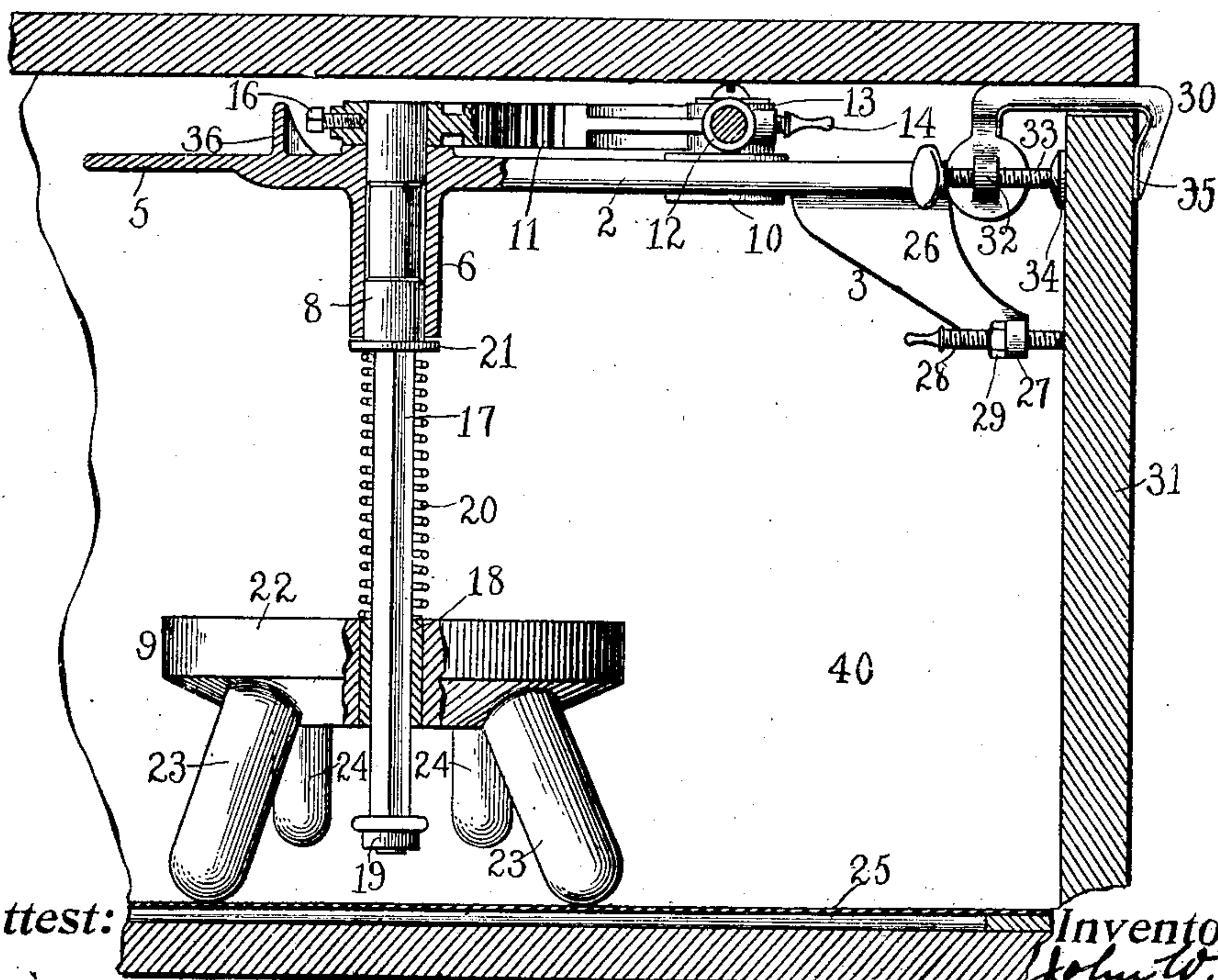
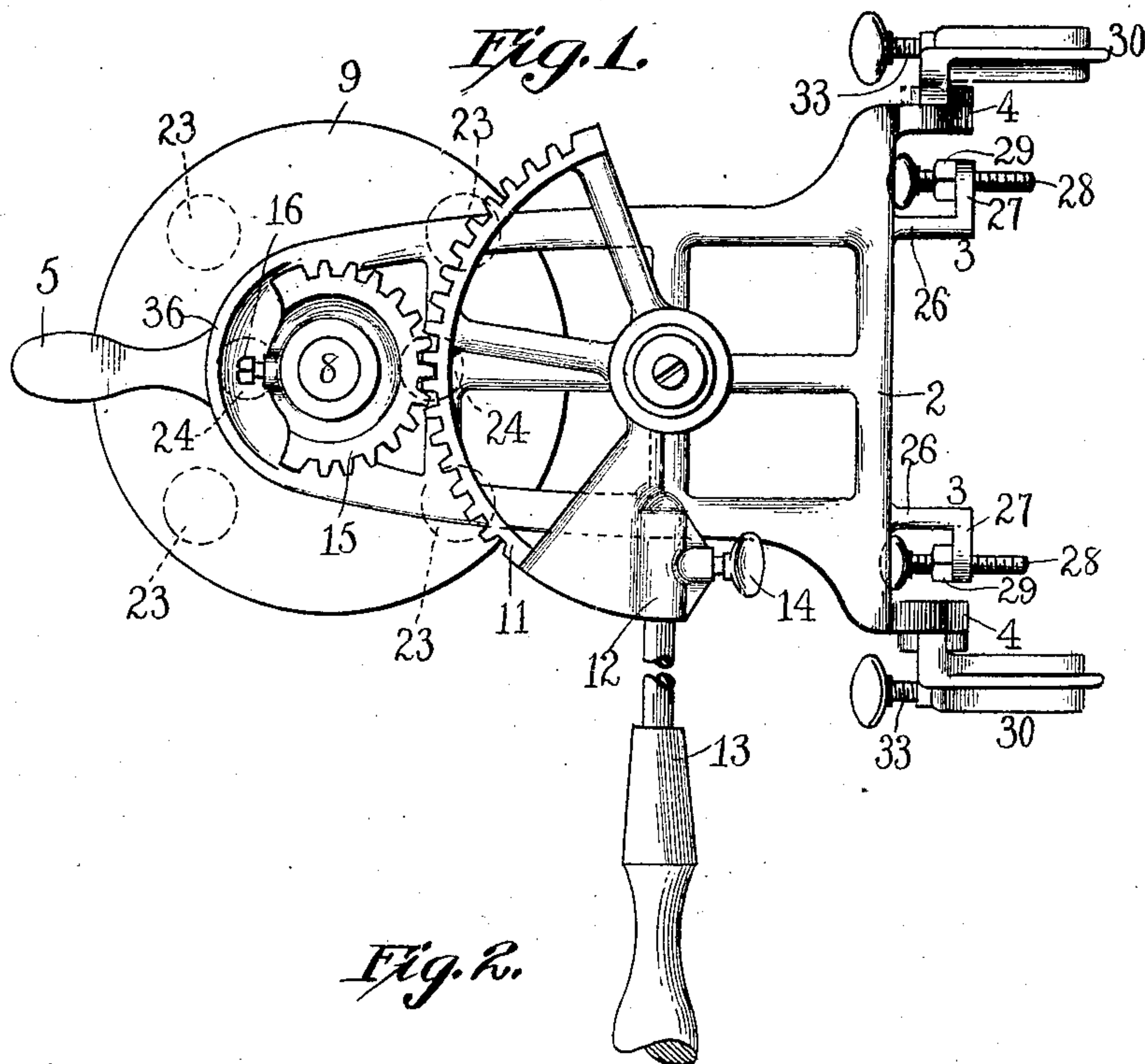


No. 880,349.

PATENTED FEB. 25, 1908.

J. W. AYERS.  
WASHING MACHINE.  
APPLICATION FILED MAY 3, 1907.



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Atty



# UNITED STATES PATENT OFFICE.

JOHN W. AYERS, OF BROOKLYN, NEW YORK.

## WASHING-MACHINE.

No. 880,349.

Specification of Letters Patent.

Patented Feb. 25, 1908.

Application filed May 3, 1907. Serial No. 371,621.

*To all whom it may concern:*

Be it known that I, JOHN W. AYERS, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification.

This invention relates to washing machines, and particularly to a device of a type adapted for attachment to a set tub such as is ordinarily found in apartment houses, city residences, etc.

The main object of the invention is to provide a washing machine the principal element of which is in the form of an attachment which may be readily secured to the wall of a set tub, usually to an end wall thereof, and when thus set may be easily moved to a position within said tub or swung to a position outside said tub, as desired. Said attachment is adapted to cooperate with a wash-board placed at the bottom of said tub, and may also be adapted for permanent location within the tub in its working position, with all of its parts beneath the plane of the cover of the tub; or if desired may be quickly removed from the tub.

Other features of the invention not hereinbefore referred to will be hereinafter described and are illustrated in the accompanying drawings, in which

Figure 1 is a plan view of the device, showing the frame for carrying the moving parts and also the means for actuating the parts within the tub. Fig. 2 is an elevation, with parts in section, of the device secured in operative position within a stationary tub, and shows particularly the rotary rubber and its connections, with the carrying frame and operative parts.

Similar characters designate like parts in all the figures of the drawing.

Referring to the drawing, 2 represents the main stationary frame of the device for carrying the movable parts of the washer. Said frame, as here shown, is a metal web cast with lugs 3 and 4 and a handle 5 integral therewith. Said web has a downwardly extending portion 6 forming a journal bearing for the shaft 8 carrying the rubber 9. The web 2 also has journaled therein at 10 a short shaft carrying a rotary toothed segment 11 having a socket 12 adapted to receive a handle 13 for rotating said segment. This handle is secured in the socket by a clamping-screw 14 of an ordinary type.

Meshing with the segment 11 is a segment 15 of smaller radius than the segment 11, carrying the main shaft 8, which as shown is secured therein against rotation by the binding-screw 16. The main shaft carried by the segment 15 is journaled in the bearing 6, the central portion of said shaft being reduced in thickness to lessen friction. The shaft 8 has attached thereto or forming a continuation thereof a squared or other flat-sided shaft 17 passing loosely through a similarly-shaped opening in the rubber 9 or in a similarly bored bushing 18 set in said rubber.

The shaft 17 is of such length that when the machine is attached to a set tub and firmly clamped in place said shaft will be clear of the bottom of the tub and of the rubbing-board resting on said bottom. To prevent detachment of the rubber from the shaft a stop-nut 19 or equivalent device at the end of said shaft is employed.

To hold the rubber 9 firmly against the clothes which are placed in the tub to be washed and exert a constant slight pressure thereon I have shown herein a spring 20 between the movable top bed of said rubber and the stationary collar 21 between the bearing-shaft 8 and the rectangular shaft 17. The use of such a spring is not essential, however, as any means may be employed which will exert sufficient pressure of the rubber on the clothes, the weight of the rubber being sufficient in many cases to produce the desired pressure.

The rubber 9 is of a well-known type, usually of wood, and consists of a substantially horizontal block 22, carrying on its under side fingers or rubbing members disposed at such angles as to properly rub the clothes without holding or tearing. In the drawing four main arms 23 are shown and two shorter arms 24.

The set tub 40 has placed at the bottom thereof a corrugated wash-board 25 of ordinary type, with which the rubber cooperates. This wash-board is preferably weighted, as with lead, to hold it in its proper position.

The lugs 3 and 4 on the main frame of the device are designed to carry the means for attaching the device to a set tub. Each of the lugs 3 consists of a main portion 26 projecting from the main frame in a downward direction and an arm 27 at right angles thereto. These arms 27 have tapped holes to receive adjusting-screws 28 located in position by check-nuts 29. To the lugs 4



screw-clamps 30 for engaging the wall 31 of a set tub are hinged. Said clamps as shown have their pivot points far enough below the upper edge of the tub, when said clamps are attached thereto, to allow all parts of the device to be below the plane of the upper portion of the set tub and wholly within the tub and closed in by the ordinary cover of said tub.

Each of the clamps 30 has a lug 32 projecting therefrom formed with a tapped hole to receive a clamp-screw 33 having a clamping-disk 34 at the end thereof to engage the inner surface of the wall 31 of the tub. The outer clamping element of the device is shown at 35 in a plane parallel with the surface of the clamping-disk 34. When the clamps are attached to the edge of a set tub the device may be swung on its hinges to place it in operative position in the tub or raise it from said tub. When within the tub, the device may be leveled, so that the main frame thereof may be in the proper horizontal plane, by means of the adjusting-screws 28 before mentioned.

The rubber 9 for acting on the clothes in the tub is caused to rotate back and forth through a slight arc in a horizontal plane by oscillating the handle 13 which passes outside of and is movable in a space between the upper edge of the tub and the cover. This operation of the handle connected to the segment 11 turns the segment 15 and its shaft 8 with its continuation 17 to which is fixed the rubber 9.

The handle 5 for lifting the device and moving it about its hinge has a guard 36 for protecting the hand from injury by the parts of the adjoining movable segment.

What I claim is:

1. A washing machine for attachment to a set tub, said machine comprising a frame, a movable rubber carried by said frame, means carried by said frame for operating said rubber, and means for clamping the frame to a set tub in such a position that said frame, rubber and said operating means are located within the tub and means for leveling said frame and its parts.

2. A washing machine for attachment to a

set tub, said machine comprising a frame, a rotary rubber carried by said frame, means carried by said frame for rotating said rubber, means for clamping the frame to a set tub in such a position that said frame, rubber and said rotating means are located within the tub, and means for leveling said frame and its parts.

3. A washing machine for attachment to a set tub, said machine comprising a frame, a rotary rubber carried by said frame, means carried by said frame for rotating said rubber, and clamps hinged to the frame for securing the frame to a set tub in such a position that said frame, rubber and said rotating means are located within the tub.

4. A washing machine for attachment to a set tub, said machine comprising a frame, a shaft journaled in said frame, gearing at the upper side of said frame for rotating said shaft, a rubber at the lower end of said shaft, and means for clamping said frame to a set tub in such a position that said frame, rubber and gearing are located within the tub.

5. A washing machine for attachment to a set tub, said machine comprising a frame, a shaft journaled in said frame, gearing at the upper side of said frame for rotating said shaft, a rubber at the lower end of said shaft and slidable along said shaft, and means for clamping said frame to a set tub in such a position that said frame, rubber and gearing are located within the tub.

6. A washing machine for attachment to a set tub, said machine comprising a frame, a rotary rubber carried by said frame, means carried by said frame for rotating said rubber, means for clamping the frame to a set tub in such a position that said frame, rubber and said rotating means are located within the tub, and adjusting screws impinging against the inner wall of the tub for leveling said frame and its parts.

Signed at New York, in the county of New York, and State of New York, this 29th day of April, A. D. 1907.

JOHN W. AYERS.

Witnesses:

EDGAR A. FELLOWS,  
ROBERT CHAMPION.