(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 3 828 330 A1**

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
02.06.2021 Bulletin 2021/22

(51) Int Cl.:
D06F 39/02 *(2006.01)*

(21) Application number: **19211779.4**

(22) Date of filing: **27.11.2019**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
KH MA MD TN

(71) Applicant: **ELECTROLUX APPLIANCES AKTIEBOLAG**
105 45 Stockholm (SE)

(72) Inventors:
- **DE PAOLI, Stefano**
  33080 Porcia (PN) (IT)
- **DA RIOL, Daniele**
  33080 Porcia (PN) (IT)
- **ROVEDO, Mattia**
  33080 Porcia (PN) (IT)

(74) Representative: **Electrolux Group Patents**
AB Electrolux
Group Patents
S:t Göransgatan 143
105 45 Stockholm (SE)

(54) LAUNDRY TREATING MACHINE WITH DRAWER ASSEMBLY

(57) The invention relates to a laundry treating machine (100) having a drawer assembly (1) comprising a drawer (2) comprising at least one compartment (10a, 10b) for receiving an agent for treating laundry and/or for receiving other products/liquids and a housing (3, 20) on which the drawer (2) can slide along a sliding axis (S). The drawer assembly (1) comprises a retaining device (40) ensuring the closed position of said drawer (2) with respect to the housing (3, 20). The retaining device (40) comprises a first elastic part (42) arranged to one of the drawer (2) or the housing (3, 20) and a second part (44) adapted to interact with the first elastic part (42) ensuring the closed position of the drawer (2). The first elastic part (42) comprises an elastic metallic strip (50) having an apex (52) and two lateral sides (54, 56) longitudinally extending from the apex (52), the strip (50) being apt to be removably mounted to the drawer (2) or to said housing (3, 20).

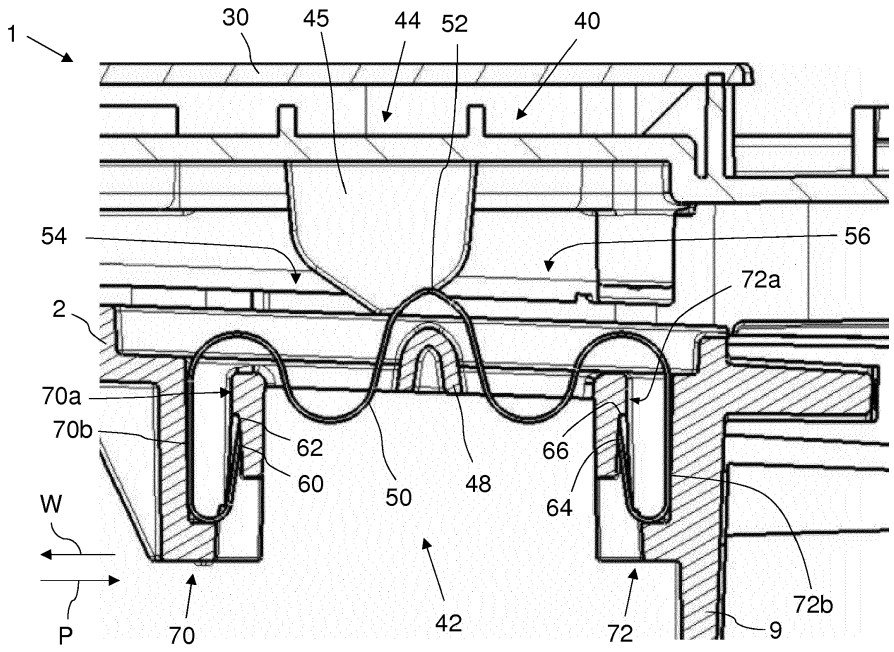


FIG. 7

EP 3 828 330 A1

Description

[0001] The present invention concerns the field of laundry treating techniques. In particular, the present invention refers to a laundry treating machine having a drawer for receiving a laundry treating agent or other products/liquid, a supporting structure on which said drawer can slide and a retaining device adapted to ensure closed position of the drawer with respect to the supporting structure.

BACKGROUND ART

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

[0003] In the present description the term "laundry washing machine" will refer to both a simple laundry washing machine and a laundry washing-drying machine. Conventionally, laundry washing machines include a drawer for receiving a detergent agent or other agents for treating the laundry, such as softener or bleach, to be used during the washing cycles.

[0004] Drawer may also be suitable for receiving other products, for example salt to be used in a water softening device of the laundry washing machine.

[0005] Laundry drying machines, then, typically include a drawer for receiving a moisture tank.

[0006] In this case, the drawer is suitable for receiving the condensation water formed during the drying cycle, so that it can be easily and periodically emptied by a user.

[0007] Drawers of known type are received in a housing on which the drawer can slide from a closed position and opening positions on a substantially horizontal plane.

[0008] Advantageously, the user may fill the compartments of the drawer with the products needed for treatment of the laundry, for example detergents or softeners, or the user may completely extract the drawer, for example for cleaning the compartments in laundry washing machines or empty the tank in laundry drying machines.

[0009] Drawers of known type are typically provided with a retaining device which ensures the closed position of the drawer with respect to the supporting structure.

[0010] The retaining device prevents movements of the drawer with respect to the housing when the drawer is in its closed position, particularly when the machine is working and is subjected to vibrations, for example due to the spinning of the drum during washing or drying cycles.

[0011] A retaining device of known type comprises a pin protruding from the housing that interacts with a plastic hook, integrated with the drawer. When the drawer is in its closed position, the pin and the hook engage and keeps the drawer in closed position. When the drawer is pulled towards an opening position, the plastic hook deforms under the action of the pin and disengages therefrom allowing opening of the drawer. When the drawer is pulled towards the closed position, the plastic hook deforms under the action of the pin and the parts come into engagement keeping the drawer in closed position.

[0012] Drawers of the known art and retaining device thereof pose some drawbacks.

[0013] A drawback posed by known drawers is that a failure of the retaining device implies the substitution of the entire drawer, with related costs for the user. Known drawers, furthermore, require reinforced retaining device due to highly stressed structural parts engaging therebetween. This implies additional material for the construction of the drawer and/or of the housing.

[0014] This negatively affects size and/or weight and/or manufacturing costs of the laundry treating machine and reliability of the same.

[0015] The object of the present invention is therefore to overcome the drawbacks posed by the known technique.

[0016] It is an object of the invention to provide a laundry treating machine that reduces constructional and/or maintenance costs compared to laundry treating machines of known type.

[0017] It is another object of the invention to provide a laundry treating machine having a drawer assembly with reduced complexity and/or size and/or weight compared to laundry treating machines of known type.

[0018] It is a further object of the invention to provide a laundry treating machine with a drawer assembly having higher reliability compared to laundry treating machines of known type.

DISCLOSURE OF INVENTION

[0019] The applicant has found that by providing a laundry treating machine having a drawer assembly comprising a retaining device ensuring the closed position of a drawer with respect to a housing wherein the retaining device comprises a metallic strip apt to be removably mounted to the drawer or the housing, it is possible to solve the drawbacks of the known systems.

[0020] The present invention relates, therefore, to a laundry treating machine having a drawer assembly comprising:

- a drawer comprising at least one compartment for receiving an agent for treating laundry and/or for receiving other products/liquids;
- a housing on which said drawer can slide along a sliding axis;
- a retaining device ensuring the closed position of said drawer with respect to said housing;

wherein said retaining device comprises a first elastic part arranged to one of said drawer or said housing and a second part, adapted to interact with said first elastic

part ensuring said closed position of said drawer, arranged to the other of said housing and said drawer, respectively, wherein said first elastic part comprises an elastic metallic strip having an apex and two lateral sides longitudinally extending from said apex, said strip being apt to be removably mounted to said drawer or to said housing.

[0021] Preferably, the two lateral sides of the strip are apt to be removably mounted to the drawer or to the housing.

[0022] The first elastic part may be therefore easily installed at the drawer assembly and also easily removed from the drawer assembly. Advantageously, manufacturing operations of the drawer and related costs assembly are reduced. Also, maintenance operations and costs in case of failure of the retaining device are reduced. Furthermore, design/dimensioning of the elastic strip may be properly carried out, irrespective of other parts of the drawer assembly.

[0023] According to a preferred embodiment of the invention, each lateral side of said two lateral sides of the strip comprises a bending portion. Preferably, said bending portion is apt to be removably mounted to said drawer or to said housing.

[0024] The bending portion enhances the mounting of the strip to the drawer or to the housing.

[0025] In a preferred embodiment of the invention, the drawer or the housing comprises a receiving slot apt to receive, at least partially, one of the two lateral sides of the strip. More preferably, the drawer or the housing comprises two receiving slots, each of said two receiving slots being apt to receive, at least partially, a respective one lateral side of said two lateral sides of the strip.

[0026] According to a preferred embodiment of the invention, the bending portion is inserted in the receiving slot when the strip is in its mounted position with respect to the drawer or to the housing.

[0027] In a preferred embodiment of the invention, each lateral side of the two lateral sides comprises an engaging surface and the drawer or the housing comprises a stopping surface adapted to receive in abutment the engaging surface.

[0028] According to a preferred embodiment of the invention, the engaging surface is arranged at the extremity of the lateral side.

[0029] Advantageously, the strip is firmly maintained in its mounted position.

[0030] Preferably, the stopping surface is realized in the receiving slot of the drawer or of the housing.

[0031] In a preferred embodiment of the invention, the receiving slot is delimited by a first wall comprising the stopping surface and a second wall opposite to the first wall.

[0032] Advantageously, the receiving slot enhances the strip to be firmly maintained in its mounted position.

[0033] According to the invention, the second part is adapt to exert a pushing force towards the first elastic part when the drawer is moved from its closed position towards an opening position along the sliding axis or when the drawer is moved from an opening position towards its closed position along the sliding axis.

[0034] Advantageously, for closed position it is intended as the position of the drawer completely inserted in the housing.

[0035] In a preferred embodiment of the invention, the retaining device comprises a stop element to limit the maximum deformation of the first elastic part.

[0036] The stop element avoids excessive deformation of the strip and possible damaging of the same.

[0037] Preferably, one lateral side of the two lateral sides comprises at least one valley placed between the apex and the extremity of said one lateral side.

[0038] The valley confers to the strip the appropriate elasticity required.

[0039] According to a preferred embodiment of the invention, the second part comprises a tooth-like element. Preferably, the second part is formed integrally with the housing or with the drawer. More preferably, the second part is rigid.

[0040] Advantageously, the second part efficiently interacts with the first elastic part.

[0041] According to a preferred embodiment of the invention, said at least one compartment is a compartment for receiving an agent for washing laundry in a laundry washing machine or said at least one compartment is a tank for receiving condensed water.

[0042] In a preferred embodiment of the invention, the drawer opens upwards and the housing comprises a water dispenser apt to be positioned above the drawer when the drawer is in its closed position.

BRIEF DESCRIPTION OF THE DRAWINGS

[0043] Further characteristics and advantages of the present invention will be highlighted in greater detail in the following detailed description of a preferred embodiment of the invention, provided with reference to the enclosed drawings. In the drawings, corresponding characteristics and/or components are identified by the same reference numbers. In such drawings:

- Figure 1 is a perspective view of a laundry washing machine of the present invention with a drawer assembly in which the drawer is in an opening position;
- Figure 2 shows the laundry washing machine of figure 1 with the drawer in closed position;
- Figure 3 shows a detail of the drawer assembly of Figure 1, isolated from the rest, in the opening position;
- Figure 4 shows the detail of the drawer assembly of Figure 3 in the closed position;
- Figure 5 shows the drawer assembly of Figure 4 from another point of view;
- Figure 6 shows a plan view of Figure 5 sectioned along line VI°-VI°;
- Figure 7 shows an enlarged view of a detail of Figure

6;

- Figure 8 shows a partial enlarged view of the drawer assembly of Figure 5 with some element removed therefrom;
- Figure 9 shows an exploded view of Figure 8;
- Figure 10 shows an enlarged view of a detail of Figure 9.

DETAILED DESCRIPTION OF THE INVENTION

[0044] The present invention has proved to be particularly advantageous when applied to laundry washing machines, as described below. It should in any case be underlined that the present invention is not limited to laundry washing machines. On the contrary, the present invention can be conveniently applied to laundry treating machines in general, for example "simple" laundry washing machines (i.e. laundry treating machines which can only wash and rinse laundry) or laundry washing-drying machines (i.e. laundry treating machines which can also dry laundry) or laundry drying machines (i.e. laundry treating machines which can only dry laundry).

[0045] In the present description, furthermore, the term "laundry washing machine" will refer to both a simple laundry washing machine and a laundry washing-drying machine.

[0046] Figures 1 and 2 depict a laundry washing machine 100 comprising a drawer assembly 1 according to a preferred embodiment of the invention.

[0047] The drawer assembly 1 comprises a drawer 2 which is slidably associated to a supporting structure 3, preferably formed by a receptacle in which the drawer 2 can be housed.

[0048] As it will be better shown in the following, according to a preferred embodiment, the supporting structure 3 defines a housing 20 capable of receiving therein the drawer 2.

[0049] Figure 1 depicts the drawer 2 in an opening position while Figure 2 depicts the drawer 2 in the closed position.

[0050] Operational open and closed positions of the drawer 1 are also illustrated, respectively, in Figures 3 and 4.

[0051] The drawer 2 preferably opens upwards and comprises two side walls 6, 8, a back wall 9, visible in Figures 6 and 7, and a front wall 15.

[0052] Preferably, the front wall 15, or more in general the drawer 2, comprises a handle 16, as shown in Figures 1 and 2, by means of which the drawer 2 can be moved from the closed position and an opening position, and vice-versa.

[0053] In other figures, the handle 16 is not shown for sake of simplicity.

[0054] The movement of the drawer 2 takes place preferably along a sliding axis S and the drawer 2 can move along a withdrawal direction W when the drawer 2 is being opened and along a push direction P when the drawer 2 is being closed.

[0055] The movement of the drawer 2 preferably takes place on a horizontal, or substantially horizontal, plane, i.e. the sliding axis S lies on a horizontal, or substantially horizontal, plane

[0056] The two side walls 6, 8 are preferably arranged in a vertical plane or substantially vertical plane, when the drawer assembly is mounted in an operational position. The two side walls 6, 8 are preferably aligned along the sliding axis S.

[0057] The drawer 2 then preferably comprises compartments 10a, 10b adapted for receiving detergent and other agents, for example bleach, softener, salt for a softening device, etc.

[0058] Preferably, in the opening position detergent and/or the other agents can be poured inside the compartments 10a, 10b of the drawer 2.

[0059] The housing 20 preferably comprises an upper wall element 30, which is a water dispenser connectable to a water supply of the laundry washing machine 100 by means of an inlet 32 and valves (not shown) to supply cold and/or hot/warm water into one or more of the compartments 10a, 10b. The housing 20 further comprises an outlet 33 to guide water or water mixed with detergent or other agents from the drawer 2 into a washing tub, not illustrated, of the laundry washing machine 100.

[0060] Preferably, in order to allow sliding of the drawer 2 on the supporting structure 3, the drawer 2 comprises sliding surfaces 11, 13 at said side walls 6, 8.

[0061] The sliding surfaces 11, 13 are adapted to preferably slide on respective guide members (not shown) of the supporting structure 3.

[0062] In different embodiments, sliding of the drawer on the supporting structure along the sliding axis may be obtained with different means, for example with rolling elements (wheels) associated to the drawer which roll over guide members of the supporting structure.

[0063] According to an aspect of the present invention, a retaining device 40 ensures the closed position of the drawer 2 with respect to the housing 20; said closed position can be preferably defined as the position of the drawer 2 completely inserted in the housing 20.

[0064] In the preferred embodiment as shown in the Figures 6 and 7, the retaining device 40 comprises a first elastic part 42 arranged to the drawer 2 and a second part 44 arranged to the housing 20, preferably arranged to the water dispenser 30. It has to be understood that said first elastic part 42 can be arranged on the housing 20 and said second part 44 can be arranged to said drawer without departing from the scope of the invention. The second part 44 is apt to interact with the first elastic part 42, as better described later.

[0065] The first elastic part 42 preferably comprises an elastic strip 50, preferably a metallic strip, having an apex 52 and two lateral sides 54, 56 longitudinally extending from the apex 52, as better visible in Figure 10.

[0066] According to an aspect of the invention, the strip 50 is apt to be removably mounted to the drawer 2.

[0067] Preferably, the lateral sides 54, 56 of the strip

50 are apt to be removably mounted to the drawer 2.

[0068] The first lateral side 54 of the strip 50 comprises a first engaging surface 60 and the drawer 2 comprises a respective first stopping surface 62. More particularly, the first engaging surface 60 is positioned to abut against the first stopping surface 62 preventing the strip disengagement, when the strip 50 is in its mounted position with respect to the drawer 2.

[0069] The first lateral side 54 preferably comprises a first bending portion 54a at its end, more preferably a U-shaped portion. Preferably, the first bending portion 54a is apt to be removably mounted to the drawer 2.

[0070] In the preferred embodiment illustrated herein, the first engaging surface 60 is realized at the extremity of the first lateral side 54, more preferably at the extremity of the first bending portion 54a.

[0071] The extremity of the first lateral side 54 has to be preferably defined as the furthest part of the first lateral side 54 and the first engaging surface 60 preferably comprises an inclined surface, more preferably a perpendicular surface, with respect to the direction of development of the first lateral side 54.

[0072] Analogously, the second lateral side 56 of the strip 50 preferably comprises a second engaging surface 64 and the drawer 2 comprises a respective second stopping surface 66. More particularly, the second engaging surface 64 is positioned to abut against the second stopping surface 66 preventing the strip disengagement, when the strip 50 is in its mounted position with respect to the drawer 2.

[0073] The second lateral side 56 preferably comprises a second bending portion 56a at its end, more preferably a U-shaped portion. Preferably, the second bending portion 56a is apt to be removably mounted to the drawer 2.

[0074] In the preferred embodiment illustrated herein, the second engaging surface 64 is realized at the extremity of the second lateral side 56, more preferably at the extremity of the second bending portion 56a.

[0075] The extremity of the second lateral side 56 has to be preferably defined as the furthest part of the second lateral side 56 and the second engaging surface 64 preferably comprises an inclined surface, more preferably a perpendicular surface, with respect to the direction of development of the second lateral side 56.

[0076] The first stopping surface 62 is preferably realized in a first receiving slot 70 of the drawer 2 and, analogously, the second stopping surface 64 is preferably realized in a second receiving slot 72 of the drawer 2, as visible in Figure 7.

[0077] The first receiving slot 70 is preferably delimited by a first wall 70a and a second wall 70b opposite to the first wall 70a. The first wall 70a preferably comprises the first stopping surface 62.

[0078] The second receiving slot 72 is preferably delimited by a first wall 72a and a second wall 72b opposite to the first wall 72a. The first wall 72a preferably comprises the second stopping surface 64.

[0079] The elastic strip 50 is mounted to the drawer 2 by inserting the first bending portion 54a into the first slot 70 and the second bending portion 56a into the second receiving slot 72.

[0080] Thanks to the flexibility of the strip 50, and preferably with the aiming of the bending portions 54a, 56a, the ends of the elastic strip 50 are snap fitted inside the slots 70, 72 and the engaging surfaces 60, 64 of the strip 50 come into abutment to respective stopping surfaces 62, 66 of the drawer 2.

[0081] Assembly operations of the first elastic part 42 to the drawer 2 are therefore simple and fast. Also, removal and/or substitution of the first elastic part 42 is simple and fast thanks to the elastic deformation of the strip 50 which allows disengagement of the engaging surfaces 60, 64 from the respective stopping surfaces 62, 66.

[0082] Constructional and/or maintenance costs are therefore reduced compared to laundry treating machines of known type.

[0083] Preferably, the first lateral side 54 of the strip 50 comprises a valley 80 placed between the apex 52 and the extremity of the first lateral side 54. Analogously, the second lateral side 56 of the strip 50 preferably comprises a valley 82 placed between the apex 52 and the extremity of the second lateral side 56.

[0084] Valleys 80, 82 are realized along the elastic strip 50 to confer it the appropriate elasticity.

[0085] According to a preferred embodiment on the invention, the elastic strip 50 is made of a metallic material, preferably iron, preferably stainless steel.

[0086] Advantageously, the type of material and/or the shape and/or the size of the elastic strip may be properly selected irrespective of the material of the other parts of the drawer assembly, in particular irrespective of the material of the drawer where the elastic strip is mounted.

[0087] Design/dimensioning of the elastic strip may be properly carried out, irrespective of other parts of the drawer assembly. Reliability of the drawer assembly is therefore positively affected.

[0088] The second part 44, as said above, is arranged to the housing 20 and interacts with the first elastic part 42. Preferably, the second part 44 is arranged to the water dispenser 30 of the housing 20

[0089] The second part 44 preferably comprises a tooth 45 protruding from the water dispenser 30 towards the first elastic part 42.

[0090] The second part 44 is preferably a rigid part, more preferably is formed integrally with said upper element 50.

[0091] In a first aspect of the invention, the second part 44 interacts with the first elastic part 42 to ensure the closed position of the drawer 2 with respect to the housing 20.

[0092] Referring in particular to Figure 7 wherein the drawer 2 is in the closed position, the tooth 45 interacts with the apex 52 of the elastic strip 50 abutting thereto.

[0093] When the drawer 2 is in the closed position, for example when the laundry washing machine 100 is per-

forming a washing cycle, and no one force is applied to the drawer 2 in the withdrawal direction W, abutment of the tooth 45 against the apex 52 prevents, or substantially prevents, movements of the drawer 2 with respect to the housing 20, or the water dispenser 30.

[0094] For example, when the laundry washing machine 100 is working and is subjected to vibrations, the drawer 2 is maintained in closed position avoiding unintentional opening.

[0095] When the drawer 2 is intentionally moved from the closed position towards an opening by applying an extracting force by a user along the withdrawal direction W, the strip 50 initially deforms bending downwards due to the interaction of the tooth 45 with the apex 52 wherein the tooth 45 exerts a pushing force towards the apex 52.

[0096] Successively, the strip 50 backs to its rest position and the tooth 44 disengages from the apex 52.

[0097] Vice-versa, when the drawer 2 is moved from an opening position towards the closed position by applying a force by a user along the push direction P, the strip 50 deforms bending downwards due to the interaction of the tooth 45 with the apex 52.

[0098] Successively, the drawer 2 reaches the final desired closed position, preferably consisting of the completely inserted position of the drawer 2 inside the housing. According to an aspect of the present invention, the retaining device 40 preferably comprises a stop element 48 apt to limit the maximum deformation of strip 50.

[0099] The stop element 48 advantageously avoids excessive deformation of the strip 50 and possible damaging of the same, in particular during assembly operations.

[0100] It has thus been shown that the present invention allows all the set objects to be achieved. In particular, it makes it possible to provide a laundry treating machine having a drawer assembly with reduced complexity and/or size and/or weight compared to laundry treating machines of known type and lower constructional and/or maintenance costs.

[0101] It is underlined that the laundry washing machine illustrated in the enclosed figures is of the front-loading type; however, it is clear that the system according to the invention can be applied as well to a top-loading laundry washing machine, substantially without any modification. It is also clear that the system according to the invention can be applied as well to laundry drying machine, substantially without any modification.

[0102] Although illustrative embodiments of the present invention have been described herein with reference to the accompanying drawings, it is to be understood that the present invention is not limited to those precise embodiments, and that various other changes and modifications may be affected therein by one skilled in the art without departing from the scope or spirit of the invention.

[0103] For example, in embodiments previously described the first elastic part is arranged to the drawer and the second part is arranged to the housing. In different embodiments, nevertheless, the first elastic part may be arranged to the housing and the second part may be arranged to the drawer.

[0104] Furthermore, in embodiments previously described the second part is preferably a rigid part. In different embodiments, nevertheless, the second part may be elastic.

[0105] Still, in embodiments previously described the engaging surfaces are arranged at the extremities of the lateral sides of the elastic strip. In different embodiments, nevertheless, the engaging surfaces may be arranged at other positions along the lateral sides of the elastic strip.

[0106] Furthermore, in embodiments previously described the drawer comprises one or more compartments for receiving agents for washing laundry in a laundry washing machine. In different embodiments, the compartment may be a tank for receiving condensed water.

[0107] All such changes and modifications are intended to be included within the scope of the invention as defined by the appended claims.

Claims

1. A laundry treating machine (100) having a drawer assembly (1) comprising:

   - a drawer (2) comprising at least one compartment (10a, 10b) for receiving an agent for treating laundry and/or for receiving other products/liquids;
   - a housing (3, 20) on which said drawer (2) can slide along a sliding axis (S);
   - a retaining device (40) ensuring the closed position of said drawer (2) with respect to said housing (3, 20);

   wherein said retaining device (40) comprises a first elastic part (42) arranged to one of said drawer (2) or said housing (3, 20) and a second part (44), adapted to interact with said first elastic part (42) ensuring said closed position of said drawer (2), arranged to the other of said housing (3, 20) and said drawer (2), respectively, wherein said first elastic part (42) comprises an elastic metallic strip (50) having an apex (52) and two lateral sides (54, 56) longitudinally extending from said apex (52), said strip (50) being apt to be removably mounted to said drawer (2) or to said housing (3, 20).

2. A machine (100) according to claim 1, wherein said two lateral sides (54, 56) of said strip (50) are apt to be removably mounted to said drawer (2) or to said housing (3, 20).

3. A machine (100) according to claim 1 or 2, wherein each lateral side of said two lateral sides (54, 56) of said strip (50) comprises a bending portion (54a,

56a).

4. A machine (100) according to any of the preceding claims, wherein said drawer (2) or said housing (3, 20) comprises a receiving slot (70, 72) apt to receive, at least partially, one of said two lateral sides (54, 56) of said strip (50).

5. A machine (100) according to any of the preceding claims, wherein said drawer (2) or said housing (3, 20) comprises two receiving slots (70, 72), each of said two receiving slots (70, 72) apt to receive, at least partially, a respective one lateral side of said two lateral sides (54, 56) of said strip (50).

6. A machine (100) according to claim 4 or 5 when depending on claim 3, wherein said bending portion (54a, 56a) is inserted in said receiving slot (70, 72) when said strip (50) is in its mounted position with respect to said drawer (2) or to said housing (3, 20).

7. A machine (100) according to any of the preceding claims, wherein each lateral side (54, 56) of said two lateral sides (54, 56) comprises an engaging surface (60, 64) and said drawer (2) or said housing (3, 20) comprises a stopping surface (62, 66) adapted to receive in abutment said engaging surface (60, 64).

8. A machine (100) according to claim 7, wherein said engaging surface (60, 64) is arranged at the extremity of said lateral side (54, 56).

9. A machine (100) according to claim 7 or 8 when depending on any of the claims 4 to 6, wherein said stopping surface (62, 66) is realized in said receiving slot (70, 72) of said drawer (2) or of said housing (3, 20).

10. A machine (100) according to any of the preceding claims, wherein said second part (44) is adapt to exert a pushing force towards said first elastic part (42) when the drawer (2) is moved from its closed position towards an opening position along said sliding axis (S) or when the drawer (2) is moved from an opening position towards its closed position along said sliding axis (S).

11. A machine (100) according to any of the preceding claims, wherein said retaining device (40) comprises a stop element (48) to limit the maximum deformation of said first elastic part (42).

12. A machine (100) according to any of the preceding claims, wherein one lateral side (54, 56) of said two lateral sides (54, 56) comprises at least one valley (80, 82) placed between said apex (52) and the extremity of said one lateral side (54, 56).

13. A machine (100) according to any of the preceding claims, wherein said second part (44) comprises a tooth-like element (48).

14. A machine (100) according to any of the preceding claims, wherein said second part (44) is formed integrally with said housing (3, 20) or with said drawer (2).

15. A machine (100) according to any of the preceding claims, wherein said second part (44) is rigid.

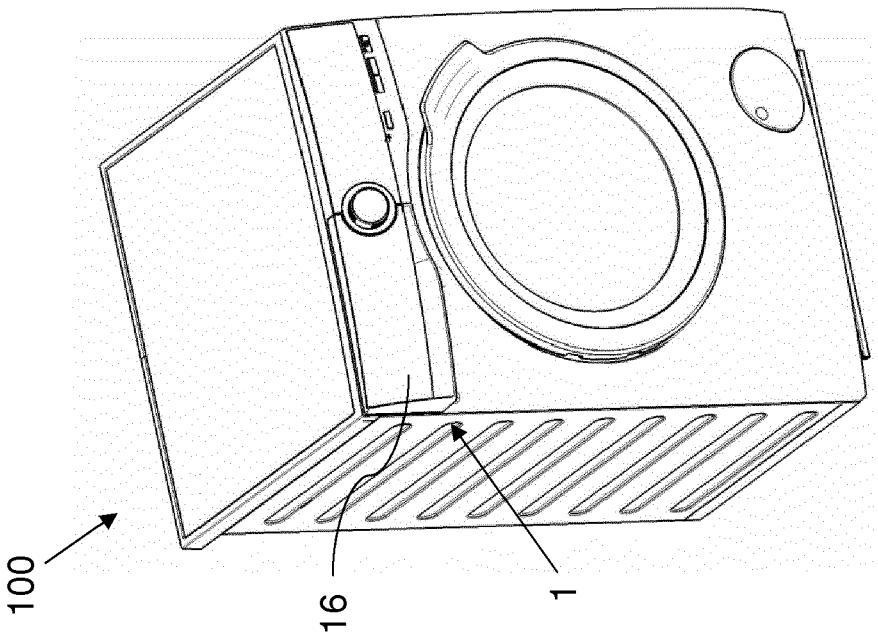


FIG. 2

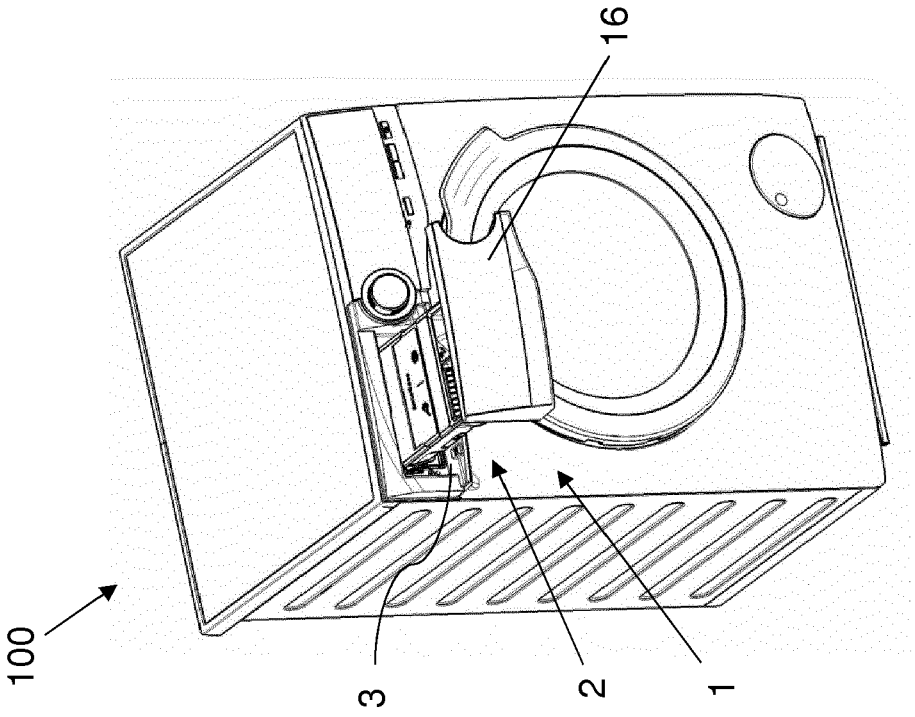


FIG. 1

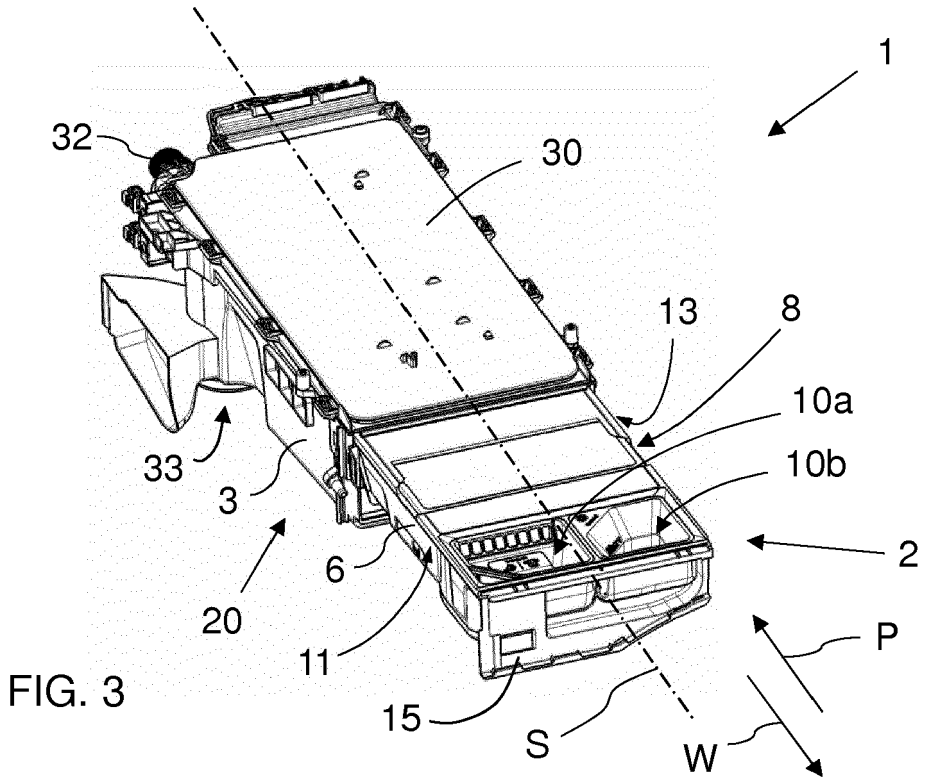


FIG. 3

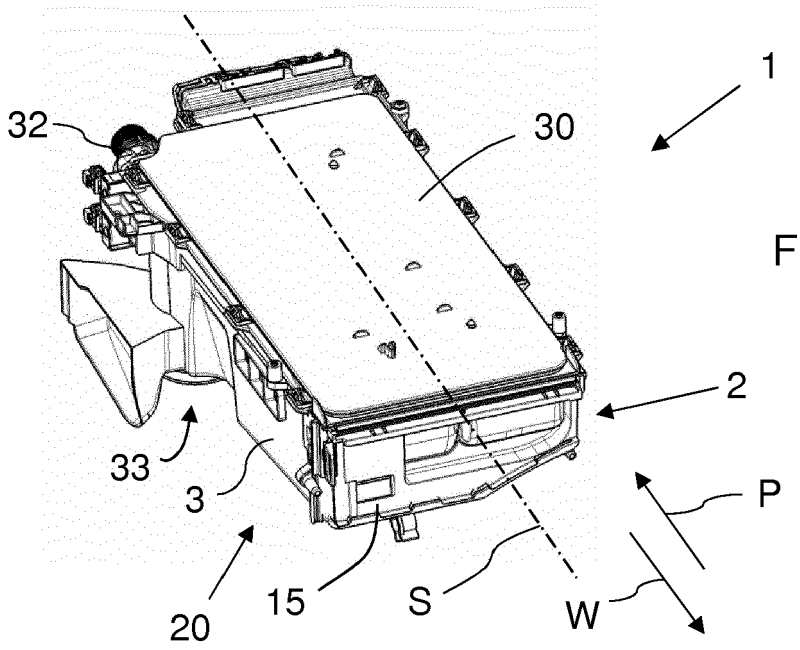


FIG. 4

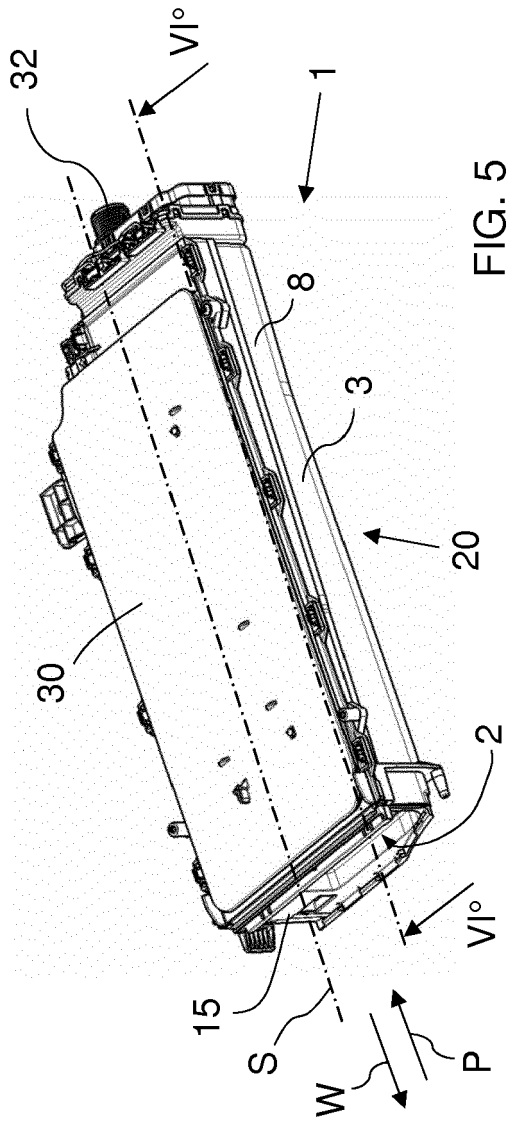


FIG. 5

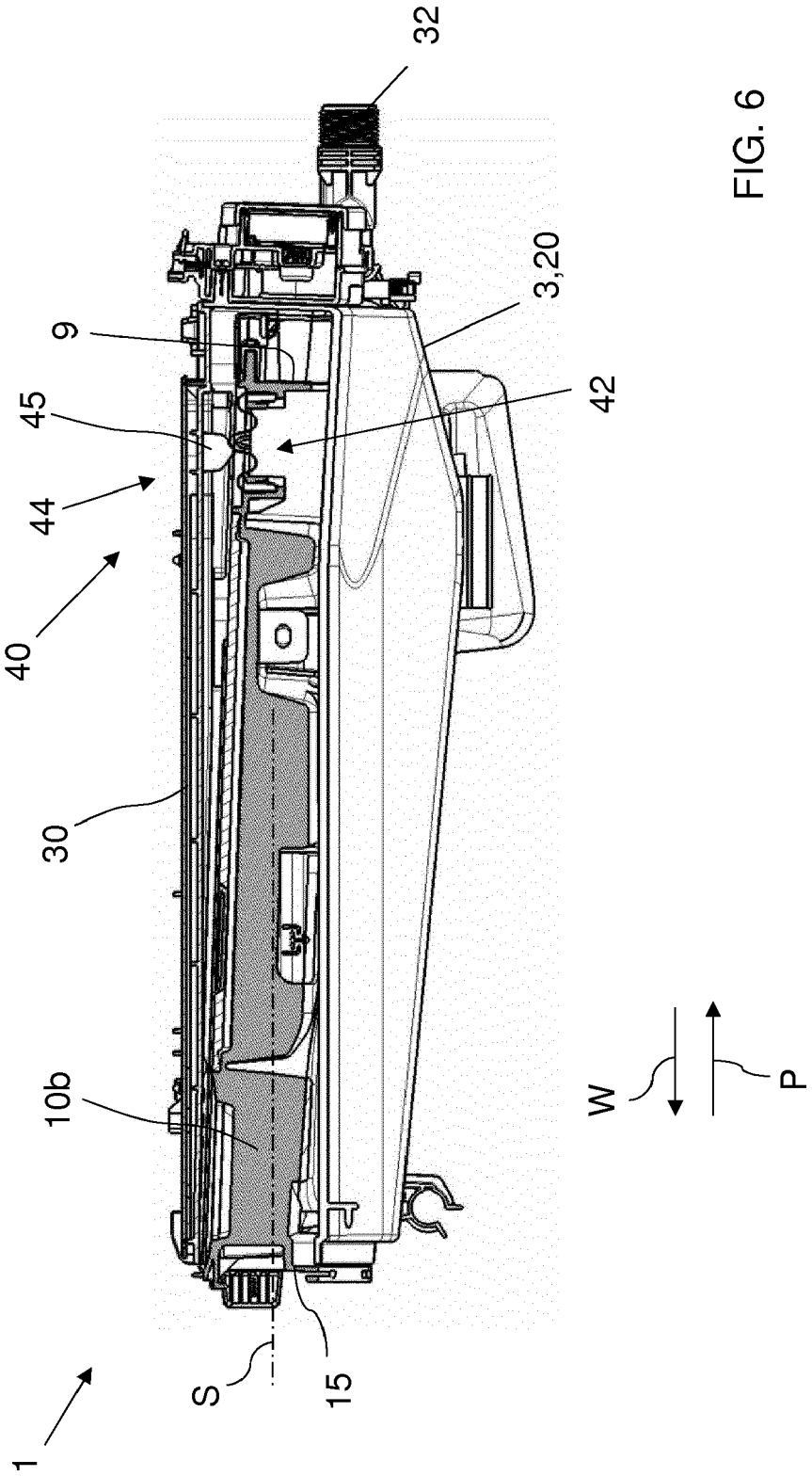
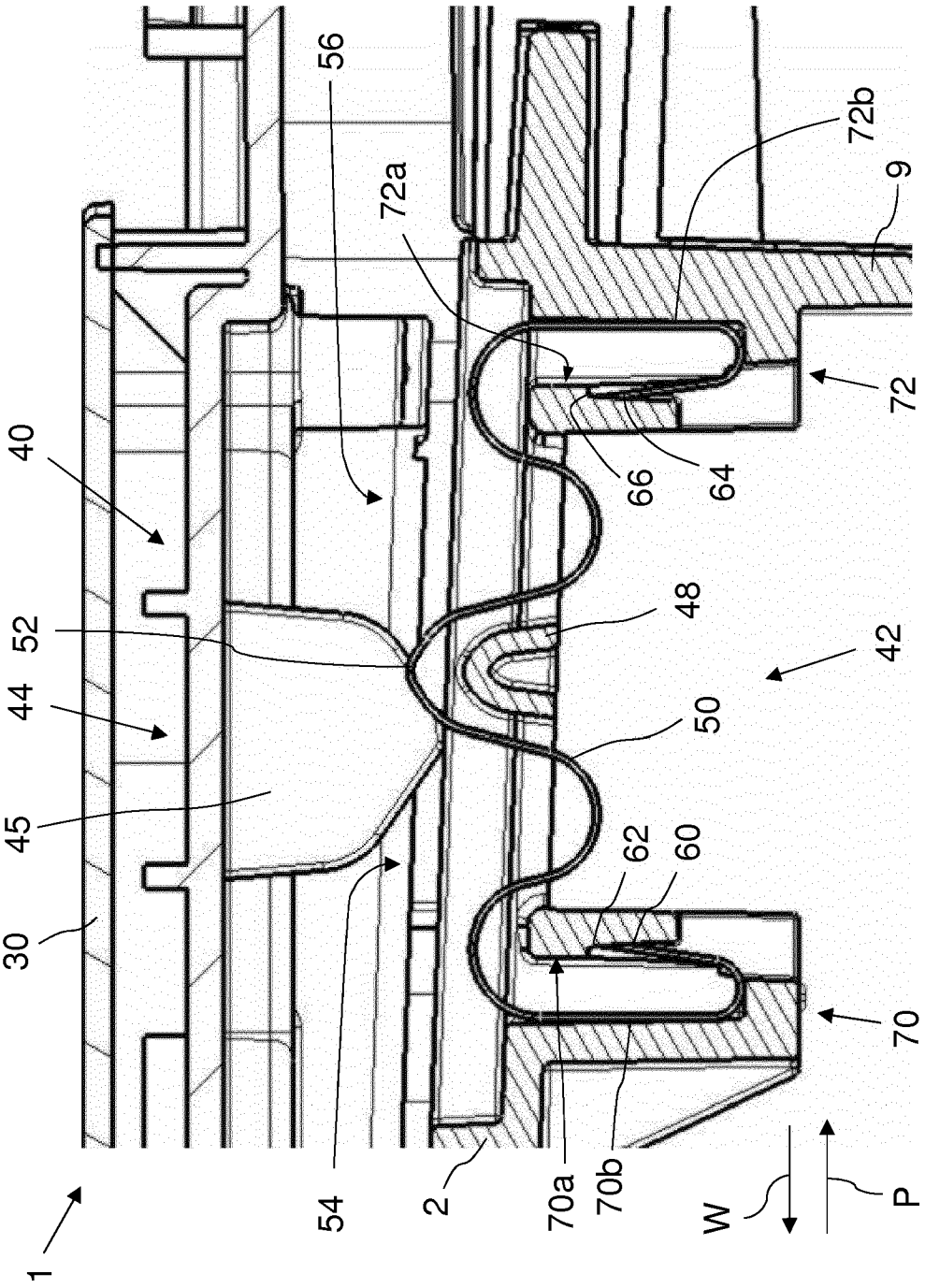


FIG. 6

FIG. 7



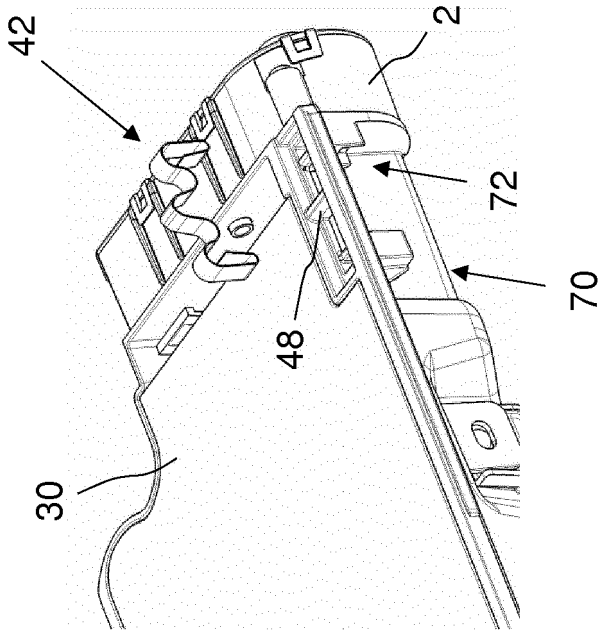


FIG. 9

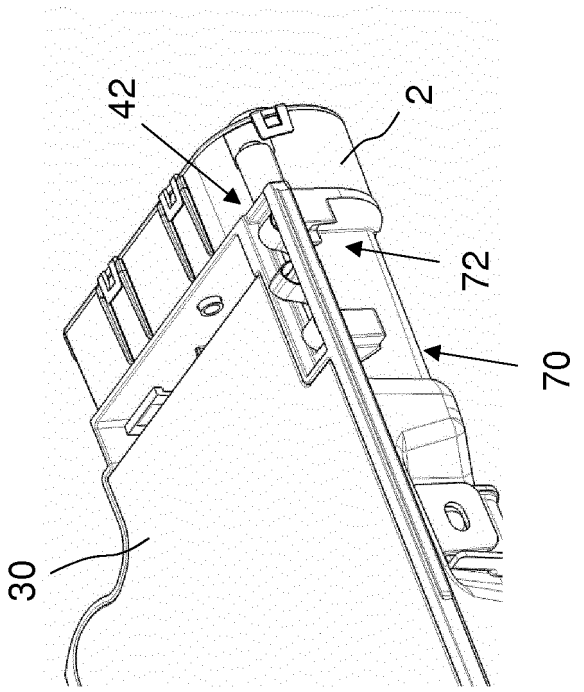
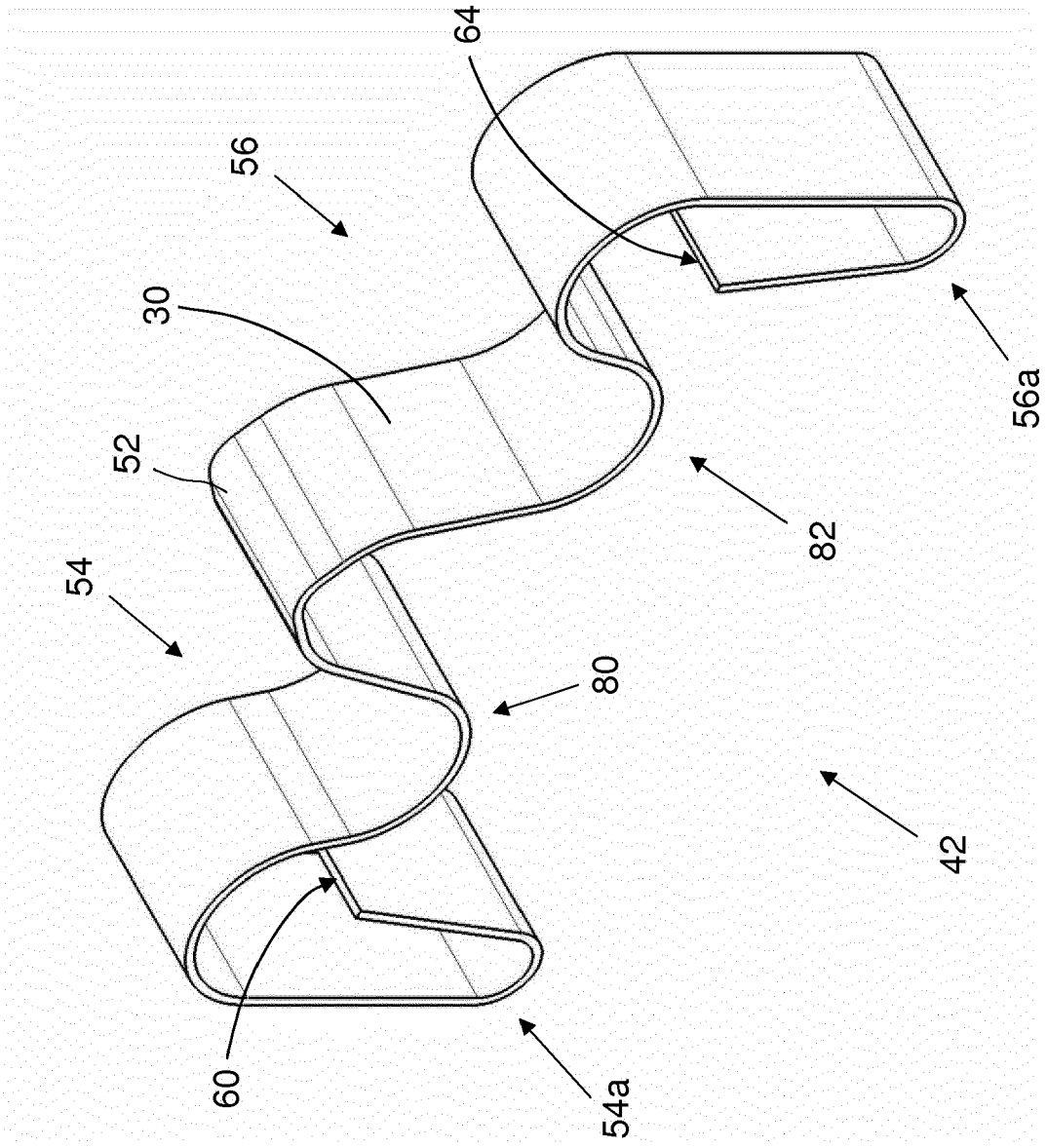


FIG. 8

FIG. 10



Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 19 21 1779

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 2 372 011 A1 (ELECTROLUX HOME PROD CORP [BE]) 5 October 2011 (2011-10-05) * paragraph [0006] - paragraph [0033]; figures *	1,10,12, 13	INV. D06F39/02
X	WO 2019/096486 A1 (ARCELIK AS [TR]) 23 May 2019 (2019-05-23) * paragraphs [0020], [0027]; claim 1; figure 4 *	1	
A	EP 3 235 938 A1 (ELECTROLUX APPLIANCES AB [SE]) 25 October 2017 (2017-10-25) * paragraph [0086] - paragraph [0095]; figure 5 *	1-15	

TECHNICAL FIELDS SEARCHED (IPC)

D06F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	27 March 2020	Diaz y Diaz-Caneja

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 19 21 1779

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

27-03-2020

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 2372011 A1	05-10-2011	NONE	
WO 2019096486 A1	23-05-2019	TR 201717946 A2	21-06-2019
		WO 2019096486 A1	23-05-2019
EP 3235938 A1	25-10-2017	AU 2017253152 A1	11-10-2018
		CN 109072532 A	21-12-2018
		EP 3235938 A1	25-10-2017
		WO 2017182199 A1	26-10-2017

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82