

(No Model.)

2 Sheets—Sheet 1.

G. L. SHOREY.
WASHING MACHINE.

No. 440,204.

Patented Nov. 11, 1890.

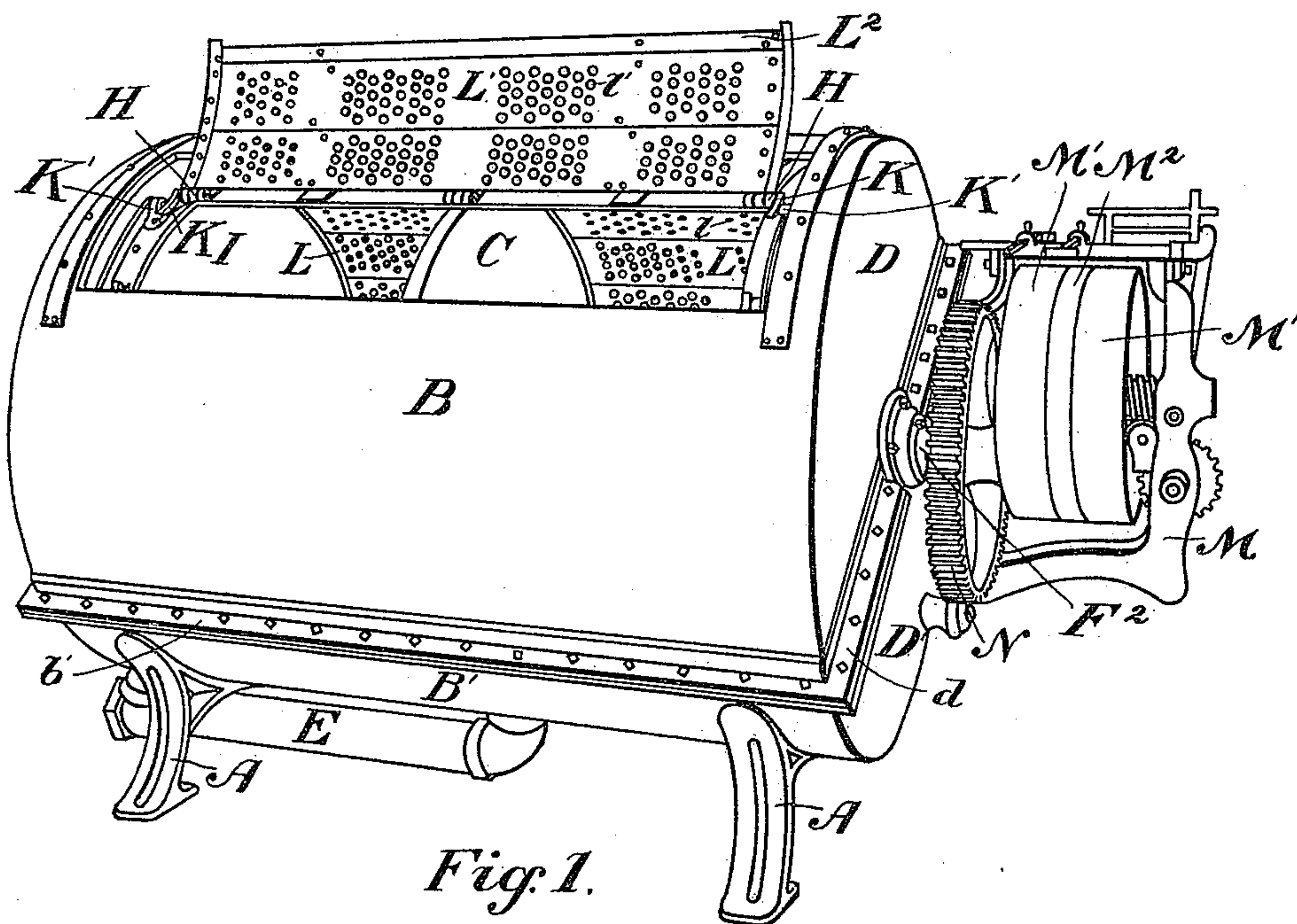


Fig. 1.

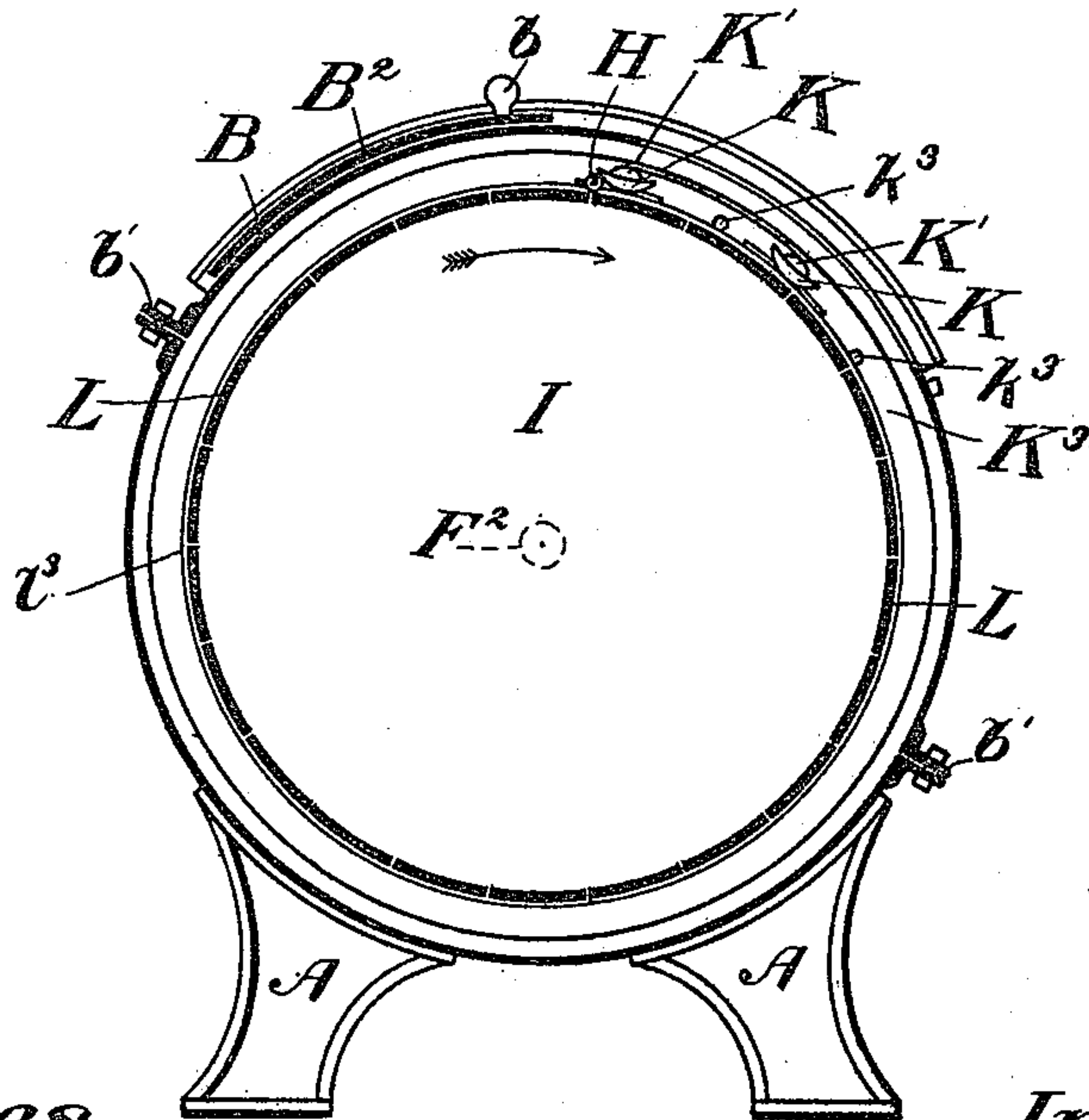


Fig. 2.

Witnesses

Albert E. Leach

M. H. Thompson.

Inventor

Geo. L. Shorey
by M. H. Thompson
Atty.

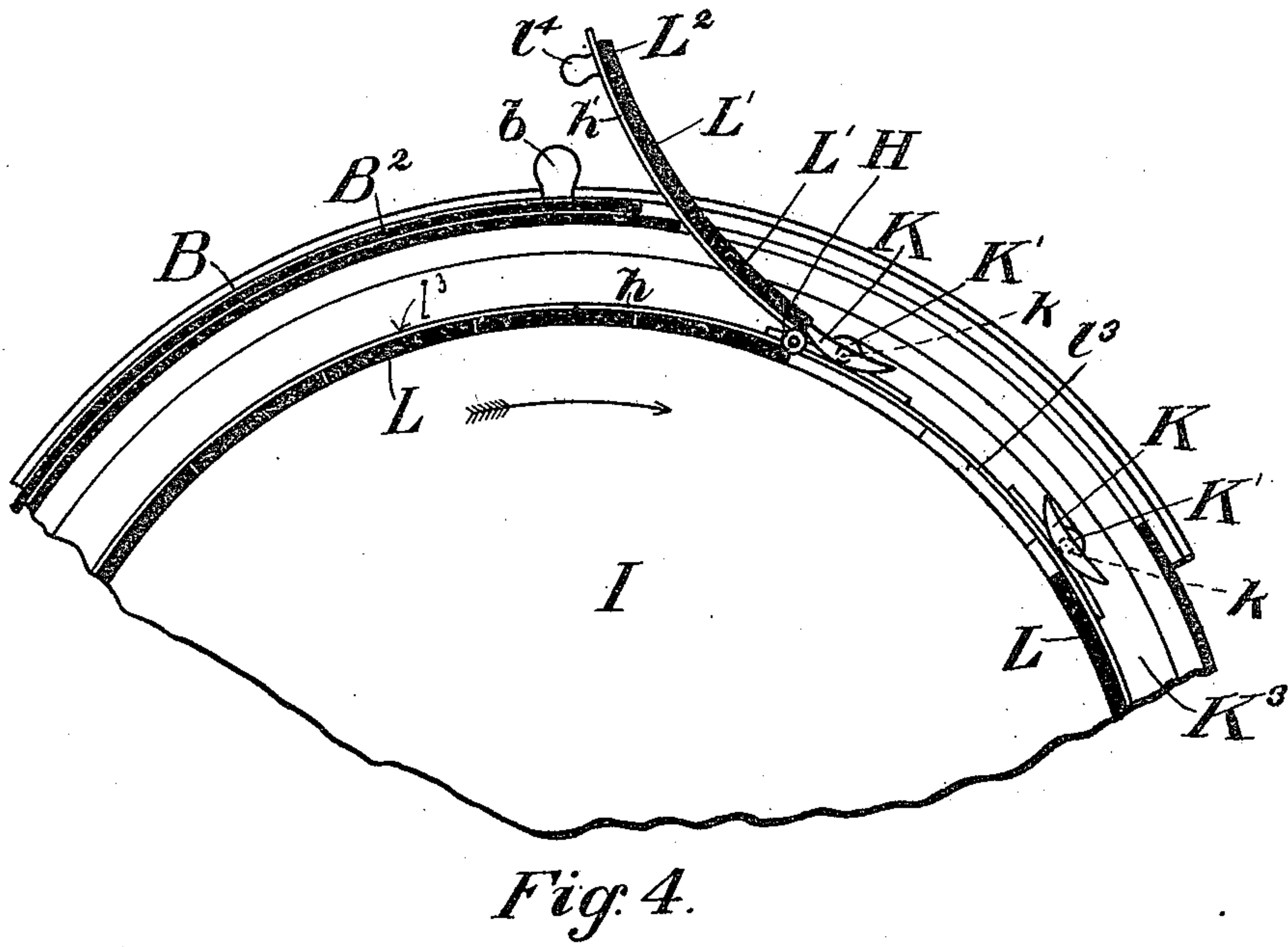
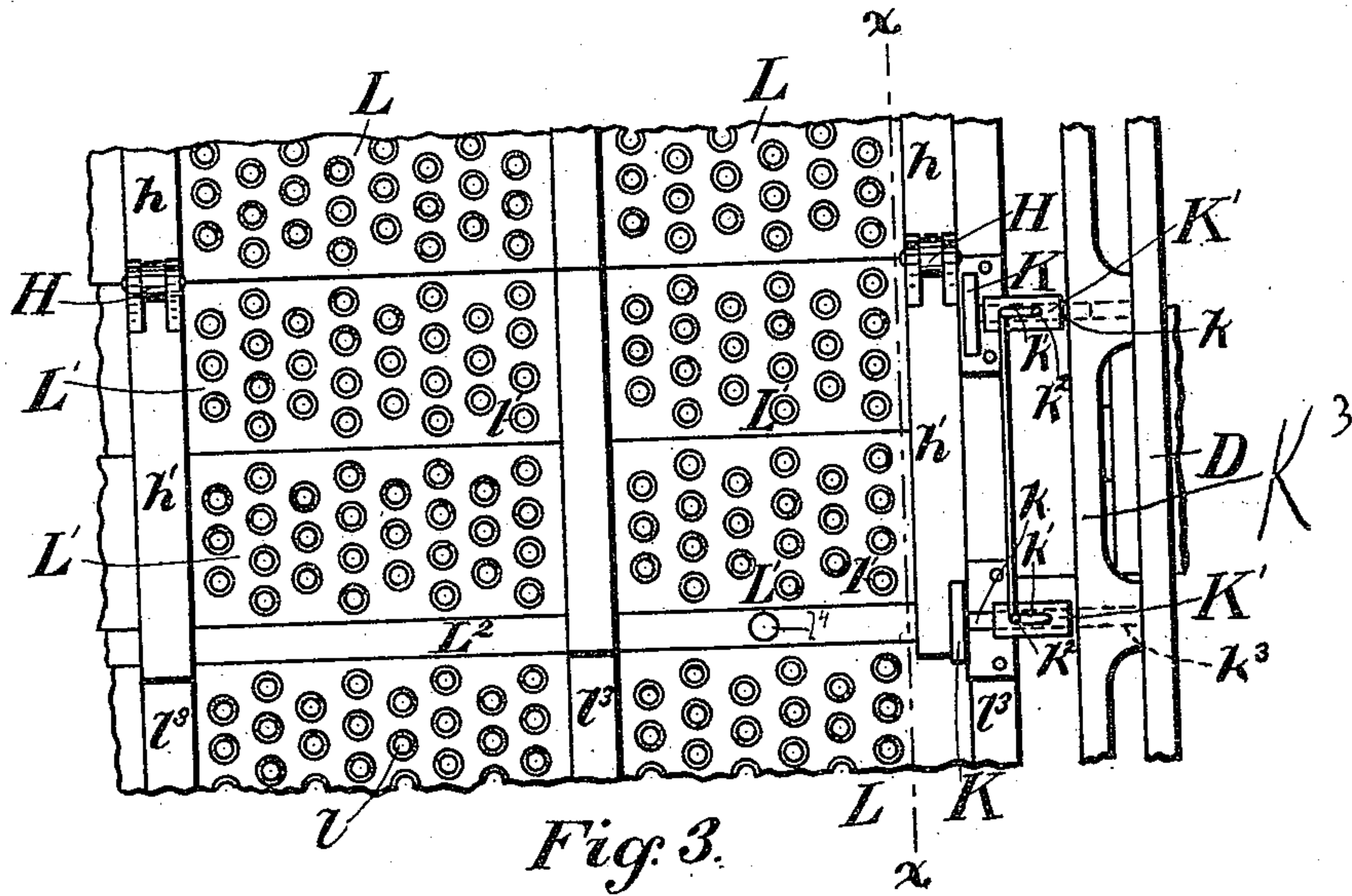
(No Model.)

2 Sheets—Sheet 2.

G. L. SHOREY.
WASHING MACHINE.

No. 440,204.

Patented Nov. 11, 1890.



Witnesses
Albert E. Leach
M. W. Thompson

Inventor
Geo. L. Shroy
by Mrs. W. J. Brown
Atty

UNITED STATES PATENT OFFICE.

GEORGE L. SHOREY, OF LYNN, MASSACHUSETTS.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 440,204, dated November 11, 1890.

Application filed April 7, 1890. Serial No. 346,853. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. SHOREY, a citizen of the United States, residing at Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Washing-Machines, of which the following is a full specification.

My invention relates to washing-machines of the class wherein an inner perforated cylinder containing the goods to be washed has a rotative movement within a stationary cylinder containing the water and suds; and it consists especially of improved locking devices applied to the inner cylinder, whereby when the floor of the said inner cylinder is open the inner cylinder is firmly locked to the outer, so that it is impossible to start the machine in this position. This fastening device, besides insuring the absolute safety of the operator, prevents all possibility of wrenching off the inside door by accidentally starting the machine while the door is open or before it is made fast, the construction being such that before the door can be opened at all the two cylinders must be locked together. Furthermore, the door is held firmly fastened when shut in such a manner that it cannot get loose while the machine is in operation.

Referring to the accompanying drawings, Figure 1 is a perspective view of a machine fitted with my improved devices, showing the door of the inner cylinder open. Fig. 2 is a sectional elevation of the same machine, showing the inner-cylinder door closed. Fig. 3 is an enlarged plan view of part of the inner-cylinder door and adjacent parts. Fig. 4 is an enlarged sectional view on line *x x*, Fig. 3, but with the door open.

The general form of machine to which my safety devices are applied is similar in construction to that shown and described in an application for Letters Patent of the United States, filed by me, for an improvement in washing-machines, the Serial number of which application is 346,854.

The machine is preferably made of metal throughout.

A A are the legs or standards supporting the outer cylinder, being bolted or otherwise firmly secured thereto. The outer cylinder, which is preferably of cast-iron, is made as herein shown, in two similar sections, an up-

per and a lower. The upper section consists of the semi-cylindrical portion B and the semi-circular ends D, and the lower section of the corresponding parts B' D' D', the two sections being bolted together along suitable side and end flanges *b' d*, as shown in Figs. 1 and 2, to form a water-tight receptacle.

The outer cylinder is provided with a door B², furnished for convenience with knobs or handles *b*, and sliding along the top of the cylinder under guides B³ on each side thereof. At the bottom of the outer cylinder is the water-pipe E, connecting with the interior, while an open-top water-gage G, also communicating with the interior through the hole *f*, is placed at the proper level upon the cylinder-head, showing the height of water in the cylinder and the condition of the suds without opening the door B².

The inner cylinder is suitably mounted on shafts F² at each end, which are journaled in bearings in the ends of the outer cylinder. The material of the inner cylinder, which comes in direct contact with the goods in washing, is preferably brass, the walls of the cylinder being in the machine herewith shown composed of staves L, perforated with a large number of holes *l*, and bound by bands *l'* over the end pieces I of the cylinder and to the central partition C.

The inner cylinder is given a rolling motion around its axis back and forth within the outer stationary cylinder by means of suitable reversing mechanism supported by the bracket M on one end of the outer cylinder. Fixed on the outer end of one of the shafts F² is the gear N, through which motion is given to the inner cylinder, first in one direction and then in the other. Any desired mechanism may be employed to accomplish this; but I preferably use mechanism similar to that shown and described in United States Letters Patent No. 246,916, granted to me September 13, 1881, for automatic reversing devices, to which reference is hereby made.

The door of the inner cylinder is made of staves L', similar to those forming the cylinder-walls, but shorter, being perforated with holes *l'* and mounted upon heavy brass bands, of which those at the ends and in the center form sections *h h'* to the hinges H, whereby the door is hinged to the body of the cylin-

der. The door, as here shown, is formed of two staves L' and an additional strip L^2 along the front thereof, and is furnished with knobs or handles L^4 for convenience in opening and closing the same. At each end of the door on the end pieces of the inner cylinder are bolted or otherwise secured blocks K' , in which slide bolts k , bearing the locking-heads K . As hereshown, two of these locking-bolts are arranged at each end of the door, one near the hinged side and one near the outer or front side thereof. Each bolt k is provided with a pin k^2 , sliding in a guiding-slot k' made in the block K' . When the door in the inner cylinder is directly opposite the door in the outer, the bolts k are directly opposite recesses k^3 (see Fig. 2) made either in the ends of the outer cylinder or in some piece or pieces connected therewith.

In the present machine the recesses k^3 are made in a piece K^3 , secured to the ends of the outer cylinder and passing completely around the same. When the doors in the two cylinders are directly opposite each other, the bolts k may be pushed outward into the recesses k^3 , which thus locks the two cylinders together, making it impossible to start the machine. When all of the bolts are thus slipped back, the heads K thereof are clear of the door, which may then be opened, the bolt-heads K then being in the position occupied by the upper one. (Shown in Fig. 3.) The shape of the locking-heads K is such that when the door is closed, as in Figs. 2 and 3, and the bolts pushed inward, in the position occupied by the lower bolt in Fig. 3, the head bears upon the door, preventing it from being raised. Moreover, when all the bolts are pushed out into the recesses k^3 , thus locking the two cylinders together, and the door raised, the shape of the locking-heads K is such that the bolt-head at each end nearest the hinged side of the door is prevented from being slid inward by bearing against the door itself, as shown in Fig. 4, so that when the door is open it is absolutely impossible to start the machine, since, although the lower of the bolts k on either side may be slid in and out, the upper ones, or those nearest the hinged side of the door, are held back by the door itself, in the man-

ner described. When once the door is closed and all the bolts slid inward, thus locking it in its closed position, it will be equally impossible for the bolts to slip back while the machine is in motion, by reason of the fact that only when in one position—viz., with the bolts k opposite the recesses k^3 —can the door be unlocked. In other words, locking the two cylinders together unlocks the door, and locking the door in a closed position releases the inner cylinder.

I claim—

1. A washing-machine having a stationary outer cylinder provided with a door and a perforated inner cylinder rotatively movable within said outer cylinder, the inner cylinder being provided with a hinged door and with sliding locking-bolts seated in blocks secured to said inner cylinder and engaging with recesses made in the ends of the outer cylinder or in pieces connected thereto, whereby locking the two cylinders together unlocks the door and locking the door releases the inner cylinder, substantially as described.

2. In a washing-machine, a stationary outer cylinder provided with a door, in combination with a perforated inner cylinder rotatively movable in said outer cylinder provided with a hinged door and having locking devices engaging with the outer cylinder, arranged whereby locking the two cylinders together unlocks the inner door, and locking the inner door releases the inner cylinder, substantially as described.

3. In a washing-machine, a rotatively-movable cylinder having a hinged door, in combination with bolts sliding in blocks secured to said cylinder, and having locking-heads arranged whereby when the door is closed the bolts may be slid inward, but when it is open the said bolt-heads are arrested by the door itself, substantially as and for the purposes described.

In witness whereof I have hereunto set my hand.

GEO. L. SHOREY.

Witnesses:

WM. B. H. DOWSE,
ALBERT E. LEACH.