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(54) LAUNDRY TREATMENT MACHINE WITH A DRAWER

WÄSCHEBEHANDLUNGSMASCHINE MIT EINER SCHUBLADE

MACHINE DE TRAITEMENT DE LINGE AYANT UN TIROIR

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Description

Field of the invention

[0001] The present invention concerns the field of laundry treatment machines. In particular, the present invention refers to a laundry treatment machine with a drawer.

Background Art

[0002] Nowadays the use of laundry treatment machines is widespread. Laundry treatment machines comprise both "simple" laundry washing machines (i.e. laundry washing machines which can only wash and rinse laundry) and laundry washing-drying machines (i.e. laundry washing machines which can also dry laundry), or drying machines (i.e. drying machines which can dry laundry).

[0003] In the present description, the term "laundry treatment machine" refers to simple laundry washing machines, laundry washing-drying machines or drying machines. Laundry treatment machines such as laundry washing machines generally comprise an external casing provided with a washing tub which contains a rotatable perforated drum where the laundry is placed. A loading/unloading door ensures access to the drum. Laundry treatment appliances typically comprise a water supply unit and a products supply unit, preferably a drawer, for the introduction of water and washing/rinsing products (i.e. detergent, softener, rinse conditioner, etc.) into the tub. Known laundry treatment appliances are also provided with water draining devices that may operate during different phases of the washing program to drain the dirty water.

[0004] According to the known art, a complete treating program typically includes different phases during which the laundry to be washed is subjected to adequate treatments. A treating cycle usually comprises a main washing phase during which the laundry is treated by means of water and a detergent. The water is typically heated to a predetermined temperature based on the washing program selected by the user. It is also possible that hot water is introduced into the tub from the hot water mains. During the main washing phase the drum is rotated, so as to apply also a mechanical cleaning action on the laundry. At the end of the main washing phase the drum is typically rotated at high rotational speed, so in such a way that dirty washing liquid (i.e. water mixed with detergent) is extracted from the laundry, and this dirty washing liquid is drained to the outside by the water draining devices.

[0005] A combined washer/dryer is built for washing and drying clothes and comprises a drying chamber into which the clothes to be dried are introduced. The drying chamber is rotatable supported within a cabinet and made to rotate by means of a driving motor, typically consisting of an electric motor connected to the drying chamber via a belt. The drying chamber usually is a drum, and

one or more drying phases are added which typically commence after the rinsing phases. The drying phase usually involves rotating the drum and applying hot air to the laundry.

[0006] Household appliances, especially laundry treatment appliances, usually have a connection to water mains or to a water supply and comprise a water circuit into which water can be admitted through a water supply valve. Additionally or alternatively, further valve(s) can be provided configured to allow the water flow into this circuit, eventually and/or potentially into a branch of this circuit; for example, a discharge valve can be associated to a discharge circuit, allowing the discharge of the waste by the flowing of the water into a discharge circuit connected outside the machine.

[0007] Moisture can collect, especially during the conduction of a laundry treatment routine, at the bottom side of the drawer when it is arranged in an inserted state in the casing of the machine. Especially during the washing cycle condensation of water can occur under the detergent drawer.

[0008] A household appliance can also be built as a drier with a laundry treatment chamber which is preferably built as rotatable drum. The drier preferably comprises a heater by which air is heated which is guided into the laundry treatment chamber. The drier preferably comprises a drawer configured/suitable to collect the moisture separated from the laundry to be dried placed on the drum. Due to the moisture presence / temperature on the drawer, also in case of a drier the condensation of the water can occur under said drawer.

[0009] When the drawer is pulled out and/or pushed in again, liquid can drop from the bottom of the drawer and hit either the user or the floor, which is an undesired effect.

[0010] The WO 2016/177627 A1 discloses a laundry treatment machine with a retractable drawer with compartments for the collecting of a product or water. The bottom of the drawer is coated with a protective layer preventing the formation of water drops at the bottom the drawer.

Summary of the invention

[0011] The aim of the invention is therefore to provide a laundry treatment machine which prevents dripping of liquid from the drawer.

[0012] The invention therefore relates to a laundry treatment machine, comprising a casing in which a laundry treatment chamber for acceptance of laundry is arranged, further comprising a retractable drawer with at least one compartment for the collection of a product/water necessary for /deriving from the laundry treatment chamber, whereby a moisture removing element is provided which is configured to remove moisture from a bottom part of the drawer when the drawer is moved, whereby the moisture removing element is arranged below a frontal part of the drawer when the drawer is arranged in an inserted state, and whereby the moisture removing

element is fixed to said casing of said laundry treatment machine.

[0013] The invention also relates to a laundry treatment machine, comprising a casing in which a laundry treatment chamber for acceptance of laundry is arranged, further comprising a retractable drawer with at least one compartment for the collection of a product /water necessary for /deriving from the laundry treatment chamber, whereby a brush element is provided which is configured to brush a bottom part of the drawer when the drawer is moved.

[0014] Preferred embodiments of the invention are described in relation to the dependent claims and the description of the enclosed drawings.

[0015] The invention is based on the consideration that moisture can condense and liquid can collect at the bottom of the drawer and drip to the floor or on the user while the user is handling the drawer. Even though the liquid is typically only moisture from water, the user will get an assessment of the washing machine to be of low quality. For this reason, moisture should be removed before it can drip from the drawer.

[0016] Applicant has found that the removal of moisture can be achieved by a dedicated moisture removing element which removes, or alternatively absorbs, moisture from the bottom of the drawer when the drawer is moving. In this way, when the drawer is pulling out, moisture at its bottom can be removed during this movement, such that bottom parts of the drawer which are protruding from the casing contain no moisture anymore which can drip down.

[0017] The drawer is moveable in a retraction direction. When it is in a retracted position, its at least one compartment becomes accessible to the user. The drawer is also moveable in an insertion direction which is a direction opposite to the retraction direction. For the laundry treatment process to be performed, the drawer is preferably fully inserted.

[0018] The moisture removing element / brush element is preferably built as a moisture and/or dirt removal element. Most preferably, it is configured to remove moisture as well as dirt from the bottom of the drawer.

[0019] The moisture removing element / brush element is fixed to the casing of the laundry treatment machine. The moisture removing element is preferably fixed to a detergent dispenser housing of the laundry treatment machine, especially preferably is fixed to the drawer seat.

[0020] The laundry treatment machine is preferably a laundry washing machine, a combined washing/drying machine or a dryer. In case of a washer or combined washer/dryer, the laundry treatment chamber is preferably a rotatable drum which is arranged in a tub. In case of a pure dryer, the laundry treatment chamber is preferably a drum.

[0021] According to the invention, the moisture removing element / brush element is arranged below a frontal part of the drawer when the drawer is arranged in an inserted state. In this way, during the process of pulling

out / retracting the drawer, moisture can be removed by the moisture removing element/ brush element starting from the front of the bottom part during the retraction until a back part of the drawer. In this way, it is assured that all moisture is removed from a location of the drawer bottom part before this location has moved outside the machine casing.

[0022] In a preferred embodiment, the moisture removing element is arranged with a spatial distance to the drawer. Preferably, it has no contact with the drawer in any position of the drawer but is close enough to remove moisture. In this way, the moisture removing element does not influence or hinder the movement of the drawer and can not lead to damage or scratches on the bottom of the drawer.

[0023] The spatial distance, i.e. the distance between closest part of the moisture removing element to the drawer bottom, is preferably equal to or smaller than 0.1 mm.

[0024] In a further preferred embodiment, during movement of the drawer the moisture removing element/ brush element remains in contact with the drawer. The moisture removing element/ brush element is preferably at least partly built with elastic and/or flexible components which bend or elastically deform when the drawer is moved.

[0025] Preferably, the moisture removing element/ brush element is shaped such it follows a contour of the bottom part of the drawer which is perpendicular to the direction of retraction of the drawer. The moisture removing element/ brush element therefore is adapted to the shape / cross section of the drawer and is adapted to remove moisture over a given spatial span of the drawer perpendicular to the direction of retraction.

[0026] In a preferred embodiment, the laundry treatment machine comprises a water softener device. Preferably, the drawer comprises a compartment for collecting a product for the water softening device.

[0027] In a preferred embodiment, the moisture removing element is built as a brush arrangement.

[0028] Advantageously, the brush arrangement comprises at least one brush element. A brush element preferably comprises at least one component which acts as a brush when the drawer is moved and which thereby is adapted to remove condensation/liquid/dirt from the bottom side of the drawer.

[0029] In a preferred embodiment, the brush arrangement comprises at least two rows of brush elements arranged parallel to each other.

[0030] Preferably, the brush elements of a first row are spaced shifted, i.e. arranged with an offset, with respect to the brush elements of a second row. The brush elements of the first row are thereby spaced with a spatial offset / distance with respect to brush elements of the second row when looking in a direction perpendicular to the two rows.

[0031] Advantageously, the brush elements of the first row and the brush elements of the second row are ar-

ranged in such a way that when looking in the direction of retraction of the drawer, no gap exists between the brush elements of the first and second rows in a direction perpendicular to the direction of retraction. In this way, it is assured that over the complete width of the drawer, moisture/dirt is removed from the drawer bottom when it is moved.

[0032] In a further preferred embodiment, the moisture removing element is built as a sponge. A sponge is especially suited for removing moisture by absorbing it.

[0033] Preferably, the moisture removing element is attached to a seat of the drawer. The connection of the moisture removing element to the drawer seat is preferably realized by a snap connection / screw connection / welding / gluing.

[0034] In a preferred embodiment, the moisture removing element comprises a carrier element on which the brush elements are mounted. The carrier element preferably is built of plastic or metal. The respective brush element is advantageously built of rubber and/or fabric and/or elastic plastic material.

[0035] The advantages of the invention are especially as follows. A moisture removing element avoids the dripping of liquid from the drawer bottom when the drawer is moved, thereby avoiding a low-quality impression the user may obtain about the laundry treatment machine. A brush arrangement with two rows of brush elements shifted with respect to each other increases the possibility to remove all condensation from the drawer bottom while the drawer is moved.

Brief description of the drawings

[0036] Further features and advantages of the present invention shall become clearer from the following detailed description of some of its preferred embodiments, made with reference to the attached schematic drawings and given as an indication and not for limiting purposes.

[0037] In particular, the attached drawings are included to provide a further understanding of the invention and are incorporated in and constitute a part of this specification. The drawings together with the description explain the principles of the invention. In the drawings, corresponding characteristics and/or components are identified by the same reference numbers. In these drawings:

FIG. 1 shows a laundry washing machine with a moveable drawer in an inserted state in a preferred embodiment;

FIG. 2 shows the laundry washing machine according to FIG. 1 with the drawer pulled out and the machine cover plate removed;

FIG. 3 shows the laundry washing machine according to FIG. 2 with the drawer removed;

FIG. 4 shows the laundry washing machine accord-

ing to FIG. 3 with some components of the drawer seat removed;

FIG. 5 shows a view of the drawer assembly according to one preferred embodiment, with a water softening device visible;

FIG. 6 shows a further view of the drawer assembly of fig.5 with some components removed;

FIG. 7 shows a moisture removing element in a perspective view;

FIG. 8 shows components of the laundry with the moisture element of FIG. 7 in an explosive view; and

FIG. 9 shows the moisture removing element in a mounted position;

FIG. 10 shows the schematic interaction between two components.

[0038] Same parts in the figures are labelled by identical reference numbers.

[0039] In FIG. 1 a laundry treatment machine 2 is shown which is built as a front-loading washing machine and comprises housing or casing 6 with a preferable parallelepiped shape, the casing 6 comprising a front wall 10, two side walls 14, a cover plate 20 and a rear wall (not shown). Front wall 10 and side walls 14 are preferably part of a cabinet. A front door 24 is provided which can be opened for loading or unloading laundry through an opening 28 into a washing drum and which can be closed. Door 24 can be preferably operated, especially opened and closed, by a handle.

[0040] Advantageously a washing tub is contained within casing 6, whereby a rotatable and perforated drum is contained by the washing tub. Both washing tub and drum have a substantially cylindrical shape. Advantageously the tub is suspended in a floating manner inside casing 6 by means of a number of coil springs and shock absorbers. The drum is rotated by an electric motor, which transmits the rotating motion of a motor shaft to the drum by a belt/pulley system. In a different embodiment of the invention, the motor can be directly associated with the shaft of the drum. The tub is preferable connected to casing 6 by means of an elastic bellows or gasket. The tub preferably comprises two complementary hemi-shells structured for being reciprocally coupled to form tub.

[0041] Alternatively, the laundry appliance can be a combined washer and dryer or a dryer, in latter case the tub is preferably not provided.

[0042] The preferred washing machine shown in FIG. 1 on a front panel 40 comprises a drawer 42 with a front plate 34 and a handle 36 for pulling out and pushing back the drawer 42. Drawer 42 comprises at least one com-

partment for receiving detergent or washing additives. In a drier, the drawer can be built as or comprise a moisture container for collection of moisture which is separated from the drying laundry.

[0043] Adjacent to drawer 42, preferably a rotatable or rotary knob 38 is arranged for selecting a laundry treatment program and/or at least one parameter of a laundry treatment program. Preferably, knob 38 has also a push-functionality and can be pressed for selected and/or confirmation of selected options. Knob 38 is preferably provided on a control panel 62 which can provide further indicating and/or control elements 64-72. Knob 38 is preferably arranged on front panel 40 adjacent to drawer 42. On control panel 62, preferably a touch display 80 is arranged. On control panel 62, preferably a row 82 of light elements is arranged which are preferably built as LEDs. Laundry treatment machine 2 preferably comprises an ON/OFF button 64 for switching on or off the machine. A service door 84 is preferably arranged on front wall 10 which can be opened to access a filter unit.

[0044] FIG. 2 shows the laundry treatment machine 2 of FIG. 1 with the top plate 20 removed. Drawer 42 comprises preferably at least two compartments 90, 92 for receiving laundry treatment agents such as washing and/or rinsing agents and a container 96 for receiving a product for a water softening device described below. Laundry treatment machine 2 comprises a water supply circuit 98 which can be built according to the known art and preferably is arranged at the upper part of the laundry treatment machine 2 and is suited to supply water into the tub. It advantageously comprises at least one supply valve which is properly controlled, opened and closed, during the washing / rinsing cycle. In the present embodiment, water supply circuit 98 comprises three supply valves 100, 104, 108. Respective inlets are connected to a fresh water supply or water mains, while respective outlets are connected to pipes 200, 206, 212 (see FIG. 4) for delivering water into a flushing device 112 provided over the drawer seat shown in FIG. 6.

[0045] FIG. 3 shows a view of laundry treatment machine 2 with the drawer 42 removed. In this view, a drawer seat 122 is visible with a left part 124 and an adjacent right part 126. In the inserted position of drawer 42, part 124 is located below the water softening container 96, while part 126 is located below compartments 90, 92.

[0046] On part 126 of drawer seat 122, a moisture removing element 140 is preferably arranged which comprises a carrier element 144 which is attached to drawer seat 122 preferably by a screw connection. Carrier element 144 therefore preferably comprises at least one dome 150 through which a screw 152 can be guided which is screwed into drawer seat 122. Moisture removing element 140 furthermore comprises a brush arrangement 160 which is shown in more detail in FIGs 7-9.

[0047] In FIG. 4, the laundry treatment machine 2 is shown from above in a top-view without the machine cover plate and the flushing device 112. Pipes 200, 206, 212 are provided to guide fresh water to a diverter 220/226.

Dividing walls 180, 186, 192 are provided to direct the flow of the washing liquid from the detergent compartments toward the outlet 176. A pipe 170 connects outlet 176 to the tub.

5 The diverter 220, 226 is provided for diverting water to the detergent compartments 90, 92 and/or salt container / softening agent container 96.

[0048] Hot water from hot mains 200 preferably passes through the drawer seat 122 and flows on the passage or outlet 176 directly (bypassing the flushing device/drawer compartments) toward the tub. Fresh water flowing through pipe 206 preferably passes through the flushing device 112, reaching the water softener resin reservoir 256 directly, thereby bypassing the drawer compartments. Fresh water flowing through pipe 212 preferably flows to the diverter 220, 226, and then through the flushing device 112, reaching the drawer compartments resulting from the diverter position

[0049] In the preferred embodiment here illustrated, the water is supplied into the water supply circuit 98 by making it flow through the flushing device 112, through one of the compartment of the extractable drawer 42 and then through a supply pipe 170. The water which reaches the tub can, in this case, selectively contain one of the products contained in the compartments 90, 92 of the drawer 42. Such water can be clean if the product in the drawer 42 has been already removed. In an alternative embodiment of the invention, a further separate water supply pipe can be provided in the drawer assembly or through an additional pipe, which supplies exclusively clean water into the tub, thus bypassing the compartments of the drawer 42, which is possible through the diverter 220 and the internal circuit on the drawer seat.

[0050] The water supply circuit 98 also preferably comprises a water flow sensor, for example a flow meter, which makes it possible to calculate the quantity of water supplied into the tub. The supply pipe 170 is preferably arranged laterally with respect to the tub and preferably terminates at an upper region of the tub. More preferably, the supply pipe terminates at a rear side of the washing tub.

[0051] As shown in FIG. 5, the water supply circuit 98 / drawer seat in the preferred embodiment comprises a water softening device 250 for removal of calcium, magnesium and/or certain other metal cations in hard water before entering the tub. The water softening device 250 advantageously comprises water softening agents for reducing the hardness degree of the water to be supplied to the washing tub. Furthermore, the water supply circuit 98 comprises the regeneration-agent container or compartment 96 which is preferably housed inside the extractable drawer 42 and is structured for receiving salt or other regeneration agents for regenerating a water softening function of the water softening agents.

[0052] The water softening device 250 comprises a water softening agent container 256 which in the mounted position of drawer 42 is located below regeneration agent compartment 96. The water softening device 250

furthermore preferably comprises a water supply circuit which is structured for channeling, on command, a given amount of fresh water into the regeneration-agent container 96 or reservoir so to at least partly dissolve the salt or other regeneration agents stored therein and form a given amount of brine (i.e. salt water); it preferably comprises an electrically-powered brine-circulating pump / valve which is interposed between a water-softening agent container 256 and the regeneration-agent container 96 and is structured for transferring/moving, when activated / switched, the brine (i.e. the salt water) from the regeneration-agent reservoir container 90 to the water-softening agent container 256.

[0053] As can be seen in FIG. 6, the moisture removing element is preferably located at or essentially at an outer rim 270 of drawer seat part 126 which is preferably at the border of the machine and faces the user when operating drawer 42. In this way, when drawer 42 is retracted, moisture and/or dirt can be removed from essentially the whole bottom part of drawer 42. The probability for liquid and/or dirt to drip down is thereby strongly reduced. Moisture removing element 140 is preferably arranged in a detergent dispenser housing 182 of which drawer seat 122 or drawer seat part 126 are part of.

[0054] In FIG. 7, moisture removal element 140 is shown in an enlarged perspective view. Carrier element 144 preferably has an elongated shape with two ends 280, 282, whereby preferably at each end, respectively, dome 150 is arranged. Domes 150 at ends 280, 282 preferably face in opposite directions with respect to a long axis of carrier element 144. This arrangement of domes 150 is advantageous for the stability of the attachment of moisture removing element 140 to the drawer seat 122 since the movement of the drawer 42 exerts forces on the moisture removing element 140 which can be compensated better in the configuration shown. Additionally, the configuration with two domes in two opposite directions allows the use of few components as possible (two screws) to avoid detachment and vibration of these components.

[0055] On carrier element 144, a brush arrangement 160 is preferably arranged which comprises a first row 290 of first brush elements 294 and a second row 300 of second brush element 304 (in each row only a few of the respective brush elements 294, 304 are labelled). In a lateral direction 310 in which the elongated shape of the carrier element 144 is oriented, in each row 290, 300 the respective brush elements 294, 304 are arranged with a respective distance to each other, whereby preferably the respective distance is constant for each pair of adjacent brush elements 294, 304. These respective distances are preferably identical in both rows 290, 300. Viewed in direction 310, brush elements 294 are preferably arranged with an offset in this direction with respect to brush elements 304. The brush element 294 of row 290 closest to end 282 is preferably closer to end 282 than brush element 304 of row 300 which is closest to end 282. Carrier element 144 is preferably made of metal or plastic.

[0056] Due to the preferably constant distance between each adjacent brush elements 294, 304 of the same row 290, 300, and/or due to the suitable placement of each brush element, when the brush arrangement 160 is viewed in a direction 320, brush elements 294 of row 290 are arranged shifted or with an offset in such a way that when looking in this direction, no gaps is seen. In other words, the complete set of all brush elements 294, 304 is in touch with the bottom of the drawer without gaps along the direction 310. In this way, moisture can be removed from the bottom of drawer 42 seamlessly along a direction 310. In other preferred embodiments, only one row of brush elements can be provided or more than two rows of brush elements can be provided. Alternatively, one brush element can be provided which extends along or essentially along the whole length of the carrier element 144 or extends at least partially along the carrier element. The moisture removing element 140 can also be built as a brush arrangement without a carrier element 144.

[0057] Brush elements 294, 304 are preferably made of an elastic material, especially rubber and/or fabric. Brush elements 294, 304 are configured with respect to their spatial position and/or length that they are in contact with the bottom of the drawer 42 when it is moved. The brush elements 294, 304 are preferably built identically to each other. In other preferred embodiments, brush elements 294 can be built identical and brush elements 304 can be built identical, while brush elements 294, 304 are different.

[0058] In the preferred embodiment shown, brush elements 294, 304 are in contact with the bottom side of the drawer 42. When drawer 42 is moved, brush elements 294, 304 are in contact with the bottom of drawer 42 and wipe off moisture from the drawer bottom. In other preferred embodiments, at least some or all brush elements are arranged with a spatial distance to the drawer bottom, which is preferably equal to or smaller than 0.1 mm. In this way, moisture can still get in contact with the respective brush element and be removed. In an embodiment with a spatial distance, the movement of the drawer is not affected by the brush elements, and now physical traces are left on the drawer bottom by the brush elements. In other preferred embodiments, some of the brush elements are in contact with the drawer bottom, while other brush elements are not in contact with the drawer bottom.

[0059] In FIG. 8, drawer seat part 122, moisture removing element 140 and screws 152 are shown in an explosive view. Domes 150 are in the mounted position mounted on protrusions 340 arranged on drawer seat 122 and which preferably receive domes 150 in a form-locking manner. Protrusions 340 comprise an inner thread which receives the respective screw 152. According to an alternative / additional embodiment, the carrier element 144 has a "U-shape" suitable to be engaged with the protrusion 500 provided in the drawer seat part 122 when the moisture removing element 140 is on its mount-

ed position, as shown in FIG.10. The screw connection as well as the eventual connection between the carrier element and the protrusion 500 as shown here leads to a very firm connection of moisture removing element 140 and drawer seat 122. Hence movement of drawer 42 does not lead to a significant loosening of moisture removing element 140. Moreover, the screw connection allows in a simple and convenient way a removal of moisture removal element 140 when needed, especially for cleaning or replacement. In FIG. 9, moisture removing element 140 is shown in a mounted position on drawer seat 122. The protrusions 500 which preferably respectively have a parallelepiped shape are configured to engage with the preferably U-shaped carrier element 144.

[0060] The invention thus conceived can be subjected to numerous modifications and variants all falling within the scope of the inventive concept. In addition, all details can be replaced by other technically equivalent elements. In practice, all the materials used, as well as the shapes and contingent dimensions, may vary depending on the requirements without departing from the scope of protection of the following claims. Especially, the invention also relates to a moisture removing element which is built or comprises a sponge for absorbing moisture located at the drawer bottom. The sponge can especially be arranged in a carrier element arranged on the drawer seat.

Claims

1. Laundry treatment machine (2), comprising a casing (6) in which a laundry treatment chamber for acceptance of laundry is arranged, further comprising a retractable drawer (42) with at least one compartment (90, 92) for the collection of a product /water necessary for /deriving from said laundry treatment chamber
characterized in that
a moisture removing element (140) is provided which is configured to remove moisture from a bottom part of said drawer (42) when said drawer (42) is moved, whereby said moisture removing element (140) is arranged below a frontal part of said drawer (42) when said drawer (42) is arranged in an inserted state, and whereby said moisture removing element (140) is fixed to said casing (6) of said laundry treatment machine (2).
2. Laundry treatment machine (2) according to claim 1, whereby said moisture removing element (140) is arranged with a spatial distance to said drawer (42).
3. Laundry treatment machine (2) according to claim 2, whereby said spatial distance is equal to or smaller than 0.1 mm.
4. Laundry treatment machine (2) according to claim 1, whereby during movement of said drawer (42) said moisture removing element (140) remains in contact with said drawer (42).
5. Laundry treatment machine (2) according to one of the claims 1 to 4, whereby said moisture removing element (140) is shaped such it follows a contour of the bottom part of said drawer (42) which is perpendicular to the direction of retraction (320) of said drawer (42).
6. Laundry treatment machine (2) according to one of the claims 1 to 5, comprising a water softener device (250).
7. Laundry treatment machine (2) according to one of the claim 6, whereby said drawer (42) comprises a compartment (96) for collecting a product for said water softening device (250).
8. Laundry treatment machine (2) according to one of the claims 1 to 7, whereby said moisture removing element (140) is built as a brush arrangement (160).
9. Laundry treatment machine (2) according to claim 8, whereby said brush arrangement (160) comprises at least one brush element (294, 304).
10. Laundry treatment machine (2) according to claim 9, whereby said brush arrangement (160) comprises at least two rows (290, 300) of brush elements (294, 304) arranged parallel to each other.
11. Laundry treatment machine (2) according to claim 10, whereby said brush elements (294) of a first row are spaced shifted with respect to said brush elements (304) of a second row (300).
12. Laundry treatment machine (2) according to claim 11, whereby said brush elements (294) of said first row (290) and said brush elements (304) of said second row (300) are arranged in such a way that when looking in the direction of retraction (320) of said drawer (42) no gap exists between brush elements (294, 304) of first (290) and second rows (300) in a direction perpendicular to said direction of retraction (320).
13. Laundry treatment machine (2) according to one of the claims 1 to 7, whereby said moisture removing element is built as a sponge.
14. Laundry treatment machine (2) according to one of the claims 1 to 13, whereby said moisture removing element (140) is attached to a seat (122) of said drawer (42).

Patentansprüche

1. Wäschebehandlungsmaschine (2), umfassend ein Gehäuse (6), in dem eine Wäschebehandlungskammer zur Aufnahme von Wäsche angeordnet ist, ferner umfassend eine ausziehbare Schublade (42) mit mindestens einem Fach (90, 92) zur Sammlung eines Produkts/von Wasser, das in der Wäschebehandlungskammer benötigt wird/aus derselben stammt,
dadurch gekennzeichnet, dass
ein Element zum Entfernen von Feuchtigkeit (140) bereitgestellt ist, das dazu ausgelegt ist, Feuchtigkeit aus einem unteren Teil der Schublade (42) zu entfernen, wenn die Schublade (42) bewegt wird, wobei das Element zum Entfernen von Feuchtigkeit (140) unterhalb eines vorderen Teils der Schublade (42) angeordnet ist, wenn die Schublade (42) in einem eingeschobenen Zustand angeordnet ist, und wobei das Element zum Entfernen von Feuchtigkeit (140) an dem Gehäuse (6) der Wäschebehandlungsmaschine (2) befestigt ist.
2. Wäschebehandlungsmaschine (2) nach Anspruch 1, wobei das Element zum Entfernen von Feuchtigkeit (140) mit einem räumlichen Abstand zu der Schublade (42) angeordnet ist.
3. Wäschebehandlungsmaschine (2) nach Anspruch 2, wobei der räumliche Abstand gleich oder kleiner als 0,1 mm ist.
4. Wäschebehandlungsmaschine (2) nach Anspruch 1, wobei das Element zum Entfernen von Feuchtigkeit (140) während der Bewegung der Schublade (42) in Kontakt mit der Schublade (42) bleibt.
5. Wäschebehandlungsmaschine (2) nach einem der Ansprüche 1 bis 4, wobei das Element zum Entfernen von Feuchtigkeit (140) derart geformt ist, dass es einem Umriss des unteren Teils der Schublade (42) folgt, der senkrecht zur Zugrichtung (320) der Schublade (42) steht.
6. Wäschebehandlungsmaschine (2) nach einem der Ansprüche 1 bis 5, umfassend eine Wasserenthärtungsvorrichtung (250).
7. Wäschebehandlungsmaschine (2) nach einem der Ansprüche 6, wobei die Schublade (42) ein Fach (96) zum Sammeln eines Produkts für die Wasserenthärtungsvorrichtung (250) umfasst.
8. Wäschebehandlungsmaschine (2) nach einem der Ansprüche 1 bis 7, wobei das Element zum Entfernen von Feuchtigkeit (140) als eine Bürstenanordnung (160) aufgebaut ist.

9. Wäschebehandlungsmaschine (2) nach Anspruch 8, wobei die Bürstenanordnung (160) mindestens ein Bürstenelement (294, 304) umfasst.
10. Wäschebehandlungsmaschine (2) nach Anspruch 9, wobei die Bürstenanordnung (160) mindestens zwei Reihen (290, 300) von Bürstenelementen (294, 304) umfasst, die parallel zueinander angeordnet sind.
11. Wäschebehandlungsmaschine (2) nach Anspruch 10, wobei die Bürstenelemente (294) einer ersten Reihe bezogen auf die Bürstenelemente (304) einer zweiten Reihe (300) beabstandet versetzt sind.
12. Wäschebehandlungsmaschine (2) nach Anspruch 11, wobei die Bürstenelemente (294) der ersten Reihe (290) und die Bürstenelemente (304) der zweiten Reihe (300) derart angeordnet sind, dass, wenn man in die Zugrichtung (320) der Schublade (42) schaut, in einer senkrecht zu der Zugrichtung (320) stehenden Richtung keine Lücke zwischen den Bürstenelementen (294, 304) der ersten (290) und der zweiten Reihe (300) vorhanden ist.
13. Wäschebehandlungsmaschine (2) nach einem der Ansprüche 1 bis 7, wobei das Element zum Entfernen von Feuchtigkeit als ein Schwamm aufgebaut ist.
14. Wäschebehandlungsmaschine (2) nach einem der Ansprüche 1 bis 13, wobei das Element zum Entfernen von Feuchtigkeit (140) an einer Aufnahme (122) der Schublade (42) befestigt ist.

Revendications

1. Machine (2) de traitement de linge, comprenant une carcasse (6) dans laquelle est agencée une chambre de traitement de linge pour la réception de linge, comprenant en outre un tiroir escamotable (42) ayant au moins un compartiment (90, 92) pour la collecte d'un produit / d'eau nécessaire à / provenant de ladite chambre de traitement de linge
caractérisée en ce que
un élément d'évacuation d'humidité (140) est prévu, lequel est configuré pour évacuer l'humidité d'une partie dessous dudit tiroir (42) lors d'un mouvement dudit tiroir (42), ledit élément d'évacuation d'humidité (140) étant agencé sous une partie frontale dudit tiroir (42) lorsque ledit tiroir (42) est agencé dans un état introduit, et ledit élément d'évacuation d'humidité (140) étant fixé à ladite carcasse (6) de ladite machine (2) de traitement de linge.
2. Machine (2) de traitement de linge selon la revendication 1, ledit élément d'évacuation d'humidité (140)

- étant agencé à une distance spatiale dudit tiroir (42) .
3. Machine (2) de traitement de linge selon la revendication 2, ladite distance spatiale étant inférieure ou égale à 0,1 mm.
 4. Machine (2) de traitement de linge selon la revendication 1, ledit élément d'évacuation d'humidité (140) restant au contact dudit tiroir (42) au cours du mouvement dudit tiroir (42). 10
 5. Machine (2) de traitement de linge selon l'une des revendications 1 à 4, ledit élément d'évacuation d'humidité (140) étant doté d'une forme telle qu'il suit un contour de la partie dessous dudit tiroir (42) qui est perpendiculaire à la direction d'escamotage (320) dudit tiroir (42). 15
 6. Machine (2) de traitement de linge selon l'une des revendications 1 à 5, comprenant un dispositif adoucisseur d'eau (250). 20
 7. Machine (2) de traitement de linge selon l'une de la revendication 6, ledit tiroir (42) comprenant un compartiment (96) pour la collecte d'un produit pour ledit dispositif adoucisseur d'eau (250). 25
 8. Machine (2) de traitement de linge selon l'une des revendications 1 à 7, ledit élément d'évacuation d'humidité (140) étant réalisé sous forme d'un agencement brosse (160). 30
 9. Machine (2) de traitement de linge selon la revendication 8, ledit agencement brosse (160) comprenant au moins un élément brosse (294, 304). 35
 10. Machine (2) de traitement de linge selon la revendication 9, ledit agencement brosse (160) comprenant au moins deux rangées (290, 300) d'éléments brosses (294, 304) agencés parallèlement entre elles. 40
 11. Machine (2) de traitement de linge selon la revendication 10, lesdits éléments brosses (294) d'une première rangée étant espacés en décalage par rapport auxdits éléments brosses (304) d'une deuxième rangée (300) . 45
 12. Machine (2) de traitement de linge selon la revendication 11, lesdits éléments brosses (294) de ladite première rangée (290) et lesdits éléments brosses (304) de ladite deuxième rangée (300) étant agencés de telle manière que, en regardant dans la direction d'escamotage (320) dudit tiroir (42), aucun interstice ne soit présent entre des éléments brosses (294, 304) de la première (290) et la deuxième rangée (300) dans une direction perpendiculaire à ladite direction d'escamotage (320). 50 55
 13. Machine (2) de traitement de linge selon l'une des revendications 1 à 7, ledit élément d'évacuation d'humidité étant réalisé sous forme d'une éponge.
 14. Machine (2) de traitement de linge selon l'une des revendications 1 à 13, ledit élément d'évacuation d'humidité (140) étant fixé à un siège (122) dudit tiroir (42) .

FIG. 1

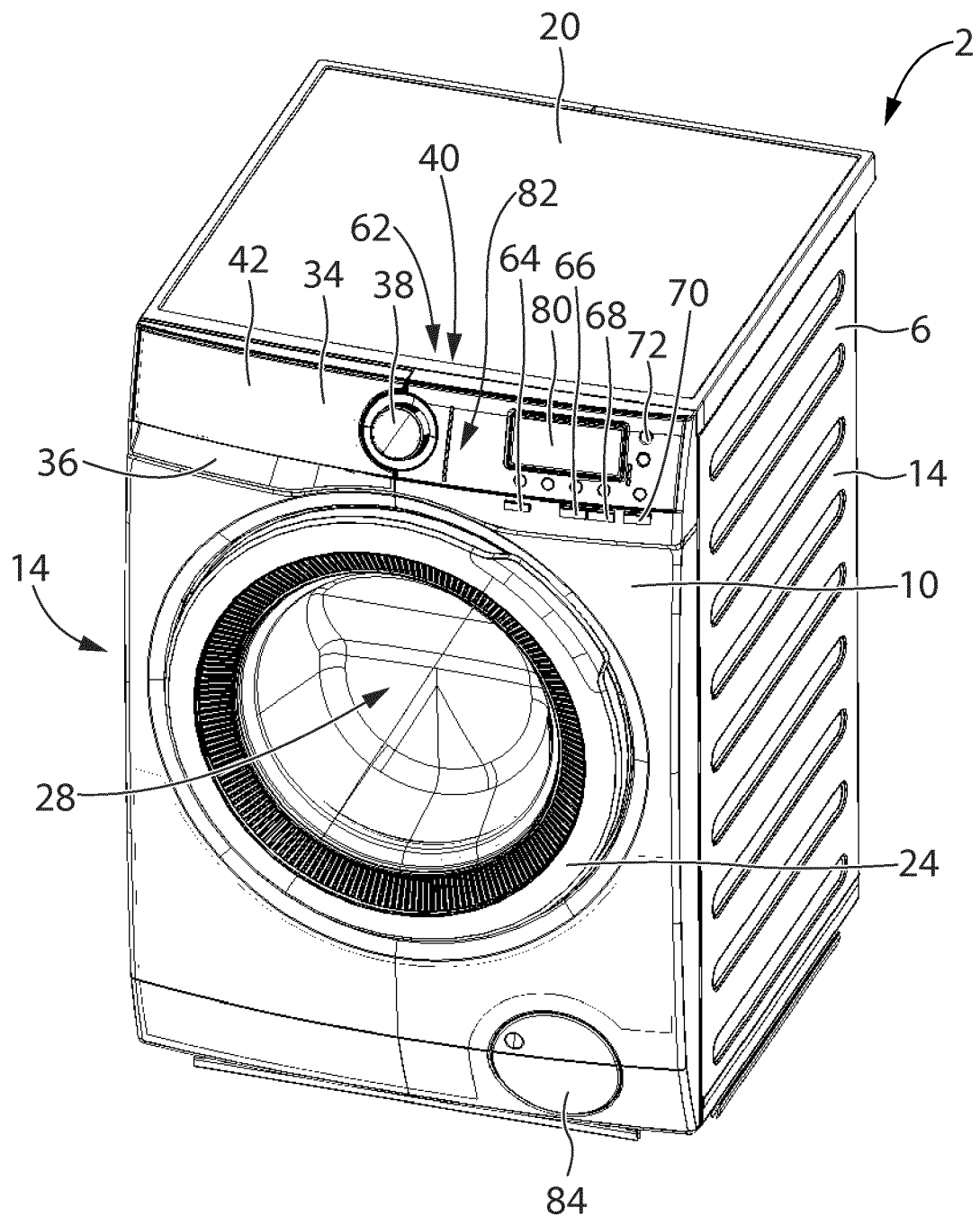


FIG. 2

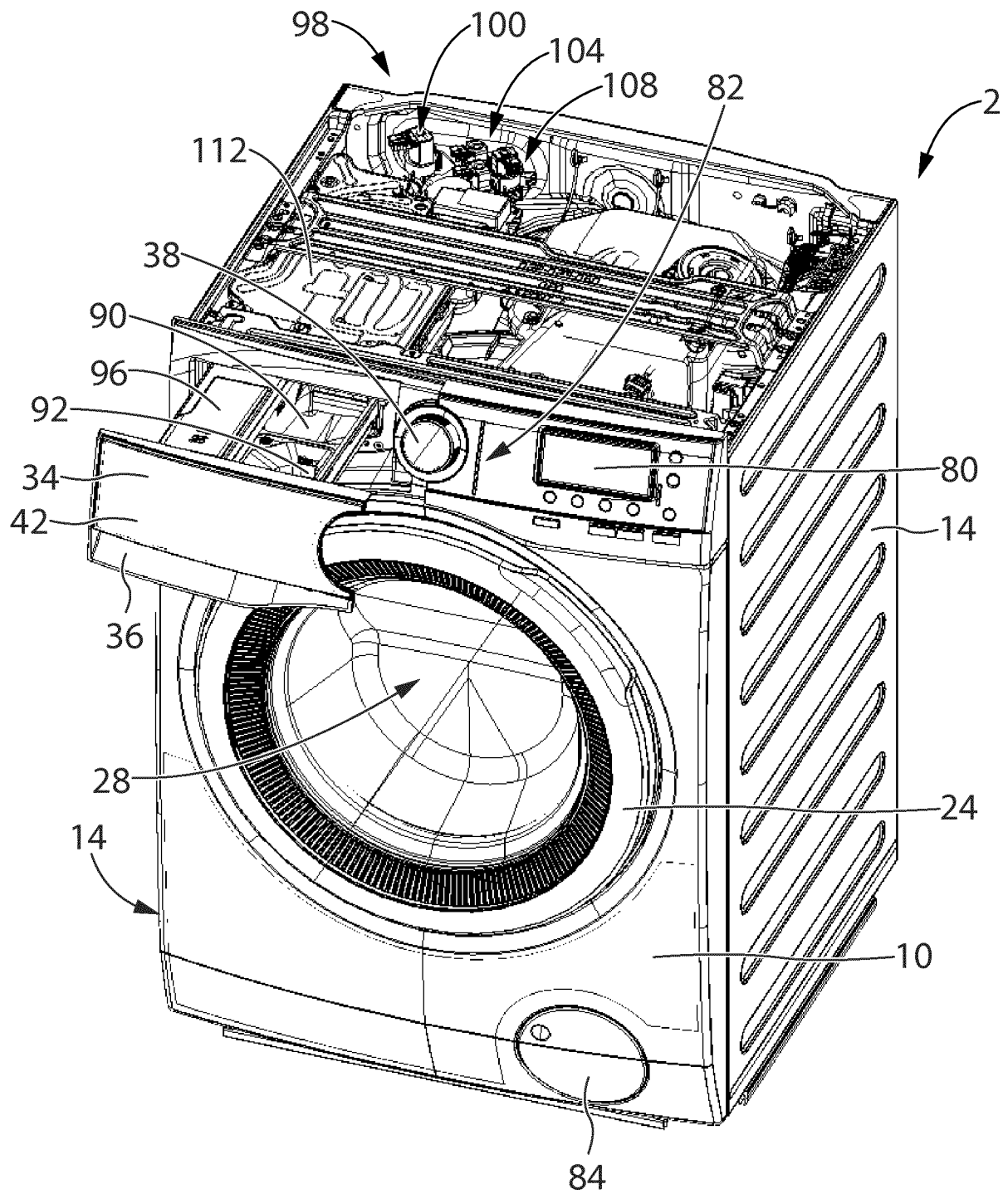


FIG. 3

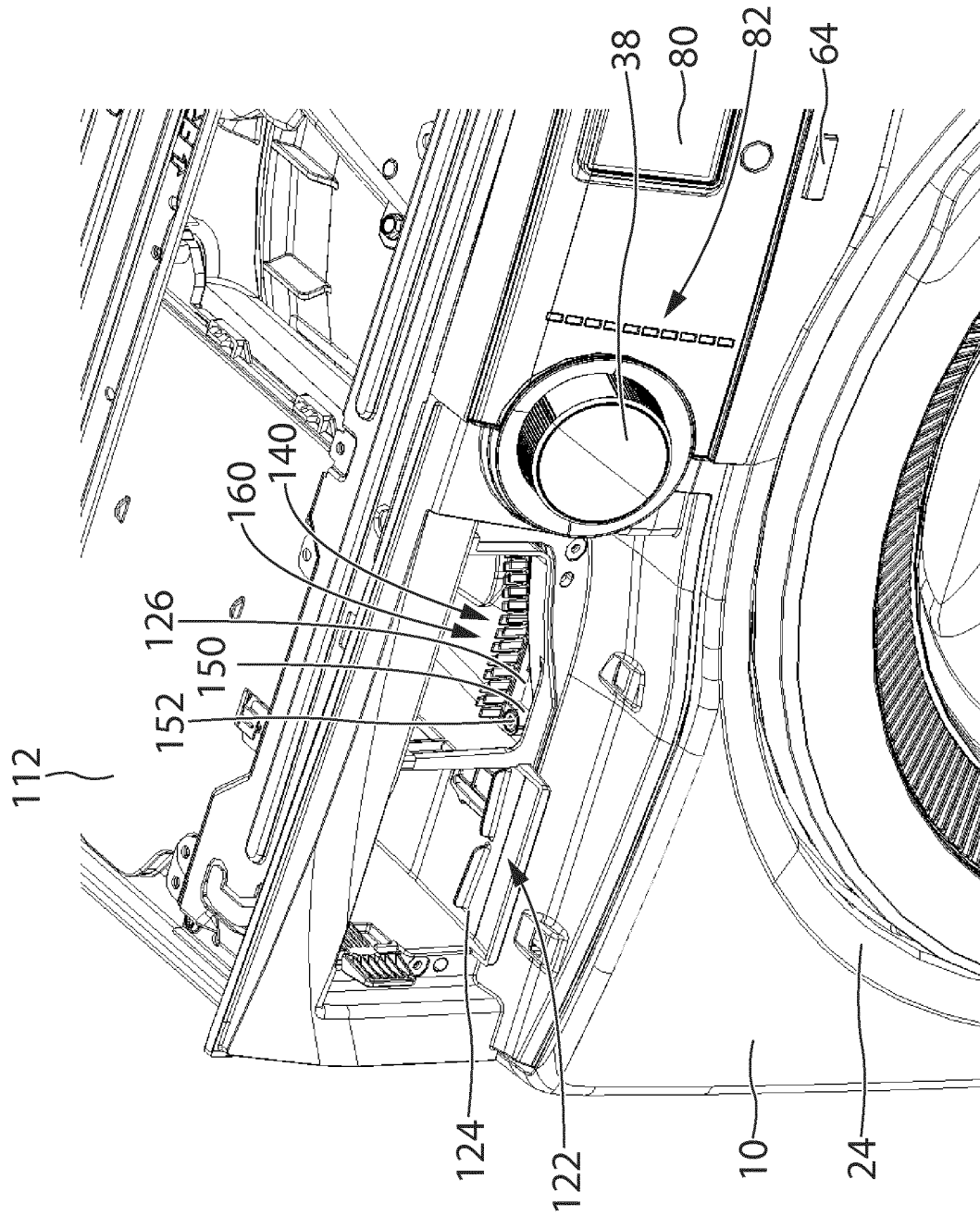


FIG. 4

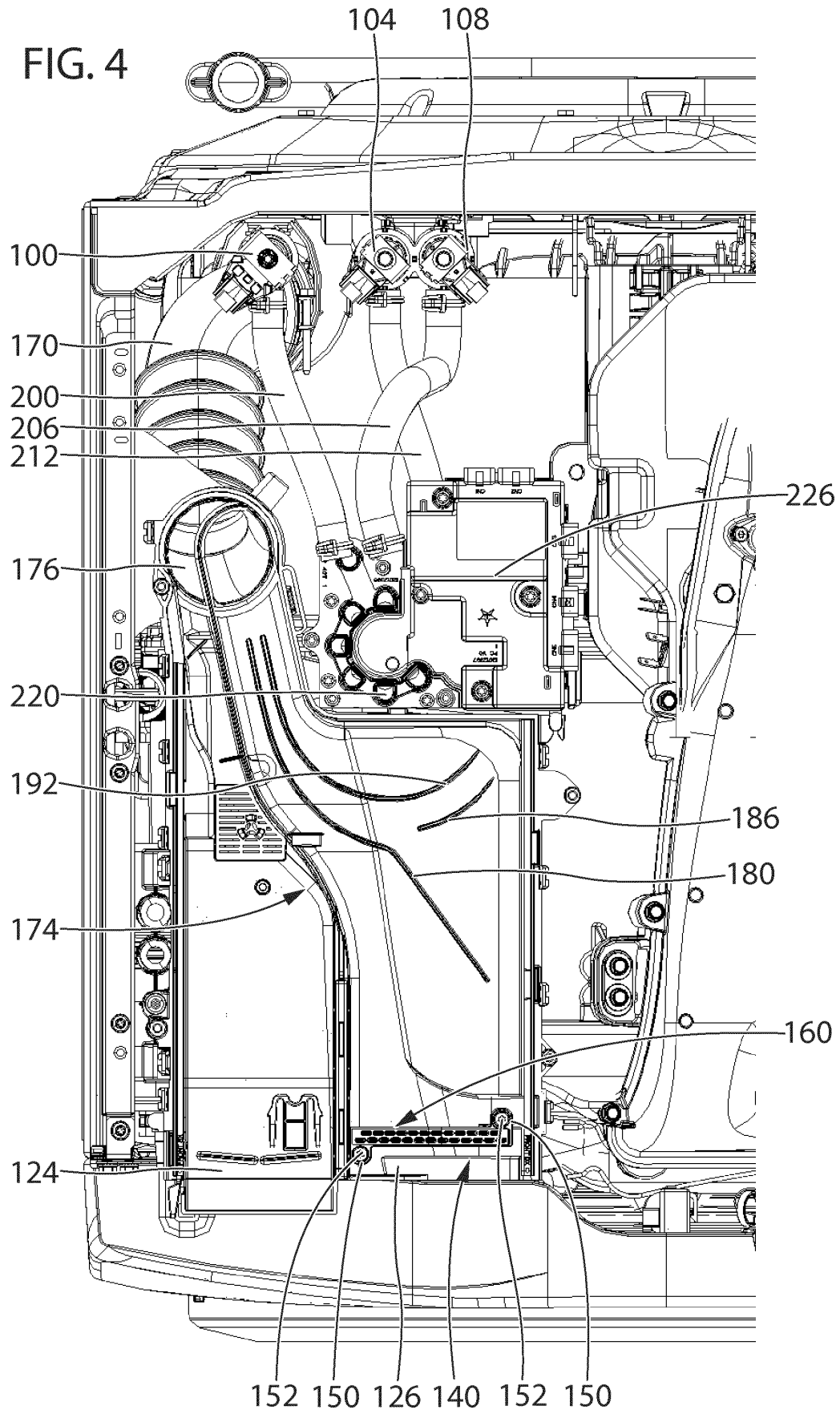


FIG. 5

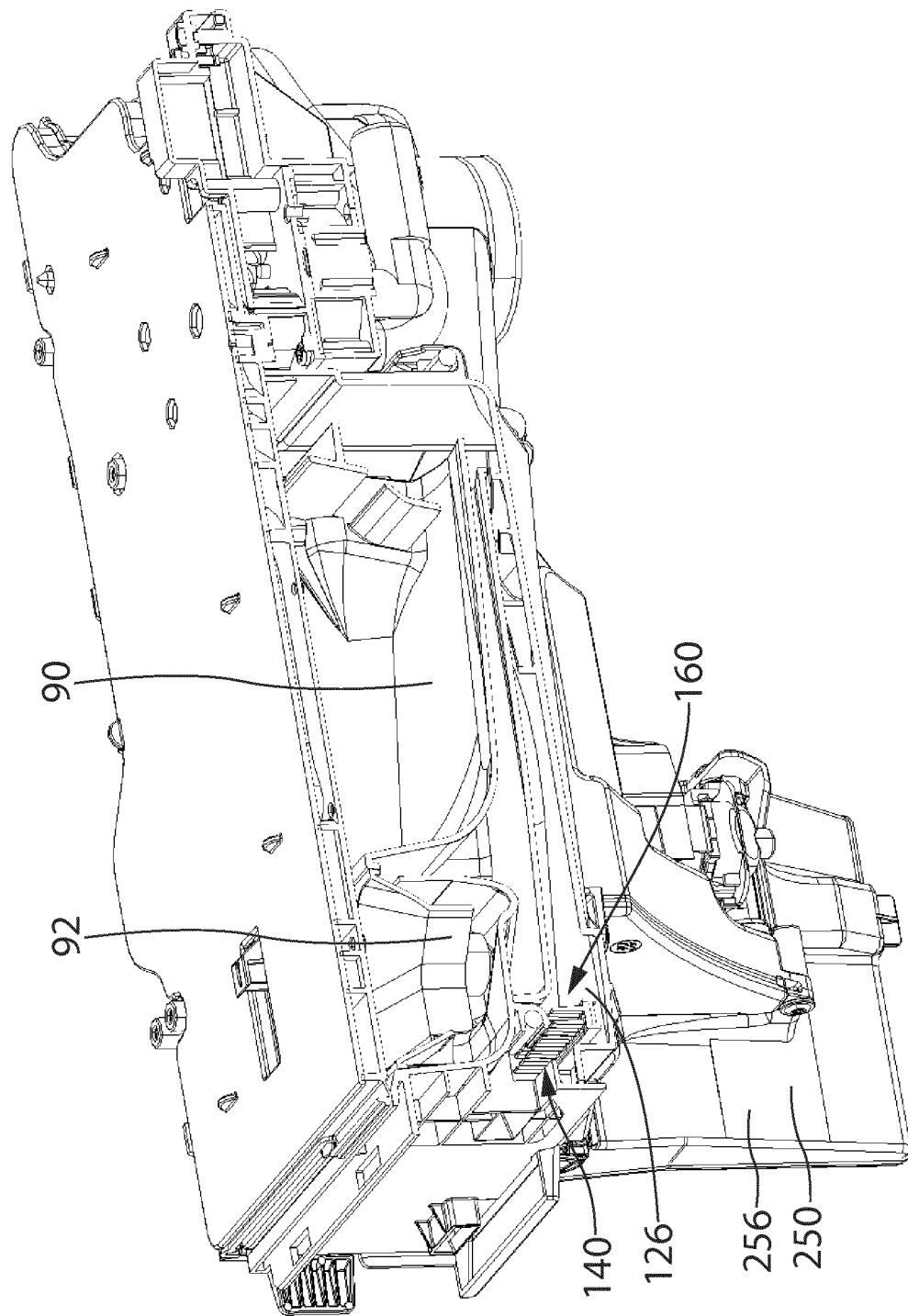


FIG. 6

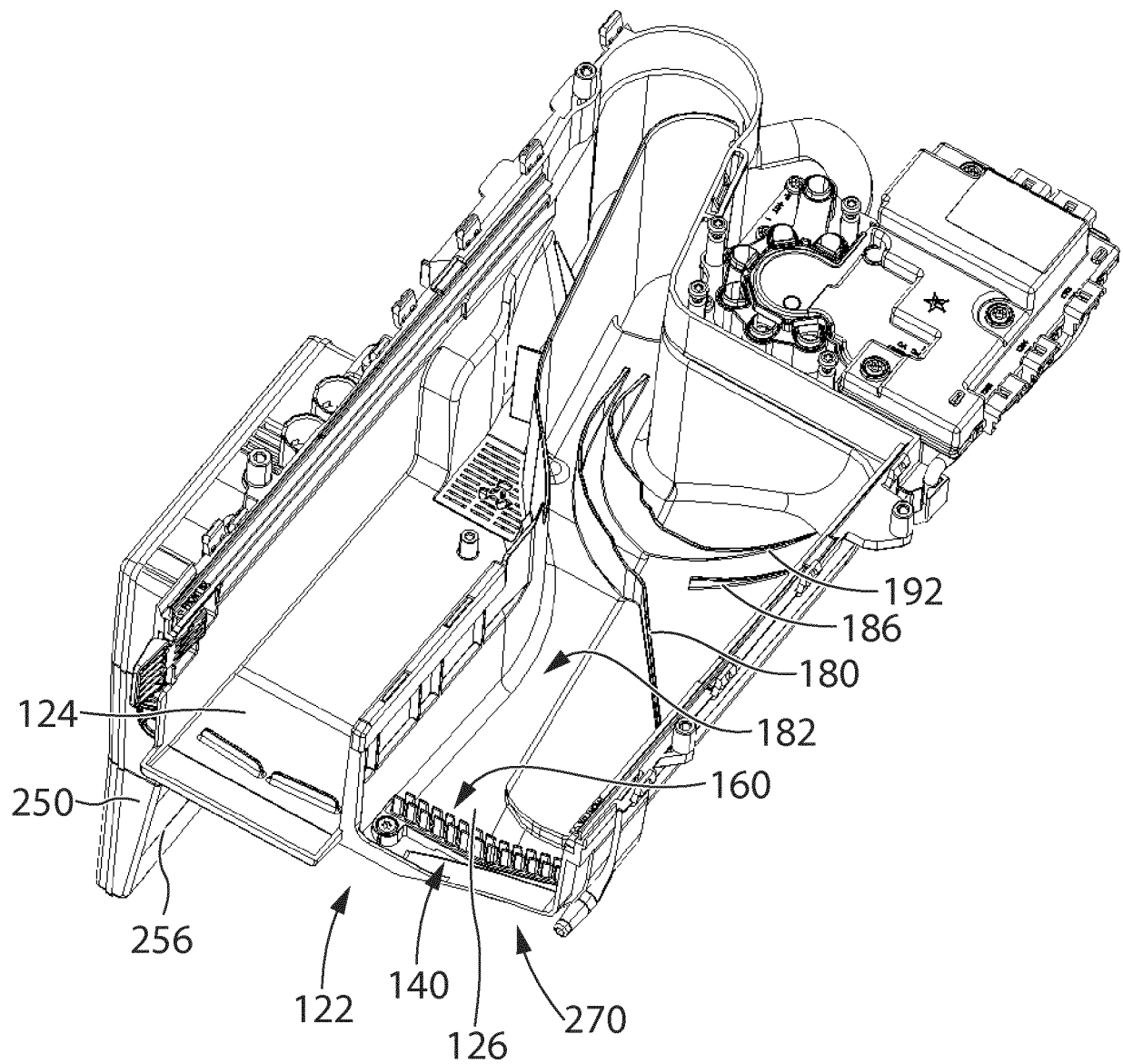


FIG. 7

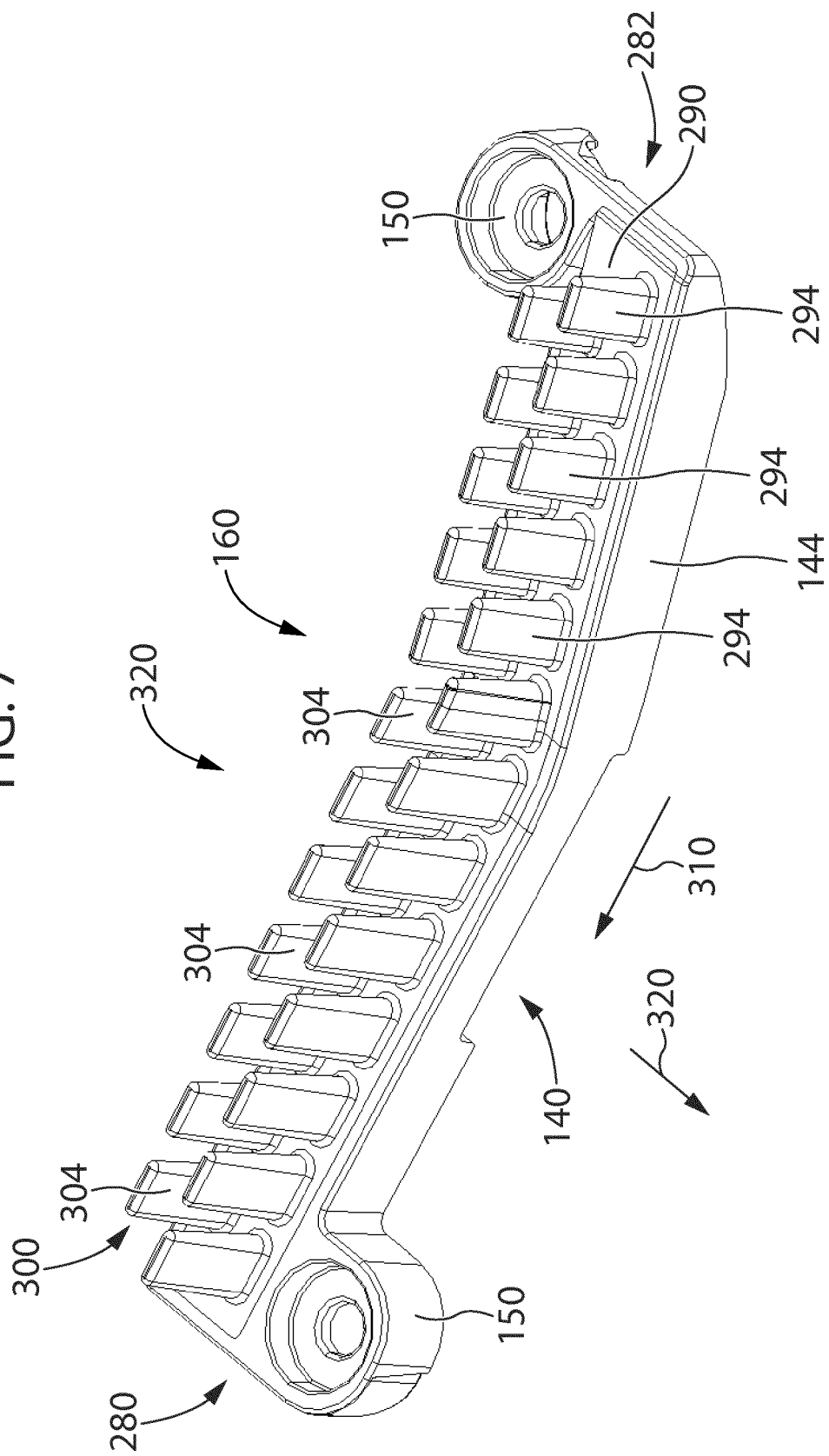


FIG. 8

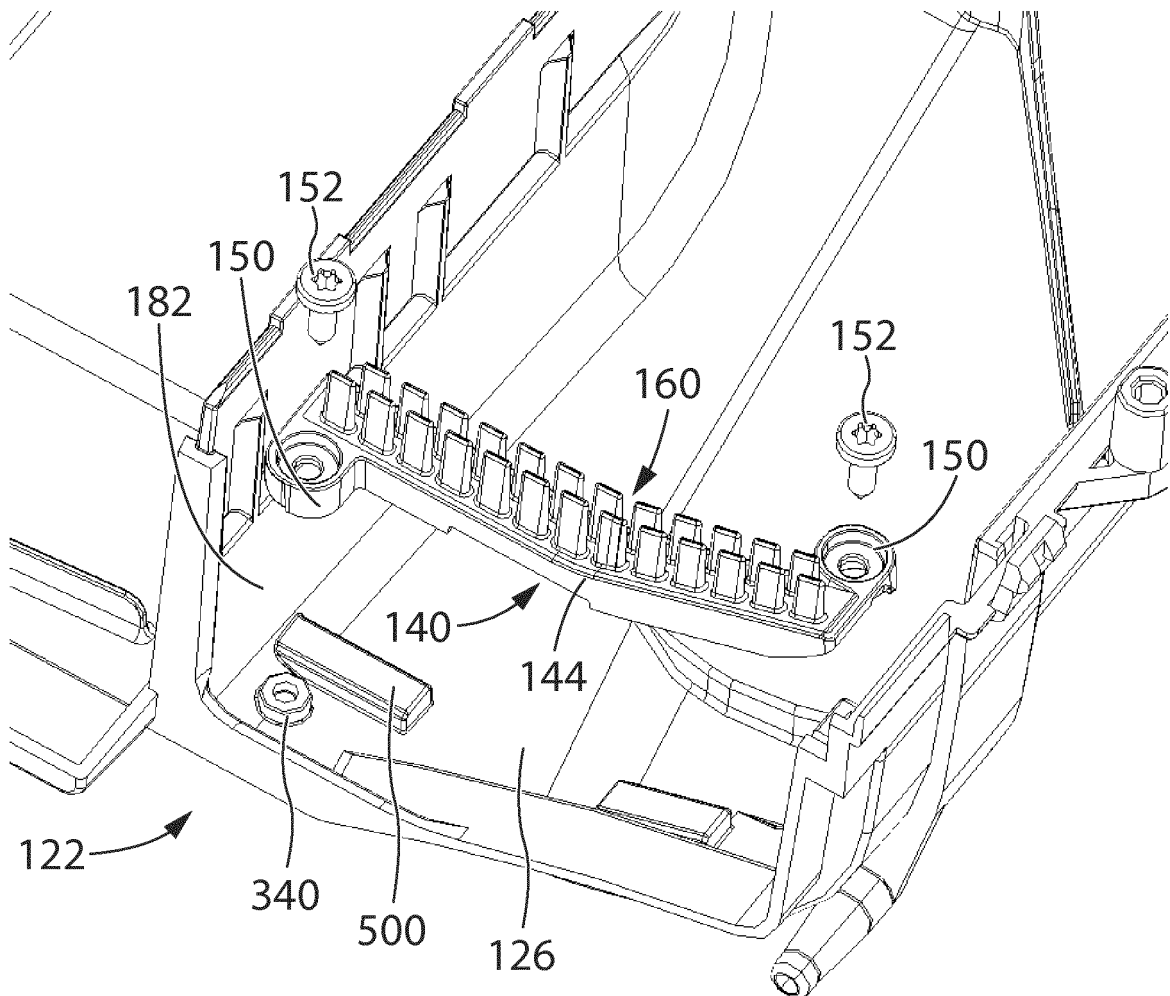


FIG. 10

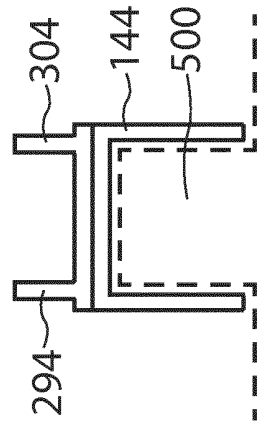
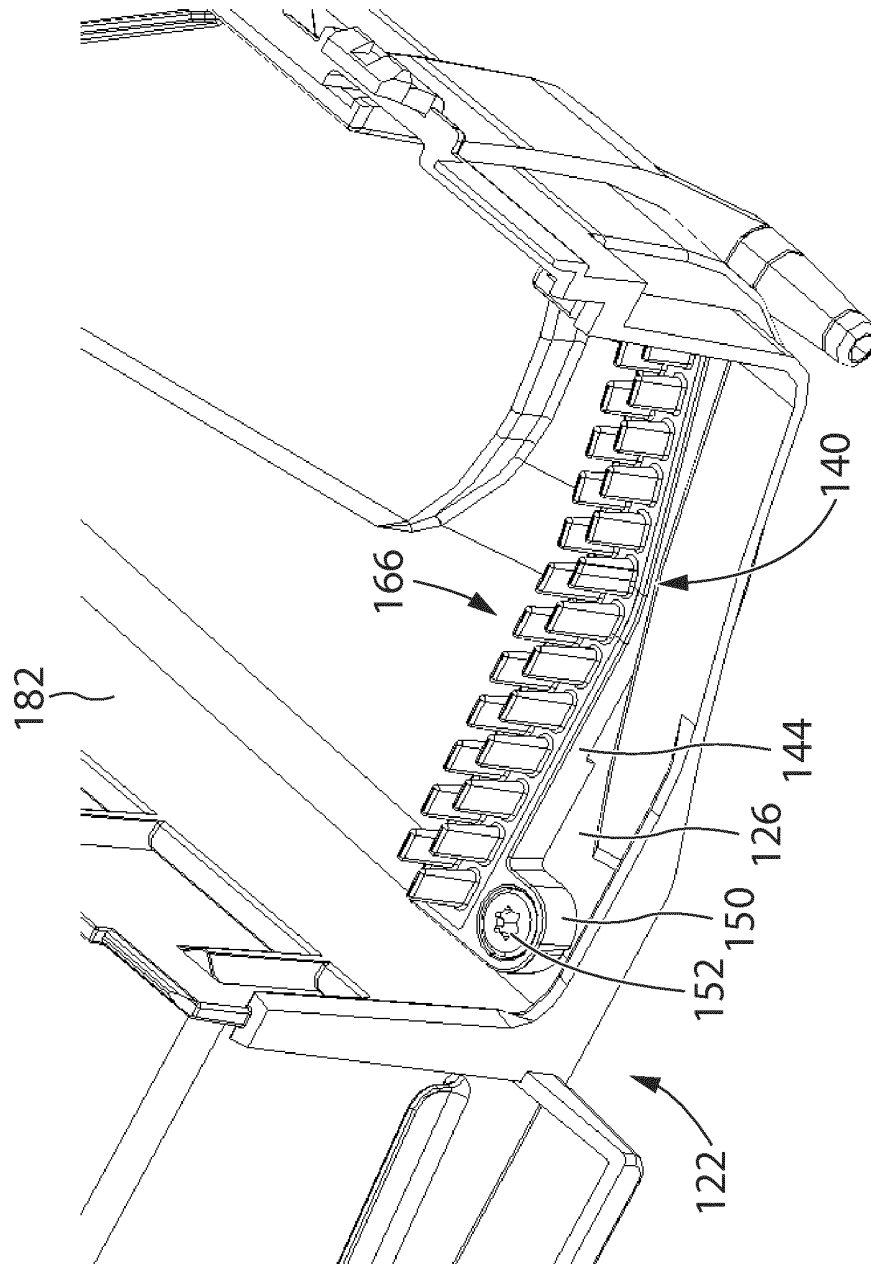


FIG. 9



REFERENCES CITED IN THE DESCRIPTION

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