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D. K. TULLIS

DOOR AND DOOR FASTENING FOR WASHING MACHINES

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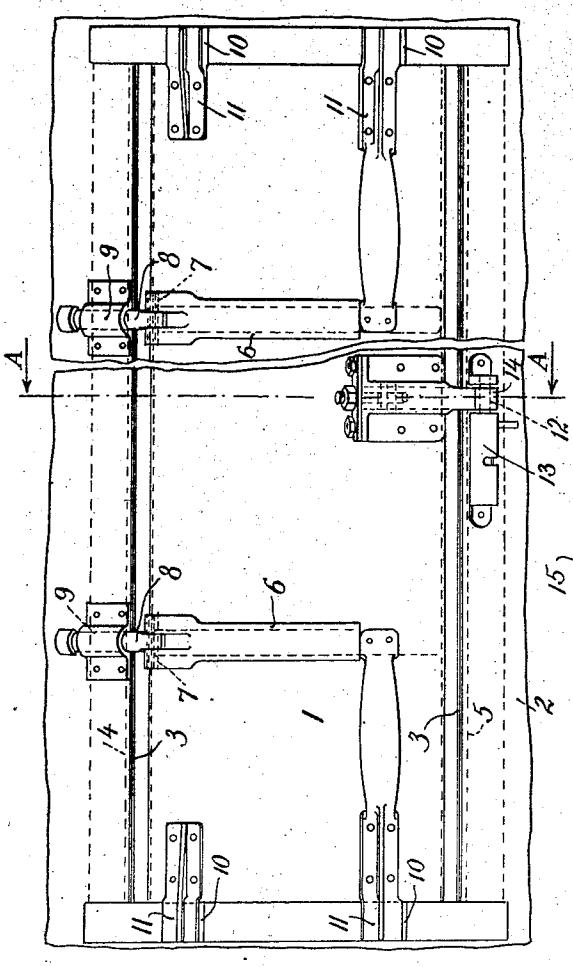


Fig. 1.

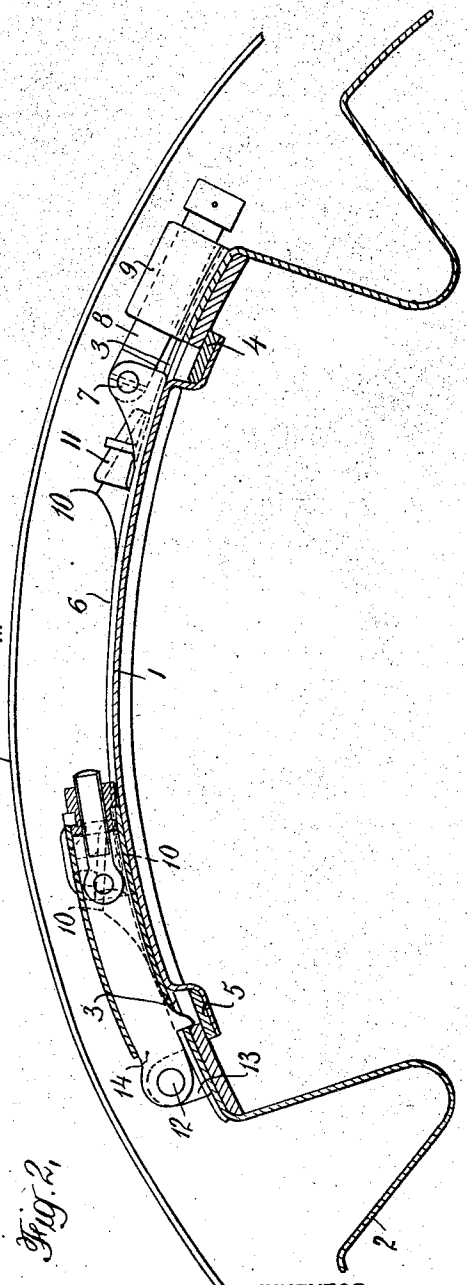


Fig. 2.

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DOOR AND DOOR FASTENING FOR WASHING MACHINES.

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This invention relates to door fittings for the rotary drums of washing machines.

Such door fittings as constructed heretofore include a door proper hingedly connected to the drum and restrained against outward movement by hinges located at one longitudinal edge and by fastening means located at the other longitudinal edge and at the lateral edges.

In such a fitting the door is disposed wholly external to the drum and forces tending to move the door outwardly are necessarily absorbed by the hinges and fastening means so that the hinges and fastenings are unduly worn and require frequent replacement.

The primary object of the invention is to provide means for securing the door rigidly in closed or operative position independently of the hinges and the fastening means so that the hinges and the fastening means are unaffected by the forces tending to move the door outwardly.

In the accompanying drawing Fig. 1 is a fragmentary elevation of a door and a portion of a drum, and Fig. 2 a fragmentary section on the line A—A of Fig. 1.

In the construction shown the door proper 1 is mounted on the drum 2 to perform angular and circumferential movements relatively thereto, and is so shaped and dimensioned as to be insertable into the door-opening 3 with the longitudinal marginal edges 4, 5 engageable with the inner surface of the drum 2.

The door is mounted on hinges spaced longitudinally thereof and each comprising a strap 6 secured to the door 1 and a hinge pin 7 fixed to the strap 6 and penetrating an eye bolt 8 which is slidable in a socket member 9 secured to the drum. It will be seen that the door is free to perform angular movement about the hinge pins 7 so as to expose or to close the door-opening and also sliding circumferential movement relatively to the socket members 9.

The door when closed is cammed outwardly so that the marginal edges 4, 5 forcibly engage the inner surface of the drum 2 by two sets of wedge-like cams 10 solid with the drum 2 and located one set at each lateral boundary of the door-opening. Co-operating with the cams 10 are cam followers constituted by arms 11 fixed to the outer side of the door 1. The acting faces of the cams are disposed substantially tangentially of the drum, and are so inclined that circumferential movement of the door away from the sockets is accompanied by outward movement of the door to close the door opening tightly.

For locking the door against circumferential movement relatively to the drum there is provided a bolt 12 mounted to perform sliding movements in a socket 13 secured to the drum 2 at the longitudinal boundary of the door-opening remote from the hinges and engageable with a perforated lug 14 mounted on the door 1.

15 denotes the usual washing machine casing enclosing the drum.

I claim:—

1. In a washing machine, a rotary drum having a door-opening, a door insertable into the opening and having at one longitudinal edge a hinge connection with the drum, door fastening means at the other longitudinal edge of the door, and co-operative means on the door and on the drum at the lateral edges of the door and opening effective on relative movement of the door and drum to seat the door on the inner margin of the opening without effect on the hinge connection or fastening means.

2. In a washing machine, a rotary drum having a door-opening, a door insertable into the opening and engageable at its margin with the inner surface of the drum, a connection between the door and the drum permitting relative movement of the door and the drum, and means effective on relative movement of the door and drum for urging the door outwardly to close the opening.

3. In a washing machine, a rotary drum having a door-opening, sockets fixed to the drum adjacent to the opening, a door insertable into the opening, eye bolts hingedly mounted on the door and engageable in said sockets permitting angular and circumferential movements of the door relatively to the drum, means effective on relative circumferential movement of the door and the drum for camming the door outwardly to close the opening, and means for locking the door against retrograde circumferential movement relatively to the drum.

4. In a washing machine, a rotary drum having a door-opening, a door insertable into the opening and having a connection with the drum permitting the door to perform angular and circumferential movements relatively to the drum, cams located adja-

cent to the lateral boundaries of the opening, cam followers fixed to the door and engageable with said cams, whereby circumferential movement of the door in one direction is accompanied by outward movement of the door to close the opening, and means for locking the door against retrograde circumferential movement relatively to the drum.

5. In a washing machine, a rotary drum having a door-opening, a door insertable into said opening and connectible with the drum to perform angular and circumferential movements relatively to the drum, means effective on relative circumferential movement of the door and the drum for camming the door outwardly to close the opening, a perforated lug secured to the door, and a bolt slidably mounted on the drum and engageable with said lug to lock the door against retrograde circumferential movement relatively to the drum.

In testimony whereof I have signed my name to this specification.

DAVID K. TULLIS.