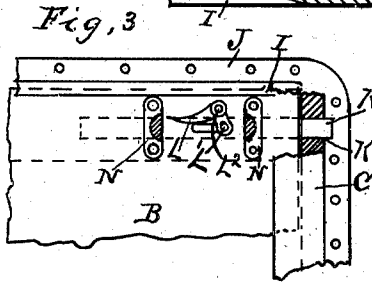
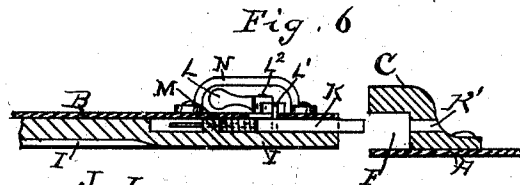
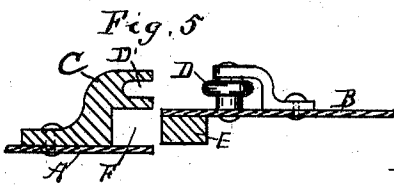
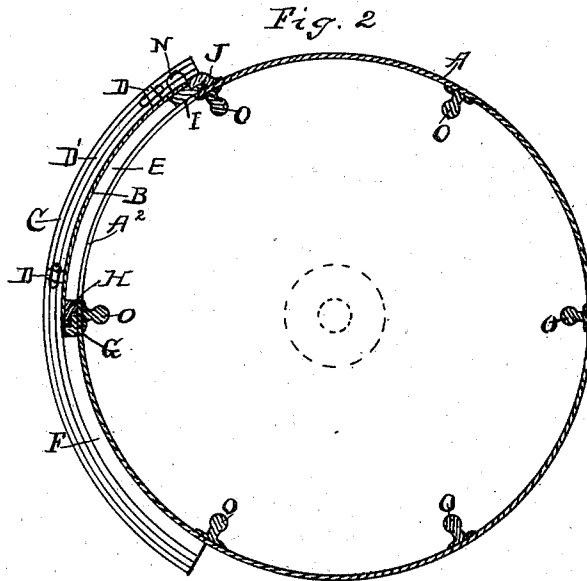
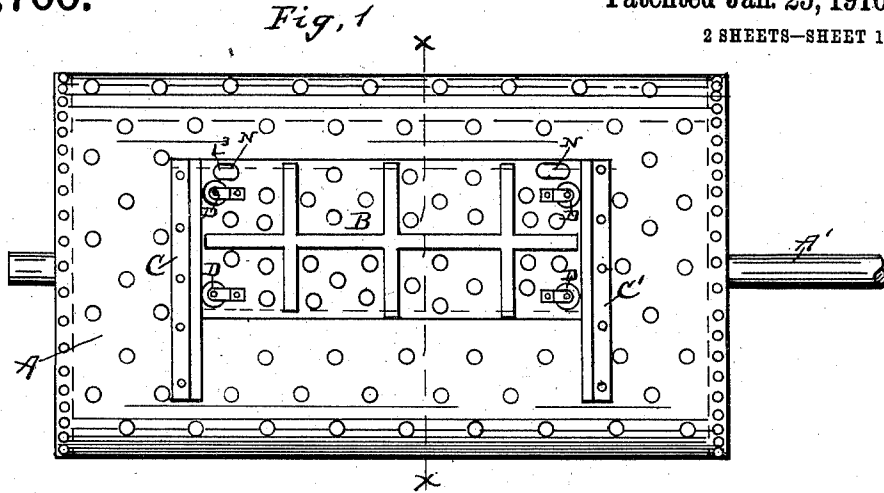


F. M. RAYMOND.
SLIDING DOOR FOR WASHING MACHINE CYLINDERS.
APPLICATION FILED APR. 30, 1908.

947,700.

Patented Jan. 25, 1910.

2 SHEETS—SHEET 1.



WITNESSES:
F. J. Kinn ball
M. Parker Rimold

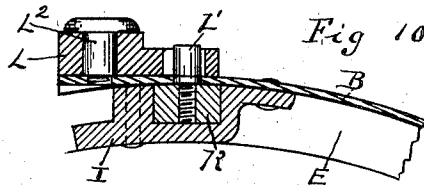
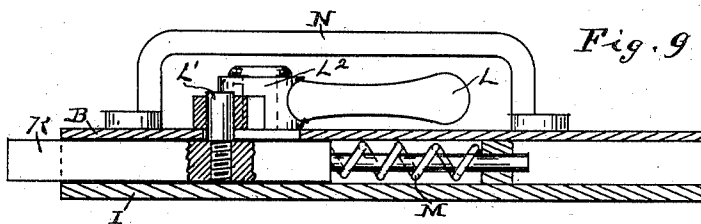
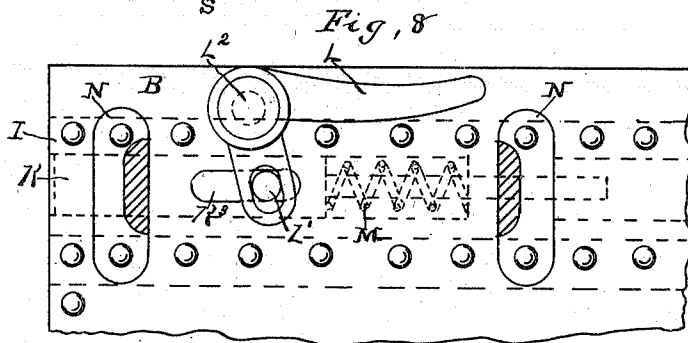
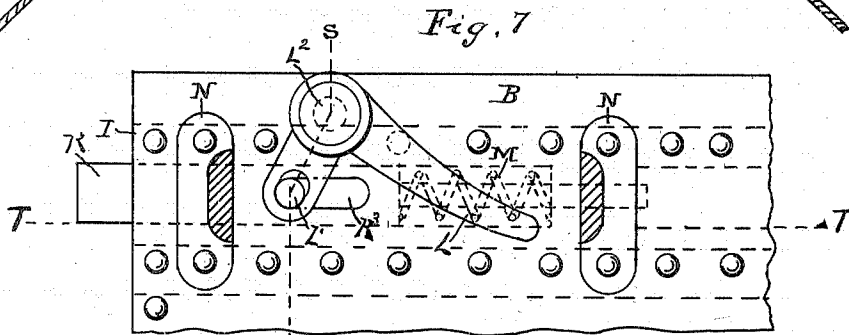
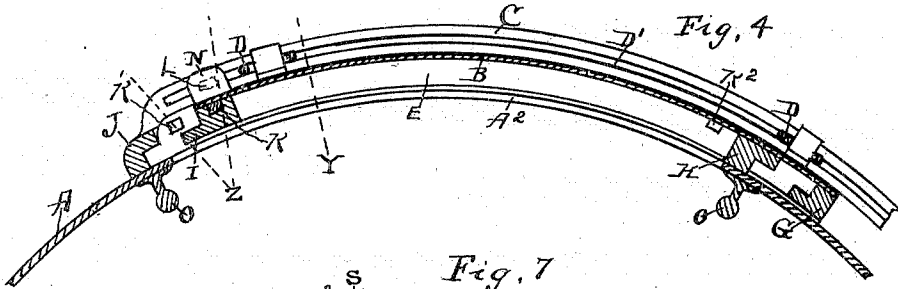
INVENTOR
Franklin M. Raymond
BY Ben A. Dore
ATTORNEY

F. M. RAYMOND.
SLIDING DOOR FOR WASHING MACHINE CYLINDERS.
APPLICATION FILED APR. 30, 1908.

947,700.

Patented Jan. 25, 1910.

2 SHEETS—SHEET 2.



WITNESSES:
F. J. Kimball
H. Parker Remondt

INVENTOR
Franklin M. Raymond

BY
Bey A. Dore
ATTORNEY

UNITED STATES PATENT OFFICE.

FRANKLIN M. RAYMOND, OF WESTPORT, CONNECTICUT, ASSIGNOR TO CONSOLIDATED HOSPITAL SUPPLY AND LAUNDRY MACHINERY COMPANY, INCORPORATED, OF WESTPORT, CONNECTICUT, A CORPORATION OF CONNECTICUT.

SLIDING DOOR FOR WASHING-MACHINE CYLINDERS.

947,700.

Specification of Letters Patent. Patented Jan. 25, 1910.

Application filed April 30, 1908. Serial No. 430,217.

To all whom it may concern:

Be it known that I, FRANKLIN M. RAYMOND, citizen of the United States, and resident of Westport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Sliding Doors for Washing-Machine Cylinders, of which the following is a specification.

The present invention has reference to a novel construction of interlocking sliding door applicable generally to revolving cylinders in which materials or goods are subjected to an overturning movement and the purposes of the invention are to provide a door of the character referred to, which when shut will be held interlocked and effectively close the door opening to the highest possible degree and to an extent that will completely prevent the escape of the materials or goods through joints between the door and cylinder, a difficulty heretofore experienced in connection with hinged and bolted doors where the material or goods exerted a pressure from the inner side of the cylinder tending to open the joints.

While as intimated above, my invention is useful in connection with a wide range of cylinder constructions, I have disclosed the novel sliding door in the present case as being embodied with the revolving cylinder of a washing machine, and the subsequent description will deal with the door in such application.

It may be of interest to state at this point of the description, that the type of washing machine in which the cylinder and novel door are used, contemplates an arrangement wherein said cylinder containing clothes and with its door securely closed, is revolved within a door closed stationary drum or cylinder of somewhat greater diameter, a cleaning liquid being within the drum to circulate through numerous perforations in the revolving cylinder and percolate through the clothes to cleanse the same. This cleansing operation is promoted by an overturning action to which the clothes are subjected while an intermittent reversal of the direction in which the cylinder revolves, avoids the highly objectionable winding up of the clothes, well known to those practically familiar with this class of machines.

In the accompanying drawing forming part of this specification,—Figure 1, is a

side view of the inner cylinder of a washing machine, and embodying my invention, the novel sliding interlocking door being closed. Fig. 2, is a transverse sectional view of said cylinder and door, the plane of section being on line $x-x$, Fig. 1. Fig. 3, is a fragmentary view, partly in section, illustrating one of the upper corner portions of the door and contiguous runway guide and interlocking bar on the cylinder, this view specially showing the novel locking or bolting means for securely holding the door in its closed position. Fig. 4, is a transverse sectional detail view of the cylinder and door, the parts being on an enlarged scale and the plane of section being similar to that in which Fig. 2, is taken, but with the door in a slightly opened position. Fig. 5, is a detail sectional view on the line Y , Fig. 4, the adjacently related portions of the cylinder and door shown, and parts carried by both, being represented as being separated to an inoperative extent, in order to more clearly illustrate certain features. Fig. 6, is a view similar in character to Fig. 5, the plane of section being on the line Z , Fig. 4. In this view, the locking or bolting means at one of the upper corners of the door, is particularly illustrated, the parts for clearness of disclosure also being shown separated to an inoperative extent. Fig. 7 is a plan view partly in section of the bolt mechanism, on an enlarged scale, showing the bolt projected beyond the door. Fig. 8 a like view showing the bolt retracted. Fig. 9 a detail longitudinal section partly in elevation on line $T-T$, Fig. 7 and Fig. 10 a transverse section on line $S-S$, Fig. 7.

Similar reference characters are employed to designate corresponding parts throughout the several figures of the drawing, wherein they occur.

The inner cylinder A , is revolvably supported in position through the medium of end journals, one of which A^1 , is extended to constitute a shaft through which power is conveyed to revolve the cylinder. Said cylinder circumferentially contains a horizontally extended rectangular opening A^2 through which the clothes are to be introduced and removed.

A rectangular door B , is of a shape similar to the cylinder opening A^2 , the dimensions of the door however, being

such that it will more than close said opening when in the shut position. The door is curved so that it closely conforms to the outer surface of the cylinder and is maintained in circumferentially movable relation with respect to the same by curved runway guides C, C', secured on the cylinder at each end of the door and which incase the door ends in close sliding engagement. Externally on the door and approximately at each of the four corners thereof, is rotatably mounted an anti-friction roller D, the series of said rollers being adapted to bear in rolling contact with inner surfaces of the guides C, C', and thereby prevent cramping or fouling of the door and otherwise insure its free movement. The guides C, C' contain grooves D¹, in which the rollers will travel when the door is moved. The grooves D¹, are not vitally essential to the carrying out of the invention.

Secured to the door, on the underside thereof and at each end, is a reinforcing bar E, both of such bars constituting runners, which slide in grooves F, of the guides C, C'.

At the lower and upper edges of the door sheet and on the underside of the same, are secured transverse lipped bars G, I, the horizontal flanges forming the lips of said bars being disposed close to the circumferential plane of the cylinder A, both lips extending in the direction of the upper side of the door opening, the lip of the bar I, being somewhat forwardly projecting beyond the upper edge of the door. These lipped bars G, I, connect the upper and lower ends of the reinforcing runner bars E, before referred to, such arrangement obviously tending to a strong and rigid construction.

Secured externally on the cylinder immediately contiguous to the upper and lower sides of the door opening A², are longitudinal oppositely lipped bars H, J, which are in such reversed relation with respect to the bars G, I, that when the door is slid to the closed position, the relatively inner lips of the bars G, I, will snugly take beneath the relatively outer lips of the bars H, J, and thus both pairs of bars will be so effectively interlocked, that the door will be firmly held against any internal pressure that might be exerted by the clothing, and all possibility of the clothing working through joints at the upper and lower door edges, entirely obviated. When the door is slid completely open, the back of the upper lipped bar I, on the door will come in contact with the back of the lower lip bar H, and the latter thus acts as a stop for preventing the movement of the door farther than what is required to fully uncover the door opening.

The door is shown as being equipped at each of its upper corners, with novel lock or bolt mechanism, coöperating with bolt

openings in the guides C, C', for positively locking the door in either the closed or open positions according to requirement. But one of said lock or bolt mechanisms is shown in detail, and a description of one will suffice for an understanding for both. As the detail Figs. 3 6, 7, 8, 9, and 10, refer more particularly to the right-hand bolt mechanism, such will be described. At the upper edge and at each end of the door B, is a sliding bolt K projected by a spring M, adapted to engage an opening K' in the upper part of the guide C for securing the door when in closed position. When the door is in its full open position the bolt can be engaged with an opening K², in the lower part of the guide C', under which conditions the door can not be closed accidentally or otherwise unintentionally disturbed. The guides C C' are each provided with the openings K' K² to receive the bolt K, but are shown only in guide C in Fig. 4, as they are duplicates of each other and require no further elucidation. Pivoted on the door B, in proximity to the bolt K, is a bell-crank-lever L², a free extended member L of which forms an operating handle, while the shorter member of said lever is pivotally engaged with the end of pin L', which is firmly seated in the bolt K and projects through a slot K³ in the door. In unbolting the door, the lever L is turned, the spring M compressed and the bolt K withdrawn from the opening K', when the door may be opened. A guard N spans the lever mechanism of the bolt and also serves as a handle for moving the door. As before intimated, similar bolt and guard mechanism is provided for the other upper corner of the door and is generally designated L³ and N.

Longitudinal bars O, are equi-distantly secured on the interior surface of the cylinder. These bars have rounded heads and are those familiarly employed for effecting the overturning and loosening of the clothes. It will be noted by reference to Figs. 2 and 4, that two of said bars O, are so located that they will tend to reinforce the cylinder at the upper and lower ends of the door opening and thus by strengthening the positions of the lipped bars H, J, secured to said cylinder, the rigidity of the interlocking action between the bars on the door and those on the cylinder will be greatly increased.

From the foregoing description, it will be appreciated that an interlocking sliding door embodying my invention is not only highly ingenious, but is comparatively simple in construction, conveniently operated, is of great durability and efficiency and will completely protect the door against internal pressure and absolutely prevent the clothes from working through.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is—

5 In a machine of the character described, the combination of a cylinder with an opening therein, a lipped bar located at the upper edge of said opening and a lipped bar located at the lower edge thereof; a curved guide located at each end of said opening,
10 and a door, the ends of which are embraced by said guides and having a lipped bar located at its upper edge and a lipped bar located at its lower edge, each of which are

adapted to coact with the lipped bars connected to the cylinder to form interlocking joints; said door also having anti-friction wheels connected thereto and adapted to abut said guides. 15

Signed at New York in the county of New York and State of New York this 29 day of April A. D. 1908. 20

FRANKLIN M. RAYMOND.

Witnesses:

BENJ. A. DARE,
JOHN D. CALKINS.