(No Model.)

2 Sheets—Sheet 1.

A. WELLS.

WASHING MACHINE.

No. 459,775. Patented Sept. 22, 1891.

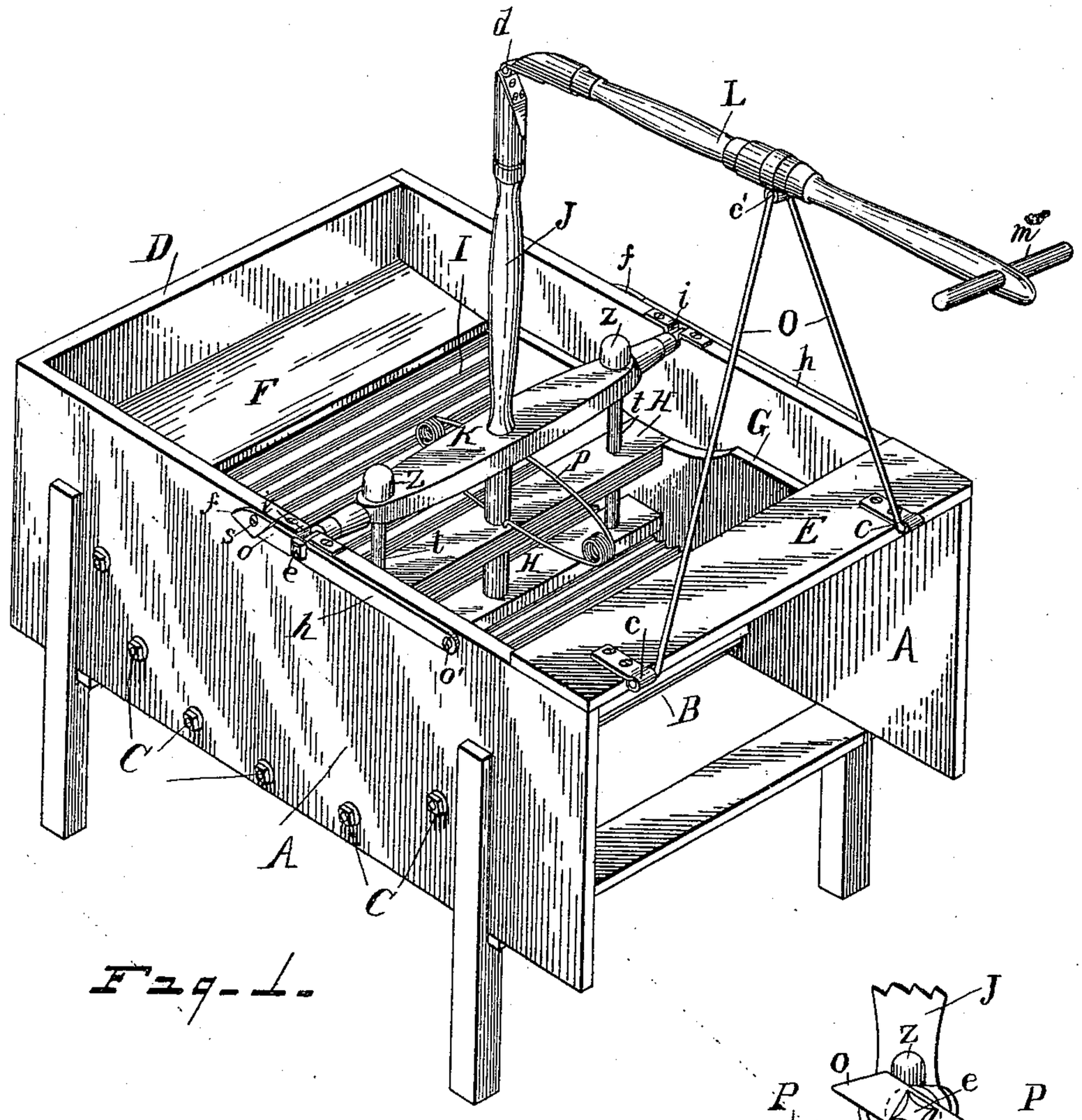

Fig. 1.

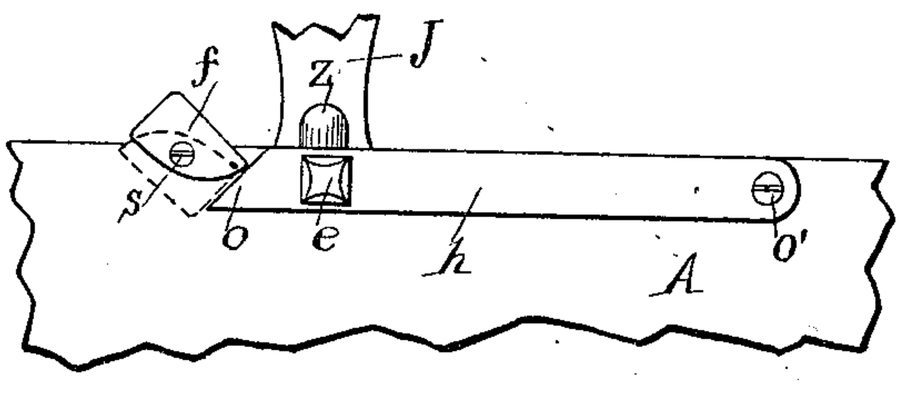

Fig. 2.

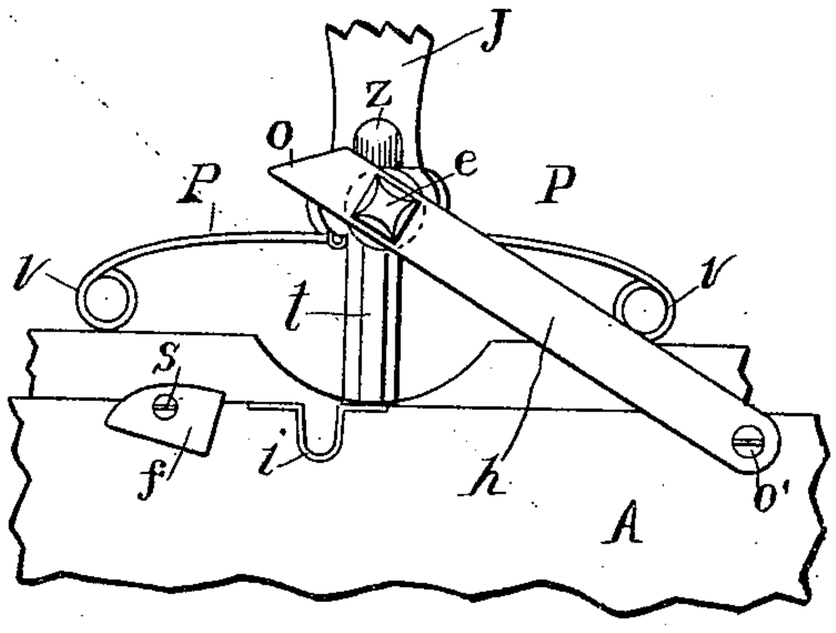

Fig. 3.

WITNESSES.

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(No Model.) 2 Sheets—Sheet 2.

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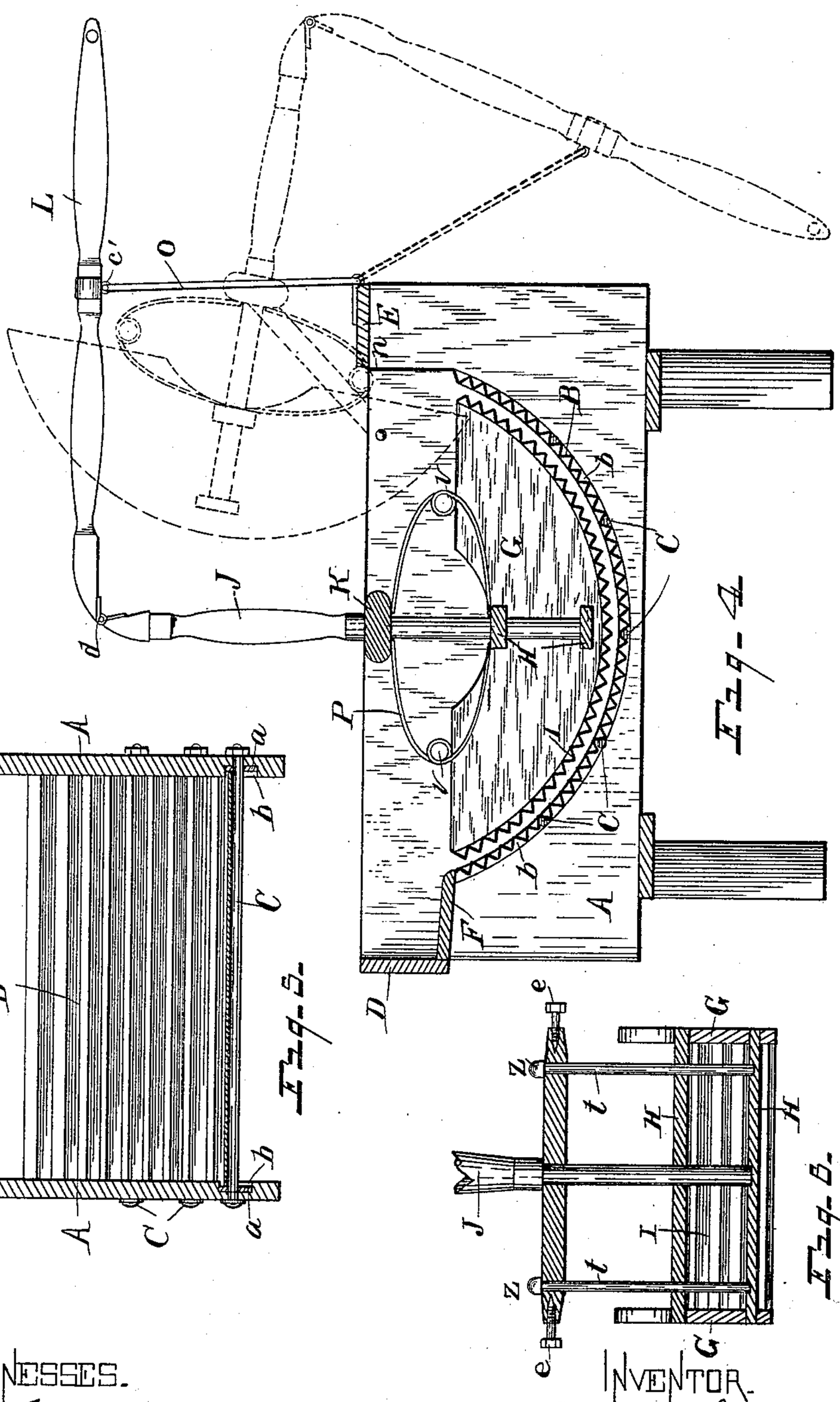

Fig. 4.

Fig. 5.

Fig. 6.

WITNESSES.

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UNITED STATES PATENT OFFICE.

ALBERT WELLS, OF SARANAC, MICHIGAN.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 459,775, dated September 22, 1891.

Application filed April 24, 1891. Serial No. 390,220. (No model.)

To all whom it may concern:

Be it known that I, ALBERT WELLS, a citizen of the United States, residing at Saranac, in the county of Ionia and State of Michigan, have invented certain new and useful Improvements in Washing-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use 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 new and useful improvements in washing-machines; and it consists in a certain construction and arrangement of parts, as hereinafter fully set forth, the essential features of the device being pointed out particularly in the claims.

The objects of the invention are to provide a machine that is simple of construction, effectual, and easy of operation; that is so constructed as to enable the swinging rubbing-head to be readily placed in the machine or removed therefrom, and that is provided with means whereby a uniform pressure upon the clothes is maintained when placed between the swinging and stationary rubbing-surfaces of the machine and whereby the swinging rubbing-head is given an increased vertical adjustment. These objects are attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved machine. Fig. 2 is an enlarged view of the locking device that secures the swinging head in place. Fig. 3 is a view of same, showing said swinging head partially withdrawn or raised. Fig. 4 is a vertical longitudinal section through the machine. Fig. 5 is a vertical cross-section through the body only of the machine. Fig. 6 is a cross-section through the swinging head and the oscillating shaft on which it rocks.

Referring to the letters of reference, A indicates the sides of the body, to which are secured the supporting-legs of the machine. Said sides are provided in their inner adjacent faces with a circular groove *b*, in which is located a strip of rubber or like flexible material *a*, as shown in Fig. 4.

B indicates a corrugated sheet of zinc or suitable metal, which is curved to conform to the shape of the grooves *b* in the sides A, in which the edges of said sheet are received, and are adapted to bear against the rubber packing *a* therein, as shown in Figs. 4 and 5, the sides A being secured by the transverse bolts C, that pass through said sides and lie in the corrugations in the under face of the metal sheet B. By means of said bolts the sides A may be drawn tightly together upon the edges of the metal sheet B, forcing the rubber packing *a* in the grooves *b* in said sides firmly against the edges of said sheet, thereby making a water-tight joint between the sides A and the edges of the metal sheet B, said sheet forming a concaved corrugated bottom to the machine, as clearly shown in Figs. 1 and 4. The sides A are additionally coupled at their respective ends by the vertical end piece D and the cross-piece E. The vertical end piece supports the ledge F at the forward end of the machine, to the inner edge of which the front end of the bottom B is attached, the rear end of said bottom being secured at *n* to the cross-piece E, (see Fig. 4,) making a secure and tight receptacle to contain the water and clothes.

G indicates the side pieces of the swinging head, the lower edges of which are circular to conform to the concaved bottom B. Said sides G are connected by the cross-pieces H, and to the circular edges thereof is secured the corrugated metal sheet I, which forms the rubbing-surface of the swinging head, as clearly shown in Fig. 4.

J indicates a vertical lever, the lower end of which is secured in the cross-pieces H of the swinging head. Said lever passes loosely through the rock-shaft K, and its upper end is hinged at *d* to one end of the horizontal lever L, which is supported near its longitudinal center by the forked brace-rod O, the lower diverging ends of said brace-rod being pivoted to the cross-piece E, as shown at *c* in Fig. 1, the upper point of which is pivoted at *c'* to the under face of the lever L, the outer end of said lever carrying the handle *m*.

The rock-shaft K is provided in each end thereof with a screw-bolt *e*, (see Fig. 6,) that form the journals on which said shaft rocks and which lie in the U-shaped bearings *i* in

the opposite upper edges of the sides A, as shown in Figs. 1 and 3. The outer ends of the journal-bolts *e* pass loosely through the swinging arms *h* near the beveled end *o*, the opposite end of said arms being pivoted to the outer faces of the sides A, as shown at *o'* in Figs. 1, 2, and 3. By this arrangement when it is desired to withdraw the swinging head from the tub or body the shaft K may be raised from its bearings and the swinging head rocked back and upward, supported by the arms *h*, as shown in Fig. 3 and by dotted lines in Fig. 4.

f indicates an automatic catch-plate that is eccentrically pivoted at *s* to the outer face of the sides A. Said plate presents the form of a triangle, one of whose lines is curved, and is so hung as to normally stand in the position shown in Figs. 1 and 3, in which position the square end of said plate, when the arm *h* is down, will engage the beveled end *o* thereof, as shown in Fig. 1, and lock said arm in that position. When it is desired to lift the swinging rubbing-head from the body of the machine, the catch-plate is turned back so that its beveled or rounded point will rest against the beveled end *o* of the arm *h*, as shown in Fig. 2. The arm *h* is then unlocked, and the rubbing-head may then be swung out to the position shown by dotted lines in Fig. 4, the plate *f* resuming the position shown in Fig. 3. As the rubbing-head is returned the arms *h* guide the journals *e* of the rock-shaft K to their bearings *i*, and the point *o* of the arm *h* will engage the plate *f* and swing its square end down until the beveled end *o* of said arm slips past the upper corner thereof, when said plate will drop back and lock the parts, as shown in Fig. 1 and by dotted lines in Fig. 2.

P indicates a spring, elliptical in form, having the coil *v* at the ends. Said spring is placed between the rock-shaft K and the upper cross-piece H of the rubbing-head. By means of the tension of this spring the rubbing-surface of the swinging head is held down upon the clothes, which are placed between it and the corrugated bottom B, and said head is permitted to adjust itself vertically to a large or small quantity of clothes in the washer, and by means of the formation and manner of attaching said spring it occupies no space between the shaft K and the upper cross-piece H of the swinging head, thereby permitting the greatest possible vertical play to said head, enabling a large quantity of clothes to be placed thereunder.

t t indicate guide-spindles, the lower ends of which are secured in the cross-pieces H of the swinging head and whose upper ends pass loosely through the shaft or cross-head K, whereby the swinging head is guided in its vertical play, which construction is clearly shown in Figs. 1 and 6. The shoulders formed by the heads *z* on the upper ends of the spindles *t* engage the upper face of the shaft K and restrain the spring P from forcing the rubbing-surface I of the swinging head into contact with the bottom B when there are no clothes in the washer, holding said surfaces slightly apart, as shown in Fig. 4.

To place the clothes in the washer the catch-plates *f* are turned so as to unlock the arms *h*. The vertical lever J is then grasped and the rubbing-head lifted out to the position shown by the dotted lines in Fig. 4. The clothes and water are then placed in the tub or body of the washer and the swinging rubbing-head replaced and secured by the catch-plates *f*. The machine is now ready for washing, and by grasping the handle *m* of the lever L and reciprocating said lever horizontally the rubbing-head is thereby swung back and forth upon the rock-shaft K, the clothes being rolled and pressed between its rubbing-surface I and the corrugated bottom B of the machine, whereby they are quickly and effectually washed, and by the use of the extended horizontal lever L the operator is not required to work over the steam from the water and is permitted to stand in an erect position, thus enabling the machine to be more easily operated; and by the employment of the forked brace O to support the lever L said lever is restrained from lateral play, obviating the twisting of the hinge *d*.

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

1. In combination with the body of the machine, the sides thereof having the U-shaped bearings in their upper edge, the swinging head journaled in said bearings, the swinging arms pivotally mounted on the rock-shaft of said head and having a pivotal connection at one end with the sides of the body, the free ends of said arms having the beveled ends, and the triangular catch-plates pivotally mounted on the sides of the tub and in the path of the swinging arms, engaging therewith, substantially as specified.

2. In a washing-machine, the swinging head having the curved and corrugated metal bottom, and the cross-pieces made fast to the sides of said head, combined with the rock-shaft, the guide-spindles passing loosely through the rock-shaft, their lower ends being made fast to the cross-pieces H, the elliptic spring being located between the rock-shaft and the upper cross-piece, and the lever attached to the rock-shaft, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT WELLS.

Witnesses:
E. S. WHEELER,
O. B. BAENZIGER.