

(No Model.)

H. JOHNSEN.
WASHING MACHINE.

No. 405,482.

Patented June 18, 1889.

Fig. 1.

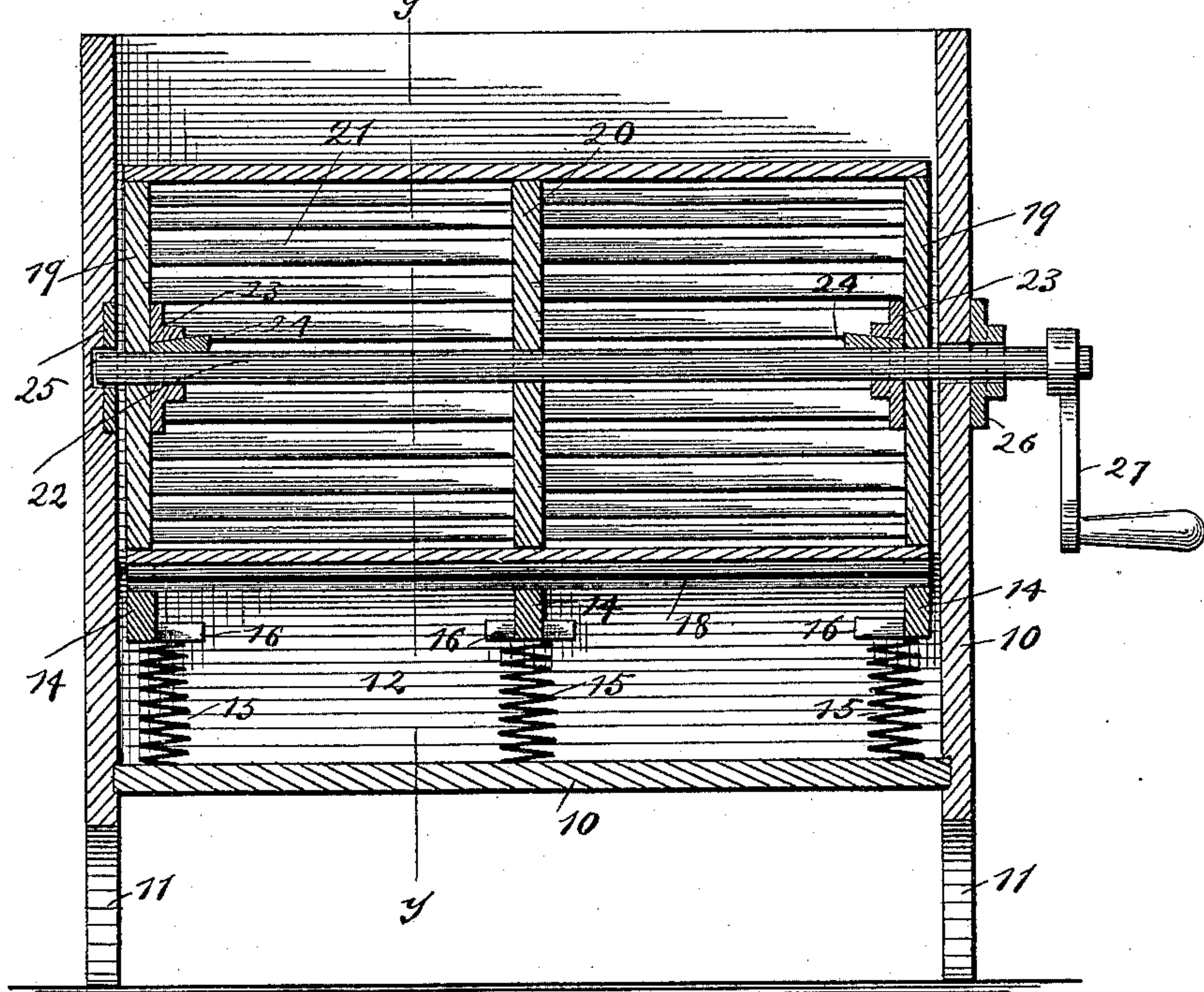
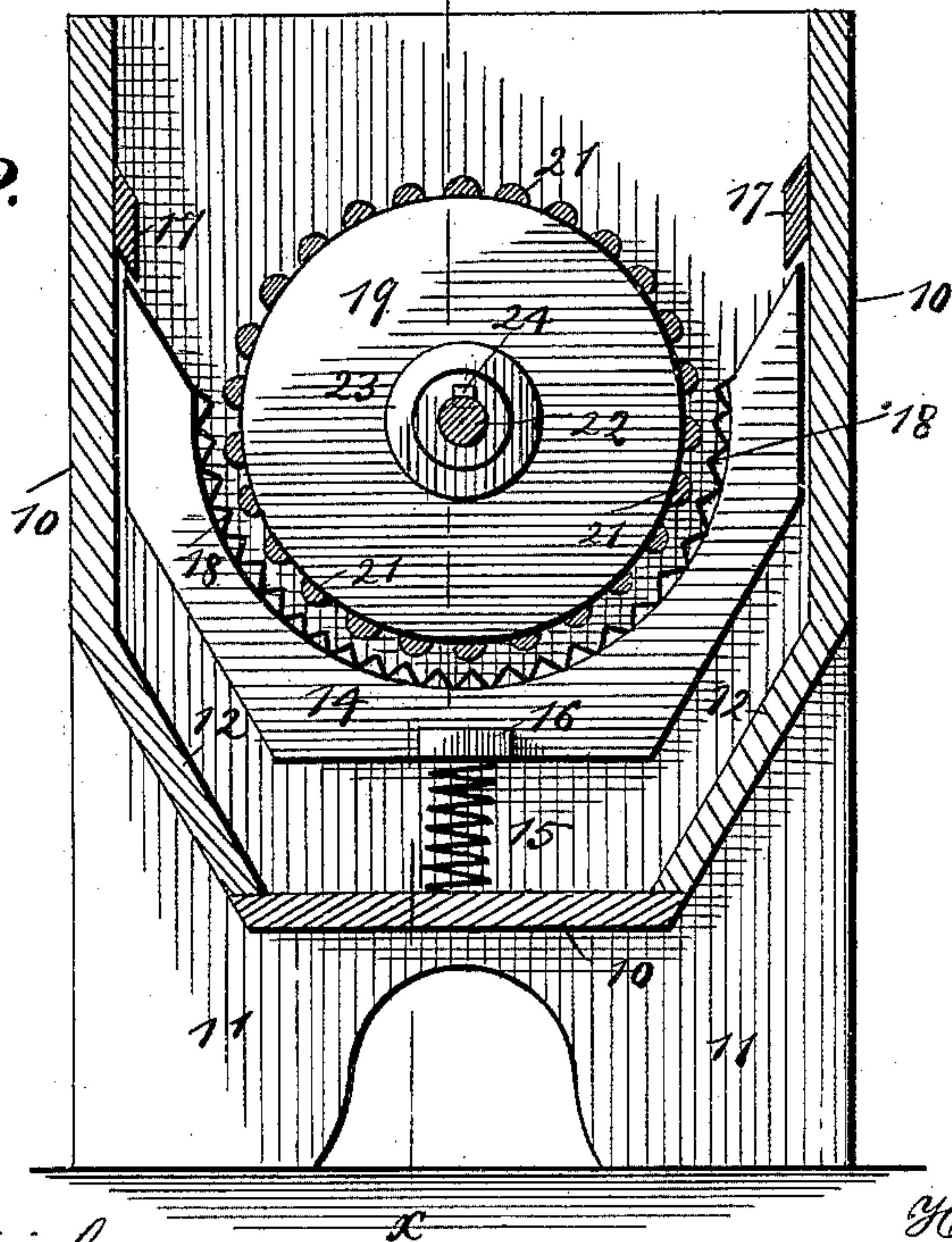


Fig. 2.



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HANS JOHNSEN, OF MENOMINEE, MICHIGAN.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 405,482, dated June 18, 1889.

Application filed January 8, 1889. Serial No. 295,744. (No model.)

To all whom it may concern:

Be it known that I, HANS JOHNSEN, of Menominee, in the county of Menominee and State of Michigan, have invented a new and
5 useful Improvement in Washing-Machines, of which the following is a full, clear, and exact description.

My invention relates to an improvement in washing-machines, and has for its object to
10 provide a machine of simple and durable construction and capable of being manufactured at a minimum cost.

A further object of the invention is to provide a machine which may be conveniently
15 manipulated with one hand, and to so construct the machine as to provide a continuous bottom rubbing-surface, which will be automatically brought in proper frictional contact with a revoluble rubbing-cylinder.

20 The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claim.

Reference is to be had to the accompanying
25 drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in both the views.

Figure 1 is a central longitudinal section through the machine on line $x x$ of Fig. 2, and
30 Fig. 2 is a transverse section on line $y y$ of Fig. 1.

In carrying out the invention the body 10 of the machine is preferably made rectangular, the end pieces thereof being carried down-
35 ward below the body proper to constitute legs, as best illustrated at 11 in Fig. 2.

The bottom of the body is preferably so constructed that the side pieces thereof contiguous to the horizontal portion will incline
40 upward to a junction with the sides of the body, as best illustrated at 12 in Fig. 2, whereby a dish-shaped bottom is provided, the top of the body being open for the reception of the clothes, and may be covered with any
45 suitable or approved form of lid.

In the bottom of the body a series of spaced blocks 14 are placed, the upper surfaces whereof are concaved in circular form, and the lower faces are made to correspond with
50 the contour of the bottom of the body. The upper outer surfaces of the blocks 14 are made to engage with the sides of the body in

such manner as to be capable of sliding thereon, and the base of the blocks is so reduced as that when in their normal position, which is
55 elevated above the bottom of the body, a space will intervene between the said base of the blocks and the said bottom of the body, as best shown in Fig. 2. The blocks are held in this normal position through the medium
60 of a spiral or coil spring 15, attached to the base of each block at or near the center, and having a bearing upon the inner surface of the bottom of the body. As a support or bearing for the upper end of the said springs 15,
65 each of the blocks 14 is provided with a horizontal projection 16, integral therewith or attached thereto, which projections are located at the center of the base and extend outward at a right angle thereto. The projections in
70 the end blocks are formed, preferably, upon the inner side only, as the outer faces of the end blocks are in contact with the ends of the body. The intermediate blocks 14 are however preferably formed with a projection
75 at each side, as best illustrated in Fig. 1.

If found desirable, the lower ends of the springs may be securely attached to the bottom of the body and the upper ends to the
80 blocks, or the said springs may be so attached that the said blocks may be readily removed when desirable.

The upward movement of the blocks 14 is limited by stops 17, secured to the inner face of the side pieces, and the lower ends of the
85 said stops are preferably inclined or beveled outward and upward. The upper edges of the blocks 14 are correspondingly beveled or inclined, as best shown in Fig. 2.

The several blocks are connected by means
90 of a zinc or other equivalent metal plate 18, which plate is corrugated, as best shown in Fig. 2, and is attached to the several blocks, being so shaped as to conform to the circular contour of the upper edge. The corrugated
95 zinc plate 18, which constitutes the lower rubbing-surface, is made to extend from one end block to the other. The upper rubber is of cylindrical form, and consists of two heads 19 and one or more interior partitions 20, of like
100 contour with the heads, which partitions serve to brace or strengthen a series of semi-circular or cylindrical strips 21, which strips, extending from head to head, constitute the

outer surface of the upper rubber. The strips 21 are suitably spaced, and are attached to the heads 19 and the partitions 20 in such manner that their convex surfaces constitute the outer surface of the upper rubber.

The upper rubber, above described, is adapted for rotary movement within the body of the machine, and to that end is rigidly secured to a shaft 22, which shaft is journaled in the end pieces of the said machine, as best illustrated in Fig. 1. In attaching the upper rubber to the shaft 22 a suitable aperture is made in each end of the rubber, and the said aperture is surrounded by a metal collar 23, secured to the inner surface of the several heads 19 and 20, and a key 24 is ordinarily driven between one surface of the shaft and the opposing surface of the collar to a firm contact with both of said surfaces, as shown in Fig. 1; but I desire it to be understood that I do not confine myself to this means of attachment, as other equivalent means may be employed without departing from the spirit of the invention.

The rear end of the shaft 22 is journaled in a bushing 25, which bushing may be attached to the inner face of the rear end piece if the shaft is not carried through the same, or to the outer face of the end piece if the shaft is carried to the outer side. The front end of the shaft is journaled in the collar or bushing 26, attached to the outer face of the front end piece, and the said forward end of the shaft is made to project beyond the said collar, being provided with a crank 27, whereby the shaft is rotated.

When the upper and lower rubbers are in their normal positions, the lower rubber is in close proximity to the upper rubber, as best shown in Fig. 2.

In operation sufficient water and washing material are placed in the body of the machine and the clothes are thrown in, whereupon the

upper or cylindrical rubber is rotated or rocked by turning the crank 27, and the clothes are carried downward and rubbed by contact with the corrugated surface of the zinc plate 18 and the convex surfaces of the several strips 21.

It will be observed that the bottom rubber of the machine, consisting of the corrugated zinc or metal plate, is essentially stationary, and that the necessary pressure between the lower rubber and the upper cylindrical rubber is automatically furnished by the springs 15. The work of the machine is thus so simplified that only one hand is needed to manipulate the upper roller, the other hand being left free, with which to guide in or lift out the clothes in the process of washing them.

If in practice it is found desirable, the space between the upper and lower rubbers may be made wider on the left than upon the right side for the better reception of the clothes.

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

A washing-machine consisting in the rectangular tub or box 10, having a dish-shaped bottom 12, the transverse spaced blocks 14, shaped to conform to said bottom and having central transverse projections 16 on their lower sides, the springs 15, on which said projections rest, the semicircular sheet 18 of corrugated zinc extending from end to end of the box and secured to the concave upper faces of said blocks, the rotary rubber formed of centrally-apertured disks 19 20, and spaced bars 21, secured thereto, the shaft 22, the collars 23, and bearings in the ends of box for said shaft, substantially as set forth.

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Witnesses:

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