, in which the elevations correspond in configuration to passages (35-37) through an intermediate element (23). Behind the intermediate element there is an element (24) which faces the housing (10) of the filter unit and is provided with axially projecting appendages (30, 31) which extend into the passages (35-37) of the intermediate element (23). Intermediate element (23) and element (24) are axially movably mounted on a central mandrel (17), and the appendages (30, 31) can be pushed axially by the filter element (12) out of the passages (35-27) of the intermediate element (23) so that intermediate element (23) and element (24) can rotate relative to each other and move axially and the filter element can be moved to its fully installed position.
1[a] a filter housing,	Dworatzek discloses a filter housing. *See, e.g.,* Dworatzek at [0023]: The diagram according to FIG. 1 shows a filter housing 10 which is made, for example, of synthetic resin material and defines a receptacle for a filter element 12. The filter housing 10 is closed by a housing lid. The medium to be filtered, e.g., air, flows through the unfiltered air inlet 13 into the outer unfiltered air chamber 14 of the filter housing, then flows radially through the zigzag pleated filter element and through the active filter layer, leaving the filter unit through the interior 15 and the opening 16 in the central mandrel 17, having been cleaned by its passage through the filter layer. As already mentioned, the filter element 12 is pleated and is made of paper or a nonwoven medium. For example, Dworatzek discloses a filter housing (10).
1[b] a ring filter insert, replaceably arranged in the filter housing, and	Dworatzek discloses a ring filter insert, replaceably arranged in the filter housing. *See, e.g.,* Dworatzek at [0023]: The diagram according to FIG. 1 shows a filter housing 10 which is made, for example, of synthetic resin material and defines a receptacle for a filter element 12. The filter housing 10 is closed by a housing lid. The medium to be filtered, e.g., air, flows through the unfiltered air inlet

	13 into the outer unfiltered air chamber 14 of the filter housing, then flows radially through the zigzag pleated filter element and through the active filter layer, leaving the filter unit through the interior 15 and the opening 16 in the central mandrel 17, having been cleaned by its passage through the filter layer. As already mentioned, the filter element 12 is pleated and is made of paper or a nonwoven medium. For example, Dworatzek discloses a ring filter insert (12), replaceably arranged in the filter housing (10).
1[c] a removable cover arranged to close the filter housing during operation,	Dworatzek discloses a removable cover arranged to close the filter housing during operation. *See, e.g.,* Dworatzek at [0023]: The diagram according to FIG. 1 shows a filter housing 10 which is made, for example, of synthetic resin material and defines a receptacle for a filter element 12. The filter housing 10 is closed by a housing lid. The medium to be filtered, e.g., air, flows through the unfiltered air inlet 13 into the outer unfiltered air chamber 14 of the filter housing, then flows radially through the zigzag pleated filter element and through the active filter layer, leaving the filter unit through the interior 15 and the opening 16 in the central mandrel 17, having been cleaned by its passage through the filter layer. As already mentioned, the filter element 12 is pleated and is made of paper or a nonwoven medium. Dworatzek at Fig. 5:  Fig.5 For example, Dworatzek discloses a removable cover (11) arranged to close the filter housing (10) 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	Dworatzek discloses 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. *See, e.g.,* Dworatzek at [0023]: The diagram according to FIG. 1 shows a filter housing 10 which is made, for example, of synthetic resin material and defines a receptacle for a filter element 12. The filter housing 10 is closed by a housing lid. The medium to be filtered, e.g., air, flows through the unfiltered air inlet 13 into the outer unfiltered air chamber 14 of the filter housing, then flows radially through the zigzag pleated filter element and through the active filter layer, leaving the filter unit through the interior 15 and the opening 16 in the central mandrel 17, having been cleaned by its passage through the filter layer. As already mentioned, the filter element 12 is pleated and is made of paper or a nonwoven medium. For example, Dworatzek discloses the filter housing including at least one inlet (13) for raw liquid to be filtered, which inlet (13) leads into a raw side (14) of the filter housing (10).
1[e] a return extending from a clean side of the filter housing for filtered clean liquid,	Dworatzek discloses a return extending from a clean side of the filter housing for filtered clean liquid. *See, e.g.,* Dworatzek at [0023]: The diagram according to FIG. 1 shows a filter housing 10 which is made, for example, of synthetic resin material and defines a receptacle for a filter element 12. The filter housing 10 is closed by a housing lid. The medium to be filtered, e.g., air, flows through the unfiltered air inlet 13 into the outer unfiltered air chamber 14 of the filter housing, then flows radially through the zigzag pleated filter element and through the active filter layer, leaving the filter unit through the interior 15 and the opening 16 in the central mandrel 17, having been cleaned by its passage through the filter layer. As already mentioned, the filter element 12 is pleated and is made of paper or a nonwoven medium.

	For example, Dworatzek discloses a return (16) extending from a clean side (15) of the filter housing (10) for filtered clean liquid.
1[f] an eccentric opening arranged in a bottom of the filter housing,	Dworatzek in combination with Cline, and/or the background knowledge of a POSA, discloses an eccentric opening arranged in a bottom of the filter housing,. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an opening (*e.g.*, 58) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding this feature to Dworatzek and/or incorporating the teachings of Dworatzek into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0020]-[0021]: The filter apparatus 10 comprises a housing 16, as shown in FIGS. 1-3 and 6-7. A base 18 of the housing 16 is configured to be secured to the engine 12. A cover 20 of the housing 16 is configured to be secured to the base 18 via a threaded connection or other suitable connection. Together, the base 18 and the cover 20 define an interior region 22 (see FIG. 6) when the cover 20 is secured to the base 18. The base 18 comprises passageways of the interior region 22 to admit fluid into and discharge fluid from a filter chamber 23 (see FIG. 6) of the interior region 22. The base 18 comprises an inlet passageway 24 (see FIG. 3), a filtered fluid outlet passageway 26 (see FIGS. 3, 6, and 7), a bypass passageway 28 (see FIG. 3), and a quick-drain passageway 30 (see FIGS. 3, 6, and 7). The inlet passageway 24 admits unfiltered fluid into the filter chamber 23. The filtered fluid outlet passageway 26 discharges fluid filtered by the filter element 32 from the filter chamber 23. The bypass passageway 28 contains a bypass valve 34 (see FIG. 3) to discharge unfiltered fluid from the filter chamber 23 when, for example, the filter element 32 becomes clogged with contaminants and/or the fluid is somewhat thick due to, for example, cold weather. The quick-drain passageway 26 discharges fluid from the filter chamber 23 through a quick-drain outlet 36 (see FIGS. 6-7) when the filter element 32 is removed from the filter chamber 23. Cline at [0025]:

	The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. Cline at [0027]-[0029]: The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64. The post 64 comprises a body 68, a head 70, and a neck 72 interconnecting the body 68 and the head 70, as shown in FIGS. 5-7. The body 68 is secured to and extends from the outwardly facing surface 62. The head 70 has a diameter less than a diameter of the body 68. The neck 72 has a diameter less than the diameters of the body 68 and the head 70. The body 68, the head 70, and the neck 72 cooperate to define an annular groove 74. The neck 72 defines a channel 76 extending through the neck 72. The flow blocker 66 surrounds the head 70 and the neck 72 and extends into the annular groove 74 and through the channel 76 to mount the flow blocker 66 to the post 64. The flow blocker 66 comprises a surface 78, as shown in FIGS. 4-7, for engaging the valve seat 60. The surface 78 and the valve seat 60 are, for example, frusto-conical in shape. The surface 78 engages the valve seat 60 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6, and disengages the valve seat 60 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. Cline at Fig. 3:

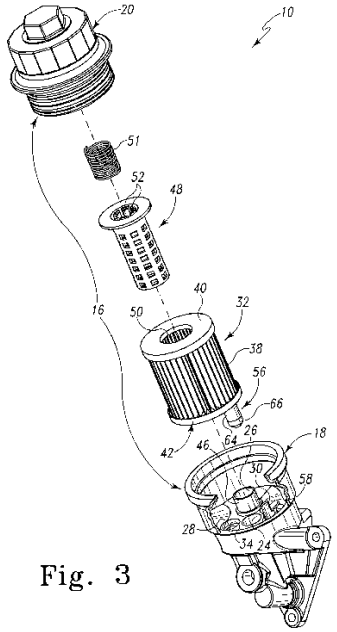


Fig. 3

Cline at Figs. 6-7:

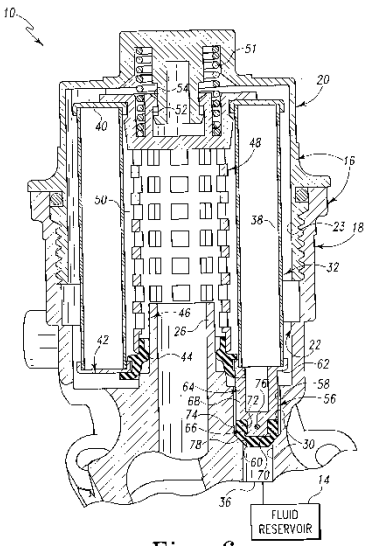


Fig. 6

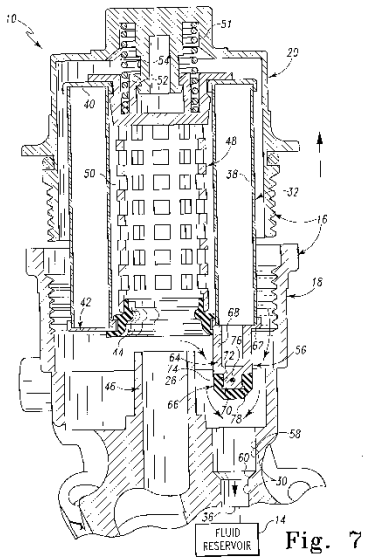


Fig. 7

For example, Dworatzek in combination with Cline discloses an eccentric opening (Cline 58) arranged in a bottom (Cline 18) of the filter housing (Cline 16, 18).

Moreover, it would have been obvious to combine Dworatzek with one or more of the other references identified by Defendant as disclosing this limitation including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading.

A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding these features to Dworatzek and/or incorporating the teachings of Dworatzek into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts.

A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding these features to Dworatzek and/or incorporating the teachings of Dworatzek into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts.

See, e.g.,

Grass at [0006]:

The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing.

Grass at [0018]-[0021]:

According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine.

The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B.

filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

Grass at [0033]-[0036]:

According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified.

If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially

	adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function. To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection

	being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]:

	The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
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,	Dworatzek discloses 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. *See, e.g.,* Dworatzek at [0024]: The filter element 12 has an end disk 18 and 19 at each end. The end disks are made, for example, of a thermoplastic material. The end disk 19 comprises an axially extending structure of defined elevations and/or recesses 20, 21 and 22, which may, for example, take the form of letters or other recognizable characters. These elevations engage through openings in a so-called intermediate element 23 and are in direct operative connection with a disk-shaped element 24 which is arranged adjacent the filter housing 10 so as to be axially movable. For example, Dworatzek discloses the ring filter insert (12) comprising a hollow-cylindrical filter material body ("the zigzag pleated filter element"), surrounded on front sides by top (18) and bottom (19) front panels, the ring filter insert (12) separating the raw side (14) of the filter housing (10) and the clean side (15) of the filter housing (10) from each another.
1[h] an eccentric blocking element for the eccentric opening arranged on the bottom front panel,	Dworatzek in combination with Cline, and/or the background knowledge of a POSA, discloses an eccentric blocking element for the eccentric opening arranged on the bottom front panel,. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding this feature to Dworatzek and/or incorporating the teachings of Dworatzek into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0020]-[0021]:

	The filter apparatus 10 comprises a housing 16, as shown in FIGS. 1-3 and 6-7. A base 18 of the housing 16 is configured to be secured to the engine 12. A cover 20 of the housing 16 is configured to be secured to the base 18 via a threaded connection or other suitable connection. Together, the base 18 and the cover 20 define an interior region 22 (see FIG. 6) when the cover 20 is secured to the base 18. The base 18 comprises passageways of the interior region 22 to admit fluid into and discharge fluid from a filter chamber 23 (see FIG. 6) of the interior region 22. The base 18 comprises an inlet passageway 24 (see FIG. 3), a filtered fluid outlet passageway 26 (see FIGS. 3, 6, and 7), a bypass passageway 28 (see FIG. 3), and a quick-drain passageway 30 (see FIGS. 3, 6, and 7). The inlet passageway 24 admits unfiltered fluid into the filter chamber 23. The filtered fluid outlet passageway 26 discharges fluid filtered by the filter element 32 from the filter chamber 23. The bypass passageway 28 contains a bypass valve 34 (see FIG. 3) to discharge unfiltered fluid from the filter chamber 23 when, for example, the filter element 32 becomes clogged with contaminants and/or the fluid is somewhat thick due to, for example, cold weather. The quick-drain passageway 26 discharges fluid from the filter chamber 23 through a quick-drain outlet 36 (see FIGS. 6-7) when the filter element 32 is removed from the filter chamber 23. Cline at [0025]: The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. Cline at [0027]-[0029]:

	The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64. The post 64 comprises a body 68, a head 70, and a neck 72 interconnecting the body 68 and the head 70, as shown in FIGS. 5-7. The body 68 is secured to and extends from the outwardly facing surface 62. The head 70 has a diameter less than a diameter of the body 68. The neck 72 has a diameter less than the diameters of the body 68 and the head 70. The body 68, the head 70, and the neck 72 cooperate to define an annular groove 74. The neck 72 defines a channel 76 extending through the neck 72. The flow blocker 66 surrounds the head 70 and the neck 72 and extends into the annular groove 74 and through the channel 76 to mount the flow blocker 66 to the post 64. The flow blocker 66 comprises a surface 78, as shown in FIGS. 4-7, for engaging the valve seat 60. The surface 78 and the valve seat 60 are, for example, frusto-conical in shape. The surface 78 engages the valve seat 60 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6, and disengages the valve seat 60 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. Cline at Fig. 3:

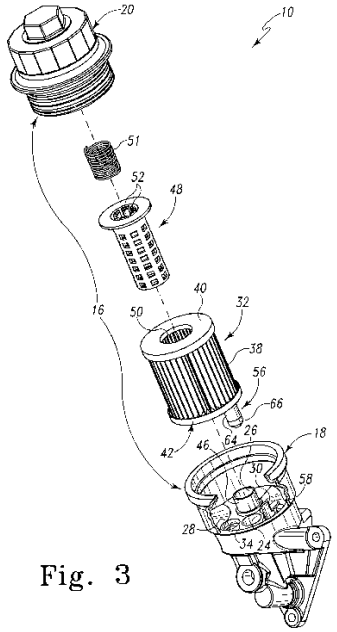


Fig. 3

Cline at Figs. 4-5:

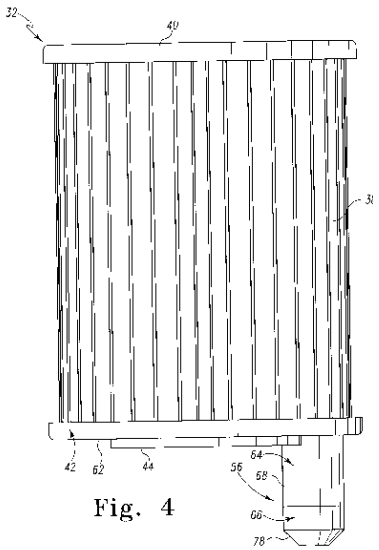


Fig. 4

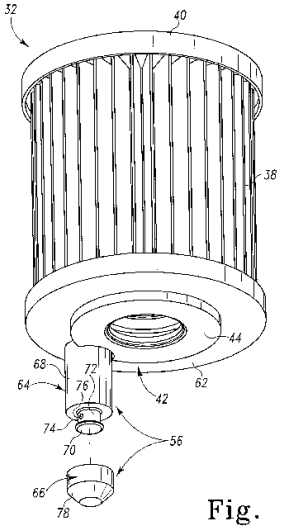


Fig. 5

For example, Dworatzek in combination with Cline discloses an eccentric blocking element (Cline 56) for the eccentric opening (Cline 58) arranged on the bottom front panel (Cline 42).

Moreover, it would have been obvious to combine Dworatzek with one or more of the other references identified by Defendant as disclosing this limitation including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading.

A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding these features to Dworatzek and/or incorporating the teachings of Dworatzek into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts.

	See, e.g., Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing. Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean

room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

Grass at [0033]-[0036]:

According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified.

If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function.

To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped

	attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.

	Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
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,	Dworatzek in combination with Cline, and/or the background knowledge of a POSA, discloses 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. A POSA would have motivation to make this combination for numerous reasons. For example, it was well known in the art to use a positioning means to ensure proper alignment of components in a filter assembly and/or that only the proper filter insert is installed on a filter housing. *See, e.g.*, US 2006/0219621, [0003] ("Published German patent application no. DE 4402836, for

	example, describes an arrangement in which the correct use of Suitable replacement parts is ensured by the fact that the respective part for attachment can be attached to the unit only according to a lock-and-key principle."), [0006] ("Another object of the invention is to provide a filter device which establishes a definitive correlation between the filter housing and an installed filter element."), [0007] ("A further object of the invention is to provide a filter device which prevents installation of an incorrect filter element."), [0028] ("If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24."). Such a positioning means also ensures a user need not visually align or guess at proper alignment through trial and error, potentially damaging the blocking element or incorrectly installing it. Thus there was common sense—and express—motivation in the art to use a positioning means to ensure proper alignment of components such as an eccentric blocking element within the filter housing. Moreover, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding this feature to Dworatzek and/or incorporating the teachings of Dworatzek into Cline as doing so involves no more than routine techniques well established in the mechanical arts. Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below. For example: Dworatzek at [0028]-[0029]: FIGS. 3 a and 3 b show the disk-shaped element 24, which also has inwardly directed projections 26, 27, 28. Furthermore, the element 24 has resiliently mounted pin-like appendages 30 and 31 which extend out of the plane of the disk 24, as well as a number of other projections which are also resiliently mounted and arranged in the axial direction. If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24. Only when the projecting appendages 30, 31 are pushed by the end disk 19, i.e., by the letter-shaped elevations or configurations 20 on the end

disk 19, in the axial direction out of the letter-shaped passageways of the intermediate disk 23 is it possible for the two disks 23 and 24 to rotate relative to each other. This means that the end disk 19 represents the key, so to speak, with which the lock comprised of the disks 23 and 24 can be unlocked.

The central mandrel 17 which is shown in FIGS. 4 a and 4 b also plays an important role in this unlocking. This central mandrel has three grooves 32, 33, 34 which are arranged distributed around the circumference of the mandrel and serve to guide the projections 26, 27 and 28. If there is no filter element in the housing according to FIG. 1, then the two elements 23 and 24 are in the position indicated schematically in FIG. 4 a. The engagement of the end disk 19 in the two elements causes the element 24 to be moved into the obliquely extending groove areas and to be shifted to the ends of the groove, which can be seen at the right side in FIG. 4 a, owing to the unlocking effect due to the axial movement of the filter element.

At Figs. 2-4:

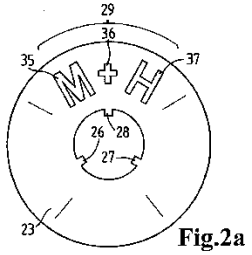


Fig.2a

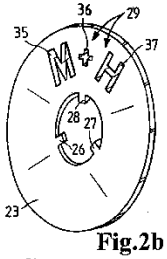


Fig.2b

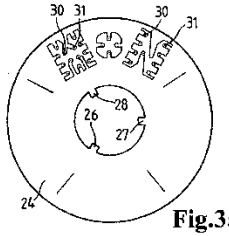


Fig.3a

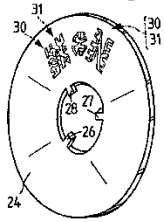


Fig.3b

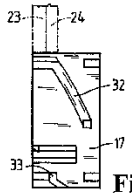


Fig.4a

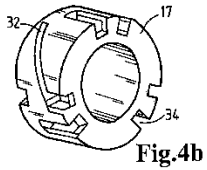


Fig.4b

	Cline at [0025]: The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. As one example, Dworatzek in combination with Cline discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: first (Dworatzek 32-34) and second (Dworatzek 26-28) interacting positioning means each on one of the ring filter insert (Dworatzek 12) and the filter housing (Dworatzek 10) and arranged to bring the blocking element (Cline 56) into engagement with the eccentric opening (Cline 58) when the ring filter insert is inserted into the filter housing, Moreover, it would have been obvious to combine Dworatzek with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding these features to Dworatzek and/or incorporating the

	teachings of Dworatzek into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing. Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside.

The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

Grass at [0033]-[0036]:

According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified.

If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function.

To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle

14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off.

According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 .

Brisson at [0029]:

To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank.

Brisson at [0050]:

Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to

	unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
1[j] the first positioning means comprising an inclined plane,	Dworatzek in combination with Cline, and/or the background knowledge of a POSA, discloses the first positioning means comprising an inclined plane,. Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below.

	A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding this feature to Dworatzek and/or incorporating the teachings of Dworatzek into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Dworatzek at [0028]-[0029]: FIGS. 3 a and 3 b show the disk-shaped element 24, which also has inwardly directed projections 26, 27, 28. Furthermore, the element 24 has resiliently mounted pin-like appendages 30 and 31 which extend out of the plane of the disk 24, as well as a number of other projections which are also resiliently mounted and arranged in the axial direction. If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24. Only when the projecting appendages 30, 31 are pushed by the end disk 19, i.e., by the letter-shaped elevations or configurations 20 on the end disk 19, in the axial direction out of the letter-shaped passageways of the intermediate disk 23 is it possible for the two disks 23 and 24 to rotate relative to each other. This means that the end disk 19 represents the key, so to speak, with which the lock comprised of the disks 23 and 24 can be unlocked. The central mandrel 17 which is shown in FIGS. 4 a and 4 b also plays an important role in this unlocking. This central mandrel has three grooves 32, 33, 34 which are arranged distributed around the circumference of the mandrel and serve to guide the projections 26, 27 and 28. If there is no filter element in the housing according to FIG. 1, then the two elements 23 and 24 are in the position indicated schematically in FIG. 4 a. The engagement of the end disk 19 in the two elements causes the element 24 to be moved into the obliquely extending groove areas and to be shifted to the ends of the groove, which can be seen at the right side in FIG. 4 a, owing to the unlocking effect due to the axial movement of the filter element. At Figs. 2-4:

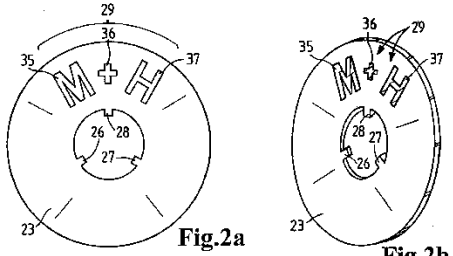


Fig.2a

Fig.2b

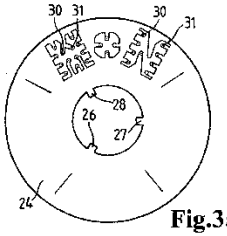


Fig.3a

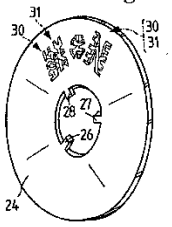


Fig.3b

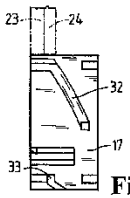


Fig.4a

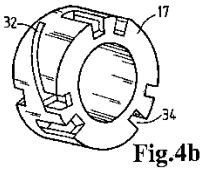


Fig.4b

Cline at [0025]:

The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain

	valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. As one example, Dworatzek in combination with Cline discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: the first positioning means comprising an inclined plane (Dworatzek 32-34). Moreover, it would have been obvious to combine Dworatzek with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding these features to Dworatzek and/or incorporating the teachings of Dworatzek into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B.

	filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
1[k] the second positioning means comprising a protruding nose which is arranged opposite the inclined plane, and	Dworatzek in combination with Cline, and/or the background knowledge of a POSA, discloses the second positioning means comprising a protruding nose which is arranged opposite the inclined plane.

	Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding this feature to Dworatzek and/or incorporating the teachings of Dworatzek into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Dworatzek at [0028]-[0029]: FIGS. 3 a and 3 b show the disk-shaped element 24, which also has inwardly directed projections 26, 27, 28. Furthermore, the element 24 has resiliently mounted pin-like appendages 30 and 31 which extend out of the plane of the disk 24, as well as a number of other projections which are also resiliently mounted and arranged in the axial direction. If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24. Only when the projecting appendages 30, 31 are pushed by the end disk 19, i.e., by the letter-shaped elevations or configurations 20 on the end disk 19, in the axial direction out of the letter-shaped passageways of the intermediate disk 23 is it possible for the two disks 23 and 24 to rotate relative to each other. This means that the end disk 19 represents the key, so to speak, with which the lock comprised of the disks 23 and 24 can be unlocked. The central mandrel 17 which is shown in FIGS. 4 a and 4 b also plays an important role in this unlocking. This central mandrel has three grooves 32, 33, 34 which are arranged distributed around the circumference of the mandrel and serve to guide the projections 26, 27 and 28. If there is no filter element in the housing according to FIG. 1, then the two elements 23 and 24 are in the position indicated schematically in FIG. 4 a. The engagement of the end disk 19 in the two elements causes the element 24 to be moved into the obliquely extending groove areas and to be shifted to the ends of the groove, which can be seen at the right side in FIG. 4 a, owing to the unlocking effect due to the axial movement of the filter element.

At Figs. 2-4:

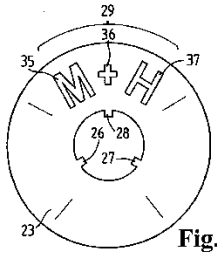


Fig.2a

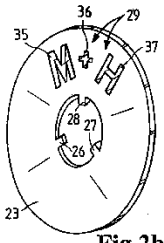


Fig.2b

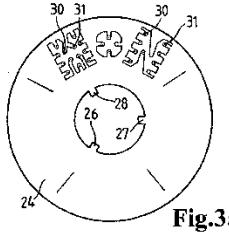


Fig.3a

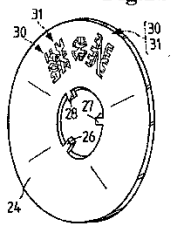


Fig.3b

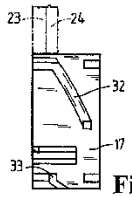


Fig.4a

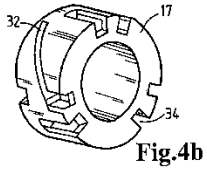


Fig.4b

Cline at [0025]:

The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In

	particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. As one example, Dworatzek in combination with Cline discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: the second positioning means comprising a protruding nose (Dworatzek 26-28) which is arranged opposite the inclined plane (Dworatzek 32-34). Moreover, it would have been obvious to combine Dworatzek with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding these features to Dworatzek and/or incorporating the teachings of Dworatzek into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine.

	The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
1[l] the inclined plane and the nose arranged to be movable in relation to each other in such a	Dworatzek in combination with Cline, and/or the background knowledge of a POSA, discloses the inclined plane and the nose arranged to be movable in relation to each other in such a way

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,	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. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding this feature to Dworatzek and/or incorporating the teachings of Dworatzek into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Dworatzek at [0028]-[0029]: FIGS. 3 a and 3 b show the disk-shaped element 24, which also has inwardly directed projections 26, 27, 28. Furthermore, the element 24 has resiliently mounted pin-like appendages 30 and 31 which extend out of the plane of the disk 24, as well as a number of other projections which are also resiliently mounted and arranged in the axial direction. If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24. Only when the projecting appendages 30, 31 are pushed by the end disk 19, i.e., by the letter-shaped elevations or configurations 20 on the end disk 19, in the axial direction out of the letter-shaped passageways of the intermediate disk 23 is it possible for the two disks 23 and 24 to rotate relative to each other. This means that the end disk 19 represents the key, so to speak, with which the lock comprised of the disks 23 and 24 can be unlocked. The central mandrel 17 which is shown in FIGS. 4 a and 4 b also plays an important role in this unlocking. This central mandrel has three grooves 32, 33, 34 which are arranged distributed around the circumference of the mandrel and serve to guide the projections 26, 27 and 28. If there is no filter element in the housing according to FIG. 1, then the two elements 23 and 24 are in the position indicated schematically in FIG. 4 a. The engagement of the end disk 19 in the two elements causes the element 24 to be moved into the obliquely extending groove areas and to be shifted to the ends of the groove, which can be seen at the right side in FIG. 4 a, owing to the unlocking effect due to the axial movement of the filter element. At Figs. 2-4:

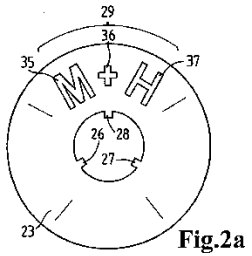


Fig.2a

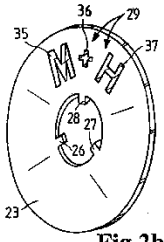


Fig.2b

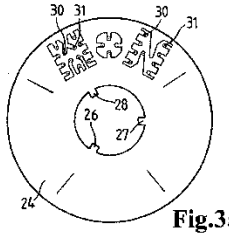


Fig.3a

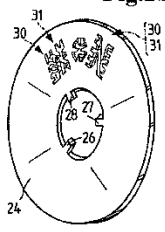


Fig.3b

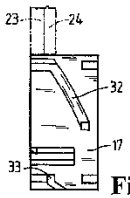


Fig.4a

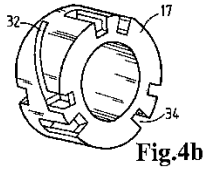


Fig.4b

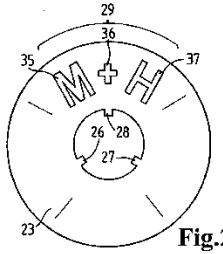
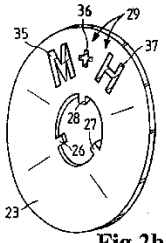
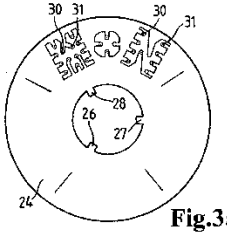
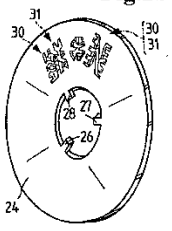
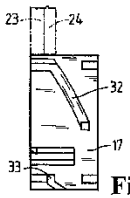
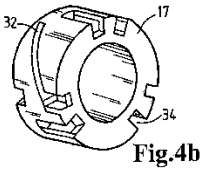
Cline at [0025]:

The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain

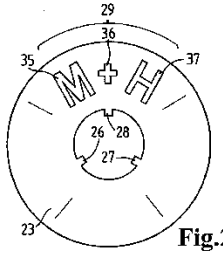
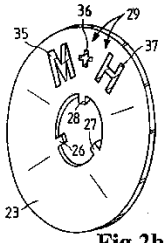
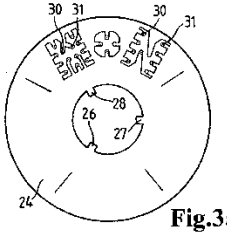
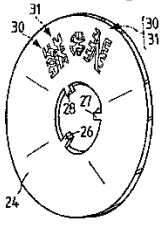
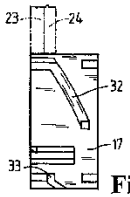
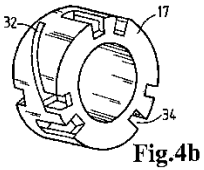
	valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. For example, Dworatzek discloses the inclined plane (Dworatzek 32-34) and the nose (Dworatzek 26-28) arranged to be movable in relation to each other in such a way that they slide along each other (see Dworatzek [0029]) and bring the blocking element (Cline 56) into engagement with the eccentric opening (Cline 58), by rotating the ring filter insert relative to the filter housing (*see* Dworatzek at [0029]). Moreover, it would have been obvious to combine Dworatzek with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding these features to Dworatzek and/or incorporating the teachings of Dworatzek into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine.

	The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
1[m] the inclined plane being one of embodied and arranged on one of the inner	Dworatzek discloses 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

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,	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,. *See, e.g.,* Dworatzek at [0028]-[0029]: FIGS. 3 a and 3 b show the disk-shaped element 24, which also has inwardly directed projections 26, 27, 28. Furthermore, the element 24 has resiliently mounted pin-like appendages 30 and 31 which extend out of the plane of the disk 24, as well as a number of other projections which are also resiliently mounted and arranged in the axial direction. If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24. Only when the projecting appendages 30, 31 are pushed by the end disk 19, i.e., by the letter-shaped elevations or configurations 20 on the end disk 19, in the axial direction out of the letter-shaped passageways of the intermediate disk 23 is it possible for the two disks 23 and 24 to rotate relative to each other. This means that the end disk 19 represents the key, so to speak, with which the lock comprised of the disks 23 and 24 can be unlocked. The central mandrel 17 which is shown in FIGS. 4 a and 4 b also plays an important role in this unlocking. This central mandrel has three grooves 32, 33, 34 which are arranged distributed around the circumference of the mandrel and serve to guide the projections 26, 27 and 28. If there is no filter element in the housing according to FIG. 1, then the two elements 23 and 24 are in the position indicated schematically in FIG. 4 a. The engagement of the end disk 19 in the two elements causes the element 24 to be moved into the obliquely extending groove areas and to be shifted to the ends of the groove, which can be seen at the right side in FIG. 4 a, owing to the unlocking effect due to the axial movement of the filter element. At Figs. 2-4:

	 Fig.2a  Fig.2b  Fig.3a  Fig.3b  Fig.4a  Fig.4b As one example, Dworatzek discloses the inclined plane (32-34) being one of embodied and arranged on the outer circumference of a filter housing part (17) arranged inside the ring filter insert (12) and the protruding nose (26-28) being one of embodied and arranged on the inner circumference of the ring filter insert (12, 19, 23).
1[n] the inclined plane comprising an incline which excludes a self-locking and	The specification lacks adequate written description support for and does not enable the POSA to practice the limitation "excludes a self-locking." The term is further indefinite as the POSA would not understand the scope of such term and what is included or excluded therein. Applying Hengst's apparent construction however, Dworatzek discloses the inclined plane comprising an incline which excludes a self-locking. *See, e.g.*, Dworatzek at [0028]-[0029]:

	FIGS. 3 a and 3 b show the disk-shaped element 24, which also has inwardly directed projections 26, 27, 28. Furthermore, the element 24 has resiliently mounted pin-like appendages 30 and 31 which extend out of the plane of the disk 24, as well as a number of other projections which are also resiliently mounted and arranged in the axial direction. If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24. Only when the projecting appendages 30, 31 are pushed by the end disk 19, i.e., by the letter-shaped elevations or configurations 20 on the end disk 19, in the axial direction out of the letter-shaped passageways of the intermediate disk 23 is it possible for the two disks 23 and 24 to rotate relative to each other. This means that the end disk 19 represents the key, so to speak, with which the lock comprised of the disks 23 and 24 can be unlocked. The central mandrel 17 which is shown in FIGS. 4 a and 4 b also plays an important role in this unlocking. This central mandrel has three grooves 32, 33, 34 which are arranged distributed around the circumference of the mandrel and serve to guide the projections 26, 27 and 28. If there is no filter element in the housing according to FIG. 1, then the two elements 23 and 24 are in the position indicated schematically in FIG. 4 a. The engagement of the end disk 19 in the two elements causes the element 24 to be moved into the obliquely extending groove areas and to be shifted to the ends of the groove, which can be seen at the right side in FIG. 4 a, owing to the unlocking effect due to the axial movement of the filter element. At Figs. 2-4:

	 Fig.2a  Fig.2b  Fig.3a  Fig.3b  Fig.4a  Fig.4b For example, Dworatzek discloses the inclined plane (32-34) comprising an incline (32-34) which excludes a self-locking.
1[o] the eccentric opening being an outlet for emptying the filter housing when the filter insert is removed.	Dworatzek in combination with Cline, and/or the background knowledge of a POSA, discloses the eccentric opening being an outlet for emptying the filter housing when the filter insert is removed. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding this feature to Dworatzek and/or incorporating the teachings of Dworatzek into Cline as doing so involves no more than routine techniques well established in the mechanical arts.

See, e.g.,

Cline at [0025]:

The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14.

Cline at Figs. 4-7:

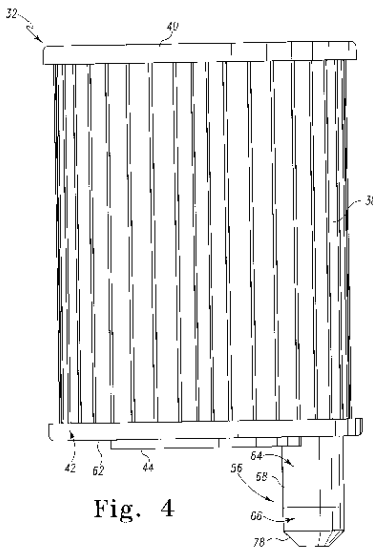


Fig. 4

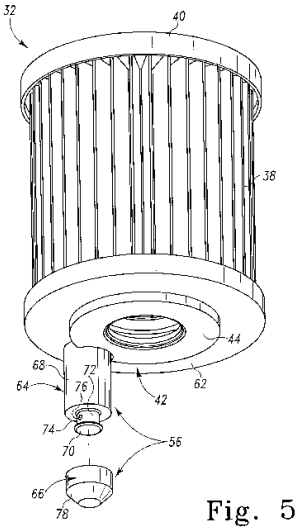


Fig. 5

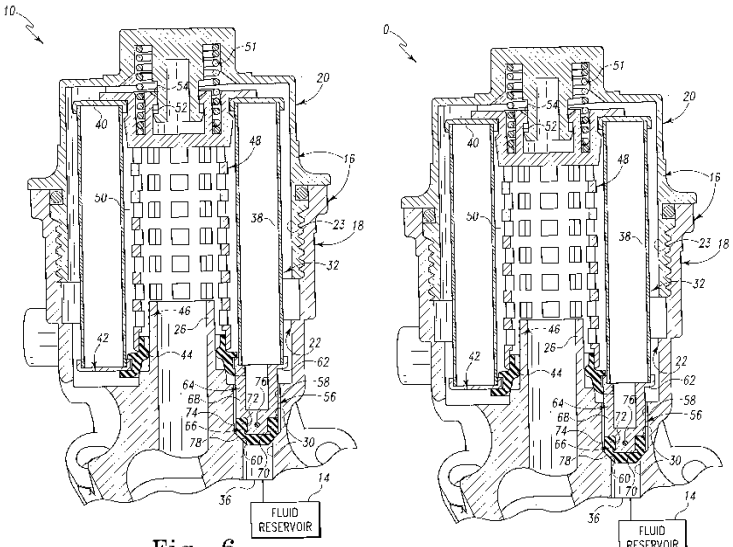


Fig. 6

Fig. 6

For example, Dworatzek in combination with Cline discloses the eccentric opening (Cline 58) being an outlet for emptying the filter housing when the filter insert (Cline 32) is removed (*see* Cline [0025] "[t]he quick-drain valve member 56 is removed from the valve chamber 58 … to allow a flow of fluid from the interior region 22 through the quick-drain outlet 36 … when the filter element 32 is removed").

Moreover, it would have been obvious to combine Dworatzek with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading.

A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a

reasonable expectation of success in adding these features to Dworatzek and/or incorporating the teachings of Dworatzek into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts.

See, e.g.,

Grass at [0018]-[0021]:

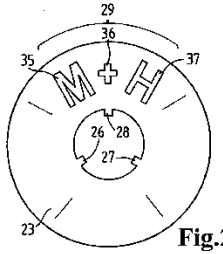
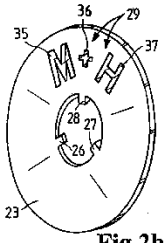
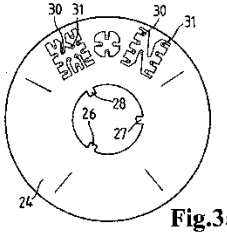
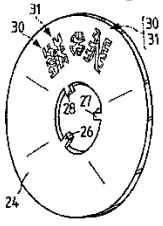
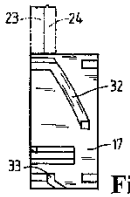
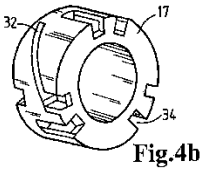
According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine.

The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

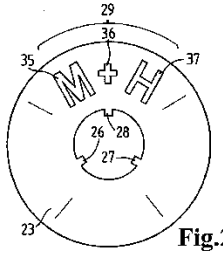
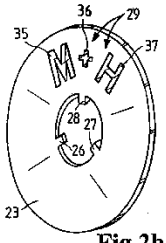
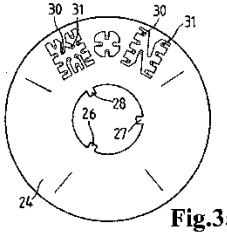
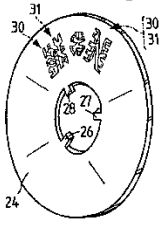
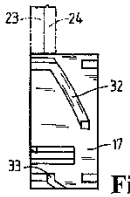
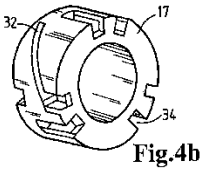
The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

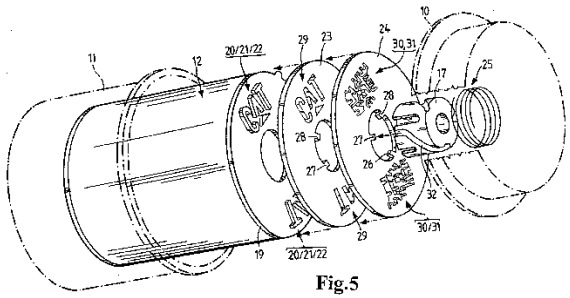
	The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
Claim 2	
[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.	The subject matter of claim 2 as a whole would have been obvious in light of Dworatzek and the general background knowledge of the POSA. The POSA would have understood that implementing the inclined planes of Dworatzek by forming 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 was a simple design option and choice for implementing the inclines planes.
Claim 3	
[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.	Dworatzek discloses a guide for the nose which runs in an axial direction and is connected to a lower end of the inclined plane. *See, e.g.,* Dworatzek at [0028]-[0029]: FIGS. 3 a and 3 b show the disk-shaped element 24, which also has inwardly directed projections 26, 27, 28. Furthermore, the element 24 has resiliently mounted pin-like appendages 30 and 31 which extend out of the plane of the disk 24, as well as a number of other projections which are also resiliently mounted and arranged in the axial direction. If the element 23 rests against the

	element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24. Only when the projecting appendages 30, 31 are pushed by the end disk 19, i.e., by the letter-shaped elevations or configurations 20 on the end disk 19, in the axial direction out of the letter-shaped passageways of the intermediate disk 23 is it possible for the two disks 23 and 24 to rotate relative to each other. This means that the end disk 19 represents the key, so to speak, with which the lock comprised of the disks 23 and 24 can be unlocked. The central mandrel 17 which is shown in FIGS. 4 a and 4 b also plays an important role in this unlocking. This central mandrel has three grooves 32, 33, 34 which are arranged distributed around the circumference of the mandrel and serve to guide the projections 26, 27 and 28. If there is no filter element in the housing according to FIG. 1, then the two elements 23 and 24 are in the position indicated schematically in FIG. 4 a. The engagement of the end disk 19 in the two elements causes the element 24 to be moved into the obliquely extending groove areas and to be shifted to the ends of the groove, which can be seen at the right side in FIG. 4 a, owing to the unlocking effect due to the axial movement of the filter element. At Figs. 2-4:

	 Fig.2a  Fig.2b  Fig.3a  Fig.3b  Fig.4a  Fig.4b For example, Dworatzek discloses a guide (*see* Fig.4) for the nose (26-28) which runs in an axial direction and is connected to a lower end of the inclined plane (32-34).
Claim 5	
[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.	Dworatzek discloses 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. *See, e.g.*, Dworatzek at [0028]-[0029]: FIGS. 3 a and 3 b show the disk-shaped element 24, which also has inwardly directed projections 26, 27, 28. Furthermore, the element 24 has resiliently mounted pin-like appendages 30 and 31 which extend out of the plane of the disk 24, as well as a number of other projections which are also resiliently mounted and arranged in the axial direction. If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of

	the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24. Only when the projecting appendages 30, 31 are pushed by the end disk 19, i.e., by the letter-shaped elevations or configurations 20 on the end disk 19, in the axial direction out of the letter-shaped passageways of the intermediate disk 23 is it possible for the two disks 23 and 24 to rotate relative to each other. This means that the end disk 19 represents the key, so to speak, with which the lock comprised of the disks 23 and 24 can be unlocked. The central mandrel 17 which is shown in FIGS. 4 a and 4 b also plays an important role in this unlocking. This central mandrel has three grooves 32, 33, 34 which are arranged distributed around the circumference of the mandrel and serve to guide the projections 26, 27 and 28. If there is no filter element in the housing according to FIG. 1, then the two elements 23 and 24 are in the position indicated schematically in FIG. 4 a. The engagement of the end disk 19 in the two elements causes the element 24 to be moved into the obliquely extending groove areas and to be shifted to the ends of the groove, which can be seen at the right side in FIG. 4 a, owing to the unlocking effect due to the axial movement of the filter element. At Figs. 2-4:

	 Fig.2a  Fig.2b  Fig.3a  Fig.3b  Fig.4a  Fig.4b As one example, Dworatzek discloses the inclined plane (32-34) is formed by a radially protruding step, which forms a contact surface (*see* Fig.4) for the nose (26-28) on a lower side thereof.
Claim 6	
[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.	Dworatzek discloses the inclined plane is formed integrally with one of the filter housing and the ring filter insert. *See, e.g.,* Dworatzek at [0028]-[0029]: FIGS. 3 a and 3 b show the disk-shaped element 24, which also has inwardly directed projections 26, 27, 28. Furthermore, the element 24 has resiliently mounted pin-like appendages 30 and 31 which extend out of the plane of the disk 24, as well as a number of other projections which are

	also resiliently mounted and arranged in the axial direction. If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24. Only when the projecting appendages 30, 31 are pushed by the end disk 19, i.e., by the letter-shaped elevations or configurations 20 on the end disk 19, in the axial direction out of the letter-shaped passageways of the intermediate disk 23 is it possible for the two disks 23 and 24 to rotate relative to each other. This means that the end disk 19 represents the key, so to speak, with which the lock comprised of the disks 23 and 24 can be unlocked. The central mandrel 17 which is shown in FIGS. 4 a and 4 b also plays an important role in this unlocking. This central mandrel has three grooves 32, 33, 34 which are arranged distributed around the circumference of the mandrel and serve to guide the projections 26, 27 and 28. If there is no filter element in the housing according to FIG. 1, then the two elements 23 and 24 are in the position indicated schematically in FIG. 4 a. The engagement of the end disk 19 in the two elements causes the element 24 to be moved into the obliquely extending groove areas and to be shifted to the ends of the groove, which can be seen at the right side in FIG. 4 a, owing to the unlocking effect due to the axial movement of the filter element. Dworatzek at Fig. 5:  Fig.5 As one example, Dworatzek discloses the inclined plane (32-34) is formed integrally with the filter housing (10).
Claim 8	
[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.	Dworatzek discloses the nose is formed integrally with one of the filter housing and the ring filter insert. *See, e.g.,*

Dworatzek at [0028]-[0029]:

FIGS. 3 a and 3 b show the disk-shaped element 24, which also has inwardly directed projections 26, 27, 28. Furthermore, the element 24 has resiliently mounted pin-like appendages 30 and 31 which extend out of the plane of the disk 24, as well as a number of other projections which are also resiliently mounted and arranged in the axial direction. If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24. Only when the projecting appendages 30, 31 are pushed by the end disk 19, i.e., by the letter-shaped elevations or configurations 20 on the end disk 19, in the axial direction out of the letter-shaped passageways of the intermediate disk 23 is it possible for the two disks 23 and 24 to rotate relative to each other. This means that the end disk 19 represents the key, so to speak, with which the lock comprised of the disks 23 and 24 can be unlocked.

The central mandrel 17 which is shown in FIGS. 4 a and 4 b also plays an important role in this unlocking. This central mandrel has three grooves 32, 33, 34 which are arranged distributed around the circumference of the mandrel and serve to guide the projections 26, 27 and 28. If there is no filter element in the housing according to FIG. 1, then the two elements 23 and 24 are in the position indicated schematically in FIG. 4 a. The engagement of the end disk 19 in the two elements causes the element 24 to be moved into the obliquely extending groove areas and to be shifted to the ends of the groove, which can be seen at the right side in FIG. 4 a, owing to the unlocking effect due to the axial movement of the filter element.

Dworatzek at Fig. 5:

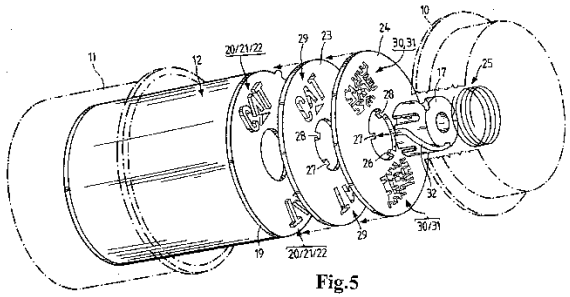
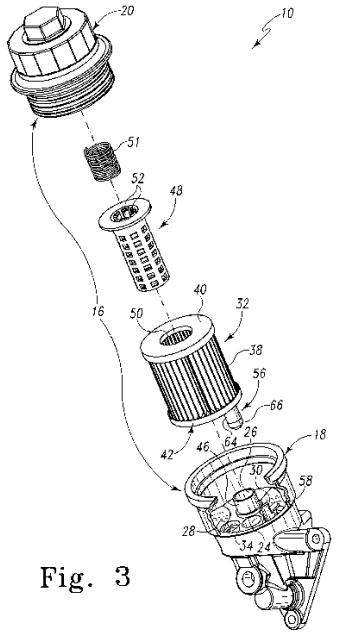


Fig.5

	As one example, Dworatzek discloses the nose (26-28) is formed integrally with the ring filter insert (12, 23).
Claim 9	
[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.	Dworatzek in combination with Cline, and/or the background knowledge of a POSA, discloses 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. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding this feature to Dworatzek and/or incorporating the teachings of Dworatzek into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0020]-[0021]: The filter apparatus 10 comprises a housing 16, as shown in FIGS. 1-3 and 6-7. A base 18 of the housing 16 is configured to be secured to the engine 12. A cover 20 of the housing 16 is configured to be secured to the base 18 via a threaded connection or other suitable connection. Together, the base 18 and the cover 20 define an interior region 22 (see FIG. 6) when the cover 20 is secured to the base 18. The base 18 comprises passageways of the interior region 22 to admit fluid into and discharge fluid from a filter chamber 23 (see FIG. 6) of the interior region 22. The base 18 comprises an inlet passageway 24 (see FIG. 3), a filtered fluid outlet passageway 26 (see FIGS. 3, 6, and 7), a bypass passageway 28 (see FIG. 3), and a quick-drain passageway 30 (see FIGS. 3, 6, and 7). The inlet passageway 24 admits unfiltered fluid into the filter chamber 23. The filtered fluid outlet passageway 26 discharges fluid filtered by the filter element 32 from the filter chamber 23. The bypass passageway 28 contains a bypass valve 34 (see FIG. 3) to discharge unfiltered fluid from the filter chamber 23 when, for example, the filter element 32 becomes clogged with contaminants and/or the fluid is somewhat thick due to, for example, cold weather. The quick-

	drain passageway 26 discharges fluid from the filter chamber 23 through a quick-drain outlet 36 (see FIGS. 6-7) when the filter element 32 is removed from the filter chamber 23. Cline at [0025]: The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. Cline at [0027]-[0029]: The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64. The post 64 comprises a body 68, a head 70, and a neck 72 interconnecting the body 68 and the head 70, as shown in FIGS. 5-7. The body 68 is secured to and extends from the outwardly facing surface 62. The head 70 has a diameter less than a diameter of the body 68. The neck 72 has a diameter less than the diameters of the body 68 and the head 70. The body 68, the head 70, and the neck 72 cooperate to define an annular groove 74. The neck 72 defines a channel 76 extending through the neck 72. The flow blocker 66 surrounds the head 70 and the neck 72 and extends into the annular groove 74 and through the channel 76 to mount the flow blocker 66 to the post 64. The flow blocker 66 comprises a surface 78, as shown in FIGS. 4-7, for engaging the valve seat 60. The surface 78 and the valve seat 60 are, for example, frusto-conical in shape. The surface 78

	engages the valve seat 60 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6, and disengages the valve seat 60 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. Cline at [0030]-[0035]: Another filter element 132 for use with the filter apparatus 10 is shown in FIGS. 8-11. The filter element 132 is similar in structure and function to the filter element 32, except as otherwise noted, so that identical reference numbers refer to similar structures. The filter element 132 is secured to a center tube 148, as shown in FIGS. 10-11. An end cap 142 of the filter element 132 is secured to, for example, a lower portion of the center tube 148 which extends in the filtered fluid region 50 to provide internal support to the filter media 38. Fingers 52 of the center tube 148 extend in the annular groove 54 formed in the cover 20 for movement therein during assembly and disassembly of the filter apparatus 10. A seal 144 is secured to the end cap 142 for engagement with the outlet post 46 to block flow of fluid between the end cap 142 and the outlet post 46. A quick- drain valve member 156 shown in FIGS. 8-11 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 156 extends in the valve chamber 58 and engages the valve seat 60 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 132 is positioned in the interior region 22, as shown in FIG. 10. In particular, when the filter element 132 is positioned in the filter chamber 23, the quick-drain valve member 156 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 156 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 to the fluid reservoir 14 when the filter element 132 is removed from the interior region 22, as shown in FIG. 11. In particular, when the filter element 132 is removed from the filter chamber 23, the quick-drain valve member 156 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. The quick- drain valve member 156 is secured to and extends from the an outwardly facing surface 162 of the end cap 142, as shown in FIGS. 8-11. The quick-drain valve member 156 is axially spaced apart from the center tube 148. The quick- drain valve member 156 comprises a retainer 180, a flow blocker carrier 182, and a flow blocker 184, as shown in FIGS. 9-11. The retainer 180 is secured to and extends from the outwardly facing surface 162. The flow blocker carrier 182 is secured to the retainer 180 for movement relative thereto. 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. The flow blocker 184 is made of, for example, an elastomeric material. The retainer 180 and the flow blocker 184 define a proximal end portion and a distal end portion, respectively, of the quick-drain valve member 156. A biasing element such as a spring 186 (see FIGS. 9-11) is captured within the retainer 180 and the flow blocker carrier 182. The spring 186 biases the flow blocker carrier 182 away from the outwardly facing surface 162 to press the flow blocker 184 against the valve seat 60. The spring 186 is configured to compress in response to engagement between the flow blocker 184 and the valve seat 60. In this way, the spring 186 accommodates dimensional variations between components of the filter apparatus 10 due to, for example, manufacturing tolerances and thermal expansion. The spring 51 is thus omitted from the filter apparatus 10 when the spring 186 is present. Cline at Fig. 3:  Fig. 3 Cline at Figs. 4-5:

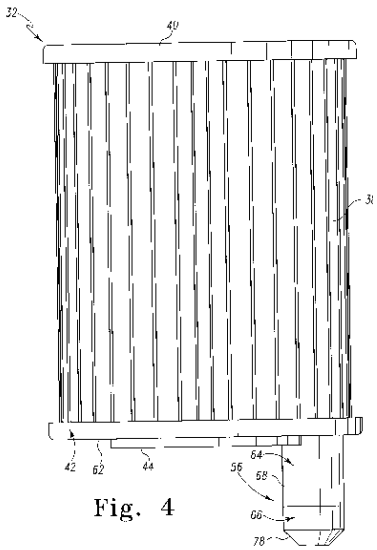


Fig. 4

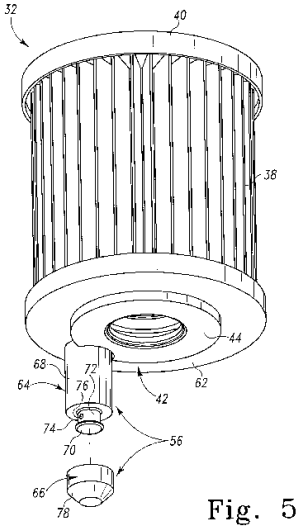


Fig. 5

Cline at Figs. 8-9:

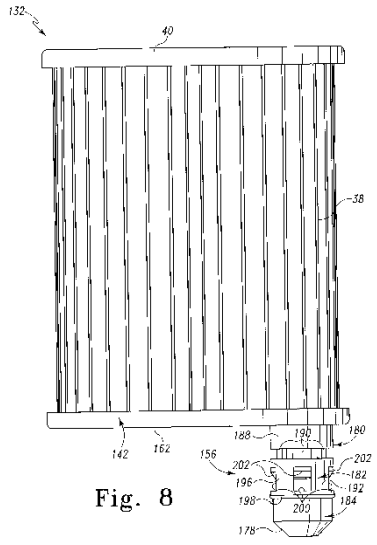


Fig. 8

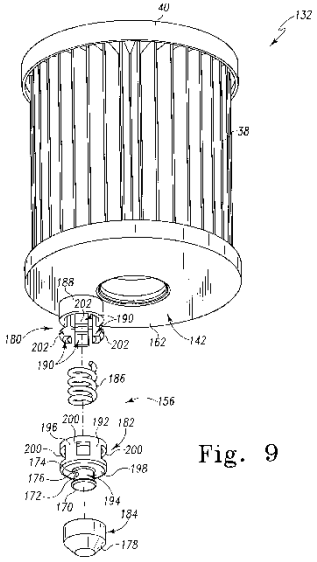


Fig. 9

	As one example, Dworatzek in combination with Cline discloses the blocking element (Cline 56) is a radially sealing plug which is rigidly arranged on the bottom front panel (Cline 42). Moreover, it would have been obvious to combine Dworatzek with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding these features to Dworatzek and/or incorporating the teachings of Dworatzek into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter

	element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
Claim 10	
[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.	Dworatzek in combination with Cline, and/or the background knowledge of a POSA, discloses the blocking element is an axially sealing valve element which is elastically arranged on the bottom front panel. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the

	filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding this feature to Dworatzek and/or incorporating the teachings of Dworatzek into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0027]: The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64. For example, Dworatzek in combination with Cline discloses the blocking element (Cline 56) is an axially sealing valve element (Cline 66) which is elastically arranged on the bottom front panel (Cline 42) (*see* Cline [0027] "[t]he flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64"). Moreover, it would have been obvious to combine Dworatzek with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding these features to Dworatzek and/or incorporating the teachings of Dworatzek into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,*

Grass at [0018]-[0021]:

According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine.

The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

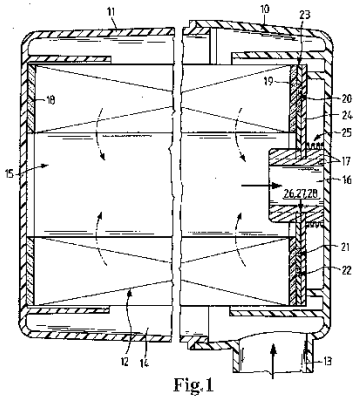
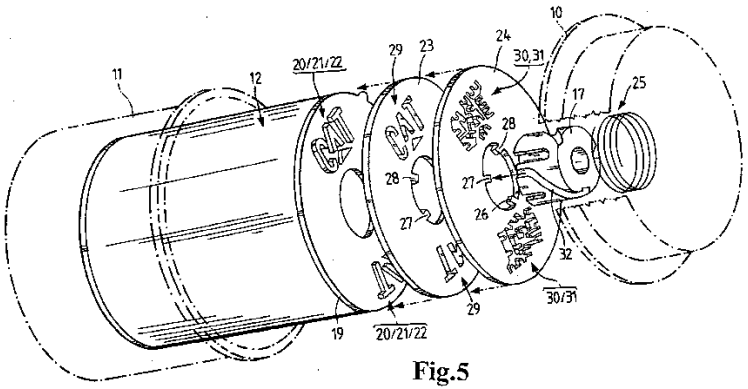
The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

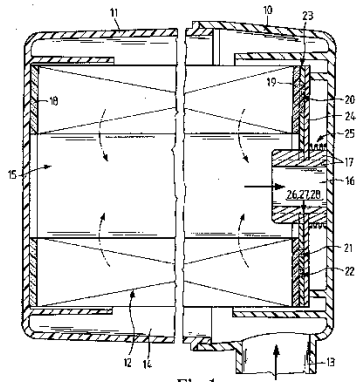
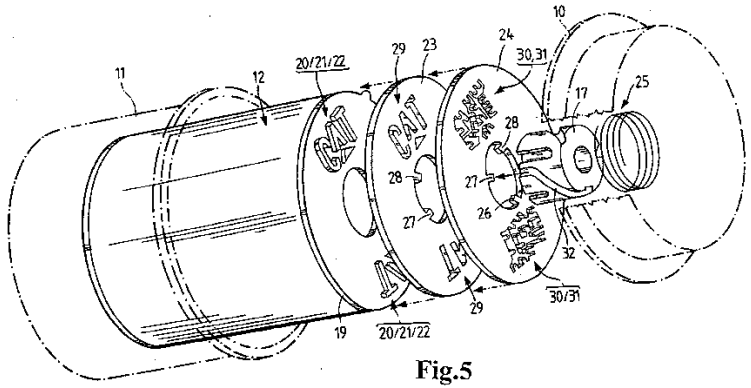
	Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
Claim 11	
[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.	Dworatzek in combination with Cline, and/or the background knowledge of a POSA, discloses 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. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding this feature to Dworatzek and/or incorporating the teachings of Dworatzek into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0025]: The quick- drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain

	valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. For example, Dworatzek in combination with Cline discloses the outlet (Cline 36) comprises a seat (Cline 60) which is one of incorporated on a side of the filter housing (Cline 18) and is inserted as a separate part and which conforms to a shape of the blocking element (Cline 66, 56). Moreover, it would have been obvious to combine Dworatzek with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding these features to Dworatzek and/or incorporating the teachings of Dworatzek into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an

	end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
Claim 12	
[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	Dworatzek discloses 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

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.	be movable in the remaining filter housing in axial direction, and is prestressed with a spring force in the direction of the cover. *See, e.g.,* Dworatzek at [0028]-[0029]: FIGS. 3 a and 3 b show the disk-shaped element 24, which also has inwardly directed projections 26, 27, 28. Furthermore, the element 24 has resiliently mounted pin-like appendages 30 and 31 which extend out of the plane of the disk 24, as well as a number of other projections which are also resiliently mounted and arranged in the axial direction. If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24. Only when the projecting appendages 30, 31 are pushed by the end disk 19, i.e., by the letter-shaped elevations or configurations 20 on the end disk 19, in the axial direction out of the letter-shaped passageways of the intermediate disk 23 is it possible for the two disks 23 and 24 to rotate relative to each other. This means that the end disk 19 represents the key, so to speak, with which the lock comprised of the disks 23 and 24 can be unlocked. The central mandrel 17 which is shown in FIGS. 4 a and 4 b also plays an important role in this unlocking. This central mandrel has three grooves 32, 33, 34 which are arranged distributed around the circumference of the mandrel and serve to guide the projections 26, 27 and 28. If there is no filter element in the housing according to FIG. 1, then the two elements 23 and 24 are in the position indicated schematically in FIG. 4 a. The engagement of the end disk 19 in the two elements causes the element 24 to be moved into the obliquely extending groove areas and to be shifted to the ends of the groove, which can be seen at the right side in FIG. 4 a, owing to the unlocking effect due to the axial movement of the filter element. Dworatzek at Figs. 1, 5:

	 Fig.1  Fig.5 As one example, Dworatzek discloses the filter housing part (17, 10) arranged on the inside of the ring filter insert (12) comprises a pipe nozzle (17) which includes the return (16) and which is integrally formed with the remaining filter housing (10).
Claim 15	
[15.pre] 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,	To the extent it is a limitation, Dworatzek discloses 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. *See, e.g.,* Dworatzek at [0028]-[0029]: FIGS. 3 a and 3 b show the disk-shaped element 24, which also has inwardly directed projections 26, 27, 28. Furthermore, the element 24 has resiliently mounted pin-like appendages 30 and 31 which extend out of the plane of the disk 24, as well as a number of other projections which are also resiliently mounted and arranged in the axial direction. If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24. Only when the projecting appendages 30, 31 are pushed by the end disk 19, i.e., by the letter-shaped elevations or configurations 20 on the end disk 19, in the axial direction out of the letter-shaped passageways of the intermediate disk 23 is it possible for the two disks 23 and 24 to rotate relative to each other. This means that the end

	disk 19 represents the key, so to speak, with which the lock comprised of the disks 23 and 24 can be unlocked. The central mandrel 17 which is shown in FIGS. 4 a and 4 b also plays an important role in this unlocking. This central mandrel has three grooves 32, 33, 34 which are arranged distributed around the circumference of the mandrel and serve to guide the projections 26, 27 and 28. If there is no filter element in the housing according to FIG. 1, then the two elements 23 and 24 are in the position indicated schematically in FIG. 4 a. The engagement of the end disk 19 in the two elements causes the element 24 to be moved into the obliquely extending groove areas and to be shifted to the ends of the groove, which can be seen at the right side in FIG. 4 a, owing to the unlocking effect due to the axial movement of the filter element. Dworatzek at Figs. 1, 5:  Fig.1  Fig.5 For example, Dworatzek discloses a hollow-cylindrical filter material body (12) surrounded on front sides by top (19, 23) and bottom (18) front panels and which can be replaceably arranged in a filter housing (10) (*see* figure 5 showing filter housing).
[15.a] an eccentric blocking element arranged on the bottom front panel for engaging an eccentric opening in the filter housing,	Dworatzek in combination with Cline, and/or the background knowledge of a POSA, discloses an eccentric blocking element arranged on the bottom front panel for engaging an eccentric opening in the filter housing. It would have been obvious to combine Dworatzek with Cline for the reasons discussed herein and in Defendant's cover pleading.

	A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding this feature to Dworatzek and/or incorporating the teachings of Dworatzek into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0020]-[0021]: The filter apparatus 10 comprises a housing 16, as shown in FIGS. 1-3 and 6-7. A base 18 of the housing 16 is configured to be secured to the engine 12. A cover 20 of the housing 16 is configured to be secured to the base 18 via a threaded connection or other suitable connection. Together, the base 18 and the cover 20 define an interior region 22 (see FIG. 6) when the cover 20 is secured to the base 18. The base 18 comprises passageways of the interior region 22 to admit fluid into and discharge fluid from a filter chamber 23 (see FIG. 6) of the interior region 22. The base 18 comprises an inlet passageway 24 (see FIG. 3), a filtered fluid outlet passageway 26 (see FIGS. 3, 6, and 7), a bypass passageway 28 (see FIG. 3), and a quick-drain passageway 30 (see FIGS. 3, 6, and 7). The inlet passageway 24 admits unfiltered fluid into the filter chamber 23. The filtered fluid outlet passageway 26 discharges fluid filtered by the filter element 32 from the filter chamber 23. The bypass passageway 28 contains a bypass valve 34 (see FIG. 3) to discharge unfiltered fluid from the filter chamber 23 when, for example, the filter element 32 becomes clogged with contaminants and/or the fluid is somewhat thick due to, for example, cold weather. The quick-drain passageway 26 discharges fluid from the filter chamber 23 through a quick-drain outlet 36 (see FIGS. 6-7) when the filter element 32 is removed from the filter chamber 23. Cline at [0025]: The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to

	block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. Cline at [0027]-[0029]: The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64. The post 64 comprises a body 68, a head 70, and a neck 72 interconnecting the body 68 and the head 70, as shown in FIGS. 5-7. The body 68 is secured to and extends from the outwardly facing surface 62. The head 70 has a diameter less than a diameter of the body 68. The neck 72 has a diameter less than the diameters of the body 68 and the head 70. The body 68, the head 70, and the neck 72 cooperate to define an annular groove 74. The neck 72 defines a channel 76 extending through the neck 72. The flow blocker 66 surrounds the head 70 and the neck 72 and extends into the annular groove 74 and through the channel 76 to mount the flow blocker 66 to the post 64. The flow blocker 66 comprises a surface 78, as shown in FIGS. 4-7, for engaging the valve seat 60. The surface 78 and the valve seat 60 are, for example, frusto-conical in shape. The surface 78 engages the valve seat 60 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6, and disengages the valve seat 60 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. Cline at Fig. 3:

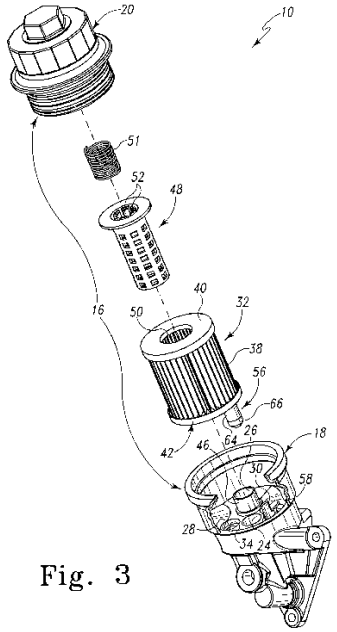


Fig. 3

Cline at Figs. 4-7:

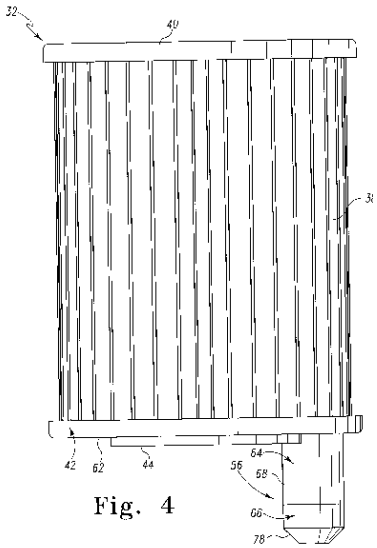


Fig. 4

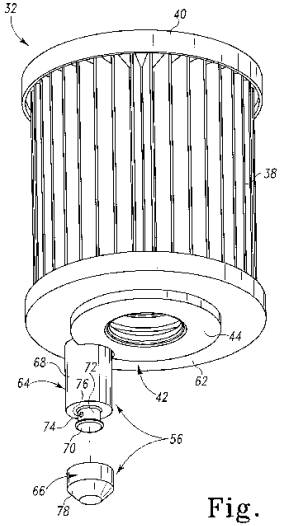


Fig. 5

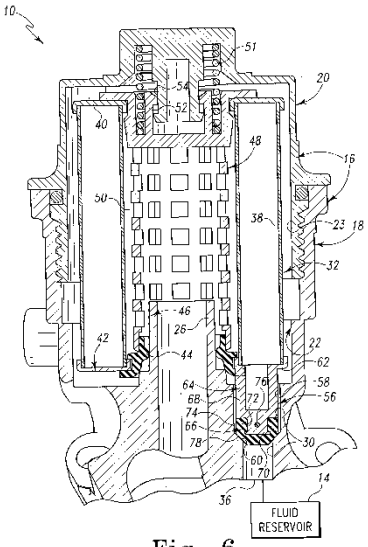


Fig. 6

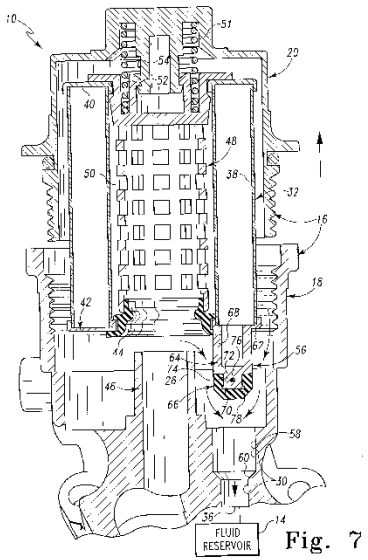


Fig. 7

For example, Cline discloses an eccentric blocking element (56) arranged on the bottom front panel (42) for engaging an eccentric opening (58) in the filter housing (16, 18).

Moreover, it would have been obvious to combine Dworatzek with one or more of the other references identified by Defendant as disclosing this limitation including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading.

A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding these features to Dworatzek and/or incorporating the teachings of Dworatzek into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts.

	See, e.g., Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing. Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean

room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

Grass at [0033]-[0036]:

According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified.

If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function.

To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped

	attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.

	Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
[15.b] 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,	Dworatzek in combination with Cline, and/or the background knowledge of a POSA, 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 which are arranged to bring the blocking element into engagement with the eccentric opening. It would have been obvious to combine Dworatzek with Cline for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make this combination for numerous reasons. For example, it was well known in the art to use a positioning means to ensure proper alignment of components

	in a filter assembly and/or that only the proper filter insert is installed on a filter housing. *See, e.g.*, US 2006/0219621, [0003] ("Published German patent application no. DE 4402836, for example, describes an arrangement in which the correct use of Suitable replacement parts is ensured by the fact that the respective part for attachment can be attached to the unit only according to a lock-and-key principle."), [0006] ("Another object of the invention is to provide a filter device which establishes a definitive correlation between the filter housing and an installed filter element."), [0007] ("A further object of the invention is to provide a filter device which prevents installation of an incorrect filter element."), [0028] ("If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24."). Such a positioning means also ensures a user need not visually align or guess at proper alignment through trial and error, potentially damaging the blocking element or incorrectly installing it. Thus there was common sense—and express—motivation in the art to use a positioning means to ensure proper alignment of components such as an eccentric blocking element within the filter housing. Moreover, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding this feature to Dworatzek and/or incorporating the teachings of Dworatzek into Cline as doing so involves no more than routine techniques well established in the mechanical arts. Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below. For example: Dworatzek at [0028]-[0029]: FIGS. 3 a and 3 b show the disk-shaped element 24, which also has inwardly directed projections 26, 27, 28. Furthermore, the element 24 has resiliently mounted pin-like appendages 30 and 31 which extend out of the plane of the disk 24, as well as a number of other projections which are also resiliently mounted and arranged in the axial direction. If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational

movement between the two disks 23 and 24. Only when the projecting appendages 30, 31 are pushed by the end disk 19, i.e., by the letter-shaped elevations or configurations 20 on the end disk 19, in the axial direction out of the letter-shaped passageways of the intermediate disk 23 is it possible for the two disks 23 and 24 to rotate relative to each other. This means that the end disk 19 represents the key, so to speak, with which the lock comprised of the disks 23 and 24 can be unlocked.

The central mandrel 17 which is shown in FIGS. 4 a and 4 b also plays an important role in this unlocking. This central mandrel has three grooves 32, 33, 34 which are arranged distributed around the circumference of the mandrel and serve to guide the projections 26, 27 and 28. If there is no filter element in the housing according to FIG. 1, then the two elements 23 and 24 are in the position indicated schematically in FIG. 4 a. The engagement of the end disk 19 in the two elements causes the element 24 to be moved into the obliquely extending groove areas and to be shifted to the ends of the groove, which can be seen at the right side in FIG. 4 a, owing to the unlocking effect due to the axial movement of the filter element.

Dworatzek at Figs. 1, 5:

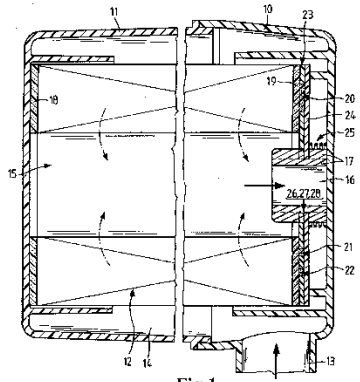


Fig.1

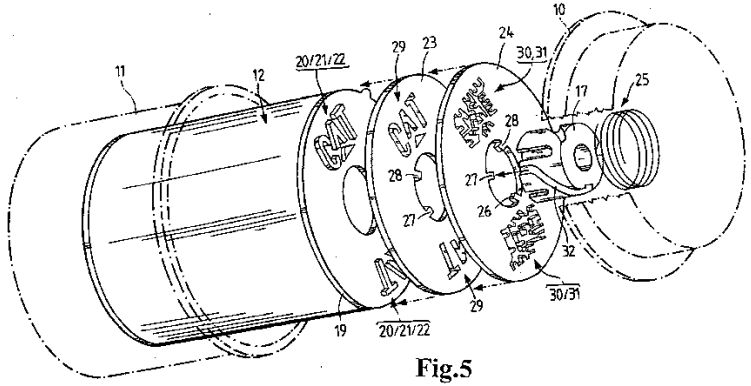


Fig.5

Cline at [0025]:

The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the

	quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. As one example, Dworatzek in combination with Cline discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: first positioning means (Dworatzek 26-28) on the ring filter insert (Dworatzek 12), which interact with second positioning means (Dworatzek 32-34) on the filter housing (Dworatzek 10) when the ring filter insert (Dworatzek 12) is inserted into the filter housing (Dworatzek 10) and which are arranged to bring the blocking element (Cline 56) into engagement with the eccentric opening (Cline 58). Moreover, it would have been obvious to combine Dworatzek with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding these features to Dworatzek and/or incorporating the teachings of Dworatzek into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0006]:

The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing.

Grass at [0018]-[0021]:

According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine.

The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

	The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Grass at [0033]-[0036]: According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified. If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function. To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far

enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off.

According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 .

Brisson at [0029]:

To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank.

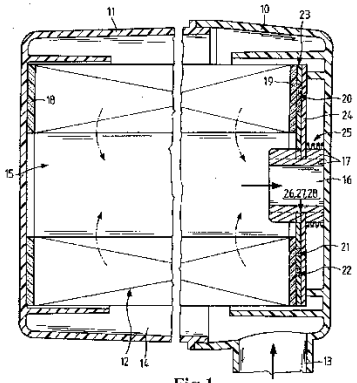
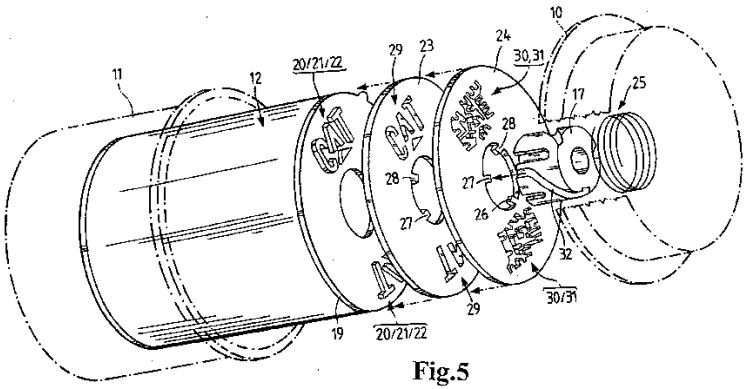
Brisson at [0050]:

Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.

Brisson at [0057]:

	Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
[15.c] 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,	Dworatzek discloses 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. Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below. *See, e.g.,*

	Dworatzek at [0028]-[0029]: FIGS. 3 a and 3 b show the disk-shaped element 24, which also has inwardly directed projections 26, 27, 28. Furthermore, the element 24 has resiliently mounted pin-like appendages 30 and 31 which extend out of the plane of the disk 24, as well as a number of other projections which are also resiliently mounted and arranged in the axial direction. If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24. Only when the projecting appendages 30, 31 are pushed by the end disk 19, i.e., by the letter-shaped elevations or configurations 20 on the end disk 19, in the axial direction out of the letter-shaped passageways of the intermediate disk 23 is it possible for the two disks 23 and 24 to rotate relative to each other. This means that the end disk 19 represents the key, so to speak, with which the lock comprised of the disks 23 and 24 can be unlocked. The central mandrel 17 which is shown in FIGS. 4 a and 4 b also plays an important role in this unlocking. This central mandrel has three grooves 32, 33, 34 which are arranged distributed around the circumference of the mandrel and serve to guide the projections 26, 27 and 28. If there is no filter element in the housing according to FIG. 1, then the two elements 23 and 24 are in the position indicated schematically in FIG. 4 a. The engagement of the end disk 19 in the two elements causes the element 24 to be moved into the obliquely extending groove areas and to be shifted to the ends of the groove, which can be seen at the right side in FIG. 4 a, owing to the unlocking effect due to the axial movement of the filter element. Dworatzek at Figs. 1, 5:

	 Fig.1  Fig.5 As one example, Dworatzek discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: the first positioning means being a protruding nose (26-28), with the second positioning means being an inclined plane (32-34).
[15.d] 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,	Dworatzek in combination with Cline, and/or the background knowledge of a POSA, discloses 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. It would have been obvious to combine Dworatzek with Cline for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding this feature to Dworatzek and/or incorporating the teachings of Dworatzek into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Dworatzek at [0028]-[0029]:

FIGS. 3 a and 3 b show the disk-shaped element 24, which also has inwardly directed projections 26, 27, 28. Furthermore, the element 24 has resiliently mounted pin-like appendages 30 and 31 which extend out of the plane of the disk 24, as well as a number of other projections which are also resiliently mounted and arranged in the axial direction. If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24. Only when the projecting appendages 30, 31 are pushed by the end disk 19, i.e., by the letter-shaped elevations or configurations 20 on the end disk 19, in the axial direction out of the letter-shaped passageways of the intermediate disk 23 is it possible for the two disks 23 and 24 to rotate relative to each other. This means that the end disk 19 represents the key, so to speak, with which the lock comprised of the disks 23 and 24 can be unlocked.

The central mandrel 17 which is shown in FIGS. 4 a and 4 b also plays an important role in this unlocking. This central mandrel has three grooves 32, 33, 34 which are arranged distributed around the circumference of the mandrel and serve to guide the projections 26, 27 and 28. If there is no filter element in the housing according to FIG. 1, then the two elements 23 and 24 are in the position indicated schematically in FIG. 4 a. The engagement of the end disk 19 in the two elements causes the element 24 to be moved into the obliquely extending groove areas and to be shifted to the ends of the groove, which can be seen at the right side in FIG. 4 a, owing to the unlocking effect due to the axial movement of the filter element.

Dworatzek at Figs. 1, 5:

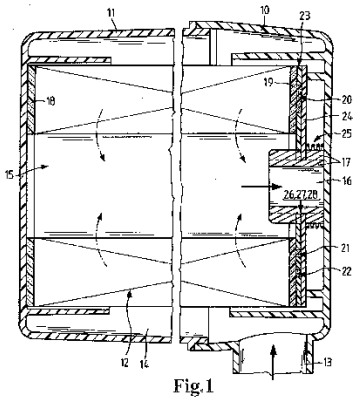


Fig.1

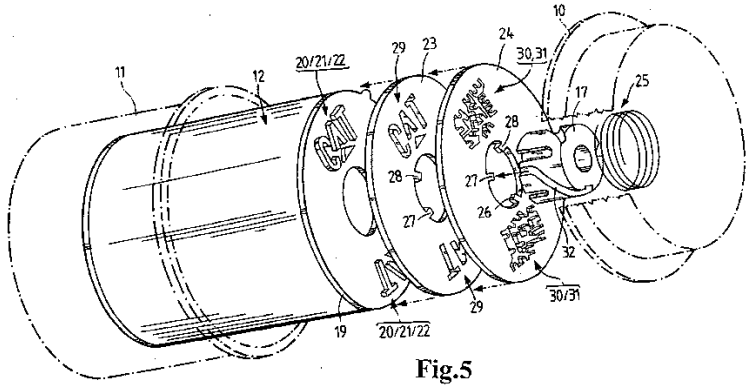


Fig.5

Cline at [0025]:

The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14.

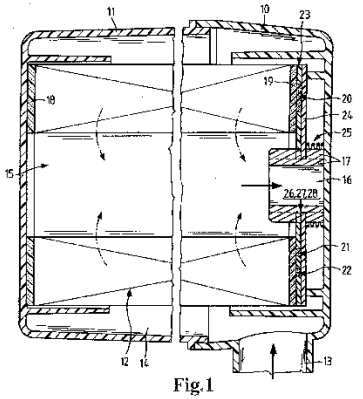
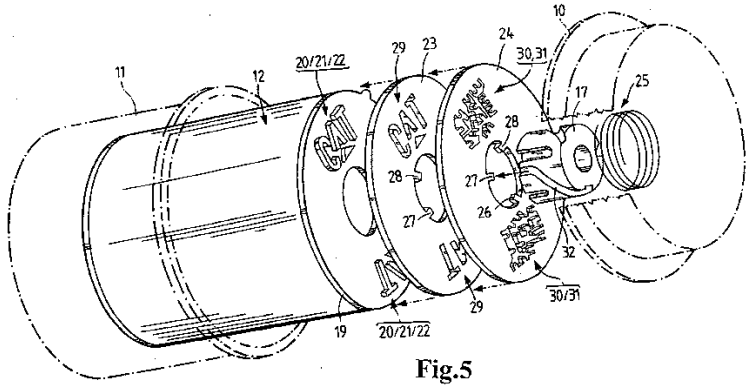
For example, Dworatzek in combination with Cline discloses the inclined plane (Dworatzek 32-34) and the nose (Dworatzek 26-28) arranged to be moved in relation to each other in such a way that they slide along each other (see Dworatzek [0029]) and bring the blocking element (Cline 56) into engagement with the eccentric opening (Cline 58), by rotating the ring filter insert relative to the filter housing (see Dworatzek at [0029]).

Moreover, it would have been obvious to combine Dworatzek with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading.

A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding these features to Dworatzek and/or incorporating the

	teachings of Dworatzek into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

	The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
[15.e] the first positioning means being one of embodied and arranged on an inner circumference of the ring filter insert.	Dworatzek in combination with Cline, and/or the background knowledge of a POSA, discloses the first positioning means being one of embodied and arranged on an inner circumference of the ring filter insert. Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding this feature to Dworatzek and/or incorporating the teachings of Dworatzek into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Dworatzek at [0028]-[0029]: FIGS. 3 a and 3 b show the disk-shaped element 24, which also has inwardly directed projections 26, 27, 28. Furthermore, the element 24 has resiliently mounted pin-like appendages 30 and 31 which extend out of the plane of the disk 24, as well as a number of other projections which are

	also resiliently mounted and arranged in the axial direction. If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24. Only when the projecting appendages 30, 31 are pushed by the end disk 19, i.e., by the letter-shaped elevations or configurations 20 on the end disk 19, in the axial direction out of the letter-shaped passageways of the intermediate disk 23 is it possible for the two disks 23 and 24 to rotate relative to each other. This means that the end disk 19 represents the key, so to speak, with which the lock comprised of the disks 23 and 24 can be unlocked. The central mandrel 17 which is shown in FIGS. 4 a and 4 b also plays an important role in this unlocking. This central mandrel has three grooves 32, 33, 34 which are arranged distributed around the circumference of the mandrel and serve to guide the projections 26, 27 and 28. If there is no filter element in the housing according to FIG. 1, then the two elements 23 and 24 are in the position indicated schematically in FIG. 4 a. The engagement of the end disk 19 in the two elements causes the element 24 to be moved into the obliquely extending groove areas and to be shifted to the ends of the groove, which can be seen at the right side in FIG. 4 a, owing to the unlocking effect due to the axial movement of the filter element. Dworatzek at Figs. 1, 5:  Fig.1  Fig.5 Cline at [0025]:

	The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. As one example, Dworatzek in combination with Cline discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: the first positioning means being a protruding nose (Dworatzek 26-28) and arranged on an inner circumference of the ring filter insert (Dworatzek 12, 19, 23). Moreover, it would have been obvious to combine Dworatzek with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding these features to Dworatzek and/or incorporating the teachings of Dworatzek into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0018]-[0021]:

According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine.

The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

Brisson at [0050]:

	Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
Claim 16	
[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.	Dworatzek discloses 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. *See, e.g.*, claims 2, *supra*.
Claim 17	
[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.	Dworatzek discloses a guide for the nose which runs in an axial direction and is connected to a lower end of the inclined plane. *See, e.g.*, claims 3, *supra*.
Claim 19	
[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.	Dworatzek discloses 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. *See, e.g.*, claims 5, *supra*.
Claim 23	
[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.	Dworatzek discloses the nose is formed integrally with the bottom front panel of the ring filter insert. *See, e.g.*, claims 8, *supra*.
Claim 24	
[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	Dworatzek in combination with Cline, and/or the background knowledge of a POSA, discloses 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.

plug which is one of rigidly connected to the lower front panel and rigidly arranged on the lower front panel.	*See, e.g.*, claims 9, *supra*.
Claim 25	
[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.	Dworatzek in combination with Cline, and/or the background knowledge of a POSA, discloses the blocking element is an axially sealing valve element which is elastically arranged on the bottom front panel. *See, e.g.*, claims 10, *supra*.
Claim 28	
[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.	Dworatzek in combination with Cline, and/or the background knowledge of a POSA, discloses 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. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding this feature to Dworatzek and/or incorporating the teachings of Dworatzek into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.*, Cline at [0027]-[0029]: The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64. The post 64 comprises a body 68, a head 70, and a neck 72 interconnecting the body 68 and the head 70, as shown in FIGS. 5-7. The body 68 is secured to and extends from the outwardly facing

	surface 62. The head 70 has a diameter less than a diameter of the body 68. The neck 72 has a diameter less than the diameters of the body 68 and the head 70. The body 68, the head 70, and the neck 72 cooperate to define an annular groove 74. The neck 72 defines a channel 76 extending through the neck 72. The flow blocker 66 surrounds the head 70 and the neck 72 and extends into the annular groove 74 and through the channel 76 to mount the flow blocker 66 to the post 64. The flow blocker 66 comprises a surface 78, as shown in FIGS. 4-7, for engaging the valve seat 60. The surface 78 and the valve seat 60 are, for example, frusto-conical in shape. The surface 78 engages the valve seat 60 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6, and disengages the valve seat 60 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. Cline at [0030]-[0035]: Another filter element 132 for use with the filter apparatus 10 is shown in FIGS. 8-11. The filter element 132 is similar in structure and function to the filter element 32, except as otherwise noted, so that identical reference numbers refer to similar structures. The filter element 132 is secured to a center tube 148, as shown in FIGS. 10-11. An end cap 142 of the filter element 132 is secured to, for example, a lower portion of the center tube 148 which extends in the filtered fluid region 50 to provide internal support to the filter media 38. Fingers 52 of the center tube 148 extend in the annular groove 54 formed in the cover 20 for movement therein during assembly and disassembly of the filter apparatus 10. A seal 144 is secured to the end cap 142 for engagement with the outlet post 46 to block flow of fluid between the end cap 142 and the outlet post 46. A quick- drain valve member 156 shown in FIGS. 8-11 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 156 extends in the valve chamber 58 and engages the valve seat 60 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 132 is positioned in the interior region 22, as shown in FIG. 10. In particular, when the filter element 132 is positioned in the filter chamber 23, the quick-drain valve member 156 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 156 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 to the fluid reservoir 14 when the filter element 132 is removed from the interior region 22, as shown in FIG. 11. In particular, when the filter element 132 is removed from the filter chamber 23, the quick-drain valve member 156 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14.

	The quick- drain valve member 156 is secured to and extends from the an outwardly facing surface 162 of the end cap 142, as shown in FIGS. 8-11. The quick-drain valve member 156 is axially spaced apart from the center tube 148. The quick- drain valve member 156 comprises a retainer 180, a flow blocker carrier 182, and a flow blocker 184, as shown in FIGS. 9-11. The retainer 180 is secured to and extends from the outwardly facing surface 162. The flow blocker carrier 182 is secured to the retainer 180 for movement relative thereto. 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. The flow blocker 184 is made of, for example, an elastomeric material. The retainer 180 and the flow blocker 184 define a proximal end portion and a distal end portion, respectively, of the quick-drain valve member 156. A biasing element such as a spring 186 (see FIGS. 9-11) is captured within the retainer 180 and the flow blocker carrier 182. The spring 186 biases the flow blocker carrier 182 away from the outwardly facing surface 162 to press the flow blocker 184 against the valve seat 60. The spring 186 is configured to compress in response to engagement between the flow blocker 184 and the valve seat 60. In this way, the spring 186 accommodates dimensional variations between components of the filter apparatus 10 due to, for example, manufacturing tolerances and thermal expansion. The spring 51 is thus omitted from the filter apparatus 10 when the spring 186 is present.

Cline at Figs. 4-5:

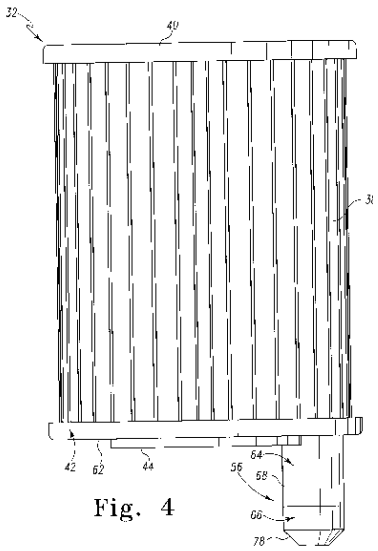


Fig. 4

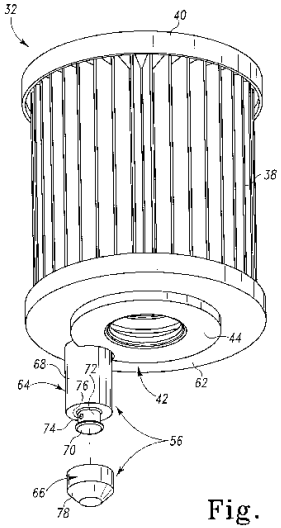


Fig. 5

Cline at Figs. 8-9:

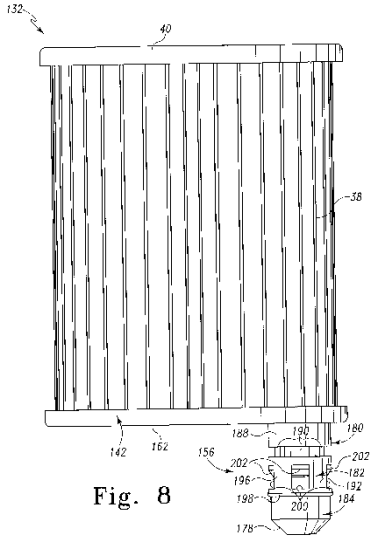


Fig. 8

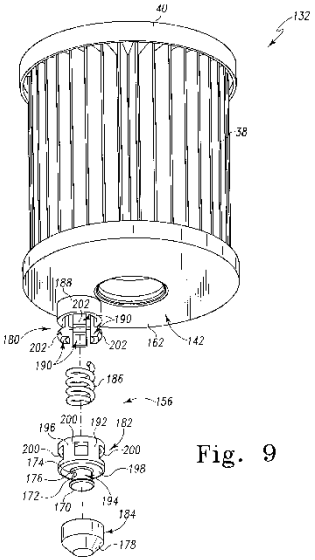


Fig. 9

	For example, Dworatzek in combination with Cline discloses the blocking element (Cline 156) is formed from two parts (Cline 180, 184), 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 (*see* Cline [0035] "for example, manufacturing tolerances and thermal expansion"). Moreover, it would have been obvious to combine Dworatzek with one or more of the other references identified by Defendant as disclosing this limitation including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Dworatzek. A POSA would have a reasonable expectation of success in adding these features to Dworatzek and/or incorporating the teachings of Dworatzek into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing. Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5

on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine.

The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

Grass at [0033]-[0036]:

According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3

	is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified. If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function. To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a

	removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced.

	Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
Claim 29	
[29] The liquid filter according to claim 1, wherein the protruding nose protrudes radially.	Dworatzek discloses the protruding nose protrudes radially. *See, e.g.,* Dworatzek at [0028]-[0029]: FIGS. 3 a and 3 b show the disk-shaped element 24, which also has inwardly directed projections 26, 27, 28. Furthermore, the element 24 has resiliently mounted pin-like appendages 30 and 31 which extend out of the plane of the disk 24, as well as a number of other projections which are also resiliently mounted and arranged in the axial direction. If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24. Only when the projecting appendages 30, 31 are pushed by the end disk 19, i.e., by the letter-shaped elevations or configurations 20 on the end disk 19, in the axial direction out of the letter-shaped passageways of the intermediate disk 23 is it possible for the two disks 23 and 24 to rotate relative to each other. This means that the end disk 19 represents the key, so to speak, with which the lock comprised of the disks 23 and 24 can be unlocked. The central mandrel 17 which is shown in FIGS. 4 a and 4 b also plays an important role in this unlocking. This central mandrel has three grooves 32, 33, 34 which are arranged distributed around the circumference of the mandrel and serve to guide the projections 26, 27 and 28. If there is no filter element in the housing according to FIG. 1, then the two elements 23 and 24 are in the position indicated schematically in FIG. 4 a. The engagement of the end disk 19 in the two elements causes the element 24 to be moved into the obliquely extending groove areas and to be

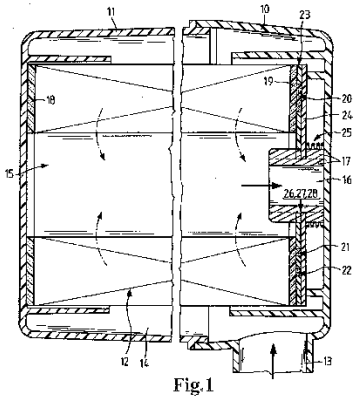
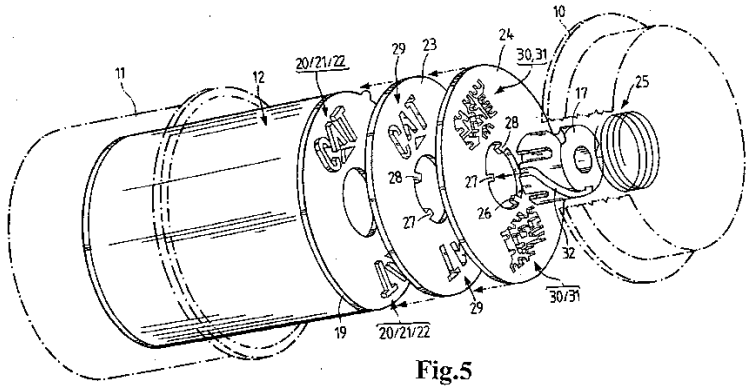
	shifted to the ends of the groove, which can be seen at the right side in FIG. 4 a, owing to the unlocking effect due to the axial movement of the filter element. Dworatzek at Figs. 1, 5:  Fig.1  Fig.5 For example, Dworatzek discloses the protruding nose (26-28) protrudes radially.
Claim 30	
[30] The ring filter insert according to claim 15, wherein the protruding nose protrudes radially.	Dworatzek discloses the protruding nose protrudes radially. *See, e.g.*, claims 29, *supra*.

Exhibit D – Invalidity of U.S. Patent No. 9,023,203 Based on PCT International Patent Application Publication No. 2008134494 to Honermann et al. ("Honermann") in View of U.S. Patent Application Publication No. 20040232063 to Cline et al. ("Cline")

PCT International Patent Application Publication No. 2008134494 to Honermann et al. ("Honermann") was filed on April 25, 2008 and published on November 6, 2004. U.S. Patent Application Publication No. 20040232063 to Cline et al. ("Cline"), filed May 21, 2003 and published November 25, 2004. Accordingly, Honermann, alone based on the knowledge of a POSA, or in combination with Cline constitutes prior art and invalidates the asserted claims of the U.S. Patent No. 9,023,203 (the "'203 patent") under at least pre-AIA 35 U.S.C. § 103.

Honermann in combination with Cline, including any material incorporated by reference into Honermann and Cline, renders all asserted claims invalid as obvious under 35 U.S.C. §103, alone based on the state of the art, or further in combination with one or more of the references cited in Exhibits B to C and E, including:

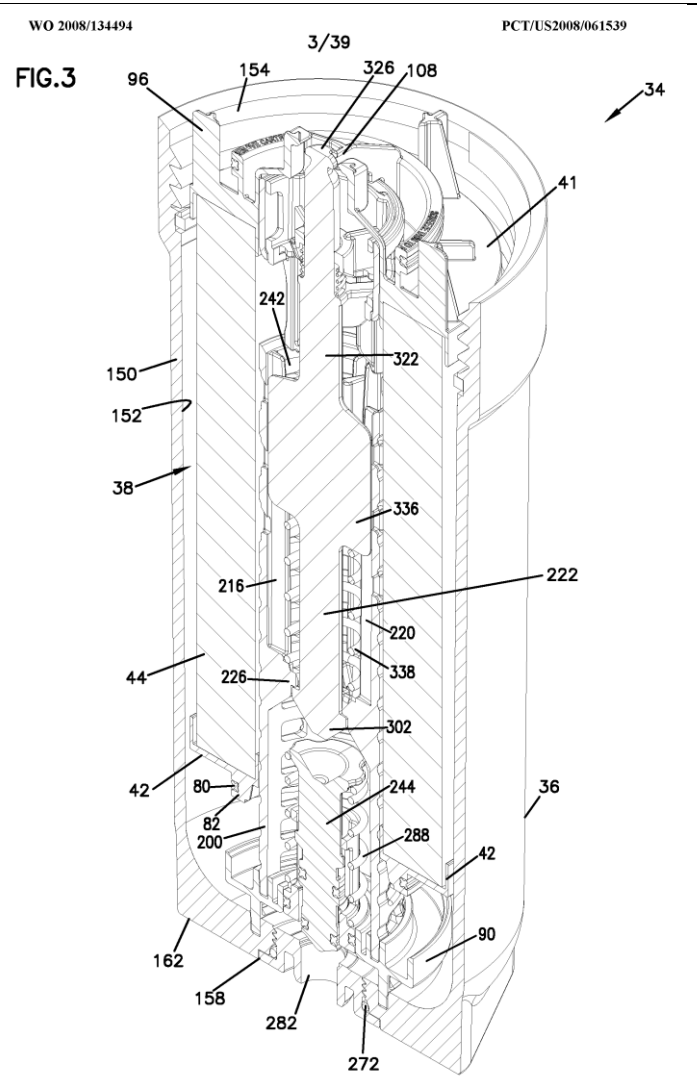
- Germany Patent Publication No. 10,2007,062,102 to Grass et al. ("Grass"), filed December 21, 2007 and published June 25, 2009.
- European Patent No. 1,714,688 to Brisson ("Brisson"), filed April 11, 2006 and January 2, 2008.

A Person of Skill in the Art ("POSA") would have been motivated to combine these references, because they are in the same field, they are aimed at solving the same perceived problems in the art, the nature of the problem to be solved was the same, and there is express motivation in these references. Known design incentives and market forces would have also motivated one of ordinary skill to combine these references. Furthermore, one of skill in the art would understand that each limitation not expressly disclosed in Honermann would be was a standard implementation and an obvious design choice in the design of a filter by the priority date of the asserted patent. Such an implementation simply reflects one of a finite number of well-known techniques implemented in a predictable manner, to achieve well-known, predictable results.

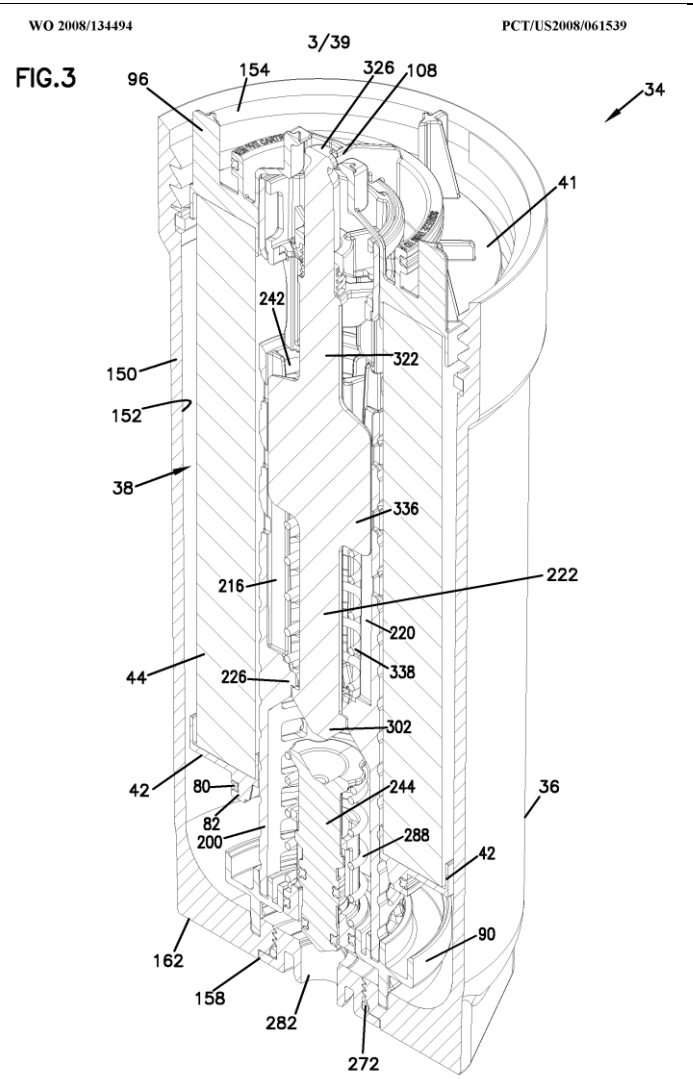
The use of claim terms in the below chart is based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, as well as the plain and ordinary meaning of the claim terms. This chart should not be construed as consenting to or agreeing with Hengst's construction of claim terms. Because discovery is ongoing and the claims have not yet been construed, Champion reserves all rights to amend its invalidity contentions based on discovery or on the Court's constructions.

Claim Element	Exemplary Disclosures
Claim 1	
1[pre] A liquid filter, comprising:	To the extent it is a limitation, Honermann discloses a liquid filter. *See, e.g.,* Honermann at 1:12-14:

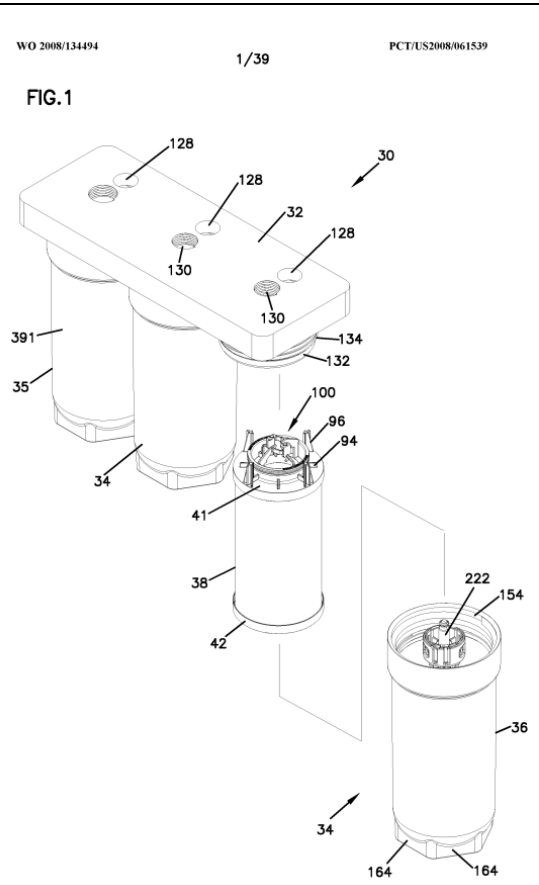
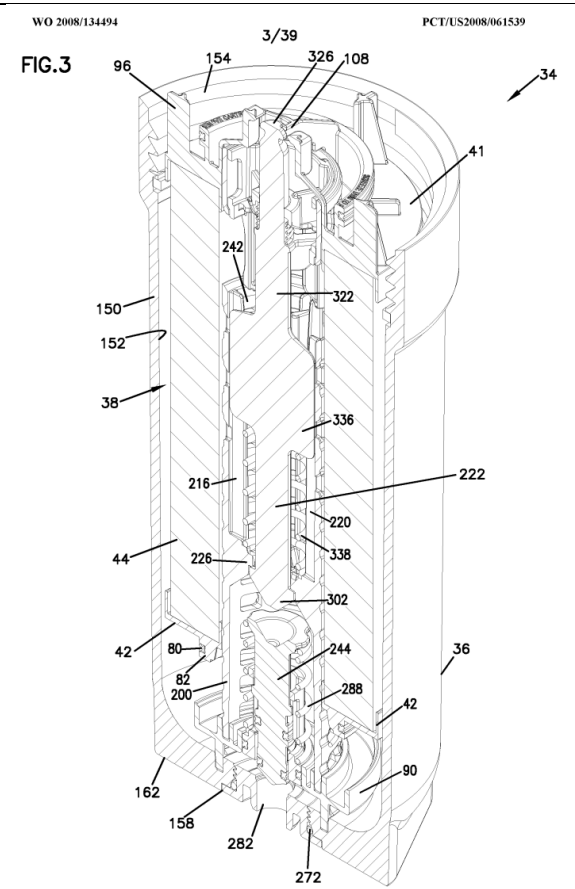
	This disclosure relates to filtration assemblies and methods. In particular, this disclosure relates to filter assemblies and methods for use in liquid filtration, such as lube filters, hydraulic filters, and fuel filters. Honermann at 10:9-20: In general, the lock-out mechanism ensures that the filter system 30 is not accidentally operated with equipment without the filter cartridge 38 installed therein (see FIG. 39, for example). Furthermore, in the particular system 30, the lock-out mechanism helps to ensure that the filter cartridge that goes within the bypass filter assembly 35 is not mistakenly used with the filter cartridge of the full-flow filter assemblies 34. The equipment upon which the filter system 30 is mounted is protected by ensuring that the filter head 32 and the filter bowl 36 cannot be operably connected unless there is a filter cartridge 38 operably oriented within the filter bowl 36 (FIG. 39). It also protects the equipment by ensuring that the correct filter cartridge 38 is mounted within the filter bowl 36, rather than, for example, the bypass filter cartridge utilized in the bypass filter assembly 35. Details on an example lock-out mechanism are described in Section K of this disclosure. Honermann at Fig. 3:

	 For example, Honermann discloses a liquid filter (34).
1[a] a filter housing,	Honermann discloses a filter housing. *See, e.g.*,

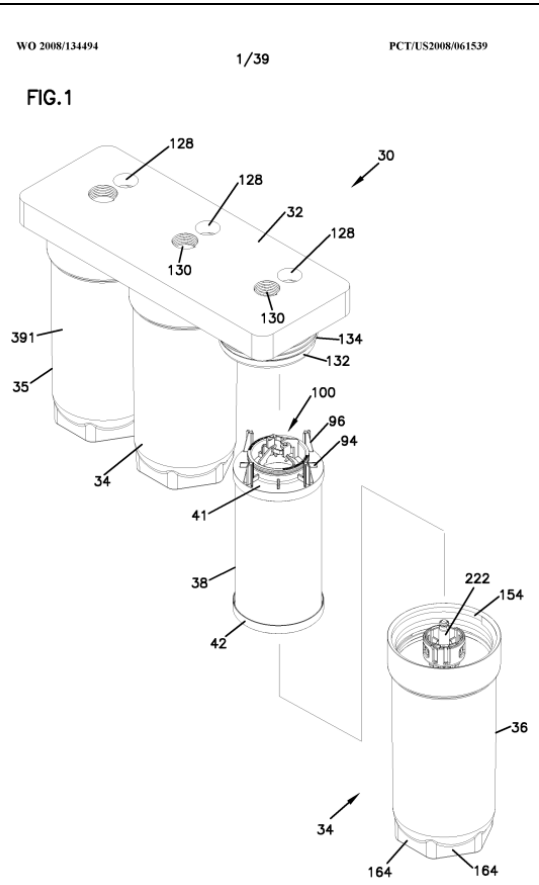
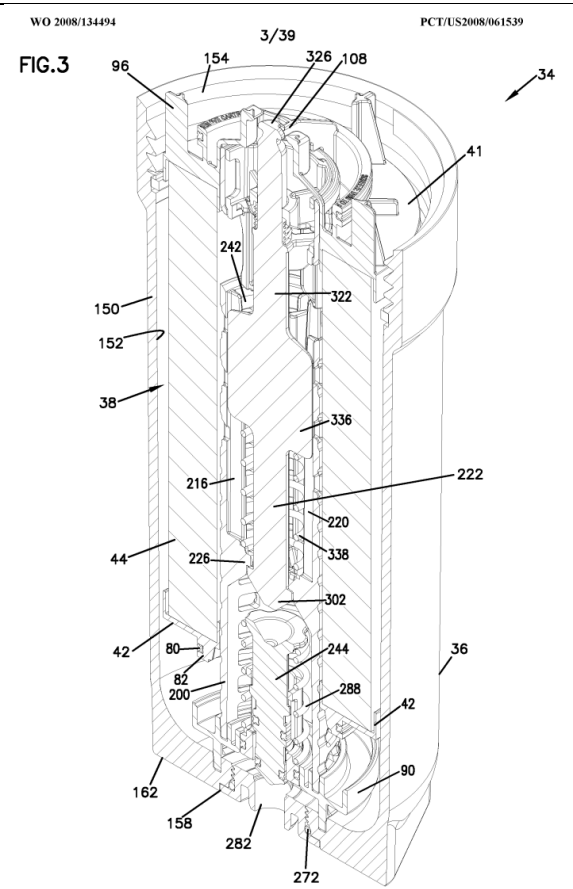
	Honermann at 1:12-14: This disclosure relates to filtration assemblies and methods. In particular, this disclosure relates to filter assemblies and methods for use in liquid filtration, such as lube filters, hydraulic filters, and fuel filters. Honermann at 10:9-20: In general, the lock-out mechanism ensures that the filter system 30 is not accidentally operated with equipment without the filter cartridge 38 installed therein (see FIG. 39, for example). Furthermore, in the particular system 30, the lock-out mechanism helps to ensure that the filter cartridge that goes within the bypass filter assembly 35 is not mistakenly used with the filter cartridge of the full-flow filter assemblies 34. The equipment upon which the filter system 30 is mounted is protected by ensuring that the filter head 32 and the filter bowl 36 cannot be operably connected unless there is a filter cartridge 38 operably oriented within the filter bowl 36 (FIG. 39). It also protects the equipment by ensuring that the correct filter cartridge 38 is mounted within the filter bowl 36, rather than, for example, the bypass filter cartridge utilized in the bypass filter assembly 35. Details on an example lock-out mechanism are described in Section K of this disclosure. Honermann at Fig. 3:

	 For example, Honermann discloses a filter housing (36).
1[b] a ring filter insert, replaceably arranged in the filter housing, and	Honermann discloses a ring filter insert, replaceably arranged in the filter housing. *See, e.g.*,

	Honermann at 9:19-10:20. An example embodiment of a filtration system including a filter assembly and a filter head is depicted in FIGS. 1 -39. It should be realized that many examples are envisioned and not illustrated in the drawings. FIG. 1 shows a filter system 30, including a filter head 32 and a filter assembly 34. In the embodiment of FIG. 1, there is one common filter head 32 accommodating at least first and second filter assemblies 34. Also attached to the filter head 32 is a bypass filter assembly 35. The filter assemblies 34 are full-flow filters, while the filter assembly 35 is a bypass filter assembly. In FIG. 1, one of the filter assemblies 34 is shown in an exploded, perspective view as including filter bowl 36 and a removable and replaceable filter cartridge 38. Each of the filter assemblies 34, 35 is selectively connectable and mountable on the filter head 32. The filter head 32 is connected with other equipment, including a lubrication system of an engine, a fuel system for an engine, a hydraulic system for heavy-duty equipment, and generators for industrial use. In the embodiment illustrated, the filter assembly 34 includes features including a lock-out mechanism, an auto-drain valve mechanism, and a cartridge retention mechanism. Each of these features can be implemented independently of the other features. The particular embodiment illustrated in the drawings shows all three features integrated into the same filter assembly. One skilled in the art will appreciate that each feature can be implemented independently of the others. In general, the lock-out mechanism ensures that the filter system 30 is not accidentally operated with equipment without the filter cartridge 38 installed therein (see FIG. 39, for example). Furthermore, in the particular system 30, the lock-out mechanism helps to ensure that the filter cartridge that goes within the bypass filter assembly 35 is not mistakenly used with the filter cartridge of the full-flow filter assemblies 34. The equipment upon which the filter system 30 is mounted is protected by ensuring that the filter head 32 and the filter bowl 36 cannot be operably connected unless there is a filter cartridge 38 operably oriented within the filter bowl 36 (FIG. 39). It also protects the equipment by ensuring that the correct filter cartridge 38 is mounted within the filter bowl 36, rather than, for example, the bypass filter cartridge utilized in the bypass filter assembly 35. Details on an example lock-out mechanism are described in Section K of this disclosure. Honermann at Figs. 1, 3:

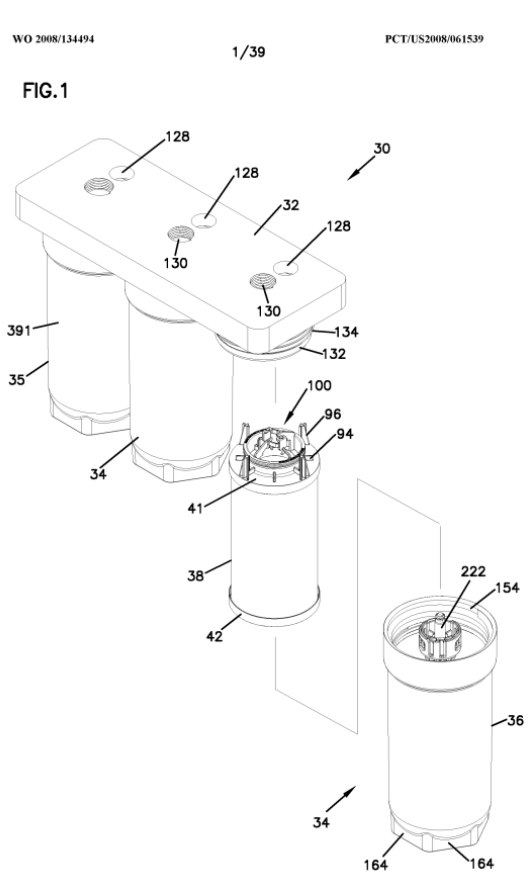
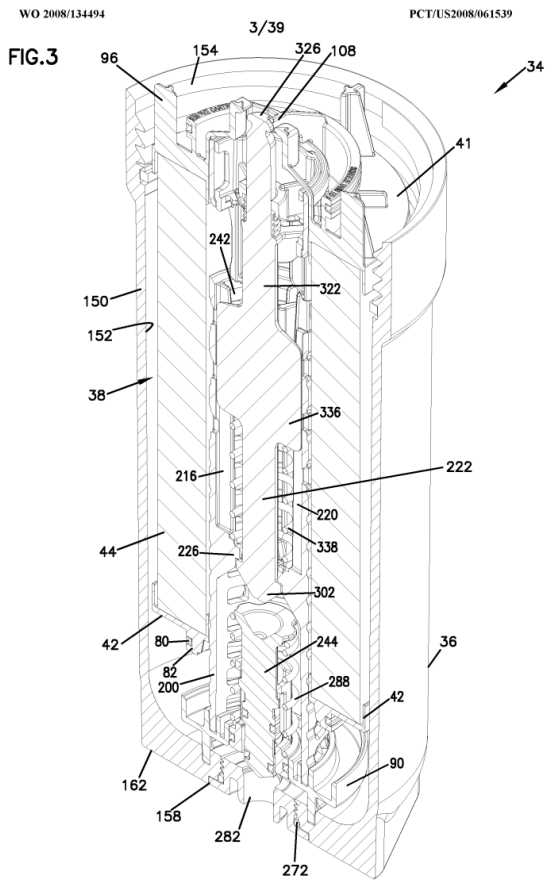
	  For example, Honermann discloses a ring filter insert (38), replaceably arranged in the filter housing (36).
1[c] a removable cover arranged to close the filter housing during operation,	Honermann discloses a removable cover arranged to close the filter housing during operation. *See, e.g.*, Honermann at 9:19-10:20.

	An example embodiment of a filtration system including a filter assembly and a filter head is depicted in FIGS. 1 -39. It should be realized that many examples are envisioned and not illustrated in the drawings. FIG. 1 shows a filter system 30, including a filter head 32 and a filter assembly 34. In the embodiment of FIG. 1, there is one common filter head 32 accommodating at least first and second filter assemblies 34. Also attached to the filter head 32 is a bypass filter assembly 35. The filter assemblies 34 are full-flow filters, while the filter assembly 35 is a bypass filter assembly. In FIG. 1, one of the filter assemblies 34 is shown in an exploded, perspective view as including filter bowl 36 and a removable and replaceable filter cartridge 38. Each of the filter assemblies 34, 35 is selectively connectable and mountable on the filter head 32. The filter head 32 is connected with other equipment, including a lubrication system of an engine, a fuel system for an engine, a hydraulic system for heavy-duty equipment, and generators for industrial use. In the embodiment illustrated, the filter assembly 34 includes features including a lock-out mechanism, an auto-drain valve mechanism, and a cartridge retention mechanism. Each of these features can be implemented independently of the other features. The particular embodiment illustrated in the drawings shows all three features integrated into the same filter assembly. One skilled in the art will appreciate that each feature can be implemented independently of the others. In general, the lock-out mechanism ensures that the filter system 30 is not accidentally operated with equipment without the filter cartridge 38 installed therein (see FIG. 39, for example). Furthermore, in the particular system 30, the lock-out mechanism helps to ensure that the filter cartridge that goes within the bypass filter assembly 35 is not mistakenly used with the filter cartridge of the full-flow filter assemblies 34. The equipment upon which the filter system 30 is mounted is protected by ensuring that the filter head 32 and the filter bowl 36 cannot be operably connected unless there is a filter cartridge 38 operably oriented within the filter bowl 36 (FIG. 39). It also protects the equipment by ensuring that the correct filter cartridge 38 is mounted within the filter bowl 36, rather than, for example, the bypass filter cartridge utilized in the bypass filter assembly 35. Details on an example lock-out mechanism are described in Section K of this disclosure. Honermann at Figs. 1, 3:

	  For example, Honermann discloses a removable cover (30) arranged to close the filter housing (36) 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	Honermann discloses 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. *See, e.g.*, Honermann at 9:19-10:20.

	An example embodiment of a filtration system including a filter assembly and a filter head is depicted in FIGS. 1 -39. It should be realized that many examples are envisioned and not illustrated in the drawings. FIG. 1 shows a filter system 30, including a filter head 32 and a filter assembly 34. In the embodiment of FIG. 1, there is one common filter head 32 accommodating at least first and second filter assemblies 34. Also attached to the filter head 32 is a bypass filter assembly 35. The filter assemblies 34 are full-flow filters, while the filter assembly 35 is a bypass filter assembly. In FIG. 1, one of the filter assemblies 34 is shown in an exploded, perspective view as including filter bowl 36 and a removable and replaceable filter cartridge 38. Each of the filter assemblies 34, 35 is selectively connectable and mountable on the filter head 32. The filter head 32 is connected with other equipment, including a lubrication system of an engine, a fuel system for an engine, a hydraulic system for heavy-duty equipment, and generators for industrial use. In the embodiment illustrated, the filter assembly 34 includes features including a lock-out mechanism, an auto-drain valve mechanism, and a cartridge retention mechanism. Each of these features can be implemented independently of the other features. The particular embodiment illustrated in the drawings shows all three features integrated into the same filter assembly. One skilled in the art will appreciate that each feature can be implemented independently of the others. In general, the lock-out mechanism ensures that the filter system 30 is not accidentally operated with equipment without the filter cartridge 38 installed therein (see FIG. 39, for example). Furthermore, in the particular system 30, the lock-out mechanism helps to ensure that the filter cartridge that goes within the bypass filter assembly 35 is not mistakenly used with the filter cartridge of the full-flow filter assemblies 34. The equipment upon which the filter system 30 is mounted is protected by ensuring that the filter head 32 and the filter bowl 36 cannot be operably connected unless there is a filter cartridge 38 operably oriented within the filter bowl 36 (FIG. 39). It also protects the equipment by ensuring that the correct filter cartridge 38 is mounted within the filter bowl 36, rather than, for example, the bypass filter cartridge utilized in the bypass filter assembly 35. Details on an example lock-out mechanism are described in Section K of this disclosure. Honermann at 16:24-17:2: In FIGS. 1, 11, and 39, a schematic depiction of filter head 32 is shown. The filter head 32 in the embodiment shown has an inlet conduit 128 (FIG. 1) and an outlet conduit 130. As mentioned above, in the particular example shown in FIG. 1 , the filter head 32 shows connections with three filter assemblies, two of which are full-flow filter assemblies 34, and one of which is a bypass filter assembly 35. Of course, this is just an example, and other arrangements can include only a single filter assembly 34 connected to a filter head 32. The filter head 32 is connected to other

	equipment, such that liquid to be filtered flows into the filter head 32 through the inlet conduit 128 and then exits the filter head 32 by flowing through the outlet conduit 130. In some example arrangements, the filter head 32 is constructed of a cast metal part. Honermann at 22:22-23:5: Still in reference to FIGS. 13-15, a spring 288 is operably oriented around the valve housing wall 250 and pushes against a portion of the plug 244. Specifically, the spring 288 is located between an outwardly extending rib 290 extending outwardly from the wall 250 of the valve housing 248. The spring 288 engages rib 290 and against flange 292 of the plug 244. The spring 288 biases the plug 244 to be in the position in FIG. 15, which corresponds to drainage position 246. The plug 244 is moveable within the opening 252 of the valve housing 248 in a direction toward the sealed position 238 by compression of the spring 288. The drain valve assembly 236 further includes a first plug seal member 294 secured to the plug 244 to form first plug seal 240 (FIG. 12). The first plug seal 240 prevents unfiltered fluid from bypassing the filter media 44 and then flowing into the open filter interior 246, when the plug 244 is in the sealed position 238 (FIG. 12). The drain valve assembly 236 further includes a second plug seal member 296 secured to the plug 244 to form the second plug seal 242 (FIG. 12) with the inner wall 280 of the valve housing 248. The second plug seal 242 prevents liquid from flowing from the bowl 36 through the drain port 282 of the drainage aperture arrangement 160. Honermann at 34:3-18: The first plug seal 240 seals off liquid located on the clean side in the filtered liquid volume 212 (FIG. 12), from allowing unfiltered liquid in the unfiltered liquid volume 214 from flowing through holes 194 (FIG. 12). The second plug seal 242 seals off liquid from the unfiltered liquid volume 214 from the drain port 282 that is directed to the outside environment. Also, the seal 204 (FIG. 10) prevents liquid from the unfiltered liquid volume 214 to be able to reach the filtered liquid volume 212. With the filter cartridge 38 operably positioned in the bowl 36 and the head 32 fully engaged and connected to the bowl 36, the adaptor 64 presses against the first endcap 41, which pushes the cartridge 38 and the core piece 222 holding the basket 304 and legs 306 downward axially relative to the porous inner filter support 200. As the core piece 222 moves in a direction toward the closed end 156 of the bowl 36, the head 302 of the core piece 222 is moved away from the inwardly extending support 226 and engages the receiver 298 of the plug 244. This axial force presses the plug 244 against the valve spring 288 to move the plug into the sealed position of FIG. 12.

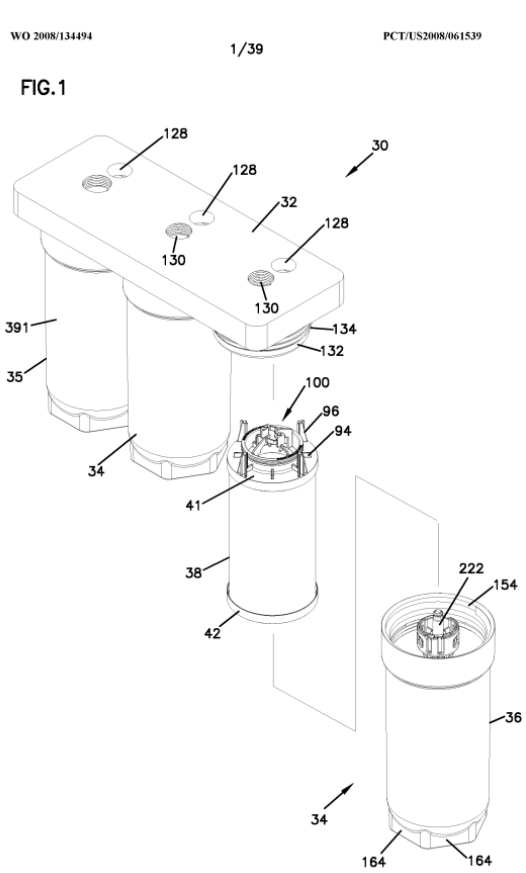
	Honermann at Figs. 1, 3:   For example, Honermann discloses the filter housing including at least one inlet (128) for raw liquid to be filtered, which inlet (128) leads into a raw side (214) of the filter housing (36).
1[e] a return extending from a clean side of the filter housing for filtered clean liquid,	Honermann discloses a return extending from a clean side of the filter housing for filtered clean liquid. *See, e.g.*,

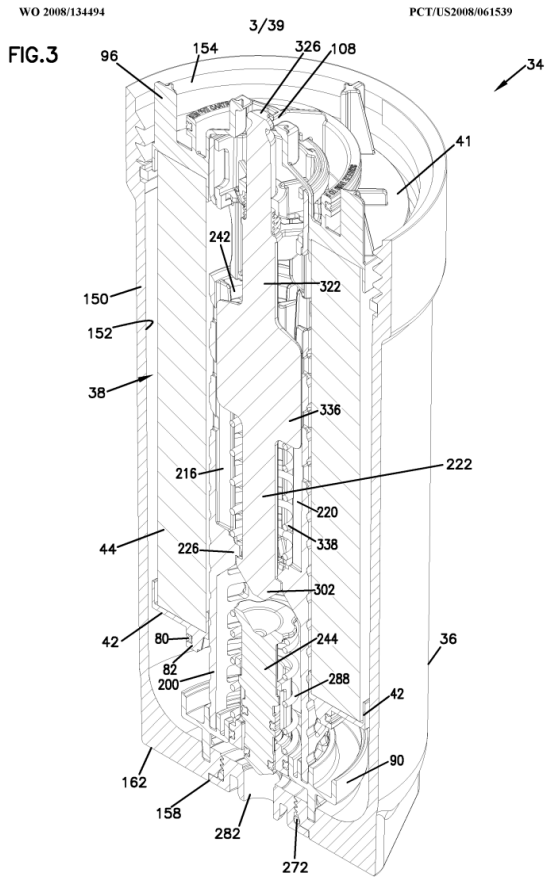
	Honermann at 9:19-10:20. An example embodiment of a filtration system including a filter assembly and a filter head is depicted in FIGS. 1 -39. It should be realized that many examples are envisioned and not illustrated in the drawings. FIG. 1 shows a filter system 30, including a filter head 32 and a filter assembly 34. In the embodiment of FIG. 1, there is one common filter head 32 accommodating at least first and second filter assemblies 34. Also attached to the filter head 32 is a bypass filter assembly 35. The filter assemblies 34 are full-flow filters, while the filter assembly 35 is a bypass filter assembly. In FIG. 1, one of the filter assemblies 34 is shown in an exploded, perspective view as including filter bowl 36 and a removable and replaceable filter cartridge 38. Each of the filter assemblies 34, 35 is selectively connectable and mountable on the filter head 32. The filter head 32 is connected with other equipment, including a lubrication system of an engine, a fuel system for an engine, a hydraulic system for heavy-duty equipment, and generators for industrial use. In the embodiment illustrated, the filter assembly 34 includes features including a lock-out mechanism, an auto-drain valve mechanism, and a cartridge retention mechanism. Each of these features can be implemented independently of the other features. The particular embodiment illustrated in the drawings shows all three features integrated into the same filter assembly. One skilled in the art will appreciate that each feature can be implemented independently of the others. In general, the lock-out mechanism ensures that the filter system 30 is not accidentally operated with equipment without the filter cartridge 38 installed therein (see FIG. 39, for example). Furthermore, in the particular system 30, the lock-out mechanism helps to ensure that the filter cartridge that goes within the bypass filter assembly 35 is not mistakenly used with the filter cartridge of the full-flow filter assemblies 34. The equipment upon which the filter system 30 is mounted is protected by ensuring that the filter head 32 and the filter bowl 36 cannot be operably connected unless there is a filter cartridge 38 operably oriented within the filter bowl 36 (FIG. 39). It also protects the equipment by ensuring that the correct filter cartridge 38 is mounted within the filter bowl 36, rather than, for example, the bypass filter cartridge utilized in the bypass filter assembly 35. Details on an example lock-out mechanism are described in Section K of this disclosure. Honermann at 16:24-17:2: In FIGS. 1, 11, and 39, a schematic depiction of filter head 32 is shown. The filter head 32 in the embodiment shown has an inlet conduit 128 (FIG. 1) and an outlet conduit 130. As mentioned above, in the particular example shown in FIG. 1 , the filter head 32 shows connections with three filter assemblies, two of which are full-flow filter assemblies 34, and one of which is a bypass

	filter assembly 35. Of course, this is just an example, and other arrangements can include only a single filter assembly 34 connected to a filter head 32. The filter head 32 is connected to other equipment, such that liquid to be filtered flows into the filter head 32 through the inlet conduit 128 and then exits the filter head 32 by flowing through the outlet conduit 130. In some example arrangements, the filter head 32 is constructed of a cast metal part. Honermann at 22:22-23:5: Still in reference to FIGS. 13-15, a spring 288 is operably oriented around the valve housing wall 250 and pushes against a portion of the plug 244. Specifically, the spring 288 is located between an outwardly extending rib 290 extending outwardly from the wall 250 of the valve housing 248. The spring 288 engages rib 290 and against flange 292 of the plug 244. The spring 288 biases the plug 244 to be in the position in FIG. 15, which corresponds to drainage position 246. The plug 244 is moveable within the opening 252 of the valve housing 248 in a direction toward the sealed position 238 by compression of the spring 288. The drain valve assembly 236 further includes a first plug seal member 294 secured to the plug 244 to form first plug seal 240 (FIG. 12). The first plug seal 240 prevents unfiltered fluid from bypassing the filter media 44 and then flowing into the open filter interior 246, when the plug 244 is in the sealed position 238 (FIG. 12). The drain valve assembly 236 further includes a second plug seal member 296 secured to the plug 244 to form the second plug seal 242 (FIG. 12) with the inner wall 280 of the valve housing 248. The second plug seal 242 prevents liquid from flowing from the bowl 36 through the drain port 282 of the drainage aperture arrangement 160. Honermann at 34:3-18: The first plug seal 240 seals off liquid located on the clean side in the filtered liquid volume 212 (FIG. 12), from allowing unfiltered liquid in the unfiltered liquid volume 214 from flowing through holes 194 (FIG. 12). The second plug seal 242 seals off liquid from the unfiltered liquid volume 214 from the drain port 282 that is directed to the outside environment. Also, the seal 204 (FIG. 10) prevents liquid from the unfiltered liquid volume 214 to be able to reach the filtered liquid volume 212. With the filter cartridge 38 operably positioned in the bowl 36 and the head 32 fully engaged and connected to the bowl 36, the adaptor 64 presses against the first endcap 41, which pushes the cartridge 38 and the core piece 222 holding the basket 304 and legs 306 downward axially relative to the porous inner filter support 200. As the core piece 222 moves in a direction toward the closed end 156 of the bowl 36, the head 302 of the core piece 222 is moved away from the inwardly extending support 226 and engages the receiver 298 of the plug 244.

This axial force presses the plug 244 against the valve spring 288 to move the plug into the sealed position of FIG. 12.

Honermann at Figs. 1, 3:





For example, Honermann discloses a return (130) extending from a clean side (212) of the filter housing (36) for filtered clean liquid.

1[f] an eccentric opening arranged in a bottom of the filter housing,	Honermann in combination with Cline, and/or the background knowledge of a POSA, discloses an eccentric opening arranged in a bottom of the filter housing,. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an opening (*e.g.*, 58) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding this feature to Honermann and/or incorporating the teachings of Honermann into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0020]-[0021]: The filter apparatus 10 comprises a housing 16, as shown in FIGS. 1-3 and 6-7. A base 18 of the housing 16 is configured to be secured to the engine 12. A cover 20 of the housing 16 is configured to be secured to the base 18 via a threaded connection or other suitable connection. Together, the base 18 and the cover 20 define an interior region 22 (see FIG. 6) when the cover 20 is secured to the base 18. The base 18 comprises passageways of the interior region 22 to admit fluid into and discharge fluid from a filter chamber 23 (see FIG. 6) of the interior region 22. The base 18 comprises an inlet passageway 24 (see FIG. 3), a filtered fluid outlet passageway 26 (see FIGS. 3, 6, and 7), a bypass passageway 28 (see FIG. 3), and a quick-drain passageway 30 (see FIGS. 3, 6, and 7). The inlet passageway 24 admits unfiltered fluid into the filter chamber 23. The filtered fluid outlet passageway 26 discharges fluid filtered by the filter element 32 from the filter chamber 23. The bypass passageway 28 contains a bypass valve 34 (see FIG. 3) to discharge unfiltered fluid from the filter chamber 23 when, for example, the filter element 32 becomes clogged with contaminants and/or the fluid is somewhat thick due to, for example, cold weather. The quick-drain passageway 26 discharges fluid from the filter chamber 23 through a quick-drain outlet 36 (see FIGS. 6-7) when the filter element 32 is removed from the filter chamber 23. Cline at [0025]: The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages

	a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. Cline at [0027]-[0029]: The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64. The post 64 comprises a body 68, a head 70, and a neck 72 interconnecting the body 68 and the head 70, as shown in FIGS. 5-7. The body 68 is secured to and extends from the outwardly facing surface 62. The head 70 has a diameter less than a diameter of the body 68. The neck 72 has a diameter less than the diameters of the body 68 and the head 70. The body 68, the head 70, and the neck 72 cooperate to define an annular groove 74. The neck 72 defines a channel 76 extending through the neck 72. The flow blocker 66 surrounds the head 70 and the neck 72 and extends into the annular groove 74 and through the channel 76 to mount the flow blocker 66 to the post 64. The flow blocker 66 comprises a surface 78, as shown in FIGS. 4-7, for engaging the valve seat 60. The surface 78 and the valve seat 60 are, for example, frusto-conical in shape. The surface 78 engages the valve seat 60 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6, and disengages the valve seat 60 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. Cline at Fig. 3:

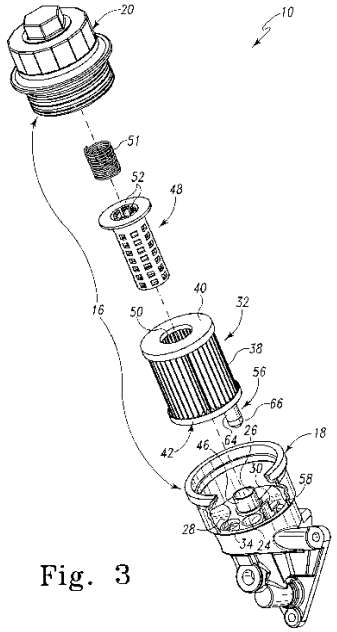


Fig. 3

Cline at Figs. 6-7:

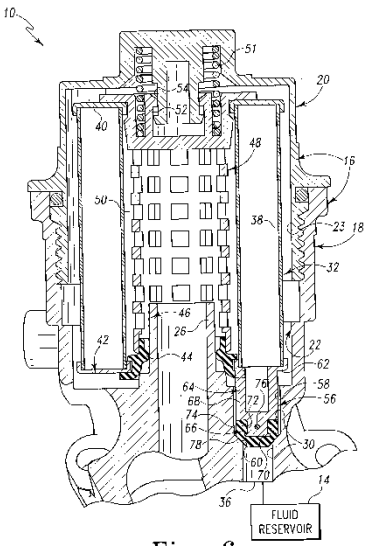


Fig. 6

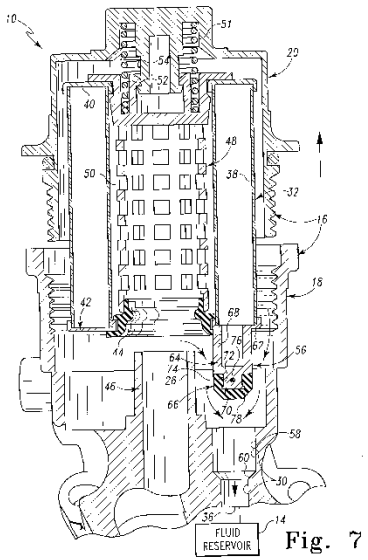


Fig. 7

For example, Honermann in combination with Cline discloses an eccentric opening (Cline 58) arranged in a bottom (Cline 18) of the filter housing (Cline 16, 18).

Moreover, it would have been obvious to combine Honermann with one or more of the other references identified by Defendant as disclosing this limitation including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading.

A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding these features to Honermann and/or incorporating the

	teachings of Honermann into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding these features to Honermann and/or incorporating the teachings of Honermann into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing. Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine.

The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

Grass at [0033]-[0036]:

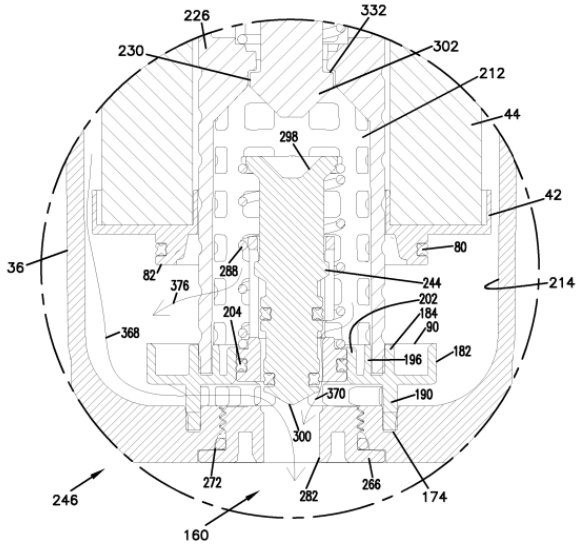
According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified.

	If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function. To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid

	communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]:

	The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
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,	Honermann discloses 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. *See, e.g.,* Honermann at 11:8-21: Reference is made to FIGS. 6 and 7, which illustrate one embodiment of filter cartridge 38 usable in this arrangement. In the embodiment shown, the filter cartridge 38 includes first and second opposite endcaps 41, 42 and a tubular construction of filter media 44 extending between the first and second endcaps 41, 42. In the embodiment shown, the media 44 is cylindrical in construction and defines an open filter interior 46. A variety of different types of media 44 can be used and will depend upon the particular fluid that is being filtered. In the embodiment shown, the media 44 is pleated media 48. The pleated media 48 can include cellulose, synthetic, and blends of synthetic and cellulose, for example. In general, fluid 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 46. In some systems, it will be possible to operate the filter system 30 in a reverse-flow manner, in which the liquid to be filtered flows from the open filter interior 46, through the media 44, and to a region outside of the media 44. For example, Honermann discloses the ring filter insert (38) comprising a hollow-cylindrical filter material body (44), surrounded on front sides by top (41) and bottom (42) front panels, the ring filter insert (38) separating the raw side (214) of the filter housing (36) and the clean side (212) of the filter housing (36) from each another.

1[h] an eccentric blocking element for the eccentric opening arranged on the bottom front panel,	Honermann in combination with Cline, and/or the background knowledge of a POSA, discloses an eccentric blocking element for the eccentric opening arranged on the bottom front panel,. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding this feature to Honermann and/or incorporating the teachings of Honermann into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Honermann at 20:32-21:16: The filter system 30 depicted also has a drain-valve assembly 236 (FIG. 13) to allow liquid in the complete assembly to automatically be drained during the servicing of the system 30. The drain-valve assembly 236 can be implemented independently of other features in the example embodiment. For example, the drain valve assembly 236 can be implemented independently of the lock-out mechanism and cartridge retention mechanism 100. Attention is directed to FIGS. 12 and 13. In FIGS. 12 and 13, the filter cartridge 38 is operably positioned in the filter bowl 36, and the bowl 36 is fully-threaded on the filter head 32. In this condition, the drain-valve assembly 236 is in a sealed position 238. In the sealed position 238, there is in place a first plug seal 240 and a second plug seal 242. The drain-valve assembly 236 includes a plug 244. The plug 244 is movably oriented between the sealed position 238 (FIGS. 11 and 12) and a drainage position 246 (FIGS. 9 and 10, for example). The sealed position 238 includes the plug 244 blocking fluid flow between the interior volume 152 of the bowl 36 and the drainage aperture arrangement 160. The drainage position 246 includes the plug 244 being oriented relative to the bowl 36 to permit flow from the interior volume 152 of the bowl 36 through the drainage aperture arrangement 160. Honermann at Fig. 10:



Cline at [0020]-[0021]:

The filter apparatus 10 comprises a housing 16, as shown in FIGS. 1-3 and 6-7. A base 18 of the housing 16 is configured to be secured to the engine 12. A cover 20 of the housing 16 is configured to be secured to the base 18 via a threaded connection or other suitable connection. Together, the base 18 and the cover 20 define an interior region 22 (see FIG. 6) when the cover 20 is secured to the base 18.

The base 18 comprises passageways of the interior region 22 to admit fluid into and discharge fluid from a filter chamber 23 (see FIG. 6) of the interior region 22. The base 18 comprises an inlet passageway 24 (see FIG. 3), a filtered fluid outlet passageway 26 (see FIGS. 3, 6, and 7), a bypass passageway 28 (see FIG. 3), and a quick-drain passageway 30 (see FIGS. 3, 6, and 7). The inlet passageway 24 admits unfiltered fluid into the filter chamber 23. The filtered fluid outlet passageway 26 discharges fluid filtered by the filter element 32 from the filter chamber 23. The bypass passageway 28 contains a bypass valve 34 (see FIG. 3) to discharge unfiltered fluid from the filter chamber 23 when, for example, the filter element 32 becomes clogged with contaminants and/or the fluid is somewhat thick due to, for example, cold weather. The quick-drain passageway 26 discharges fluid from the filter chamber 23 through a quick-drain outlet 36 (see FIGS. 6-7) when the filter element 32 is removed from the filter chamber 23.

Cline at [0025]:

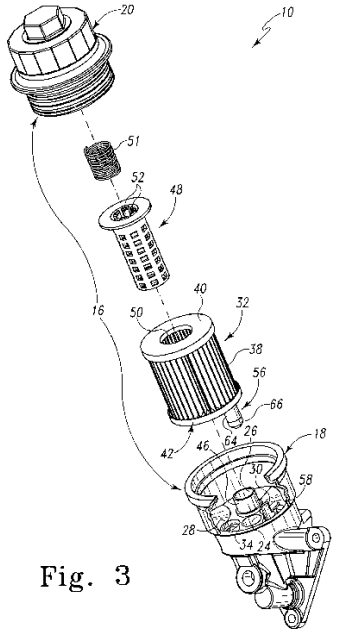
The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14.

Cline at [0027]-[0029]:

The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64.

The post 64 comprises a body 68, a head 70, and a neck 72 interconnecting the body 68 and the head 70, as shown in FIGS. 5-7. The body 68 is secured to and extends from the outwardly facing surface 62. The head 70 has a diameter less than a diameter of the body 68. The neck 72 has a diameter less than the diameters of the body 68 and the head 70. The body 68, the head 70, and the neck 72 cooperate to define an annular groove 74. The neck 72 defines a channel 76 extending through the neck 72. The flow blocker 66 surrounds the head 70 and the neck 72 and extends into the annular groove 74 and through the channel 76 to mount the flow blocker 66 to the post 64.

The flow blocker 66 comprises a surface 78, as shown in FIGS. 4-7, for engaging the valve seat 60. The surface 78 and the valve seat 60 are, for example, frusto-conical in shape. The surface 78 engages the valve seat 60 when the filter element 32 is positioned in the interior region 22, as

	shown in FIG. 6, and disengages the valve seat 60 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. Cline at Fig. 3:  Fig. 3 Cline at Figs. 4-5:

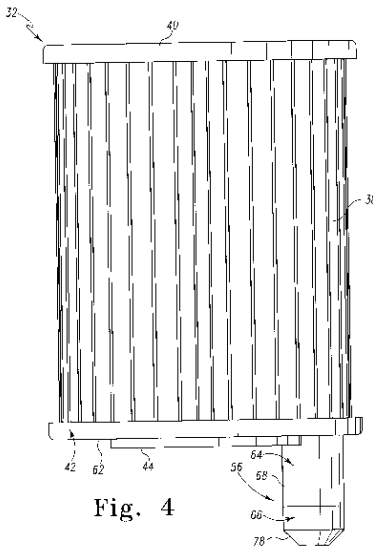


Fig. 4

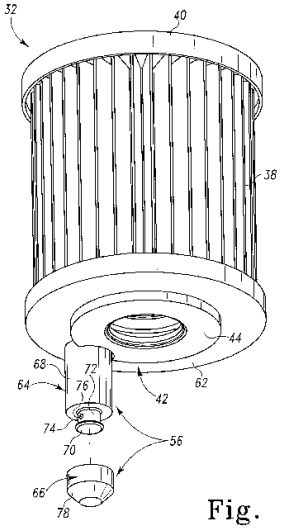


Fig. 5

For example, Honermann in combination with Cline discloses an eccentric blocking element (Cline 56) for the eccentric opening (Cline 58) arranged on the bottom front panel (Cline 42).

Moreover, it would have been obvious to combine Honermann with one or more of the other references identified by Defendant as disclosing this limitation including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading.

A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding these features to Honermann and/or incorporating the teachings of Honermann into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts.

See, e.g.,

Grass at [0006]:

The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing.

Grass at [0018]-[0021]:

According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine.

The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be

plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

Grass at [0033]-[0036]:

According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified.

If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function.

To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle

	14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends

	axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
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	Honermann in combination with Cline, and/or the background knowledge of a POSA, discloses 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.

eccentric opening when the ring filter insert is inserted into the filter housing,	A POSA would have motivation to make this combination for numerous reasons. For example, it was well known in the art to use a positioning means to ensure proper alignment of components in a filter assembly and/or that only the proper filter insert is installed on a filter housing. *See, e.g.*, US 2006/0219621, [0003] ("Published German patent application no. DE 4402836, for example, describes an arrangement in which the correct use of Suitable replacement parts is ensured by the fact that the respective part for attachment can be attached to the unit only according to a lock-and-key principle."), [0006] ("Another object of the invention is to provide a filter device which establishes a definitive correlation between the filter housing and an installed filter element."), [0007] ("A further object of the invention is to provide a filter device which prevents installation of an incorrect filter element."), [0028] ("If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24."). Such a positioning means also ensures a user need not visually align or guess at proper alignment through trial and error, potentially damaging the blocking element or incorrectly installing it. Thus there was common sense—and express—motivation in the art to use a positioning means to ensure proper alignment of components such as an eccentric blocking element within the filter housing. Moreover, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding this feature to Honermann and/or incorporating the teachings of Honermann into Cline as doing so involves no more than routine techniques well established in the mechanical arts. Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below. For example: Honermann at 24:24-25:7: The first slide surface 314 of the first groove 312 is constructed and arranged to engage the filter cartridge 38 and rotate the basket 304 from the first locked position to the second locked position. This rotation of the basket 304 also exposes the second slide surface 318 of the second groove

316 to engagement with the filter cartridge 38. An example can be seen by comparing FIGS. 19 and 20. In FIG. 19, the basket 304 is in the first locked position. The first slide surface 314 is exposed to engagement with the filter cartridge 38. In particular, and as explained further below in Section K, the first slide surface 314 engages the first protrusion 121 of the filter cartridge 38. The third protrusion 123 will engage the other first slide surface 314, in preferred embodiments. The first protrusion 121 engages the first slide surface 314, which rotates the basket 304 clockwise when viewed from above. The basket 304 is rotated to the second locked position, depicted in FIG. 20. The second locked position then exposes the second slide surface 318. The second slide surface 318, in preferred embodiments, has the second protrusion 122 engage against it, which causes the basket 304 to further rotate clockwise, when viewed above, to the unlocked position as shown in FIG. 21. In preferred embodiments, the fourth protrusion 124 will engage the other second slide surface 318.

Honermann at 31:16-32:12:

During servicing, when a new filter cartridge 38 has been provided, the filter cartridge 38 is oriented in the bowl 36 by placing it through the open mouth 154. When 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. See FIGS. 19, 28, 29, and 30. In embodiments that have more than two protrusions, one possibility is that both the first protrusion 121 and the third protrusion 123 will engage a corresponding first slide surface 314 on the basket 304. As the first protrusion 121 engages this first slide surface 314, it causes the basket 304 to rotate against the spring 350. In preferred embodiments, the rotation will be less than 45 degrees, for example, 5-20 degrees. This rotates the basket 304 from the first locked position (FIGS. 19 and 30) to the second unlocked position (FIG. 20). The first groove 312 in the basket 304 become aligned with the first slot 360 of the basket holder 340, which will eventually allow the first protrusion 121 to slide down. When the basket 304 is rotated to the second locked position (FIG. 20), this exposes the second slide surface 318. The second protrusion 122 is oriented such that it will contact or engage the second slide surface 318. The contact with the second slide surface 318 can be made through a protrusion located in the location of the fourth protrusion 124, as well. In embodiments that have protrusions at both locations of the second protrusion 122 and fourth protrusion 124, then both the second protrusion 122 and the fourth protrusion 124 will contact the corresponding second slide surface 318. The initial contact between the second protrusion 122 and the second slide surface 318 causes the basket 304 to rotate against the spring 350 from its second locked position to its unlocked position (FIG. 21). FIGS. 23, 25, and 27 illustrate engagement of the second protrusion 122 against the second slide surface 318. The rotation of the basket 304 from the second locked position (FIG. 20) to the unlocked position (FIG. 21) is

preferably less than 45 degrees, for example, 5-20 degrees. Rotation to the unlocked position aligns second groove 316 and second slot 362, which will eventually allow axial sliding of the second protrusion 122 therein downwardly.

Honermann at Figs. 23-25, 27:

FIG.23

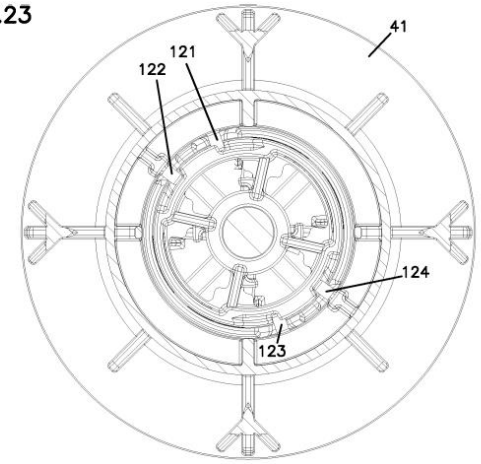


FIG.24

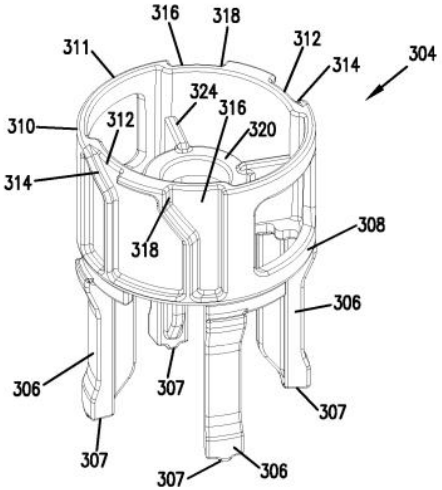


FIG.25

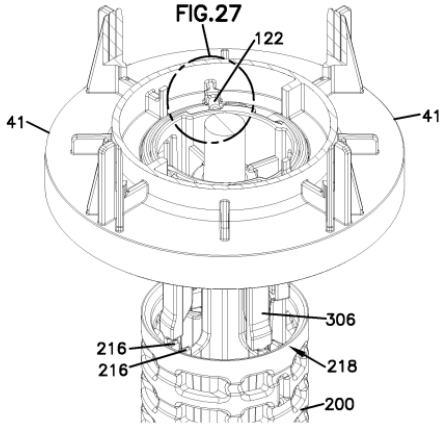
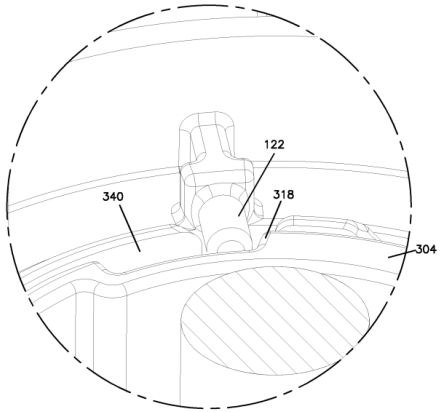


FIG.27



Cline at [0025]:

	The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. As one example, Honermann in combination with Cline discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: first (Honermann 318) and second (Honermann 121, 122) interacting positioning means each on one of the ring filter insert (Honermann 38) and the filter housing (Honermann 36) and arranged to bring the blocking element (Cline 56) into engagement with the eccentric opening (Cline 58) when the ring filter insert is inserted into the filter housing, Moreover, it would have been obvious to combine Honermann with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding these features to Honermann and/or incorporating the teachings of Honermann into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts.

	See, e.g., Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing. Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean

room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

Grass at [0033]-[0036]:

According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified.

If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function.

To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the

respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off.

According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 .

Brisson at [0029]:

To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank.

Brisson at [0050]:

Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to

	unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
1[j] the first positioning means comprising an inclined plane,	Honermann in combination with Cline, and/or the background knowledge of a POSA, discloses the first positioning means comprising an inclined plane,. Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs

	the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding this feature to Honermann and/or incorporating the teachings of Honermann into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Honermann at 24:24-25:7: The first slide surface 314 of the first groove 312 is constructed and arranged to engage the filter cartridge 38 and rotate the basket 304 from the first locked position to the second locked position. This rotation of the basket 304 also exposes the second slide surface 318 of the second groove 316 to engagement with the filter cartridge 38. An example can be seen by comparing FIGS. 19 and 20. In FIG. 19, the basket 304 is in the first locked position. The first slide surface 314 is exposed to engagement with the filter cartridge 38. In particular, and as explained further below in Section K, the first slide surface 314 engages the first protrusion 121 of the filter cartridge 38. The third protrusion 123 will engage the other first slide surface 314, in preferred embodiments. The first protrusion 121 engages the first slide surface 314, which rotates the basket 304 clockwise when viewed from above. The basket 304 is rotated to the second locked position, depicted in FIG. 20. The second locked position then exposes the second slide surface 318. The second slide surface 318, in preferred embodiments, has the second protrusion 122 engage against it, which causes the basket 304 to further rotate clockwise, when viewed above, to the unlocked position as shown in FIG. 21. In preferred embodiments, the fourth protrusion 124 will engage the other second slide surface 318. Honermann at 31:16-32:12: During servicing, when a new filter cartridge 38 has been provided, the filter cartridge 38 is oriented in the bowl 36 by placing it through the open mouth 154. When 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. See FIGS. 19, 28, 29, and 30. In

	embodiments that have more than two protrusions, one possibility is that both the first protrusion 121 and the third protrusion 123 will engage a corresponding first slide surface 314 on the basket 304. As the first protrusion 121 engages this first slide surface 314, it causes the basket 304 to rotate against the spring 350. In preferred embodiments, the rotation will be less than 45 degrees, for example, 5-20 degrees. This rotates the basket 304 from the first locked position (FIGS. 19 and 30) to the second unlocked position (FIG. 20). The first groove 312 in the basket 304 become aligned with the first slot 360 of the basket holder 340, which will eventually allow the first protrusion 121 to slide down. When the basket 304 is rotated to the second locked position (FIG. 20), this exposes the second slide surface 318. The second protrusion 122 is oriented such that it will contact or engage the second slide surface 318. The contact with the second slide surface 318 can be made through a protrusion located in the location of the fourth protrusion 124, as well. In embodiments that have protrusions at both locations of the second protrusion 122 and fourth protrusion 124, then both the second protrusion 122 and the fourth protrusion 124 will contact the corresponding second slide surface 318. The initial contact between the second protrusion 122 and the second slide surface 318 causes the basket 304 to rotate against the spring 350 from its second locked position to its unlocked position (FIG. 21). FIGS. 23, 25, and 27 illustrate engagement of the second protrusion 122 against the second slide surface 318. The rotation of the basket 304 from the second locked position (FIG. 20) to the unlocked position (FIG. 21) is preferably less than 45 degrees, for example, 5-20 degrees. Rotation to the unlocked position aligns second groove 316 and second slot 362, which will eventually allow axial sliding of the second protrusion 122 therein downwardly. Honermann at Figs. 23-25, 27:

FIG.23

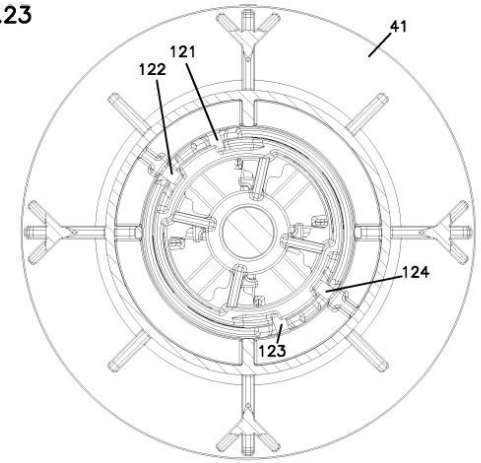


FIG.24

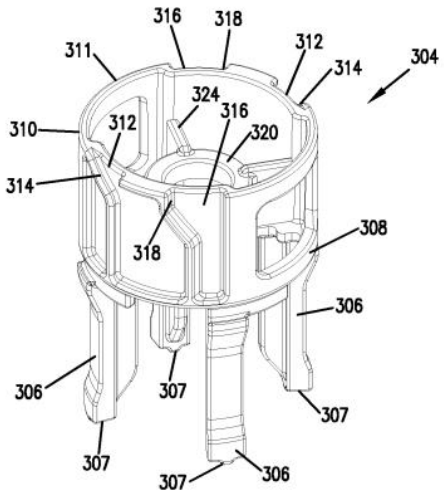


FIG.25

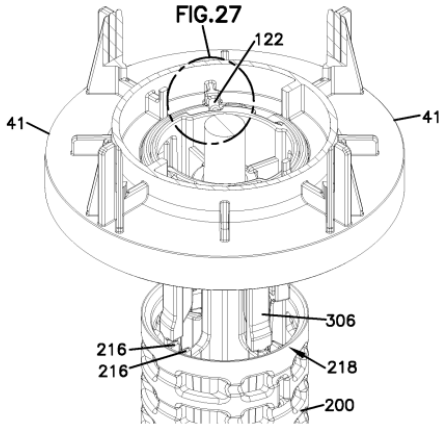
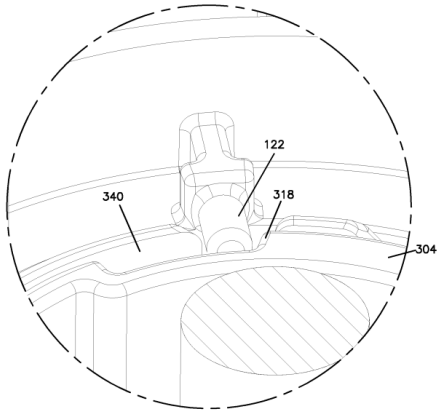


FIG.27



Cline at [0025]:

The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to

	block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. As one example, Honermann in combination with Cline discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: the first positioning means comprising an inclined plane (Honermann 318). Moreover, it would have been obvious to combine Honermann with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding these features to Honermann and/or incorporating the teachings of Honermann into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to

	filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to

	unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
1[k] the second positioning means comprising a protruding nose which is arranged opposite the inclined plane, and	Honermann in combination with Cline, and/or the background knowledge of a POSA, discloses the second positioning means comprising a protruding nose which is arranged opposite the inclined plane. Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding this feature to Honermann and/or incorporating the teachings of Honermann into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Honermann at 24:24-25:7: The first slide surface 314 of the first groove 312 is constructed and arranged to engage the filter cartridge 38 and rotate the basket 304 from the first locked position to the second locked position. This rotation of the basket 304 also exposes the second slide surface 318 of the second groove 316 to engagement with the filter cartridge 38. An example can be seen by comparing FIGS. 19 and 20. In FIG. 19, the basket 304 is in the first locked position. The first slide surface 314 is exposed to engagement with the filter cartridge 38. In particular, and as explained further below in Section K, the first slide surface 314 engages the first protrusion 121 of the filter cartridge 38. The third protrusion 123 will engage the other first slide surface 314, in preferred embodiments. The first protrusion 121 engages the first slide surface 314, which rotates the basket 304 clockwise when viewed from above. The basket 304 is rotated to the second locked position, depicted in FIG. 20. The second locked position then exposes the second slide surface 318. The second slide surface 318, in preferred embodiments, has the second protrusion 122 engage against it, which causes the basket 304 to further rotate clockwise, when viewed above, to the

	unlocked position as shown in FIG. 21. In preferred embodiments, the fourth protrusion 124 will engage the other second slide surface 318. Honermann at 31:16-32:12: During servicing, when a new filter cartridge 38 has been provided, the filter cartridge 38 is oriented in the bowl 36 by placing it through the open mouth 154. When 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. See FIGS. 19, 28, 29, and 30. In embodiments that have more than two protrusions, one possibility is that both the first protrusion 121 and the third protrusion 123 will engage a corresponding first slide surface 314 on the basket 304. As the first protrusion 121 engages this first slide surface 314, it causes the basket 304 to rotate against the spring 350. In preferred embodiments, the rotation will be less than 45 degrees, for example, 5-20 degrees. This rotates the basket 304 from the first locked position (FIGS. 19 and 30) to the second unlocked position (FIG. 20). The first groove 312 in the basket 304 become aligned with the first slot 360 of the basket holder 340, which will eventually allow the first protrusion 121 to slide down. When the basket 304 is rotated to the second locked position (FIG. 20), this exposes the second slide surface 318. The second protrusion 122 is oriented such that it will contact or engage the second slide surface 318. The contact with the second slide surface 318 can be made through a protrusion located in the location of the fourth protrusion 124, as well. In embodiments that have protrusions at both locations of the second protrusion 122 and fourth protrusion 124, then both the second protrusion 122 and the fourth protrusion 124 will contact the corresponding second slide surface 318. The initial contact between the second protrusion 122 and the second slide surface 318 causes the basket 304 to rotate against the spring 350 from its second locked position to its unlocked position (FIG. 21). FIGS. 23, 25, and 27 illustrate engagement of the second protrusion 122 against the second slide surface 318. The rotation of the basket 304 from the second locked position (FIG. 20) to the unlocked position (FIG. 21) is preferably less than 45 degrees, for example, 5-20 degrees. Rotation to the unlocked position aligns second groove 316 and second slot 362, which will eventually allow axial sliding of the second protrusion 122 therein downwardly. Honermann at Figs. 23-25, 27:

FIG.23

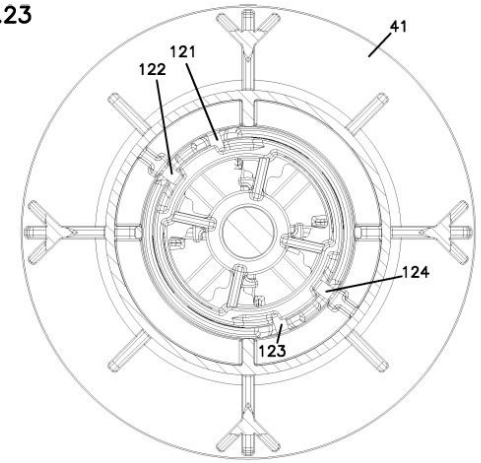


FIG.24

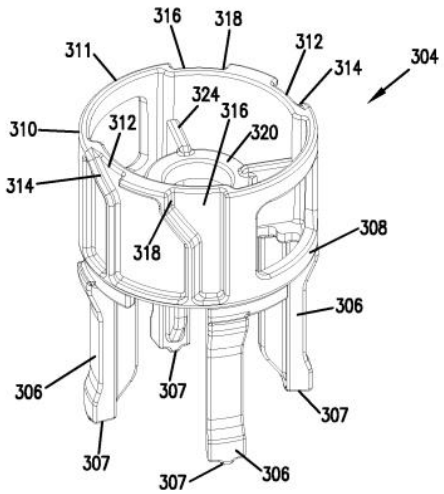


FIG.25

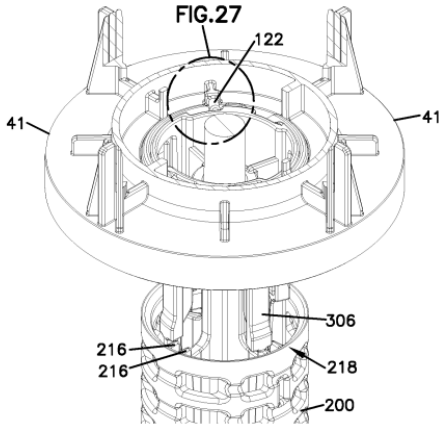
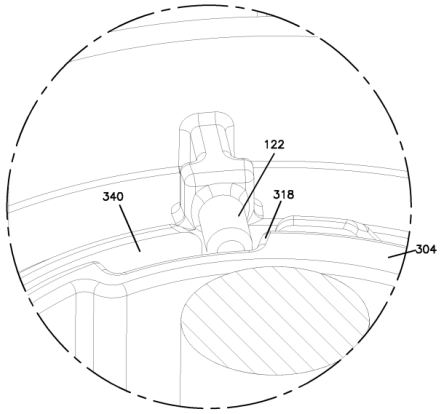


FIG.27



Cline at [0025]:

The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve

	member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. As one example, Honermann in combination with Cline discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: the second positioning means comprising a protruding nose (Honermann 121, 122) which is arranged opposite the inclined plane (Honermann 318). Moreover, it would have been obvious to combine Honermann with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding these features to Honermann and/or incorporating the teachings of Honermann into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also

	conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to

	unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
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 in combination with Cline, and/or the background knowledge of a POSA, discloses 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. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding this feature to Honermann and/or incorporating the teachings of Honermann into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.*, Honermann at 24:24-25:7: The first slide surface 314 of the first groove 312 is constructed and arranged to engage the filter cartridge 38 and rotate the basket 304 from the first locked position to the second locked position. This rotation of the basket 304 also exposes the second slide surface 318 of the second groove 316 to engagement with the filter cartridge 38. An example can be seen by comparing FIGS. 19 and 20. In FIG. 19, the basket 304 is in the first locked position. The first slide surface 314 is exposed to engagement with the filter cartridge 38. In particular, and as explained further below in Section K, the first slide surface 314 engages the first protrusion 121 of the filter cartridge 38. The third protrusion 123 will engage the other first slide surface 314, in preferred embodiments. The first protrusion 121 engages the first slide surface 314, which rotates the basket 304 clockwise when viewed from above. The basket 304 is rotated to the second locked position, depicted in FIG. 20. The second locked position then exposes the second slide surface 318. The second slide surface 318, in preferred embodiments, has the second protrusion 122 engage against it, which causes the basket 304 to further rotate clockwise, when viewed above, to the unlocked position as shown in FIG. 21. In preferred embodiments, the fourth protrusion 124 will engage the other second slide surface 318. Honermann at 31:16-32:12:

	During servicing, when a new filter cartridge 38 has been provided, the filter cartridge 38 is oriented in the bowl 36 by placing it through the open mouth 154. When 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. See FIGS. 19, 28, 29, and 30. In embodiments that have more than two protrusions, one possibility is that both the first protrusion 121 and the third protrusion 123 will engage a corresponding first slide surface 314 on the basket 304. As the first protrusion 121 engages this first slide surface 314, it causes the basket 304 to rotate against the spring 350. In preferred embodiments, the rotation will be less than 45 degrees, for example, 5-20 degrees. This rotates the basket 304 from the first locked position (FIGS. 19 and 30) to the second unlocked position (FIG. 20). The first groove 312 in the basket 304 become aligned with the first slot 360 of the basket holder 340, which will eventually allow the first protrusion 121 to slide down. When the basket 304 is rotated to the second locked position (FIG. 20), this exposes the second slide surface 318. The second protrusion 122 is oriented such that it will contact or engage the second slide surface 318. The contact with the second slide surface 318 can be made through a protrusion located in the location of the fourth protrusion 124, as well. In embodiments that have protrusions at both locations of the second protrusion 122 and fourth protrusion 124, then both the second protrusion 122 and the fourth protrusion 124 will contact the corresponding second slide surface 318. The initial contact between the second protrusion 122 and the second slide surface 318 causes the basket 304 to rotate against the spring 350 from its second locked position to its unlocked position (FIG. 21). FIGS. 23, 25, and 27 illustrate engagement of the second protrusion 122 against the second slide surface 318. The rotation of the basket 304 from the second locked position (FIG. 20) to the unlocked position (FIG. 21) is preferably less than 45 degrees, for example, 5-20 degrees. Rotation to the unlocked position aligns second groove 316 and second slot 362, which will eventually allow axial sliding of the second protrusion 122 therein downwardly. Honermann at Figs. 23-25, 27:

FIG.23

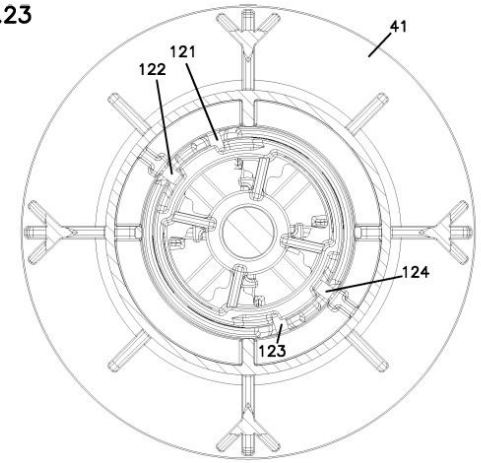


FIG.24

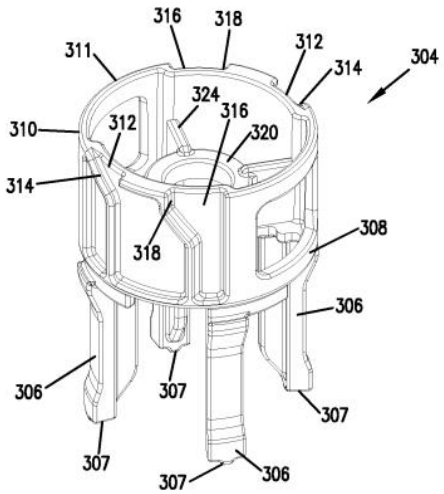


FIG.25

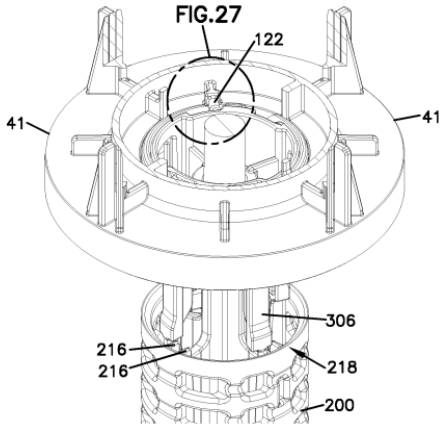
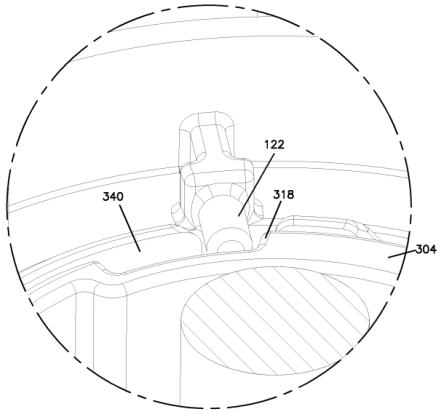


FIG.27



Cline at [0025]:

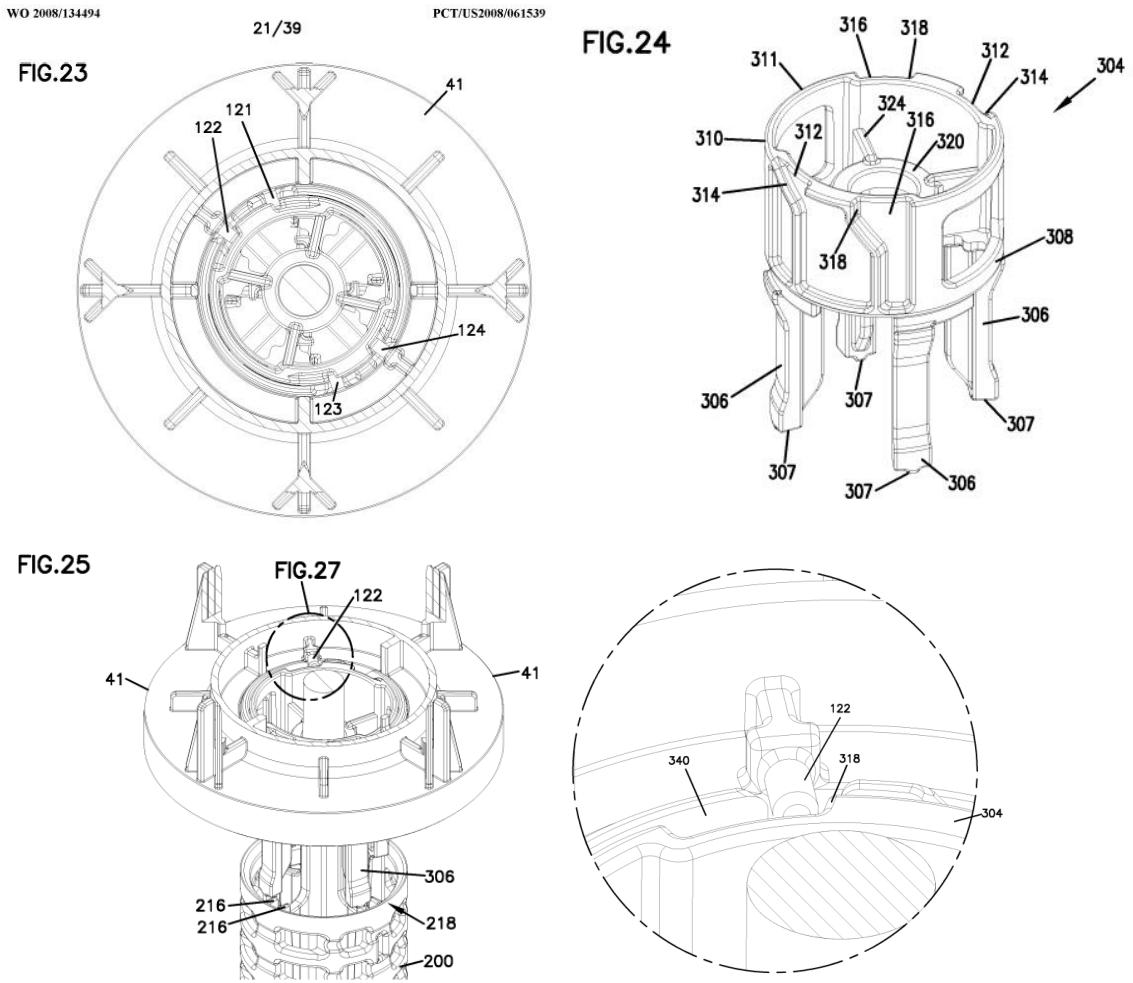
The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to

	block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. For example, Honermann discloses the inclined plane (Honermann 314, 318) and the nose (Honermann 121-124) arranged to be movable in relation to each other in such a way that they slide along each other (*see* Honermann fig. 27) and bring the blocking element (Cline 56) into engagement with the eccentric opening (Cline 58), by rotating the ring filter insert relative to the filter housing (*see* Honermann at 24, "first slide surface 314 of the first groove 312 is constructed and arranged to engage the filter cartridge 38 and rotate the basket"). Moreover, it would have been obvious to combine Honermann with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding these features to Honermann and/or incorporating the teachings of Honermann into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5

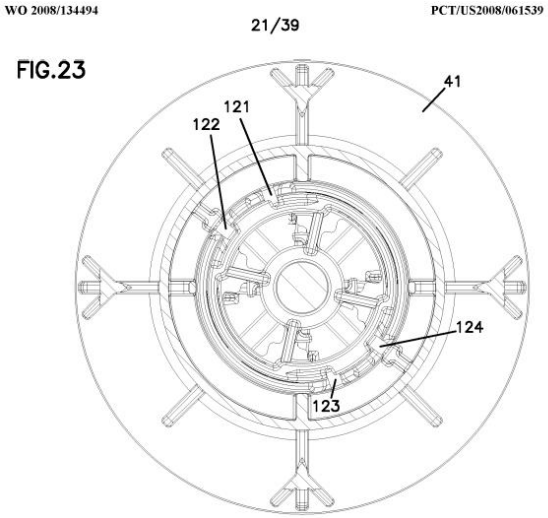
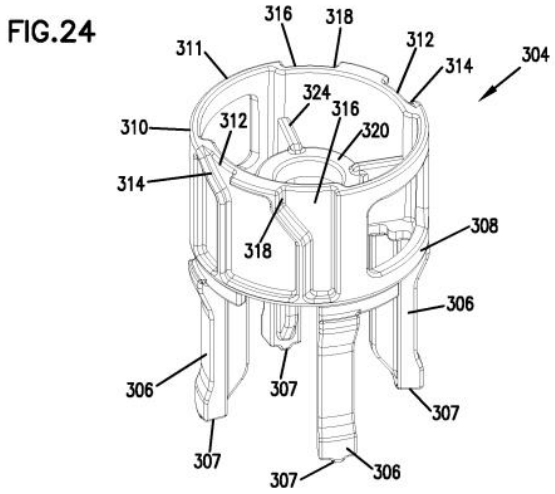
	on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Brisson at [0050]:

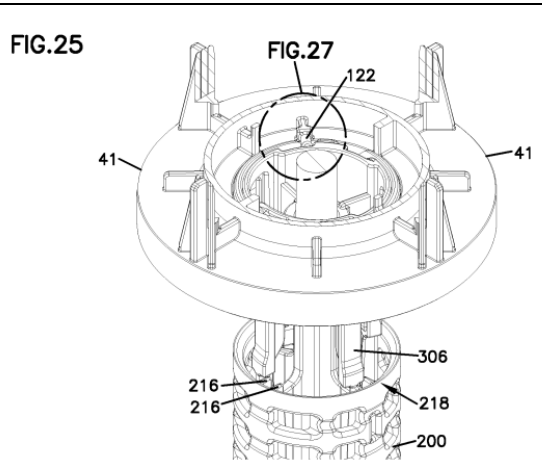
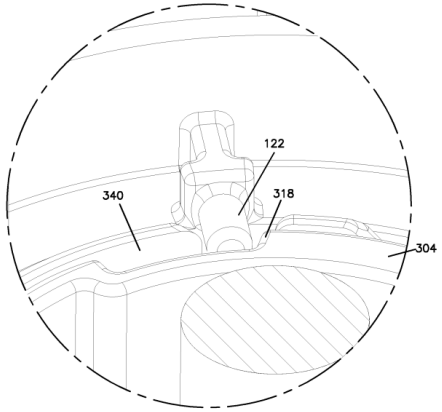
	Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
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,	Honermann discloses 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,. *See, e.g.,* Honermann at 24:24-25:7: The first slide surface 314 of the first groove 312 is constructed and arranged to engage the filter cartridge 38 and rotate the basket 304 from the first locked position to the second locked position. This rotation of the basket 304 also exposes the second slide surface 318 of the second groove 316 to engagement with the filter cartridge 38. An example can be seen by comparing FIGS. 19 and 20. In FIG. 19, the basket 304 is in the first locked position. The first slide surface 314 is exposed to engagement with the filter cartridge 38. In particular, and as explained further below in Section K, the first slide surface 314 engages the first protrusion 121 of the filter cartridge 38. The third protrusion 123 will engage the other first slide surface 314, in preferred embodiments. The first protrusion 121 engages the first slide surface 314, which rotates the basket 304 clockwise when viewed from above. The basket 304 is rotated to the second locked position, depicted in FIG. 20. The second locked position then exposes the second slide surface 318. The second slide surface 318, in preferred embodiments, has the second protrusion 122 engage against it, which causes the basket 304 to further rotate clockwise, when viewed above, to the unlocked position as shown in FIG. 21. In preferred embodiments, the fourth protrusion 124 will engage the other second slide surface 318. Honermann at 31:16-32:12: During servicing, when a new filter cartridge 38 has been provided, the filter cartridge 38 is oriented in the bowl 36 by placing it through the open mouth 154. When the filter cartridge 38 is properly and operably positioned in the filter bowl 36, the first protrusion 121 comes in contact or

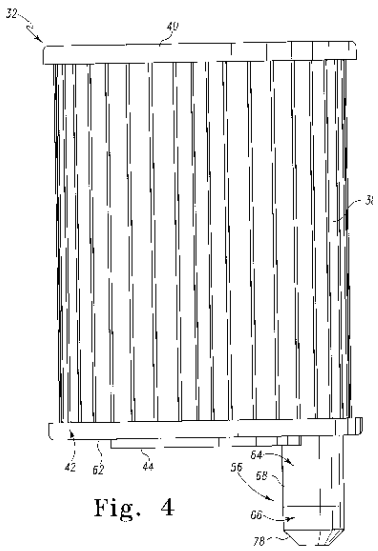
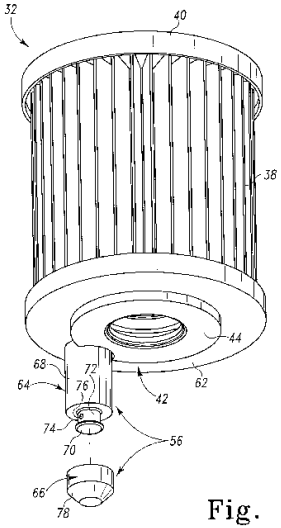
	engages the ramped first slide surface 314 of the basket 304. See FIGS. 19, 28, 29, and 30. In embodiments that have more than two protrusions, one possibility is that both the first protrusion 121 and the third protrusion 123 will engage a corresponding first slide surface 314 on the basket 304. As the first protrusion 121 engages this first slide surface 314, it causes the basket 304 to rotate against the spring 350. In preferred embodiments, the rotation will be less than 45 degrees, for example, 5-20 degrees. This rotates the basket 304 from the first locked position (FIGS. 19 and 30) to the second unlocked position (FIG. 20). The first groove 312 in the basket 304 become aligned with the first slot 360 of the basket holder 340, which will eventually allow the first protrusion 121 to slide down. When the basket 304 is rotated to the second locked position (FIG. 20), this exposes the second slide surface 318. The second protrusion 122 is oriented such that it will contact or engage the second slide surface 318. The contact with the second slide surface 318 can be made through a protrusion located in the location of the fourth protrusion 124, as well. In embodiments that have protrusions at both locations of the second protrusion 122 and fourth protrusion 124, then both the second protrusion 122 and the fourth protrusion 124 will contact the corresponding second slide surface 318. The initial contact between the second protrusion 122 and the second slide surface 318 causes the basket 304 to rotate against the spring 350 from its second locked position to its unlocked position (FIG. 21). FIGS. 23, 25, and 27 illustrate engagement of the second protrusion 122 against the second slide surface 318. The rotation of the basket 304 from the second locked position (FIG. 20) to the unlocked position (FIG. 21) is preferably less than 45 degrees, for example, 5-20 degrees. Rotation to the unlocked position aligns second groove 316 and second slot 362, which will eventually allow axial sliding of the second protrusion 122 therein downwardly. Honermann at Figs. 23-25, 27:

	 As one example, Honermann discloses the inclined plane (318, 316, 314) being one of embodied and arranged on the outer circumference of a filter housing part (304) arranged inside the ring filter insert (38) and the protruding nose (121-124) being one of embodied and arranged on the inner circumference (41) of the ring filter insert (38).
1[n] the inclined plane comprising an incline which excludes a self-locking and	The specification lacks adequate written description support for and does not enable the POSA to practice the limitation "excludes a self-locking." The term is further indefinite as the POSA would not understand the scope of such term and what is included or excluded therein. Applying

	Hengst's apparent construction however, Honermann discloses the inclined plane comprising an incline which excludes a self-locking. *See, e.g.,* Honermann at 24:24-25:7: The first slide surface 314 of the first groove 312 is constructed and arranged to engage the filter cartridge 38 and rotate the basket 304 from the first locked position to the second locked position. This rotation of the basket 304 also exposes the second slide surface 318 of the second groove 316 to engagement with the filter cartridge 38. An example can be seen by comparing FIGS. 19 and 20. In FIG. 19, the basket 304 is in the first locked position. The first slide surface 314 is exposed to engagement with the filter cartridge 38. In particular, and as explained further below in Section K, the first slide surface 314 engages the first protrusion 121 of the filter cartridge 38. The third protrusion 123 will engage the other first slide surface 314, in preferred embodiments. The first protrusion 121 engages the first slide surface 314, which rotates the basket 304 clockwise when viewed from above. The basket 304 is rotated to the second locked position, depicted in FIG. 20. The second locked position then exposes the second slide surface 318. The second slide surface 318, in preferred embodiments, has the second protrusion 122 engage against it, which causes the basket 304 to further rotate clockwise, when viewed above, to the unlocked position as shown in FIG. 21. In preferred embodiments, the fourth protrusion 124 will engage the other second slide surface 318. Honermann at 31:16-32:12: During servicing, when a new filter cartridge 38 has been provided, the filter cartridge 38 is oriented in the bowl 36 by placing it through the open mouth 154. When 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. See FIGS. 19, 28, 29, and 30. In embodiments that have more than two protrusions, one possibility is that both the first protrusion 121 and the third protrusion 123 will engage a corresponding first slide surface 314 on the basket 304. As the first protrusion 121 engages this first slide surface 314, it causes the basket 304 to rotate against the spring 350. In preferred embodiments, the rotation will be less than 45 degrees, for example, 5-20 degrees. This rotates the basket 304 from the first locked position (FIGS. 19 and 30) to the second unlocked position (FIG. 20). The first groove 312 in the basket 304 become aligned with the first slot 360 of the basket holder 340, which will eventually allow the first protrusion 121 to slide down. When the basket 304 is rotated to the second locked position (FIG.

	20), this exposes the second slide surface 318. The second protrusion 122 is oriented such that it will contact or engage the second slide surface 318. The contact with the second slide surface 318 can be made through a protrusion located in the location of the fourth protrusion 124, as well. In embodiments that have protrusions at both locations of the second protrusion 122 and fourth protrusion 124, then both the second protrusion 122 and the fourth protrusion 124 will contact the corresponding second slide surface 318. The initial contact between the second protrusion 122 and the second slide surface 318 causes the basket 304 to rotate against the spring 350 from its second locked position to its unlocked position (FIG. 21). FIGS. 23, 25, and 27 illustrate engagement of the second protrusion 122 against the second slide surface 318. The rotation of the basket 304 from the second locked position (FIG. 20) to the unlocked position (FIG. 21) is preferably less than 45 degrees, for example, 5-20 degrees. Rotation to the unlocked position aligns second groove 316 and second slot 362, which will eventually allow axial sliding of the second protrusion 122 therein downwardly. Honermann at Figs. 23-25, 27:  

	  For example, Honermann discloses the inclined plane (316) comprising an incline (314) which excludes a self-locking.
1[o] the eccentric opening being an outlet for emptying the filter housing when the filter insert is removed.	Honermann in combination with Cline, and/or the background knowledge of a POSA, discloses the eccentric opening being an outlet for emptying the filter housing when the filter insert is removed. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding this feature to Honermann and/or incorporating the teachings of Honermann into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0025]: The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages

	a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. Cline at Figs. 4-7:  Fig. 4  Fig. 5

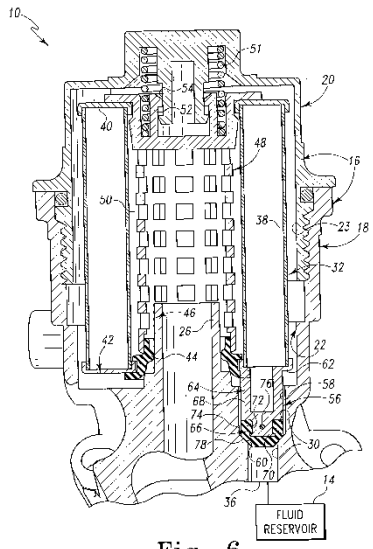


Fig. 6

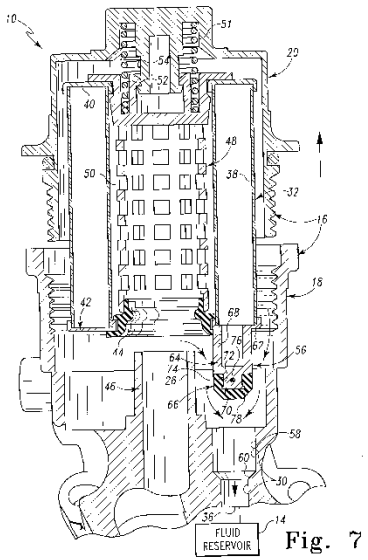


Fig. 7

For example, Honermann in combination with Cline discloses the eccentric opening (Cline 58) being an outlet for emptying the filter housing when the filter insert (Cline 32) is removed (*see* Cline [0025] "[t]he quick-drain valve member 56 is removed from the valve chamber 58 … to allow a flow of fluid from the interior region 22 through the quick-drain outlet 36 … when the filter element 32 is removed").

Moreover, it would have been obvious to combine Honermann with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading.

A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add

	this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding these features to Honermann and/or incorporating the teachings of Honermann into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end

	plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
Claim 2	
[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.	The subject matter of claim 2 as a whole would have been obvious in light of Honermann and the general background knowledge of the POSA. The POSA would have understood that implementing the inclined planes of Honermann by forming 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 was a simple design option and choice for implementing the inclines planes.
Claim 3	
[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 a guide for the nose which runs in an axial direction and is connected to a lower end of the inclined plane. *See, e.g.,* Honermann at 24:24-25:7:

	The first slide surface 314 of the first groove 312 is constructed and arranged to engage the filter cartridge 38 and rotate the basket 304 from the first locked position to the second locked position. This rotation of the basket 304 also exposes the second slide surface 318 of the second groove 316 to engagement with the filter cartridge 38. An example can be seen by comparing FIGS. 19 and 20. In FIG. 19, the basket 304 is in the first locked position. The first slide surface 314 is exposed to engagement with the filter cartridge 38. In particular, and as explained further below in Section K, the first slide surface 314 engages the first protrusion 121 of the filter cartridge 38. The third protrusion 123 will engage the other first slide surface 314, in preferred embodiments. The first protrusion 121 engages the first slide surface 314, which rotates the basket 304 clockwise when viewed from above. The basket 304 is rotated to the second locked position, depicted in FIG. 20. The second locked position then exposes the second slide surface 318. The second slide surface 318, in preferred embodiments, has the second protrusion 122 engage against it, which causes the basket 304 to further rotate clockwise, when viewed above, to the unlocked position as shown in FIG. 21. In preferred embodiments, the fourth protrusion 124 will engage the other second slide surface 318. Honermann at 31:16-32:12: During servicing, when a new filter cartridge 38 has been provided, the filter cartridge 38 is oriented in the bowl 36 by placing it through the open mouth 154. When 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. See FIGS. 19, 28, 29, and 30. In embodiments that have more than two protrusions, one possibility is that both the first protrusion 121 and the third protrusion 123 will engage a corresponding first slide surface 314 on the basket 304. As the first protrusion 121 engages this first slide surface 314, it causes the basket 304 to rotate against the spring 350. In preferred embodiments, the rotation will be less than 45 degrees, for example, 5-20 degrees. This rotates the basket 304 from the first locked position (FIGS. 19 and 30) to the second unlocked position (FIG. 20). The first groove 312 in the basket 304 become aligned with the first slot 360 of the basket holder 340, which will eventually allow the first protrusion 121 to slide down. When the basket 304 is rotated to the second locked position (FIG. 20), this exposes the second slide surface 318. The second protrusion 122 is oriented such that it will contact or engage the second slide surface 318. The contact with the second slide surface 318 can be made through a protrusion located in the location of the fourth protrusion 124, as well. In embodiments that have protrusions at both locations of the second protrusion 122 and fourth protrusion 124, then both the second protrusion 122 and the fourth protrusion 124 will contact the corresponding second slide surface 318. The initial contact between the second protrusion 122 and the second slide surface 318 causes the basket 304 to rotate against the spring 350 from its

second locked position to its unlocked position (FIG. 21). FIGS. 23, 25, and 27 illustrate engagement of the second protrusion 122 against the second slide surface 318. The rotation of the basket 304 from the second locked position (FIG. 20) to the unlocked position (FIG. 21) is preferably less than 45 degrees, for example, 5-20 degrees. Rotation to the unlocked position aligns second groove 316 and second slot 362, which will eventually allow axial sliding of the second protrusion 122 therein downwardly.

Honermann at Figs. 23-25, 27:

FIG.23

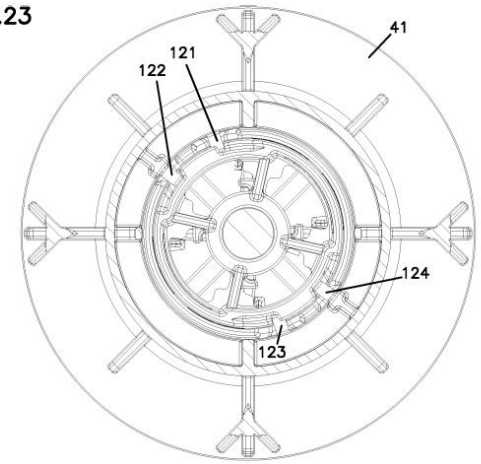


FIG.24

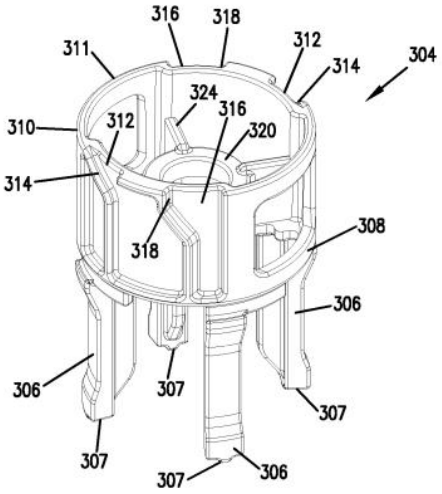


FIG.25

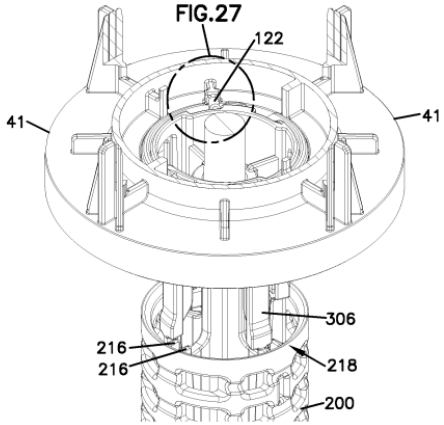
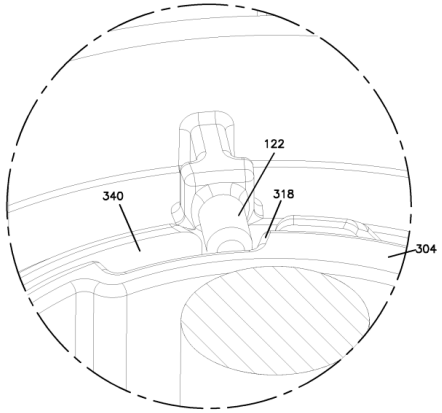


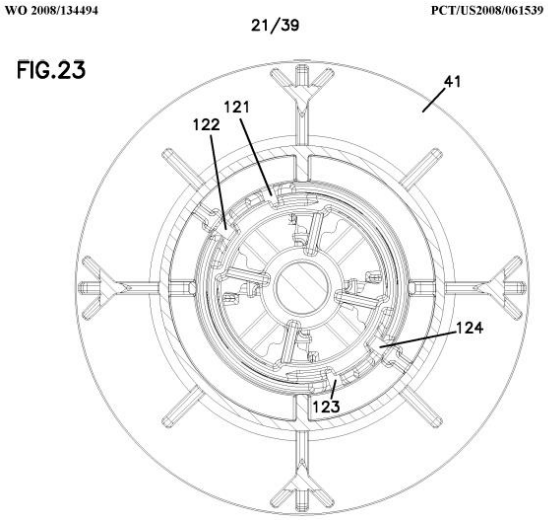
FIG.27

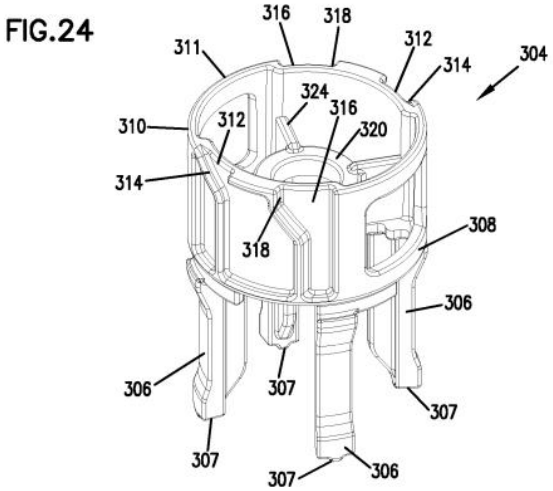


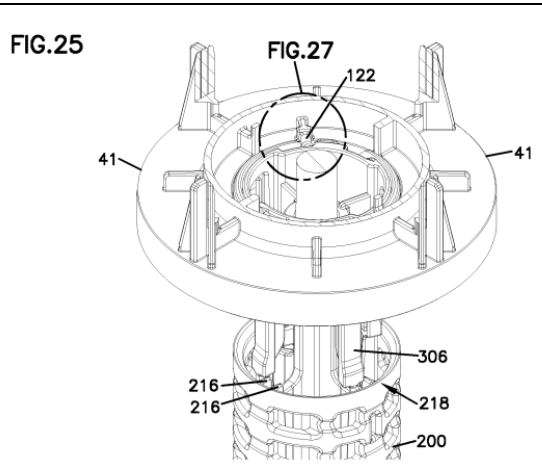
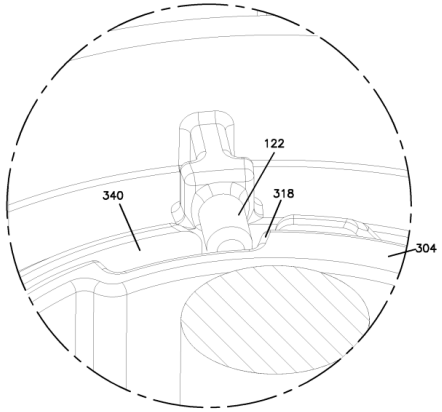
	For example, Honermann discloses a guide (*see* Fig. 24) for the nose (122) which runs in an axial direction and is connected to a lower end of the inclined plane (318).
Claim 5	
[5] The liquid filter according to claim 1, wherein the inclined plane is formed by one of a radially protruding rib and step, which forms a contact surface for the nose on one of an upper and lower side thereof.	Honermann discloses 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. *See, e.g.,* Honermann at 24:24-25:7: The first slide surface 314 of the first groove 312 is constructed and arranged to engage the filter cartridge 38 and rotate the basket 304 from the first locked position to the second locked position. This rotation of the basket 304 also exposes the second slide surface 318 of the second groove 316 to engagement with the filter cartridge 38. An example can be seen by comparing FIGS. 19 and 20. In FIG. 19, the basket 304 is in the first locked position. The first slide surface 314 is exposed to engagement with the filter cartridge 38. In particular, and as explained further below in Section K, the first slide surface 314 engages the first protrusion 121 of the filter cartridge 38. The third protrusion 123 will engage the other first slide surface 314, in preferred embodiments. The first protrusion 121 engages the first slide surface 314, which rotates the basket 304 clockwise when viewed from above. The basket 304 is rotated to the second locked position, depicted in FIG. 20. The second locked position then exposes the second slide surface 318. The second slide surface 318, in preferred embodiments, has the second protrusion 122 engage against it, which causes the basket 304 to further rotate clockwise, when viewed above, to the unlocked position as shown in FIG. 21. In preferred embodiments, the fourth protrusion 124 will engage the other second slide surface 318. Honermann at 31:16-32:12: During servicing, when a new filter cartridge 38 has been provided, the filter cartridge 38 is oriented in the bowl 36 by placing it through the open mouth 154. When 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. See FIGS. 19, 28, 29, and 30. In embodiments that have more than two protrusions, one possibility is that both the first protrusion 121 and the third protrusion 123 will engage a corresponding first slide surface 314 on the basket

304. As the first protrusion 121 engages this first slide surface 314, it causes the basket 304 to rotate against the spring 350. In preferred embodiments, the rotation will be less than 45 degrees, for example, 5-20 degrees. This rotates the basket 304 from the first locked position (FIGS. 19 and 30) to the second unlocked position (FIG. 20). The first groove 312 in the basket 304 become aligned with the first slot 360 of the basket holder 340, which will eventually allow the first protrusion 121 to slide down. When the basket 304 is rotated to the second locked position (FIG. 20), this exposes the second slide surface 318. The second protrusion 122 is oriented such that it will contact or engage the second slide surface 318. The contact with the second slide surface 318 can be made through a protrusion located in the location of the fourth protrusion 124, as well. In embodiments that have protrusions at both locations of the second protrusion 122 and fourth protrusion 124, then both the second protrusion 122 and the fourth protrusion 124 will contact the corresponding second slide surface 318. The initial contact between the second protrusion 122 and the second slide surface 318 causes the basket 304 to rotate against the spring 350 from its second locked position to its unlocked position (FIG. 21). FIGS. 23, 25, and 27 illustrate engagement of the second protrusion 122 against the second slide surface 318. The rotation of the basket 304 from the second locked position (FIG. 20) to the unlocked position (FIG. 21) is preferably less than 45 degrees, for example, 5-20 degrees. Rotation to the unlocked position aligns second groove 316 and second slot 362, which will eventually allow axial sliding of the second protrusion 122 therein downwardly.

Honermann at Figs. 23-25, 27:



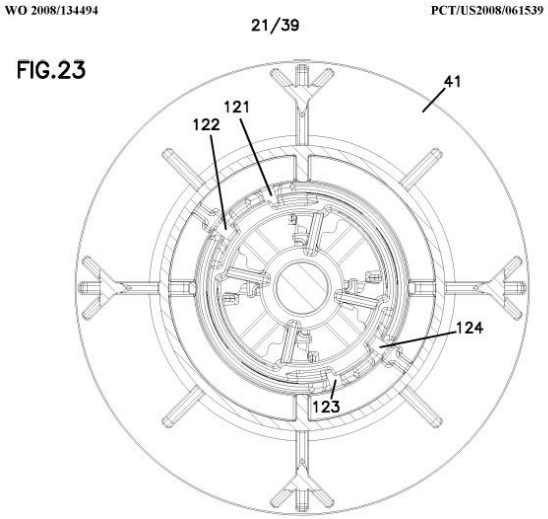


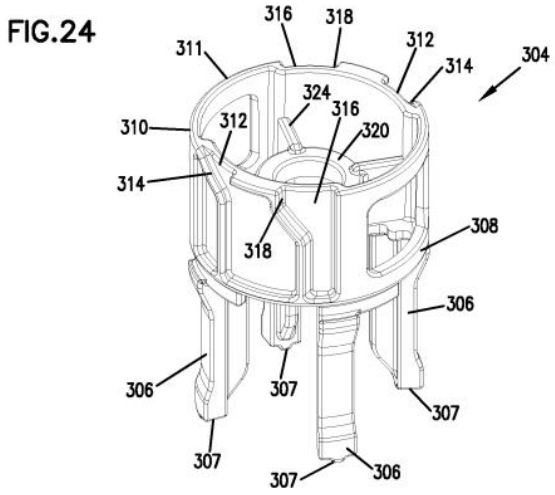
	  As one example, Honermann discloses the inclined plane (316) is formed by a radially protruding step, which forms a contact surface (318) for the nose (122) on a lower side thereof.
Claim 6	
[6] The liquid filter according to claim 1, wherein the inclined plane is formed integrally with one of the filter housing and the ring filter insert.	Honermann discloses the inclined plane is formed integrally with one of the filter housing and the ring filter insert. *See, e.g.,* Honermann at 19:20-20:6: One embodiment of a porous inner filter support 200 is illustrated in various FIGS, including, for example, FIGS. 3, 4, 8, 9, 11, and 18. Portions of the filter support 200 can be seen in several of the other figures. The porous inner filter support 200 is oriented within the open filter interior 46 (FIG. 6) of the filter cartridge 38. Further, in the embodiment shown, the porous inner filter support 200 is oriented within the open interior volume 152 of the bowl 36. In the specific embodiment illustrated, the inner filter support 200 is secured to the filter bowl 36 by being secured to the disk 90 between inner ring 184 and second inner ring 196.. In other embodiments, the support 200 can be secured directly to the bowl 36 at, for example, the floor 176 of the bowl 36. Filter support 200 can be permanently secured to the disk 90 through a variety of techniques including adhesive, press-fit, staking, welding; or, the support 200 and the bowl 36 can be the same integral piece. In another embodiment, the disk 90 and the filter support 200 can be the

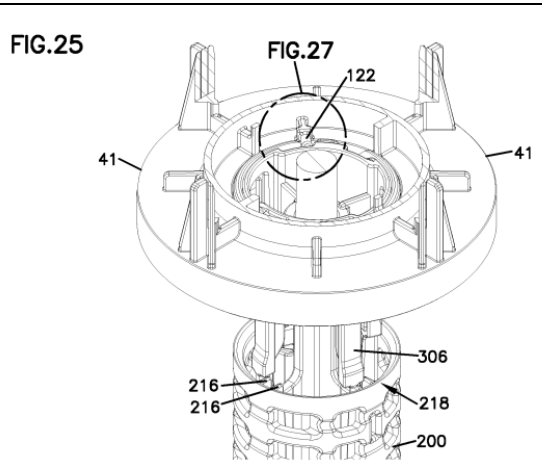
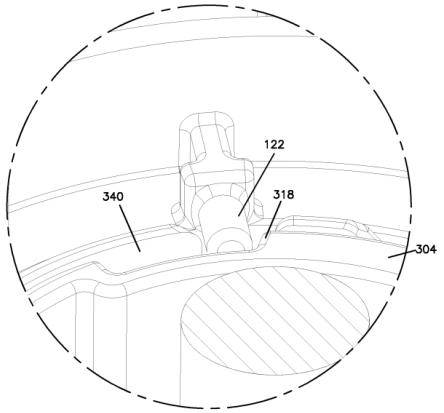
	same integral piece. In the embodiment illustrated, the inner filter support 200 includes a porous wall 208. The porous wall 208 defines a plurality of flow passages 210 (FIGS. 8, 9 and 18) therethrough. In use, the filter support 200 functions to help support the filter media 44 by lining the open filter interior 46 of the media 44, and the flow passages 210 allow for the filtered liquid to flow into a filtered liquid volume 212 (FIGS. 3 and 4) with in the porous wall 208. Honermann at 24:24-25:7: The first slide surface 314 of the first groove 312 is constructed and arranged to engage the filter cartridge 38 and rotate the basket 304 from the first locked position to the second locked position. This rotation of the basket 304 also exposes the second slide surface 318 of the second groove 316 to engagement with the filter cartridge 38. An example can be seen by comparing FIGS. 19 and 20. In FIG. 19, the basket 304 is in the first locked position. The first slide surface 314 is exposed to engagement with the filter cartridge 38. In particular, and as explained further below in Section K, the first slide surface 314 engages the first protrusion 121 of the filter cartridge 38. The third protrusion 123 will engage the other first slide surface 314, in preferred embodiments. The first protrusion 121 engages the first slide surface 314, which rotates the basket 304 clockwise when viewed from above. The basket 304 is rotated to the second locked position, depicted in FIG. 20. The second locked position then exposes the second slide surface 318. The second slide surface 318, in preferred embodiments, has the second protrusion 122 engage against it, which causes the basket 304 to further rotate clockwise, when viewed above, to the unlocked position as shown in FIG. 21. In preferred embodiments, the fourth protrusion 124 will engage the other second slide surface 318. Honermann at 31:16-32:12: During servicing, when a new filter cartridge 38 has been provided, the filter cartridge 38 is oriented in the bowl 36 by placing it through the open mouth 154. When 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. See FIGS. 19, 28, 29, and 30. In embodiments that have more than two protrusions, one possibility is that both the first protrusion 121 and the third protrusion 123 will engage a corresponding first slide surface 314 on the basket 304. As the first protrusion 121 engages this first slide surface 314, it causes the basket 304 to rotate against the spring 350. In preferred embodiments, the rotation will be less than 45 degrees, for example, 5-20 degrees. This rotates the basket 304 from the first locked position (FIGS. 19 and 30) to the second unlocked position (FIG. 20). The first groove 312 in the basket 304 become aligned with the first slot 360 of the basket holder 340, which will eventually allow the first

protrusion 121 to slide down. When the basket 304 is rotated to the second locked position (FIG. 20), this exposes the second slide surface 318. The second protrusion 122 is oriented such that it will contact or engage the second slide surface 318. The contact with the second slide surface 318 can be made through a protrusion located in the location of the fourth protrusion 124, as well. In embodiments that have protrusions at both locations of the second protrusion 122 and fourth protrusion 124, then both the second protrusion 122 and the fourth protrusion 124 will contact the corresponding second slide surface 318. The initial contact between the second protrusion 122 and the second slide surface 318 causes the basket 304 to rotate against the spring 350 from its second locked position to its unlocked position (FIG. 21). FIGS. 23, 25, and 27 illustrate engagement of the second protrusion 122 against the second slide surface 318. The rotation of the basket 304 from the second locked position (FIG. 20) to the unlocked position (FIG. 21) is preferably less than 45 degrees, for example, 5-20 degrees. Rotation to the unlocked position aligns second groove 316 and second slot 362, which will eventually allow axial sliding of the second protrusion 122 therein downwardly.

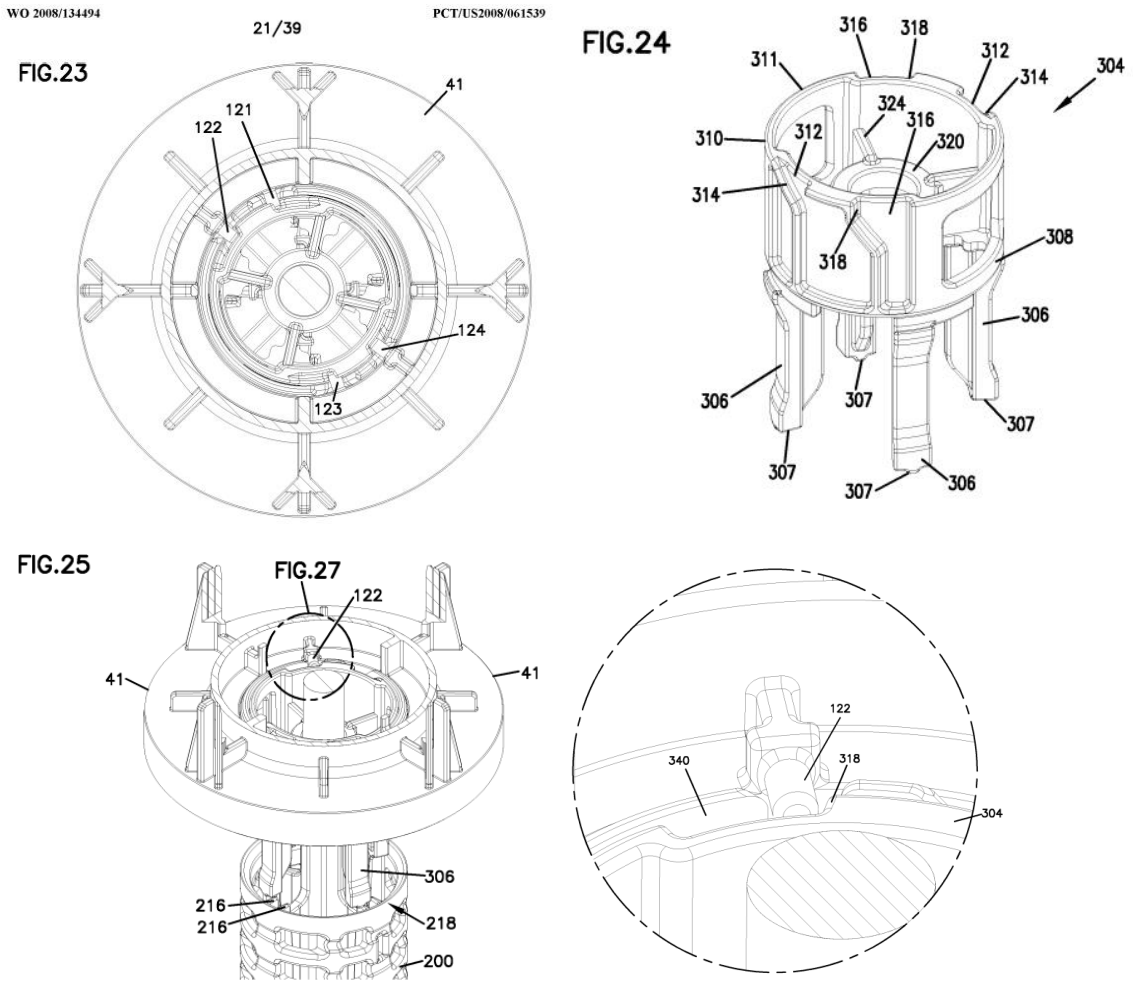
Honermann at Figs. 23-25, 27:





	  As one example, Honermann discloses the inclined plane (318) is formed integrally with the filter housing (200, 36).
Claim 8	
[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 the nose is formed integrally with one of the filter housing and the ring filter insert. *See, e.g.,* Honermann at 11:22-12:10: The first endcap 41, depicted, defines a first open aperture 50, which is in fluid communication with the open filter interior 46. The first endcap 41 further includes an axially-extending neck 52 protruding from an outward axial surface 54. The neck 52 defines a groove 56 along an outer radial surface 58 of the neck 52. Seated within the groove 56 along the radial surface 58 is a first seal member 60. The first seal member 60 forms a releasable seal 62 (FIG. 11) with an adaptor 64 when the filter cartridge 38 is operably assembled in the filter system 30 with the filter head 32 operably engaged with the filter bowl 36. The first endcap 41 defines an aperture wall 66 lining the first open aperture 50. The first open aperture 50 in the embodiment shown, is circular and defines an inner diameter. The neck 52 defines an inner radial surface 68 that is on an opposite side as the outer radial surface 58. In the embodiment shown, the first endcap 41 further defines a filter media holding section 70. The filter media holding section 70 is the portion of the first

	endcap 41 that is secured to the filter media 44 and contains the media 44 on radial sides thereof. In the embodiment shown, the filter media section 70 includes an inner media wall 72 defining an inner radial surface 74, which forms part of the aperture wall 66. The inner wall surface 74 of the inner media wall 72 is spaced radially inwardly relative to the neck inner radial surface 68. The filter media holding section 70 further includes an outer media wall 76 that circumscribes remaining portions of the first endcap 41. The first endcap 41 further includes other features, in the embodiment shown, and those features will be further described below after the second endcap 42 is described. Honermann at 14:7-20: The filter cartridge 38 further includes a protrusion arrangement 118 (FIG. 5) extending into the first open aperture 50. The protrusion arrangement 118 cooperates, in one embodiment with the lock-out arrangement described in Section K below. In the embodiment shown, the protrusion arrangement 118 includes at least first and second protrusions 121, 122 extending from the aperture wall 66 and into the first open aperture 50. By reviewing FIGS. 6 and 7, it can be seen how in the preferred embodiment, the first protrusion 121 is spaced from the second protrusion 122 in a vertical direction along the aperture wall 66. That is, in the embodiment shown, the first protrusion 121 is vertically lower than the second protrusion 122. By reviewing FIGS. 6 and 7, it can further be appreciated that the first protrusion 121 is circumferentially-spaced from the second protrusion 122 along the aperture wall 66. In preferred embodiments, the vertical distance between first and second protrusions is between 2-30% of the distance of the inner diameter of the first open aperture 50. Honermann at Figs. 23-25, 27:

	 As one example, Honermann discloses the nose (121, 122) is formed integrally with the ring filter insert (66, 41, 38).
Claim 9	
[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	Honermann in combination with Cline, and/or the background knowledge of a POSA, discloses 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.

plug which is one of rigidly connected to and rigidly arranged on the bottom front panel.	A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding this feature to Honermann and/or incorporating the teachings of Honermann into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0020]-[0021]: The filter apparatus 10 comprises a housing 16, as shown in FIGS. 1-3 and 6-7. A base 18 of the housing 16 is configured to be secured to the engine 12. A cover 20 of the housing 16 is configured to be secured to the base 18 via a threaded connection or other suitable connection. Together, the base 18 and the cover 20 define an interior region 22 (see FIG. 6) when the cover 20 is secured to the base 18. The base 18 comprises passageways of the interior region 22 to admit fluid into and discharge fluid from a filter chamber 23 (see FIG. 6) of the interior region 22. The base 18 comprises an inlet passageway 24 (see FIG. 3), a filtered fluid outlet passageway 26 (see FIGS. 3, 6, and 7), a bypass passageway 28 (see FIG. 3), and a quick-drain passageway 30 (see FIGS. 3, 6, and 7). The inlet passageway 24 admits unfiltered fluid into the filter chamber 23. The filtered fluid outlet passageway 26 discharges fluid filtered by the filter element 32 from the filter chamber 23. The bypass passageway 28 contains a bypass valve 34 (see FIG. 3) to discharge unfiltered fluid from the filter chamber 23 when, for example, the filter element 32 becomes clogged with contaminants and/or the fluid is somewhat thick due to, for example, cold weather. The quick-drain passageway 26 discharges fluid from the filter chamber 23 through a quick-drain outlet 36 (see FIGS. 6-7) when the filter element 32 is removed from the filter chamber 23. Cline at [0025]: The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in

	the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. Cline at [0027]-[0029]: The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64. The post 64 comprises a body 68, a head 70, and a neck 72 interconnecting the body 68 and the head 70, as shown in FIGS. 5-7. The body 68 is secured to and extends from the outwardly facing surface 62. The head 70 has a diameter less than a diameter of the body 68. The neck 72 has a diameter less than the diameters of the body 68 and the head 70. The body 68, the head 70, and the neck 72 cooperate to define an annular groove 74. The neck 72 defines a channel 76 extending through the neck 72. The flow blocker 66 surrounds the head 70 and the neck 72 and extends into the annular groove 74 and through the channel 76 to mount the flow blocker 66 to the post 64. The flow blocker 66 comprises a surface 78, as shown in FIGS. 4-7, for engaging the valve seat 60. The surface 78 and the valve seat 60 are, for example, frusto-conical in shape. The surface 78 engages the valve seat 60 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6, and disengages the valve seat 60 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. Cline at [0030]-[0035]: Another filter element 132 for use with the filter apparatus 10 is shown in FIGS. 8-11. The filter element 132 is similar in structure and function to the filter element 32, except as otherwise noted, so that identical reference numbers refer to similar structures.

	The filter element 132 is secured to a center tube 148, as shown in FIGS. 10-11. An end cap 142 of the filter element 132 is secured to, for example, a lower portion of the center tube 148 which extends in the filtered fluid region 50 to provide internal support to the filter media 38. Fingers 52 of the center tube 148 extend in the annular groove 54 formed in the cover 20 for movement therein during assembly and disassembly of the filter apparatus 10. A seal 144 is secured to the end cap 142 for engagement with the outlet post 46 to block flow of fluid between the end cap 142 and the outlet post 46. A quick- drain valve member 156 shown in FIGS. 8-11 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 156 extends in the valve chamber 58 and engages the valve seat 60 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 132 is positioned in the interior region 22, as shown in FIG. 10. In particular, when the filter element 132 is positioned in the filter chamber 23, the quick-drain valve member 156 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 156 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 to the fluid reservoir 14 when the filter element 132 is removed from the interior region 22, as shown in FIG. 11. In particular, when the filter element 132 is removed from the filter chamber 23, the quick-drain valve member 156 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. The quick- drain valve member 156 is secured to and extends from the an outwardly facing surface 162 of the end cap 142, as shown in FIGS. 8-11. The quick-drain valve member 156 is axially spaced apart from the center tube 148. The quick- drain valve member 156 comprises a retainer 180, a flow blocker carrier 182, and a flow blocker 184, as shown in FIGS. 9-11. The retainer 180 is secured to and extends from the outwardly facing surface 162. The flow blocker carrier 182 is secured to the retainer 180 for movement relative thereto. 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. The flow blocker 184 is made of, for example, an elastomeric material. The retainer 180 and the flow blocker 184 define a proximal end portion and a distal end portion, respectively, of the quick-drain valve member 156. A biasing element such as a spring 186 (see FIGS. 9-11) is captured within the retainer 180 and the flow blocker carrier 182. The spring 186 biases the flow blocker carrier 182 away from the outwardly facing surface 162 to press the flow blocker 184 against the valve seat 60. The spring 186 is configured to compress in response to engagement between the flow blocker 184 and the valve seat 60. In this way, the spring 186 accommodates dimensional variations between

components of the filter apparatus 10 due to, for example, manufacturing tolerances and thermal expansion. The spring 51 is thus omitted from the filter apparatus 10 when the spring 186 is present.

Cline at Fig. 3:

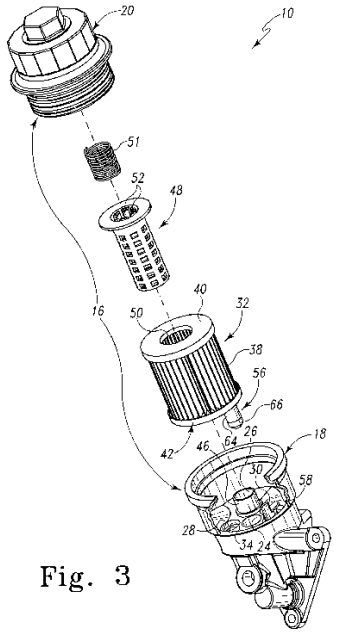


Fig. 3

Cline at Figs. 4-5:

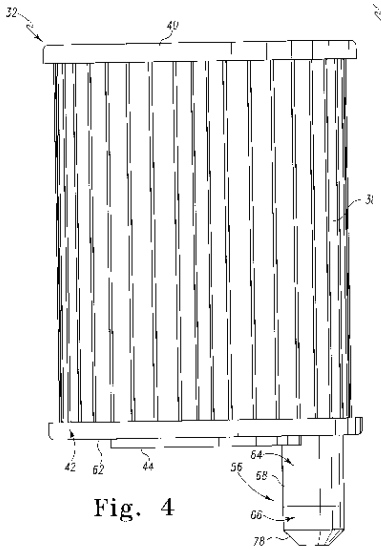


Fig. 4

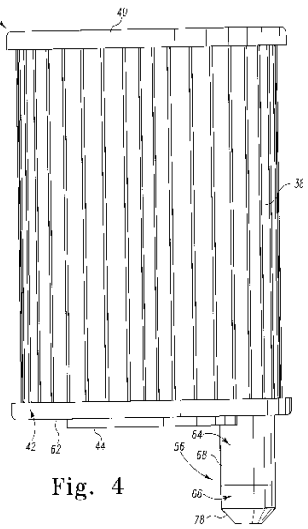


Fig. 4

Cline at Figs. 8-9:

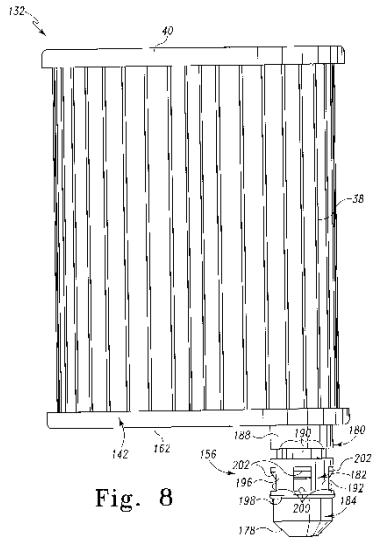


Fig. 8

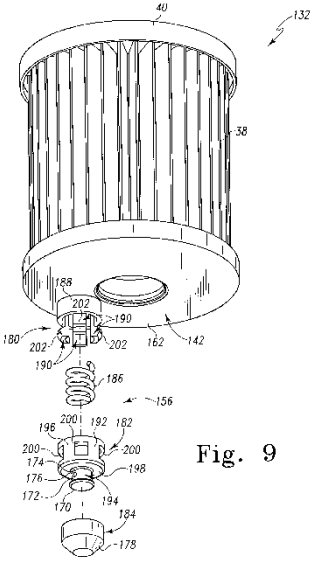


Fig. 9

	As one example, Honermann in combination with Cline discloses the blocking element (Cline 56) is a radially sealing plug which is rigidly arranged on the bottom front panel (Cline 42). Moreover, it would have been obvious to combine Honermann with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding these features to Honermann and/or incorporating the teachings of Honermann into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown

	has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
Claim 10	
[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.	Honermann in combination with Cline, and/or the background knowledge of a POSA, discloses the blocking element is an axially sealing valve element which is elastically arranged on the bottom front panel.

	A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding this feature to Honermann and/or incorporating the teachings of Honermann into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0027]: The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64. For example, Honermann in combination with Cline discloses the blocking element (Cline 56) is an axially sealing valve element (Cline 66) which is elastically arranged on the bottom front panel (Cline 42) (*see* Cline [0027] "[t]he flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64"). Moreover, it would have been obvious to combine Honermann with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a

	reasonable expectation of success in adding these features to Honermann and/or incorporating the teachings of Honermann into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

	The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
Claim 11	
[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.	Honermann in combination with Cline, and/or the background knowledge of a POSA, discloses 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. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding this feature to Honermann and/or incorporating the teachings of Honermann into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0025]: The quick- drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the

	interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. For example, Honermann in combination with Cline discloses the outlet (Cline 36) comprises a seat (Cline 60) which is one of incorporated on a side of the filter housing (Cline 18) and is inserted as a separate part and which conforms to a shape of the blocking element (Cline 66, 56). Moreover, it would have been obvious to combine Honermann with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding these features to Honermann and/or incorporating the teachings of Honermann into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine,

which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine.

The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

Brisson at [0050]:

Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends

	axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
Claim 12	
[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.	Honermann discloses 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. *See, e.g.*, Honermann at 19:20-20:6: One embodiment of a porous inner filter support 200 is illustrated in various FIGS, including, for example, FIGS. 3, 4, 8, 9, 11, and 18. Portions of the filter support 200 can be seen in several of the other figures. The porous inner filter support 200 is oriented within the open filter interior 46 (FIG. 6) of the filter cartridge 38. Further, in the embodiment shown, the porous inner filter support 200 is oriented within the open interior volume 152 of the bowl 36. In the specific embodiment illustrated, the inner filter support 200 is secured to the filter bowl 36 by being secured to the disk 90 between inner ring 184 and second inner ring 196.. In other embodiments, the support 200 can be secured directly to the bowl 36 at, for example, the floor 176 of the bowl 36. Filter support 200 can be permanently secured to the disk 90 through a variety of techniques including adhesive, press-fit, staking, welding; or, the support 200 and the bowl 36 can be the same integral piece. In another embodiment, the disk 90 and the filter support 200 can be the same integral piece. In the embodiment illustrated, the inner filter support 200 includes a porous wall 208. The porous wall 208 defines a plurality of flow passages 210 (FIGS. 8, 9 and 18) therethrough. In use, the filter support 200 functions to help support the filter media 44 by lining the open filter interior 46 of the media 44, and the flow passages 210 allow for the filtered liquid to flow into a filtered liquid volume 212 (FIGS. 3 and 4) with in the porous wall 208. Honermann at 24:24-25:7: The first slide surface 314 of the first groove 312 is constructed and arranged to engage the filter cartridge 38 and rotate the basket 304 from the first locked position to the second locked position.

	This rotation of the basket 304 also exposes the second slide surface 318 of the second groove 316 to engagement with the filter cartridge 38. An example can be seen by comparing FIGS. 19 and 20. In FIG. 19, the basket 304 is in the first locked position. The first slide surface 314 is exposed to engagement with the filter cartridge 38. In particular, and as explained further below in Section K, the first slide surface 314 engages the first protrusion 121 of the filter cartridge 38. The third protrusion 123 will engage the other first slide surface 314, in preferred embodiments. The first protrusion 121 engages the first slide surface 314, which rotates the basket 304 clockwise when viewed from above. The basket 304 is rotated to the second locked position, depicted in FIG. 20. The second locked position then exposes the second slide surface 318. The second slide surface 318, in preferred embodiments, has the second protrusion 122 engage against it, which causes the basket 304 to further rotate clockwise, when viewed above, to the unlocked position as shown in FIG. 21. In preferred embodiments, the fourth protrusion 124 will engage the other second slide surface 318. Honermann at 31:16-32:12: During servicing, when a new filter cartridge 38 has been provided, the filter cartridge 38 is oriented in the bowl 36 by placing it through the open mouth 154. When 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. See FIGS. 19, 28, 29, and 30. In embodiments that have more than two protrusions, one possibility is that both the first protrusion 121 and the third protrusion 123 will engage a corresponding first slide surface 314 on the basket 304. As the first protrusion 121 engages this first slide surface 314, it causes the basket 304 to rotate against the spring 350. In preferred embodiments, the rotation will be less than 45 degrees, for example, 5-20 degrees. This rotates the basket 304 from the first locked position (FIGS. 19 and 30) to the second unlocked position (FIG. 20). The first groove 312 in the basket 304 become aligned with the first slot 360 of the basket holder 340, which will eventually allow the first protrusion 121 to slide down. When the basket 304 is rotated to the second locked position (FIG. 20), this exposes the second slide surface 318. The second protrusion 122 is oriented such that it will contact or engage the second slide surface 318. The contact with the second slide surface 318 can be made through a protrusion located in the location of the fourth protrusion 124, as well. In embodiments that have protrusions at both locations of the second protrusion 122 and fourth protrusion 124, then both the second protrusion 122 and the fourth protrusion 124 will contact the corresponding second slide surface 318. The initial contact between the second protrusion 122 and the second slide surface 318 causes the basket 304 to rotate against the spring 350 from its second locked position to its unlocked position (FIG. 21). FIGS. 23, 25, and 27 illustrate engagement of the second protrusion 122 against the second slide surface 318. The rotation of the

basket 304 from the second locked position (FIG. 20) to the unlocked position (FIG. 21) is preferably less than 45 degrees, for example, 5-20 degrees. Rotation to the unlocked position aligns second groove 316 and second slot 362, which will eventually allow axial sliding of the second protrusion 122 therein downwardly.

Honermann at Figs. 23-25, 27:

FIG.23

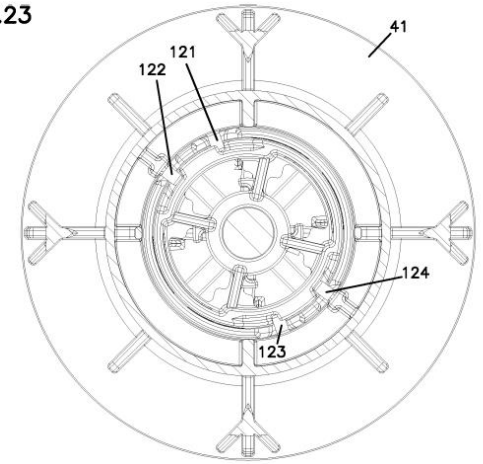


FIG.24

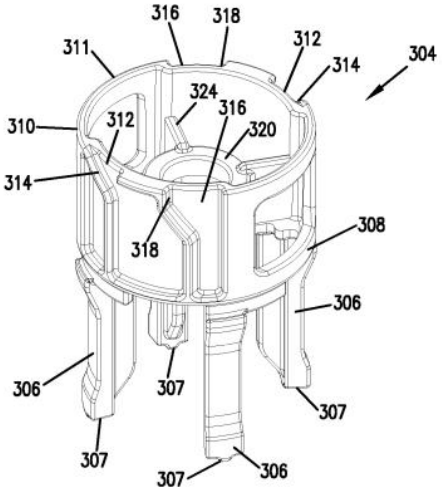


FIG.25

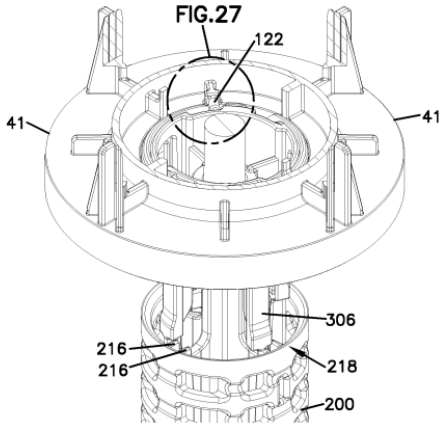
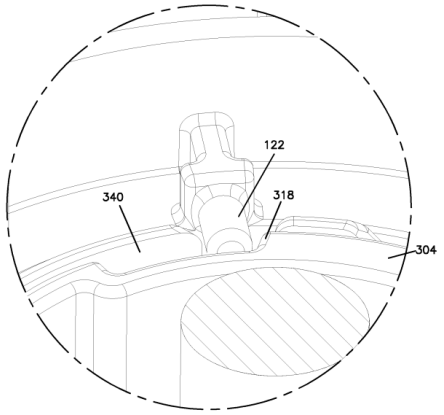
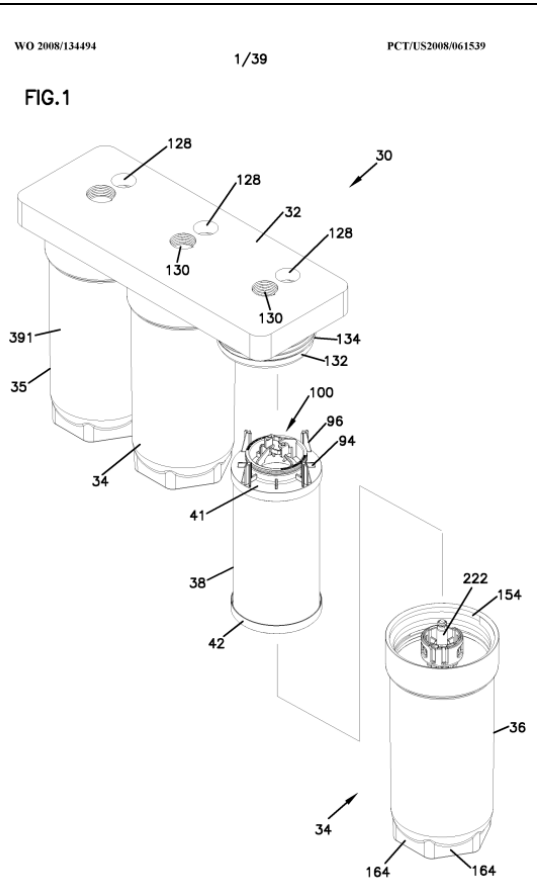
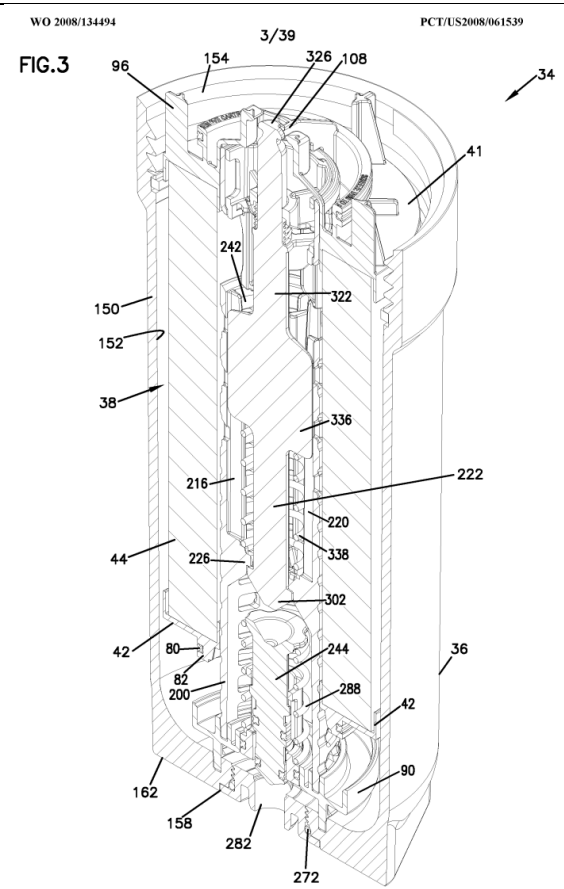


FIG.27

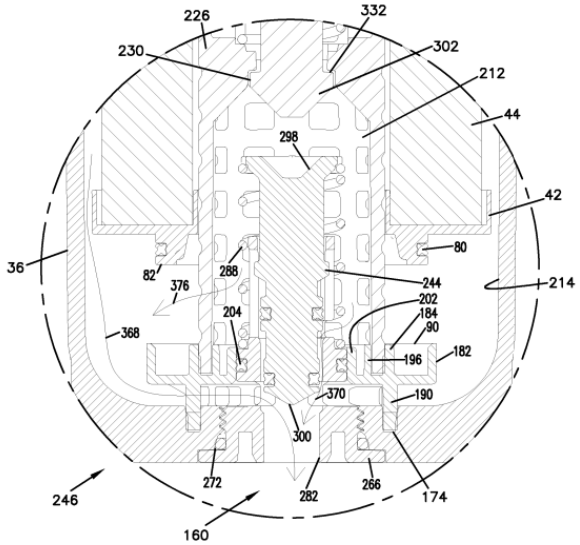


	As one example, Honermann discloses the filter housing part (200) arranged on the inside of the ring filter insert (38) comprises a pipe nozzle (200) which includes the return (130, 64) and which is integrally formed with the remaining filter housing (38).
Claim 15	
[15.pre] A hollow-cylindrical filter material body surrounded on front sides by top and bottom front panels and which can be replaceably arranged in a filter housing,	To the extent it is a limitation, Honermann discloses 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. *See, e.g.,* Honermann at 9:19-10:20. An example embodiment of a filtration system including a filter assembly and a filter head is depicted in FIGS. 1 -39. It should be realized that many examples are envisioned and not illustrated in the drawings. FIG. 1 shows a filter system 30, including a filter head 32 and a filter assembly 34. In the embodiment of FIG. 1, there is one common filter head 32 accommodating at least first and second filter assemblies 34. Also attached to the filter head 32 is a bypass filter assembly 35. The filter assemblies 34 are full-flow filters, while the filter assembly 35 is a bypass filter assembly. In FIG. 1, one of the filter assemblies 34 is shown in an exploded, perspective view as including filter bowl 36 and a removable and replaceable filter cartridge 38. Each of the filter assemblies 34, 35 is selectively connectable and mountable on the filter head 32. The filter head 32 is connected with other equipment, including a lubrication system of an engine, a fuel system for an engine, a hydraulic system for heavy-duty equipment, and generators for industrial use. In the embodiment illustrated, the filter assembly 34 includes features including a lock-out mechanism, an auto-drain valve mechanism, and a cartridge retention mechanism. Each of these features can be implemented independently of the other features. The particular embodiment illustrated in the drawings shows all three features integrated into the same filter assembly. One skilled in the art will appreciate that each feature can be implemented independently of the others. In general, the lock-out mechanism ensures that the filter system 30 is not accidentally operated with equipment without the filter cartridge 38 installed therein (see FIG. 39, for example). Furthermore, in the particular system 30, the lock-out mechanism helps to ensure that the filter cartridge that goes within the bypass filter assembly 35 is not mistakenly used with the filter cartridge of the full-flow filter assemblies 34. The equipment upon which the filter system 30 is mounted is protected by ensuring that the filter head 32 and the filter bowl 36 cannot be operably

	connected unless there is a filter cartridge 38 operably oriented within the filter bowl 36 (FIG. 39). It also protects the equipment by ensuring that the correct filter cartridge 38 is mounted within the filter bowl 36, rather than, for example, the bypass filter cartridge utilized in the bypass filter assembly 35. Details on an example lock-out mechanism are described in Section K of this disclosure. Honermann at 11:8-21: Reference is made to FIGS. 6 and 7, which illustrate one embodiment of filter cartridge 38 usable in this arrangement. In the embodiment shown, the filter cartridge 38 includes first and second opposite endcaps 41, 42 and a tubular construction of filter media 44 extending between the first and second endcaps 41, 42. In the embodiment shown, the media 44 is cylindrical in construction and defines an open filter interior 46. A variety of different types of media 44 can be used and will depend upon the particular fluid that is being filtered. In the embodiment shown, the media 44 is pleated media 48. The pleated media 48 can include cellulose, synthetic, and blends of synthetic and cellulose, for example. In general, fluid 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 46. In some systems, it will be possible to operate the filter system 30 in a reverse-flow manner, in which the liquid to be filtered flows from the open filter interior 46, through the media 44, and to a region outside of the media 44. Honermann at Figs. 1, 3:

	  For example, Honermann discloses a hollow-cylindrical filter material body (44) surrounded on front sides by top (41) and bottom (42) front panels and which can be replaceably arranged in a filter housing (36).
[15.a] an eccentric blocking element arranged on the bottom front panel for engaging an eccentric opening in the filter housing,	Honermann in combination with Cline, and/or the background knowledge of a POSA, discloses an eccentric blocking element arranged on the bottom front panel for engaging an eccentric opening in the filter housing. It would have been obvious to combine Honermann with Cline for the reasons discussed herein and in Defendant's cover pleading.

	A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding this feature to Honermann and/or incorporating the teachings of Honermann into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Honermann at 20:32-21:16: The filter system 30 depicted also has a drain-valve assembly 236 (FIG. 13) to allow liquid in the complete assembly to automatically be drained during the servicing of the system 30. The drain-valve assembly 236 can be implemented independently of other features in the example embodiment. For example, the drain valve assembly 236 can be implemented independently of the lock-out mechanism and cartridge retention mechanism 100. Attention is directed to FIGS. 12 and 13. In FIGS. 12 and 13, the filter cartridge 38 is operably positioned in the filter bowl 36, and the bowl 36 is fully-threaded on the filter head 32. In this condition, the drain-valve assembly 236 is in a sealed position 238. In the sealed position 238, there is in place a first plug seal 240 and a second plug seal 242. The drain-valve assembly 236 includes a plug 244. The plug 244 is movably oriented between the sealed position 238 (FIGS. 11 and 12) and a drainage position 246 (FIGS. 9 and 10, for example). The sealed position 238 includes the plug 244 blocking fluid flow between the interior volume 152 of the bowl 36 and the drainage aperture arrangement 160. The drainage position 246 includes the plug 244 being oriented relative to the bowl 36 to permit flow from the interior volume 152 of the bowl 36 through the drainage aperture arrangement 160. Honermann at Fig. 10:

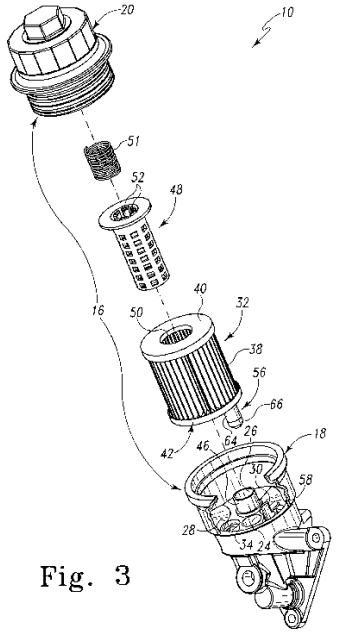


Cline at [0020]-[0021]:

The filter apparatus 10 comprises a housing 16, as shown in FIGS. 1-3 and 6-7. A base 18 of the housing 16 is configured to be secured to the engine 12. A cover 20 of the housing 16 is configured to be secured to the base 18 via a threaded connection or other suitable connection. Together, the base 18 and the cover 20 define an interior region 22 (see FIG. 6) when the cover 20 is secured to the base 18.

The base 18 comprises passageways of the interior region 22 to admit fluid into and discharge fluid from a filter chamber 23 (see FIG. 6) of the interior region 22. The base 18 comprises an inlet passageway 24 (see FIG. 3), a filtered fluid outlet passageway 26 (see FIGS. 3, 6, and 7), a bypass passageway 28 (see FIG. 3), and a quick-drain passageway 30 (see FIGS. 3, 6, and 7). The inlet passageway 24 admits unfiltered fluid into the filter chamber 23. The filtered fluid outlet passageway 26 discharges fluid filtered by the filter element 32 from the filter chamber 23. The bypass passageway 28 contains a bypass valve 34 (see FIG. 3) to discharge unfiltered fluid from the filter chamber 23 when, for example, the filter element 32 becomes clogged with contaminants and/or the fluid is somewhat thick due to, for example, cold weather. The quick-drain passageway 26 discharges fluid from the filter chamber 23 through a quick-drain outlet 36 (see FIGS. 6-7) when the filter element 32 is removed from the filter chamber 23.

	Cline at [0025]: The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. Cline at [0027]-[0029]: The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64. The post 64 comprises a body 68, a head 70, and a neck 72 interconnecting the body 68 and the head 70, as shown in FIGS. 5-7. The body 68 is secured to and extends from the outwardly facing surface 62. The head 70 has a diameter less than a diameter of the body 68. The neck 72 has a diameter less than the diameters of the body 68 and the head 70. The body 68, the head 70, and the neck 72 cooperate to define an annular groove 74. The neck 72 defines a channel 76 extending through the neck 72. The flow blocker 66 surrounds the head 70 and the neck 72 and extends into the annular groove 74 and through the channel 76 to mount the flow blocker 66 to the post 64. The flow blocker 66 comprises a surface 78, as shown in FIGS. 4-7, for engaging the valve seat 60. The surface 78 and the valve seat 60 are, for example, frusto-conical in shape. The surface 78 engages the valve seat 60 when the filter element 32 is positioned in the interior region 22, as

	shown in FIG. 6, and disengages the valve seat 60 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. Cline at Fig. 3:  Fig. 3

Cline at Figs. 4-7:

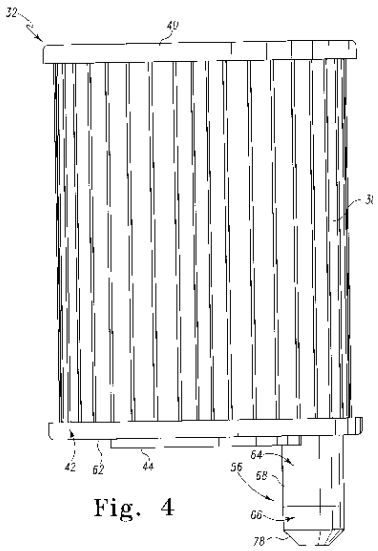


Fig. 4

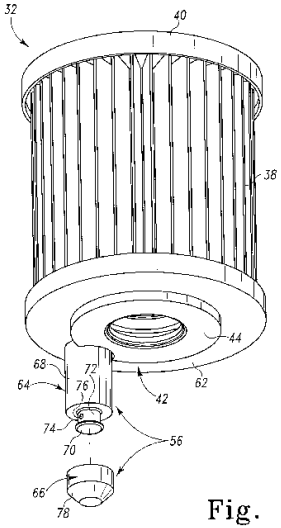


Fig. 5

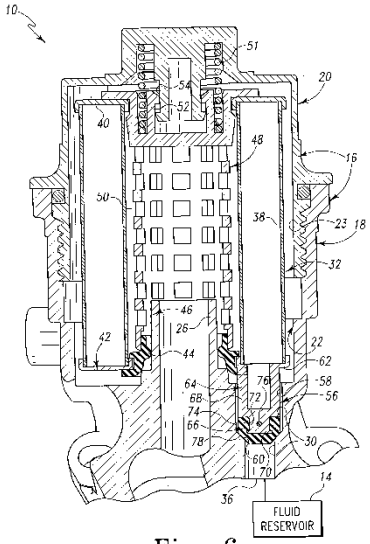


Fig. 6

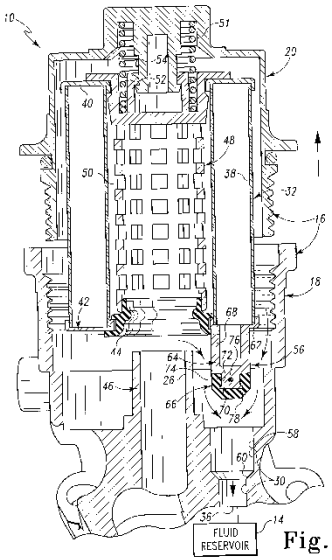


Fig. 7

	For example, Cline discloses an eccentric blocking element (56) arranged on the bottom front panel (42) for engaging an eccentric opening (58) in the filter housing (16, 18). Moreover, it would have been obvious to combine Honermann with one or more of the other references identified by Defendant as disclosing this limitation including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding these features to Honermann and/or incorporating the teachings of Honermann into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing. Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine,

which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine.

The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

Grass at [0033]-[0036]:

According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3

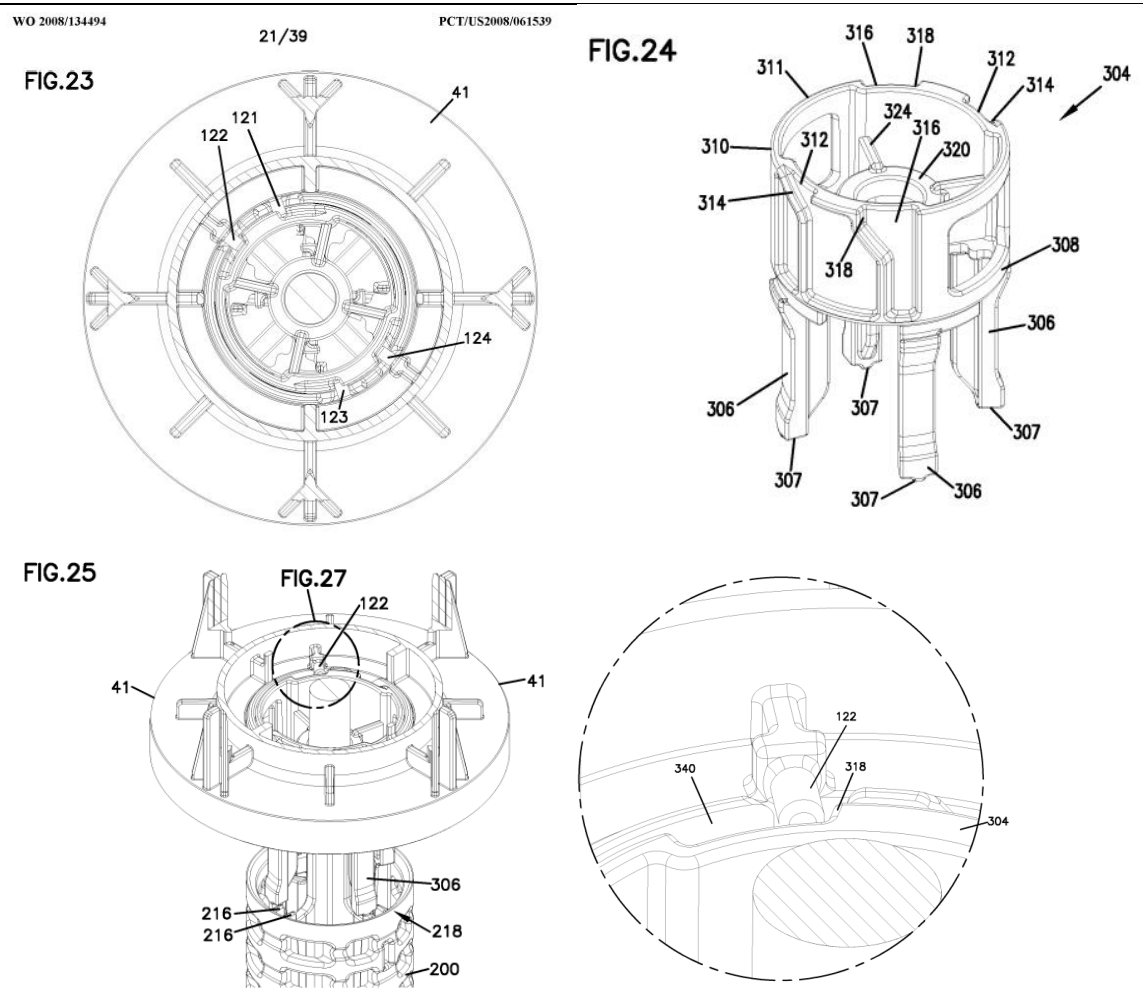
	is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified. If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function. To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the

	oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the

	risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
[15.b] 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,	Honermann in combination with Cline, and/or the background knowledge of a POSA, 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 which are arranged to bring the blocking element into engagement with the eccentric opening. It would have been obvious to combine Honermann with Cline for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make this combination for numerous reasons. For example, it was well known in the art to use a positioning means to ensure proper alignment of components in a filter assembly and/or that only the proper filter insert is installed on a filter housing. *See, e.g.*, US 2006/0219621, [0003] ("Published German patent application no. DE 4402836, for example, describes an arrangement in which the correct use of Suitable replacement parts is ensured by the fact that the respective part for attachment can be attached to the unit only according to a lock-and-key principle."), [0006] ("Another object of the invention is to provide a filter device which establishes a definitive correlation between the filter housing and an installed filter element."), [0007] ("A further object of the invention is to provide a filter device which prevents installation of an incorrect filter element."), [0028] ("If the element 23 rests against the element 24, then the pin-like appendages 30, 31 engage in passages of the written characters of the intermediate element 23 when in the correct position and thereby prevent a relative rotational movement between the two disks 23 and 24."). Such a positioning means also ensures a user need not visually align or guess at proper alignment through trial and error, potentially damaging the blocking element or incorrectly installing it. Thus there was common sense—and express—

	motivation in the art to use a positioning means to ensure proper alignment of components such as an eccentric blocking element within the filter housing. Moreover, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding this feature to Honermann and/or incorporating the teachings of Honermann into Cline as doing so involves no more than routine techniques well established in the mechanical arts. Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below. For example: Honermann at 24:24-25:7: The first slide surface 314 of the first groove 312 is constructed and arranged to engage the filter cartridge 38 and rotate the basket 304 from the first locked position to the second locked position. This rotation of the basket 304 also exposes the second slide surface 318 of the second groove 316 to engagement with the filter cartridge 38. An example can be seen by comparing FIGS. 19 and 20. In FIG. 19, the basket 304 is in the first locked position. The first slide surface 314 is exposed to engagement with the filter cartridge 38. In particular, and as explained further below in Section K, the first slide surface 314 engages the first protrusion 121 of the filter cartridge 38. The third protrusion 123 will engage the other first slide surface 314, in preferred embodiments. The first protrusion 121 engages the first slide surface 314, which rotates the basket 304 clockwise when viewed from above. The basket 304 is rotated to the second locked position, depicted in FIG. 20. The second locked position then exposes the second slide surface 318. The second slide surface 318, in preferred embodiments, has the second protrusion 122 engage against it, which causes the basket 304 to further rotate clockwise, when viewed above, to the unlocked position as shown in FIG. 21. In preferred embodiments, the fourth protrusion 124 will engage the other second slide surface 318. Honermann at 31:16-32:12:

	During servicing, when a new filter cartridge 38 has been provided, the filter cartridge 38 is oriented in the bowl 36 by placing it through the open mouth 154. When 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. See FIGS. 19, 28, 29, and 30. In embodiments that have more than two protrusions, one possibility is that both the first protrusion 121 and the third protrusion 123 will engage a corresponding first slide surface 314 on the basket 304. As the first protrusion 121 engages this first slide surface 314, it causes the basket 304 to rotate against the spring 350. In preferred embodiments, the rotation will be less than 45 degrees, for example, 5-20 degrees. This rotates the basket 304 from the first locked position (FIGS. 19 and 30) to the second unlocked position (FIG. 20). The first groove 312 in the basket 304 become aligned with the first slot 360 of the basket holder 340, which will eventually allow the first protrusion 121 to slide down. When the basket 304 is rotated to the second locked position (FIG. 20), this exposes the second slide surface 318. The second protrusion 122 is oriented such that it will contact or engage the second slide surface 318. The contact with the second slide surface 318 can be made through a protrusion located in the location of the fourth protrusion 124, as well. In embodiments that have protrusions at both locations of the second protrusion 122 and fourth protrusion 124, then both the second protrusion 122 and the fourth protrusion 124 will contact the corresponding second slide surface 318. The initial contact between the second protrusion 122 and the second slide surface 318 causes the basket 304 to rotate against the spring 350 from its second locked position to its unlocked position (FIG. 21). FIGS. 23, 25, and 27 illustrate engagement of the second protrusion 122 against the second slide surface 318. The rotation of the basket 304 from the second locked position (FIG. 20) to the unlocked position (FIG. 21) is preferably less than 45 degrees, for example, 5-20 degrees. Rotation to the unlocked position aligns second groove 316 and second slot 362, which will eventually allow axial sliding of the second protrusion 122 therein downwardly. Honermann at Figs. 23-25, 27:



Cline at [0025]:

The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve

	member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. As one example, Honermann in combination with Cline discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: first positioning means (Honermann 121, 122) on the ring filter insert (Honermann 38), which interact with second positioning means (Honermann 318) on the filter housing (Honermann 36) when the ring filter insert (Honermann 38) is inserted into the filter housing (Honermann 36) and which are arranged to bring the blocking element (Cline 56) into engagement with the eccentric opening (Cline 58). Moreover, it would have been obvious to combine Honermann with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding these features to Honermann and/or incorporating the teachings of Honermann into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0006]:

	The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing. Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

	The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Grass at [0033]-[0036]: According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified. If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function. To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This

	means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.

	Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
[15.c] 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,	Honermann discloses 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. Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below.

	See, e.g., Honermann at 24:24-25:7: The first slide surface 314 of the first groove 312 is constructed and arranged to engage the filter cartridge 38 and rotate the basket 304 from the first locked position to the second locked position. This rotation of the basket 304 also exposes the second slide surface 318 of the second groove 316 to engagement with the filter cartridge 38. An example can be seen by comparing FIGS. 19 and 20. In FIG. 19, the basket 304 is in the first locked position. The first slide surface 314 is exposed to engagement with the filter cartridge 38. In particular, and as explained further below in Section K, the first slide surface 314 engages the first protrusion 121 of the filter cartridge 38. The third protrusion 123 will engage the other first slide surface 314, in preferred embodiments. The first protrusion 121 engages the first slide surface 314, which rotates the basket 304 clockwise when viewed from above. The basket 304 is rotated to the second locked position, depicted in FIG. 20. The second locked position then exposes the second slide surface 318. The second slide surface 318, in preferred embodiments, has the second protrusion 122 engage against it, which causes the basket 304 to further rotate clockwise, when viewed above, to the unlocked position as shown in FIG. 21. In preferred embodiments, the fourth protrusion 124 will engage the other second slide surface 318. Honermann at 31:16-32:12: During servicing, when a new filter cartridge 38 has been provided, the filter cartridge 38 is oriented in the bowl 36 by placing it through the open mouth 154. When 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. See FIGS. 19, 28, 29, and 30. In embodiments that have more than two protrusions, one possibility is that both the first protrusion 121 and the third protrusion 123 will engage a corresponding first slide surface 314 on the basket 304. As the first protrusion 121 engages this first slide surface 314, it causes the basket 304 to rotate against the spring 350. In preferred embodiments, the rotation will be less than 45 degrees, for example, 5-20 degrees. This rotates the basket 304 from the first locked position (FIGS. 19 and 30) to the second unlocked position (FIG. 20). The first groove 312 in the basket 304 become aligned with the first slot 360 of the basket holder 340, which will eventually allow the first protrusion 121 to slide down. When the basket 304 is rotated to the second locked position (FIG. 20), this exposes the second slide surface 318. The second protrusion 122 is oriented such that it will contact or engage the second slide surface 318. The contact with the second slide surface 318

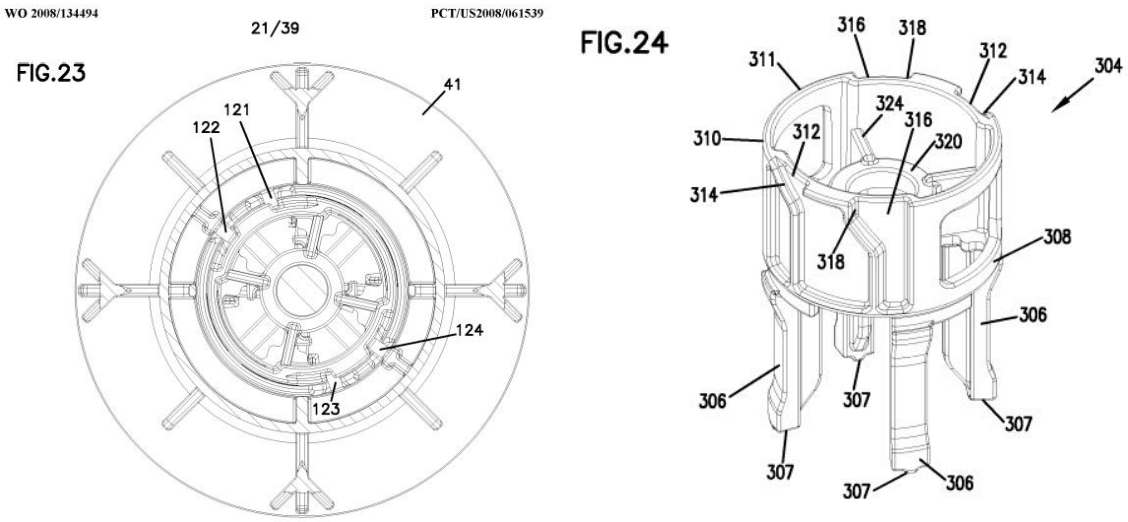
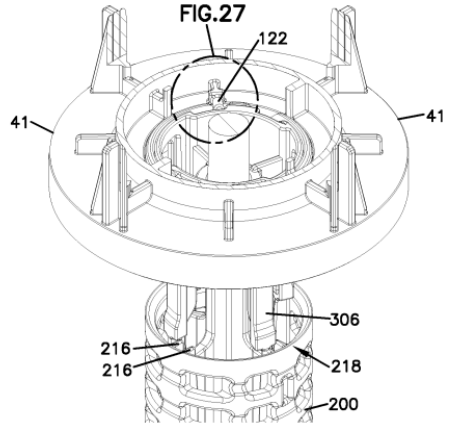
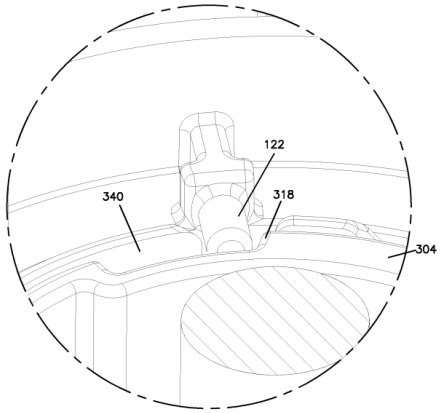
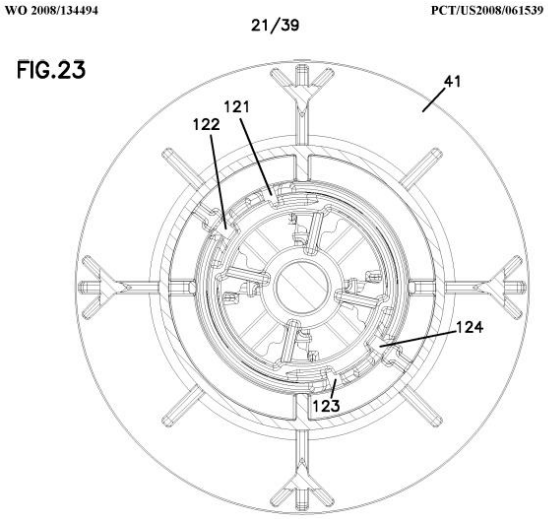
	can be made through a protrusion located in the location of the fourth protrusion 124, as well. In embodiments that have protrusions at both locations of the second protrusion 122 and fourth protrusion 124, then both the second protrusion 122 and the fourth protrusion 124 will contact the corresponding second slide surface 318. The initial contact between the second protrusion 122 and the second slide surface 318 causes the basket 304 to rotate against the spring 350 from its second locked position to its unlocked position (FIG. 21). FIGS. 23, 25, and 27 illustrate engagement of the second protrusion 122 against the second slide surface 318. The rotation of the basket 304 from the second locked position (FIG. 20) to the unlocked position (FIG. 21) is preferably less than 45 degrees, for example, 5-20 degrees. Rotation to the unlocked position aligns second groove 316 and second slot 362, which will eventually allow axial sliding of the second protrusion 122 therein downwardly. Honermann at Figs. 23-25, 27: 

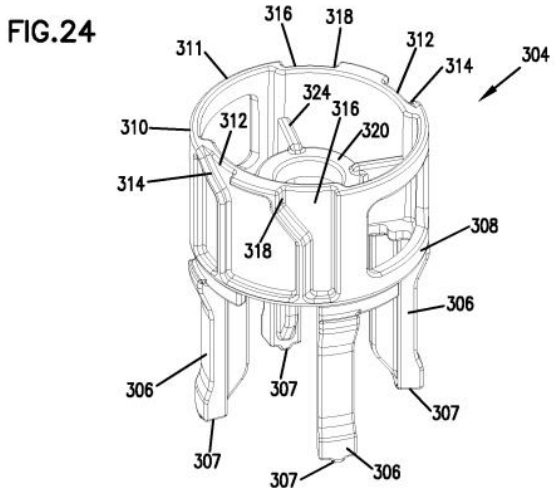
	FIG.25  FIG.27  As one example, Honermann discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: the first positioning means being a protruding nose (122), with the second positioning means being an inclined plane (318).
[15.d] 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,	Honermann in combination with Cline, and/or the background knowledge of a POSA, discloses 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. It would have been obvious to combine Honermann with Cline for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding this feature to Honermann and/or incorporating the teachings of Honermann into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.*,

	Honermann at 24:24-25:7: The first slide surface 314 of the first groove 312 is constructed and arranged to engage the filter cartridge 38 and rotate the basket 304 from the first locked position to the second locked position. This rotation of the basket 304 also exposes the second slide surface 318 of the second groove 316 to engagement with the filter cartridge 38. An example can be seen by comparing FIGS. 19 and 20. In FIG. 19, the basket 304 is in the first locked position. The first slide surface 314 is exposed to engagement with the filter cartridge 38. In particular, and as explained further below in Section K, the first slide surface 314 engages the first protrusion 121 of the filter cartridge 38. The third protrusion 123 will engage the other first slide surface 314, in preferred embodiments. The first protrusion 121 engages the first slide surface 314, which rotates the basket 304 clockwise when viewed from above. The basket 304 is rotated to the second locked position, depicted in FIG. 20. The second locked position then exposes the second slide surface 318. The second slide surface 318, in preferred embodiments, has the second protrusion 122 engage against it, which causes the basket 304 to further rotate clockwise, when viewed above, to the unlocked position as shown in FIG. 21. In preferred embodiments, the fourth protrusion 124 will engage the other second slide surface 318. Honermann at 31:16-32:12: During servicing, when a new filter cartridge 38 has been provided, the filter cartridge 38 is oriented in the bowl 36 by placing it through the open mouth 154. When 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. See FIGS. 19, 28, 29, and 30. In embodiments that have more than two protrusions, one possibility is that both the first protrusion 121 and the third protrusion 123 will engage a corresponding first slide surface 314 on the basket 304. As the first protrusion 121 engages this first slide surface 314, it causes the basket 304 to rotate against the spring 350. In preferred embodiments, the rotation will be less than 45 degrees, for example, 5-20 degrees. This rotates the basket 304 from the first locked position (FIGS. 19 and 30) to the second unlocked position (FIG. 20). The first groove 312 in the basket 304 become aligned with the first slot 360 of the basket holder 340, which will eventually allow the first protrusion 121 to slide down. When the basket 304 is rotated to the second locked position (FIG. 20), this exposes the second slide surface 318. The second protrusion 122 is oriented such that it will contact or engage the second slide surface 318. The contact with the second slide surface 318 can be made through a protrusion located in the location of the fourth protrusion 124, as well. In embodiments that have protrusions at both locations of the second protrusion 122 and fourth protrusion 124, then both the second protrusion 122 and the fourth protrusion 124 will contact the

corresponding second slide surface 318. The initial contact between the second protrusion 122 and the second slide surface 318 causes the basket 304 to rotate against the spring 350 from its second locked position to its unlocked position (FIG. 21). FIGS. 23, 25, and 27 illustrate engagement of the second protrusion 122 against the second slide surface 318. The rotation of the basket 304 from the second locked position (FIG. 20) to the unlocked position (FIG. 21) is preferably less than 45 degrees, for example, 5-20 degrees. Rotation to the unlocked position aligns second groove 316 and second slot 362, which will eventually allow axial sliding of the second protrusion 122 therein downwardly.

Honermann at Figs. 23-25, 27:





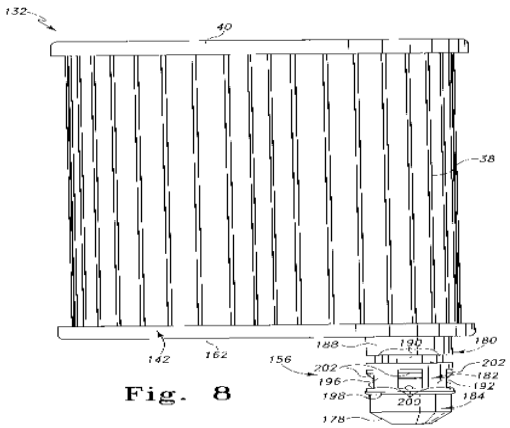
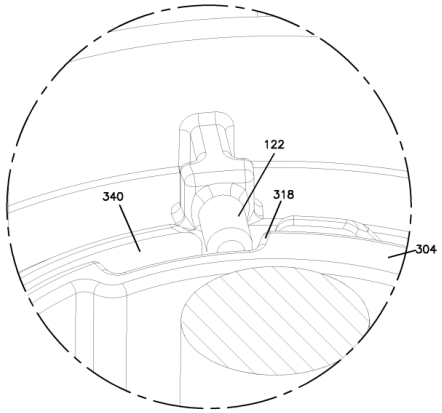


Fig. 8



Cline at [0025]:

The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14.

For example, Honermann in combination with Cline discloses the inclined plane (Honermann 318) and the nose (Honermann 121, 122) arranged to be moved in relation to each other in such a way that they slide along each other (*see* Honermann at 31:16-32:12) and bring the blocking element (Cline 56) into engagement with the eccentric opening (Cline 58), by rotating the ring filter insert relative to the filter housing (*see* Honermann at 31, “it causes the basket 304 to rotate”).

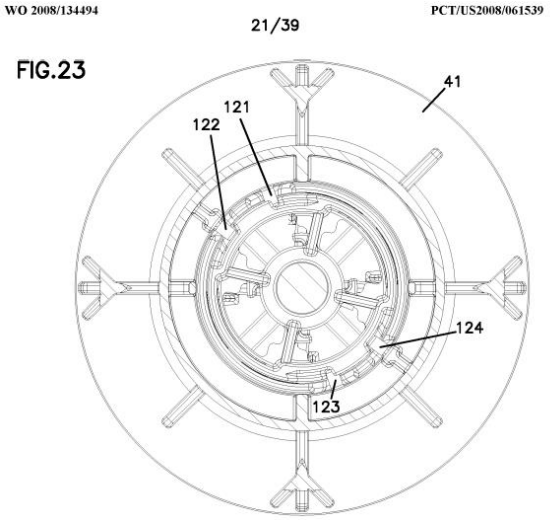
	Moreover, it would have been obvious to combine Honermann with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding these features to Honermann and/or incorporating the teachings of Honermann into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter

	element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
[15.e] the first positioning means being one of embodied and arranged on an inner circumference of the ring filter insert.	Honermann in combination with Cline, and/or the background knowledge of a POSA, discloses the first positioning means being one of embodied and arranged on an inner circumference of the ring filter insert. Based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, this term is subject to 35 U.S.C. § 112(6). The corresponding structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to, the exemplary disclosures described below.

	A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding this feature to Honermann and/or incorporating the teachings of Honermann into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Honermann at 24:24-25:7: The first slide surface 314 of the first groove 312 is constructed and arranged to engage the filter cartridge 38 and rotate the basket 304 from the first locked position to the second locked position. This rotation of the basket 304 also exposes the second slide surface 318 of the second groove 316 to engagement with the filter cartridge 38. An example can be seen by comparing FIGS. 19 and 20. In FIG. 19, the basket 304 is in the first locked position. The first slide surface 314 is exposed to engagement with the filter cartridge 38. In particular, and as explained further below in Section K, the first slide surface 314 engages the first protrusion 121 of the filter cartridge 38. The third protrusion 123 will engage the other first slide surface 314, in preferred embodiments. The first protrusion 121 engages the first slide surface 314, which rotates the basket 304 clockwise when viewed from above. The basket 304 is rotated to the second locked position, depicted in FIG. 20. The second locked position then exposes the second slide surface 318. The second slide surface 318, in preferred embodiments, has the second protrusion 122 engage against it, which causes the basket 304 to further rotate clockwise, when viewed above, to the unlocked position as shown in FIG. 21. In preferred embodiments, the fourth protrusion 124 will engage the other second slide surface 318. Honermann at 31:16-32:12: During servicing, when a new filter cartridge 38 has been provided, the filter cartridge 38 is oriented in the bowl 36 by placing it through the open mouth 154. When 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. See FIGS. 19, 28, 29, and 30. In embodiments that have more than two protrusions, one possibility is that both the first protrusion 121 and the third protrusion 123 will engage a corresponding first slide surface 314 on the basket

304. As the first protrusion 121 engages this first slide surface 314, it causes the basket 304 to rotate against the spring 350. In preferred embodiments, the rotation will be less than 45 degrees, for example, 5-20 degrees. This rotates the basket 304 from the first locked position (FIGS. 19 and 30) to the second unlocked position (FIG. 20). The first groove 312 in the basket 304 become aligned with the first slot 360 of the basket holder 340, which will eventually allow the first protrusion 121 to slide down. When the basket 304 is rotated to the second locked position (FIG. 20), this exposes the second slide surface 318. The second protrusion 122 is oriented such that it will contact or engage the second slide surface 318. The contact with the second slide surface 318 can be made through a protrusion located in the location of the fourth protrusion 124, as well. In embodiments that have protrusions at both locations of the second protrusion 122 and fourth protrusion 124, then both the second protrusion 122 and the fourth protrusion 124 will contact the corresponding second slide surface 318. The initial contact between the second protrusion 122 and the second slide surface 318 causes the basket 304 to rotate against the spring 350 from its second locked position to its unlocked position (FIG. 21). FIGS. 23, 25, and 27 illustrate engagement of the second protrusion 122 against the second slide surface 318. The rotation of the basket 304 from the second locked position (FIG. 20) to the unlocked position (FIG. 21) is preferably less than 45 degrees, for example, 5-20 degrees. Rotation to the unlocked position aligns second groove 316 and second slot 362, which will eventually allow axial sliding of the second protrusion 122 therein downwardly.

Honermann at Figs. 23-25, 27:



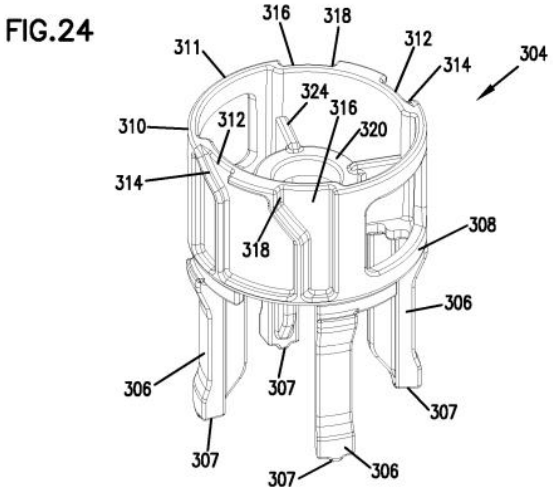


FIG.25

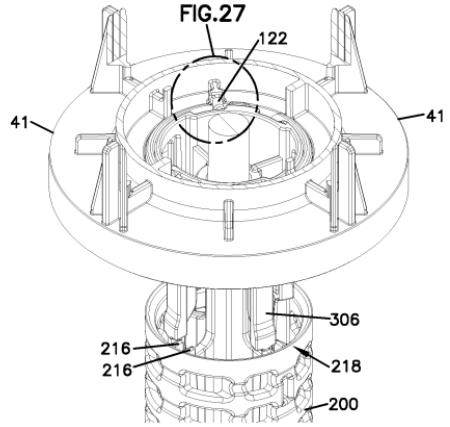
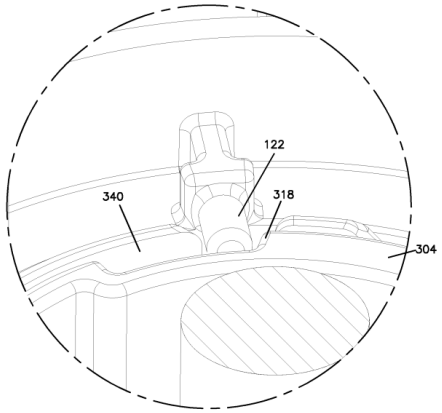


FIG.27



Cline at [0025]:

The quick-drain valve member 56 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 56 extends in a valve chamber 58 defined by the base 18 and engages a valve seat 60 of the base 18 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6. In particular, when the filter element 32 is positioned in the filter chamber 23, the quick-drain valve member 56 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 56 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 to the fluid reservoir 14 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. In particular, when the filter element 32 is removed from the filter chamber 23, the quick-drain valve member 56 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14.

As one example, Honermann in combination with Cline discloses that the structure that performs the function of bringing the blocking element into engagement with the eccentric opening includes, but is not limited to: the first positioning means being a protruding nose (Honermann 121, 122) and arranged on an inner circumference (Honermann 41) of the ring filter insert (Honermann 38).

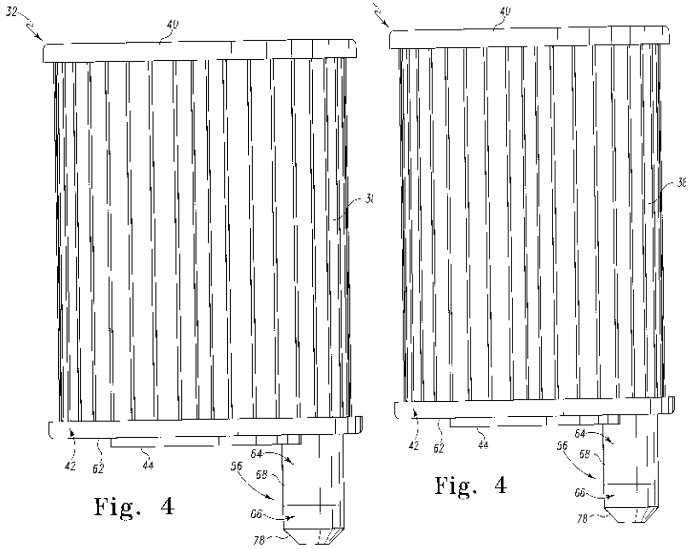
	Moreover, it would have been obvious to combine Honermann with one or more of the other references identified by Defendant as disclosing this limitation, including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading. A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding these features to Honermann and/or incorporating the teachings of Honermann into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with

	the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11. The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 . The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 . Brisson at [0050]: Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed.
Claim 16	
[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.	Honermann discloses 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. *See, e.g.*, claims 2, *supra*.
Claim 17	

[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.	Honermann discloses a guide for the nose which runs in an axial direction and is connected to a lower end of the inclined plane. *See, e.g.*, claims 3, *supra*.
Claim 19	
[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.	Honermann discloses 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. *See, e.g.*, claims 5, *supra*.
Claim 23	
[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.	Honermann discloses the nose is formed integrally with the bottom front panel of the ring filter insert. *See, e.g.*, claims 8, *supra*.
Claim 24	
[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.	Honermann in combination with Cline, and/or the background knowledge of a POSA, discloses 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. *See, e.g.*, claims 9, *supra*.
Claim 25	
[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.	Honermann in combination with Cline, and/or the background knowledge of a POSA, discloses the blocking element is an axially sealing valve element which is elastically arranged on the bottom front panel. *See, e.g.*, claims 10, *supra*.
Claim 28	
[28] The ring filter insert according to claim 15, wherein the blocking element is formed from two parts, the two parts of the blocking	Honermann in combination with Cline, and/or the background knowledge of a POSA, discloses the blocking element is formed from two parts, the two parts of the blocking element being

element being engaged with each other in a manner allowing a compensation of radial dimension tolerances and angle errors.	engaged with each other in a manner allowing a compensation of radial dimension tolerances and angle errors. A POSA would have motivation to make this combination for numerous reasons. For example, as disclosed in Cline, including an eccentric blocking element (*e.g.*, 56) has the benefit of allowing clogged or contaminated oil to be discharged when the filter insert is removed from the housing (*e.g.*, 16) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding this feature to Honermann and/or incorporating the teachings of Honermann into Cline as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Cline at [0027]-[0029]: The quick-drain valve member 56 comprises a post 64 and a flow blocker 66 secured to the post 64, as shown in FIGS. 3-7. The post 64 defines a proximal end portion of the quick-drain valve member 56, and the flow blocker 66 defines a distal end portion of the quick-drain valve member 56. Exemplarily, the post 64 and the end cap 42 are made of a plastic material and are monolithic with one another. It should be appreciated that the post 64 and the end cap 42 may be made discrete from one another. The flow blocker 66 is, for example, made of an elastomeric material and molded onto the post 64. The post 64 comprises a body 68, a head 70, and a neck 72 interconnecting the body 68 and the head 70, as shown in FIGS. 5-7. The body 68 is secured to and extends from the outwardly facing surface 62. The head 70 has a diameter less than a diameter of the body 68. The neck 72 has a diameter less than the diameters of the body 68 and the head 70. The body 68, the head 70, and the neck 72 cooperate to define an annular groove 74. The neck 72 defines a channel 76 extending through the neck 72. The flow blocker 66 surrounds the head 70 and the neck 72 and extends into the annular groove 74 and through the channel 76 to mount the flow blocker 66 to the post 64. The flow blocker 66 comprises a surface 78, as shown in FIGS. 4-7, for engaging the valve seat 60. The surface 78 and the valve seat 60 are, for example, frusto-conical in shape. The surface 78 engages the valve seat 60 when the filter element 32 is positioned in the interior region 22, as shown in FIG. 6, and disengages the valve seat 60 when the filter element 32 is removed from the interior region 22, as shown in FIG. 7. Cline at [0030]-[0035]:

	Another filter element 132 for use with the filter apparatus 10 is shown in FIGS. 8-11. The filter element 132 is similar in structure and function to the filter element 32, except as otherwise noted, so that identical reference numbers refer to similar structures. The filter element 132 is secured to a center tube 148, as shown in FIGS. 10-11. An end cap 142 of the filter element 132 is secured to, for example, a lower portion of the center tube 148 which extends in the filtered fluid region 50 to provide internal support to the filter media 38. Fingers 52 of the center tube 148 extend in the annular groove 54 formed in the cover 20 for movement therein during assembly and disassembly of the filter apparatus 10. A seal 144 is secured to the end cap 142 for engagement with the outlet post 46 to block flow of fluid between the end cap 142 and the outlet post 46. A quick- drain valve member 156 shown in FIGS. 8-11 controls flow of fluid through the quick-drain outlet 36. The quick-drain valve member 156 extends in the valve chamber 58 and engages the valve seat 60 to block a flow of fluid from the interior region 22 through the quick-drain outlet 36 to the fluid reservoir 14 when the filter element 132 is positioned in the interior region 22, as shown in FIG. 10. In particular, when the filter element 132 is positioned in the filter chamber 23, the quick-drain valve member 156 extends in the valve chamber 58 so as to block fluid flow from the interior region 22 to the fluid reservoir 14. The quick-drain valve member 156 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 to the fluid reservoir 14 when the filter element 132 is removed from the interior region 22, as shown in FIG. 11. In particular, when the filter element 132 is removed from the filter chamber 23, the quick-drain valve member 156 is removed from the valve chamber 58 thereby allowing fluid to advance from the interior region 22 to the fluid reservoir 14. The quick- drain valve member 156 is secured to and extends from the an outwardly facing surface 162 of the end cap 142, as shown in FIGS. 8-11. The quick-drain valve member 156 is axially spaced apart from the center tube 148. The quick- drain valve member 156 comprises a retainer 180, a flow blocker carrier 182, and a flow blocker 184, as shown in FIGS. 9-11. The retainer 180 is secured to and extends from the outwardly facing surface 162. The flow blocker carrier 182 is secured to the retainer 180 for movement relative thereto. 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. The flow blocker 184 is made of, for example, an elastomeric material. The retainer 180 and the flow blocker 184 define a proximal end portion and a distal end portion, respectively, of the quick-drain valve member 156.

	A biasing element such as a spring 186 (see FIGS. 9-11) is captured within the retainer 180 and the flow blocker carrier 182. The spring 186 biases the flow blocker carrier 182 away from the outwardly facing surface 162 to press the flow blocker 184 against the valve seat 60. The spring 186 is configured to compress in response to engagement between the flow blocker 184 and the valve seat 60. In this way, the spring 186 accommodates dimensional variations between components of the filter apparatus 10 due to, for example, manufacturing tolerances and thermal expansion. The spring 51 is thus omitted from the filter apparatus 10 when the spring 186 is present. Cline at Figs. 4-5:  Fig. 4 Fig. 4 Cline at Figs. 8-9:

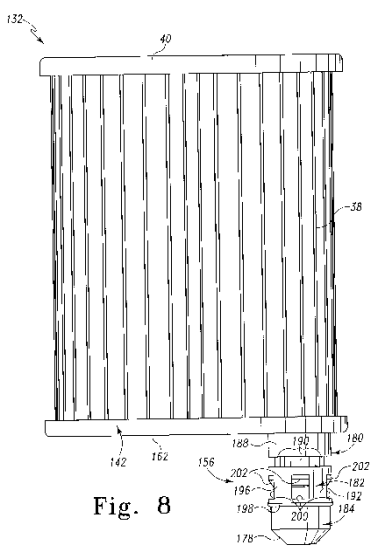


Fig. 8

Fig. 9

For example, Honermann in combination with Cline discloses the blocking element (Cline 156) is formed from two parts (Cline 180, 184), 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 (*see* Cline [0035] "for example, manufacturing tolerances and thermal expansion").

Moreover, it would have been obvious to combine Honermann with one or more of the other references identified by Defendant as disclosing this limitation including Grass or Brisson, for the reasons discussed herein and in Defendant's cover pleading.

A POSA would have motivation to make these combinations for numerous reasons. For example, as disclosed in Grass, including a pin (*e.g.*, 13) and a pin receptacle (*e.g.*, 14) has the benefit of detecting if the filter insert (*e.g.*, 3) is installed or removed from the filter housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. For example, as disclosed in Brisson, including an opening (*e.g.*, 8) and a plug (*e.g.*, 27) have the benefit of allowing clogged or contaminated oil to be discharged when the filter insert (*e.g.*, 9) is removed from the housing (*e.g.*, 2) and thus a POSA would be motivated to add this advantageous feature to the filter and housing of Honermann. A POSA would have a reasonable expectation of success in adding these features to Honermann and/or incorporating the

	teachings of Honermann into Grass or Brisson as doing so involves no more than routine techniques well established in the mechanical arts. *See, e.g.,* Grass at [0006]: The invention is based on the general idea of equipping the filter device with a signal transmitter which can detect and signal the presence or absence of the spigot and thus of a filter element equipped with the spigot. This information can, for example, be transmitted to vehicle electronics, for example to indicate to a driver that the filter element is missing. It is also fundamentally possible for the vehicle electronics to prevent the internal combustion engine from starting if there is no filter element. The proposed design can thus effectively prevent damage to the internal combustion engine caused by contaminants that could be introduced into the internal combustion engine if the filter element is missing. Grass at [0018]-[0021]: According to FIGS. 1 and 2 , a filter device 1 comprises a filter housing 2 which is designed to accommodate a filter element 3. The filter housing 2 has an inlet 4 on the raw side and an outlet 5 on the clean side. The filter device 1 is used to filter a liquid of an internal combustion engine, which can be arranged in particular in a motor vehicle. In particular, the filter device 1 serves to filter the lubricating oil of the internal combustion engine. In principle, an embodiment is also conceivable in which the filter device 1 serves to filter fuel or any other liquid of the internal combustion engine. The filter element 3 is preferably designed as a ring filter element and accordingly has an annular or cylindrical filter body 6. The filter body 6 consists of a conventional filter material such as. B. filter paper or filter fleece. At an axial end shown in FIGS. 1 and 2 , the filter element 3 has an end disk 7 which is connected to the filter body 6 in a liquid-tight manner. The end disk 7 can be welded or glued to the filter body 6 or connected in any other suitable manner. For example, the filter material of the filter body 6 can be plasticized into the end plate 7 . The end disk 7 shown has a central opening 8 so that it is an open end disk 7 here. At its other axial end, the filter element 3 can have a further end disk, which can be open or closed. The filter element 3 separates a raw space 9 from a clean space 10 in the filter housing 2. The raw room 9 communicates with the inlet 4 , while the clean room 10 communicates with the outlet 5 . In the example, the clean room 10 is formed in the interior of the filter element 3 enclosed by the filter body 6 . In the

example, the filter element 3 can thus be flown through radially from the outside to the inside. The filter housing 2 has a socket 11 onto which the open end plate 7 with its opening 8 can be plugged. The outlet 5 communicates with the interior of the filter element 3 , ie with the clean room 10 , through the socket 11 . A radial direction 36 is formed on the open end disk 7 and interacts with the socket 11.

The filter element 3 has a pin 13 that protrudes axially and eccentrically with respect to a longitudinal center axis 12 of the filter element 3 . This pin 13 is preferably formed on the end plate 7 . For example, the pin 13 is formed integrally on the end plate 7 . Likewise, the pin 13 can be fully or partially attached to the end plate 7 .

The housing 2 has a pin receptacle 14 . This is open to the raw room 9 . The filter housing 2 and filter element 3 are matched to one another in such a way that the pin 13 protrudes axially into the pin receptacle 14 or is inserted into it when the filter element 3 is correctly inserted into the filter housing 2 .

Grass at [0033]-[0036]:

According to FIGS. 1 and 2 , the housing 2 can have a ramp 30 . This is designed in the form of a circular path and leads to the pin receptacle 14 . For this purpose, the ramp 30 falls helically towards the pin receptacle 14 . The pin 13 can slide along the ramp 30 when the filter element 3 is screwed in. With the aid of the ramp 30, the insertion of the pin 13 into the pin receptacle 14 is considerably simplified.

If the filter housing 2 is equipped with such a ramp 30, a special embodiment explained in more detail in FIGS. 6 to 8 can also be implemented. In these special embodiments, the ramp 30 and the pin 13 are designed and matched to one another in such a way that they work together according to the key-lock principle. This lock and key principle has the effect that only those filter elements 3 can be properly used with the filter device 1 in which the pin 13 is specially adapted to the ramp 30 . Proper use, which is relevant here, means that the pin 13 automatically finds the pin receptacle 14 when it is attached or when the filter element 3 is rotated and penetrates into it. If the filter element 3 is not specially adapted to the filter device 1, the lock and key principle prevents the pin 13 that may be present from being able to automatically find the pin receptacle 14 when the filter element 3 is screwed on or screwed in. This is intended to ensure that only filter elements 3 that have been precisely adapted for the filter device 1 can be used, for example in order to be able to ensure a proper filtering function.

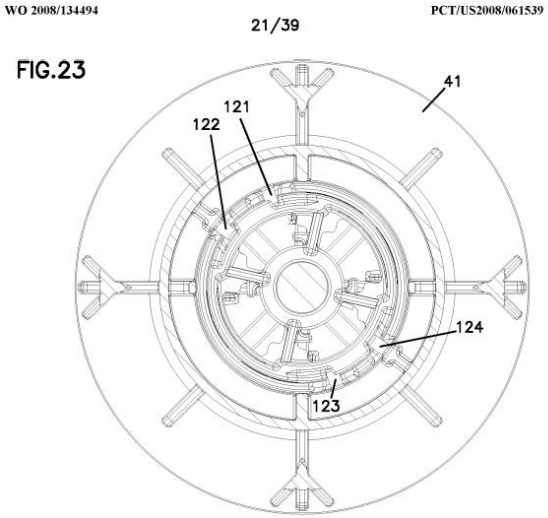
	To implement this lock and key principle, an insertion contour with guide bodies 32 can be provided according to FIGS. A pin 13 sliding along the ramp 30 can only reach the pin receptacle 14 if it has a projection 33 adapted to this guide body 32 and protruding axially from the respective pin 13 . This projection 33 is, for example, a conical or pin-shaped or bar-shaped attachment that establishes contact between the pin 13 and the ramp 30 . This projection 33 is dimensioned axially in such a way that it can lift the pin 13 over the guide elements 32 . This means that the spigot 13 sliding over the projection 33 on the ramp 30 is spaced axially far enough from the guide bodies 32 that it can be aligned past the guide bodies 32 to the spigot receptacle 14 . According to FIGS. 6 to 8 , the projection 33 can contact the ramp 30 between the guide bodies 35 and thereby enable the pin 13 to slide off. According to FIG. 6, the guide elements 32 are arranged in the area of the lower end 34 of the ramp. The pin receptacle 14 is arranged in the circumferential direction between the lower end of the ramp 34 and an upper end of the ramp 35 , which slopes down along the ramp 30 to the lower end of the ramp 34 . Brisson at [0029]: To these ends, the invention relates, according to a first aspect, to an oil filter, in particular for an internal combustion engine of a motor vehicle, this filter defining a filtration chamber in which is housed a filter insert, the filtration being in fluid communication with a conduit for supplying the oil to be filtered and a conduit for discharging the filtered oil, this filter comprising a tank and a removable lid on this tank, the filter insert defining, in its active filtration position in the filtration enclosure an internal space and an external space, the internal space being in fluid communication with a filtered oil evacuation conduit and the external space being in fluid communication with the conduit supply of oil to be filtered, a drain channel being closed off when the cover is in the mounted position on the tank, this drain channel being open following the unscrewing of the cover, this filter comprising a plate provided with a tubular part sliding along the axis of the drain pipe for the filtered oil, this plate further comprising a projection sliding along the axis of the drain channel, the sliding of the tubular part and of the projection being obtained simultaneously when in place or removal of the lid on the tank, the sliding of the projection along the axis of the drain channel ensuring the closure of this channel, when the lid is in the closed position of the enclosure, and ensuring the opening of this drain channel, when the cover is removed from the tank. Brisson at [0050]:

	Therefore, the plate begins to move as soon as one begins to unscrew the cover and the plate 24 has the same amplitude of axial movement as the cover. Thus, the projection 27 which extends axially from the plate 24 to close the drain channel 8 also begins to move as soon as one begins to unscrew the cover 24 and also undergoes the same axial movement as the cover, which allows the drain channel to be quickly opened when the cover is unscrewed. Brisson at [0057]: Opposite the drain channel 8 and sliding in this drain channel 8, the plate 24 is provided with a projection 27 provided with sealing means, means whose structure will be described in detail later with reference to Figures 4 and 5. It is simply indicated for the moment that these means can be of radial or axial sealing. Brisson at [0063]: It should be noted that the opening of the drain channel is obtained shortly before, or substantially at the same time as the venting of the filtration enclosure. A small number of unscrewing turns may be enough to open the drain channel 8. Draining thus begins very early and before the cover 3 is completely unscrewed, the volume of oil contained in the filtration chamber is completely drained. Thus, when removing the filter insert 9, the risk of oil splashing on the operator and the risk of oil flowing on the outer walls of the filter housing and on the other engine components are considerably reduced. Brisson at [0064]: The elastic means such as compression spring 29 have the dual function of ensuring the movement of the plate 24 when the cover 3 is unscrewed and of pressing this plate 24 firmly against the filter insert 9, when the cover 3 is in the screwed position. on bowl 2. Brisson at [0080]: The drain channel 8 is closed off by the projection 27 of the plate 24, as shown in Figures 8 and 10.
Claim 29	

[29] The liquid filter according to claim 1, wherein the protruding nose protrudes radially.	Honermann discloses the protruding nose protrudes radially. *See, e.g.,* Honermann at 24:24-25:7: The first slide surface 314 of the first groove 312 is constructed and arranged to engage the filter cartridge 38 and rotate the basket 304 from the first locked position to the second locked position. This rotation of the basket 304 also exposes the second slide surface 318 of the second groove 316 to engagement with the filter cartridge 38. An example can be seen by comparing FIGS. 19 and 20. In FIG. 19, the basket 304 is in the first locked position. The first slide surface 314 is exposed to engagement with the filter cartridge 38. In particular, and as explained further below in Section K, the first slide surface 314 engages the first protrusion 121 of the filter cartridge 38. The third protrusion 123 will engage the other first slide surface 314, in preferred embodiments. The first protrusion 121 engages the first slide surface 314, which rotates the basket 304 clockwise when viewed from above. The basket 304 is rotated to the second locked position, depicted in FIG. 20. The second locked position then exposes the second slide surface 318. The second slide surface 318, in preferred embodiments, has the second protrusion 122 engage against it, which causes the basket 304 to further rotate clockwise, when viewed above, to the unlocked position as shown in FIG. 21. In preferred embodiments, the fourth protrusion 124 will engage the other second slide surface 318. Honermann at 31:16-32:12: During servicing, when a new filter cartridge 38 has been provided, the filter cartridge 38 is oriented in the bowl 36 by placing it through the open mouth 154. When 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. See FIGS. 19, 28, 29, and 30. In embodiments that have more than two protrusions, one possibility is that both the first protrusion 121 and the third protrusion 123 will engage a corresponding first slide surface 314 on the basket 304. As the first protrusion 121 engages this first slide surface 314, it causes the basket 304 to rotate against the spring 350. In preferred embodiments, the rotation will be less than 45 degrees, for example, 5-20 degrees. This rotates the basket 304 from the first locked position (FIGS. 19 and 30) to the second unlocked position (FIG. 20). The first groove 312 in the basket 304 become aligned with the first slot 360 of the basket holder 340, which will eventually allow the first protrusion 121 to slide down. When the basket 304 is rotated to the second locked position (FIG. 20), this exposes the second slide surface 318. The second protrusion 122 is oriented such that it

will contact or engage the second slide surface 318. The contact with the second slide surface 318 can be made through a protrusion located in the location of the fourth protrusion 124, as well. In embodiments that have protrusions at both locations of the second protrusion 122 and fourth protrusion 124, then both the second protrusion 122 and the fourth protrusion 124 will contact the corresponding second slide surface 318. The initial contact between the second protrusion 122 and the second slide surface 318 causes the basket 304 to rotate against the spring 350 from its second locked position to its unlocked position (FIG. 21). FIGS. 23, 25, and 27 illustrate engagement of the second protrusion 122 against the second slide surface 318. The rotation of the basket 304 from the second locked position (FIG. 20) to the unlocked position (FIG. 21) is preferably less than 45 degrees, for example, 5-20 degrees. Rotation to the unlocked position aligns second groove 316 and second slot 362, which will eventually allow axial sliding of the second protrusion 122 therein downwardly.

Honermann at Figs. 23-25, 27:



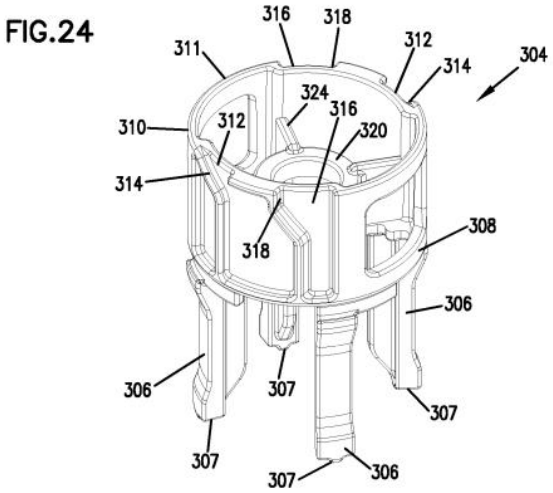


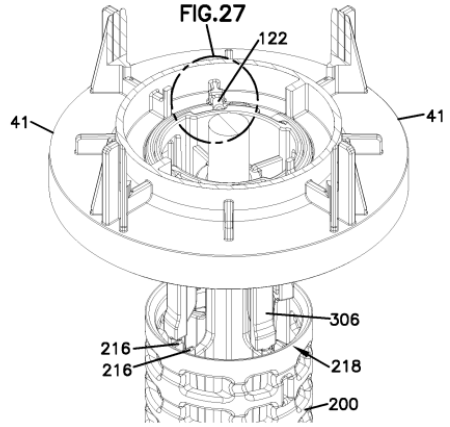
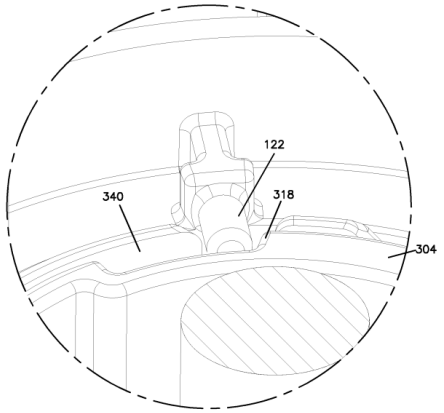
	FIG.25   For example, Honermann discloses the protruding nose (122) protrudes radially.
Claim 30	
[30] The ring filter insert according to claim 15, wherein the protruding nose protrudes radially.	Honermann discloses the protruding nose protrudes radially. *See, e.g.*, claims 29, *supra*.

Exhibit E – Invalidity of U.S. Patent No. 9,023,203 in view of Additional Prior Art

The following patents, printed publications, and/or systems qualify as prior art ("Additional Prior Art"), and, as of the alleged priority date of the U.S. Patent No. 9,023,203 (the "'203 patent"), all limitations of Asserted Claims of the '203 Patent were well known and common place in the art. Numerous patents and publications, including those identified in Exhibits A to D, render the claimed filter system obvious. Further, each of the Additional Prior Art in combination with one or more of the prior art identified in Exhibits A to D, including Cline, Brisson, or Grass, renders obvious under at least pre-AIA 35 U.S.C. s§ 103 at least as Champion understands Hengst's application of the Asserted Claims in an effort to show infringement.

- Germany Patent No. 9215351 to Held et al. ("Held"), filed November 11, 1992 and published December 24, 1992.
- European Patent No. 1555058 to Fremont et al. ("Fremont"), filed January 5, 2005 and published July 20, 2005.
- U.S. Patent Publication No. 2006/0054547 to Richmond et al. ("Richmond"), filed September 13, 2004 and published March 16, 2006.
- U.S. Patent Publication No. 2007/0000830 to Snider et al. ("Snider"), filed June 30, 2005 and published January 4, 2007.
- U.S. Patent Publication No. 2008/0053886 to Marshall et al. ("Marshall"), filed September 6, 2006 and published March 6, 2008.
- U.S. Patent Publication No. 2008/0245719 to Beard et al. ("Beard"), filed June 16, 2008 and published October 9, 2008.
- U.S. Patent Publication No. 2008/0277327 to Hersey et al. ("Hersey"), filed May 9, 2007 and published November 13, 2008.
- U.S. Patent No. 6,554,139 to Maxwell et al. ("Maxwell"), filed June 1, 2000 and issued April 29, 2003.
- U.S. Patent No. 7,022,228 to Hennes et al. ("Hennes"), filed August 2, 2002 and issued April 4, 2006.

A Person of Skill in the Art ("POSA") would have been motivated to combine these references, because they are in the same field, they are aimed at solving the same perceived problems in the art, the nature of the problem to be solved was the same, and there is express motivation in these references. Known design incentives and market forces would have also motivated one of ordinary skill to combine these references. Furthermore, one of skill in the art would understand that each limitation not expressly disclosed in Additional Prior Art would be was a standard implementation and an obvious design choice in the design of a filter by the priority date of the asserted patent. Such an implementation simply reflects one of a finite number of well-known techniques implemented in a predictable manner, to achieve well-known, predictable results.

The use of claim terms in the below chart is based on Hengst's construction of claim terms in its infringement contentions as understood by Champion, as well as the plain and ordinary meaning of the claim terms. This chart should not be construed as consenting to or agreeing with Hengst's construction of claim terms. Because discovery is ongoing and the claims have not yet been construed, Champion reserves all rights to amend its invalidity contentions based on discovery or on the Court's constructions.

Claim Element	Exemplary Disclosures
Claim 1	

1[pre] A liquid filter, comprising:	To the extent it is a limitation, Additional Prior Art discloses a liquid filter. *See, e.g.,* Held at [0006]-[0008], Fig. 1 and associated description. Fremont at Abstract. Richmond at Abstract, [0001]-[0003], Fig. 1 and associated description. Snider at [0001]-[0012], Fig. 1 and associated description. Marshall at [0001]-[0006], Fig. 1 and associated description. Beard at [0001]-[0012], Figs. 1-2 and associated description. Hersey at [0001]-[0010], Figs. 1-2 and associated description. Maxwell at 5:43-7:10, Figs. 2-3 and associated description. Hennes at 2:46-3:37, Figs. 1-2 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
1[a] a filter housing,	Additional Prior Art discloses a filter housing. *See, e.g.,* Held at [0057]-[0061], Fig. 1 and associated description. Fremont at Abstract. Richmond at Abstract, [0001]-[0003], Fig. 1 and associated description. Snider at [0001]-[0012], Fig. 1 and associated description.

	Marshall at [0001]-[0006], Fig. 1 and associated description. Beard at [0001]-[0012], Figs. 1-2 and associated description. Hersey at [0001]-[0010], Figs. 1-2 and associated description. Maxwell at 5:43-7:10, Figs. 2-3 and associated description. Hennes at 2:46-3:37, Figs. 1-2 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
1[b] a ring filter insert, replaceably arranged in the filter housing, and	Additional Prior Art discloses a ring filter insert, replaceably arranged in the filter housing. *See, e.g.*, Held at [0057]-[0061], Fig. 1 and associated description. Fremont at Abstract. Richmond at Abstract, [0001]-[0003], Fig. 1 and associated description. Snider at [0001]-[0012], Fig. 1 and associated description. Marshall at [0001]-[0006], Fig. 1 and associated description. Beard at [0001]-[0012], Figs. 1-2 and associated description. Hersey at [0001]-[0010], Figs. 1-2 and associated description. Maxwell at 5:43-7:10, Figs. 2-3 and associated description. Hennes at 2:46-3:37, Figs. 1-2 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.

1[c] a removable cover arranged to close the filter housing during operation,	Additional Prior Art discloses a removable cover arranged to close the filter housing during operation. *See, e.g.,* Held at [0057]-[0061], Fig. 1 and associated description. Fremont at Abstract, Fig. 1-2 and associated description. Richmond at [0030]-[0034], Fig. 1-2 and associated description. Snider at [0001]-[0012], Fig. 1 and associated description. Marshall at [0001]-[0006], Fig. 1 and associated description. Beard at [0001]-[0012], Figs. 1-2 and associated description. Hersey at [0001]-[0010], Figs. 1-2 and associated description. Maxwell at 5:43-7:10, Figs. 2-3 and associated description. Hennes at 2:46-3:37, Figs. 1-2 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
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	Additional Prior Art discloses 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. *See, e.g.,* Held at [0057]-[0061], Fig. 1 and associated description. Fremont at Abstract, Fig. 1-2 and associated description, [0016]-[0020]. Richmond at [0030]-[0034], Fig. 1-2 and associated description.

	Snider at [0001]-[0012], Fig. 1 and associated description. Marshall at [0012]-[0014], Figs. 2-3 and associated description. Beard at [0001]-[0012], Figs. 1-2 and associated description. Hersey at [0001]-[0010], Figs. 1-2 and associated description. Maxwell at 5:43-7:10, Figs. 2-3 and associated description. Hennes at 2:46-3:37, Figs. 1-2 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
1[e] a return extending from a clean side of the filter housing for filtered clean liquid,	Additional Prior Art discloses a return extending from a clean side of the filter housing for filtered clean liquid. *See, e.g.,* Held at [0057]-[0061], Fig. 1 and associated description. Fremont at Abstract, Fig. 1-2 and associated description, [0016]-[0020]. Richmond at [0030]-[0034], Fig. 1-2 and associated description. Snider at [0001]-[0012], Fig. 1 and associated description. Marshall at [0012]-[0014], Figs. 2-3 and associated description. Beard at [0001]-[0012], Figs. 1-2 and associated description. Hersey at [0001]-[0010], Figs. 1-2 and associated description. Maxwell at 5:43-7:10, Figs. 2-3 and associated description. Hennes at 2:46-3:37, Figs. 1-2 and associated description.

	See also, disclosures of this claim or claim element in Exhibits B-D.
1[f] an eccentric opening arranged in a bottom of the filter housing,	Additional Prior Art discloses an eccentric opening arranged in a bottom of the filter housing,. *See, e.g.,* Held at [0057]-[0061], Fig. 1 and associated description. Fremont at [0029]-[0031], [0067]-[0068], Figs. 2-3, 5 and associated description. Maxwell at 1:31-65, 6:19-23. *See also*, disclosures of this claim or claim element in Exhibits B-D.
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,	Additional Prior Art discloses 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. *See, e.g.,* Held at [0057]-[0061], Fig. 1 and associated description. Fremont at Abstract, Fig. 1-2 and associated description. Richmond at [0030]-[0034], Figs. 1-2 and associated description. Snider at [0001]-[0012], Fig. 1 and associated description. Marshall at [0001]-[0006], Fig. 1 and associated description. Beard at [0001]-[0012], Figs. 1-2 and associated description. Hersey at [0001]-[0010], Figs. 1-2 and associated description.

	Maxwell at 5:43-7:10, Figs. 2-3 and associated description. Hennes at 2:46-3:37, Figs. 1-2 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
1[h] an eccentric blocking element for the eccentric opening arranged on the bottom front panel,	Additional Prior Art discloses an eccentric blocking element for the eccentric opening arranged on the bottom front panel,. *See, e.g.,* Held at [0057]-[0061], Fig. 1 and associated description. Maxwell at 1:31-65, 6:19-23. *See also*, disclosures of this claim or claim element in Exhibits B-D.
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,	Additional Prior Art discloses 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. *See, e.g.,* Held at [0042], [0055], [0061]-[0062], fig. 1 and associated description. Fremont at [0083]-[0085], fig. 5 and associated description. Richmond at [0002]-[0006], [0035]-[0039], Figs 3-9, 11-15, and 17-25 and associated description. Snider at [0010]-[0011], [0035]-[0042], Figs. 4-8 and associated description.

	Marshall at [0026]-[0034], Figs. 2-4 and associated description. Beard at [0008]-[0012], [0085]-[0096], [0110]-[0111], [0139], [0148]-[0150], Figs. 12-16 and associated description. Hersey at [0041]-[0051], Figs. 4-15 and associated description. Maxwell at 3:20-4:10, 7:51-8:63, Figs. 4-8, 10-13 and associated description. Hennes at 1:45-2:16, 3:18-4:20, Figs. 2-4 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
1[j] the first positioning means comprising an inclined plane,	Additional Prior Art discloses the first positioning means comprising an inclined plane,. *See, e.g.*, Held at [0042], [0055], [0061]-[0062], fig. 1 and associated description. Fremont at [0083]-[0085], fig. 5 and associated description. Richmond at [0002]-[0006], [0035]-[0039], Figs 3-9, 11-15, and 17-25 and associated description. Snider at [0010]-[0011], [0035]-[0042], Figs. 4-8 and associated description. Marshall at [0026]-[0034], Figs. 2-4 and associated description. Beard at [0008]-[0012], [0085]-[0096], [0110]-[0111], [0139], [0148]-[0150], Figs. 12-16 and associated description. Hersey at [0041]-[0051], Figs. 4-15 and associated description. Maxwell at 3:20-4:10, 7:51-8:63, Figs. 4-8, 10-13 and associated description. Hennes at 1:45-2:16, 3:18-4:20, Figs. 2-4 and associated description.

	See also, disclosures of this claim or claim element in Exhibits B-D.
1[k] the second positioning means comprising a protruding nose which is arranged opposite the inclined plane, and	Additional Prior Art discloses the second positioning means comprising a protruding nose which is arranged opposite the inclined plane. *See, e.g.,* Held at [0042], [0055], [0061]-[0062], fig. 1 and associated description. Fremont at [0083]-[0085], fig. 5 and associated description. Richmond at [0002]-[0006], [0035]-[0039], Figs 3-9, 11-15, and 17-25 and associated description. Snider at [0010]-[0011], [0035]-[0042], Figs. 4-8 and associated description. Marshall at [0026]-[0034], Figs. 2-4 and associated description. Beard at [0008]-[0012], [0085]-[0096], [0110]-[0111], [0139], [0148]-[0150], Figs. 12-16 and associated description. Hersey at [0041]-[0051], Figs. 4-15 and associated description. Maxwell at 3:20-4:10, 7:51-8:63, Figs. 4-8, 10-13 and associated description. Hennes at 1:45-2:16, 3:18-4:20, Figs. 2-4 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
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,	Additional Prior Art discloses 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. *See, e.g.,*

	Held at [0042], [0055], [0061]-[0062], fig. 1 and associated description. Fremont at [0083]-[0085], fig. 5 and associated description. Richmond at [0002]-[0006], [0035]-[0039], Figs 3-9, 11-15, and 17-25 and associated description. Snider at [0010]-[0011], [0035]-[0042], Figs. 4-8 and associated description. Marshall at [0026]-[0034], Figs. 2-4 and associated description. Beard at [0008]-[0012], [0085]-[0096], [0110]-[0111], [0139], [0148]-[0150], Figs. 12-16 and associated description. Hersey at [0041]-[0051], Figs. 4-15 and associated description. Maxwell at 3:20-4:10, 7:51-8:63, Figs. 4-8, 10-13 and associated description. Hennes at 1:45-2:16, 3:18-4:20, Figs. 2-4 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
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,	Additional Prior Art discloses 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,. *See, e.g.*, Held at [0042], [0055], [0061]-[0062], fig. 1 and associated description. Fremont at [0083]-[0085], fig. 5 and associated description. Richmond at [0002]-[0006], [0035]-[0039], Figs 3-9, 11-15, and 17-25 and associated description.

	Snider at [0010]-[0011], [0035]-[0042], Figs. 4-8 and associated description. Marshall at [0026]-[0034], Figs. 2-4 and associated description. Beard at [0008]-[0012], [0085]-[0096], [0110]-[0111], [0139], [0148]-[0150], Figs. 12-16 and associated description. Hersey at [0041]-[0051], Figs. 4-15 and associated description. Maxwell at 3:20-4:10, 7:51-8:63, Figs. 4-8, 10-13 and associated description. Hennes at 1:45-2:16, 3:18-4:20, Figs. 2-4 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
1[n] the inclined plane comprising an incline which excludes a self-locking and	The specification lacks adequate written description support for and does not enable the POSA to practice the limitation "excludes a self-locking." The term is further indefinite as the POSA would not understand the scope of such term and what is included or excluded therein. Applying Hengst's apparent construction however, Additional Prior Art discloses the inclined plane comprising an incline which excludes a self-locking. *See, e.g.,* Held at [0042], [0055], [0061]-[0062], fig. 1 and associated description. Fremont at [0083]-[0085], fig. 5 and associated description. Richmond at [0002]-[0006], [0035]-[0039], Figs 3-9, 11-15, and 17-25 and associated description. Snider at [0010]-[0011], [0035]-[0042], Figs. 4-8 and associated description. Marshall at [0026]-[0034], Figs. 2-4 and associated description.

	Beard at [0008]-[0012], [0085]-[0096], [0110]-[0111], [0139], [0148]-[0150], Figs. 12-16 and associated description. Hersey at [0041]-[0051], Figs. 4-15 and associated description. Maxwell at 3:20-4:10, 7:51-8:63, Figs. 4-8, 10-13 and associated description. Hennes at 1:45-2:16, 3:18-4:20, Figs. 2-4 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
1[o] the eccentric opening being an outlet for emptying the filter housing when the filter insert is removed.	Additional Prior Art discloses the eccentric opening being an outlet for emptying the filter housing when the filter insert is removed. *See, e.g.,* Held at [0057]-[0061], Fig. 1 and associated description. Fremont at [0029]-[0031], [0067]-[0068], Figs. 2-3, 5 and associated description. Maxwell at 1:31-65, 6:19-23. *See also*, disclosures of this claim or claim element in Exhibits B-D.
Claim 2	
[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.	The subject matter of claim 2 as a whole would have been obvious in light of Additional Prior Art and the general background knowledge of the POSA. The POSA would have understood that implementing the inclined planes of Additional Prior Art by forming 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 was a simple design option and choice for implementing the inclines planes.

Claim 3	
[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.	Additional Prior Art discloses a guide for the nose which runs in an axial direction and is connected to a lower end of the inclined plane. *See, e.g.,* Held at [0042], [0055], [0061]-[0062], fig. 1 and associated description. Fremont at [0083]-[0085], fig. 5 and associated description. Marshall at [0026]-[0034], Figs. 2-4 and associated description. Beard at [0008]-[0012], [0085]-[0096], [0110]-[0111], [0139], [0148]-[0150], Figs. 12-16 and associated description. Hersey at [0041]-[0051], Figs. 4-15 and associated description. Hennes at 1:45-2:16, 3:18-4:20, Figs. 2-4 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
Claim 5	
[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.	Additional Prior Art discloses 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. *See, e.g.,* Held at [0042], [0055], [0061]-[0062], fig. 1 and associated description. Fremont at [0083]-[0085], fig. 5 and associated description. Marshall at [0026]-[0034], Figs. 2-4 and associated description. Beard at [0008]-[0012], [0085]-[0096], [0110]-[0111], [0139], [0148]-[0150], Figs. 12-16 and associated description.

	Hersey at [0041]-[0051], Figs. 4-15 and associated description. Hennes at 1:45-2:16, 3:18-4:20, Figs. 2-4 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
Claim 6	
[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.	Additional Prior Art discloses the inclined plane is formed integrally with one of the filter housing and the ring filter insert. *See, e.g.*, Held at [0042], [0055], [0061]-[0062], fig. 1 and associated description. Fremont at [0083]-[0085], fig. 5 and associated description. Richmond at [0002]-[0006], [0035]-[0039], Figs 3-9, 11-15, and 17-25 and associated description. Snider at [0010]-[0011], [0035]-[0042], Figs. 4-8 and associated description. Marshall at [0026]-[0034], Figs. 2-4 and associated description. Beard at [0008]-[0012], [0085]-[0096], [0110]-[0111], [0139], [0148]-[0150], Figs. 12-16 and associated description. Hersey at [0041]-[0051], Figs. 4-15 and associated description. Maxwell at 3:20-4:10, 7:51-8:63, Figs. 4-8, 10-13 and associated description. Hennes at 1:45-2:16, 3:18-4:20, Figs. 2-4 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.

Claim 8	
[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.	Additional Prior Art discloses the nose is formed integrally with one of the filter housing and the ring filter insert. *See, e.g.,* Held at [0042], [0055], [0061]-[0062], fig. 1 and associated description. Fremont at [0083]-[0085], fig. 5 and associated description. Richmond at [0002]-[0006], [0035]-[0039], Figs 3-9, 11-15, and 17-25 and associated description. Snider at [0010]-[0011], [0035]-[0042], Figs. 4-8 and associated description. Marshall at [0026]-[0034], Figs. 2-4 and associated description. Beard at [0008]-[0012], [0085]-[0096], [0110]-[0111], [0139], [0148]-[0150], Figs. 12-16 and associated description. Hersey at [0041]-[0051], Figs. 4-15 and associated description. Maxwell at 3:20-4:10, 7:51-8:63, Figs. 4-8, 10-13 and associated description. Hennes at 1:45-2:16, 3:18-4:20, Figs. 2-4 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
Claim 9	
[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.	Additional Prior Art discloses 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. *See, e.g.,*

	Held at [0057]-[0061], Fig. 1 and associated description. Maxwell at 1:31-65, 6:19-23. *See also*, disclosures of this claim or claim element in Exhibits B-D.
Claim 10	
[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.	Additional Prior Art discloses the blocking element is an axially sealing valve element which is elastically arranged on the bottom front panel. *See, e.g.*, Held at [0057]-[0061], Fig. 1 and associated description. Maxwell at 1:31-65, 6:19-23. *See also*, disclosures of this claim or claim element in Exhibits B-D.
Claim 11	
[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.	Additional Prior Art discloses 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. *See, e.g.*, Held at [0057]-[0061], Fig. 1 and associated description. Maxwell at 1:31-65, 6:19-23. *See also*, disclosures of this claim or claim element in Exhibits B-D.
Claim 12	
[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	Additional Prior Art discloses 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

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.	be movable in the remaining filter housing in axial direction, and is prestressed with a spring force in the direction of the cover. *See, e.g.*, Held at [0042], [0055], [0061]-[0062], fig. 1 and associated description. Richmond at [0002]-[0006], [0035]-[0039], Figs 3-9, 11-15, and 17-25 and associated description. Snider at [0010]-[0011], [0035]-[0042], Figs. 4-8 and associated description. Beard at [0008]-[0012], [0085]-[0096], [0110]-[0111], [0139], [0148]-[0150], Figs. 12-16 and associated description. Hersey at [0041]-[0051], Figs. 4-15 and associated description. Maxwell at 3:20-4:10, 7:51-8:63, Figs. 4-8, 10-13 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
Claim 15	
[15.pre] 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,	To the extent it is a limitation, Additional Prior Art discloses 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. *See, e.g.*, Held at [0057]-[0061], Fig. 1 and associated description. Fremont at Abstract, Fig. 1-2 and associated description. Richmond at [0030]-[0034], Figs. 1-2 and associated description. Snider at [0001]-[0012], Fig. 1 and associated description.

	Marshall at [0001]-[0006], Fig. 1 and associated description. Beard at [0001]-[0012], Figs. 1-2 and associated description. Hersey at [0001]-[0010], Figs. 1-2 and associated description. Maxwell at 5:43-7:10, Figs. 2-3 and associated description. Hennes at 2:46-3:37, Figs. 1-2 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
[15.a] an eccentric blocking element arranged on the bottom front panel for engaging an eccentric opening in the filter housing,	Additional Prior Art discloses an eccentric blocking element arranged on the bottom front panel for engaging an eccentric opening in the filter housing. It would have been obvious to combine Additional Prior Art with Cline for the reasons discussed herein and in Defendant's cover pleading. *See, e.g.,* Held at [0057]-[0061], Fig. 1 and associated description. Maxwell at 1:31-65, 6:19-23. *See also*, disclosures of this claim or claim element in Exhibits B-D.
[15.b] 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,	Additional Prior Art 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 which are arranged to bring the blocking element into engagement with the eccentric opening. It would have been obvious to combine Additional Prior Art with Cline for the reasons discussed herein and in Defendant's cover pleading. *See, e.g.,* Held at [0042], [0055], [0061]-[0062], fig. 1 and associated description.

	Fremont at [0083]-[0085], fig. 5 and associated description. Richmond at [0002]-[0006], [0035]-[0039], Figs 3-9, 11-15, and 17-25 and associated description. Snider at [0010]-[0011], [0035]-[0042], Figs. 4-8 and associated description. Marshall at [0026]-[0034], Figs. 2-4 and associated description. Beard at [0008]-[0012], [0085]-[0096], [0110]-[0111], [0139], [0148]-[0150], Figs. 12-16 and associated description. Hersey at [0041]-[0051], Figs. 4-15 and associated description. Maxwell at 3:20-4:10, 7:51-8:63, Figs. 4-8, 10-13 and associated description. Hennes at 1:45-2:16, 3:18-4:20, Figs. 2-4 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
[15.c] 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,	Additional Prior Art discloses 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. *See, e.g.,* Held at [0042], [0055], [0061]-[0062], fig. 1 and associated description. Fremont at [0083]-[0085], fig. 5 and associated description. Richmond at [0002]-[0006], [0035]-[0039], Figs 3-9, 11-15, and 17-25 and associated description. Snider at [0010]-[0011], [0035]-[0042], Figs. 4-8 and associated description.

	Marshall at [0026]-[0034], Figs. 2-4 and associated description. Beard at [0008]-[0012], [0085]-[0096], [0110]-[0111], [0139], [0148]-[0150], Figs. 12-16 and associated description. Hersey at [0041]-[0051], Figs. 4-15 and associated description. Maxwell at 3:20-4:10, 7:51-8:63, Figs. 4-8, 10-13 and associated description. Hennes at 1:45-2:16, 3:18-4:20, Figs. 2-4 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
[15.d] 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,	Additional Prior Art discloses 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. It would have been obvious to combine Additional Prior Art with Cline for the reasons discussed herein and in Defendant's cover pleading. *See, e.g.,* Held at [0042], [0055], [0061]-[0062], fig. 1 and associated description. Fremont at [0083]-[0085], fig. 5 and associated description. Richmond at [0002]-[0006], [0035]-[0039], Figs 3-9, 11-15, and 17-25 and associated description. Snider at [0010]-[0011], [0035]-[0042], Figs. 4-8 and associated description. Marshall at [0026]-[0034], Figs. 2-4 and associated description. Beard at [0008]-[0012], [0085]-[0096], [0110]-[0111], [0139], [0148]-[0150], Figs. 12-16 and associated description. Hersey at [0041]-[0051], Figs. 4-15 and associated description.

	Maxwell at 3:20-4:10, 7:51-8:63, Figs. 4-8, 10-13 and associated description. Hennes at 1:45-2:16, 3:18-4:20, Figs. 2-4 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
[15.e] the first positioning means being one of embodied and arranged on an inner circumference of the ring filter insert.	Additional Prior Art discloses the first positioning means being one of embodied and arranged on an inner circumference of the ring filter insert. *See, e.g.,* Held at [0042], [0055], [0061]-[0062], fig. 1 and associated description. Richmond at [0002]-[0006], [0035]-[0039], Figs 3-9, 11-15, and 17-25 and associated description. Snider at [0010]-[0011], [0035]-[0042], Figs. 4-8 and associated description. Hersey at [0041]-[0051], Figs. 4-15 and associated description. Maxwell at 3:20-4:10, 7:51-8:63, Figs. 4-8, 10-13 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
Claim 16	
[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.	Additional Prior Art discloses 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. *See, e.g.*, claims 2, *supra*.
Claim 17	
[17] The ring filter insert according to claim 15, including a guide for the nose which runs	Additional Prior Art discloses a guide for the nose which runs in an axial direction and is connected to a lower end of the inclined plane.

in an axial direction and is connected to a lower end of the inclined plane.	*See, e.g.*, claims 3, *supra*.
Claim 19	
[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.	Additional Prior Art discloses 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. *See, e.g.*, claims 5, *supra*.
Claim 23	
[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.	Additional Prior Art discloses the nose is formed integrally with the bottom front panel of the ring filter insert. *See, e.g.*, claims 8, *supra*.
Claim 24	
[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.	Additional Prior Art discloses 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. *See, e.g.*, claims 9, *supra*.
Claim 25	
[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.	Additional Prior Art discloses the blocking element is an axially sealing valve element which is elastically arranged on the bottom front panel. *See, e.g.*, claims 10, *supra*.
Claim 28	
[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	Additional Prior Art discloses 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. *See, e.g.*,

manner allowing a compensation of radial dimension tolerances and angle errors.	Held at [0057]-[0061], Fig. 1 and associated description. Maxwell at 1:31-65, 6:19-23. *See also*, disclosures of this claim or claim element in Exhibits B-D.
Claim 29	
[29] The liquid filter according to claim 1, wherein the protruding nose protrudes radially.	Additional Prior Art discloses the protruding nose protrudes radially. *See, e.g.*, Held at [0042], [0055], [0061]-[0062], fig. 1 and associated description. Fremont at [0083]-[0085], fig. 5 and associated description. Marshall at [0026]-[0034], Figs. 2-4 and associated description. Beard at [0008]-[0012], [0085]-[0096], [0110]-[0111], [0139], [0148]-[0150], Figs. 12-16 and associated description. Hersey at [0041]-[0051], Figs. 4-15 and associated description. Hennes at 1:45-2:16, 3:18-4:20, Figs. 2-4 and associated description. *See also*, disclosures of this claim or claim element in Exhibits B-D.
Claim 30	
[30] The ring filter insert according to claim 15, wherein the protruding nose protrudes radially.	Additional Prior Art discloses the protruding nose protrudes radially. *See, e.g.*, claims 29, *supra*.