No. 627,788. Patented June 27, 1899.

H. W. WICHMAN & A. H. HERRON.

WASHING MACHINE.

(Application filed Dec. 27, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

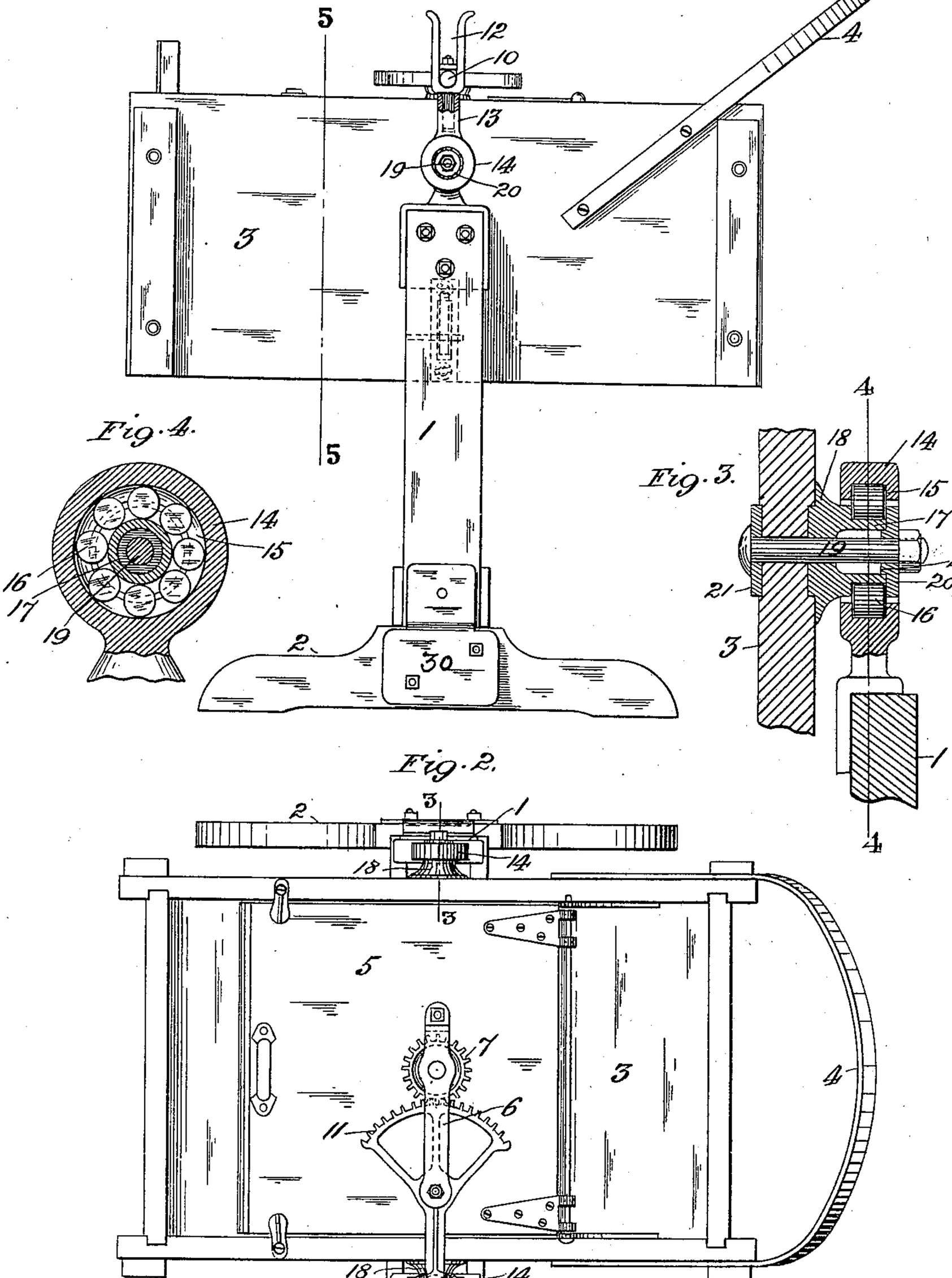

Fig. 4.

Fig. 3.

Fig. 2.

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Fig. 5.

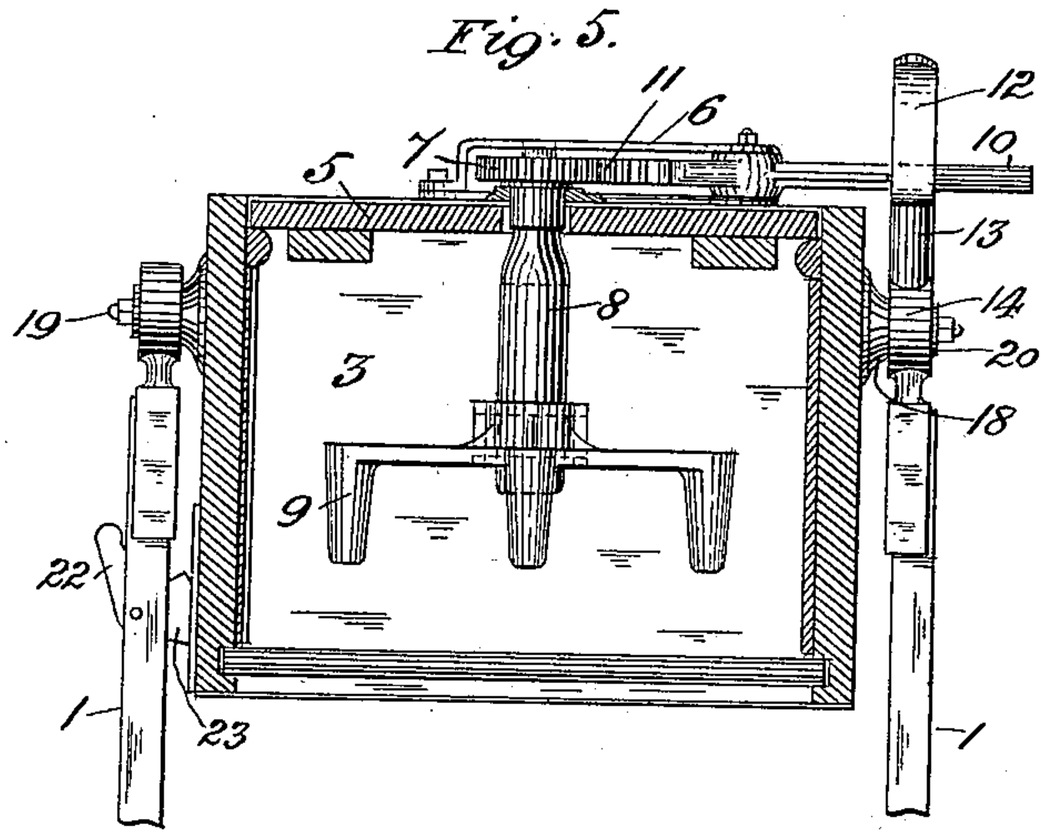


Fig. 6.

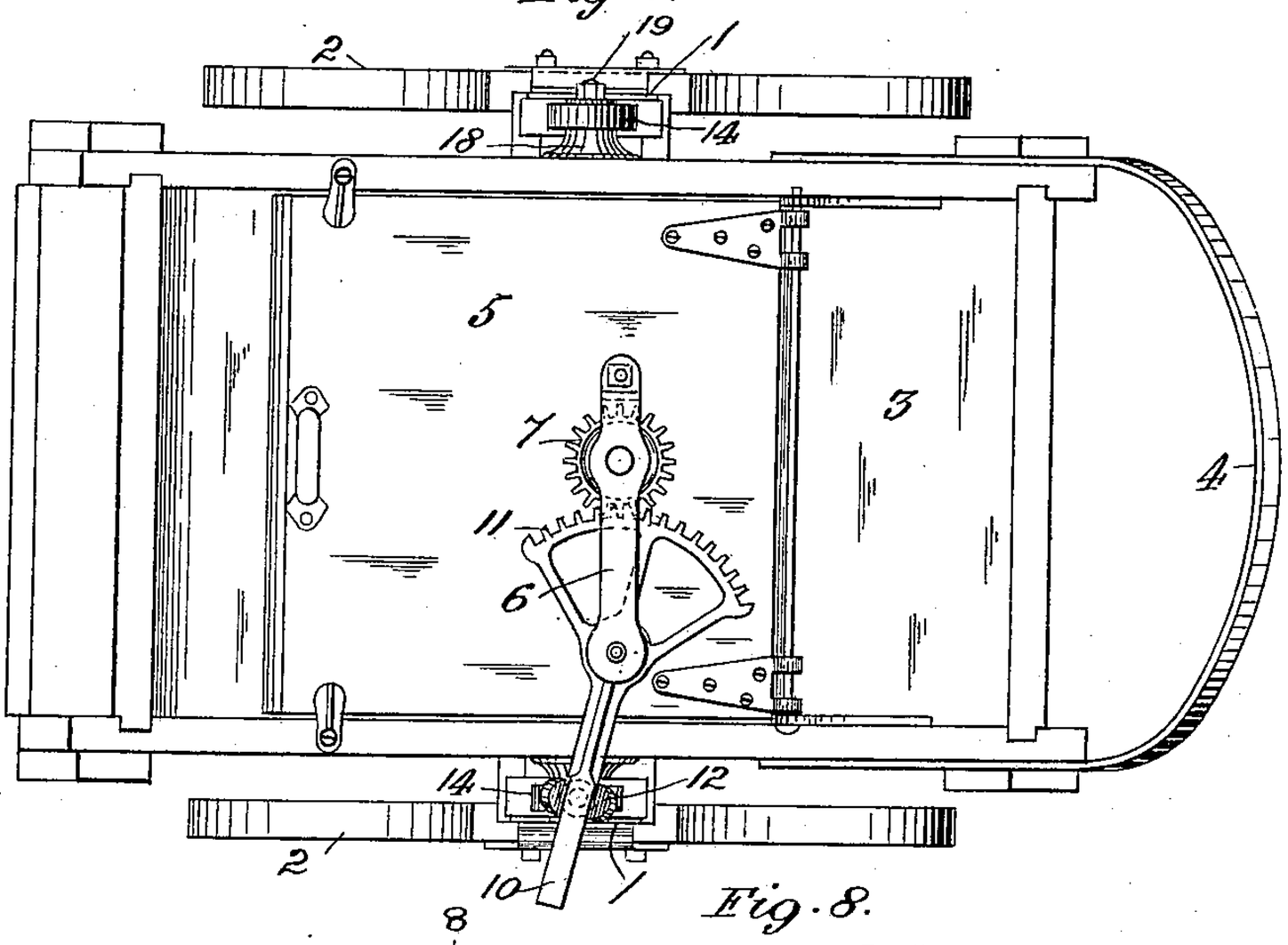
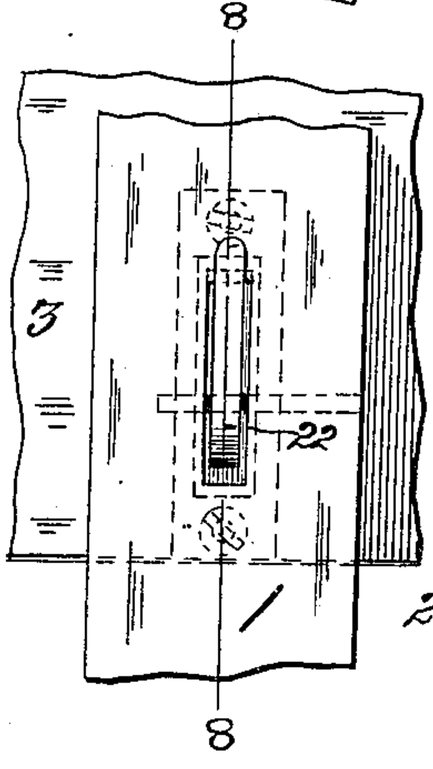
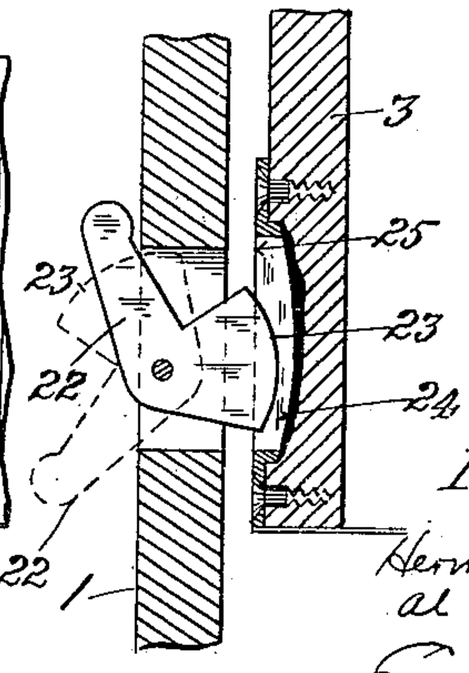


Fig. 8.

Fig. 7.





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UNITED STATES PATENT OFFICE.

HERMAN W. WICHMAN AND AL H. HERRON, OF ST. LOUIS, MISSOURI, ASSIGNORS TO THE ANTHONY WAYNE MANUFACTURING COMPANY, OF SAME PLACE.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 627,788, dated June 27, 1899.

Application filed December 27, 1898. Serial No. 700,442. (No model.)

To all whom it may concern:

Be it known that we, HERMAN W. WICHMAN and AL H. HERRON, citizens of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Washing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention has relation to improvements in washing-machines; and it consists in the novel arrangement and combination of parts more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the washing-machine. Fig. 2 is a top plan view thereof with the operating parts in their normal position, the suds-box being in a horizontal position. Fig. 3 is an enlarged transversely-sectional detail of the bearing, taken on line 3 3 of Fig. 2. Fig. 4 is a section on line 4 4 of Fig. 3, the roller-bearings, however, being in end elevation. Fig. 5 is a section on line 5 5 of Fig. 1 looking to the right, the handle 4 being omitted. Fig. 6 is a top plan view of the suds-box tilted, showing also the position of the gear mechanism under the circumstances. Fig. 7 is a detail elevation of a portion of the standards, showing the brake-lever pivoted therein; and Fig. 8 is a section on line 8 8 of Fig. 7, showing the brake applied to the suds-box and also (in dotted lines) disengaged therefrom.

The present invention is an improvement on that class of washing-machines in which the rocking motion of a swinging clothes-receptacle or suds-box imparts motion to an oscillating agitator or rubber confined within such receptacle, the improvements herein being directed more particularly to the construction shown and described in United States Letters Patent issued to Herman W. Wichman under date of January 7, 1896, and numbered 552,736.

The object of the present invention is to materially simplify the construction referred to in the particulars of mounting the receptacle, in the means for actuating the lever by which oscillation to the agitator is imparted, in means for locking the receptacle against movement, and in further and other details more fully outlined in a detailed description of the invention, which is as follows:

Referring to the drawings, 1 1 represent standards supported on suitable bases 2, between the upper ends of which is mounted the rocking clothes-receptacle or suds-box 3, provided with a suitable handle 4, as usual. Hinged so as to open lengthwise of the receptacle is a lid 5, along whose upper surface is mounted transversely a frame 6 for the support of the gear mechanism by which the agitator is oscillated. This gear mechanism comprises a pinion 7, located at the inner end of the frame, to the lower depending hub of which is secured the stem 8, carrying the rotatable agitator or rubber 9, the latter being free to ride up and down along said stem, according to the quantity of clothes in the receptacle, as is usual in this class of machines. Pivoted at the outer end of the frame 6 is a lever 10, whose one end assumes the form of a toothed segment or quadrant 11, the teeth of which mesh with the teeth of the pinion 7. The outer end of the lever 10 is adapted to be engaged by the prongs of a rotatable fork 12, the stem of the fork resting and being supported within the socket extension 13, forming a part of the bearing 14 on that side of the machine. The free ends of the prongs of the fork 12 flare outwardly, so as to guide the passage of the lever into the fork when the lid is closed.

The bearings 14 in detail are constructed as follows: The bearing, which is preferably of cast-iron, is secured directly to the upper end of the standard 1, being cylindrical in form and hollow and having formed along its inner periphery an annular groove or channel 15 for the reception of roller-bearings 16, the latter being confined between the terminal walls of such groove and between the base of the groove and the reduced extension 17 of the gudgeon 18, carried by the side walls of the receptacle. The gudgeon, which is hollow, is partially sunk into the wooden wall of the receptacle and is further secured thereto by a bolt 19, passed through the gudgeon and its extension 17, the outer screw-threaded end of the bolt having passed over it a suitable

washer 20, provided with an annular shoulder 20′, adapted to snugly enter the opening of the portion 17 and the washer bearing against the end of the extension 17, to which it is tightly drawn by a nut screwed over the screw-threaded end of the bolt, the latter being provided at its inner end with a head bearing against a washer 21, the nut drawing the several parts tightly together, thus permanently securing the gudgeon to the receptacle and at the same time effectively confining the antifriction-rollers 16, by which the portion 17 is directly supported. In this manner an almost frictionless bearing or support for the receptacle is effected, and the latter can be rocked with very little exertion. The receptacle is provided with the usual handle 4, which is seized by the operator during the rocking of the receptacle.

Pivoted, preferably, in the standard which is opposite to that carrying the fork is a bell-crank brake-lever 22, the toe 23 of which drops into the recess 24 of a casting 25, secured to the adjacent wall of the receptacle when the lever is tilted in one direction, but from which it is withdrawn when tilted in a reverse direction, so that the operator can lock and unlock the machine at will, according to circumstances.

While the operation of this class of machines is sufficiently well understood, it may be incidentally reviewed herein to fully bring out the purpose and function of the fork 12, by which the free end of the lever 10 is constrained during the rocking motion of the receptacle. Normally—that is to say, when the machine is at rest—the axis of the lever 10 lies directly in the vertical plane passing through the axis of suspension of the clothes-receptacle and is parallel to such axis of suspension. As the receptacle is oscillated in one direction or the other the pivotal point of said lever, and hence the toothed quadrant thereof, is shifted to one side or the other of said vertical plane a distance equal substantially to the sine of the arc through which these parts oscillate; but as the free end of the lever is constrained to remain in one position by the fork 12 it follows that the lever will oscillate about the fork as a fulcrum, the toothed quadrant thereof meshing with the pinion carrying the rubber, and thus oscillating the latter on its supporting-stem within the suds-box. In its oscillations the lever of course becomes inclined to the vertical plane passing through the axis of oscillation of the suds-box, and it is to these inclinations that the fork must conform, so that where for the normal position of the parts the opening between the fork-prongs is in line with the axis of suspension of the suds-box for any inclined position of the lever the said fork-opening becomes inclined to such axis, as best seen in Fig. 6. In other words, the fork oscillates about its stem to conform to the inclinations of the lever during the rocking motion of the suds-box 3.

It was stated above that the free ends of the arms or prongs of the fork flare outwardly. The object of this construction is to allow the lever to be lifted out of the fork without material binding when the lid to which the operating parts are secured is opened out, and, further, to guide the lever back into place when the lid is being closed.

It is apparent that minor changes might be made in the present device without departing from the spirit of our invention.

As best seen in Fig. 1, the standards 1 and bases 2 are rigidly connected by braces 30, preferably of cast-iron.

Having described our invention, what we claim is—

1. In a washing-machine, a suitable rocking clothes-receptacle, supporting-standards for the same, a rubber carried by the receptacle, a lever mounted on the receptacle, intermediate gearing between said lever and rubber for oscillating the latter upon the rocking of the receptacle, and a rotatable fork for receiving the free end of the lever, substantially as set forth.

2. In a washing-machine, a suitable rocking receptacle, supporting-standards for the same, a rubber carried by the receptacle, a supporting-stem for the rubber, a pinion to which the stem is secured, a lever pivoted to the receptacle and having a toothed quadrant meshing with the pinion, a fork having a stem rotatably mounted at the upper end of one of the standards, the said fork being adapted to receive the arm of the lever and oscillate therewith during the rocking motion of the receptacle, substantially as set forth.

3. In a washing-machine, a suitable rocking receptacle, supporting-standards for the same, gudgeons carried by the receptacle and supported in suitable bearings at the upper portions of the standards, the bearing on one of the standards having a tubular socket extension, an oscillating fork mounted in said socket extension, a rotatable rubber carried by the receptacle, and intermediate connections between the rubber and fork for successively reversing the rotation of the rubber, and oscillating the fork, during the rocking of the receptacle, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

HERMAN W. WICHMAN.
AL H. HERRON.

Witnesses:
EMIL STAREK,
GEORGE L. BELFRY.