No. 850,291. PATENTED APR. 16, 1907.

F. BRUCKER & A. L. STUMP.

WASHING MACHINE.

APPLICATION FILED APR. 28, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

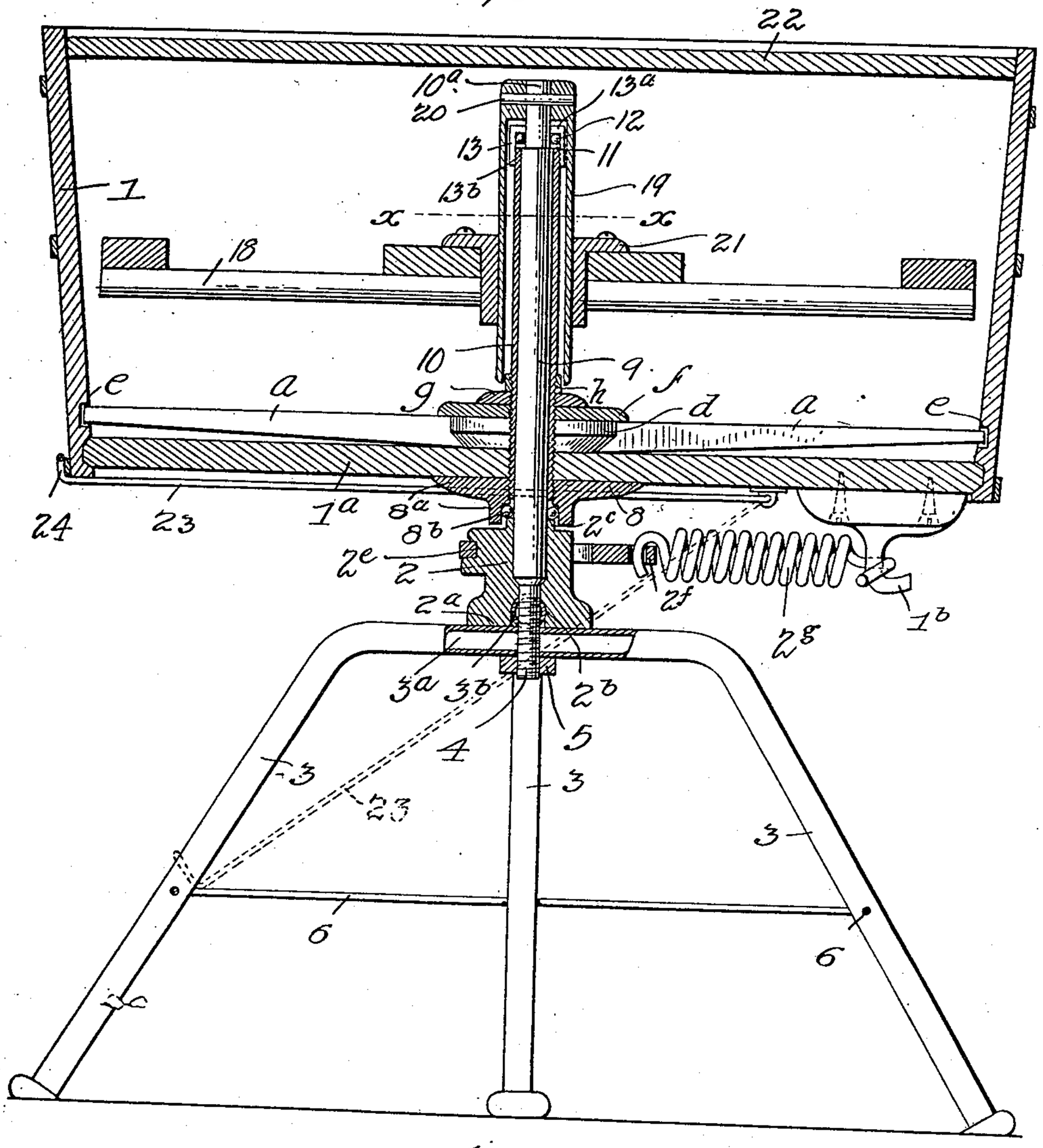
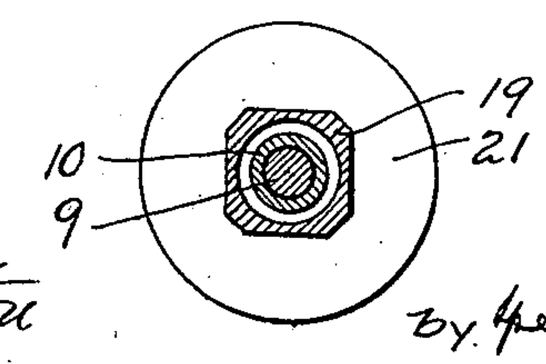


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

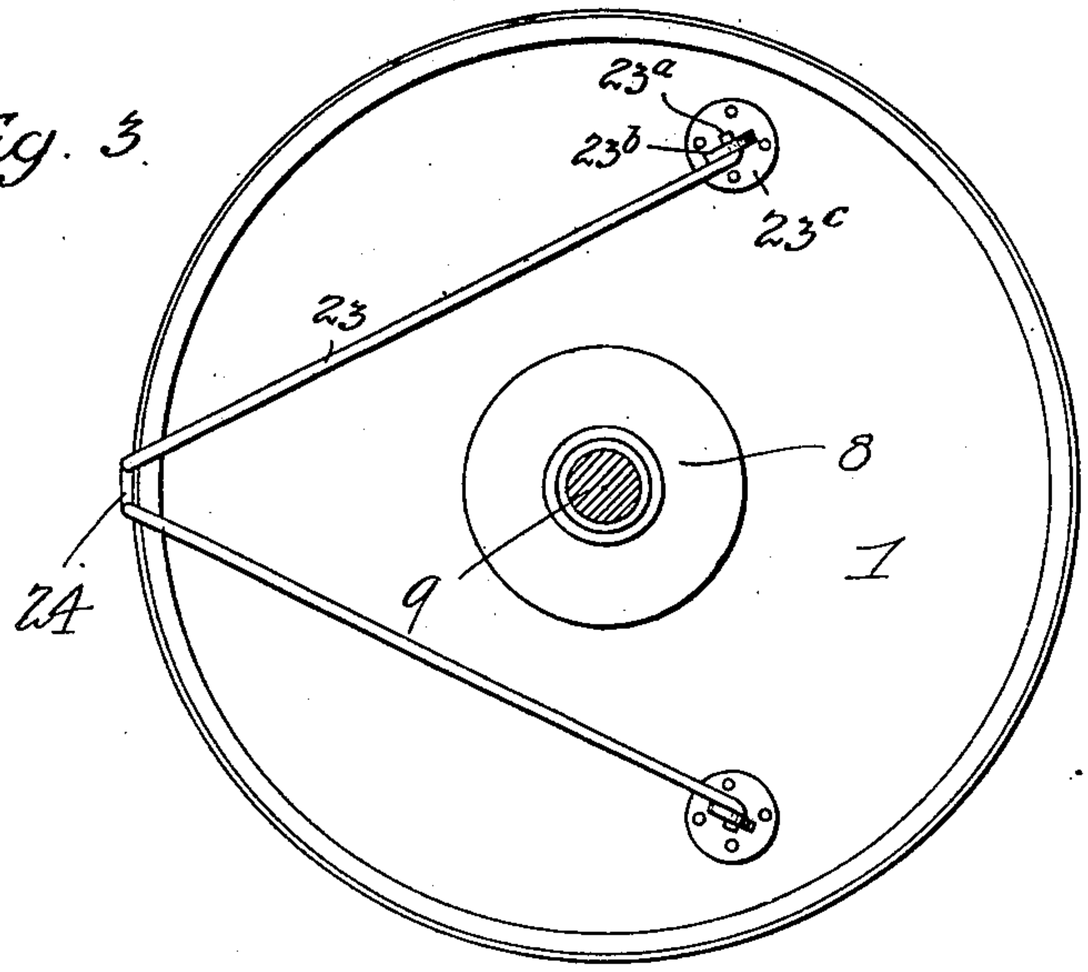

Fig. 4.

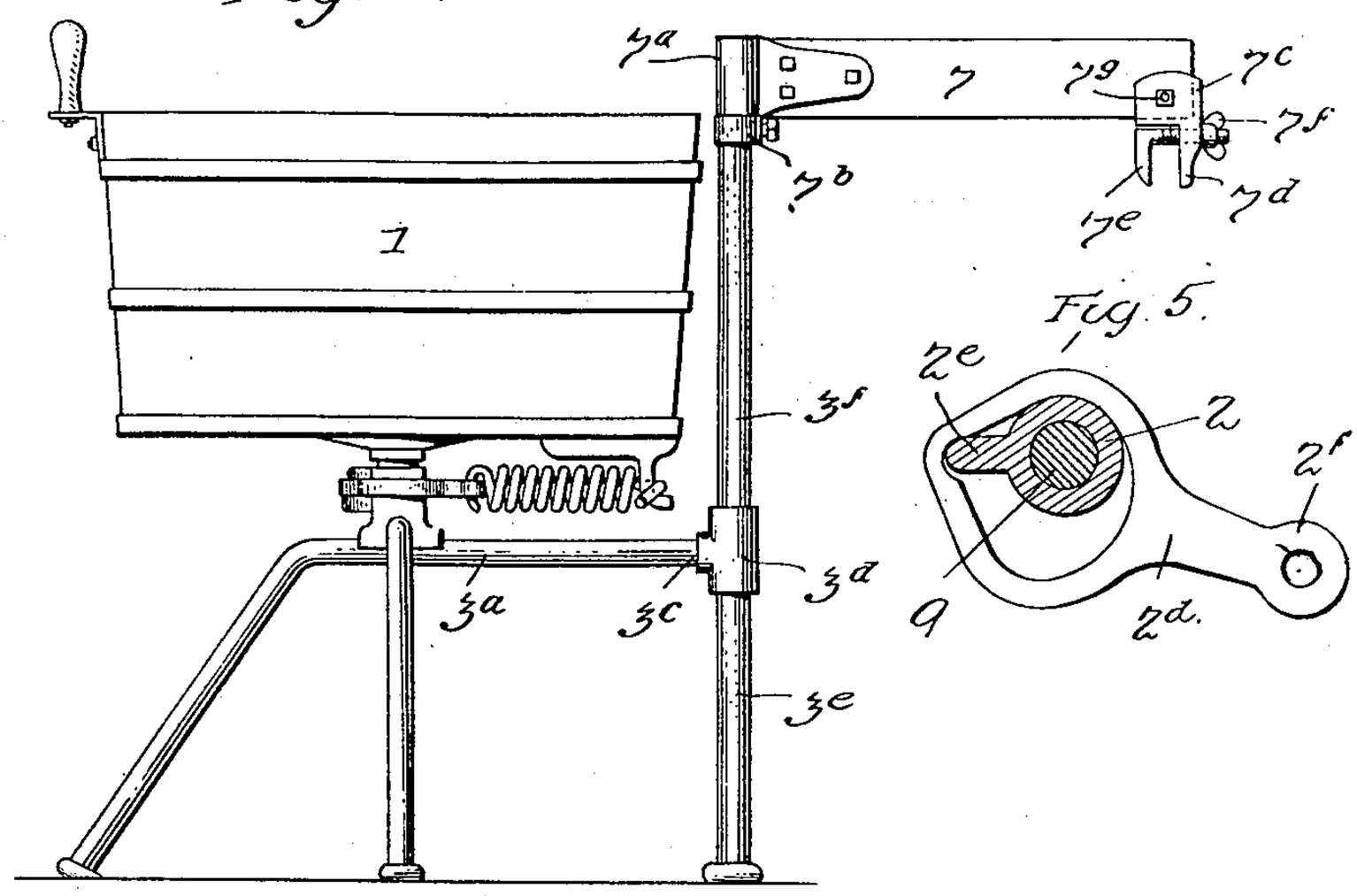

Fig. 5.

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UNITED STATES PATENT OFFICE.

FRANCIS BRUCKER AND ABRAHAM L. STUMP, OF SHELBY, OHIO.

WASHING-MACHINE.

No. 850,291. Specification of Letters Patent. Patented April 16, 1907.

Application filed April 28, 1905. Serial No. 257,951.

To all whom it may concern:

Be it known that we, FRANCIS BRUCKER and ABRAHAM L. STUMP, citizens of the United States, residing at Shelby, Ohio, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification.

Our invention relates to improvements in washing-machines of that type in which a suitably-supported tub is rotated or oscillated by the operator and the clothes are subjected to the action of a rubber held within the tub against rotary movement.

We have aimed to improve the machine in its various structural details with a view to increased simplicity, economy of manufacture, and durability; and to this end the invention includes the various features of construction and arrangement of parts hereinafter described, and particularly pointed out in the claims.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation. Fig. 2 is a detail section on line x x of Fig. 1. Fig. 3 is a bottom view of the tub. Fig. 4 is a modification, and Fig. 5 is a detail view of the hub and rocking arm.

In the drawing the ordinal 1 designates the tub, which is rotatably mounted in the manner hereinafter specified upon the hub 2 of a stand or support. This hub 2 has two semicircular recesses or grooves 2^a and 2^b in its under side, which cross each other at right angles and lie in different planes and are adapted to receive the horizontal portions 3^a and 3^b of the supporting members or legs 3. These members are preferably formed of tubular sheet metal, and the horizontal portions 3^a and 3^b are held in the recesses 2^a and 2^b by the extension 4 of the post 9, which passes through openings in the parts 3^a and 3^b, where they cross each other, and carries at its lower end a clamp-nut 5. The legs or supporting members 3 are tied together or braced by a continuous rod of wire or the like 6, passing through openings in the legs.

The rod 9 is encircled by a sleeve 10, which passes through the bottom 1^a of the tub, where it detachably engages a plate 8, preferably by a screw-threaded connection, as shown. Encircling the sleeve above the bottom is a member or piece d, rabbeted out to receive the inner ends of the rubbing-ribs a, which have their outer ends seated in the grooves or recesses e in the staves of the tub. Above the piece d is placed a plate f, which is clamped in position by a washer g and screw-threaded collar h, threaded upon the sleeve 10, by which all of the aforesaid parts may be securely clamped together and a water-tight joint effected. The rod 9 is reduced at its upper end, where it carries a bearing-ring 11, upon which rests a series of balls 12. A cap 13 has an inwardly-extending flange 13^a at its upper end adapted to rest upon the tops of the balls, while its lower end 13^b is threaded to engage the sleeve 10. From this construction it will be seen that the weight of the tub is supported by the antifriction-bearing thus provided at the upper end of the sleeve 10 and may be freely rotated thereupon.

In order to prevent any binding or friction between the sleeve 10 and spindle 9, at the lower end a space is provided between the annular flange 8^a of the plate 8 and the spindle 9, in which space is located a series of balls 8^b, these being supported at the bottom by a bearing-surface 2^c, formed as an upward extension of the member 2. Encircling the hub 2 is a yoke 2^d, which has a central opening larger than the hub, as shown in Fig. 5. A recess is formed in the wall of said opening at one side, into which projects a rib 2^e on the hub. An arm 2^f projects from the opposite side of the yoke, to which arm is connected one end of a spring 2^g, the other end of which engages a hook or projection 1^b, depending from the bottom of the tub. By this arrangement the tub is allowed a certain amount of free movement before the spring begins to act, making its operation easier.

The spindle 9 terminates a short distance below the top of the tub, and its reduced upper end 10^a receives the upper end of a sleeve 19, which is rigidly secured to said reduced upper end in any suitable manner, preferably by having a pin 20 passed through alining openings in the sleeve and reduced end. The rubber-arms 18, which may be formed in any suitable manner, are secured to a collar 21, which has a vertically-sliding but non-rotatable connection with the sleeve 19, which is secured by making the sleeve 19 and collar 21 non-circular in cross-section or providing a splined connection between the parts. The result of this is that while the rubber 18 is capable of vertical adjustment to correspond to the amount of clothes placed underneath the same it is yet held against being rotated as the tub is oscillated. By this ar-

rangement we secure a non-rotatable rubber without having means for holding it projecting down through the top of the cover, and are thus enabled to provide a cover 22 intact throughout its entire surface, avoiding any openings through which steam may escape or the necessity of packed joints to prevent the escape of steam.

Beneath the bottom of the tub we provide a bail 23, which has its angular bent ends 23^a. pivotally secured in eyes 23^b, carried by plates 23^c, secured to the lower face of the tub-bottom. The bail is preferably of substantially V shape, and its central portion has an angular portion 24, designed to be sprung over or into engagement with the lower hoop of the tub, as shown. Thus when the tub is being oscillated the bail rotates therewith and is out of the way. When, however, the clothes are properly washed and it is desired to hold the tub stationary, the bail may be released at its end, freed from the tub, and dropped down into the position shown in dotted lines to engage one of the angular supporting members. The tub will thus be securely held against rotation while the wringer-board is being attached and thereafter braced, and thus excessive strain removed from other parts.

In the modified form of stand we extend one of the members 3^a out horizontally to a point outside of the periphery of the tub, as shown at 3^c, at which point it is provided with a T-coupling 3^d, to one arm of which is connected the leg portion 3^e, while the other arm carries the upwardly-extending member 3^f, which extends upward slightly above the top of the tub. A wringer-board 7 has a socket member 7^a secured to one end and designed to rotatably engage the upper end of this member 3^f, being held against vertical displacement thereon by a collar 7^b.

The opposite or free end of the wringer-board carries a clamp 7^c, secured in place by bolt 7^g and having a rigid jaw 7^d and an adjustable jaw 7^e, capable of being adjusted and clamped in any desired position by a thumb-nut 7^f. By this arrangement the wringer-board may be swung over and its clamp secured to the edge of the tub, thus serving the double purpose of holding the tub stationary and the wringer-board in position to have a wringer clamped thereto.

Having thus described our invention, what we claim is—

1. In a washing-machine, the combination with a rotary tub and stationary rubber, of a stand or support comprising a hub having horizontal grooves or recesses on its lower face, and supporting members clamped within said recesses, substantially as described.

2. In a washing-machine, the combination with a rotary tub, of a stand or support comprising a hub having open horizontal recesses or grooves in the bottom thereof of different depths, and supporting members having horizontal portions crossing each other and resting in said grooves or recesses with means for clamping them therein, substantially as described.

3. In combination, a stand or support, a vertical rod rigidly carried thereby, a tub, a tubular sleeve passing through and secured centrally to the bottom of the tub and encircling the rod, an antifriction-bearing between said sleeve and the upper portion of the rod, a second sleeve secured to the rod above said bearing and depending outside of the first-named sleeve, and a rubber having a sliding and non-rotating connection with the depending portion of said second-named sleeve, substantially as described.

4. In combination, a stand having a hub, a tub rotatably mounted on said hub, a yoke pivotally held at one side of said hub and having a limited rocking movement thereon, an arm extending from the opposite side of said yoke and a spring connection between said arm and the tub, substantially as described.

5. In combination, a stand having a hub, a tub rotatably mounted on the hub, a rib projecting from one side of the hub, a yoke loosely encircling the hub and having a recess engaged by said rib, an arm projecting from the opposite side of said yoke and a spring connecting the arm with the tub, substantially as described.

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

FRANCIS BRUCKER.
ABRAHAM L. STUMP.

Witnesses:
H. W. HILDEBRANT,
ESTELLA CLOWES.