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WASHING CYLINDER DOOR CONSTRUCTION

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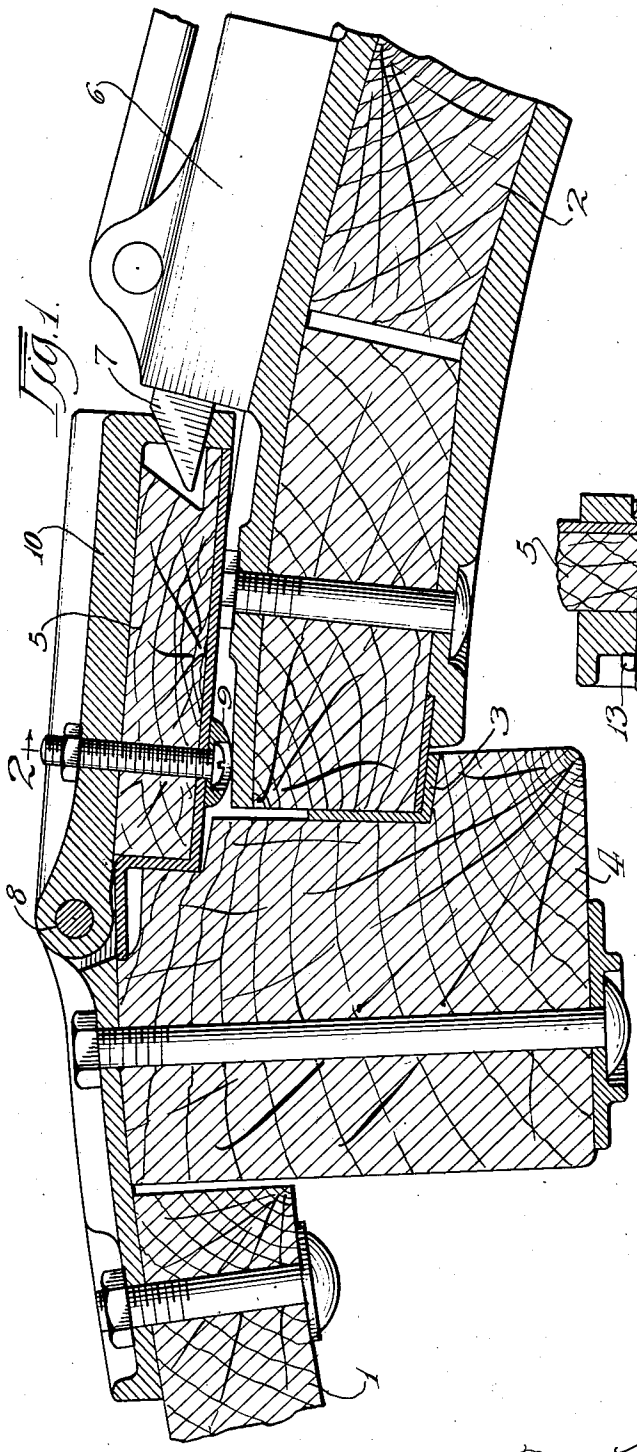


Fig. 1.

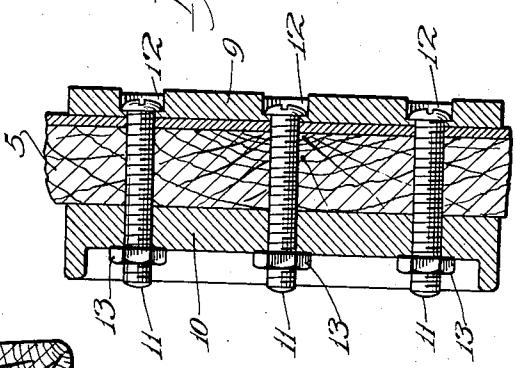


Fig. 2.

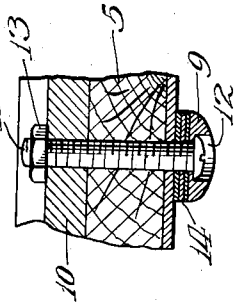


Fig. 3.

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WASHING CYLINDER DOOR CONSTRUCTION

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3 Claims. (Cl. 220—55)

In my prior application, Serial No. 517,716, filed February 24, 1931, I have disclosed a novel means, including an unloading shelf, to secure closed the door of a washing machine cylinder. One of the great difficulties encountered in large washing machines is in keeping the doors tight, since there is constant wear in hinge joints, catches, and elsewhere, that quickly produces sufficient looseness in the door to be objectionable. Although the construction disclosed in my aforesaid application is such that the degree of looseness that will arise is reduced to a minimum, and the time that must elapse before there is any objectionable looseness is greatly prolonged, yet, in time, some looseness will be found to exist. The object of the present invention is to make it possible easily and quickly, and without employing skilled labor, or requiring renewal or replacement of parts, to restore one of my improved door constructions to its initial state of tightness, when closed, after wear has taken place.

In the construction disclosed in my aforesaid application, the door is hinged at one end, extends entirely across the door opening, and is held down at the free end by an unloading shelf that is swung up over it and locked at its free edge to the door proper by means of suitable catches. Therefore, the unloading shelf acts as a lever pivoted at one end, beyond the edge of the door, held to the door at its other end by a catch and bearing on the door near the free end of the latter and toward the hinge axis of the unloading shelf.

In accordance with my invention, I provide means for adjusting the door or the shelf along the line of contact so that, when wear takes place in the hinge joint of the unloading shelf and in the catch, the slack or lost motion may be taken up by maintaining contact between the unloading shelf and the door, even though the distance between these two members increases as the unloading shelf is pushed outwardly to take up the looseness in the hinge joint and in the latching mechanism. The simplest way of bringing this about is to place on the door or on the unloading shelf a cleat which constitutes the actual pressure member through which the holding force of the unloading shelf is transmitted to the door. By mounting this cleat in such a way that it may be readily detached, liners or shims may be inserted under the same as wear takes place, thereby increasing its effective thickness or depth. I prefer to place the cleat on the unloading shelf in order to utilize the same screws that fasten the hinge leaves to the shelf as fastenings for the cleat. Then, when wear takes place, all that needs to be done is to loosen the screws or bolts that fasten the hinge leaves, insert a shim or shims, and again tighten the screws or bolts.

The various features of novelty whereby my invention is characterized will hereinafter be pointed out with particularity in the claims; but, for a full understanding of my invention and of its objects and advantages, reference may be had to the following detailed description taken in connection with the accompanying drawing, wherein:

Figure 1 is a section taken in a plane at right angles to the axis of rotation of a washing machine cylinder, through one of the doors, only a fragment of the door and of the cylinder being shown; Fig. 2 is a section on line 2—2 of Fig. 1, only the unloading shelf being shown; and Fig. 3 is a view similar to Fig. 1, only a fragment of the unloading shelf being shown, and there being liners or shims under the cleat or bead on the unloading shelf.

Referring to the drawing, 1 represents a part of the cylinder of a large washing machine, of usual or suitable construction. 2 is a door giving access to the interior of the cylinder. I have shown only a fragment of the door, which is of any suitable type, hinged at one end to the cylinder, extending entirely across the door opening and having its free end resting on an outwardly facing shoulder 3 in a sill or door jamb 4 forming part of the cylinder. Hinged to the door jamb, so as to be capable of swinging about an axis parallel with the free edge of the door is an unloading shelf 5. The parts are so proportioned that, when the unloading shelf is swung upward, it overlaps the door, a suitable latch device being provided to lock the unloading shelf in this position. In the arrangement shown, there is a latch device 6 fixed to the outer side of the door and provided with a suitable dog 7 adapted to enter an opening in the free edge of the unloading shelf.

It will be seen that, after continued use of the cylinder, wear will take place on the under face of the latch dog 7, as viewed in Fig. 1, and there will also be wear on or around the hinge pintle 8. When this occurs, the unloading shelf will no longer press the free end of the door down against the shoulder 3, but will leave the door more or less loose.

In accordance with my invention, the pressure of the unloading shelf is transmitted to the door through a cleat 9 extending parallel with and near the free edge of the door. It is immaterial, in the broad sense, whether the cleat be on the door or on the unloading shelf, but I have illustrated it as being on the latter. In the arrange-

ment shown, the cleat is simply a little bar of metal flat on one side where it engages with the unloading shelf, and rounded or convex on the other side. This cleat may be secured to the unloading shelf by employing for the hinge leaf 10 fastening bolts 11 that are long enough to extend through the hinge leaf, the unloading shelf and the cleat. The cleat is preferably provided in its exposed convex side with countersunk openings 12 that house the heads of the bolts, thereby bringing the nuts 13 on the outer side.

The parts are so proportioned that initially, when the door is closed and the unloading shelf swung into locking position, the cleat presses firmly on the door which in turn is pressed firmly against the stationary shoulder 3. When wear takes place, as heretofore explained, the bolts are loosened, and one or more shims or liners, in the form of thin plates 14, are inserted between the cleat and the unloading shelf, as shown in Fig. 3. If the shims or liners simply have holes bored or punched through the same to receive the bolts, the nuts must be unscrewed so that the bolts may be withdrawn with the cleat and permit the shim or shims to be slipped on the bolts before the latter are again inserted in the unloading shelf and hinge leaf. By providing a number of shims, of the same or of different thicknesses, compensation for wear may quickly and easily be made at any time. Since each unloading shelf will ordinarily have at least two hinges, there will be no disturbance of the shelf through loosening the hinge bolts, one set at a time.

While I have illustrated and described with particularity only a single preferred form of my invention, I do not desire to be limited to the exact structural details thus illustrated and described; but intend to cover all forms and arrangements which come within the definitions of my invention constituting the appended claims.

I claim:

1. In combination, a receptacle having a door opening provided at one side with a seat for the free end of a door, a door member for said opening adapted to rest on said seat at its free end when closed, a second member hinged to said receptacle near said seat and adapted to be swung inwardly to overlie the adjacent part of the closed door member, means to secure the free end of said second member to the door member, and an adjustable pressure device between and secured to one of the said members at a point between the hinge axis of said second member and said fastening means constituting the only points of contact between said element and said door and adapted to compensate for looseness in the hinge joint and in the fastening means.

2. In combination, a receptacle having a door opening provided at one side with a seat for the free end of a door member, a door member for said opening adapted to rest on said seat at its free end when closed, a second member hinged to said receptacle near said seat and adapted to be swung inwardly over the adjacent portion of the closed door, fastening means between the free end of said second member and the door, a transverse cleat on one of said members between the hinge axis of said second member and the fastening means in position to bear against the other member when the door member is closed and the second member is swung inwardly upon the same, and means to adjust the cleat to vary the distance to which it projects from the member on which it is mounted.

3. In combination, a washing machine cylinder having a door opening and provided at one side of the opening with a seat on which may rest the free end of a door for said opening, a door for the opening adapted to rest at its free end on said seat when closed, an unloading shelf, a hinge connecting one end of said shelf to said cylinder near said seat to permit the shelf to be swung in and overlie the free end of the door when the latter is closed, a cleat on the inner side of the shelf near its hinged end and adapted to engage with the door when the door is closed and the shelf is swung in over the same, bolts passing through the hinge, the shelf and the cleat to hold the cleat to the shelf, said bolts being long enough to permit shims to be inserted under the cleat, and means to secure the free end of the shelf to the door.

BERNHARD LINDBERG.