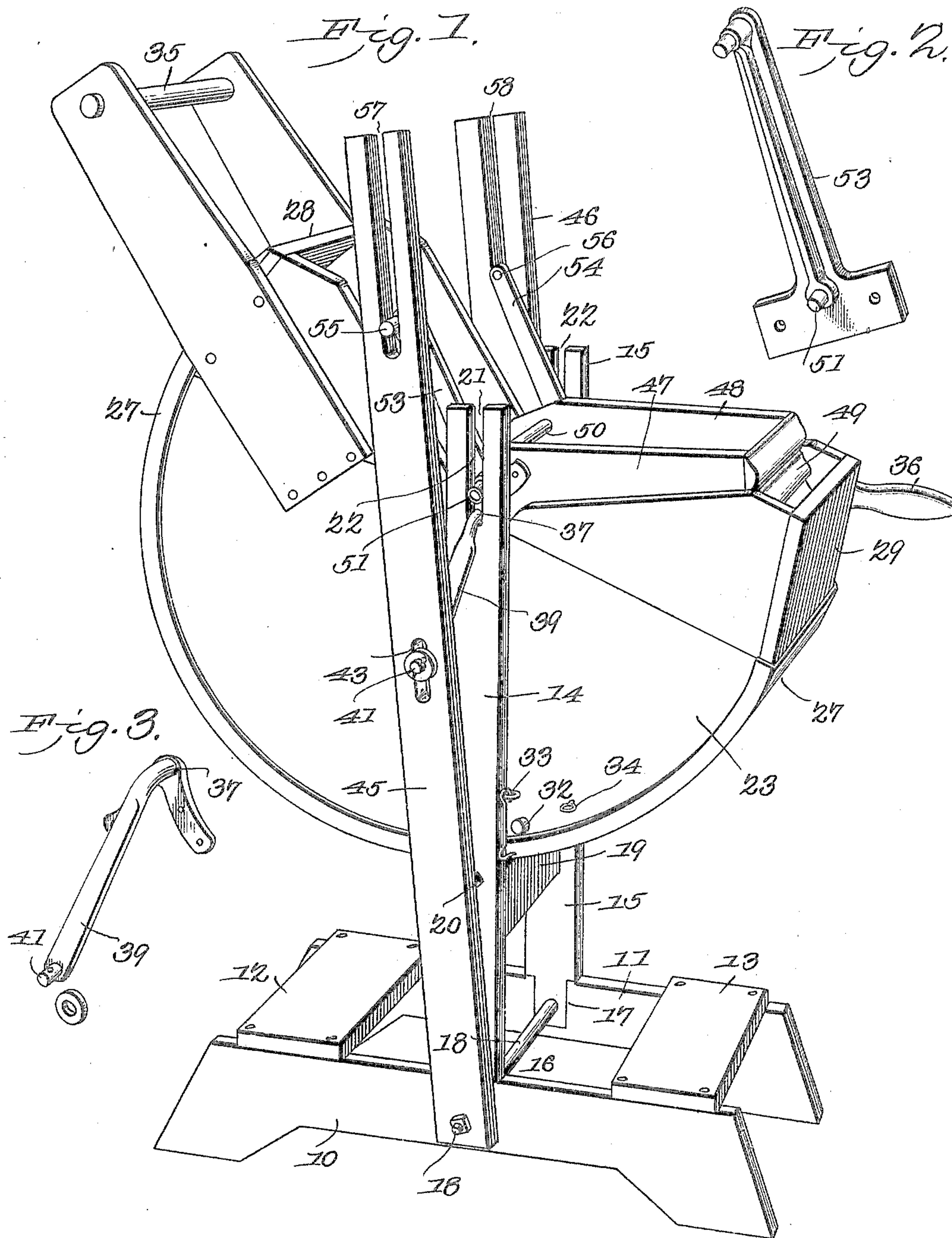


No. 804,453.

PATENTED NOV. 14, 1905.

S. O. COLLINS.
WASHING MACHINE.
APPLICATION FILED SEPT. 14, 1904.

2 SHEETS—SHEET 1.



Witnesses
E. J. Stewart
C. H. Woodward

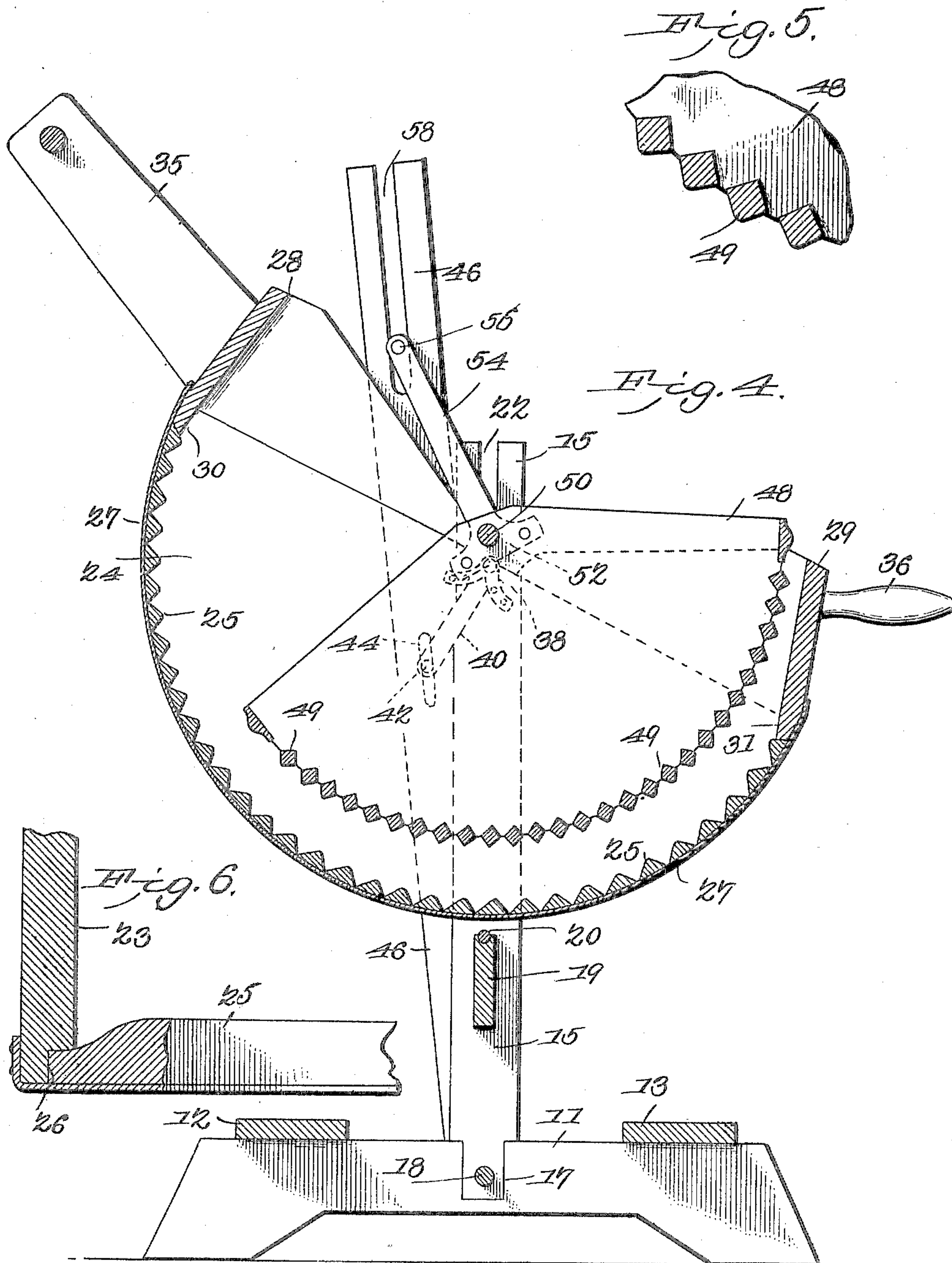
Seth O. Collins, Inventor,
by *C. A. Snow & Co.*
Attorneys.

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Attorneys

UNITED STATES PATENT OFFICE.

SETH O. COLLINS, OF ROXBURY, OHIO.

WASHING-MACHINE.

No. 804,453.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Application filed September 14, 1904. Serial No. 224,436.

To all whom it may concern:

Be it known that I, SETH O. COLLINS, a citizen of the United States, residing at Roxbury, in the county of Morgan and State of Ohio, have invented a new and useful Washing-Machine, of which the following is a specification.

This invention relates to washing-machines, and has for its object to improve the construction and increase the efficiency of devices of this character.

With these and other objects in view, which will appear as the nature of the invention is better understood, the same consists in certain novel features of construction, as herein after fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which corresponding parts are denoted by like designating characters, is illustrated the preferred form of embodiment of the invention capable of carrying the same into practical operation, it being understood that the invention is not necessarily limited thereto, as various changes in the shape, proportions, and general assemblage of the parts may be resorted to without departing from the principle of the invention or sacrificing any of its advantages.

In the drawings thus employed, Figure 1 is a perspective view of the improved device. Fig. 2 is an enlarged detached perspective view of one of the rubber-member-supporting brackets. Fig. 3 is a similar view of one of the supporting-brackets of the tub. Fig. 4 is a sectional side elevation. Fig. 5 is an enlarged sectional detail illustrating the rubber-member construction. Fig. 6 is an enlarged sectional detail illustrating the tub construction.

The improved device comprises a supporting-frame provided with vertical slotted standards, a semicircular tub or receptacle for the clothes provided with a fluted bottom and rocking upon said standards, and a semicircular rubber member having fluted periphery and mounted within the receptacle and connected to the same by vibrating arms whereby the rocking movement of the receptacle will impart a combined rocking and rolling movement to the rubber member.

The supporting-frame consists of spaced horizontal side members or feet 10 11, connected by transverse braces 12 13 and vertical standards 14 15, halved, as at 16 17, centrally in the members 10 11 and connected by a transverse tie-rod 18. The standards 14 15 are connected by a transverse brace member

19 and tie-rod 20 and are provided with longitudinal slots or guideways 21 22 in their upper ends, the guideways being preferably lined with sheet-metal wear-plates.

The tub or receptacle is formed with spaced semicircular sides 23 24, connected by V-shaped ribs 25 with the pointed sides inward to form an internal rubbing-surface, as shown in Fig. 4. The ends of the slats are halved into a rabbet 26 in the curved edges of the tub ends, as illustrated in Fig. 6, and the whole covered and supported by a sheet-metal covering 27, of zinc or other suitable non-corrosive material. Attached to the upper edges of the side members 23 24 of the tub are extension members 28 29, secured to the side members, as at 30 31, and extending nearly to the center, as shown. The outer portions of the extension members are inclined inwardly to decrease the area of the receptacle at the top, and thus assist in confining the water and preventing overflow during the operation, as hereinafter described. The receptacle will be provided with a draw-off plug 32, through which to remove the water after the washing, the plug being so placed that it will come at the lowest point when the tub is tilted into a certain predetermined position, and to hold the tub in this position during the time the water is being discharged a hook 33 and screw-eye 34 is provided, respectively, in the standard 14 and end member 23. An operating-handle 35 is attached to the receptacle at one side, and a smaller handle 36 for assisting in lifting the same is attached at the other end. Connected to the receptacle centrally of the side members 23 24 are bearings 37 38 for engaging the slots 21 22 and supporting the receptacle for rocking upon the standards, the bearings having integral arms 39 40, terminating in lateral bearings 41 42 for engaging slots 43 44 in side bars 45 46, the latter preferably pivoted at their lower ends upon the protruding ends of the tie-rod 18, the function of the vibrating bars to be hereinafter explained.

The rubber member consists of two spaced semicircular end members 47 48, connected around the curved sides by transverse slats 49, the slats being square in cross-section and attached cornerwise to the end members, as shown in Figs. 4 and 5, to produce the requisite abrasive surface toward the rubbing-surface of the tub-bottom. The side members of the rubber member are connected by a brace rod or round 50 and also provided with

outwardly-extending bearings 51 52 centrally of the end members 47 48 for resting in the slots 21 22 in the standards 14 15 above the receptacle-bearings 37 38. The bearings 51 52 are formed upon brackets 53 54, attached to the side members 47 48, and extended upwardly and terminating in lateral bearings 55 56, extending into longitudinal slots 57 58 in the upper ends of the vibrating bars 45 46.

It will be noted by this arrangement that when the tub is oscillated upon its bearings 37 38 by operating the handles 35 or 36, or both, the integral arms 39 40 will vibrate the bars 45 46 and through the connection of the same with the rubber member by the arms 53 54 will cause the latter to rock alternately upon its bearings 51 52. Thus the rubbing slats 49 of the rubber member move over the clothes in one direction while the rubber slats 25 of the tub move under the clothes in the reverse direction and produce a very thorough and complete rubbing action. It will also be noted that the rubber member is free to rise to any extent within the range of the slots in the members 14 15 and 45 46, so that it rests at all times by its full weight upon the clothes in the receptacle, thus producing a constant and uniform pressure thereon and automatically adapting itself to the quantity of clothes.

The parts are easily separable for cleansing or repairs. The rubber or agitator member can be easily reversed in position or thrown over upon the handle 35 to enable the clothes to be placed in the tub.

A very effectual and varied action may be obtained with a machine thus constructed, as the stroke of the tub and rubber member may be extended to any desired length within the range of the connecting means, so that a short rapid stroke or a longer slower stroke may be made to exactly suit the motion to the quality or condition of the clothes, the short rapid strokes rubbing the clothes as between the hands or by hand upon the washboard and the longer strokes causing the clothes to be rolled over and over and exposing every part to the rubbing action.

The slats 49 are spaced apart to a sufficient extent to permit the water to freely pass between them as the rubber member is agitated, and thus materially increase the cleansing action by causing the water to be forced laterally

from the clothes and carrying the loosened dirt with it.

If it is desired to increase the pressure of the rubber member, this can be very readily accomplished by pressing downward upon the rung 50 with one hand while operating the tub by either of the handles 35 or 36, or two persons can operate the machine, one at each of the handles.

The machines can be constructed in any desired size and may be large enough to require steam or other power to operate them, as for laundry work.

If required, the action may be accelerated by vertically actuating the handle member 35 or 36 with one hand and the other hand engaging one of the vibrating bars 45 or 46 and exerting a horizontal vibrating motion thereto. Thus the action may be varied according to the weight or strength of the operator.

The operation is easy and natural and requires a comparatively small power, as will be obvious.

After the washing is completed the rubber member is turned over upon the handle 35 and the tub tilted until the end of extension member 29 is substantially vertical and the tub secured in that position by engaging the hook 33 in the screw-eye 34. A wringer can then be attached to the end member 29.

Having thus described the invention, what is claimed is—

In a washing-machine, a base, standards rigid therewith and having their upper terminals slotted, side bars pivotally connected with the base and having their intermediate portions and upper terminals slotted, a suds-box disposed between the standards, crank-arms secured to the suds-box and engaging the slots of the standards and having lateral pintles engaging the intermediate slots of the side bars, a rubber arranged in the suds-box, and brackets carried by the rubber and having pintles to engage the slots in the upper terminals of the standards and the side bars.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SETH O. COLLINS.

Witnesses:

LIZZIE M. ELDRIDGE,
ELLIE C. ROUSE.