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LAUNDRY WASHING MACHINE.
APPLICATION FILED SEPT. 23, 1904.

Fig. 1.

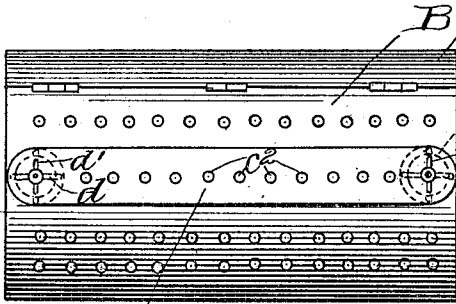


Fig. 2.

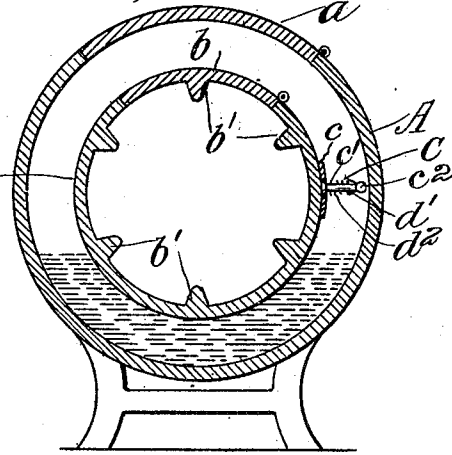


Fig. 3.

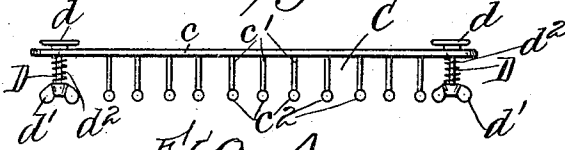


Fig. 4.

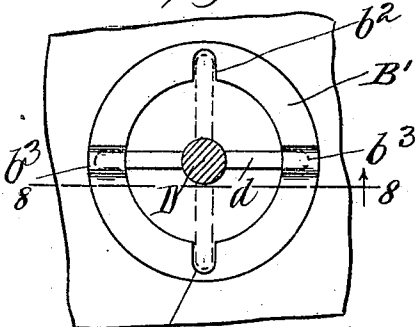


Fig. 8.

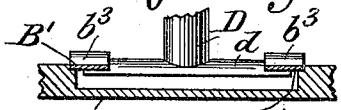


Fig. 6.

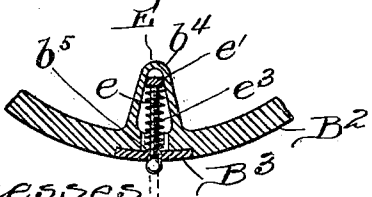


Fig. 5.

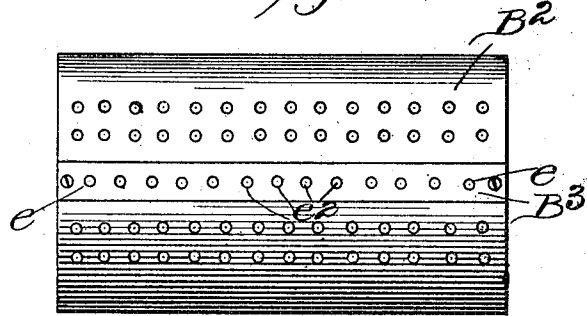
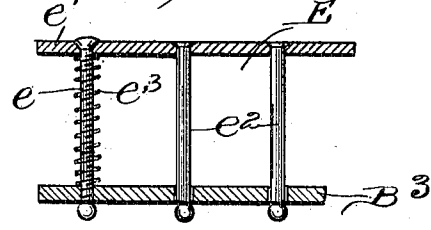


Fig. 7.



Witnesses
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UNITED STATES PATENT OFFICE.

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LAUNDRY WASHING-MACHINE.

No. 837,686.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed September 23, 1904. Serial No. 225,550.

To all whom it may concern:

Be it known that I, HERMAN T. KLUG, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Laundry Washing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in laundry washing-machines, and more particularly to that class embodying a revolving cylinder within a cylindric tub.

Heretofore in the use of devices of this kind a considerable expense and annoyance have been occasioned by the loss of articles being laundried, especially of smaller articles—such as napkins, handkerchiefs, &c.—which while being transferred to or from the machine are accidentally dropped into the annular or suds chamber between the revolving cylinder and the tub, and inasmuch as machines of this kind are generally connected directly with a sewer system or other source of discharge for water said articles pass off with the water when the tubs are emptied and are not recovered.

The object of this invention is to provide means carried upon the revolving cylinder for ascertaining whether any such articles have passed into said chamber and if so to recover the same before the water is withdrawn from the tub. A further object of the invention is to provide a device for recovering said articles which when not in use may be removed from the annular chamber between the cylinder and tub, thereby enabling the operator to insert his hand in said chamber to ascertain the temperature while the machine is in motion without endangering the same.

The invention consists in the matters hereinafter described, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a side elevation of the revolving cylinder of a washing-machine provided with a device embodying my invention. Fig. 2 is a transverse section of a laundry washing-machine, showing the

position of the comb or brush when in operation. Fig. 3 is a side elevation of the comb or brush. Fig. 4 is an enlarged fragmentary detail illustrating one means for attaching the comb to the cylinder. Fig. 5 is a view similar to Fig. 1, illustrating another means for attaching the comb to the cylinder. Fig. 6 is an enlarged fragmentary section of the device shown in Fig. 5. Fig. 7 is an enlarged detail thereof, showing the means for adjusting the comb. Fig. 8 is a section taken on line 8 8 of Fig. 4.

As shown in said drawings, A represents the tub of a laundry-machine, which may be of any preferred material and construction and is provided with a swinging door or cover *a*, as is usual in such devices. Journaled within said tub and concentric therewith is the clothes-cylinder B, which may also be of any usual or desired construction and either of wood or metal, as preferred. The cylinder, as shown, is provided with a door or cover *b* and is perforated to permit the passage of the water into and out of the same and is provided on its inner periphery with longitudinal ribs *b'* *b'*, adapted to agitate the clothes while said cylinder is revolved.

As shown in Figs. 1 and 4, an annular locking-plate B' is countersunk in the outer periphery of said cylinder near each end thereof and, as shown, is provided in its inner periphery on diametrically opposite sides thereof with notches *b²* *b²* and intermediate said notches with diametrically opposed outward offsets *b³* *b³*.

A comb or brush C, which, as shown, comprises a back *c*, of metal or any preferred material, provided on one face thereof with a plurality of outwardly-directed teeth *c'* of a length which, when said comb is in operative position, are adapted to reach nearly across the annular space between said cylinder and said tub and which, as shown more clearly in Fig. 3, are provided at their outer ends with rounded knobs *c²*, which not only enable said teeth to more readily pick up the articles in said chamber, but also prevent tearing or mutilating the same. Said comb C is apertured at its outer ends, and in each of said apertures, as shown in Figs. 1 and 4, is a rod D, provided at its inner end with a cross-piece *d*, adapted to engage beneath the plate

B', and at its outer end is provided with a winged head d' , between which and said back is a coiled spring d^2 , adapted to normally hold said rod at the outermost limit of its movement.

As shown in Figs. 5 to 7, inclusive, one of the longitudinal ribs b^4 on the cylinder B² is provided with a recess which opens outwardly through a slot b^5 in the side of the cylinder, as shown more clearly in Fig. 6. Carried in the recess in said rib b^4 is the comb E, constructed as before described, with the exception that the two end adjusting-teeth e are swiveled in the back e' and are screw-threaded to engage in screw-threaded apertures in a plate B³, which, as shown, is provided with equally-spaced apertures to receive the teeth e^2 and is countersunk in said cylinder above and closes said recess. Intermediate said back and said plate B³ are provided on the adjusting-teeth e coiled springs e^3 , as shown in Figs. 6 and 7, adapted to exert pressure on said comb and hold it in its adjusted position.

The operation is as follows: When it is desired to ascertain if any articles have fallen into the annular chamber between the cylinder and the tub and to recover the same if there, the comb or brush C or E is placed in position to sweep through said chamber as the cylinder is revolved and pick up said articles. In securing the comb, as shown in Figs. 1 to 4, upon the cylinder B the ends thereof are placed over the annular plates B', and by means of the winged head d' the cross-piece d of the rod D is brought into register with the notches b^2 in said annular plate, as shown in dotted lines in Fig. 4, whereupon said rods are pushed inwardly beneath the plate and turned to bring the cross-piece beneath said offsets b^3 . The springs d^2 act to force said rods outwardly, thereby holding the teeth directed radially outwardly in position to recover any articles that may have fallen into said chamber. When, however, it is desired to permanently carry the comb upon the cylinder, one of the ribs b^4 is constructed hollow and the comb E is inclosed therein with the teeth directed outwardly, as shown more clearly in Fig. 6. Said comb is normally held retracted within the recess; but when in use it is adjusted outwardly by means of the threaded adjusting-teeth e into the position shown in dotted lines in Fig. 6. The coiled springs e^3 act by exerting pressure upon the plate B³ and the back of the brush act to hold said brush in its adjusted position.

While I have shown my invention in only a few of the various forms in which it may be embodied, I do not desire to be limited therein to a greater extent than is necessitated by the prior state of the art, as obviously many details of construction may be varied without departing from the principles of my invention.

I claim as my invention—

1. In a device of the class described the combination with a tub of a voluble cylinder therein, a plurality of teeth carried on said cylinder adapted to extend into close proximity with said tub and resilient means adapted to secure said teeth in place.

2. In a device of the class described the combination with a tub of a voluble cylinder therein, a comb extending longitudinally of said cylinder with the teeth directed outwardly and resilient means adapted to hold said comb in position.

3. In a device of the class described the combination with a tub of a voluble cylinder therein affording a space between the same and said tub, a plurality of outwardly-directed teeth on said cylinder adapted to project across said space into close proximity with said tub, a threaded shaft adjacent each end of the cylinder and springs thereon acting to force the teeth inwardly.

4. In a device of the class described the combination with a tub of a voluble cylinder therein, a hollow rib in said cylinder, and means therein adapted to be projected outwardly into close proximity with said tub.

5. In a washing-machine, a tub of a voluble cylinder therein provided with a recess in its periphery, a plurality of teeth carried in said recess and means for adjusting said teeth radially.

6. In a washing-machine the combination with a tub of a voluble cylinder therein provided with a longitudinal recess, a comb in said recess and means swiveled in the ends thereof adapted to adjust said comb radially of the cylinder.

7. In a device of the class described the combination with a tub of a voluble cylinder therein affording a chamber intermediate said cylinder and said tub, and a plurality of teeth carried on said cylinder adapted to be extended across said space and to be retracted therefrom when not in use.

8. In a washing-machine the combination with the tub of a voluble cylinder therein, separated therefrom by an annular chamber, a plurality of radially-disposed teeth in said cylinder, means for adjusting said teeth with respect to the periphery and resilient means for holding said teeth in their adjusted position.

9. In a washing-machine the combination with a tub of a voluble cylinder therein, a recess in the periphery of said cylinder, an apertured plate covering the same, a comb in said recess having its teeth projecting outwardly through the apertures in said plate and springs acting to normally hold said comb at the inner limit of its movement.

10. In a washing-machine the combination with a tub of voluble cylinder therein, a longitudinal recess in said cylinder, an apertured plate covering the same, a comb in said re-

cess having its teeth directed outwardly
through said apertures, adjusting - screws
swiveled in the back of said comb and having
threaded engagement in said plate and springs
5 thereon adapted to movably hold said comb
at the inner limit of its movement.

In testimony whereof I have hereunto sub-

scribed my name in the presence of two sub-
scribing witnesses.

HERMAN T. KLUG.

Witnesses:

W. W. WITHEMBURY,
H. S. RUDD.