(No Model.)

2 Sheets—Sheet 1.

A. GREEN.

WASHING MACHINE.

No. 356,832.

Patented Feb. 1, 1887.

Fig. 1.

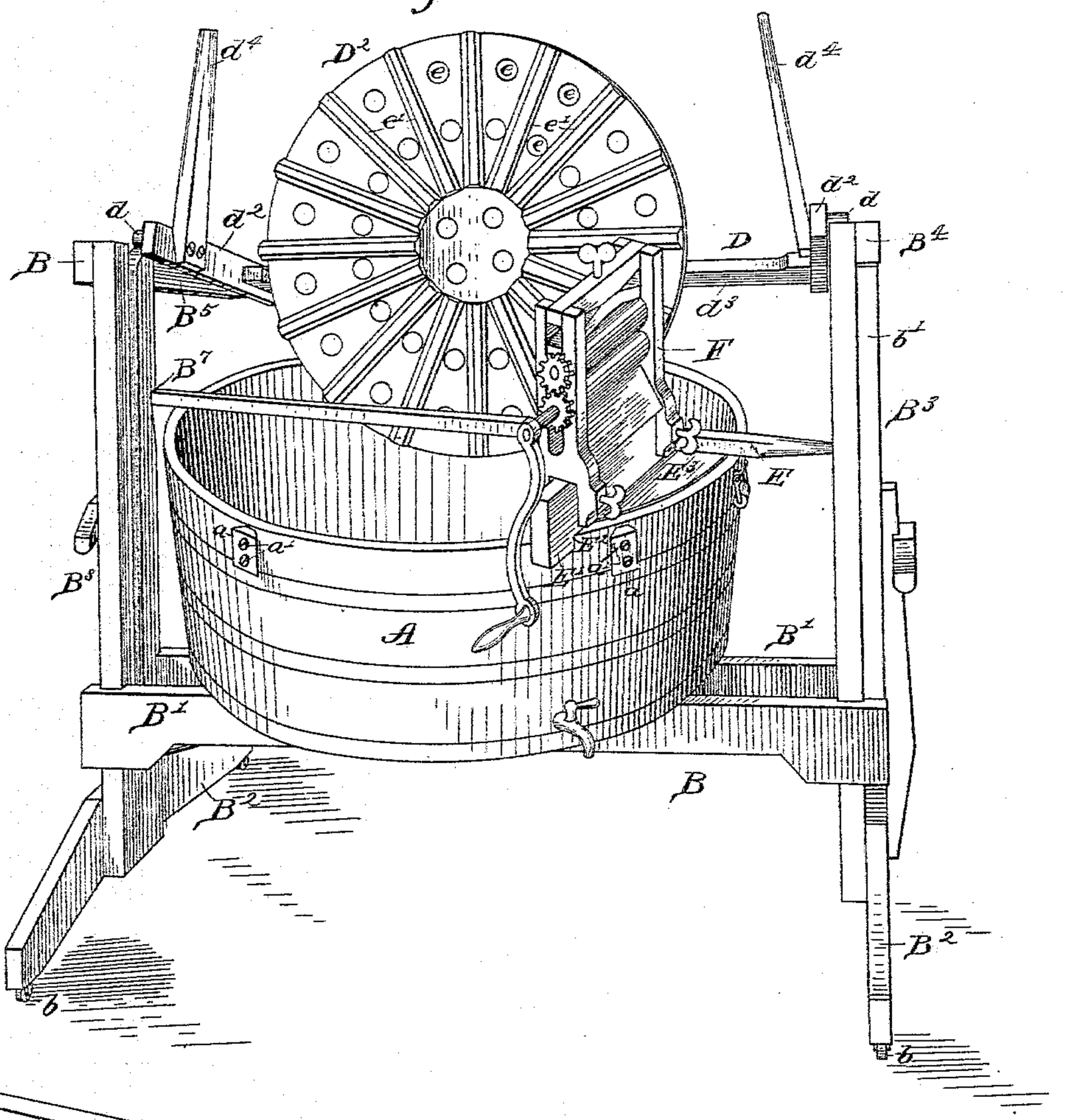
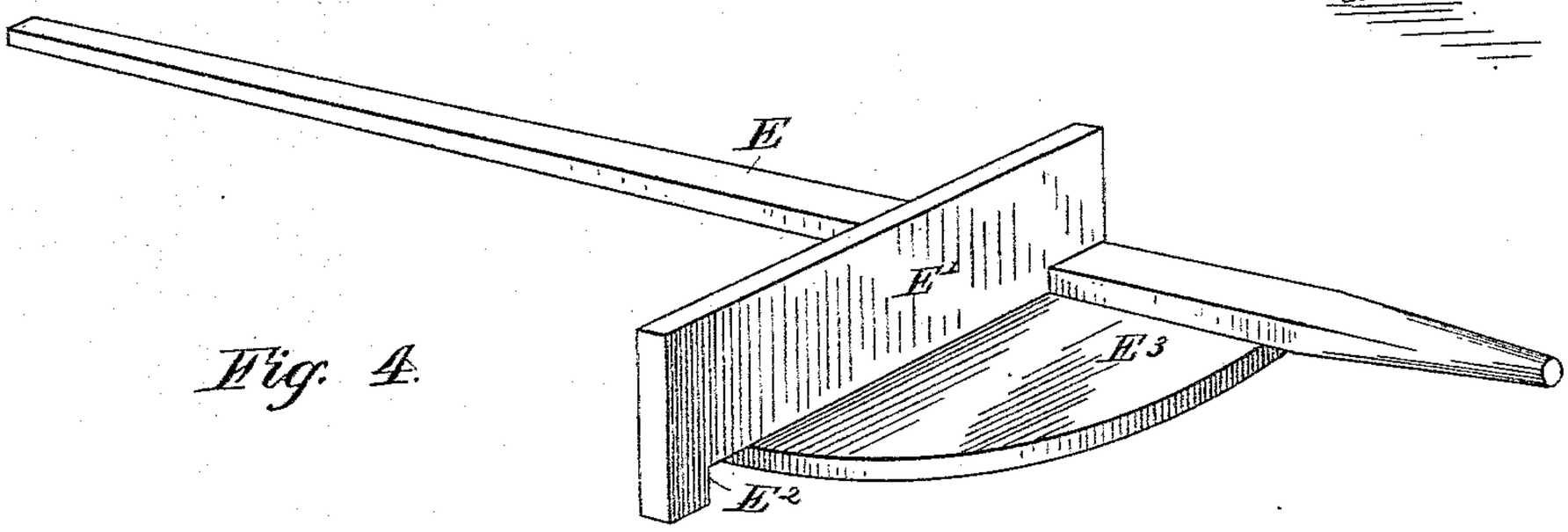


Fig. 4.



WITNESSES

Percy C. Bowen.

John Siggers.

INVENTOR

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By C. A. Snow & Co

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(No Model.) 2 Sheets—Sheet 2.

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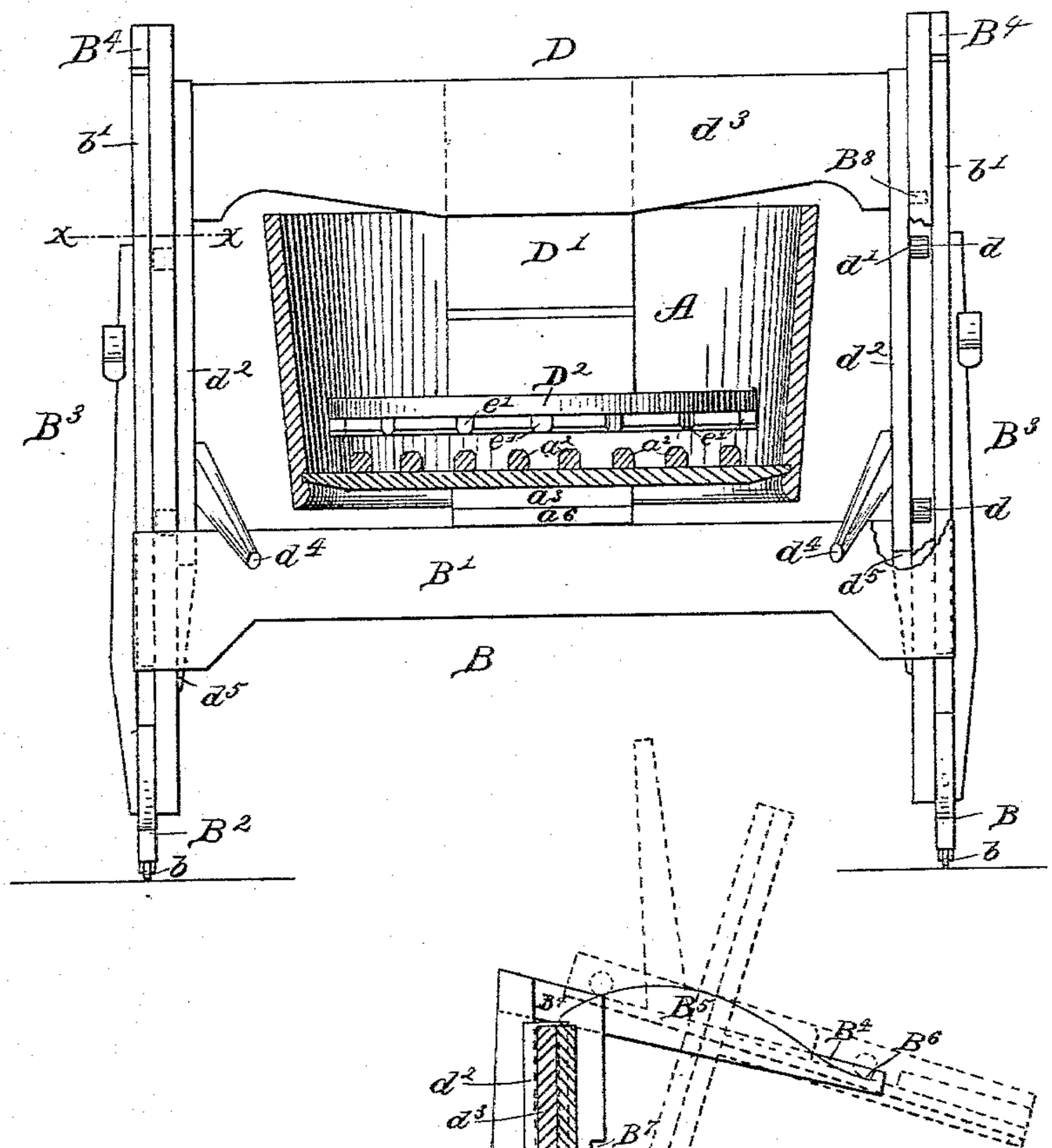
Fig. 2.



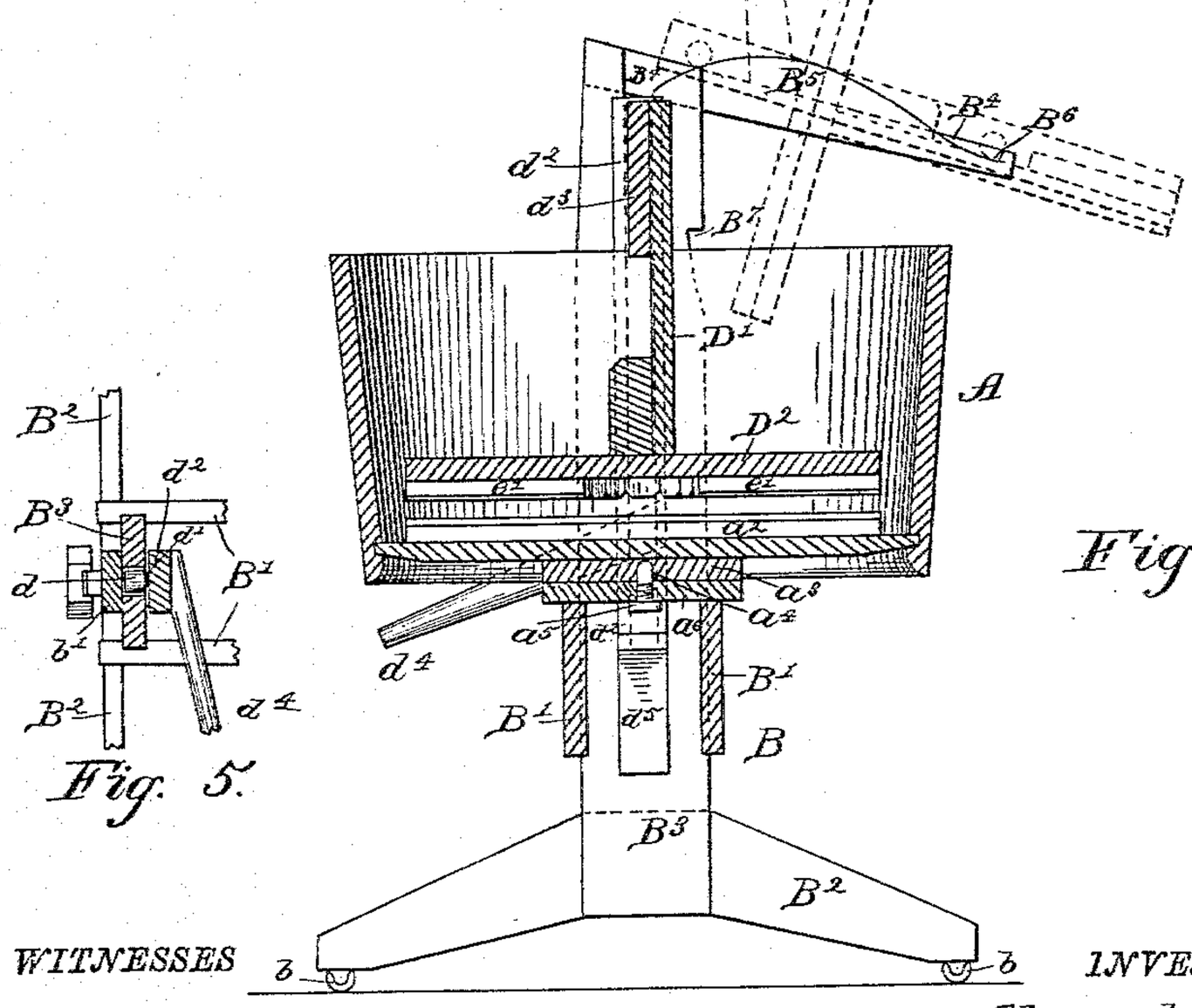


Fig. 3.

Fig. 5.

WITNESSES

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UNITED STATES PATENT OFFICE.

ALEXANDER GREEN, OF DELTA, OHIO, ASSIGNOR OF ONE-HALF TO JOSEPH A. SIMMONS, OF SAME PLACE.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 356,832, dated February 1, 1887.

Application filed July 24, 1885. Serial No. 172,549. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER GREEN, a citizen of the United States, residing at Delta, in the county of Fulton and State of Ohio, have invented a new and useful Improvement in Washing-Machines, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in washing-machines for cleansing fabrics and clothing; and the novelty consists in the construction, combination, and arrangement of the various parts for service, substantially as hereinafter set forth, and particularly pointed out in the claims.

The object of my invention is to provide a machine which will thoroughly and quickly cleanse wearing-apparel, clothing, and fabrics from dirt, &c., which shall be strong and durable in construction, cheap of manufacture, easy and efficient of operation, and permit of the easy and ready attachment of a wringing device.

In the drawings hereto annexed, Figure 1 is a perspective view of a washing-machine embodying my invention with the rubbing-disk thrown back out of use and a wringer in position over the clothes-receptacle. Fig. 2 is a side elevation showing the tub in section with the wringer attachment removed. Fig. 3 is a vertical cross-section. Fig. 4 is a perspective view of the wringer-supporting bar detached from the machine. Fig. 5 is a cross-section on the line *x x*, Fig. 2.

Like letters of reference denote like parts in all the figures of the accompanying drawings, referring to which—

A designates the clothes-receptacle or containing-vessel, preferably cylindrical in form, and mounted so as to be capable of revolving upon a supporting-frame, B.

The vessel A is provided with a series of handles, *a*, around its circumference, near the upper edge thereof, the handles being preferably formed from blocks of wood or other material, with beveled edges, and secured to the vessel by screws *a'* or otherwise. The vessel is further provided with a series of parallel cleats, a^2, secured upon the bottom thereof, and at a distance from each other, to form a rubbing-surface for the clothing, &c. The vessel may be an ordinary wash tub now in general use, and provided with a draw-off cock or faucet at the bottom thereof. A plate or disk, a^3, is secured upon the under surface of the bottom of the containing-vessel, at or near the middle thereof, and is provided with an aperture or opening, a^4, which constitutes a bearing for the reception of a pivot, a^5, secured to a plate or disk, a^6, similar to the plate a^3, and secured or fastened to cross-bars B' B' of the supporting-frame B.

The frame B comprises two transverse foot-pieces, B^2 B^2, having casters *b b* at each end, vertical uprights or standards B^3 B^3, fastened by screws or otherwise secured to the foot-pieces B^2 at their lower ends, and longitudinal cross-bars B' B', arranged on each side of the standards B^3 and extending across from one to the other, the ends of said cross-bars B' having recesses formed therein adapted to embrace or fit against the said standards, to which they are secured by bolts or screws.

The standards or uprights are slotted for nearly their entire length, and a strip or bar, *b'*, is secured on the exterior face of the standards, over the slotted portion, to provide a guideway for the passage of rollers *d d*, mounted upon pins or studs *d' d'*, secured at a distance from each other to an upright or standard, d^2, of a rubbing-disk-supporting frame, D. These pins or studs *d'* provide gudgeons for the rubbing-disk frame, the rollers being employed to reduce friction and allow the easy raising of the said frame.

The frame D comprises two vertical uprights, d^2 d^2, arranged at each side of the containing receptacle or vessel A and alongside of and parallel with the standards or uprights B^3 when in their normal position, and connected together at their upper ends by a longitudinal cross-bar, d^3, mortised in or otherwise suitably secured to said standards d^2 for strength and stability. A strong broad standard, *d'*, is secured at its upper end to the cross-bar d^3, and, depending downwardly therefrom, is provided with a rubbing-disk, D^2, suitably secured thereto and supported at a proper height above the bottom of the vessel thereby. The lower ends of the standards d^2 extend down to about the plane of the bottom of the containing-vessel and rest upon blocks d^5, se-

cured to the inner surface of each of the uprights B^3, the standards being of such a length and the blocks secured at such a distance from the top of the vessel A as to suspend the rubbing-disk D^2 therein at a sufficient height above the plane of rubbing-surfaces of the cleats therein to bring the fabrics under the action of said rubbing-disk when the vessel A is being revolved by the hands of an operator. The disk D^2 is provided with two or more series of apertures or openings, *e*, arranged circumferentially around the same, and with a series of cleats, *e'*, secured upon the bottom thereof, which radiate from the center to the circumference of the rubbing-disk.

To the upper ends of the standards B^3, and extending from their rear sides, are the downwardly-inclined arms B^4, which are provided on their inner opposing sides with curved guide-plates B^5, forming guides or ways, the upper edges of which are in communication with the vertical slots in the standards. At the lower outer ends of the arms B^4 are recesses B^6.

Projecting from the front sides of the uprights d^2, near the lower ends thereof, are handles d^4. By taking hold of these handles the frame D can be raised vertically in the frame B, the rollers *d* of the gudgeons working in the vertical slots to prevent binding and reduce friction. When the upper pair of rollers reach the guide-plates, they proceed outwardly over the curved upper edges thereof and tilt the frame D, and finally rest in the recesses B^6 and support the frame D in a substantially horizontal position above the tub or vessel, and, as the rubbing-disk D^2 is suspended from frame D, said disk is supported in nearly a vertical position at a suitable distance from the bottom of the tub and at one side thereof, as shown, thus permitting free access to the contents of the tub.

The operation of washing the clothes is as follows: The clothes and a suitable quantity of boiling suds are placed in the tub and the rubbing-disk is lowered on the clothes, pressing them between it and the bottom of the tub, which is then rotated partly back and forth by the operator seated before the machine by taking hold of the handles secured to the sides of the tub. This moves the clothes back and forth through the suds and subjects them to friction, thoroughly loosening, dissolving, and expelling the dirt in a short time, when the rubbing-disk is then raised from the tub and supported, as before described, and the clothes are then removed from the tub and wrung. On the rear side of one of the standards B^3, slightly above the level of the upper edges of the tub, is a notch, B^7, and in the inner side of the opposide standard B^3, on a line with the notch, is an opening, B^8, (see Fig. 2, dotted lines,) in which is inserted the pointed end of a bar, E. This bar extends across the top of the tub when the rubbing-disk is out of the way, and has its free end secured in the notch B^7. Secured to the bar E near its pointed end is a board, E', which extends at right angles to the bar, and when the latter is in a horizontal position on the top of the tub the board E' is turned edgewise in a vertical position, and has at its outer lower edge a notch, E^2, that fits over the top edge of the tub, and thus securely supports the board E' thereon. E^3 represents a board that is secured to the lower edge of the board E', and extends laterally therefrom and fills the space between the board E' and the side of the tub, the outer edge of board E^3 being curved to fit the side of the tub, as shown. This board E^3 serves to fill up the space between the board E' and the tub, and not only brace the attachment from lateral movement, but also prevent the clothes as they are wrung from falling back into the tub. On the top edge of the board E' is secured a wringer, F, which may be of any preferred construction, the details of which form no part of my invention. The clothes are passed between the rollers of the wringer, which expels the moisture from the clothes, which water finds its way back into the tub.

The wringer is usually attached to its support, and when desired to detach the wringer from the tub the free end of the bar E is first released from the notch B^7 and then the pointed end of said bar withdrawn from the recess B^8, when the wringer attachment can be readily taken from the tub and the operation of washing the clothes proceeded with, as before.

To apply the attachment the pointed end of the bar E is first introduced into the opening B^8 (seen in dotted lines, Fig. 2) of one of the standards B^3, the opposite end of the bar resting on the side face of the other standard B^3, above the notch B^7. The notched portion E^2 of the standard E' is then brought up against the tub by drawing onto the bar E, when, by pushing said bar down, it is caused to engage in the notch B^7. The bar E has a slight spring action imparted to it by reason of the fitting of its pointed end in the opening B^8, so that when the end of the bar is pushed down within the notch B^7 the board E' is drawn, or rather sprung, inward to catch against the tub.

I have shown rollers *d* provided on the frame D, so as to reduce friction and enable the parts to work easier; but it will be apparent that rigid studs or trunnions may be provided for the same purpose.

Having thus described my invention, I claim—

1. The frame having the standards, the tub secured on the frame, and the attachment for securing the wringer to the tub, said attachment comprising the bar E, connected to the vertical standards, and the bar E', secured to bar E and supported by the tub, as set forth.

2. The combination, with the standards and the tub, of the bar E, attached to the standards, the bar E', resting on the tub, and to which the wringer is clamped, and the board E^3, fitting in the space between the bar E' and the side of the tub, for the purpose set forth.

3. The combination, with the tub and the

supporting-frame, of the rubbing-disk and its frame mounted in said supporting-frame, and outwardly-extending arms attached to the supporting-frame for supporting the disk when the same is thrown up out of the way, as set forth.

4. The tub and the supporting-frame having the open bearings, in combination with the arms communicating with the bearings, and the rubbing-disk frame provided with gudgeons to work in the bearings of the supporting-frame and also over the said arms to suspend the rubbing-disk frame out of the way, as set forth.

5. The combination, with the tub and supporting-frame for the same, provided with a perforation, B^8, and a notch, B^7, of the attachment for securing the wringer to the tub, said attachment comprising a bar, E, having its ends inserted into the perforation and notch, respectively, and a bar, E′, for supporting the wringer, as set forth.

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

ALEXANDER GREEN.

Witnesses:
LUCIUS H. UPHAM,
ELIZABETH UPHAM.