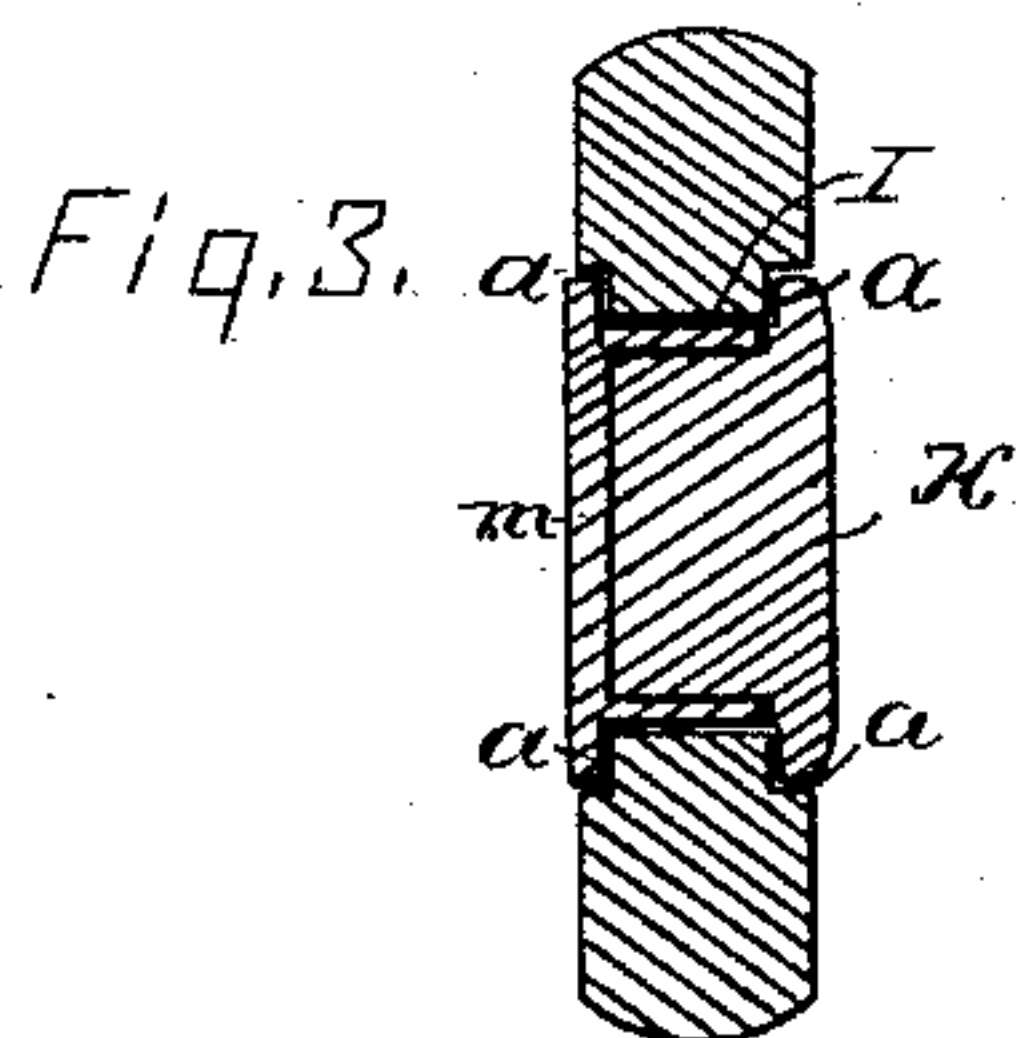
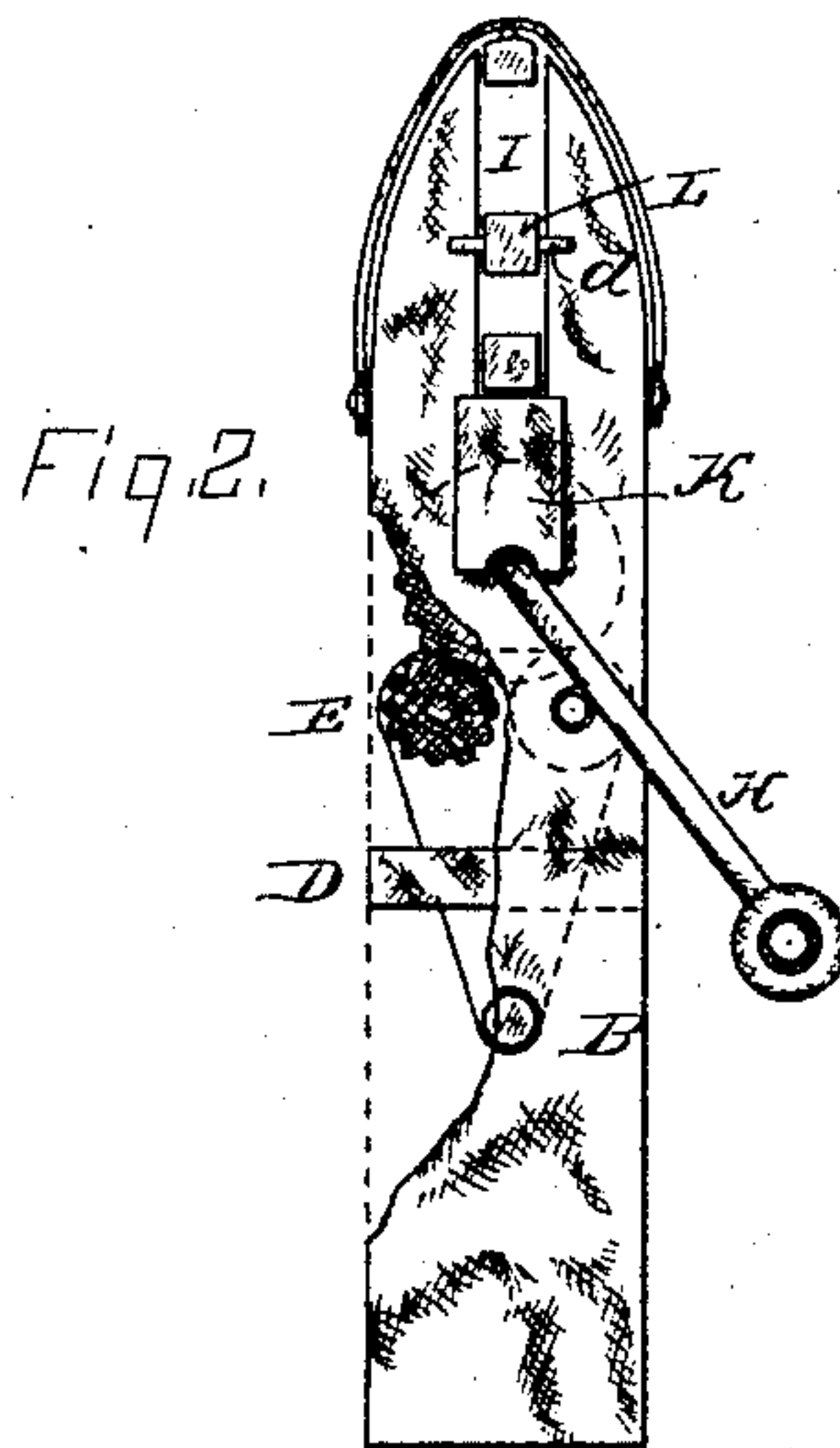
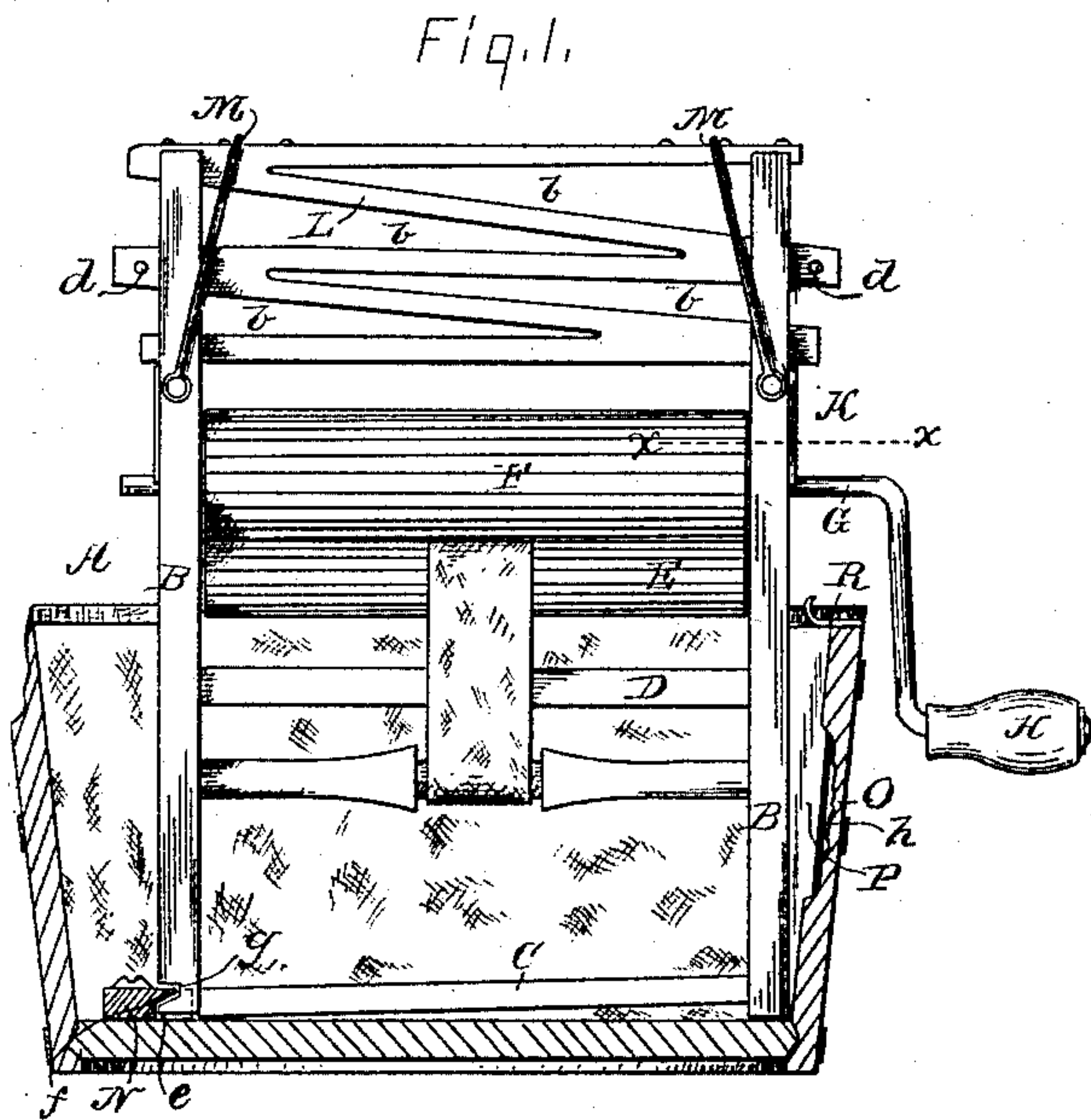


(No Model.)

W. J. BURNS.  
WASHING MACHINE.

No. 328,001.

Patented Oct. 13, 1885.



WITNESSES:

Cyrus Kehr  
Charles H. Roberts.

INVENTOR:

William J. Burns.  
By Manahan & Ward,  
His Attys

# UNITED STATES PATENT OFFICE.

WILLIAM J. BURNS, OF STERLING, ILLINOIS.

## WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 328,001, dated October 13, 1885.

Application filed October 17, 1884. Serial No. 145,796. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM J. BURNS, a citizen of the United States, residing at Sterling, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention has reference to that class of washing-machines in which longitudinally-fluted rollers are employed in the process of washing.

In the drawings, Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is an end view thereof. Fig. 3 is a section in the line *x x* of Fig. 1.

A is a frame of the machine, consisting of the end plates, B B, lower brace, C, and intermediate brace, D.

E E are fluted rollers journaled parallel and in the same plane in the end plates, B B.

F is a fluted roller rigidly affixed to the shaft G, which latter is also journaled in the end plates, B B, directly over a point midway between the journals of the rollers E E, and in such relation to the latter rollers that the lower side of the roller F extends somewhat between the rollers E E, and below the upper plane of the latter.

A crank, H, formed on the outer end of the axle G, furnishes means for rotating the roller F, and by reason of the clothes passing between such roller and the rollers E E such rotary motion is communicated to the latter rollers also.

Vertical slots I I are formed in the upper portion of the end plates, B B, extending from the shaft G to the upper extremity of such plates.

On the inner sides of the plates B B, and in the wall of the slots I I, are formed angular recesses *a*, extending the full length of such slots.

K K are head-blocks fitted at their lower ends to partially encircle the shaft G and vertically-recessed sides, so that they may pass

down the slots I I and their projecting corners overlap the walls of such slots. The blocks K K are made with an inner metallic face, *m*, which fits into and traverses the recesses *a* in the plates B B.

L is a wooden spring formed from a flat piece of wood by cutting slots *b* therein from each end, extending nearly through such spring. The spring L is placed edgewise in the slots I I, and held therein by the loops M M, pivotally attached at their lower ends to the edges of the plates B B. Short keys *d d* pass transversely through the center portion of the spring L outside of the plates B B, preventing any end movement of such spring. The lower edge of the spring L at each end rests upon the respective blocks K K, and there is thus afforded an elastic vertical adjustment to the roller F, so as to permit the passage thereunder of clothing of different degrees of thickness under substantially the same pressure. By moving the upper ends of the loops M M inward the pressure of the spring L can be increased, or such pressure may be varied at the respective ends of the spring.

N is a block having a lateral recess, *e*, with the flange *f* formed on the upper side of the rear wall of such recess.

The inner plate B is furnished on its outer face, near the lower end, with a transverse groove, *g*, fitted to receive the flange *f* on the block N.

O is a block having a groove, *h*, on its inner face, which block is fastened vertically to the inside of the tub.

P is a wedge-shaped block fastened to the outside of the outer plate B, and fitted to enter and be held tightly in the recess *h* of block O.

The block N is fastened at a proper point to the bottom of the tub. The bottom of the inner plate B is passed into the recess *e*, the flange *f* entering the groove *g*, and the other side of the machine is then forced down until the top of the block P is on a plane with the top of the block O, when a lock, R, pivoted on the top of the block O, is turned over upon the upper end of the block P, and the lower ends of the plates B B resting on the floor of the tub the machine is thus held rigidly in position.

It is obvious that the vertical compression at one end of the spring L will cause the oppo-



site end of the upper and lower leaves or slats of such spring to separate, and thus tend to relieve the pressure at such opposite end. This is important. In springs as heretofore used 5 the action at each end, by reason of the rigid cross-connection, was transferred to the other end, and therefore if the thick portion of the garment was at one end of the center of the rollers the opposite end of the upper roller was 10 raised correspondingly, whether the garment at such opposite end was or was not sufficient to fill the interval, while in my spring an extra degree of compression at one end of the spring tends to relieve or react against the 15 pressure at such opposite end, and thus proportionately close such other end and entirely avoid the said former difficulty of coincidently carrying up the end of the roller opposite to the end under which the thick portion of the 20 garment was being pressed, and thus adapting the interval at each end to the thickness of the garment there under pressure.

I am aware that springs of the construction

substantially of spring L have heretofore been shown, and I therefore do not claim such 25 spring, broadly, but only in the combination shown and claimed in this application.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

In a washing-machine, the combination of 30 the spring L, constructed with slots *b* therein, extending nearly through such spring, and beyond the center thereof, the frame A, the pivoted loops M M, the blocks K K, and rollers 35 E and F, such spring being placed parallel with said rollers and held as shown, whereby compression at one end of such spring is communicated to and tends to open the opposite end thereof, for the purpose mentioned. 40

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM J. BURNS.

Witnesses:

WALTER N. HASKELL,  
GEO. B. QUIGLEY.