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(54) SAFETY DEVICE FOR A DRAINING FILTER OF A WASHING MACHINE AND IMPROVED DRAINING FILTER FOR A WASHING MACHINE

(57) The present invention relates to a safety device (1; 1') for a draining filter (18) for a washing machine comprising a drum for receiving garments or other elements to be washed and a draining pump (19) for draining at least one washing liquid from said drum. The draining filter (18) is mountable to said washing machine in such a way as to be in fluid communication with said drum and said draining pump (19). The safety device (1; 1') comprises at least one magnetic element (12a, 12b, 12c) for attracting at least one metal object which is in a washing liquid which is pumped by said draining pump (19) from said drum to said draining filter (18) when the safety device (1; 1') is connected with the draining filter (18) and said draining filter (18) is mounted to said washing machine. The safety device (1; 1') further comprises connecting means for connecting the safety device (1; 1') with the draining filter (18). The present invention also relates to a draining filter (33, 34, 35, 36) for a washing machine comprising a drum for receiving garments or other elements to be washed and a draining pump for draining at least one washing liquid from said drum, wherein said draining filter (33, 34, 35, 36) is mountable to said washing machine in such a way as to be in fluid communication with said drum and said draining pump and comprises at least one magnetic portion or magnetic element, which is integrally incorporated in said draining filter (33, 34, 35, 36), to attract at least one metal object which is in a washing liquid which is pumped by said draining pump from said drum to said draining filter (33, 34, 35, 36) when said draining filter (33, 34, 35, 36) is mounted to said washing machine.

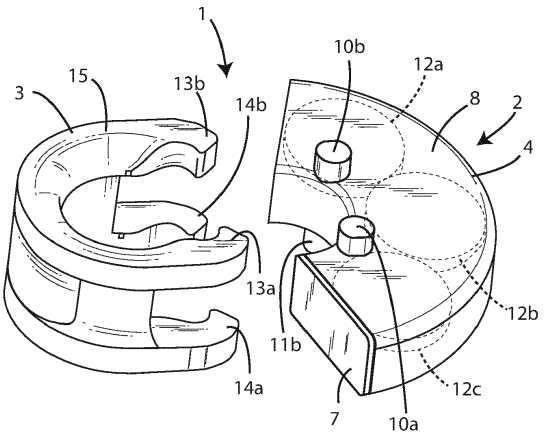

Fig. 1

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Description

[0001] This invention relates to a safety device for a draining filter of a washing machine.

[0002] In particular, this safety device prevents the occurrence of malfunctions and breakages due to the introduction of metal objects into the loading drum of the washing machine.

[0003] The invention also relates to an draining filter for a washing machine configured so as to also prevent the occurrence of malfunctions or breakages due to the introduction of metal objects into the loading drum of the washing machine.

[0004] Normally, washing machines are equipped with a loading drum to receive the clothes to be washed, which is connected, through one or more conduits, to a draining pump designed to suck from the drum the draining water produced by each washing cycle.

[0005] The draining pump is commonly associated with a draining filter that performs the specific function of protecting it from the accumulation of hair or lint and other solid elements that could be contained in the draining water coming from the washing machine drum.

[0006] There is also an additional pipe or conduit from the draining filter, that is, from the draining pump, for connection to the domestic wastewater system.

[0007] Although reference is made in the description of the invention to a domestic washing machine, the same should in no way be considered limited to domestic use only, as it can be extended also to washing machines intended for other uses, for example for industrial use.

[0008] Various types of draining filters for washing machines are known.

[0009] Traditional draining filters for washing machines do not allow, however, the avoidance of possible risks of breakages and malfunctions of the washing machine caused by the insertion of metal objects inside the washing machine itself.

[0010] In fact, during the washing machine loading operation, trousers or other garments may, inadvertently, be inserted into the washing machine drum containing, in the relative pockets, metal objects such as coins, hairpins, screws, nails, etc.

[0011] During washing, these metal objects could escape from the parts of the garments where they are located and travel along the entire connection conduit provided between the drum and the draining filter, and from the latter continue towards the draining pump for the washing machine or towards the conduit that connects the draining filter to the domestic wastewater system.

[0012] Traditional draining filters for washing machines are, in many cases, ineffective in filtering, that is to say, blocking, metal objects, allowing them to continue their travel downstream of the draining filter.

[0013] The above-mentioned metal objects, if they were to reach the draining pump, could cause instantaneous breakage or malfunctions that could lead, subsequently, to the breakage of the pump itself.

[0014] Otherwise, if the above-mentioned metal objects were to enter the domestic wastewater system, they could form obstructions, particularly in the areas of this system where corner fittings or curved elements are provided, with the consequent need to remove the obstructions thus formed.

[0015] The aim of the invention is to overcome the above-mentioned problems of the prior art.

[0016] Another aim of the invention is to provide a safety device for a draining filter for a washing machine which avoids possible risks of malfunctions or breakages of the draining pump for the washing machine due to the introduction of metal objects in the loading drum of the latter.

[0017] Another aim of the invention is to provide a safety device for a draining filter for a washing machine which is effective and reliable in performing the function for which it is intended.

[0018] Another aim of the invention is to provide a safety device for a draining filter for a washing machine which is easy to assemble and use.

[0019] Another aim of the invention is to provide a safety device for a draining filter for a washing machine, which is particularly economical with respect to the results practically achievable with it.

[0020] A further aim of the invention to provide a draining filter for a washing machine which prevents the occurrence of malfunctions or breakages due to the introduction of metal objects into the loading drum of the washing machine.

[0021] A further aim of the invention is to provide a draining filter for a washing machine which is effective and reliable in performing the function of preventing malfunctions or breakages due to the introduction of metal objects into the loading drum of the washing machine.

[0022] It is, therefore, a specific object of the present invention a safety device for a draining filter for a washing machine comprising a drum for receiving garments or other elements to be washed and a draining pump for draining at least one washing liquid from said drum, wherein said draining filter is mountable to said washing machine in such a way as to be in fluid communication with said drum and said draining pump, and wherein said safety device comprises: at least one magnetic element for attracting, in use, at least one metal object which is in a washing liquid which is pumped by said draining pump from said drum to said draining filter when the safety device is connected with the draining filter and said draining filter is mounted to said washing machine; and connecting means for connecting, in use, the safety device with the draining filter.

[0023] Advantageously according to the present invention, said connecting means can be configured to connect, in use, the safety device with the draining filter in a removable way.

[0024] Preferably according to the invention, said safety device comprises a first member and a second member which are connectable with each other in a removable way by removable connection means and which are con-

figured in such a way as to achieve the connection of the safety device with the draining filter by connecting said first member and said second member with each other.

[0025] Profitably according to the invention, said first member and said second member, when connected with each other, can jointly define a through hole for receiving, in use, at least one part of said draining filter such that said at least one part of said draining filter is trapped in said through hole by said first member and said second member which are connected with each other.

[0026] Further according to the invention, said removable connection means can comprise anchoring means and hook means which are configured to engage with said anchoring means in a removable way.

[0027] Alternatively according to the invention, said safety device can comprise: a first member; a second member which is connected to the first member in a rotatable way about a rotation axis by rotatable connection means; and removable connection means for connecting to each other, in a removable way, at least one portion of said first member and at least one portion of said second member; wherein said first member and said second member are configured in such a way as to achieve the connection of the safety device with the draining filter by connecting to each other said at least one portion of the first member and said at least one portion of the second member by said removable connection means.

[0028] Preferably according to the invention, when said at least one portion of the first member and said at least one portion of the second member are connected to each other by said removable connection means, said first member and said second member jointly define a through hole for receiving, in use, at least one part of said draining filter, such that said at least one part of said draining filter is trapped in said through hole by said first member and said second member.

[0029] Profitably according to the invention, said removable connection means can comprise anchoring means and hook means which are configured to engage with said anchoring means in a removable way.

[0030] Advantageously according to the invention, said safety device can comprise coating means made of a thermoplastic polymeric material to entirely coat said at least one magnetic element.

[0031] Preferably according to the invention, said coating means comprise a hollow body, wherein a cavity is defined for accommodating said at least one magnetic element, and a cover element for completely closing said cavity.

[0032] It is a further object of the present invention a draining filter for a washing machine comprising a drum for receiving garments or other elements to be washed and a draining pump for draining at least one washing liquid from said drum, wherein said draining filter is mountable to said washing machine in such a way as to be in fluid communication with said drum and said draining pump and comprises at least one magnetic portion or magnetic element, which is integrally incorporated in said draining filter, to attract, in use, at least one metal object which is in a washing liquid which is pumped by said draining pump from said drum to said draining filter when said draining filter is mounted to said washing machine.

[0033] Preferably according to the present invention, said at least one magnetic portion or said magnetic element is coated by a layer of thermoplastic polymeric material.

[0034] Further according to the invention, said draining filter can comprise connection means for the removable connection with said draining pump.

[0035] Features and advantages will be highlighted in more detail by the following description of preferred but not exclusive embodiments illustrated, purely by way of non-limiting example, in the accompanying drawings, in which:

- Figure 1 is a perspective view of a safety device according to a first embodiment of the invention, for a draining filter for a washing machine, according to a non-assembled configuration of the safety device;
- Figure 2 is a further perspective view of the safety device illustrated in Figure 1, in the same non-assembled configuration;
- Figure 3 is a perspective view of the same safety device shown in Figures 1 and 2, but in an assembled configuration;
- Figure 4 is a further perspective view of the safety device shown in Figure 3, in the same assembled configuration;
- Figure 5 is an exploded view of the safety device shown in Figures 1 and 2;
- Figure 6 shows a draining pump for a washing machine and a draining filter on which the safety device shown in Figures 1-5 is about to be mounted;
- Figure 7 is identical to Figure 6, except that in Figure 7 the safety device is mounted on the draining filter;
- Figure 8 shows the above-mentioned draining pump with, coupled, the above-mentioned draining filter, on which is mounted - although it is not visible - the safety device shown in Figures 1-5;
- Figure 9 is a perspective view of a safety device according to a second embodiment of the invention, for a draining filter for a washing machine, according to an open configuration of the safety device;
- Figure 10 is a further perspective view of the safety device illustrated in Figure 9, in the same open configuration;
- Figure 11 is a perspective view of the safety device shown in Figures 9 and 10, but in a closed configuration;
- Figure 12 is a further perspective view of the safety device shown in Figure 11, in the same closed configuration;
- Figure 13 shows a first draining filter according to the invention, for a washing machine;
- Figure 14 shows a second draining filter according

to the invention, for a washing machine;

- Figure 15 shows a third draining filter according to the invention, for a washing machine; and
- Figure 16 shows a fourth raining filter according to the invention, for a washing machine.

[0036] With reference to the accompanying drawings, a first safety device according to the invention is denoted in its entirety with the numeral 1, for a draining filter for a washing machine.

[0037] In particular, the first safety device 1 comprises a capturing member 2, for capturing metal objects located in the vicinity thereof, and an anchoring member 3 which can be coupled in a removable fashion to the capturing member 2 to allow the connection of the first safety device 1 to a draining filter for a washing machine.

[0038] The capturing member 2 and the anchoring member 3 can be made of any thermoplastic polymeric material, preferably of a plastic or rubbery material that cannot be damaged and worn by the drainage water of the washing machines, that is by the water produced by the washing of clothes.

[0039] The capturing member 2 comprises, in turn, a hollow body 4 with a curved shape, inside which a cavity 5 leading out through an opening 6 is formed.

[0040] The same capturing member 2 also includes a cap 7 which can be coupled in a removable fashion to the hollow body 4 at the opening 6, in such a way as to completely cover the latter and hermetically close the cavity 5 when the cap 7 itself is coupled to the hollow body 4.

[0041] If necessary, a gasket or a sealing element can be further provided on the side of the cap 7 intended to face the cavity 5 of the hollow body 4 or on the perimeter edges of the opening 6 to prevent any possibility of liquid entering the cavity 5.

[0042] A first outer face 8 and, opposite to it, a second outer face 9 are defined in the hollow body 4 from which project, respectively, in opposite directions, a first pair of anchoring pins 10a, 10b and a second pair of anchoring pins 11a, 11b.

[0043] The capturing member 2 further comprises one or more magnets 12a, 12b, 12c each having the shape of a disc and sized in such a way that they can be inserted into the cavity 5 of the hollow body 4 from the relative opening 6 and contained therein by mounting the cap 7 on the hollow body 4.

[0044] According to variant embodiments of the invention, said one or more magnets 12a, 12b, 12c may have shapes different from the one indicated above and shown in the accompanying drawings, such as for example a crescent shape.

[0045] The anchoring member 3 is, on the other hand, a shaped element provided with a first pair of coupling portions 13a, 13b and a second pair of coupling portions 14a, 14b respectively positioned at a first side 15 and a second side 16 of the anchoring member 3, wherein said first 15 and second 16 sides are mutually opposite.

[0046] In particular, the above-mentioned first pair of coupling portions 13a, 13b and second pair of coupling portions 14a, 14b are positioned and configured in such a way as to be able to attach, respectively, in a snap-on and removable fashion, to the first pair of anchoring pins 10a, 10b and to the second pair of anchoring pins 11a, 11b when the capturing member 2 and the anchoring member 3 are brought closer to each other.

[0047] Furthermore, the capturing member 2 and the anchoring member 3 are shaped in such a way as to form between them, when they are mutually coupled, a through hole 17 leading to a first side of the first safety device 1, where the first outer face 8 of the capturing member 2 and the first side 15 of the anchoring member 3 are located, and to a second side of the same first safety device 1, where the second outer face 9 of the capturing member 2 and the second side 16 of the anchoring member 3 are present.

[0048] The function of the through hole 17 will be described in detail below.

[0049] In order to achieve the mutual separation of the capturing member 2 and the anchoring member 3 it is sufficient, on the other hand, to apply to them opposite forces of such intensity as to overcome the resistance produced by the coupling between the first pair of coupling portions 13a, 13b and the first pair of anchoring pins 10a, 10b and between the second pair of coupling portions 14a, 14b and the second pair of anchoring pins 11a, 11b.

[0050] On the other hand, Figures 6-8 show how to apply the first safety device 1 to a draining filter 18 of a draining pump 19 for a washing machine.

[0051] The draining pump 19 comprises a hollow main body 20 in which a chamber 21 is defined that leads out through an opening 22 and is intended to receive the draining filter 18.

[0052] In the hollow main body 20, at the opening 22, a lead nut and screw 23 is also formed to allow removable coupling with the draining filter 18.

[0053] In the hollow main body 20 there are also a first coupling 24 and a second coupling 25, both in fluid communication with the chamber 21 and respectively intended to allow hydraulic connection with the loading drum (not illustrated) of the washing machine and with the domestic wastewater system (not illustrated).

[0054] The draining pump 19 also includes an operating unit 26, which in turn includes a motor (not visible) and an impeller (not visible) driven by said motor and housed in a relative seat (not visible) that is in fluid communication with the chamber 21.

[0055] The draining filter 18 comprises, on the other hand, a threaded end portion 27 configured in such a way as to be able to engage with the above-mentioned lead nut and screw 23 when the draining filter 18 is inserted into the chamber 21 of the draining pump 19.

[0056] From the threaded end portion 27 extend, from the same side and in parallel directions, a first lateral arm 28, a second lateral arm 29, arranged in a position dia-

metrically opposite to that of the first lateral arm 28, and a central stem 30 located in an axial position between the above-mentioned lateral arms 28, 29.

[0057] The draining filter 18 also includes a second end portion 31 joined to the above-mentioned side arms 28, 29 and, possibly, also to the central stem 30.

[0058] A central opening 32 formed at the central stem 30 is provided in said second end portion 31 in order to place in fluid communication the seat in which the above-mentioned impeller is housed with the zone of the draining filter 18 located between the threaded end portion 27 and said second end portion 31 and therefore also with the chamber 21 of the draining pump 19.

[0059] The central opening 32 of the second end portion 31 and the central stem 30 jointly define a passage 32' having substantially the shape of a circular crown and reduced dimensions to prevent objects larger than the passage 32' from reaching the seat where the above-mentioned impeller of the operating unit 26 is located when the draining filter 18 is inserted in the chamber 21 of the draining pump 19.

[0060] The application of the first safety device 1 to the draining filter 18 must be carried out before proceeding with the insertion of the latter into the chamber 21 of the draining pump 19.

[0061] In particular, as shown in Figures 6 and 7, in order to apply the first safety device 1 to the draining filter 18, it is necessary to mutually couple the capturing member 2 and the anchoring member 3 by coupling the first 13a, 13b and the second 14a, 14b pair of coupling portions, respectively, to the first 10a, 10b and to the second 11a, 11b pair of anchoring pins, in such a way that the central stem 30 of the draining filter 18 remains trapped in the above-mentioned through hole 17 of the first safety device 1.

[0062] When the first safety device 1 is applied to the draining filter 18 and the latter is inserted in the chamber 21 of the draining pump 19, when the washing program of the washing machine provides for the draining of the washing water from the relative drum, the operating unit 26 of the draining pump 19 starts operating by pumping the washing water from the drum of the washing machine to the domestic wastewater system.

[0063] For this reason, when the operating unit 26 is activated, the washing water will initially travel along the connection pipe between the drum and the first coupling 24 of the draining pump 19 and then pass through the chamber 21 where the draining filter 18 is present and then travel along the entire connection pipe provided between the second coupling 25 of the draining pump 19 and the domestic wastewater system.

[0064] If the washing water leaving the drum contains metal objects, these, once they reach the chamber 21 of the draining pump 19, would be captured by the capturing member 2, remaining attached to the latter due to the force of attraction produced by the magnets 12a, 12b, 12c.

[0065] In this way, such metal objects would then be prevented from reaching the impeller of the operating unit 26 by passing through the central opening 32 of the draining filter 18, and from entering the domestic wastewater system by passing through the connection pipe provided between the second coupling 25 of the draining pump 19 and said system.

[0066] In order to clean the draining filter 18, it will simply be necessary to extract it from the chamber 21 of the draining pump 19 and manually remove the metal objects magnetically attracted by the first safety device 1.

[0067] With reference to Figures 9-12, the reference numeral 1' denotes in its entirety a second safety device in accordance with the invention, which differs from the first safety device 1 described above only in that instead of the above-mentioned coupling portions 13b, 14b (shown in Figures 1-4) there are respectively provided, in the anchoring member 3', a first eyelet 13b' and a second eyelet 14b' coaxial with each other and respectively engaged with the two mutually opposite anchoring pins 10b', 11b' of the capturing member 2' rotatably around an axis of rotation R' passing through the centres of said two anchoring pins 10b', 11b'.

[0068] Specifically, the above-mentioned two anchoring pins 10b', 11b' occupy, respectively, the through holes of the first eyelet 13b' and the second eyelet 14b', thus ensuring that the capturing member 2' and the anchoring member 3' remain constantly connected to each other.

[0069] By rotating the anchoring member 3' around the axis of rotation R' according to a first direction C 'from the relative open position shown in Figures 9 and 10, the same anchoring member 3' can be brought into the relative closed position shown in Figures 11 and 12, in which the two coupling portions 13a', 14a' are respectively engaged, that is, coupled, to the other two anchoring pins 10a', 11a'.

[0070] When the anchoring member 3' is in the above-mentioned closed position, it defines, together with the capturing member 2', a through hole 17'.

[0071] From this closed position, it will also be possible to return the anchoring member 3' to the relative open position (see Figures 9 and 10) by applying to it a force such as to determine the disengagement, that is, the release, of the two coupling portions 13a', 14a' from the relative anchoring pins 10a', 11a' and then rotating the same anchoring member 3' around the axis of rotation R' according to a second direction A' opposite to the above-mentioned first direction C'.

[0072] In order to apply the second safety device 1' to the above-mentioned draining filter 18, it will therefore be necessary to position in advance the anchoring member 3' in the relative open position (see Figures 9 and 10) and subsequently bring it into the closed position (see Figures 11 and 12) so that the central stem 30 of the draining filter 18 remains trapped in the through hole 17' between the capturing member 2' and the anchoring member 3'.

[0073] Figures 13-16 on the other hand, show, respec-

tively, a first 33, a second 34, a third 35 and a fourth 36 draining filter, for washing machines, according to four possible embodiments of the invention.

[0074] In particular, the above-mentioned first 33, second 34, third 35 and fourth 36 draining filters are equal to the draining filter 18 described above, except for incorporating a magnetic portion, that is, a magnetic element, coated externally with a layer of thermoplastic polymeric material to prevent the magnetic portion, that is, magnetic element, from coming into direct contact with the washing water coming from the washing machine drum when the draining of said water by the draining pump is arranged.

[0075] Specifically, the first draining filter 33 shown in Figure 13 includes a magnetic portion 37, or a magnetic element, at the transition zone between the threaded end portion 38 and the central stem 39.

[0076] On the other hand, the second draining filter 34 illustrated in Figure 14 comprises a magnetic portion 40, or a magnetic element, in the relative central stem 41.

[0077] Otherwise, the third draining filter 35 shown in Figure 15 comprises two magnetic portions 42, 43, or two magnetic elements, respectively located in the two side arms 44, 45.

[0078] Lastly, in the fourth draining filter 36 referred to in Figure 16, a magnetic portion 46, or a magnetic element, is provided in the second end portion 47.

[0079] If the draining filters 33, 34, 35, 36 according to the invention are used, any metal objects present in the washing water would remain attached to the magnetic portion or the magnetic element of the draining filter.

[0080] Clearly, it is not necessary to apply the safety devices 1, 1' described above to the above-mentioned draining filters 33, 34, 35, 36, since these filters are already provided with a magnetic portion or a magnetic element to attract metal objects.

[0081] As can be seen from the foregoing description, the safety devices 1, 1' and the draining filters 33, 34, 35, 36 according to the invention prevent the metal objects present in the loading drum from causing malfunctions or breakages in the washing machine and damage to the wastewater system to which the washing machine itself is connected.

[0082] The above description is only given by way of a non-limiting example, so any constructional variants fall within the protection of the invention, as described above and claimed below.

Claims

1. Safety device (1; 1') for a draining filter (18) for a washing machine comprising a drum for receiving garments or other elements to be washed and a draining pump (19) for draining at least one washing liquid from said drum, wherein said draining filter (18) is mountable to said washing machine in such a way as to be in fluid communication with said drum and said draining pump (19), and wherein said safety device (1; 1') comprises:

   - at least one magnetic element (12a, 12b, 12c) for attracting, in use, at least one metal object which is in a washing liquid which is pumped by said draining pump (19) from said drum to said draining filter (18) when the safety device (1; 1') is connected with the draining filter (18) and said draining filter (18) is mounted to said washing machine; and
   - connecting means for connecting, in use, the safety device (1; 1') with the draining filter (18);

   characterized in that said connecting means are configured to connect, in use, the safety device (1; 1') with the draining filter (18) in a removable way.

2. Safety device (1) according to claim 1, **characterized in that** it comprises a first member (2) and a second member (3) which are connectable with each other in a removable way by removable connection means (10a, 10b, 11a, 11b, 13a, 13b, 14a, 14b) and which are configured in such a way as to achieve the connection of the safety device (1) with the draining filter (18) by connecting said first member (2) and said second member (3) with each other.

3. Safety device (1) according to claim 2, **characterized in that** said first member (2) and said second member (3), when connected with each other, jointly define a through hole (17) for receiving, in use, at least one part of said draining filter (18) such that said at least one part of said draining filter (18) is trapped in said through hole (17) by said first member (2) and said second member (3) which are connected with each other.

4. Safety device (1) according to claim 2 or 3, **characterized in that** said removable connection means comprise anchoring means (10a, 10b, 11a, 11b) and hook means (13a, 13b, 14a, 14b) which are configured to engage with said anchoring means (10a, 10b, 11a, 11b) in a removable way.

5. Safety device (1') according to claim 1, **characterized in that** it comprises:

   - a first member (2');
   - a second member (3') which is connected to the first member (2') in a rotatable way about a rotation axis (R') by rotatable connection means (10b', 11b', 13b', 14b'); and
   - removable connection means (10a', 11a', 13a', 14a') for connecting to each other, in a removable way, at least one portion of said first member (2') and at least one portion of said second member (3');

wherein said first member (2') and said second member (3') are configured in such a way as to achieve the connection of the safety device (1') with the draining filter (18) by connecting to each other said at least one portion of the first member (2') and said at least one portion of the second member (3') by said removable connection means (10a', 11a', 13a', 14a').

6. Safety device (1') according to claim 5, **characterized in that** when said at least one portion of the first member (2') and said at least one portion of the second member (3') are connected to each other by said removable connection means (10a', 11a', 13a', 14a'), said first member (2') and said second member (3') jointly define a through hole (17') for receiving, in use, at least one part of said draining filter (18), such that said at least one part of said draining filter (18) is trapped in said through hole (17') by said first member (2') and said second member (3').

7. Safety device (1') according to claim 5 or 6, **characterized in that** said removable connection means comprise anchoring means (10a', 11a') and hook means (13a', 14a') which are configured to engage with said anchoring means (10a', 11a') in a removable way.

8. Safety device (1; 1') according to any one of preceding claims, **characterized in that** it comprises coating means (4, 7) made of a thermoplastic polymeric material to entirely coat said at least one magnetic element (12a, 12b, 12c).

9. Safety device (1; 1') according to claim 8, **characterized in that** said coating means comprise a hollow body (4), wherein a cavity (5) is defined for accommodating said at least one magnetic element (12a, 12b, 12c), and a cover element (7) for completely closing said cavity (5).

10. Draining filter (33, 34, 35, 36) for a washing machine comprising a drum for receiving garments or other elements to be washed and a draining pump for draining at least one washing liquid from said drum, wherein said draining filter (33, 34, 35, 36) is mountable to said washing machine in such a way as to be in fluid communication with said drum and said draining pump and comprises at least one magnetic portion or magnetic element, which is integrally incorporated in said draining filter (33, 34, 35, 36), to attract, in use, at least one metal object which is in a washing liquid which is pumped by said draining pump from said drum to said draining filter (33, 34, 35, 36) when said draining filter (33, 34, 35, 36) is mounted to said washing machine.

11. Draining filter (33, 34, 35, 36) according to claim 10, **characterized in that** said at least one magnetic portion or said magnetic element is coated by a layer of thermoplastic polymeric material.

12. Draining filter (33, 34, 35, 36) according to claim 10 or 11, **characterized in that** it comprises connection means for the removable connection with said draining pump.

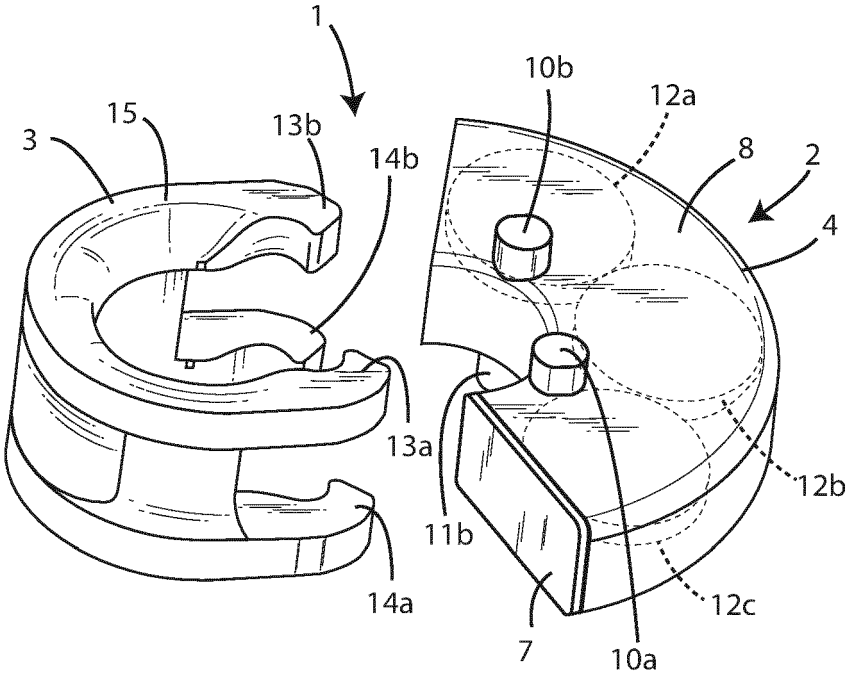

1
10b
12a
15
13b
3
14b
8
2
4
13a
12b
11b
14a
12c
7
10a

Fig. 1

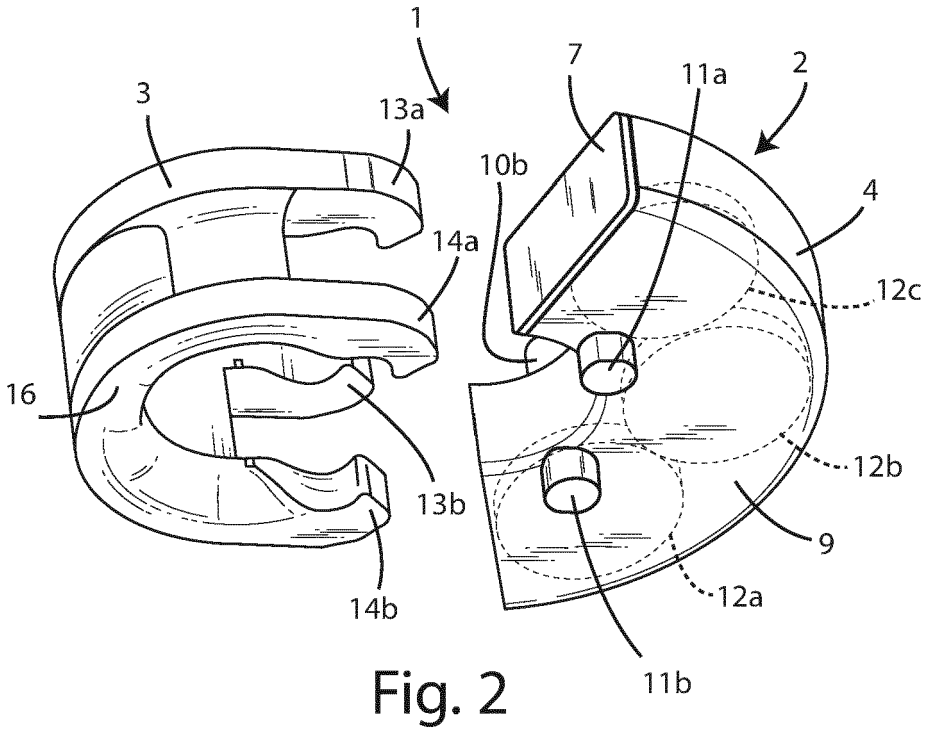

1
7
11a
2
3
13a
10b
4
14a
12c
16
12b
13b
9
12a
14b
11b

Fig. 2

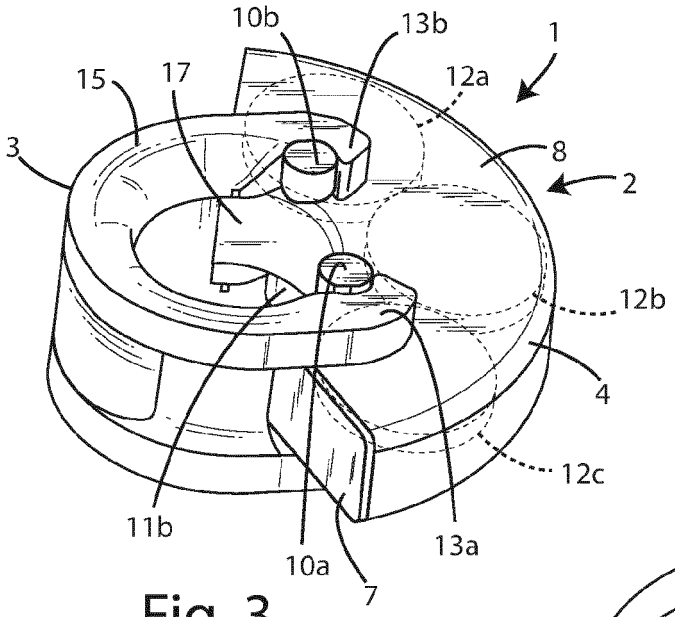


Fig. 3

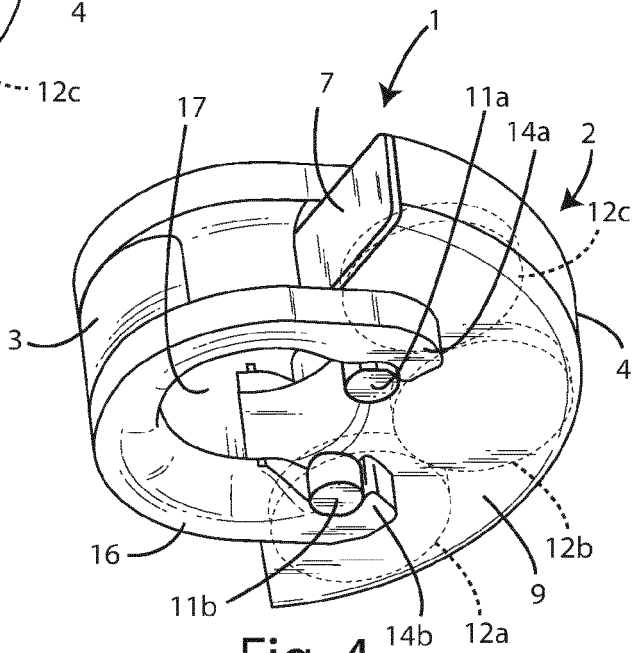
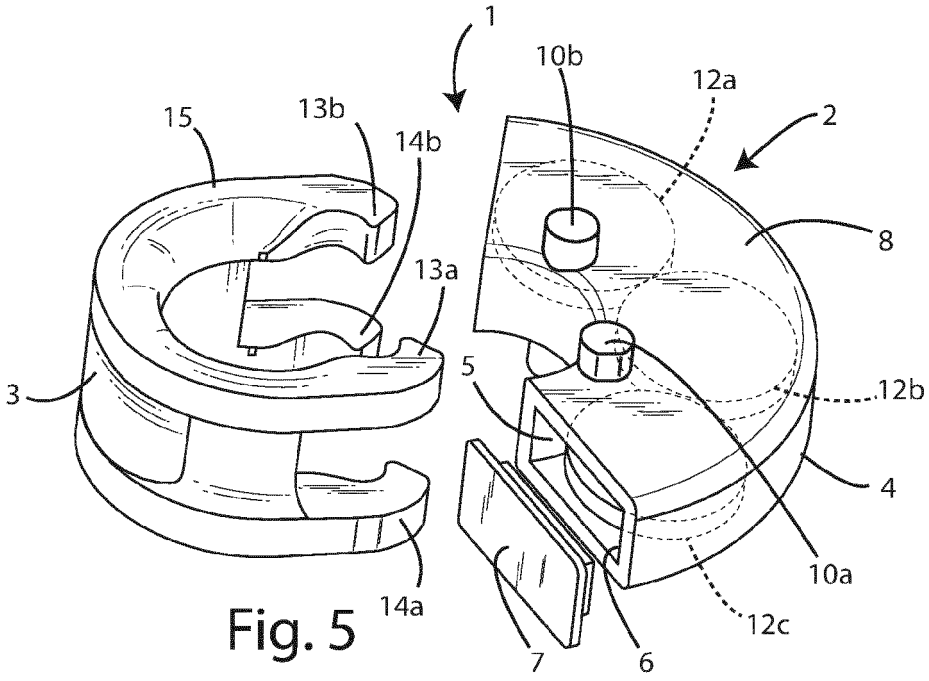


Fig. 4



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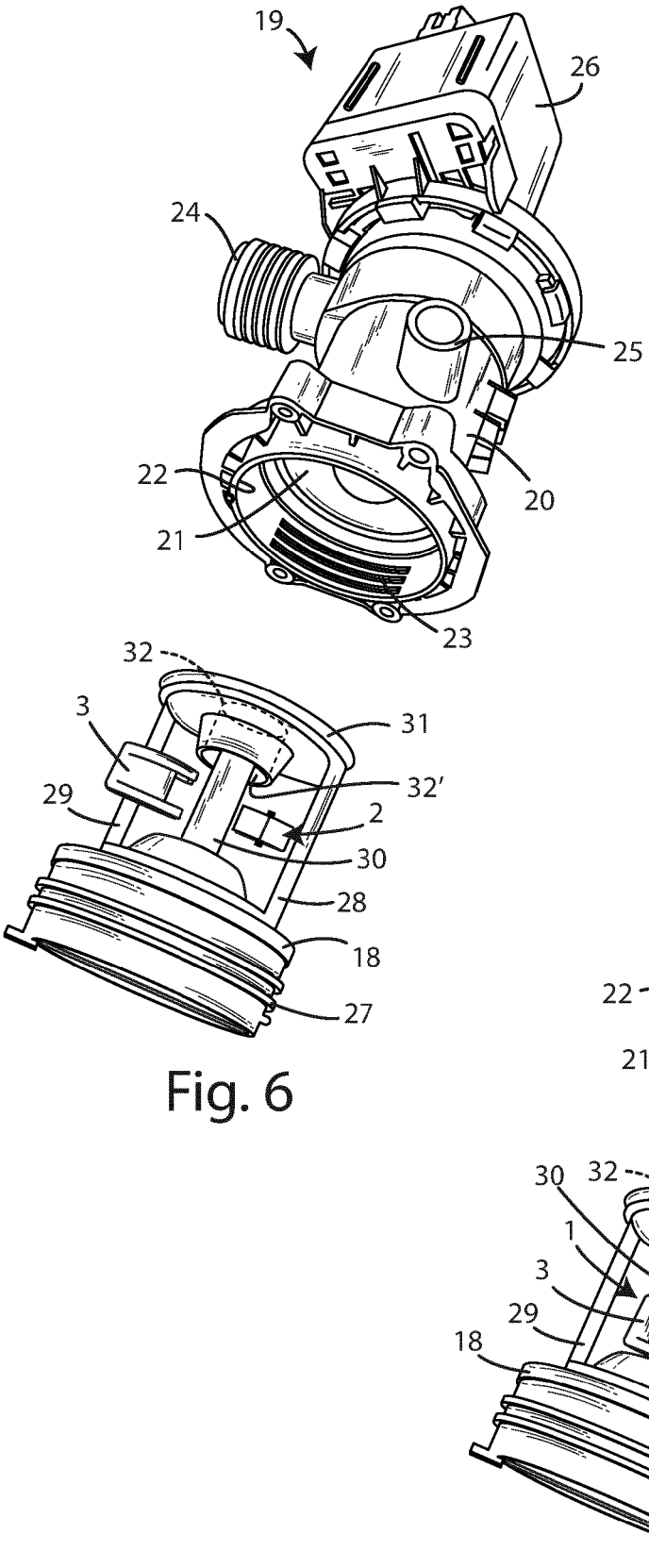
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3
31
32'
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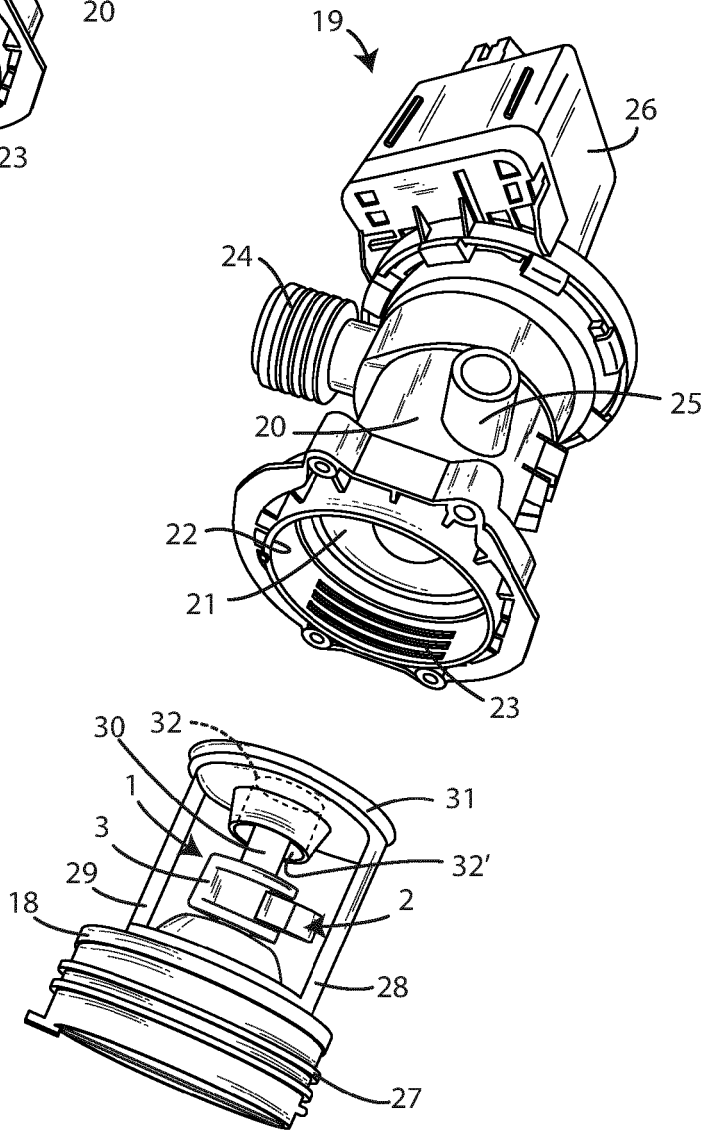
18
27

Fig. 6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1
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32'
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Fig. 7

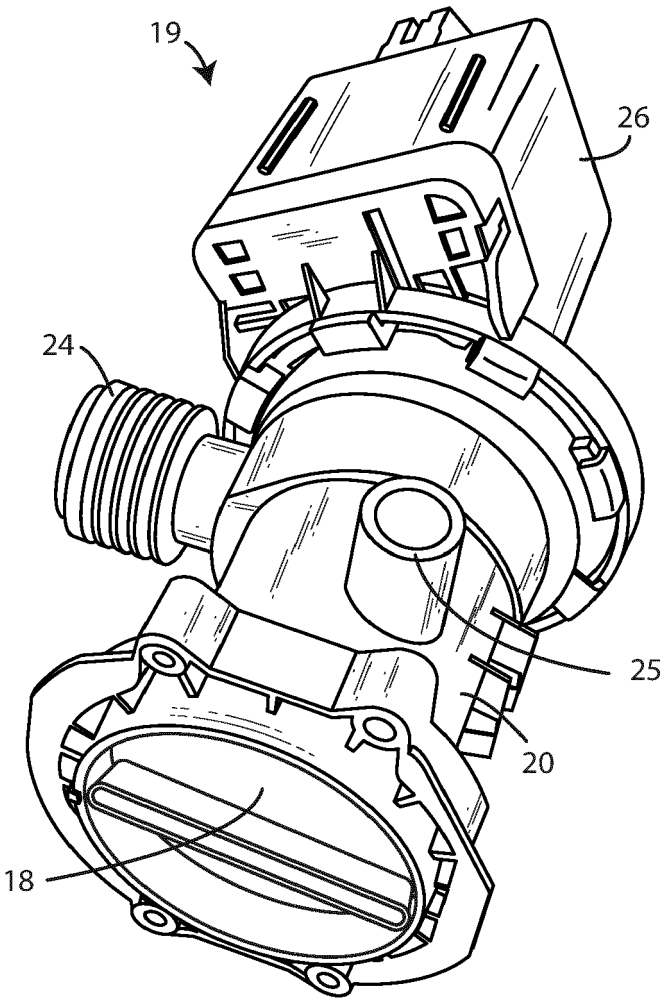

Fig. 8

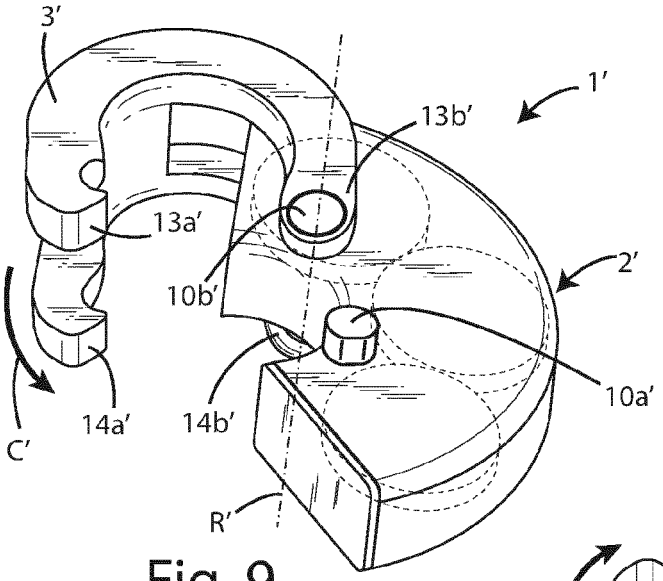

Fig. 9

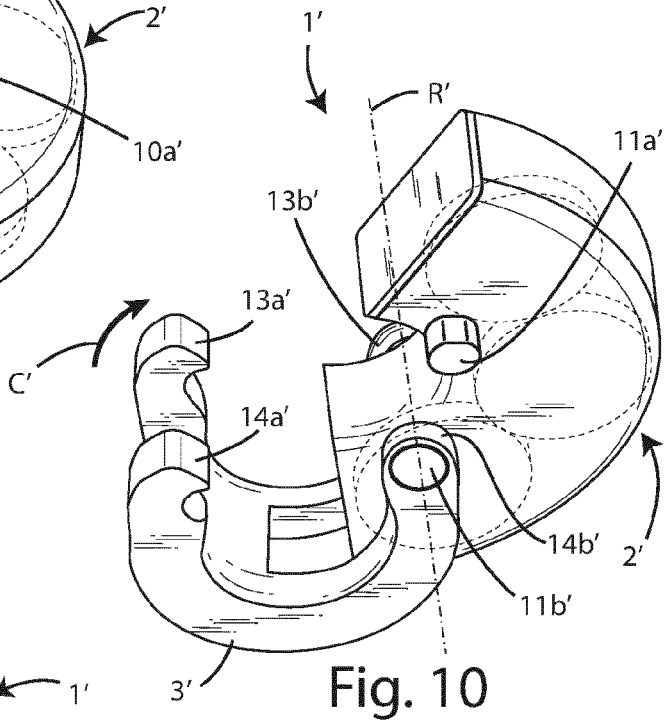

Fig. 10

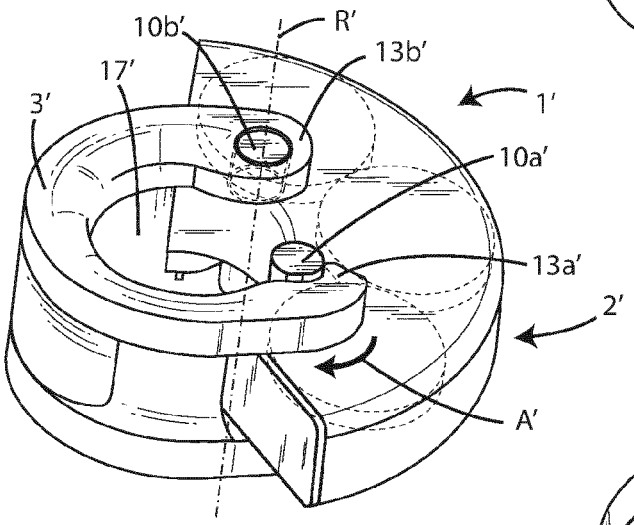

Fig. 11

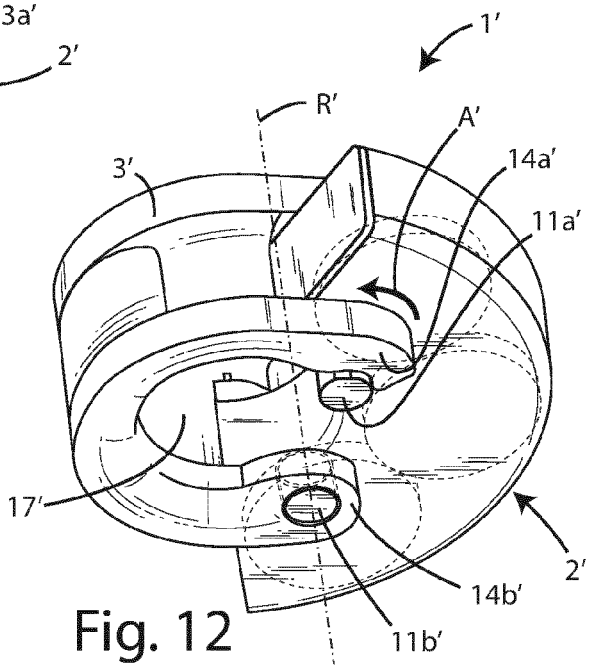

Fig. 12

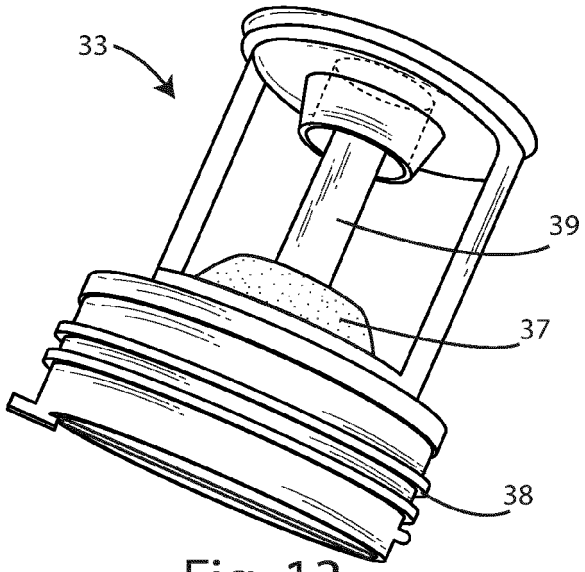

Fig. 13

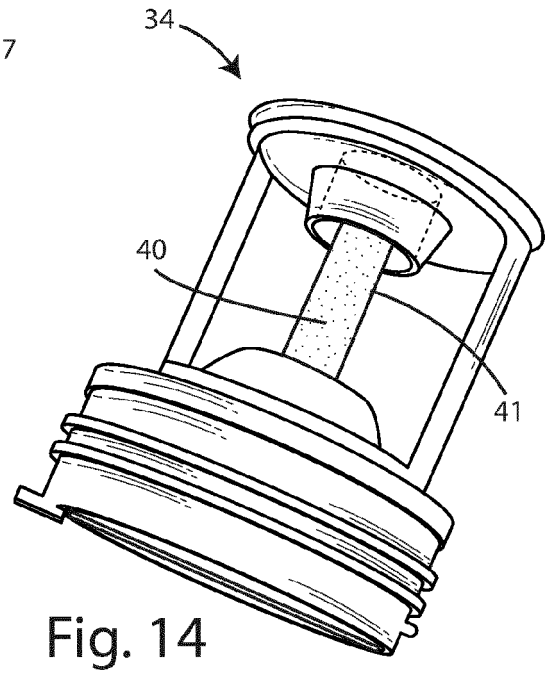

Fig. 14

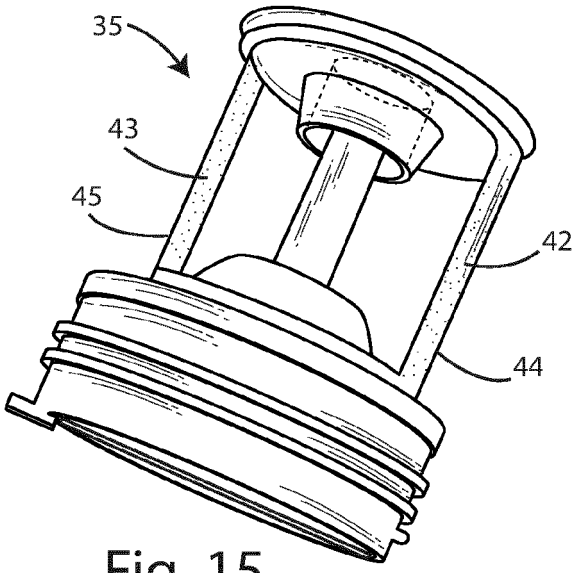

Fig. 15

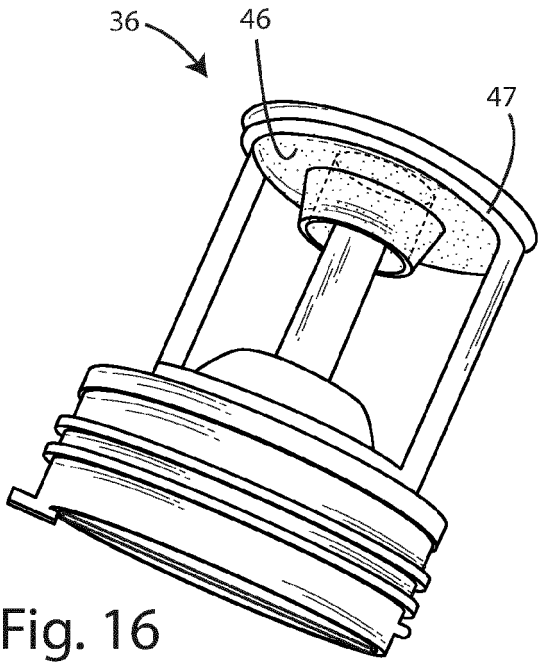

Fig. 16

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EUROPEAN SEARCH REPORT

Application Number
EP 23 19 2822

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	* paragraph [0025] - paragraph [0030]; figures 1-3 *	1-9	ADD. D06F39/08
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D06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	30 January 2024	Diaz y Diaz-Caneja

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30-01-2024

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