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(54) Title: MANUALLY-OPERATED CLOTHES WASHING APPARATUS

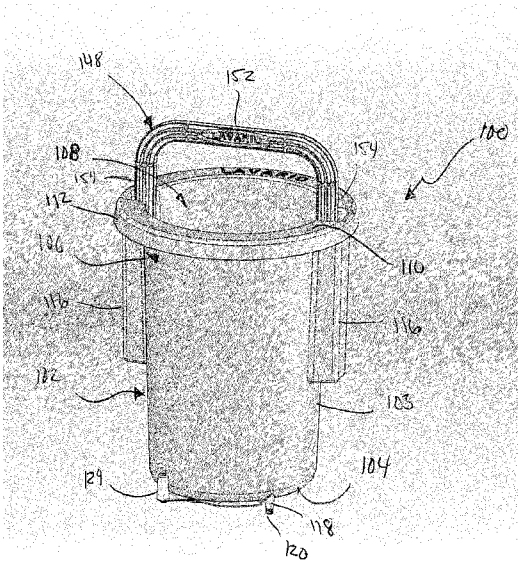


Fig. 1

(57) Abstract: A washing apparatus (100) includes a housing (102) and a plunge basket (126). The housing has a sidewall (103), a closed lower end and an open upper end, defining an internal cavity connected to the open upper end. The housing (102) further has a surface defining a mating forming on the sidewall (103). The plunge basket (126) is received through the open upper end and within the cavity, and includes a sidewall, a lower perforated surface and an open upper end, defining a compartment (134) to receive clothing (162) therein, a perforated lid (136) removably connected to the open upper end, and a handle (148) having a gripping portion and a rod extending therefrom, connected to the sidewall (103), and a reciprocal mating formation configured and arranged to cooperate with the mating formation on the housing (102) to guide the plunge basket (126) within the internal cavity of the housing (102).

MANUALLY-OPERATED CLOTHES WASHING APPARATUS

CROSS REFERENCE TO RELATED APPLICATION

[1] This patent document claims priority to earlier filed U.S. Provisional Patent Application No. 62/000,734, filed on May 20, 2014, the entire contents of which are incorporated herein by reference.

BACKGROUND OF THE INVENTION

[2] The invention relates generally to washing and drying clothes. More specifically, the present invention relates to a manually-operated system for washing clothes at home for those who do not have a full washer appliance in their home. More specifically, the present invention relates to washing small loads of laundry in the home thereby obviating the need for taking clothes to a laundry facility, such as a Laundromat.

[3] There is a need for a solution for washing small loads of laundry in between trips to a laundry facility for those who do not have full washer appliance. There are 320 million people in the United States living in 120 million households. Approximately 65% own their own homes and approximately 35% rent. Thus, there are approximately 42 million people who rent and 35,000 coin operated laundries in the United States with 90 million people depending on them.

[4] It is well know that going to a laundry facility, such as a Laundromat, is inconvenient, frustrating and expensive. As a result, there is a demand for a

simple, inexpensive device, such as a manually-operated device and system that can clean a small load of laundry in between trips to a laundry facility.

SUMMARY OF THE INVENTION

[5] The present invention preserves the advantages of prior art clothes washing systems. In addition, it provides new advantages not found in currently available systems and overcomes many disadvantages of such currently available systems.

[6] The invention is generally directed to the novel and unique manually-operated clothes washing system. A manually-operated washing apparatus is provided in accordance with the system of the present invention.

[7] It is therefore an object of the present invention to provide a manually-operated clothes washing system that is suitable for washing small loads of laundry.

BRIEF DESCRIPTION OF THE DRAWINGS

[8] The novel features which are characteristic of the present invention are set forth in the appended claims. However, the invention's preferred embodiments, together with further objects and attendant advantages, will be best understood by reference to the following detailed description taken in connection with the accompanying drawings in which:

[9] Fig. 1 is a top, front perspective view of the clothes washing apparatus of the present invention in an assembled relation;

[10] Fig. 2 is a bottom, front perspective view of the clothes washing apparatus of the present invention in an assembled relation with a drain valve closed;

[11] Fig. 3 is a bottom, front perspective view of the clothes washing apparatus of the present invention in an assembled relation with a drain valve open;

[12] Fig. 4 is a top, perspective view of the plunge basket of the clothes washing apparatus with the perforated lid removed;

[13] Fig. 5 is a top, front perspective view of the plunge basket of the clothes washing apparatus, in an assembled relation;

[14] Fig. 6 is a partial, top, front perspective view of the plunge basket illustrating the latching mechanism of the perforated lid to the plunge basket.

[15] Fig. 7 is a partially exploded view of the plunge basket of the clothes washing apparatus, illustrating the handle separated from the plunge basket;

[16] Fig. 8 is a bottom, front perspective view of the plunge basket of the clothes washing apparatus;

[17] Fig. 9 is a partial front, bottom, side, perspective view of the plunge basket illustrating the attachment of a handle to the plunge basket;

[18] Fig. 10 is a partially exploded view of the clothes washing apparatus of the present invention, illustrating a lid removed from a plunge basket and the plunge basket separated from the housing;

[19] Fig. 11 is a partially exploded view of the clothes washing apparatus of the present invention, illustrating the plunge basket separated from the housing;

[20] Fig. 12 is a cross-section view of the clothes washing apparatus of the present invention in an assembled relation, with the plunge basket partially inserted into the housing; and

[21] Fig. 13 is a cross-section view of the clothes washing apparatus of the present invention in an assembled relation, with the plunge basket fully inserted into the housing.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[22] Referring to Figs. 1-13, the manual clothes washing apparatus of the present invention is shown generally at 100. As will be more fully described below, the clothes washing apparatus 100 includes a housing 102 and plunge basket 126. The housing 102 has a sidewall 103, a closed lower end 104 and an open upper end 106, defining an internal cavity 108 connected to the open upper end 106. The housing 102 further has a surface defining a mating forming, such as a plunge channel 116, on the sidewall 103. The plunge basket 126 is received through the open upper end 106 and within the cavity 108, and

includes a sidewall 1128, a lower perforated surface 130 and an open upper end 132, defining a compartment 134 to receive clothing 162 therein, a perforated lid 136 removably connected to the open upper end 132, and a handle 148 having a gripping portion 152 and a rod 154 extending therefrom, connected to the sidewall 128, and a reciprocal mating formation, such as a channel guide 146, for example, configured and arranged to cooperate with the meting formation on the housing 102 to guide the plunge basket 126 within the internal cavity 108 of the housing 102.

[23] Referring now to Figs. 1 and 2, the housing 102 includes a sidewall, a closed lower end 104 and an open upper end 106 defining an internal cavity 108 connected to the open upper end 106. Although the housing 102 as shown generally has a cylindrical shape, any tubular configuration may be used. The open upper end 106 includes a rim 110 with a depending skirt 112. The skirt 110 and rim 112 may be reinforced with a number of ribs 114, best seen in Figs. 2 and 3, connected to the housing 102 to strengthen and provide rigidity to the rim 110 and skirt 112 and open upper end 106, generally. The sidewall 103 includes a mating formation such as a pair of elongate, plunge channels 116, depending through the rim 110 and forming a pair of keyways in the internal cavity 108 of housing 102. The plunge channels 116 may be opposed from one another. The plunge channels 116 may extend about midway a length of the housing 102.

[24] A number of bottom projections 118 may extend from the closed bottom end 104 to stabilize and support the housing 102. The bottom projections 118 may include rubberized or otherwise no-slip pads 120 to prevent the housing 102 from sliding or slipping on a surface.

[25] A drain 122 may be located near or on the closed bottom end 104 of the housing 102, as desired, and connected to the cavity 108. A drain valve 124 for selectively sealing the drain 122 is connected to the drain 122. The drain valve 124 may be closed, as shown in Fig. 2, or open, as shown in Fig. 3.

[26] Referring to Figs. 4-6, the plunge basket 126 includes a sidewall 128, a lower perforated surface 130 and an open upper end 132, defining a compartment 134 to receive clothing 162 therein. The plunge basket 126 is sized and dimensioned to be received within the cavity 108 of the housing 102. A removable perforated lid 136 is configured to secure to the open upper end 132 of the plunge basket 126. The open upper end 132 includes an annular lip 138 extending partially around the open upper end 132. The annular lip 138 includes a surface forming a recess 140 in the annular lip 138. The perforated lid 136 includes resilient members 142 depending from a bottom surface of the perforated lid 136, configured and arranged to cooperate with the recess 140 in annular lip 136, best seen in Fig. 6, to removably secure the perforated lid 136 thereto. Although there are a pair of recesses 136 and resilient members 142 shown in the exemplary embodiment, the number may be selected as desired. The perforated lid 136 further includes a number of fins

144 extending therefrom, providing a gripping surface for a user to lock and unlock the perforated lid 136 to the open upper end 132 of the plunge basket 126.

[27] On the sidewall 128 of the plunge basket 126 are reciprocal mating formations configured to engage the mating formations on the housing 102, such as channel guides 146 extending outwardly from the sidewall 126. In this exemplary embodiment, the channel guides 146 are sized and dimensioned to freely slide within the plunge channels 116 of the housing 102. In this exemplary embodiment, the channel guides 146 also serve as a mounting point for a handle 148, as shown in Figs. 7-9. More specifically, each channel guide 146 includes a surface defining an aperture 150 therethrough. The handle 148 includes a gripping portion 152 for a user to hold and two elongate rods 154 depending from opposing ends of the gripping portion 152. Each rod 154 includes a distal end 156 with a pair of resilient locking members 158 thereon, best seen in Fig. 7. The distal ends 156 are inserted into the apertures 150 on the channel guides 146, deflecting the resilient locking members 158 until the resilient locking members 158 snap into a locking position when the distal ends 156 of rods 154 are fully seated in each aperture 150 of the channel guides 146, best seen in Fig. 9.

[28] It is important to note that the exemplary mating formation and reciprocal mating formation discussed in this embodiment of the washing apparatus 100, namely the plunge channels 116 and channel guides 146, may

be inverted, reversed, or swapped. Regardless of form, the essential feature of the mating formation and reciprocal mating formation is that the two structure cooperate together to guide the plunge basket 126 within the housing 102 of the washing apparatus 100.

[29] In use, as shown in Figs. 10-13, the housing 102 is filled with water 160 at a desired temperature to a desired height within the housing 102 with the drain valve 124 closed. The appropriate amount of detergent 164 and any other additives is added, as desired. Clothes 162 are placed inside the clothing plunge basket 126, as best seen in Fig. 10, and the perforated lid 136 secured thereto, best seen in Fig. 11. The plunge basket 126 and clothes therein are immersed in the water of the housing 102 and the plunge basket 126 is pulled and pushed up and down thereby agitating the clothing and detergent as illustrated in Figs. 12 and 13. The clothing is cleaned by the significant water pressure and flow, which is generated inside the housing 102. Superior washing results are achieved with the washing apparatus 100.

[30] After washing is complete, the clothes are preferably wrung out. For example, a roller or lever mechanism (not shown) can be incorporated into the basket 126 to compress the clothes to remove excess water. Such a construction can be similar, for example, to a commercial style mop bucket. Wringing can be carried out over a sink or over or in the housing before or after the dirty water therein in emptied therefrom.

[31] When washing and wringing is complete, the drain valve 124, as best seen in Figs. 2 and 3, is opened and the dirty water is permitted to exit through the drain 122 in a bathtub or shower stall, for example. Further manual cycles, such as for rinsing, may be carried out, if desired.

[32] The washing apparatus 100 can be made out of any suitable material. For example, plastic is preferably used but any other materials, such as metals, can be used.

[33] It would be appreciated by those skilled in the art that various changes and modifications can be made to the illustrated embodiments without departing from the spirit of the present invention. All such modifications and changes are intended to be covered by the appended claims.

WHAT IS CLAIMED IS:

1. A washing apparatus, comprising:

a housing having a sidewall, a closed lower end and an open upper end, defining an internal cavity connected to the open upper end, the housing further having a surface defining a mating forming on the sidewall; and

a plunge basket received through the open upper end and within the cavity, the plunge basket having a compartment to receive clothes to be washed therein, the plunge basket configured and arranged to manually slide within the cavity, the plunge basket having a reciprocal mating formation configured and arranged to cooperate with the mating formation on the housing to guide the plunge basket within the internal cavity of the housing.

2. The washing apparatus of claim 1, wherein the mating formation comprises a plunge channel forming a keyway in the internal cavity of the housing.

3. The washing apparatus of claim 2, wherein there are a pair of opposing plunge channels.

4. The washing apparatus of claim 2, wherein the plunge channel is elongate.

5. The washing apparatus of claim 1, wherein the open upper end comprises a rim with a depending skirt.

6. The washing apparatus of claim 5, further comprising a number of ribs connected to the rim, skirt and housing, proving strength and rigidity to the rim and skirt.

7. The washing apparatus of claim 1, wherein the mating formation comprises a plunge channel forming a keyway through the rim and into the internal cavity of the housing.

8. The washing apparatus of claim 1, wherein the reciprocal mating formation is a channel guide extending from the sidewall of the plunge basket.

9. The washing apparatus of claim 1, wherein there are a pair channel guides extending from the opposite sides of the sidewall of the plunge basket.

10. The washing apparatus of claim 1, wherein the plunge basket further comprises:

a sidewall, a lower perforated surface and an open upper end, defining the compartment to receive clothing therein;

a perforated lid removably connected to the open upper end;

a handle having a gripping portion and a rod extending therefrom, the rod connected to the sidewall;

whereby a user manipulates the handle to agitate the plunge basket within the cavity.

11. The washing apparatus of claim 10, further comprising:

an annular lip extending partially around the housing, the annular lip including a surface forming a recess in the annular lip; and

a resilient member extending from a bottom surface of the perforated lid, the resilient member configured and arranged to cooperate with the recess in annular lip to removably secure the perforated lid thereto.

12. The washing apparatus of claim 11, further comprising:

a number of fins extending form the perforated lid configured and arrange to provide a gripping surface for a user to lock and unlock the perforated lid to the annular lip.

13. The washing apparatus of claim 11, wherein there are a pair of recesses in the annular lip and a corresponding pair of resilient members on the perforated lid configured and arranged to interlock together.

14. A washing apparatus, comprising:

a housing having a sidewall, a closed lower end and an open upper end, defining an internal cavity connected to the open upper end, the housing further having

a pair of opposing, elongate, plunge channels extending from the sidewall, forming a keyway through the open upper end and into the internal cavity; and

a plunge basket received through the open upper end and within the cavity, the plunge basket having a sidewall, a lower perforated surface and an open upper end, defining a compartment to receive clothing therein, a perforated lid removably connected to the open upper end, and a handle having a gripping portion and a rod extending therefrom, the rod connected to the sidewall, the plunge basket having a pair of opposing channel guides configured and arranged to cooperate with the plunge channels on the housing to guide the plunge basket within the internal cavity of the housing;

whereby a user manipulates the handle to agitate the plunge basket within the cavity.

15. The washing apparatus of claim 14, wherein the open upper end comprises a rim with a depending skirt.

16. The washing apparatus of claim 15, further comprising a number of ribs connected to the rim, skirt and housing, proving strength and rigidity to the rim and skirt.

17. The washing apparatus of claim 14, wherein the mating formation comprises a plunge channel forming a keyway through the rim and into the internal cavity of the housing.

18. The washing apparatus of claim 14, further comprising:

an annular lip extending partially around the housing, the annular lip including a surface forming a recess in the annular lip; and

a resilient member extending from a bottom surface of the perforated lid, the resilient member configured and arranged to cooperate with the recess in annular lip to removably secure the perforated lid thereto.

19. The washing apparatus of claim 18, further comprising:

a number of fins extending form the perforated lid configured and arrange to provide a gripping surface for a user to lock and unlock the perforated lid to the annular lip.

20. The washing apparatus of claim 18, wherein there are a pair of recesses in the annular lip and a corresponding pair of resilient members on the perforated lid configured and arranged to interlock together.

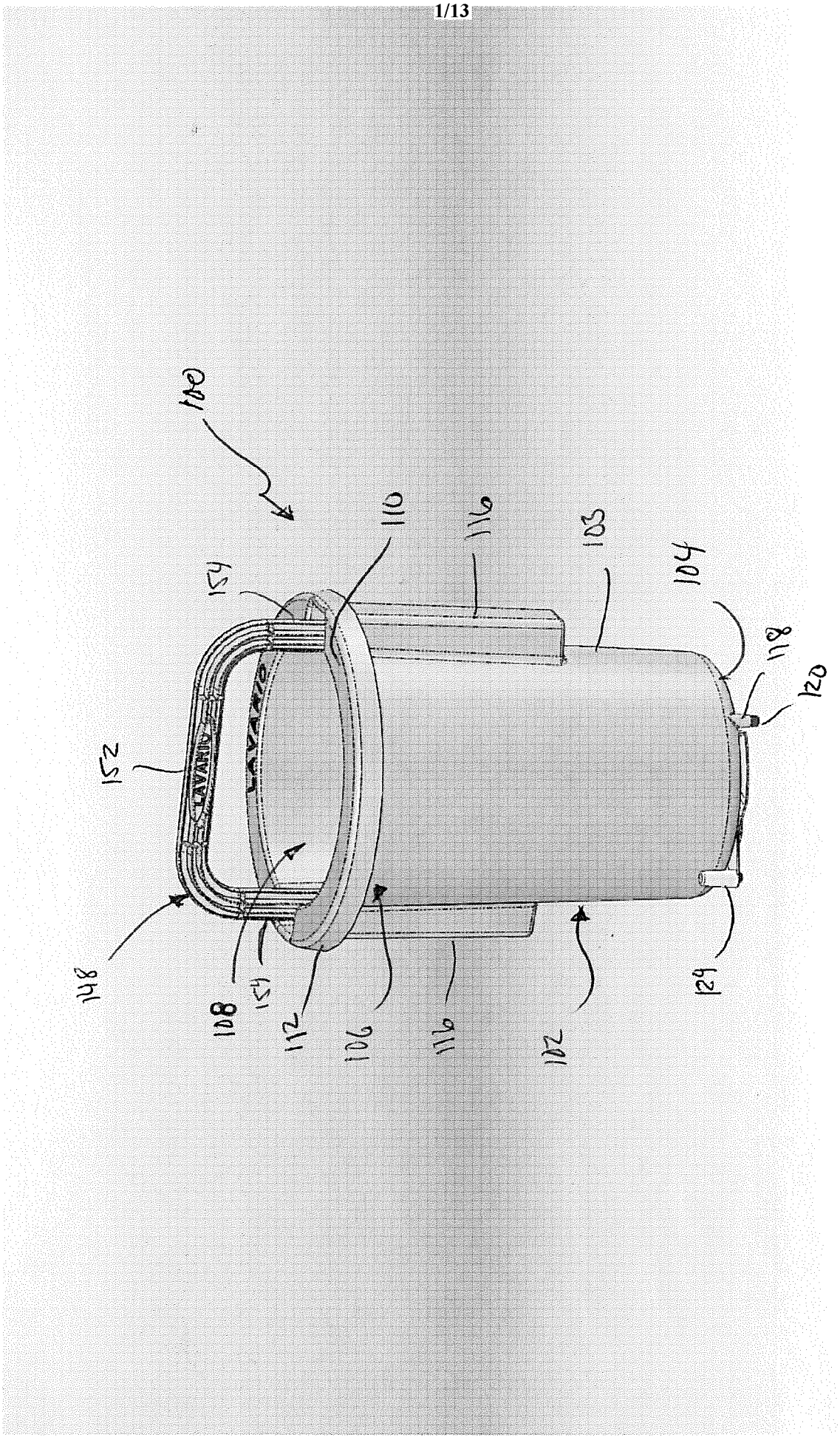

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Fig. 1

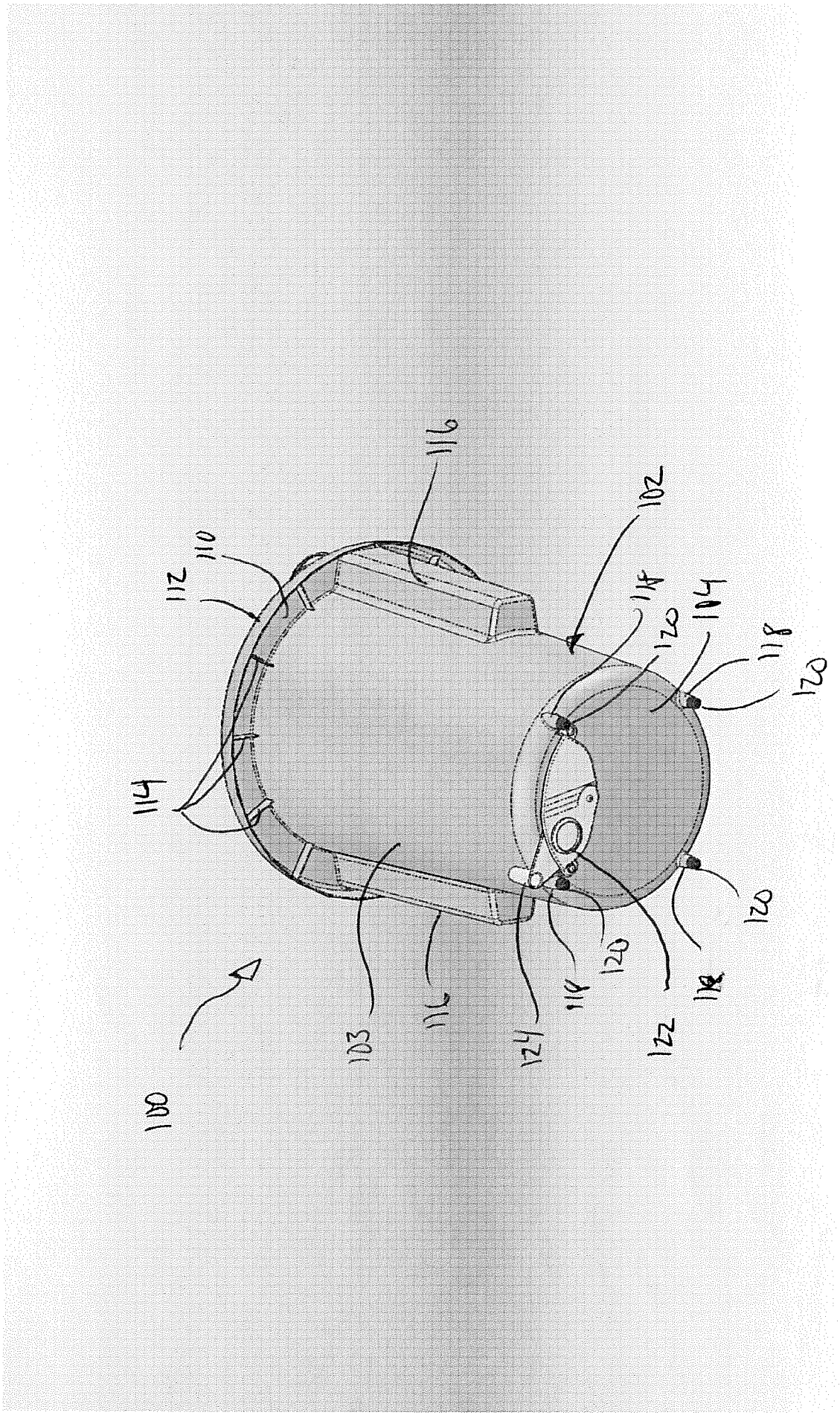

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Fig. 2

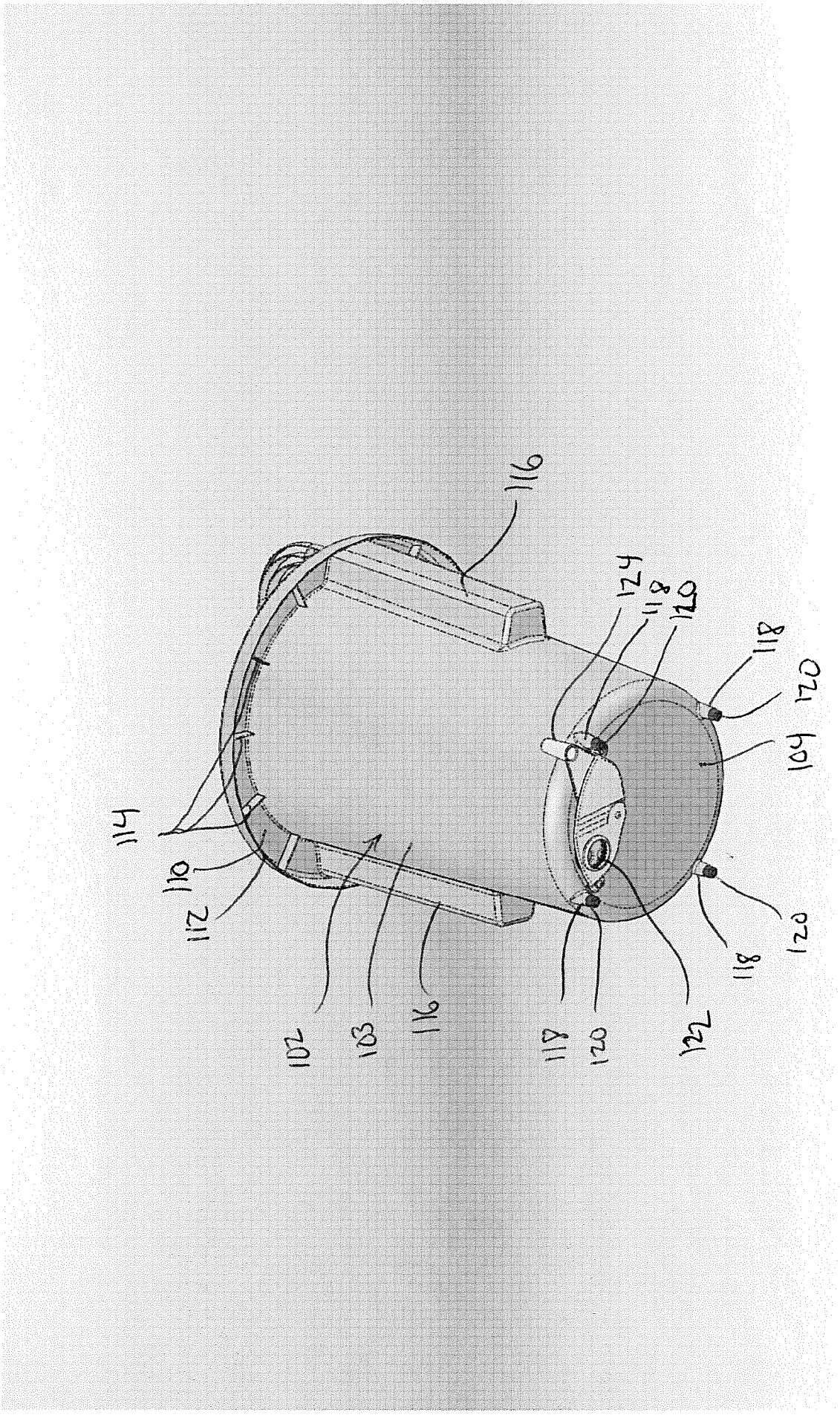

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Fig. 3

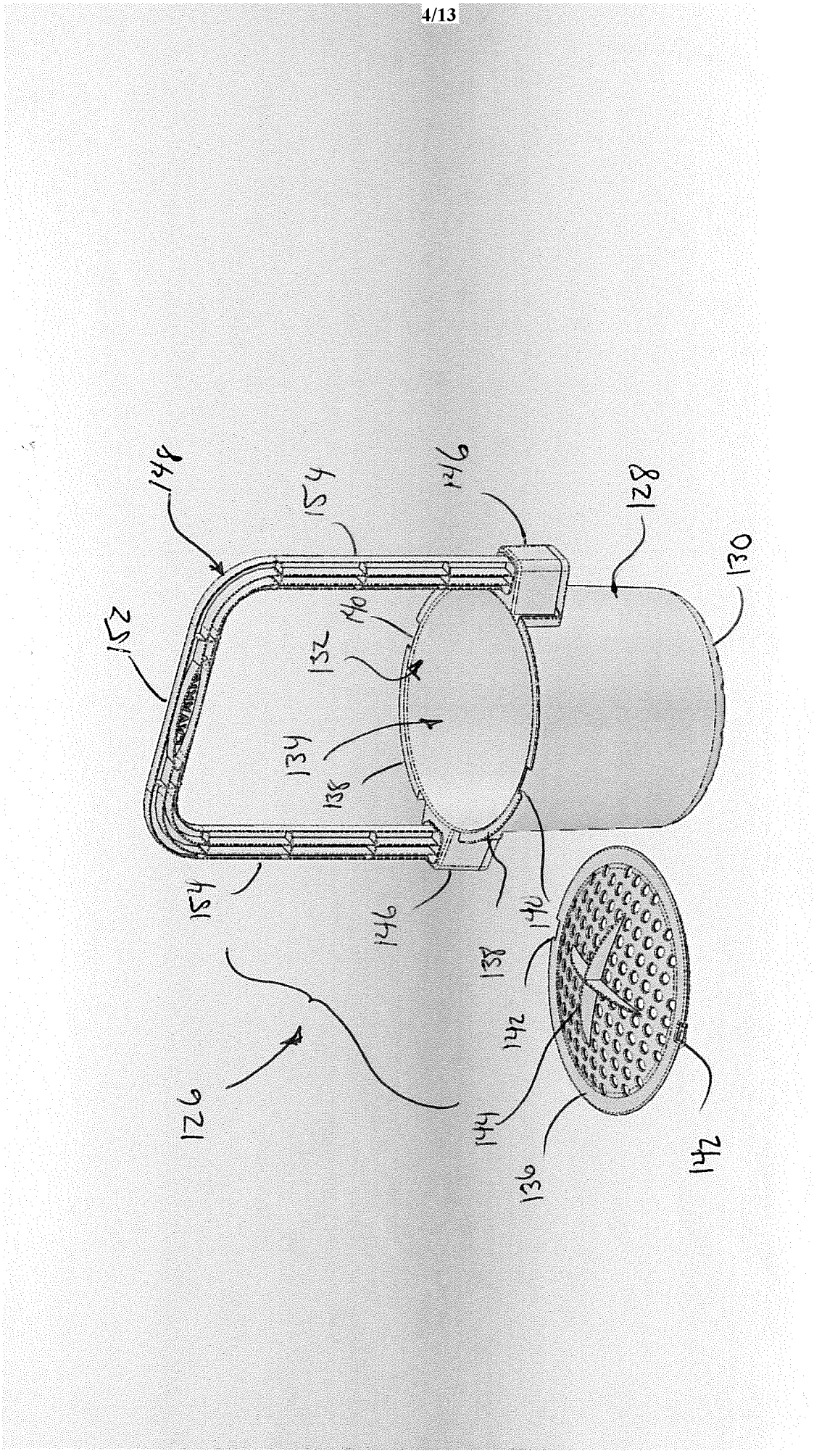

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Fig. 4

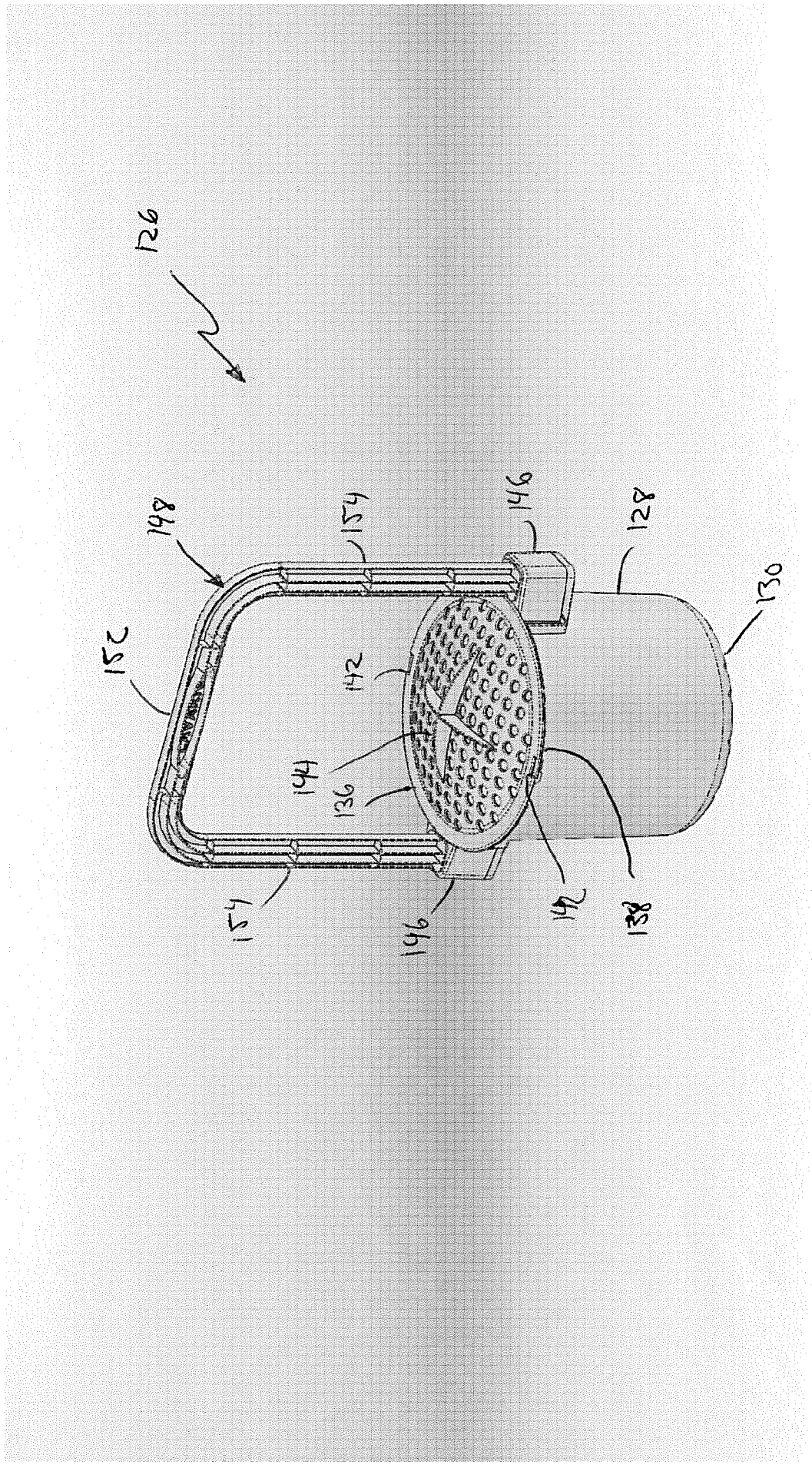


Fig. 5

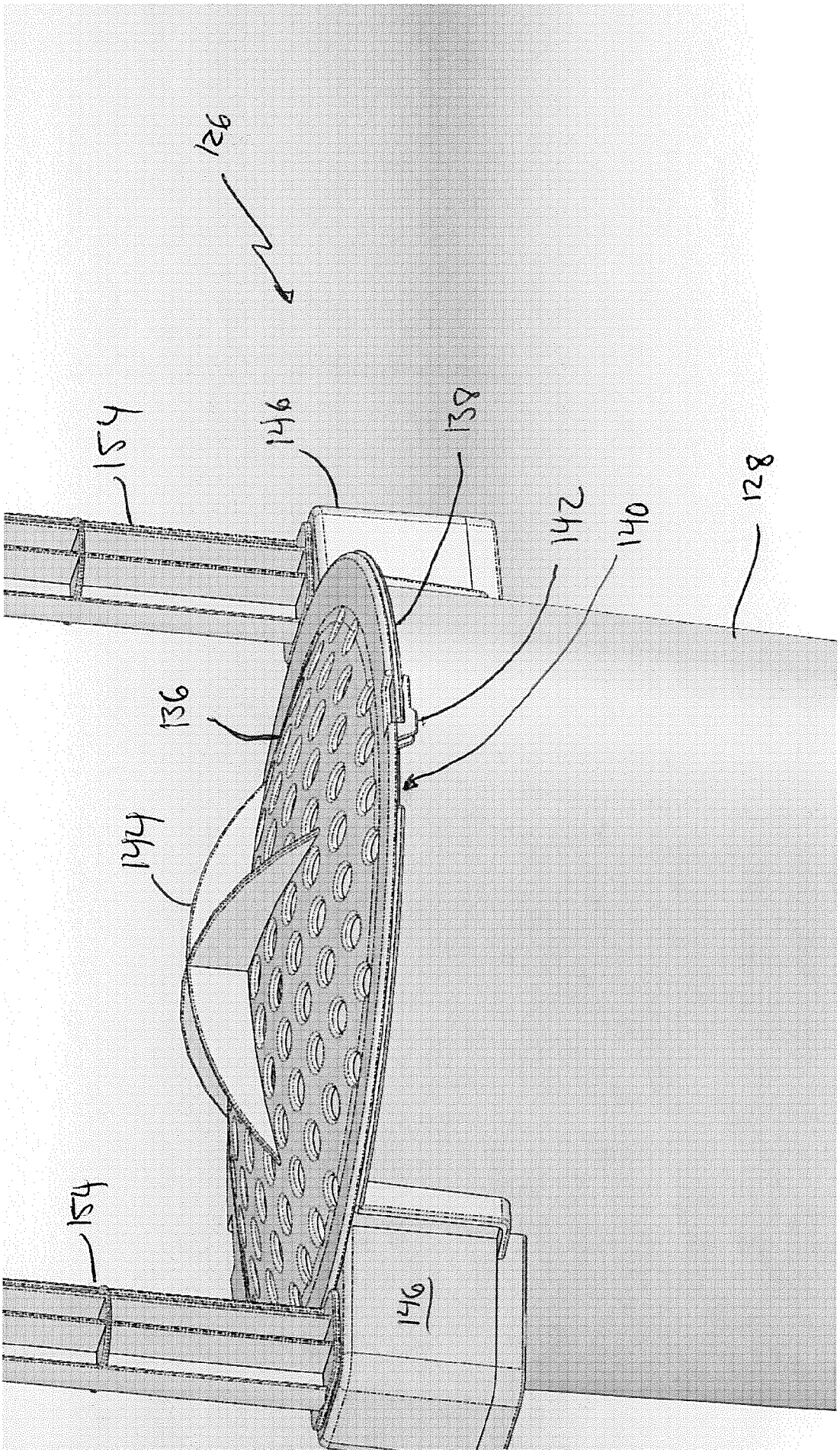


Fig. 6

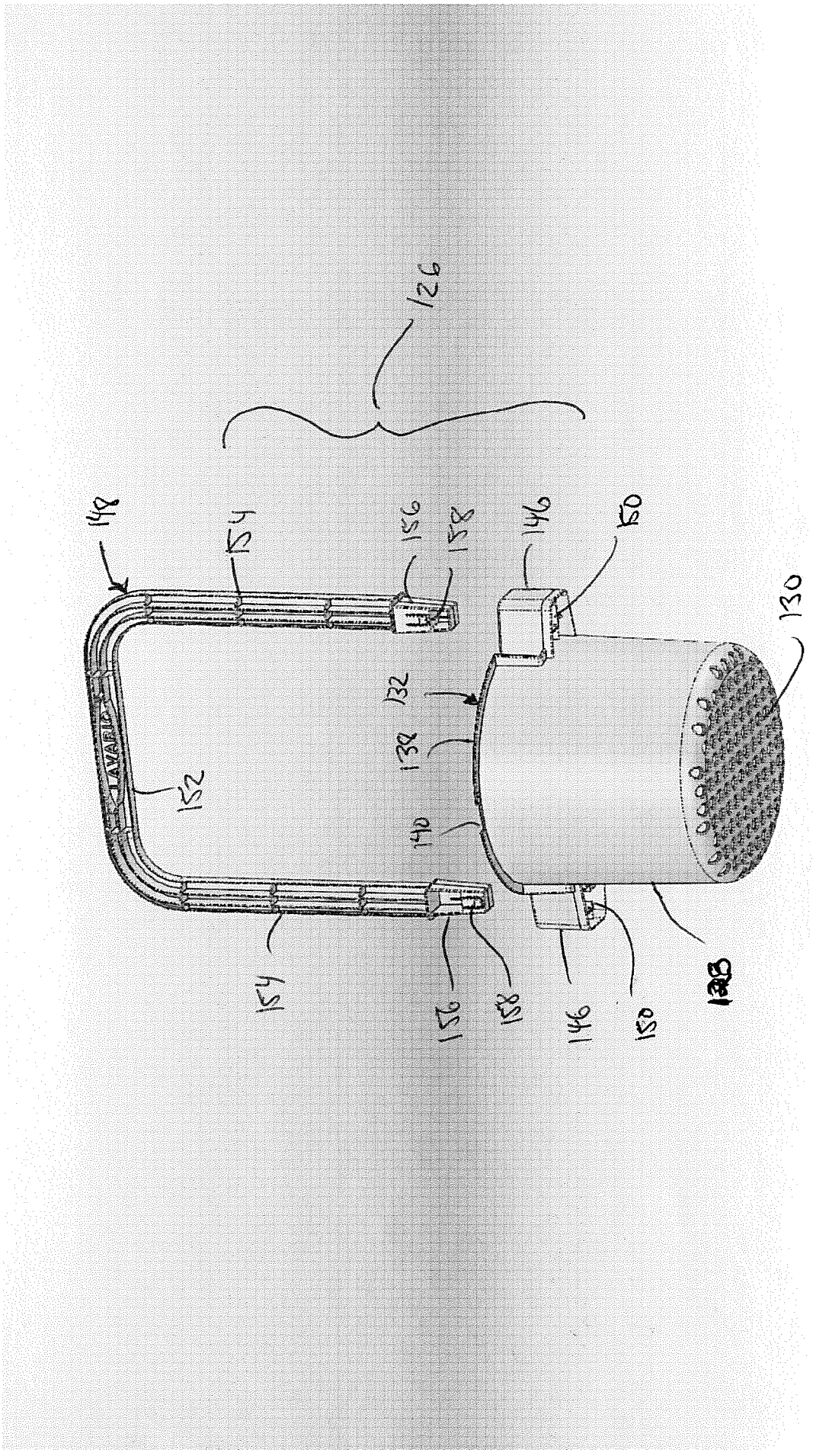

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Fig. 7

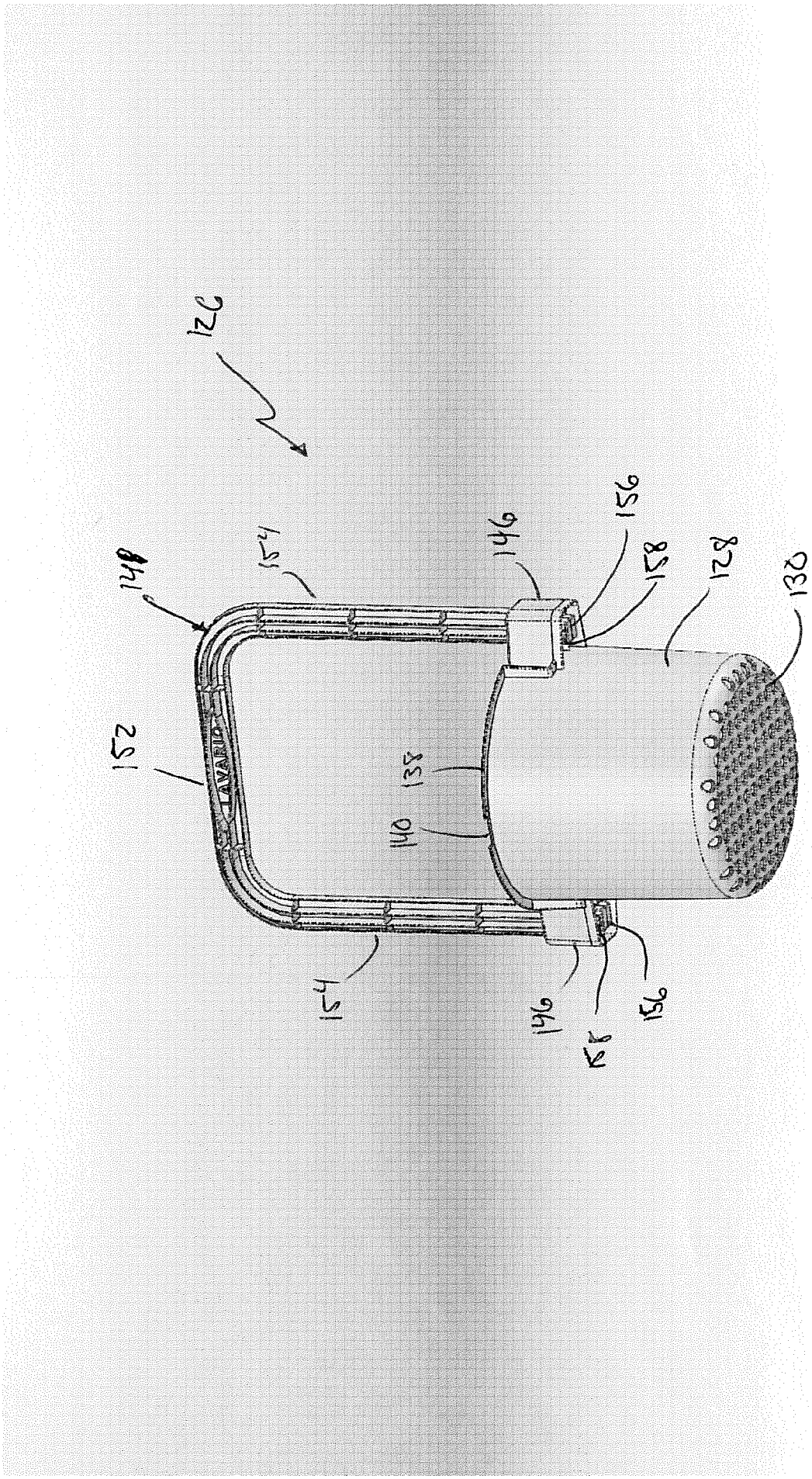


Fig. 8

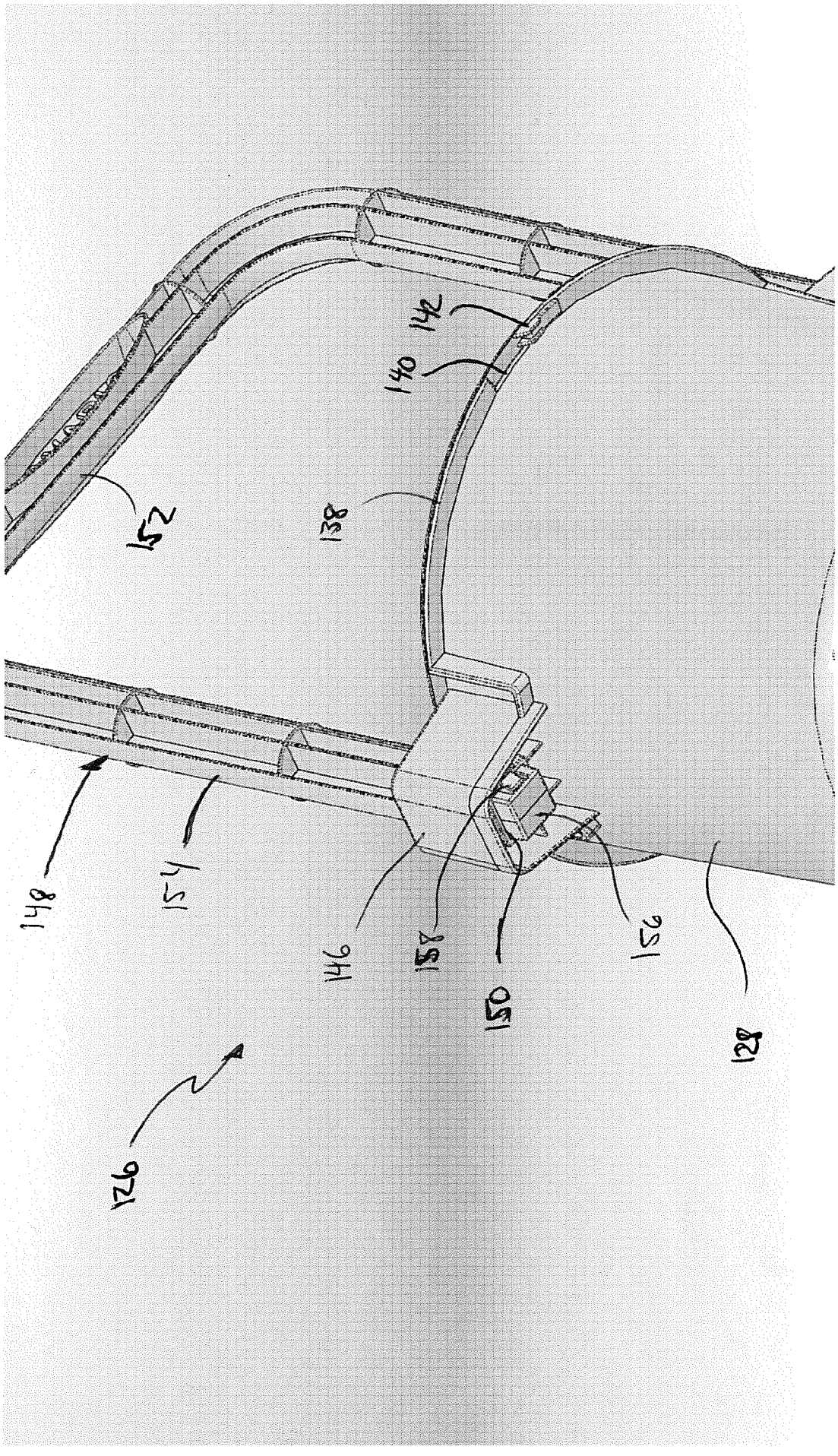


Fig. 9

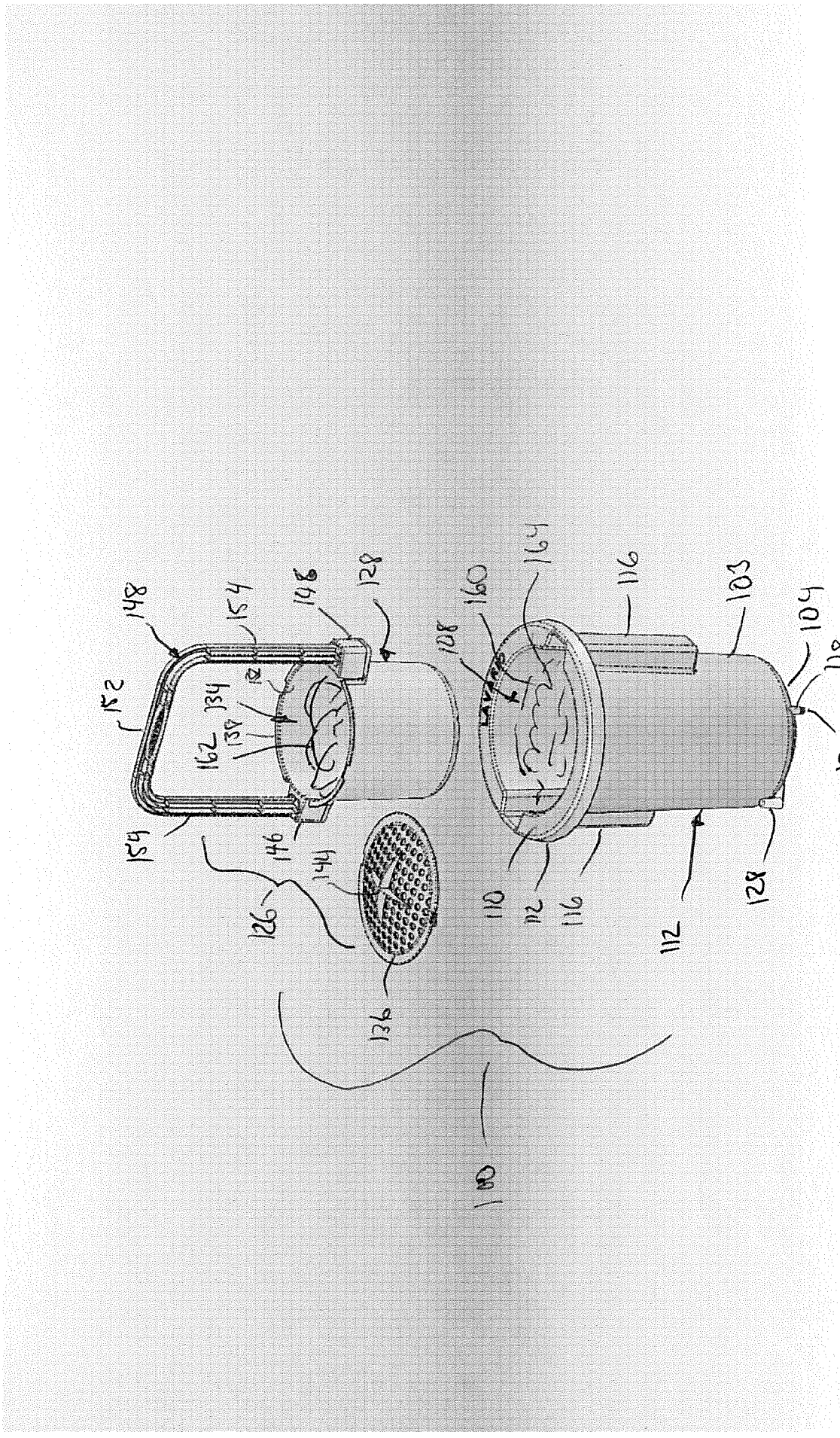

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Fig. 10

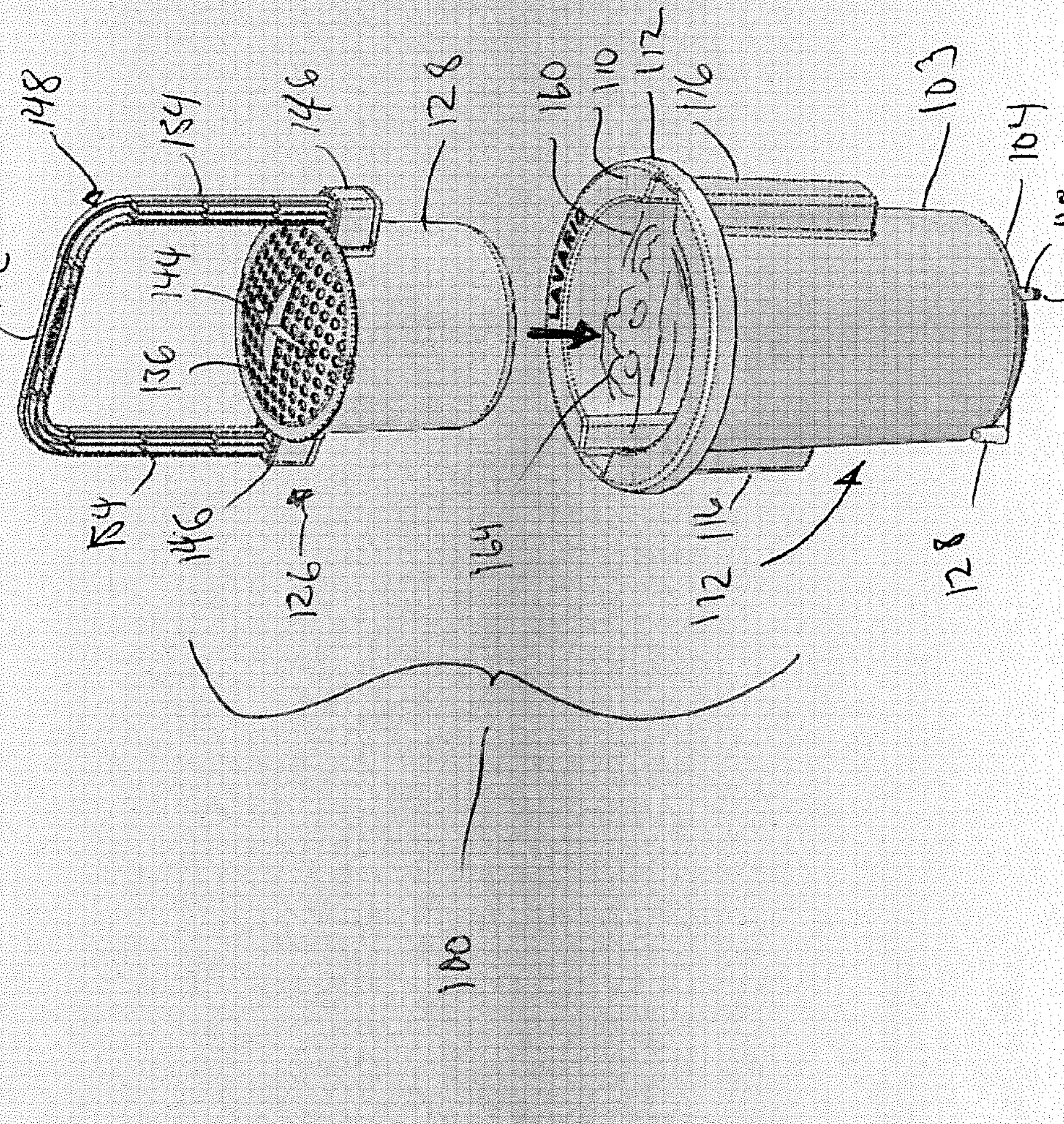

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Fig. 11

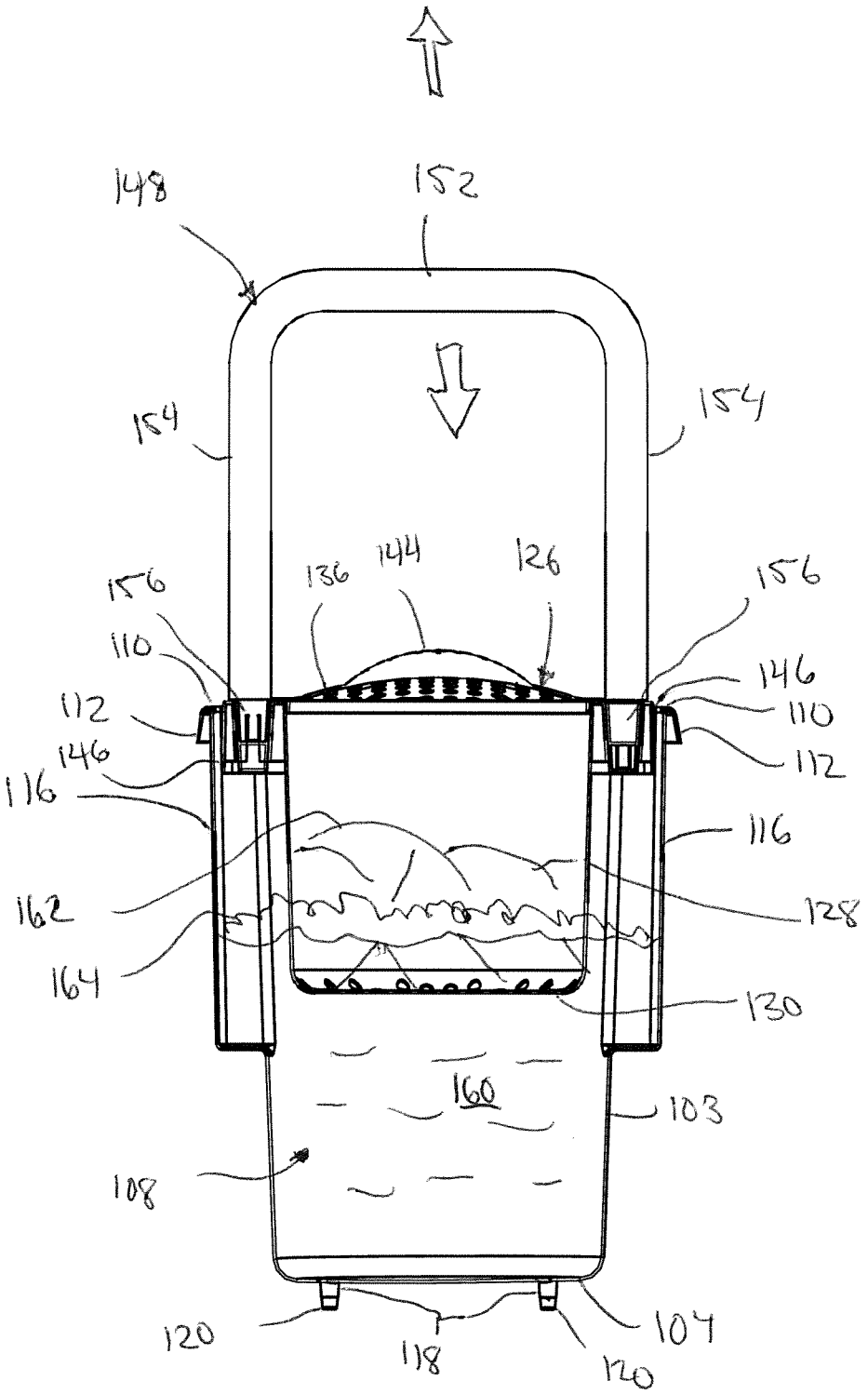

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Fig. 12

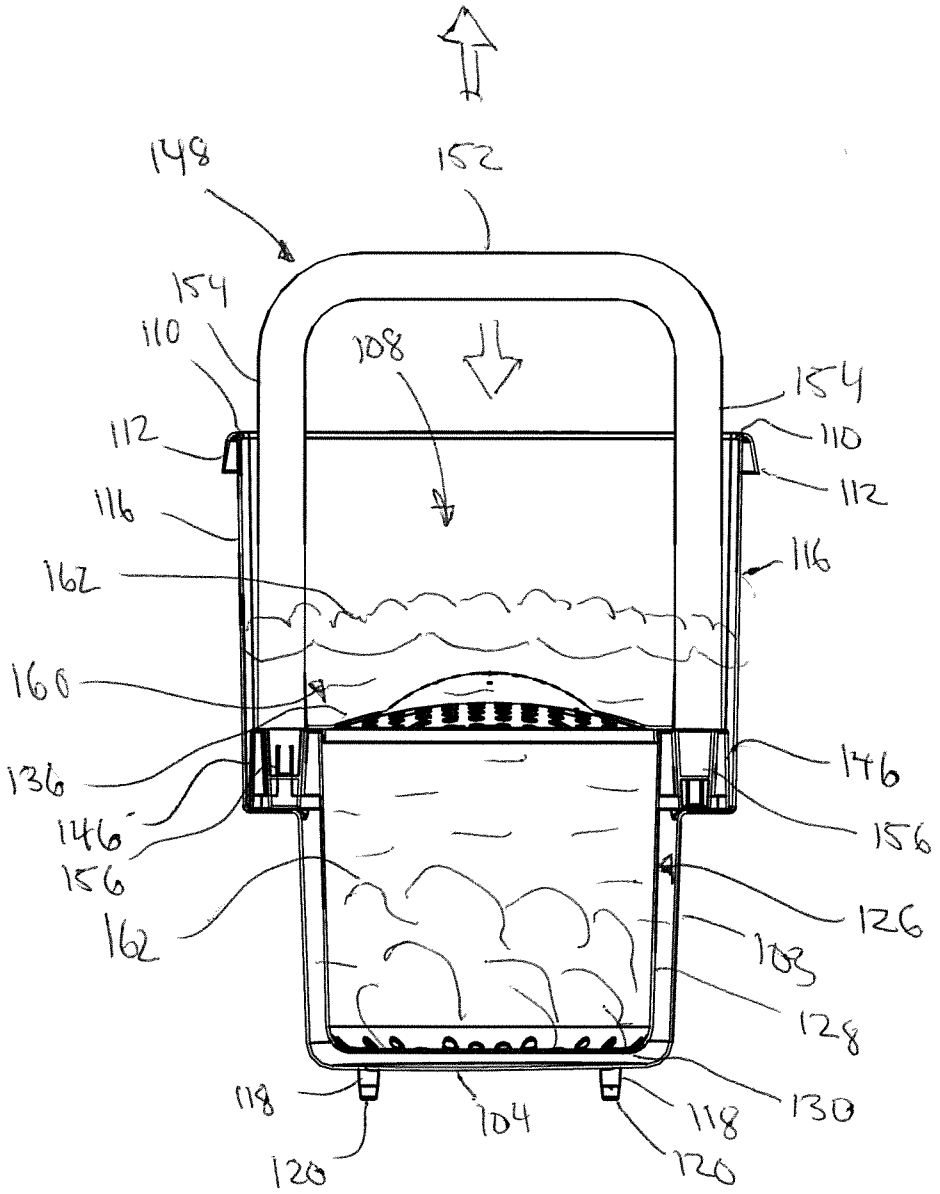

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Fig. 13

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2015/031318

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - D06F 27/00 (2015.01)
CPC - D06F 27/00 (2015.07)
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC(8) - B08B 3/06; D06F 5/00, 27/00, 39/12 (2015.01)
CPC - B08B 3/08; D06F 5/00, 27/00, 39/12 (2015.07)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC - 68/43, 57, 79, 93, 122, 147, 148, 152, 153, 154, 155, 156; 366/332 (keyword delimited)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PatBase, Google Patents, Google.
Search terms used: washer,machine,washing,clothes,clothing,plunge,basket,tub,receptacle,container,holes,apertures,openings,cage,lip manual,hand,handoperated,portable,compact,reciprocating,rectilinear,channel, rackway,tray,rim,flange,skirt,ribs, gussets,plastic

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2,741,253 A (BERNIER et al) 10 April 1956 (10.04.1956) entire document	1-5,7-9
Y		6,10,14-17
Y	US 2002/0175173 A1 (DIESTERBECK) 28 November 2002 (28.11.2002) entire document	6,16
Y	US 448,654 A (JANTZ) 24 March 1891 (24.03.1891) entire document	10,14-17
A	US 2002/0170323 A1 (STAHL) 21 November 2002 (21.11.2002) entire document	1-20
A	US 3,512,539 A (HAMILTON) 19 May 1970 (19.05.1970) entire document	1-20
A	US 2,050,431 A (GUBLER) 11 August 1936 (11.08.1936) entire document	1-20

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
27 July 2015	07 AUG 2015
Name and mailing address of the ISA/ Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300	Authorized officer Blaine Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774