



(11) **EP 3 187 651 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
**05.07.2017 Bulletin 2017/27**

(51) Int Cl.:  
**D06F 39/14** (2006.01) **D06F 39/12** (2006.01)  
**D06F 58/22** (2006.01) **D06F 58/24** (2006.01)

(21) Application number: **15203069.8**

(22) Date of filing: **30.12.2015**

(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**  
Designated Validation States:  
**MA MD**

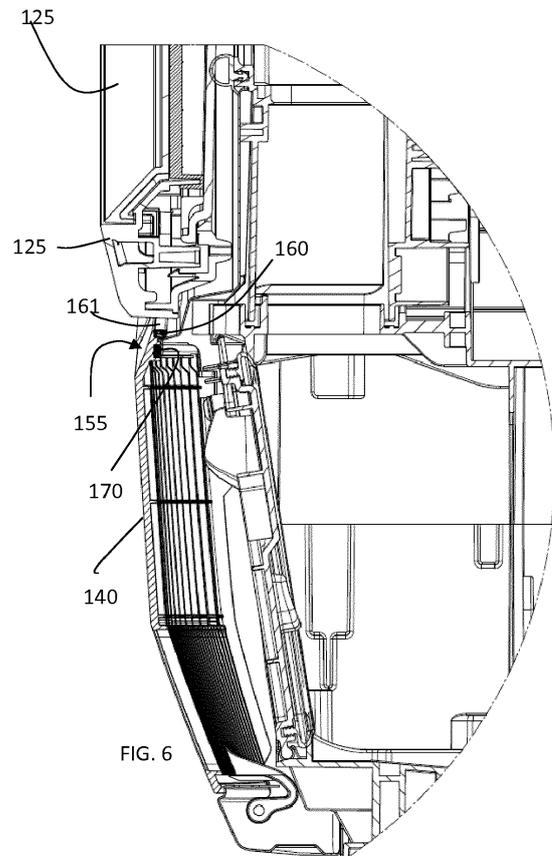
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(54) **LAUNDRY TREATING MACHINE**

(57) Laundry treating machine (100) comprising a cabinet (105) provided with a laundry loading opening (115) for accessing a laundry treatment chamber (110) and a loading door (125) hinged to the cabinet (105), the cabinet (105) further comprises a swivelling door (140) hinged to the cabinet (105) and openable to allow access to an inner region of the laundry treating machine (100), whereby said swivelling door (140) includes a closure mechanism to keep the swivelling door closed, the closure mechanism comprising a handle forming with the cabinet (105) a gap (160) located at a rim (116) of the laundry loading opening (115), wherein access to the gap (160) is hindered by said laundry loading door (125) when the laundry loading door (125) is closed.



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## Description

### Field of the invention

**[0001]** The present invention relates in general to household appliance for treating laundry, i.e. laundry treating machines like laundry washing and/or drying machine.

### Background art

**[0002]** In laundry treating machines like laundry washer-dryers and dryers, one known solution calls for accommodating the drying air moisture condensing system in the bottom part of the appliance, below the tumbler or (in the case of washing and drying machines) the tub. The moisture condensing system may comprise a single air-air heat exchanger where the moisture-laden drying air, which during the drying operation comes from the laundry treatment chamber, is cooled down by a flow of cooling air taken in from the outside environment, so as to cause condensation of the moisture. Alternatively, it may comprise two or more heat exchangers, including an evaporator and a condenser, of a heat pump system.

**[0003]** The bottom part of the appliance cabinet (i.e. the plinth) may be perforated so as to enable the cooling air to be taken in and expelled.

**[0004]** The plinth advantageously comprises an openable plinth door, typically hinged at one side to the remaining of the appliance cabinet or to the machine frame, for enabling the access to the inner region of the cabinet and, in particular, to the moisture condensing system, e.g. in order to empty the condense water collection tank, for cleaning the condensing system or generally for maintenance purposes. Commonly, a lock device is provided, for keeping the plinth door closed, and operable to unlock the plinth door. Advantageously, the lock device, which is arranged at least partially inside the appliance cabinet, is operable by a user via a release member such as a slider or button or similar device, which is conveniently located in the rim of the machine laundry loading door. In this way, being the release member hidden when the loading door is closed, the appliance aesthetic is not impaired, and also it is ensured that when the loading door is closed and the appliance is operating, the user cannot inadvertently open the plinth door and access the moisture condensing system. The release button actuates a locking element such as a tooth that engages/disengages a corresponding seat formed in the plinth door at the top thereof, proximate to the upper corner of the free side thereof, i.e., the side of the plinth door that is not hinged to the appliance cabinet.

**[0005]** An example of such a lock and corresponding plinth door is for example given in the European patent application EP 2647745 in the name of the same Applicant.

**[0006]** However, the provision of a lock requires the construction and the assembly of many different compo-

nents. Further, like all movable mechanical parts, breakage of the lock could take place, with consequent impossibility to open or close the plinth door.

**[0007]** In addition, the opening of the plinth door, being activated from the inside of the laundry treating machine, that is, the fact that the plinth door can be opened only when the loading door is opened by means of a release mechanism therein located, requires the knowledge of the positioning of the release member of the lock. In case of a new user of the laundry treating machine, he/she could be completely unaware of the "hidden" release member position and thus he/she might start tampering with the plinth door in order to open the same, causing possible damages.

### Summary of the invention

**[0008]** The Applicant has noticed that in laundry treating machines having a swivelling door openable by a lock device having a release mechanism, due to standard location of the lock device as described with reference to the prior art, the user needs to have a previous knowledge of the release member position of the release member and of how to operate the same, knowledge that can be acquired for example by reading the machine manual or by having being told by someone.

**[0009]** However, it is known that users prefers that appliances are as easy as possible in their usage and that the consultation of the user manual is an event that is required as rarely as possible.

**[0010]** The provision of the release member on the exterior of the cabinet - so that it is visible - is not a feasible or preferred solution either, because the user could open the swivelling door also during the laundry treating machine functioning, e.g. during a drying or washing cycle, with the possible risk of coming into contact with parts that may cause an injury to the user, such moving or hot parts present in the interior of the cabinet.

**[0011]** Therefore, the goal of the invention is to provide a laundry treating machine having a swivelling door, for example to access a heat exchanger, a filter or a condensate canister of the machine, whose way of opening is visible from the outside of the machine, but at the same time, the opening of the swivelling door is not possible - or at least the risk of this opening is minimized - while the laundry treating machine is in operation.

**[0012]** According to an aspect, the invention relates to a laundry treating machine comprising a cabinet provided with a laundry loading opening for accessing a laundry treatment chamber and a loading door hinged to the cabinet for selectively closing or opening the laundry loading opening, the cabinet further comprising a swivelling door hinged to the cabinet and openable to allow access to an inner region of the machine within the cabinet, characterized in that the swivelling door includes a closure mechanism to keep the swivelling door closed when the swivelling door is abutted against the cabinet, the closure mechanism comprising a handle visible from the exterior

of the cabinet when said laundry loading door is closed, said handle forming with the cabinet a gap located at a rim of said laundry loading opening, wherein access to the gap is hindered by said laundry loading door when the laundry loading door is closed so that insertion of a finger in the gap to pull the handle is not permitted, and wherein a dimension of said gap allows a finger insertion to pull the and open the swivelling door when the laundry loading door is open.

**[0013]** The laundry treating machine of the invention may include a washing machine, a drier or a combined washer-dryer. The laundry treating machine commonly includes a washing and/or drying chamber, that is a treatment chamber, where the laundry can be located in order to be washed and/or dried; the chamber can be rotated around a chamber axis during the washing and/or drying operations. Further, the laundry treating machine may be a front-loading machine, which means that the axis of rotation of the laundry chamber is positioned in a horizontal manner or slightly tilted with respect to a horizontal plane, or a top laundry treating machine, where the axis of the laundry chamber is substantially vertical.

**[0014]** In a preferred embodiment, the laundry treating machine is a dryer and more preferably it is a front loading laundry dryer.

**[0015]** The laundry treating machine comprises a cabinet preferably including a front wall, a rear wall, side walls, top wall and a base section or basement. The front or top wall may comprise a user panel to command the functioning of the appliance by the user. The cabinet defines the limit between the internal volume of the laundry treating machine and the outside to the laundry treating machine. Further, preferably, the cabinet includes a laundry loading door hinged to the cabinet itself, e.g. to the front wall in case of a front loading machine, which is openable in order to introduce the laundry in the laundry chamber, or to the top wall in case of a top loading machine. The laundry loading door thus opens or closes a laundry loading opening realized in the cabinet, such as for example in the front wall of the same.

**[0016]** The basement has, among others, the function of housing several components of the machine, such as a portion of a drying air conduit, heat exchangers, a motor for rotating the chamber, a fan, etc. Further, it has also the function of supporting some of the walls of the cabinet. The rear wall is fixed to the basement when the appliance is in an assembled position.

**[0017]** The basement can be realized in any material; preferably it is realized in plastic material. Further, the walls of the casing can also be realized in any material, preferably the rear wall is realized in plastic. Preferably, at least one of the two lateral walls is realized in metal, at least for a portion thereof, more preferably at least a portion of the front wall of the cabinet is realized in metal. In the basement a front side, a back side and two lateral sides can be defined as well, which are contiguous to the front, rear and lateral walls of the cabinet, respectively, when the appliance is fully assembled.

**[0018]** The basement is generally positioned on a floor and rests substantially horizontally when the machine is in a standard operating condition. The basement defines a basement plane, which is substantially parallel to the plane where it rests, e.g. a horizontal plane.

**[0019]** The basement for example may be divided in an upper and a lower shell. The upper and lower shells define the outer boundaries of the basement, dividing a volume "inside" of the basement and an "outside" to the basement.

**[0020]** The part of cabinet surrounding the basement is also called "plinth" in the technical field of reference.

**[0021]** The laundry treating machine further comprises an additional door, called a swivelling door, also hinged to the cabinet, for accessing a portion - such as components - of the laundry treating machine located inside the cabinet. For example, the swivelling door may give access to one or more heat exchangers of the laundry treating machine, or to a condense canister in order to check or empty the same, to a fan for moving process drying air, etc. The swivelling door is preferably kept closed during a laundry treating machine washing and/or drying cycle for security reasons, due to the fact that it may give access to components of the laundry treating machine which might be in movement or might reach a relatively high temperature when the laundry treating machine is in function. On the other hand, the swivelling door needs to be openable when the laundry treating machine is not in function in order to access the above mentioned inner components of the laundry treating machine for example for cleaning, checking or maintenance purposes.

**[0022]** In order to keep the swivelling door closed during the machine functioning, the swivelling door preferably includes a locking or closure mechanism which keeps the swivelling door closed when the laundry loading door is closed. The fact that the laundry loading door is closed might be an indication that the laundry treating machine is in operation.

**[0023]** The swivelling door can be opened by operating a handle formed in the swivelling door. According to the invention, the swivelling door can be opened only when the laundry loading door is open. However, even if the laundry loading door is closed, the swivelling door can be closed from an open position. The handle of the swivelling door forms a gap with the cabinet of the laundry treating machine and, by inserting a finger or a hand in the gap, a force can be exerted to pull the handle, and thus the swivelling door, away from the cabinet and thus opening the same. However, in a first operative configuration of the laundry treating machine where the laundry loading door is closed on the loading opening of the cabinet, the gap, which is formed between the handle and the cabinet cannot be accessed because the gap is covered by the laundry loading door and therefore the hand of a user cannot access it. Even if a slit is formed between the laundry loading door and the swivelling door, e.g. between the laundry loading door and the handle, when both are in a closed position, in order to allow relative

movement of one door with respect to the other, such slit is dimensioned so as to prevent a human finger to access the gap existing between the swivelling door and the cabinet. Such gap might be still partially visible from the outside of the cabinet through the slit also when the laundry loading door is closed, however it cannot be accessed in order to pull the handle by a hand of a user. The slit, however, allows the swivelling door to be moved from an open position to a closed position even if the laundry loading door is in a close position. This because the swivelling door can be moved to a closed position without using the handle provided on it.

**[0024]** In order to grant o preventing access to the gap formed between the swivelling door and the cabinet when the swivelling door is in a closed position, reference has been made to a "test-finger" having a diameter or 12 millimetres and a length of 80 millimeters as defined in European Norm EN 60529. A slit having at least a dimension along a direction smaller than 12 millimetres therefore does not allow a finger introduction and thus the gap cannot be accessed.

**[0025]** However, when the laundry loading door is opened, the rim of the laundry loading opening is free and therefore the gap can be easily accessed: a hand or fingers of the user can be introduced in the gap and the swivelling door can be opened pulling the handle. When the laundry loading door is open, the laundry treating machine is not in operation and therefore it is safe to open the swivelling door and to be able to contact or manipulate components of the laundry treating machine present inside the cabinet.

**[0026]** The handle could be a fixed handle with respect to the swivelling door, that is, relative movements of the handle with respect to the swivelling door are not possible. In this embodiment, for example, the handle can be formed as an integral part of the swivelling door, for example in the same moulding process step. Alternatively, the handle may operate a lock, for example the handle could be movable, such as it could rotate and in this way disengage a pin of a lock from a corresponding seat. The rotational movement of the handle to disengage the lock is prevented when the swivelling door and the laundry loading door are both in a closed position. Alternatively, the handle could be arranged in a mechanism so that when pulled it also disengage a portion of a lock from its locking position and then automatically returns to the original position.

**[0027]** Preferably, the handle comprises a flap which has to be pulled by the user to open the swivelling door.

**[0028]** Further, in order to clearly identify the position of the handle so that the user can easily understand how to operate the swivelling door, the handle is always visible from the outside of the cabinet, e.g. in all operative configurations of the laundry treating machine, with open or closed laundry loading door, the handle remains visible from the outside of the cabinet and it is not, or is only partially, covered by the laundry loading door, in particular when the latter is closed on the laundry loading open-

ing. The gap on the contrary, as said, becomes obstructed - i.e. non accessible by a user - by the laundry loading door when closed.

**[0029]** In this way, the opening of the swivelling door can be performed only when the laundry treating machine is not in function (if the laundry loading door is opened when the laundry treating machine is performing a drying or washing cycle the machine is immediately stopped), but, on the other hand, the way in which the swivelling door is operated, is clear and visible from the outside in all machine operational conditions, no "hidden" mechanism or actuating elements are to be searched for within the inside of the laundry chamber.

**[0030]** Preferably, said handle is a pull handle. More preferably, the handle is integral to the swivelling door. In this embodiment, the construction of the handle is simplified, without any moving part present, and, in order to open the swivelling door, the handle is simply pulled.

**[0031]** Preferably, when said laundry loading door is closed, a slit is formed between the laundry loading door and the handle, and wherein a dimension of said slit defined by a distance between said laundry loading door and said handle is comprised between about 1 mm and 11 mm. Although a small slit may always be present between the laundry loading door and the rim of the swivelling door or the handle provided on said swivelling door, this slit is generally not wide enough to allow a finger insertion to reach the gap existing between the swivelling door and the cabinet to pull the handle to open the swivelling door.

**[0032]** Preferably, said gap is located under said laundry loading door when the laundry loading door is closed. A position of the gap could be in the lowermost part of the rim of the laundry loading door, being easily accessible by a user also when the laundry treating machine is in a vertically stacked position, for example in case of a dryer which can be mounted on top of a washing machine.

**[0033]** Preferably, the handle is located along a symmetry axis of said swivelling door. A symmetrical positioning of the handle is both functional, reducing the force needed to open the swivelling door, and also the aesthetical appearance of the cabinet is improved.

**[0034]** Preferably, the swivelling door is located at a plinth of the cabinet. More preferably, the swivelling door is located below said laundry loading door and it is hinged at a lower side of said cabinet. Advantageously, the swivelling door is used to access the inner lower part of the laundry treating machine. It could be used for example to discharge condense water, remove and clean a filter, check the functioning of heat exchangers, etc. Commonly all these components are located at the bottom of the laundry treating machine, where room is available for these relatively bulky components.

**[0035]** Preferably, said handle protrudes upwards from said swivelling door towards said laundry loading opening. This embodiment is preferably used in combination to a swivelling door hinged at the lower part of the cabinet:

in this way the positioning of the handle is at a relatively comfortable height to be handled by a user.

**[0036]** Preferably, said handle, on its side facing the cabinet, is at least partially covered by an element formed in elastic material which in abutment to said cabinet when the swivelling door is closed. This element is used to have a damping closure of the swivelling door so that preferably only a feeble sound is produced when the swivelling door is abutted against the cabinet. This is particular useful when the cabinet is formed in a metallic material, which creates a high metallic sound when hit. For example, the handle may include a seat where the elastic material is injection moulded over it.

**[0037]** Preferably, said closure mechanism includes at least a magnet. It is preferred that the amount of movable parts which have to be fabricated, assembled and are suitable of malfunctioning is minimized. Therefore, preferably the closure of the swivelling door is assured not by the presence of a mechanical lock, but preferably by the presence of one or more magnets which, with their attraction force, keeps the door closed when it is in abutment or in close proximity to the cabinet. For this purpose, at least a portion of the cabinet is preferably realized in metallic material, so that the attraction force is generated by the magnets. Preferably, in case the handle includes the element in elastic material, the elastic material elements forms a seat for the magnet. Alternatively, a seat for the magnet can be formed integral to the handle or to one or more other portions of the swivelling door.

**[0038]** More preferably, said at least a magnet is located at said handle and/or at one lateral end of said swivelling door. For example, in case the cabinet includes a front wall where the laundry loading door is hinged and two lateral walls, the lateral end of the swivelling door may be located in proximity of one of the two lateral walls. Further, said lateral end might be parallel to one of the lateral walls of the cabinet.

**[0039]** Even more preferably, at least three magnets are located at the handle and at the two lateral end of the swivelling door. Preferably, the positioning of the magnet is such that the majority of the swivelling door remains closed flush to the front wall of cabinet. It is indeed desired that the whole swivelling door remains flush to the cabinet when closed, so that it cannot be opened by inserting a finger in a slit. A flush swivelling door also improves the aesthetic appearance of the laundry treating machine.

**[0040]** Preferably, when said swivelling door is closed, said magnet is facing a portion of said cabinet, and wherein a spacing is present between said magnet and said portion of said cabinet. The spacing is preferred in order, on one hand, to avoid damages to a possible paint coating of the cabinet, which could be splinted by the continuous bumps of the magnet hitting the cabinet surface at the swivelling door closure, and, on the other hand, to avoid noise caused by the swivelling door closure.

**[0041]** Preferably, said handle has a form which match-

es in shape a contour of said laundry loading opening. In other words, the handle and the rim defining the laundry loading opening have the same shape or contour. The handle is preferably located at the external part of the rim of the laundry loading opening and it follows the same at least for a portion of its perimeter. The handle is thus easily visible and identifiable from the exterior of the cabinet, due to the fact that a user is generally focussed on the laundry loading opening to load the laundry treating machine. For example, the handle can have an arc-of-circumference shape in case of a circular laundry loading door or a rectilinear shape in case of a rectangular laundry loading door.

**[0042]** Preferably, the swivelling door is openable to enable access to a laundry treating machine region where at least part of a laundry process air moisture condensing system is arranged. Cleaning and maintenance of the air moisture condensing system can be therefore performed.

**[0043]** More preferably, the cabinet plinth is provided with perforations for the intake/exhaust of the laundry process air.

**[0044]** Preferably, said gap has a dimension defined by a distance between said handle (155) and said cabinet (105) equal or larger than about 12 mm. This dimension is generally wide enough to allow the insertion of one or more fingers of a hand of user in order to comfortably pull the handle and open the swivelling door, according to European Norm EN 60529.

#### Brief description of the drawings

**[0045]** These and other features and advantages of the present invention will better appear from the reading of the following detailed description of an exemplary and non-limitative embodiment thereof, depicted in the annexed drawings, wherein:

- Fig. 1 is an isometric view of a laundry treating machine according to an embodiment of the present invention in a first operative configuration;
- Fig. 2 is a partial isometric view of the laundry treating machine of figure 1 in a second operative configuration;
- Fig. 3 is an enlarged view of a detail of the laundry treating machine in the operative configuration of figure 2;
- Fig. 4 is an additional view of the detail of figure 3, in a third operative configuration;
- Fig. 5 is an enlarged isometric view of the swivelling door of the laundry treating machine of figures 1 and 2;
- Fig. 6 is a cross section of a plinth of the laundry treating machine in the operative configuration of figure 1;
- Fig. 7 is a cross section of a plinth of the laundry treating machine in the operative configuration of figure 2; and

- Fig. 8 is an enlarged view of a detail of the cross section of figure 6 or 7.

#### Detailed description of an exemplary embodiment of the invention

**[0046]** With initial reference to figures 1 and 2, an isometric view of a laundry treating machine according to an embodiment of the present invention is depicted, in a first and a second operative configuration. The laundry treating machine referred in the following description, globally denoted as 100, may be a laundry dryer or a laundry washer/dryer, but it should be understood that the invention may be applied to a laundry washing machine as well. The laundry treating machine 100 has an external casing or appliance cabinet 105, inside which structural and functional parts of the machine are accommodated, such as a tumbler 110 (or, in the case of a laundry washer/dryer, a drum rotatable within a tub), a moisture condensing system for demisting the drying air, fans, pumps, valves, motors, vibration dampening devices, electronics. A laundry loading opening 115 is formed in a front wall 120 of the cabinet 105, for allowing access to the inner space of the tumbler (or drum) 110; a laundry loading door 125 is provided for closing the load opening 115. The laundry loading opening 115 includes a rim 116 which defines a surface contouring the laundry loading opening 115 which surrounds the laundry opening door 125 when the laundry opening door 125 is in a closed configuration such as the one of figure 1.

**[0047]** The cabinet 105, in addition to the front wall 120, may include a rear wall (not visible in the figures) and two lateral walls 121, 122. A top wall 123 is also included to close the top of the cabinet 105.

**[0048]** The laundry treating machine 1 is a front loading machine and preferably it defines a vertical axis Z, along which it extends. Preferably, the front wall 120 is substantially vertical.

**[0049]** Below the laundry loading opening 115, the front wall 120 terminates and the bottom region of the appliance cabinet 105 is formed by a plinth 130. The plinth 130 is a cover for a bottom part of the laundry treating machine 100 where the moisture condensing system is, at least partly, located, for example an air-air heat exchanger where the moisture-laden drying air, coming from the laundry treatment chamber, is cooled down by a flow of cooling air taken in from the outside environment, so as to cause condensation of the moisture.

**[0050]** The plinth 130 is for this purpose preferably perforated, so as to enable the cooling air to be taken in and expelled.

**[0051]** A portion of the plinth 130 is swivably coupled to the cabinet 105 so as to be openable and allow access to the area behind it, and closable when the area behind it is not to be accessed. For example, the plinth 130 is hinged, at its lower side 143, to the cabinet 105 and form a plinth door 140 that can be opened (by the user or by a repairer) for accessing the moisture condensing sys-

tem, e.g. a tank for collecting the condense water released by the drying air in order to empty it or a filter to be cleaned. The plinth door 140 is preferably perforated, at a bottom band thereof; cooling air for the moisture condensing system is for example taken in (by means of a fan, not visible in the drawings) through the perforations 150 in a first plinth part, and expelled through perforations 150 in a second plinth part. Preferably, the plinth door 140 is located symmetrically with respect to a vertical axis of the front wall 120.

**[0052]** As visible in Fig. 1, Fig. 2 and in the enlarged views of Figs. 3 and 4, a handle 155 is provided for opening the plinth door 140 when desired. Advantageously, the handle 155 is located centrally with respect to the plinth door 140 and protrudes - for being accessible to a user/operator - from a top edge 144 (see figure 5 where the plinth door 140 is depicted in an enlarged view) of the plinth door 140. As shown in figures 3, 4 and 5, the handle 155 has a contour which follows, at least for a portion, the shape of the rim 116 of the load opening 115. Thus, being the laundry loading opening 115 substantially circular, the handle has a curved shape which may be an arc of circumference. The handle has substantially the form of a flat flap, which is however not geometrically following an external surface of the plinth door, but is slightly recessed with respect to it when the plinth door 140 is closed.

**[0053]** The handle 155 is visible from the exterior of the cabinet 105 both when the laundry loading door 125 is closed (see the operative configuration of figures 1 and 6) and also when the loading door 125 is open (see the operative configuration of figures 2 and 7). Therefore, there is no doubt for the user of the position of an actuator (i.e. the handle) to open the plinth door 140.

**[0054]** The handle 155 forms with the cabinet 105 (or the frame of the laundry treating machine) a gap 160. The gap 160 is visible in particular in the sectional side views of figures 6 and 7. The gap has preferably a width, which is defined by a distance between the handle 155 and the cabinet 105 when the plinth door 140 is closed, equal or greater than 12 millimetres in order to house one or more fingers of a user. The gap is located at the rim 116 of the loading opening 115.

**[0055]** The gap 160, when the laundry treating machine 100 is in the operative position of figures 1 and 6, is covered by the loading door 125, so that the gap is not accessible by a user. Indeed, in the operative configuration of figure 1 and 6, the loading door 125 is located above the gap and a narrow slit 161 having a dimension lower than 12 millimetres is still present between the loading door 125 and the rim 16, so between the door 125 and the gap 160, is not broad enough for the insertion of a finger or any other part of a user's hand. For example, the slit has a breadth, defined as a distance along the vertical direction Z between the laundry loading door 125 and the handle 155 when the laundry loading door 125 is closed, comprised between 1 and 11 millimetres. The user can see the position of the handle 155 also when

the laundry loading door 125 is closed, but cannot operate the same because the handle can be grabbed only by means of the gap: there is no other way to pull the handle otherwise. Therefore, when the laundry treating machine 100 is in operation, and the loading door 125 is closed, it is not possible to open the plinth door 140. Indeed, the handle 155 does not offer any protrusions from the exterior of the cabinet which can be used to pull it and thus open the plinth door 140. However when the laundry loading door 125 is closed and the plinth door 140 is opened, the plinth door 140 can be closed.

**[0056]** Furthermore, when the loading door 125 is open, the gap 160 is visible in the lower part of the circumferential rim 116 of the load opening 115 and it is reachable by the user who can insert his/her hand or fingers and pull the handle 155 in order to open the plinth door 140, as shown in the enlarged view of figure 4 where the plinth door is slightly open.

**[0057]** Further, the handle 155 includes an element 156 made of elastic material, which is preferably coupled to a seat 157 formed in the handle 155. The element 156 is preferably moulded in the seat 157 and dampens the closure of the plinth door 140 on the cabinet 105. The element 156 abuts against the cabinet front wall 120 when the plinth door 140 is in a closed position as it is visible in Fig. 8.

**[0058]** The plinth door 140 is for example made in plastic material (although other materials can be used, such as sheet metal).

**[0059]** Furthermore, the handle 155 is part of a closure mechanism located in the plinth door 140. The closure mechanism further comprises preferably one magnet and more preferably three magnets, all indicated with 170 in the figures. The magnets 170 are located one at the handle 155 and two at the opposite lateral sides 141 and 142 of the plinth door 140, as visible in figure 5. In this way the magnetic force is well distributed on some regions of the plinth door perimeter to keep the plinth door 140 perfectly flush with the cabinet front wall 120. The positioning of the magnets allows a full closure of the plinth door 140 every time the plinth door 140 is in the proximity of the cabinet 105 and keeps the door closed till a force against the magnetic attraction, such as a pulling force on handle 155, overcomes the force generated by the magnets 170.

**[0060]** Each magnet 170 is preferably housed in a seat 171. The seat can be realized for example integral to the handle 155 or to the plinth door 140. A seat 171 realized in the plinth door is depicted in the enlarged view of figure 8. Each seat 171 has preferably a depth longer than the depth of the magnet 170, so that the magnet does not reach an end rim of the seat 171. In this way, when the plinth door 140 is in contact to the cabinet 105, the magnet does not touch the surface of the cabinet itself, such as the surface of front door 120. In this way, substantially no noise is heard at the closure of the plinth door 140 and no damage of a cabinet paint is caused.

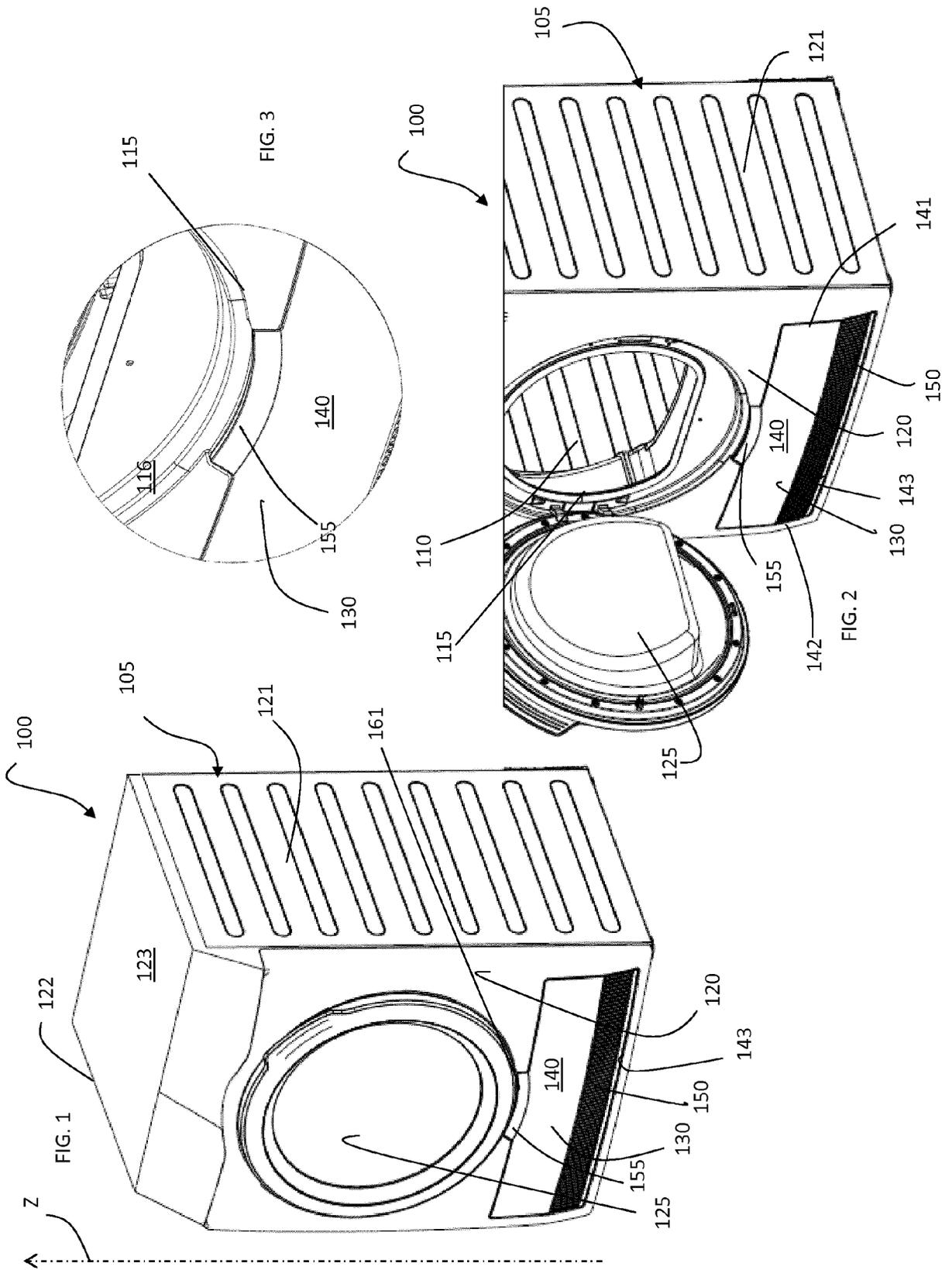
**[0061]** The provision of at least three magnets 171 (see

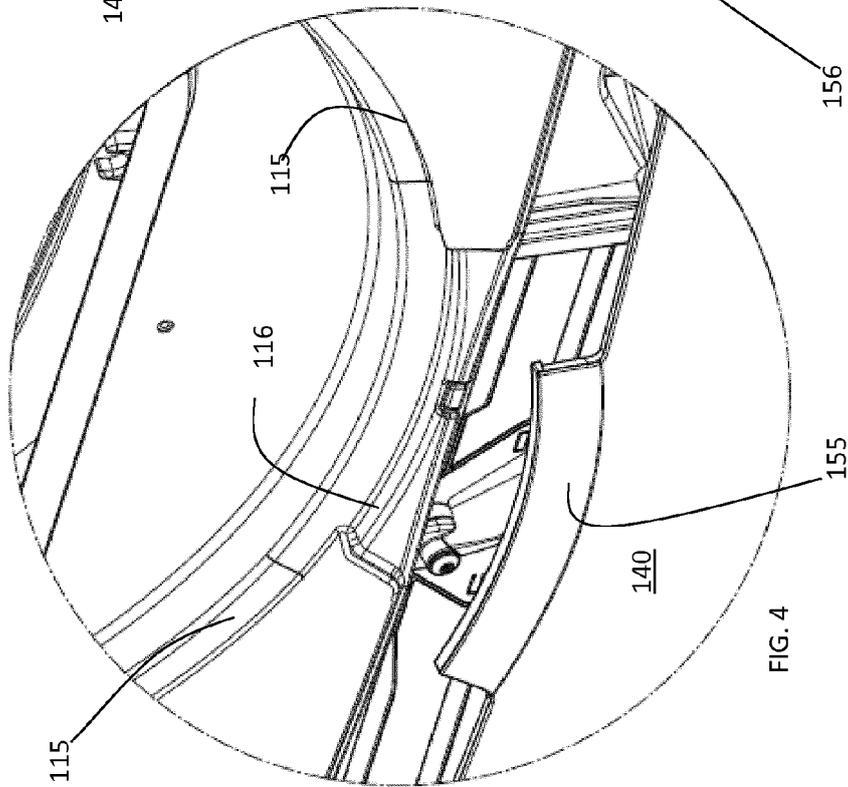
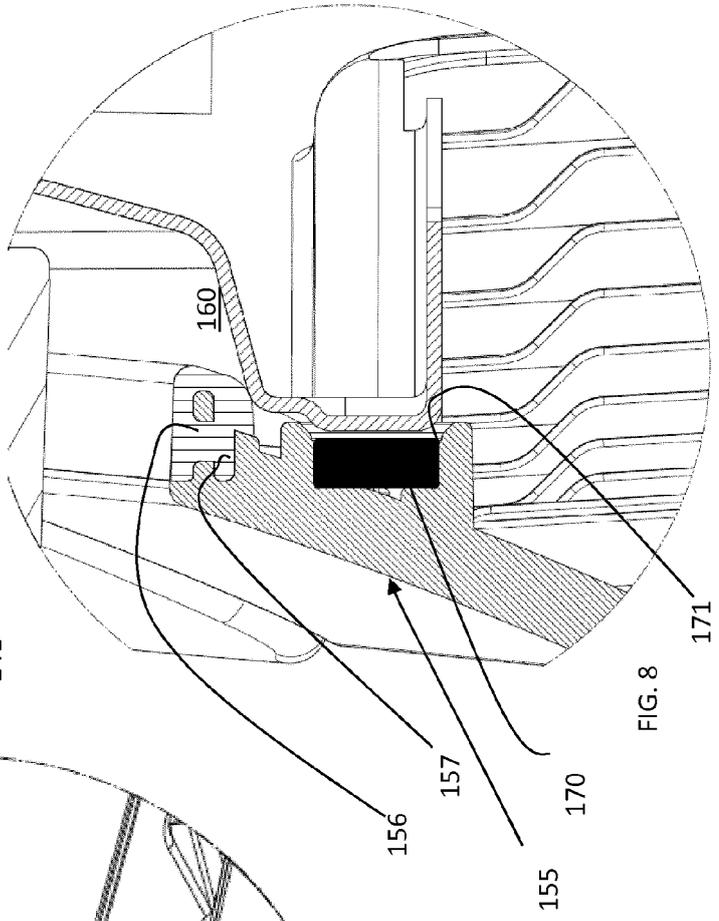
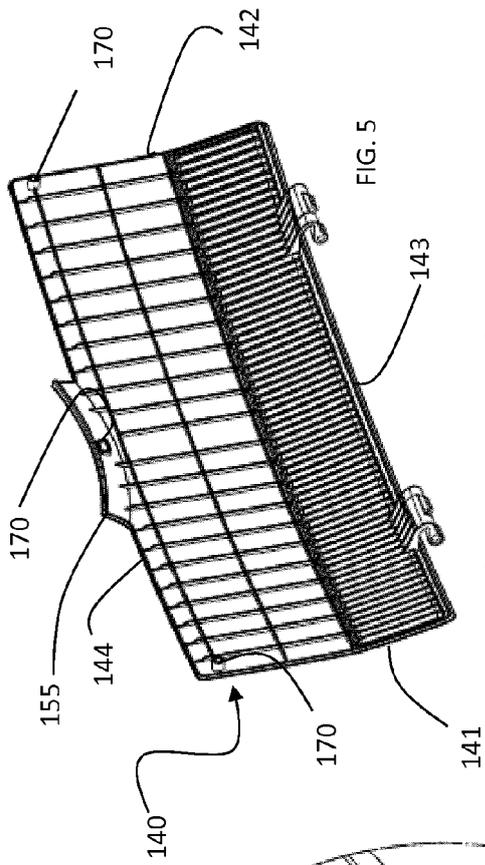
figure 5) allows a flush closure of the plinth door 140 on the cabinet 105.

## 5 Claims

1. A laundry treating machine (100) comprising a cabinet (105) provided with a laundry loading opening (115) for accessing a laundry treatment chamber (110) and a loading door (125) hinged to the cabinet for selectively closing or opening the laundry loading opening, the cabinet (105) further comprising a swivelling door (140) hinged to the cabinet and openable to allow access to an inner region of the machine within the cabinet, **characterized in that** the swivelling door (140) includes a closure mechanism to keep the swivelling door closed when the swivelling door is abutted against the cabinet (105), the closure mechanism comprising a handle (155) visible from the exterior of the cabinet (105) when said laundry loading door (125) is closed, said handle (155) forming with the cabinet a gap (160) located at a rim (116) of said laundry loading opening (115), wherein access to the gap (160) is hindered by said laundry loading door (125) when the laundry loading door is closed so that insertion of a finger in the gap to pull the handle (155) is not permitted, and wherein a dimension of said gap (160) allows a finger insertion to pull the handle (155) and open the swivelling door (140) when the laundry loading door (125) is open.
2. The laundry treating machine (100) according to claim 1, wherein said handle (155) is a pull handle.
3. The laundry treating machine (100) according to claim 1 or 2, wherein, when said laundry loading door (125) is closed, a slit (161) is formed between the laundry loading door (125) and the handle (155), and wherein a dimension of said slit defined by a distance between said laundry loading door and said handle is comprised between about 1 mm and 11 mm.
4. The laundry treating machine (100) according to any of the preceding claims, wherein said gap (160) is located under said laundry loading door (125) when the laundry loading door (125) is closed.
5. The laundry treating machine (100) according to any of the preceding claims, wherein the handle (155) is located along a symmetry axis of said swivelling door (140).
6. The laundry treating machine (100) according to any of the preceding claims, wherein the swivelling door (140) is located at a plinth (130) of the cabinet (105).

7. The laundry treating machine (100) according to claim 6, wherein said swivelling door (140) is located below said laundry loading door (125) and it is hinged at a lower side of said cabinet (105). about 12 mm.
- 5
8. The laundry treating machine (100) according to any of the preceding claims, wherein said handle (155) protrudes upwards from said swivelling door (140) towards said laundry loading opening (115).
- 10
9. The laundry treating machine (100) according to any of the preceding claims, wherein said handle (155), on its side facing the cabinet, is at least partially covered by an element (156) formed in elastic material which abuts against said cabinet when the swivelling door (140) is closed.
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10. The laundry treating machine (100) according to any of the preceding claims, wherein said closure mechanism includes at least a magnet (170).
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11. The laundry treating machine (100) according to claim 10, wherein said cabinet (105) comprises a front wall (120) where said laundry loading door (125) is hinged and two lateral walls (121, 122), wherein said at least a magnet (170) is located at said handle (155) and/or at one lateral end (141, 142) of said swivelling door (140), said lateral end (141, 142) being in proximity of one of the lateral walls (121, 122) of said cabinet.
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12. The laundry treating machine (100) according to any of claims 10 - 11, wherein, when said swivelling door (140) is closed, said magnet (170) is facing a portion of said cabinet, and wherein a spacing is present between said magnet (170) and said portion of said cabinet (105).
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13. The laundry treating machine (100) according to any of the preceding claims, wherein said handle (155) has a form which matches in shape a rim of said laundry loading opening (115).
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14. The laundry treating machine (100) according to any of the preceding claims, wherein the swivelling door (140) is openable to enable access to a machine region where at least part of a laundry process air moisture condensing system is arranged.
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15. The laundry treating machine (100) of claim 14, wherein the plinth (130) is provided with perforations (150) for the intake/exhaust of the laundry process air.
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16. The laundry treating machine (100) according to any of the preceding claims, wherein said gap (160) has a dimension defined by a distance between said handle (155) and said cabinet (105) equal or larger than
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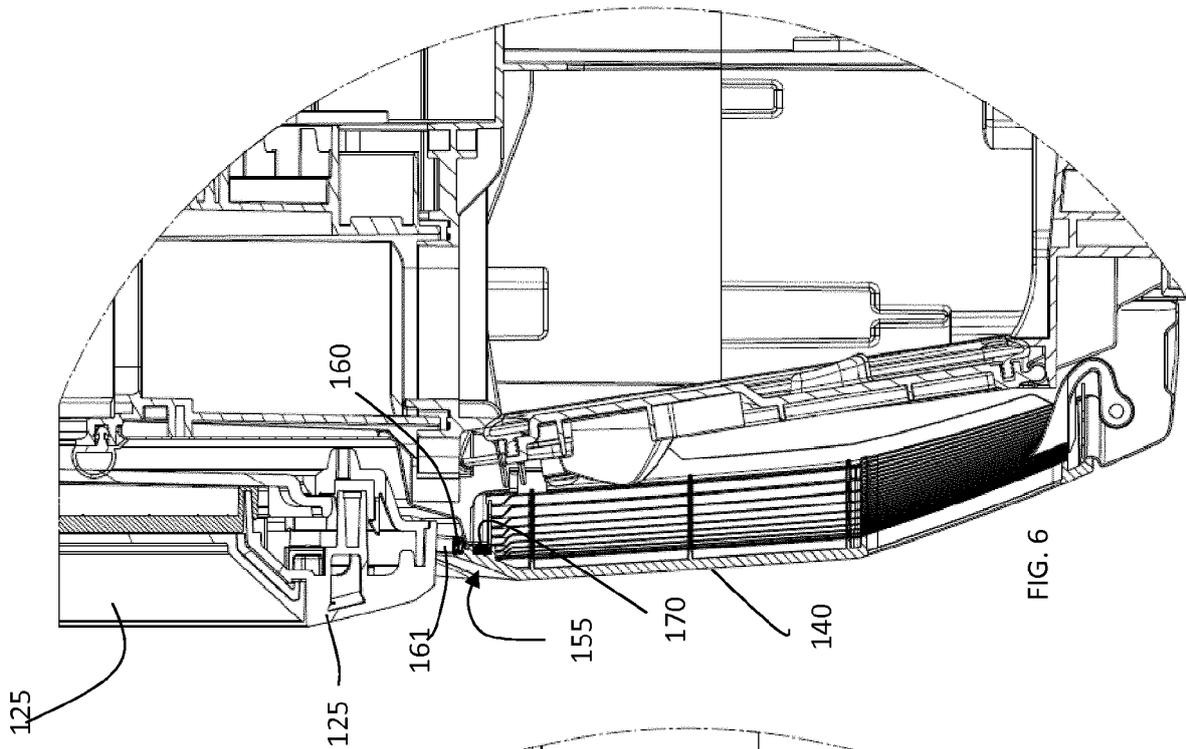


FIG. 6

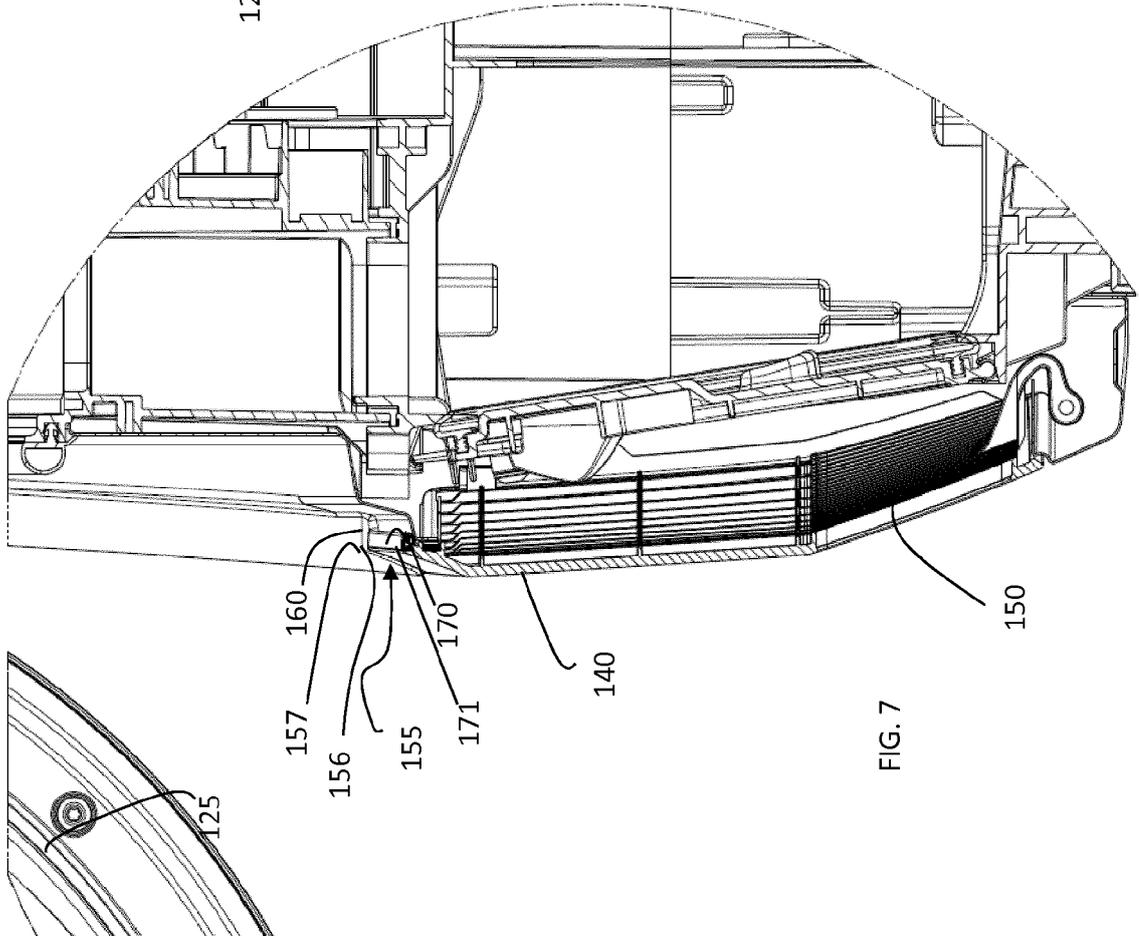


FIG. 7



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			D06F
The present search report has been drawn up for all claims			
Place of search <b>Munich</b>		Date of completion of the search <b>27 May 2016</b>	Examiner <b>Clivio, Eugenio</b>
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**REFERENCES CITED IN THE DESCRIPTION**

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