

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

Hengst SE,  
Patent Owner

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Case IPR2024-00603  
Patent 9,023,203

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**SUPPLEMENTAL DECLARATION OF MICHAEL NRANIAN IN  
SUPPORT OF PETITIONER'S REPLY**

## TABLE OF CONTENTS

|             |                                                                                                             |           |
|-------------|-------------------------------------------------------------------------------------------------------------|-----------|
| <b>I.</b>   | <b>The Construction of “Eccentric” .....</b>                                                                | <b>1</b>  |
| A.          | Yokoyama discloses “eccentric” blocking element and opening even under<br>Patent Owner’s construction ..... | 4         |
| <b>II.</b>  | <b>The Construction of “Opening” .....</b>                                                                  | <b>6</b>  |
| <b>III.</b> | <b>Yokoyama discloses “Top” and “Bottom” Panels .....</b>                                                   | <b>6</b>  |
| <b>IV.</b>  | <b>A POSITA would be Motivated to Combine Yokoyama and Cline .....</b>                                      | <b>10</b> |
| <b>V.</b>   | <b>Honermann in View of Cline Renders Claims 1 and 15 obvious .....</b>                                     | <b>14</b> |
| <b>VI.</b>  | <b>CONCLUSION .....</b>                                                                                     | <b>17</b> |

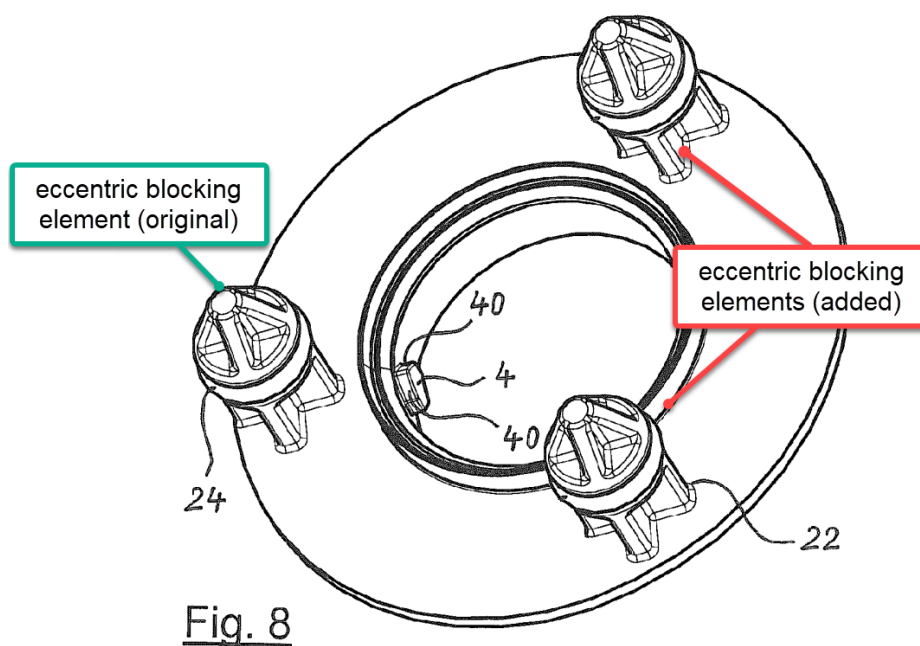
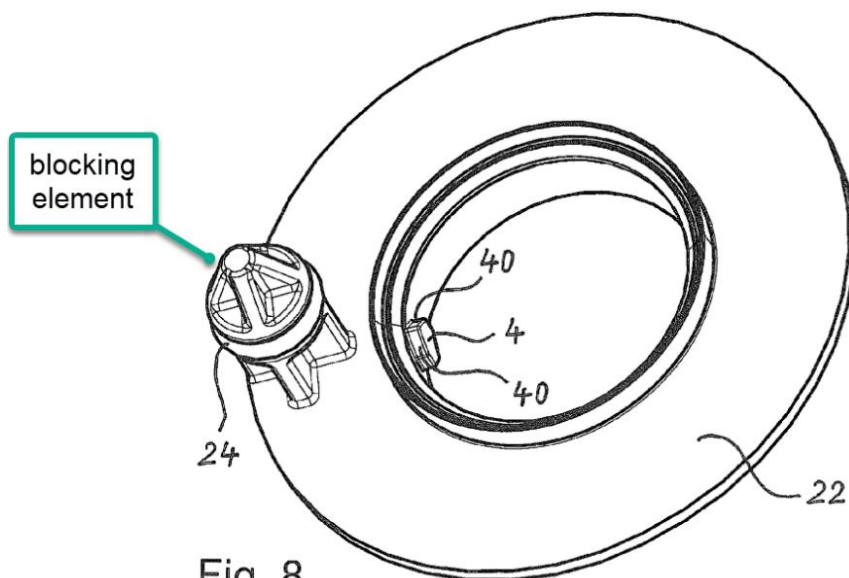
1. I have been asked to opine on certain issues, as discussed below.

**I. THE CONSTRUCTION OF “ECCENTRIC”**

2. In my opinion, Patent Owner’s construction of “eccentric” is too narrow and not consistent with the term’s plain meaning. As I testified in my first declaration, the plain meaning of “eccentric” is “not located at the center.” This is supported by the American Press Dictionary of Science and Technology, which defines “eccentric” as “located away from a center.” Ex. 1013, 3. It is also supported by Patent Owner’s own dictionary, the layman’s Merriam-Webster dictionary, which defines “eccentric” as “located elsewhere than at the geometric center.” Ex. 1012

3. I think Patent Owner’s construction of “having an axis not located in a geometric center” is too narrow, especially because Patent Owner uses that construction to exclude elements that are “concentrically arranged” with an “axis located in a geometric center.” POR 24. Notwithstanding that, clearly, these elements themselves are eccentric.

4. I note that in the ’203 patent, it describes a “plurality of eccentric blocking elements, which are arranged accordingly, on the filter insert.” Ex. 1001, 5:66-6:3. Below are unmodified and modified versions of Figure 8, the latter showing one such arrangement of blocking elements.



5. But Patent Owner’s construction would exclude this embodiment, because these blocking elements are “concentrically arranged” and together have an “axis located in a geometric center.” POR 24.

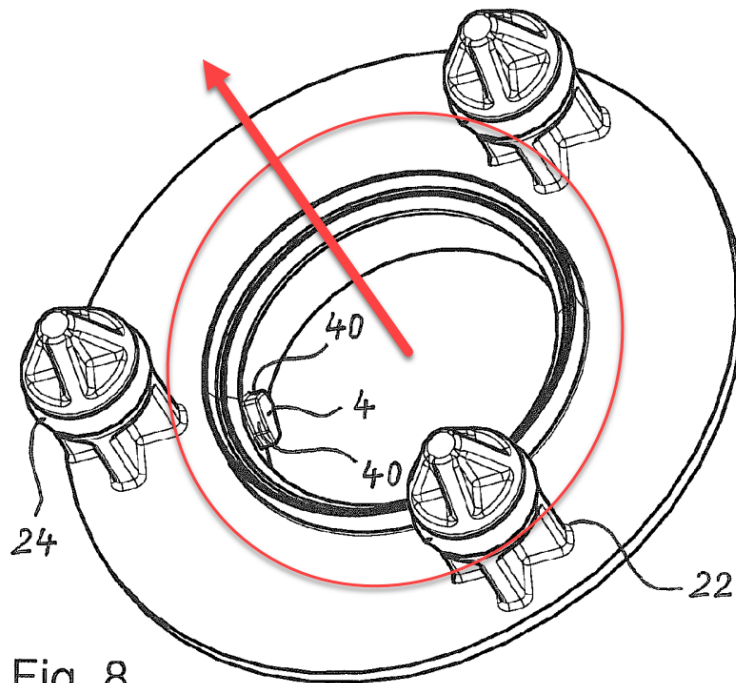
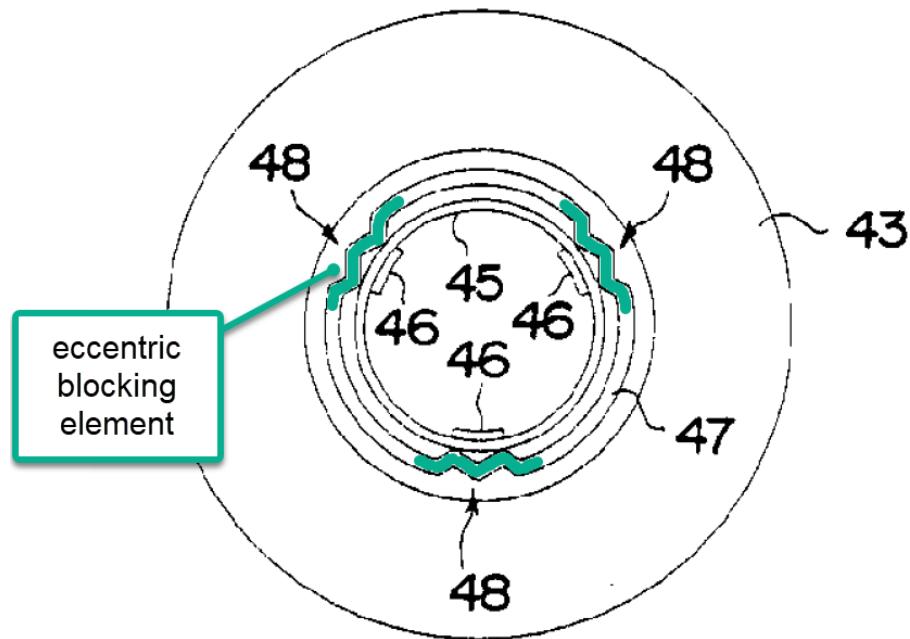


Fig. 8

6. I note that Patent Owner cited my deposition testimony, where I testified that “inclined planes 3.1 and 3.2” of Figures 4 and 6 of the ’203 patent are not “centered.” POR 203 (quoting Ex. 2018, 52:11-14). In my opinion, Patent Owner is mischaracterizing what the ’203 patent actually says, which is that “the inclined plane 3” **as a whole** is “in the center of the filter insert.” This makes sense because “the inclined plane” is circular and located in the center, just like the nozzle that it surrounds. However, the ’203 patent calls 3.1 and 3.2 “**partial** planes,” and individually these partial plains are not centered, and are eccentric.

7. Under the proper construction of “eccentric,” Yokoyama’s sealing member meets that definition, because as I explained in my original declaration, the W-shaped portions of the sealing member are each and together eccentric blocking

elements. Ex. 1003, ¶96. The arrangement of Yokoyama’s W-shaped portions is the same configuration as what the ’203 patent describes with its plurality of blocking elements.



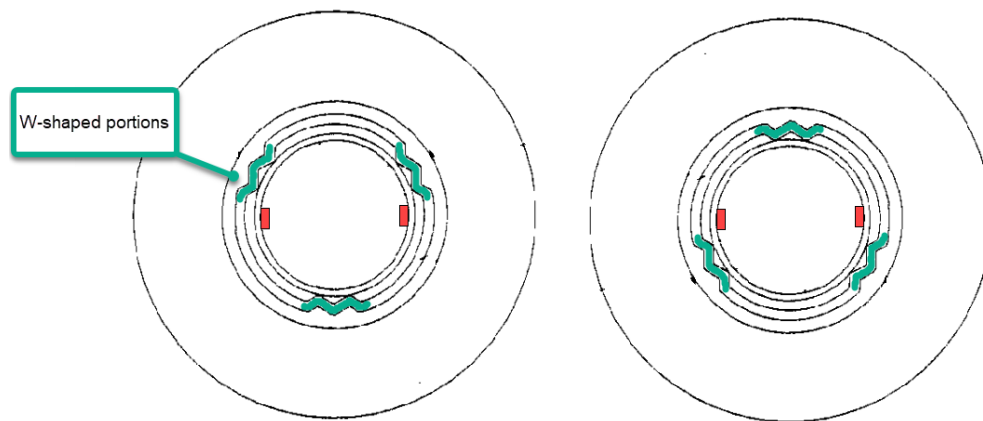
**A. Yokoyama discloses “eccentric” blocking element and opening even under Patent Owner’s construction**

8. In my opinion, even under Patent Owner’s construction, Yokoyama discloses an eccentric blocking element and opening.

9. First, as I discussed above, Yokoyama’s “W-shaped portions 48” individually do not have an axis located at the geometric center.

10. Second, Yokoyama renders obvious an embodiment where there is only one W-shaped portion. This stems from Yokoyama’s disclosure that there may be “**one** or more” “locking protrusions 46,” in other words, an embodiment with only one locking protrusion. Ex. 1008, ¶33. While Yokoyama does not expressly

describe the sealing member and opening having one W-shaped portion, a POSITA would understand that the number of W-shaped portions should be equal with the number of locking protrusion, that is, just one. This will at least ensure that the orientation of the locking mechanisms will always allow the “W-shaped” portions to engage with their corresponding opening. For example, if there are two locking protrusions but three W-shaped portions, then as I illustrate below, there are two configurations where the locking protrusions (red) are in the same position, but the W-shaped portions (green) are not.



11. And in the embodiment where there is only one W-shaped portion, the axis of the sealing member would not be in the geometric center. This is because the W-shaped portion is uneven, with two portions protruding radially inward and one portions protruding radially outward. Due to this imbalance, the axis of the sealing member would be off-center.

## **II. THE CONSTRUCTION OF “OPENING”**

12. In my opinion, Patent Owner’s construction of “opening” to require that “fluid may flow” through it is too narrow. Patent Owner’s only reason for this construction is because the specification describes various “outlets.” But the specification does not use the word “opening” to describe any part of the alleged invention.

13. In addition, I note that claim 1 recites that the opening is “an outlet,” but claim 15 does not. This indicates to me that an opening is broader than an outlet. I have also been informed that such an interpretation is also supported by the doctrine of claim differentiation.

14. The plain meaning of “opening” can be found in the Merriam-Webster dictionary, which defines it as “an open width” or “span.” Ex. 1014. It is also consistent with the American Press Dictionary of Science and Technology’s definition of “opening” as “an open place; a hole or space.” Ex. 1013, 4.

## **III. YOKOYAMA DISCLOSES “TOP” AND “BOTTOM” PANELS**

15. As I explained in my declaration, Yokoyama’s filter insert can be oriented in any arbitrary direction, and thus any side can be the “top” and “bottom.” I further opine that a POSITA would understand that oil filters can be oriented in any direction, and there is no conventional understanding of which side is “top” and which side is “bottom.” In addition, it was well-known that oil filters properly

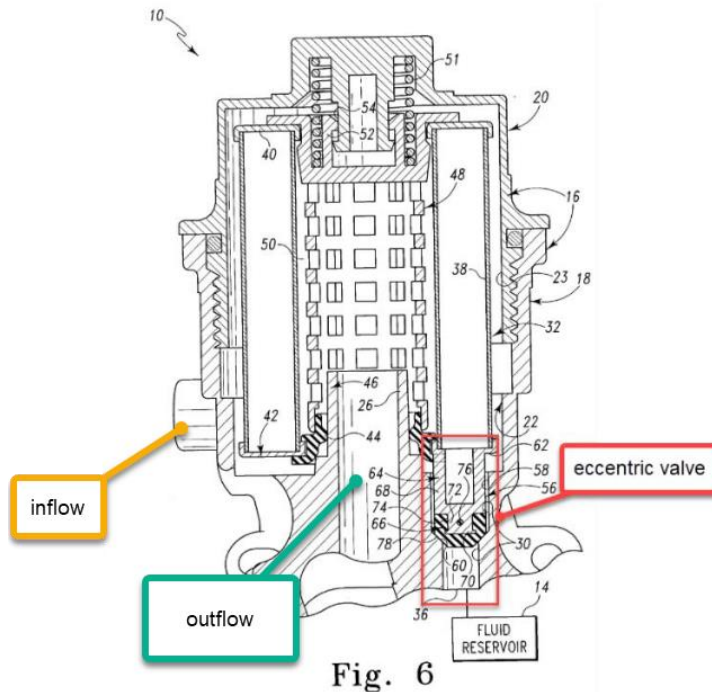
operate regardless of their orientation. This is because, as I explained in my original declaration, oil filtration systems operate using pressure, which pushes the flow of liquid through the filter regardless of the orientation of the filter device. Ex. 1003, ¶91. I note that Dr. Basirat agrees with me that pressure to push fluid within an oil filtration systems. Ex. 1011, 48:21-50:2.

16. It was well understood that filter housings are oriented differently based on the spacing and servicing needs particular to a vehicle. Vehicle manufacturers may, for example, use a housing mounted on the bottom of the motor with an opening on the bottom of the housing, or mounted on the top of the motor, with an opening at the top of the housing. As a result, a POSITA would have understood that Yokoyama's naming convention was flexible and not definitional. Indeed, the Cline and Brisson references, as well as the accused product, and the '203 patent all show filters with such orientation were known in the prior art. Ex. 1009, Fig. 6; Ex. 1005, Fig. 2; Ex. 1006, ¶126; Ex. 1001, 1:25-33; Ex. 1012; Ex. 1010, ¶16.

17. Patent Owner argues that the "front" and "rear" of an automobile does not change regardless of its orientation. But an automobile has one forward direction and one rear direction, which is dictated by the design of the car, by the seating position of its occupants, etc.

18. Patent Owner contends that turning Yokoyama's filter device upside-down would render useless its drain plug. First, Yokoyama says that the filtered

fluid could be “air,” in which case a drain plug is not necessary—consistent with Yokoyama’s silence on the matter. Ex. 1008, ¶36. Further, in my opinion, because Yokoyama never talks about a drain plug, this reflects a POSITA’s understanding that the location of the drain is a design choice based on various criteria, such as the location of the vehicle components and the need to provide easy access to the oil filter for replacement, as I explained in my original declaration. In addition, placement of the drain plug in an eccentric location has other advantages, especially in an application where the housing is opened from the top, as an eccentric drain would be *necessary* to avoid physical interference with the outflow of the mounting bracket. Because fluid is filtered from the outside to the center of the filter, it must also flow out of the filter canister from the center. Thus, the drain must be off-center to avoid obstructing the outflow path. This is shown in the following annotated version of Figure 6 from Cline Cline:



19. Indeed, oil filter housings that open from the top were common in the industry and discussed in the prior art, as I discussed above. For example, the Peterbilt engines typically had top-mounted oil filter housings, where the filter insert is inserted from the top.

20. Patent Owner argues that turning Yokoyama’s filter device upside-down would make it “likely to wobble.” POR 33. I disagree. In the upside-down orientation, the filter element 40 will be inserted into the upper case half 10, and then the lower case 30 will be lowered onto the insert, applying pressure to the filter element and rotating it until the sealing member enters the groove openings via the rotation of the locking protrusion via guided side surfaces 19. Ex. 1008, ¶21.

Yokoyama makes clear that it is the “locking protrusion 46 ... positioned in a depressions 21” that prevents the filter element from wobbling. In the upside-down orientation, the locking protrusion still enters the depression and prevents wobbling. In fact, because the “lower case 30” is exerts less force on the filter insert because gravity assists the locking protrusion into the depressions, this results in *less* wobbling and wear and tear. In my opinion, a POSITA would have understood that engaging the “lower case 30” in this upside down orientation is actually easier, and simpler, providing further motivation for this orientation.

#### **IV. A POSITA WOULD BE MOTIVATED TO COMBINE YOKOYAMA AND CLINE**

21. In my original declaration, I provided numerous reasons why a POSITA would be motivated to combine Yokoyama and Cline. Ex. 1003, ¶¶129-141. Even assuming Yokoyama has a drain plug, these motivations would largely still apply to Yokoyama, as Cline’s draining mechanism provides benefits over Yokoyama’s drain plug.

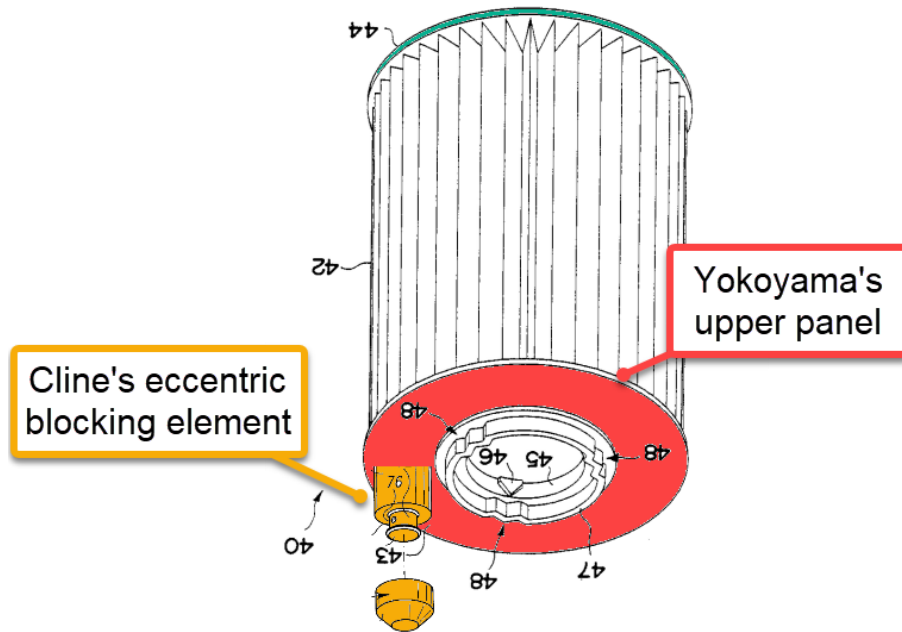
22. As I explained, using Cline’s drain mechanism was a design choice, dependent on “vehicle component packaging” and need for “accessibility for service.” Ex. 1003, ¶139.

23. Cline’s “flow blocker” is “molded onto the post 64,” thereby making it customizable, easily removable, and easily replaceable. And Cline’s design is more reliable and less prone to damage. These are still true in comparison with

Yokoyama's drain plug. In fact, that is why Cline's drain mechanism is called a "quick-drain valve," since it provides a quick, single mechanism for draining the fluid and removing the filter. Ex. 1009, Abstract. In addition, Yokoyama's drain plug, being a separate component that is detached, is more likely to be loosened due to gravity, vibration from driving, and normal wear-and-tear. It is also more prone to misplacement and requires a tool to remove.

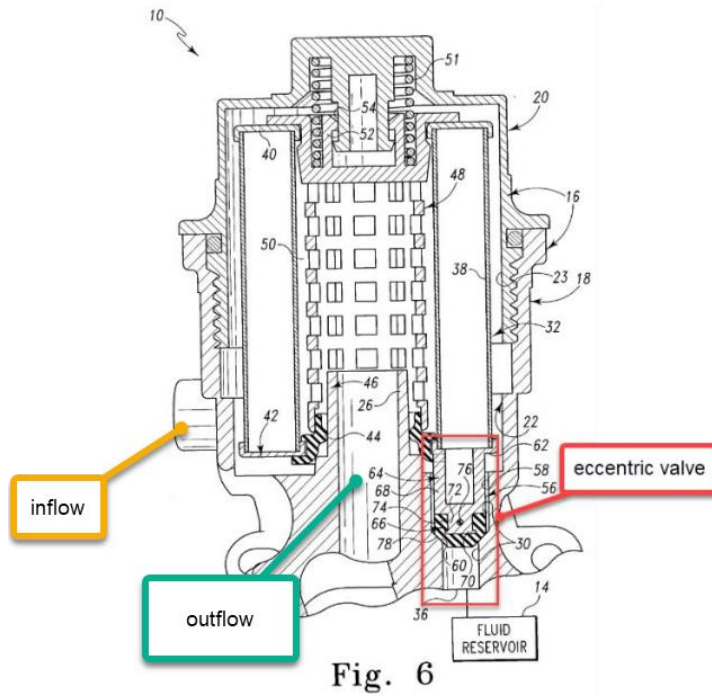
24. Patent Owner also argues that "the drain plug of Yokoyama would be operated **before** the upper case half 10 and lower case half 30 were separated during servicing, so there would be no concern that oil would spill or splash onto the filter housing or other components." POR 37. But it would be a trivial variation for a POSITA to make the upper case half 10 smaller to accommodate additional fluid.

25. Even if Yokoyama's filter device is oriented upside-down, a POSITA would still be motivated to combine Yokoyama and Cline. As I explained in my original declaration, the combination would involve placing Cline's valve in such a way as to be sealed and engaged when Yokoyama's filter insert is properly oriented, such as on the "upper plate 43" next to the "sealing member 47," and then re-oriented so that removal of the filter insert opens the valve and allows liquid to flow out for safe disposal via the pull of gravity. Ex. 1003, ¶138. The below illustration depicts this modification:

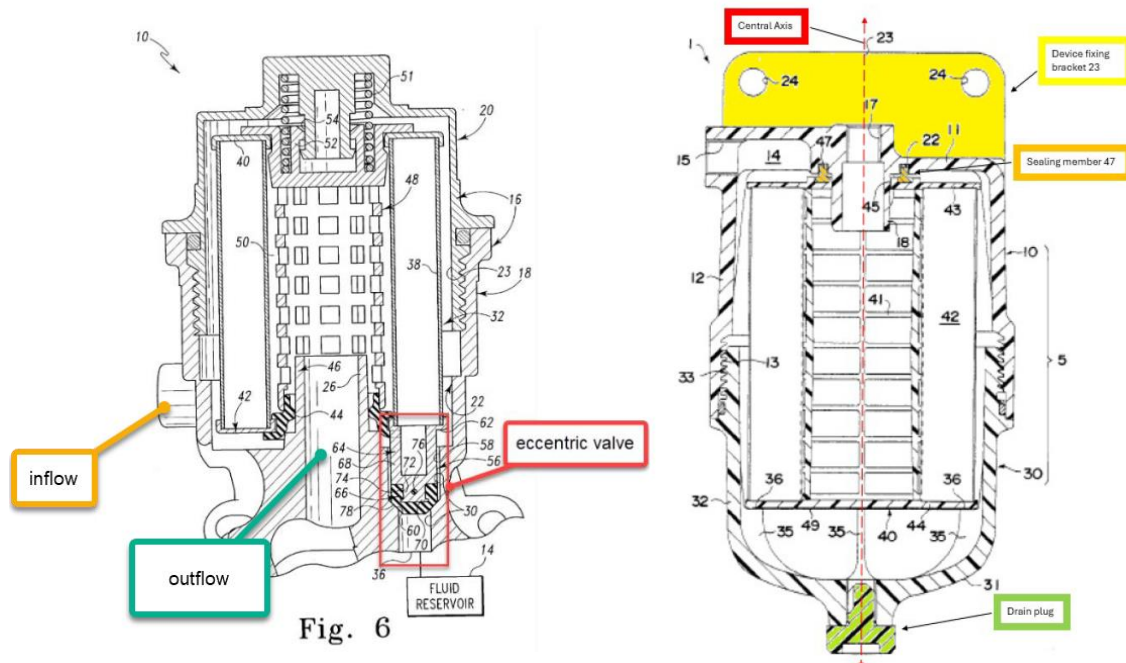


26. Patent Owner says that this arrangement would complicate Yokoyama's design. But Cline's drain mechanism is simpler than Yokoyama's unreliable drain plug. Cline's drain mechanism releases fluid by simply removing the filter insert, whereas Yokoyama's drain plug requires multiple steps.

27. Patent Owner also says it is too complex to place the inflow pipe, outflow pipe, and drain mechanism on the same upper case half of Yokoyama (which would be the bottom when oriented upside-down). I disagree. Prior art like Cline describes placing inflow, outflow, and drain mechanism near the bottom of the device, as shown below. So a POSITA would understand that there is no problem with placing them on the same half of the device, and would have known how to do so.



28. Patent Owner also argues the combination would increase the size and complexity of the filter housing. I again disagree. Cline's mechanism is less complex to operate, and looking at Cline and Yokoyama, there is no appreciable size difference with respect to their drain mechanisms.



## V. HONERMANN IN VIEW OF CLINE RENDERS CLAIMS 1 AND 15 OBVIOUS

29. Patent Owner argues that in Honermann, the filter insert does not rotate, only the basket does. This is wrong for two reasons. First, in my original declaration, I clearly proposed combining Honerman and Cline in such a way that the filter insert does rotate. Second, in Honermann, both the filter insert and the basket rotate.

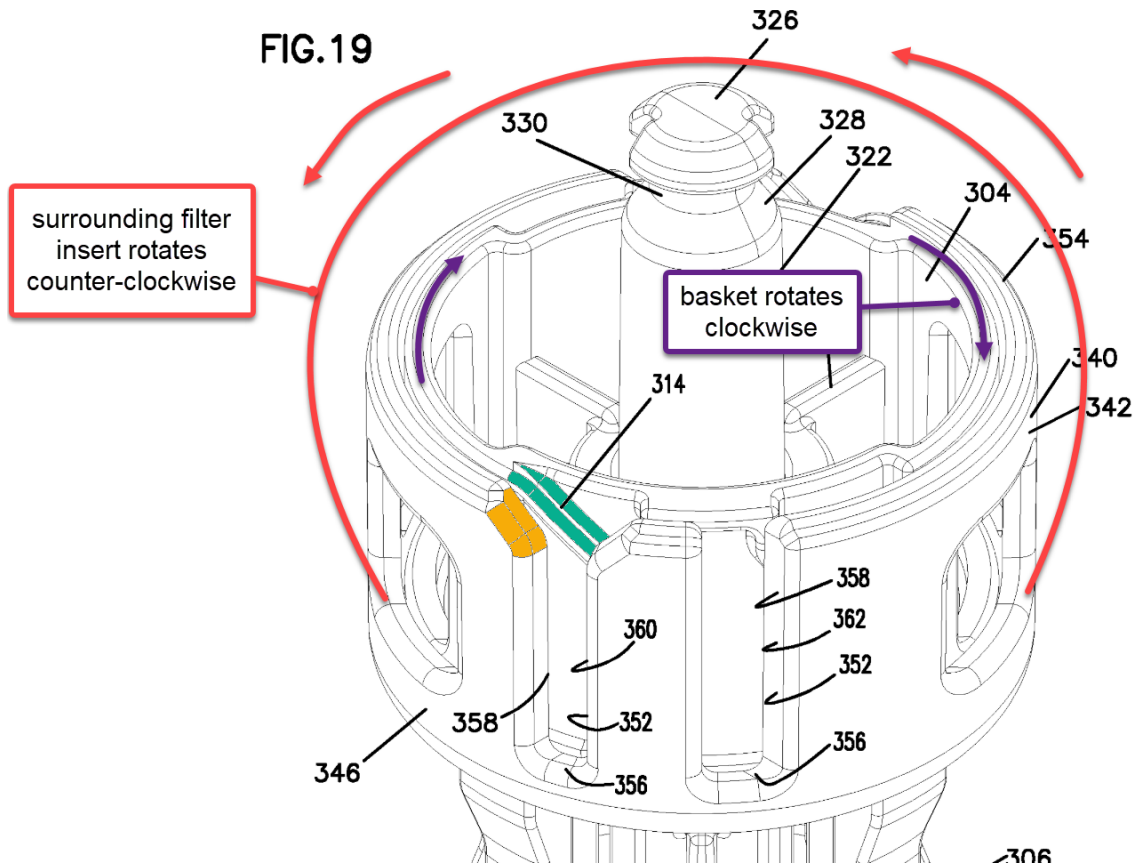
30. In my declaration, I discussed how Deschamps's blocking element engages with an opening ***“as a filter insert rotates in the filter housing”*** via a nose / plane guiding mechanism. Ex. 1003, ¶169. I then proposed that, motivated by this teaching, a POSITA would “incorporate Cline’s similar eccentric blocking element/opening with Honermann’s similar inclined plane and nose guiding

mechanism.” *Id.*, ¶170. In other words, I proposed that Honermann and Cline would be combined in a similar way as Deschamps’s guiding mechanism that allows the filter insert to rotate.

31. Consistent with this, I later stated explicitly that “in the Honermann-Cline combination, the blocking element enters the eccentric opening ***when the filter cartridge has been properly rotated*** and inserted into the filter bowl.” Ex. 1003, ¶213. I also said “In the Honermann-Cline combination, ***the proper insertion of the filter cartridge*** results in Cline’s blocking element entering its eccentric opening.” *Id.*, ¶215. Thus, it was clear I was proposing that in the combination, the filter insert rotates to allow the blocking element to engage the opening.

32. Honermann is clear that the filter insert rotates prior to the basket rotating. As I show via annotations to Figure 19 below, Honermann’s filter insert has protrusions that slide along a **slide surface 314** into a slide channel 358 having a **tapered opening** to allow a protrusion to enter the slide channel 358. The protrusion begins at the left-most side of the **slide surface 314** and **tapered opening**. Because the opening of the slide channel 358 is wider than the protrusion, the protrusion will slide rightward, ***causing the filter insert to rotate counter-clockwise***. When the protrusion contacts the right side of the slide channel 358, the protrusion has nowhere further to go and thus as it continues sliding down the slide surface 314,

it will enter the slide channel 358 and cause the basket to rotate clockwise, as Honermann describes.



33. Patent Owner argues that the inclusion of Cline’s eccentric blocking element would “inherently” prevent rotation of the basket. I disagree. By the time the protrusion enters the slide channel, the blocking element is vertically aligned with the opening, though not yet engaged with it. As the protrusion travels downward into the slide channel, the basket rotates, and the blocking element enters the opening.

34. Patent Owner argues that removing Honermann’s drain valve assembly would lead to “leaking” and “inconsistent draining.” However, as evidenced by

Cline and other prior art like Deschamps and Brisson, filters with eccentric draining mechanisms had no issues with leaking and draining because of the presence of various seals, and thus, neither would Honermann when its drain valve assembly is replaced with Cline's eccentric draining mechanism, as POSITA would understand how to use seals to prevent such issues.

35. Patent Owner also argues that Honermann's "inlet conduit 128" is part of the "filter head 32," not the "filter assembly 34," and therefore the filter assembly does not have an "inlet" that "leads into a raw side of the filter housing." But I pointed to the opening of the filter housing as the inlet. Ex. 1003, ¶185. In addition, when the filter head is secured to the housing, it becomes part of the housing, and thus the "inlet conduit" meets the claimed "inlet."

## **VI. CONCLUSION**

36. I hereby declare that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true. I further declare that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of the Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this proceeding.

Executed on April 4, 2025 by:

/s/ Michael Nranian

Michael Nranian