

L. CHURCHMAN.
Washing-Machine.

No. 226,280.

Patented April 6, 1880.

Fig. 1.

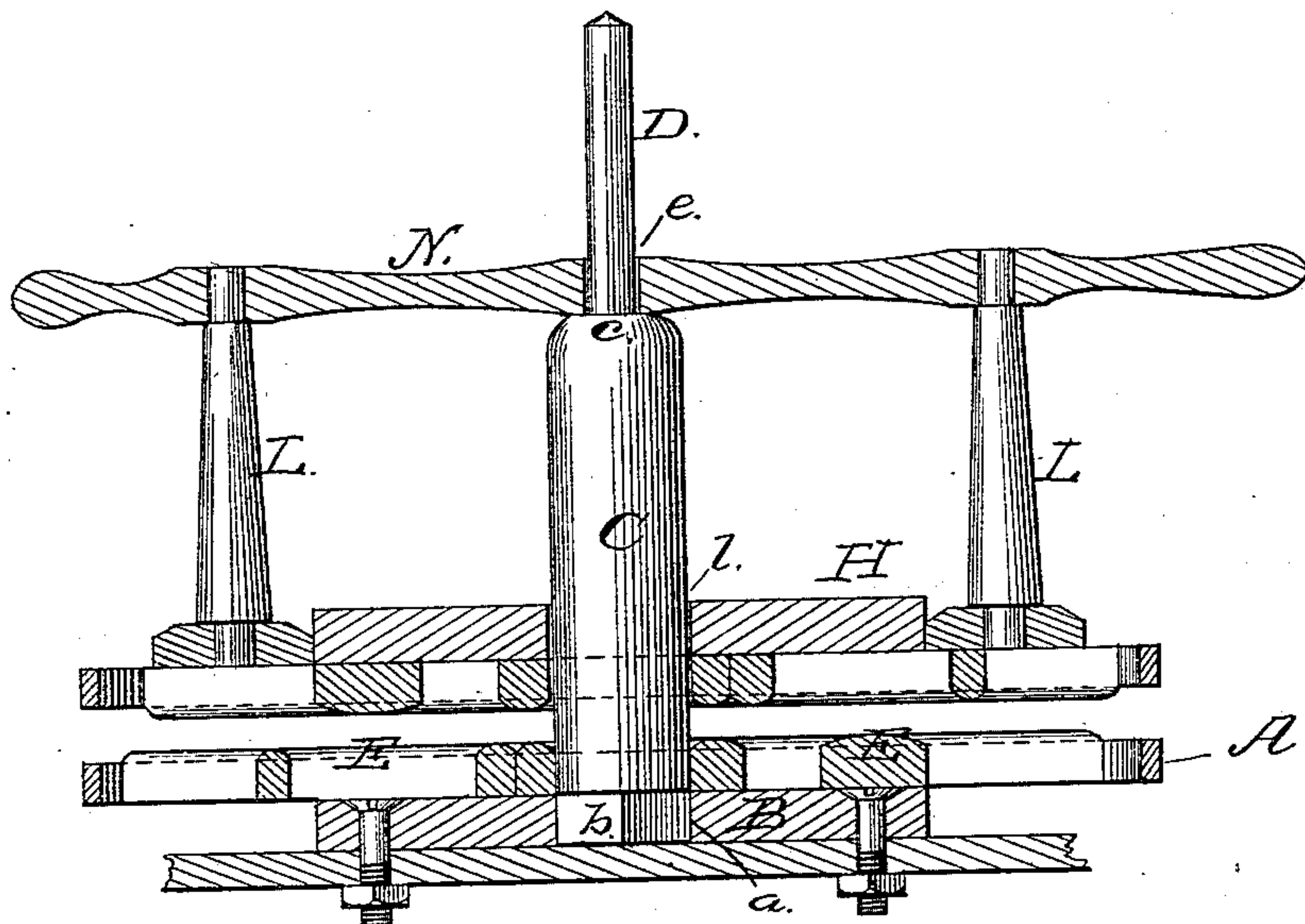
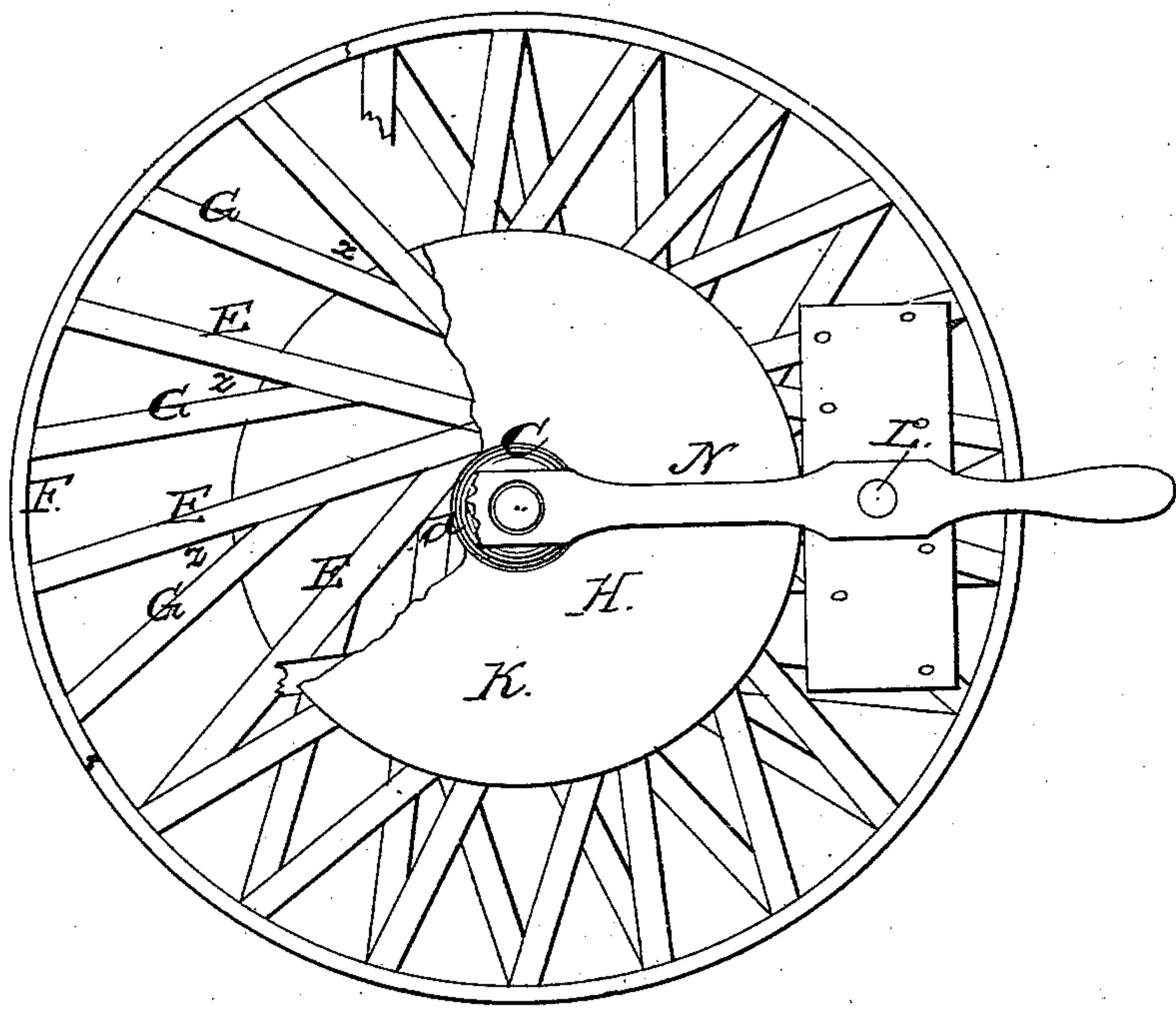


Fig. 2.



WITNESSES

John A. Ellis.
F. J. Masi.

INVENTOR

Leister Churchman
by E. W. Anderson
his ATTORNEY

UNITED STATES PATENT OFFICE.

LEISTER CHURCHMAN, OF BRYAN, OHIO.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 226,280, dated April 6, 1880.

Application filed January 6, 1880.

To all whom it may concern:

Be it known that I, LEISTER CHURCHMAN, of Bryan, in the county of Williams and State of Ohio, have invented a new and valuable Improvement in Washing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a vertical central section of my improved washing-machine, and Fig. 2 is a top view of the same.

This invention has relation to horizontally-rotating washing-machines.

The nature of the invention consists in a washing-machine composed of a lower rubber having a base-block and an upper rubber having a cap-block, and both rubbers provided with tangential main rubbing-spokes and half-spokes forming angles with said main spokes, so as to leave a series of spaces between the spokes extending from the cap and base blocks to the periphery of the rubbing-wheels, whereby the clothing enters the said spaces and is submitted to a wringing action, the upper rubbing-wheel being mounted upon a suitable bearing and rotated thereon, as hereinafter shown and described.

In the accompanying drawings, the letter A designates the lower or stationary rubber, having a circular base-block, B, which may be secured to the bottom of a tub by bolts. In the center of this base-block a mortise, *a*, is made to receive the square tenon *b* of the upright stem or central post, C, the body of which is enlarged, as shown, in order to provide sufficient bearing for the movable rubber to prevent wobbling and to obviate the tendency of the clothes to wind around and become fastened to the post. This post or stem is shouldered at *c*, and from this portion extends upward the handle-pivot D, which forms the upper portion of said post.

E designates the main rubbing-spokes, which are arranged around the base of the post so that their inner ends are tangential thereto and angular, as indicated at *d*, the succession of angular ends closing solidly about the post on the

base-block, as shown in the drawings. These tangential main spokes all trend to the rear as they extend outward to the rim F, to which they are attached, the margin of the base-block B being about midway from the post to the rim, so that beyond this margin the water can pass freely through the rubber.

Alternating with the main spokes are the half-spokes G, which are joined to the main spokes at about their middle portion, and are connected to the marginal portion of the base-block and to the rim, said half-spokes thus forming acute angles with the main spokes, and having still greater slope to the rear than the latter, as shown in the drawings. The rubbing-edges of these spokes are raised a little above the edge of the rim and are transversely rounded, so as to avoid abrading the clothes.

H represents the upper rubber, which is, like the lower rubber, in general form circular, and is provided with a cap-block, K, and with standards L, to support the horizontal handle N, which is perforated at *e* for the passage of the pivot-extension D of the post of the lower rubber, the body of said post passing through a circular opening or bearing, *l*, in the center of the movable rubber. This rubber is, therefore, designed to have a vertical sliding movement on the post as well as horizontal motion of rotation around it. The movable rubber is provided with tangential main rubbing-spokes and half-spokes, arranged in a similar manner to those of the lower rubber, but trending in the reverse direction.

The cap-block K is about equal in diameter to the lower bed-block, extending about half-way from the post-bearing to the rim of the upper rubber, so that the water will pass freely through the rubber around its outer portion.

It will be observed that the body of the post is longer than the height of the movable rubber, which is therefore, when in its lowest position, suspended on the shoulder *c* of the post, and its rubbing-surface somewhat raised above that of the lower rubber, so that these surfaces cannot come into harsh contact with thin goods or operate roughly when but two or three pieces are being washed.

This machine is simple in construction and effective in action. Being made mainly of

strips of wood and two circular blocks, it is easily and cheaply manufactured. When the rubber is rotated forward, or with the outer ends of the spokes following their inner ends, it tends to spread the clothes in the tub, and the chief motion is designed to be in this direction, as it produces a more uniform rubbing action on the mass and is more gentle. When the upper rubber is turned in the reverse direction it tends to gather the clothes toward the center, in which operation they are acted upon by the acute angles α between the half-spokes and main spokes, which effect a squeezing of the goods, which is regarded as important in securing the discharge of particles of soil.

The base and cap blocks K B being of less diameter than the rubbers A H, the clothes are permitted to pass through the spaces formed by the spokes and half-spokes, so that the clothing is pressed between them by the action of said rubbers and submitted to a wringing action.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

The washing-machine consisting of the lower rubber, A, having base-block B, and the upper rubber, H, having a cap-block, K, and both rubbers provided with tangential main rubbing-spokes and half-spokes forming angles with said main spokes, so as to leave a series of spaces between the spokes extending from the cap and base blocks K B to the periphery of the rubbing-wheels, whereby the clothing enters the said spaces and is submitted to a wringing action, the upper rubbing-wheel being mounted upon a suitable bearing and rotated thereon, as shown and described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

LEISTER CHURCHMAN.

Witnesses:

T. O. WILLIAMS,
J. T. MATTOCKS.