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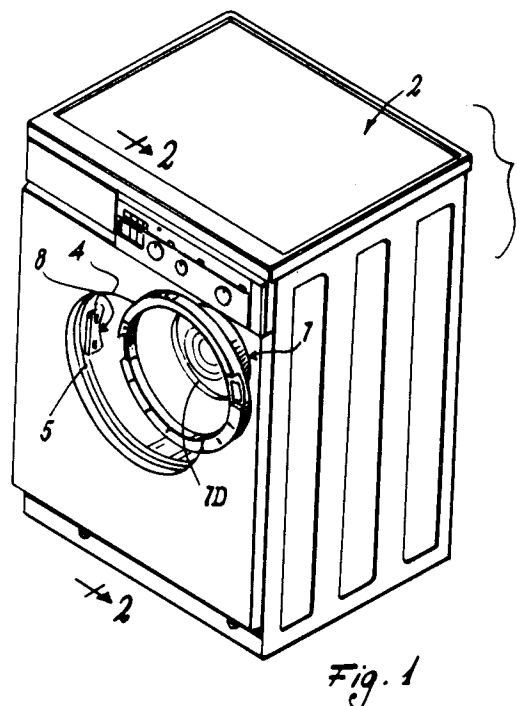
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I-21025 Comerio (VA) (IT)(54) **Door of a washing machine or a washing drying machine.**

(57) A washing machine, washing-drying machine or the like comprises a cabinet containing a tub in which a drum moves in known manner, said cabinet having a loading aperture for loading and unloading clothes into and from the drum, on said aperture there being positioned a usual door rotatable about a hinge associated with the cabinet, about the aperture there being provided usual seal members associated with the cabinet. The door is (7) removably secured to the cabinet (2), said door (7) comprising coupling members (13,14) arranged to cooperate with corresponding coupling elements (10,11) associated with the cabinet (2), the door being detached from the cabinet by moving said door along at least two different directions.

*Fig. 1***EP 0 579 069 A1**

This invention relates to a washing machine, washing-drying machine or the like comprising a cabinet containing a tub in which a drum moves in known manner, said cabinet having a loading aperture for loading and unloading clothes into and from the drum, on said aperture there being positioned a usual door rotatable about a hinge associated with the cabinet, about the aperture there being provided usual seal members associated with the cabinet.

As is well known, the user often, if not always, requires a bowl into which to place the clothes after their washing and to convey them to the place in which they are to be dried or to be simply left in the open air. Often however the user does not have such a bowl or container to hand and therefore has to delay the machine unloading.

Moreover, even if the bowl is available, the presence of the door often obstructs the free movement of the user during both machine loading and unloading.

In addition, if the door is fixed or is removable only after lengthy and uncomfortable operations, it hinders maintenance work carried out within the washing machine drum or on the cabinet seal members around the aperture at which the door is positioned.

An object of the present invention is to provide a washing machine or the like which can be easily maintained and enables the drum to be loaded and unloaded using both hands, without any space limitation.

A further object is to provide a machine of the stated type, a part of which is able to act as a container for the clothes during their unloading.

A further object is to provide a machine of the stated type which is of simple construction, is of low assembly cost and is generally of lower cost than known machines.

These and further objects which will be apparent to the expert of the art are attained by a machine of the stated type, characterised in that the door is removably secured to the cabinet, said door comprising coupling members arranged to cooperate with corresponding coupling elements associated with the cabinet, the door when detached from the cabinet being able to be used as a container for at least part of the clothes unloaded from the machine.

The present invention will be more apparent from the accompanying drawing which is provided by way of non-limiting example and in which:

Figure 1 is a perspective view of a machine according to the invention with the door removed;

Figure 2 is a part section on the line 2-2 of Figure 1 with the door fitted to the machine cabinet;

Figure 3 is a part section on the line 3-3 of Figure 1 showing the door during its detachment from the cabinet; and

Figure 4 is a section on the line 4-4 of Figure 2.

With reference to said figures, a washing machine is indicated overall by 1 and comprises a cabinet 2 containing a tub in which a drum (both not shown) rotates in known manner. The cabinet 2 comprises a loading aperture 4, in proximity thereto and on the edge of which there is a known seal element 5. On the aperture there is positioned a door 7 arranged to rotate in known manner relative to the cabinet 2 by a hinge 8.

The hinge is fixed to the cabinet 2 in the usual manner, whereas the door 7 is removably associated with the hinge. For this purpose this latter is provided with seats 10 and 11 arranged to receive hook-shaped members 13 and 14 projecting from a side edge 15 of the door 7.

Specifically, the seat 10 has an open upper part 10A and a lower recess 10B for receiving one end 13A of the member 13.

Likewise, the seat 11 has a recess 11B for receiving the end 14A of the member 14, an aperture 11A being provided in a flat surface 8A of the hinge 8 for communication between the exterior of this latter and the recess 11B.

During the use of the machine 1, the door is usually engaged with the hinge 8. This is achieved by inserting the members 13 and 14 in the seats 10 and 11, their ends 13A and 14A being inserted in the recesses 10B and 11B. Hence, when the hinge 8 rotates in known manner relative to the cabinet 2, the door 7 also rotates. If it is now desired to separate the door from the cabinet 2, for example for maintenance purposes, the door is opened and initially raised from the hinge 8 in the direction of the arrow F of Figure 3. The ends 13A and 14A of the hook-shaped members 13 and 14 are then positioned at the top 10A of the seat 10 and at the aperture 11A in the seat 11 respectively, after which the door is moved in a direction perpendicular to the arrows F away from the hinge 8 (ie in a direction perpendicular to and into the plane of Figure 3). In this manner the door is completely separated from the hinge.

As the door 7 comprises a usual concave region 7D, it can be used as a bowl for containing the clothes after they have been washed in the drum. The door can hence be used as a container for the clothes after their washing.

As the door is separable from the cabinet 2, the loading and unloading of the machine 1 are facilitated as the user encounters no obstacle to his movement in front of said machine. The removability of the door 7 also facilitates machine maintenance, and in particular of the seal member 5.

A particular embodiment of the invention has been described. Other embodiments are however possible (such as one in which the door is associated with the cabinet 2 via snap-operating coupling elements which secure the door to the cabinet 2), and are to be considered as falling within the scope of the present document.

Claims

1. A washing machine, washing-drying machine or the like comprising a cabinet containing a tub in which a drum moves in known manner, said cabinet having a loading aperture for loading and unloading clothes into and from the drum, on said aperture there being positioned a usual door rotatable about a hinge associated with the cabinet, about the aperture there being provided usual seal members associated with the cabinet, characterised in that the door (7) is removably secured to the cabinet (2), said door (7) comprising coupling members (13, 14) arranged to cooperate with corresponding coupling elements (10, 11) associated with the cabinet (2), the door when detached from the cabinet being able to be used as a container for at least part of the clothes unloaded from the machine. 5 10 15 20 25
2. A machine as claimed in claim 1, characterised in that the coupling members are hook-shaped members (13, 14) projecting from an edge (15) of the door. 30
3. A machine as claimed in claim 1, characterised in that the coupling elements (10, 11) are associated with the hinge (8) fixed to the clothes (2) of the machine (1). 35
4. A machine as claimed in claim 3, characterised in that the coupling elements are seats (10, 11) provided in the hinge (8), one (10) of these seats having an open top (10A) and a lower recess (10B) for receiving one end (13A) of the corresponding coupling member (13), the other seat (11) having a recess (11B) for receiving one end (14A) of the corresponding coupling member (14) and an aperture (11A) provided in a surface (8A) of the hinge (8) for communication between the exterior of this latter and said recess (11B). 40 45 50
5. A machine as claimed in claim 1, characterised in that the door (7) is detached from the cabinet (2) of the machine (1) by moving said door (7) along at least two different mutually perpendicular directions, of which a first relative movement between the coupling members (13, 55

14) and elements (10, 11) results in their at least partial separation, and a second movement results in their complete separation so enabling the door (7) to be removed from the cabinet (2).

6. A machine as claimed in claim 1, characterised in that the coupling members (13, 14) and elements (10, 11) are elements which mutually snap-cooperate. 10

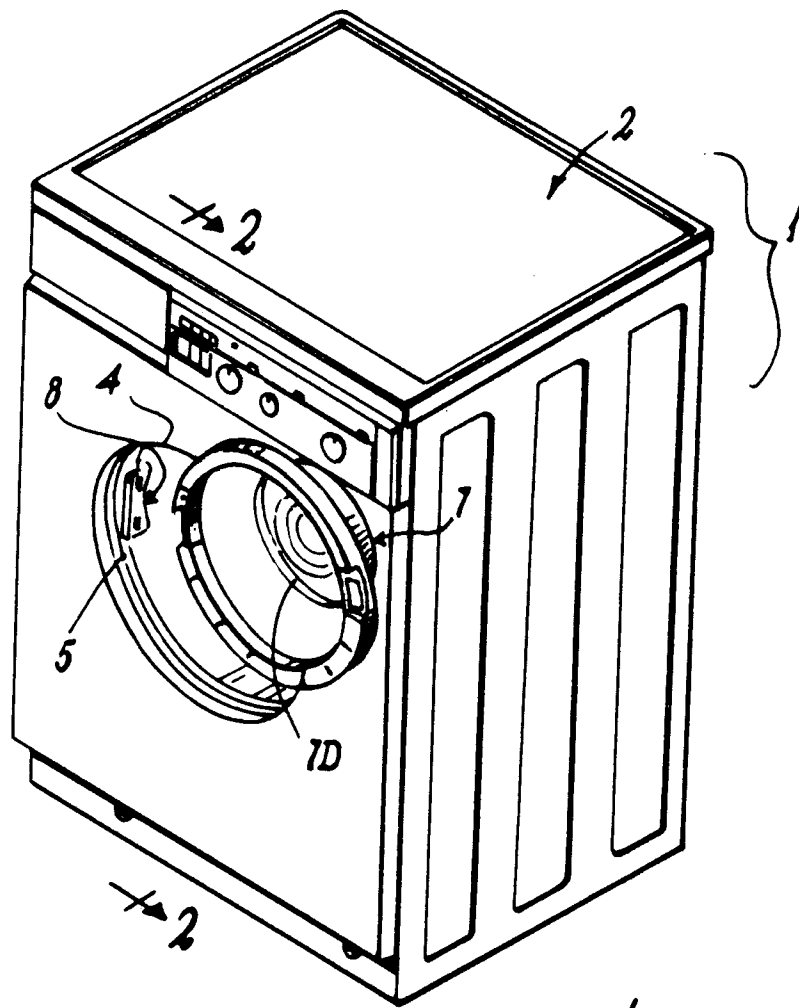


Fig. 1

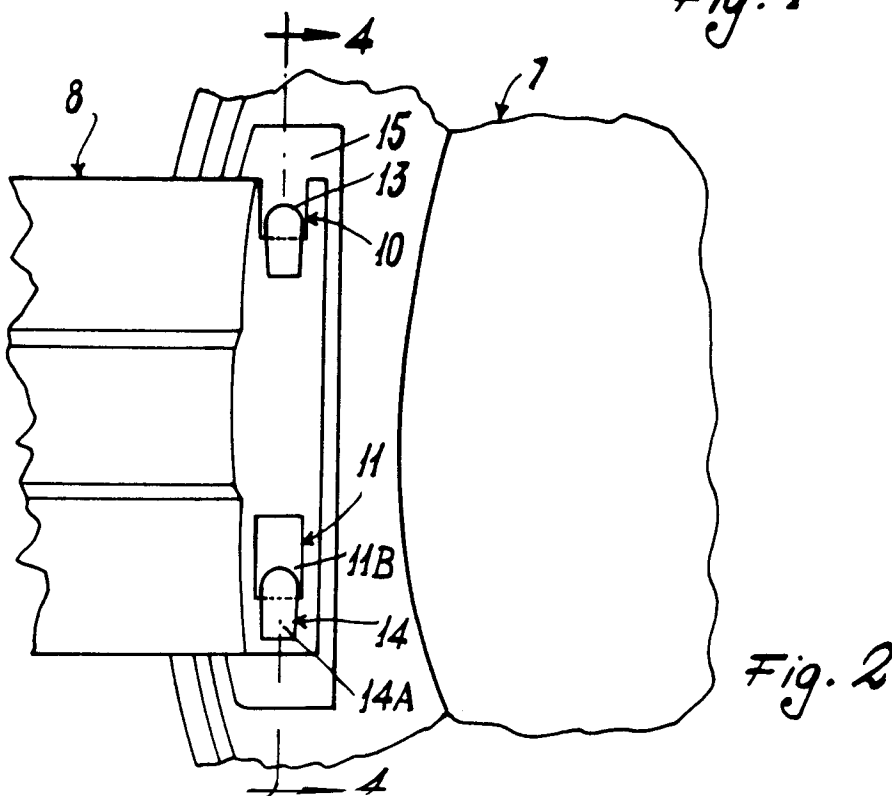


Fig. 2

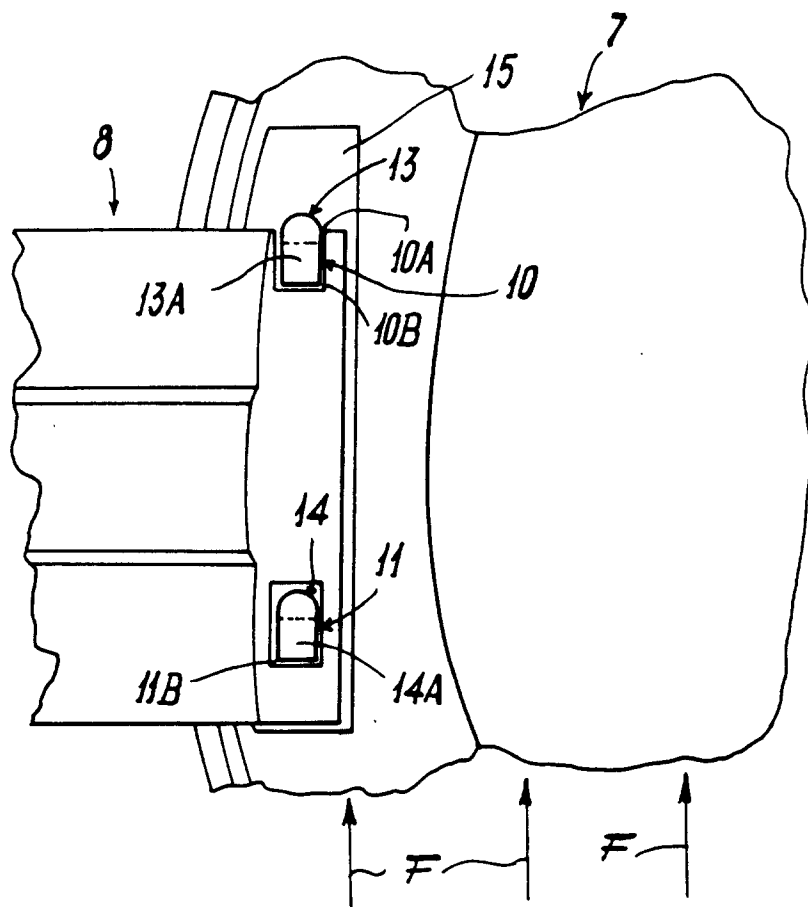


Fig. 3

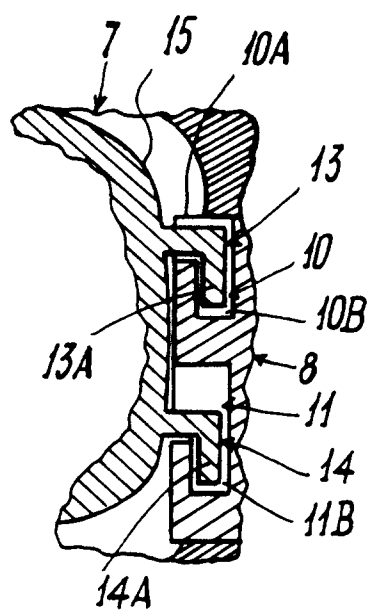


Fig. 4



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EUROPEAN SEARCH REPORT

Application Number
EP 93 11 0669

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
A	DE-B-10 56 574 (SIEMENS-ELECTROGERÄTE AKTIENGESELLSCHAFT) * column 3, line 8 - line 18; claims 1,6-8; figure 4 * ---	1-5	D06F37/28 D06F95/00
A	FR-A-1 463 220 (ROYAL COMMERCE) * page 1, column 2, line 32 - line 39; figures * ---	1-3,5	
A	FR-A-2 264 119 (MERLONI S.P.A.) ---		
A	CH-A-374 360 (MAUSER KOMMANDIT-GESELLSCHAFT) -----		
			TECHNICAL FIELDS SEARCHED (Int.Cl.5)
			D06F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 25 October 1993	Examiner COURRIER, G
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