No. 747,849. PATENTED DEC. 22, 1903.

H. A. BIERLEY.

WASHING MACHINE.

APPLICATION FILED APR. 13, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

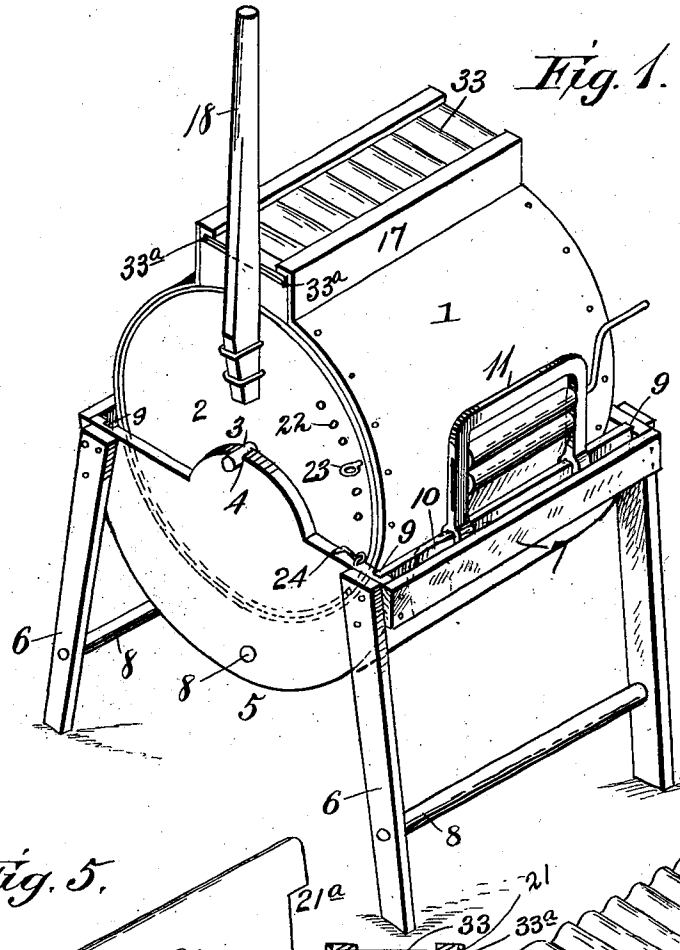


Fig. 7.

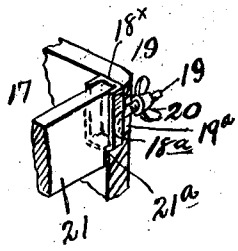
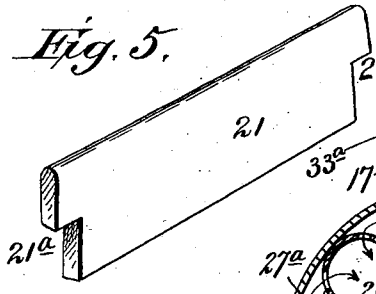


Fig. 5.



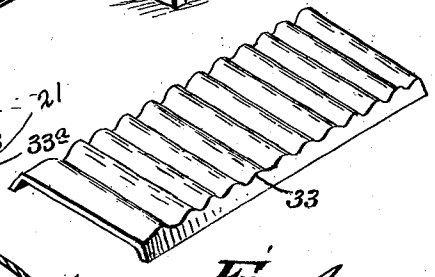
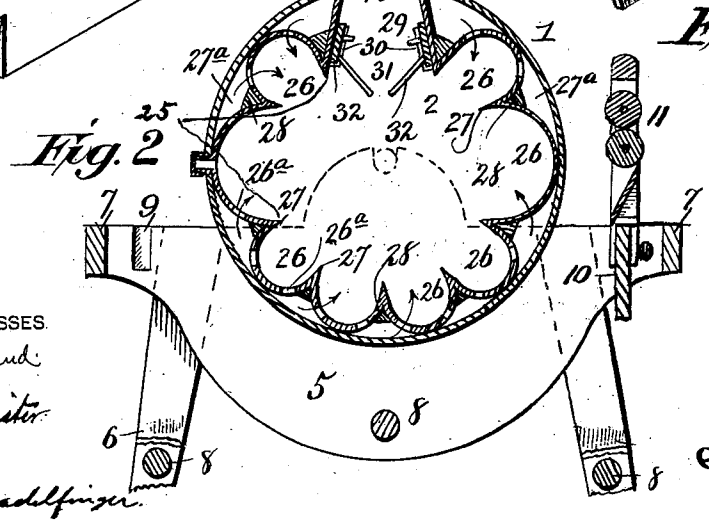


Fig. 4.

Fig. 2



WITNESSES.

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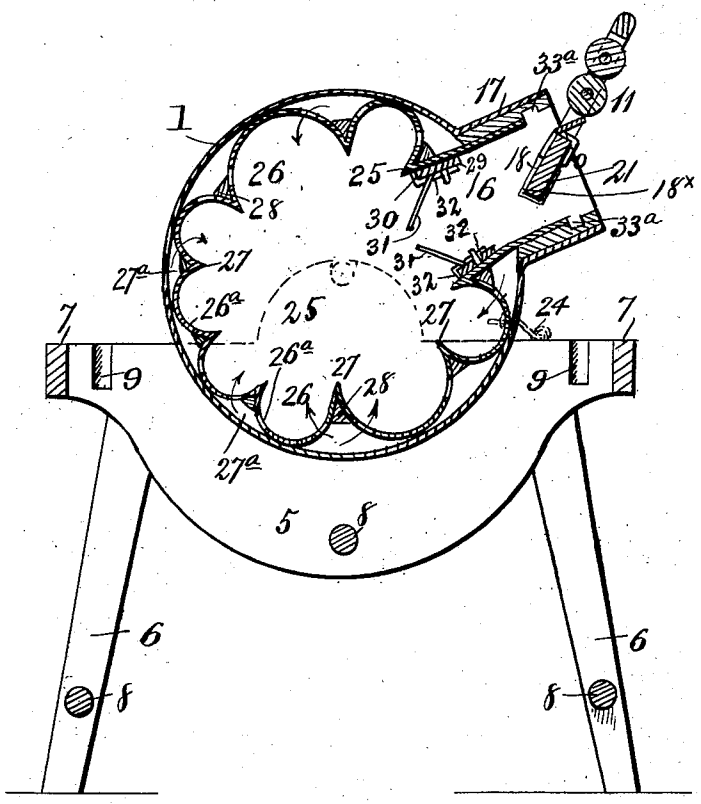
H. A. BIERLEY.

WASHING MACHINE.

APPLICATION FILED APR. 13, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.



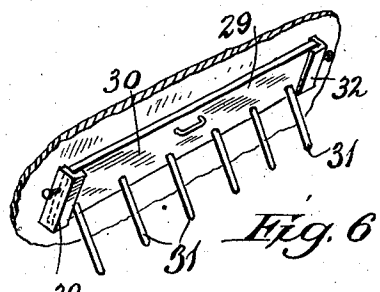


Fig. 6

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No. 747,849. Patented December 22, 1903.

UNITED STATES PATENT OFFICE.

HENRY A. BIERLEY, OF PORTSMOUTH, OHIO.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 747,849, dated December 22, 1903.

Application filed April 13, 1903. Serial No. 152,461. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. BIERLEY, a citizen of the United States, residing at Portsmouth, in the county of Scioto and State of Ohio, have invented new and useful Improvements in Washing-Machines, of which the following is a specification.

My invention relates to washing-machines; and the object of the same is to construct a machine of simple and novel construction which will be efficient to remove the dirt from the clothes and will also be provided with an improved support for a wringer and a tub.

The novel construction employed by me in carrying out my invention is fully described and claimed in this specification and illustrated in the accompanying drawings, forming a part thereof, in which—

Figure 1 is a perspective of my machine. Fig. 2 is a vertical transverse section thereof. Fig. 3 is a vertical transverse section of my machine tilted over and with the wringer mounted in the mouth thereof. Fig. 4 is a detail perspective of the cover. Fig. 5 is a detail of the bar for supporting the wringer. Fig. 6 is a detail of the finger-racks. Fig. 7 is a detail of one of the guides for the wringer-bar.

Like numerals of reference designate like parts in the different views of the drawings.

The numeral 1 designates a drum having heads 2, bearing trunnions 3, resting in open bearings 4, formed in frames 5, bearing legs 6 and connected by cross-bars 7 and braces 8. Vertical guide-grooves 9 are formed in the frames 5 to serve to accommodate a bar 10, which serves as a support for a wringer 11.

An opening 16 is formed in the convex surface of the drum 1, and a mouthpiece 17 is connected thereto. A hand-lever 18 is attached to one head 2 of the drum for use in operating the machine. Mounted within the mouthpiece 17 are angularly-adjustable guide members $18^{\times}$, having flanges 18^{a} and threaded shanks 19 thereon, which extend through apertures 19^{a} in the ends of the mouthpiece 17 and are fitted with thumb-nuts 20, which serve to clamp the guides $18^{\times}$ at any position desired. A cross-bar 21 is notched at 21^{a} to adapt it to fit the guides $18^{\times}$ to support the wringer 11.

By virtue of the angular adjustability of the guides $18^{\times}$ the wringer can be made to assume a vertical position at whatever inclination the drum is placed. The bar 21 also serves to direct the water pressed out of the clothes into the drum.

A series of apertures 22 are formed in one of the heads 2 to accommodate a pin 23, which can be fitted into any one of the apertures 22 to be engaged by a hook 24 to secure the drum in any position desired.

The rubbing-surface 25 of my machine is of novel construction and comprises a series of semicylindrical troughs 26, which are secured to the inside concave surface of the drum and are united along their longitudinal edges to form sharp ridges or rubbing-surfaces proper, 27, to engage the clothes. Strengthening-bars 28, triangular in cross-section, are mounted in the angles between the members 26 to stiffen the ridges 27. Perforations 26^{a} are formed in the members 26 and communicate with the sub water-spaces 27^{a} between said members and the walls of the drum 1. It should be noted that two of the diametrically-opposed members 26 are larger than the others, which larger members normally lie in the same horizontal plane, with the axis of the drum in position to dip up the water and carry it up at each movement of the drum 1 and then empty it on top of the clothes.

To keep the clothes from getting into the mouthpiece 17 and sticking therein, racks 29, comprising a bar 30, bearing fingers 31, are located within the mouth 17 and mounted in guides 32. The fingers 31 extend diagonally across the mouth 17 and bar the entrance thereto. When it is desired to remove clothes from the drum 1, the racks 29 can be removed and laid aside until the drum is empty. The mouth is closed by a sliding cover 33, corrugated to serve as a washboard to rub out soiled spots. It is held by grooves 33^{a}.

In operating my machine the drum 1 is filled about half full of clothes and water, the racks 29 inserted in the guides 32, and the cover 33 placed in its guides 33^{a}. The handle 18 can then be operated to oscillate the drum to rub the clothes. The action of the clothes in passing over the perforated rubbing-surface 25 will cause a suction of the water in the sub chambers or spaces 27^{a} through the perforations 26^{a}, which will aid in the

cleaning process. When the rubbing has been completed, the cover 33 and racks 29 are removed, the drum 1 set at the proper incline, corresponding to the height of the person operating the machine, and the pin 23 inserted in the corresponding aperture 22 and engaged with the hook 24. The guides 18 are then adjusted to stand vertically, the board 21 fitted therein, and the wringer 11 clamped thereon. The clothes can then be wrung out, and the water will be guided by the board 21 back into the drum. After this process is completed the clothes are rinsed, this water being expressed or removed from the clothes by again passing them through the wringer 11, the latter then being applied or inserted upon the bar 10 of the machine-frame.

I do not wish to be limited as to details of construction, as these may be modified in many particulars without departing from the spirit of my invention.

It will be also understood that I make no claim herein to what is termed the "tub-support" comprising the parts mumbered as 13, 13ª, 14, and 15.

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

1. In a washing-machine, the combination of a drum adapted to be tilted and bearing a mouthpiece, angularly-adjustable guide members mounted in said mouthpiece, a bar fitting in said guide members and extending longitudinally of said drum to serve to support a wringer and means to effect the adjustment and retention of said guide members, substantially as described.

2. In a washing-machine, the combination of a drum adapted to be tilted and provided with a mouthpiece, guides mounted in said mouthpiece and bearing threaded shanks said shanks extending through apertures in said mouthpiece and thumb-nuts fitted on said shanks and a bar mounted in said guides to serve as an angularly-adjustable support for a wringer, substantially as described.

3. In a washing-machine, the combination of a drum having a mouthpiece attached to the convex surface thereof, guides mounted in said mouthpiece, and racks bearing fingers extending diagonally of said mouthpiece, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HENRY A. BIERLEY.

Witnesses:
AUGUST PETERSON,
BENNETT S. JONES.