W. E. HILLSON.

Washing-Machine.

No. 162,550. Patented April 27, 1875.

FIG. 1.

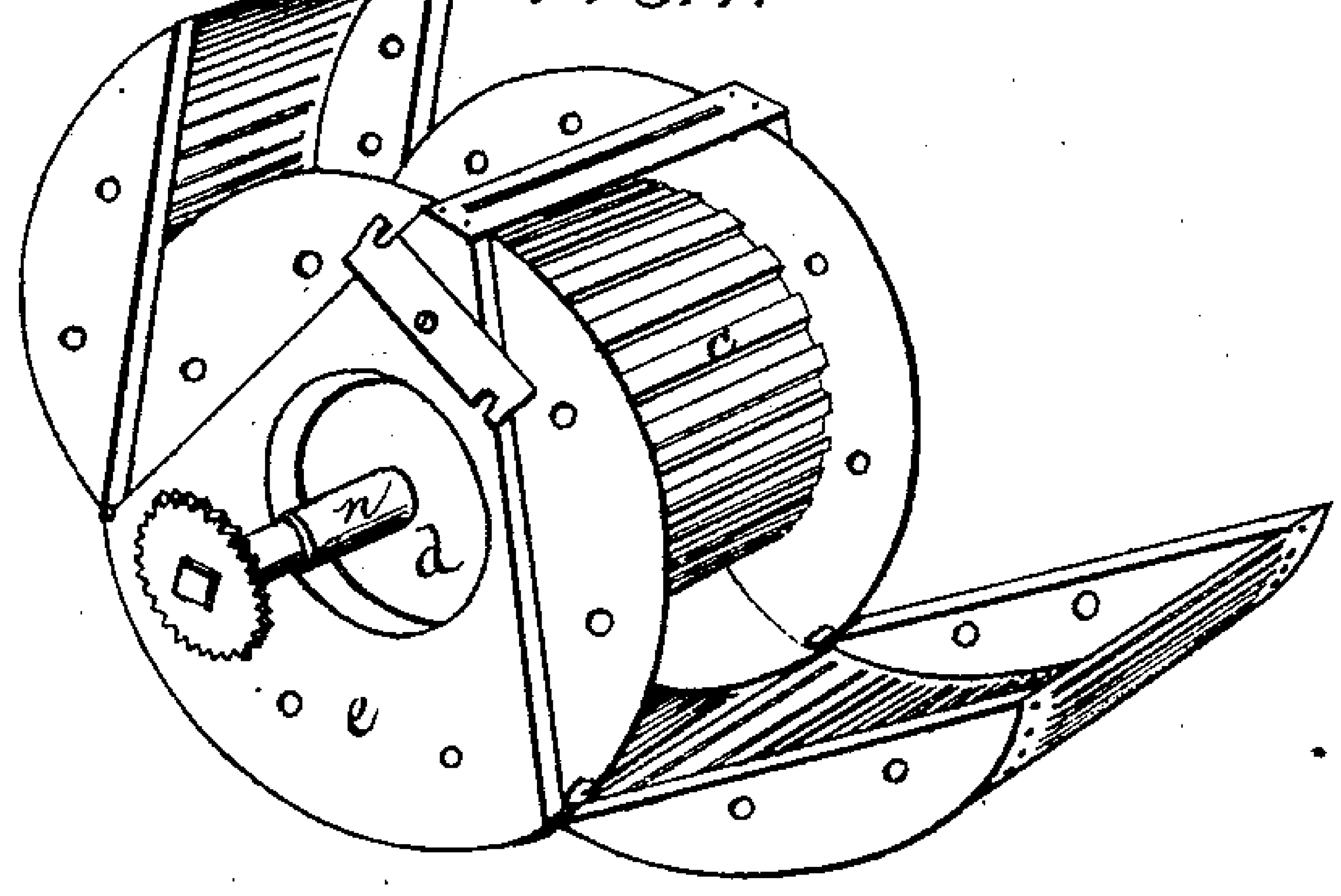
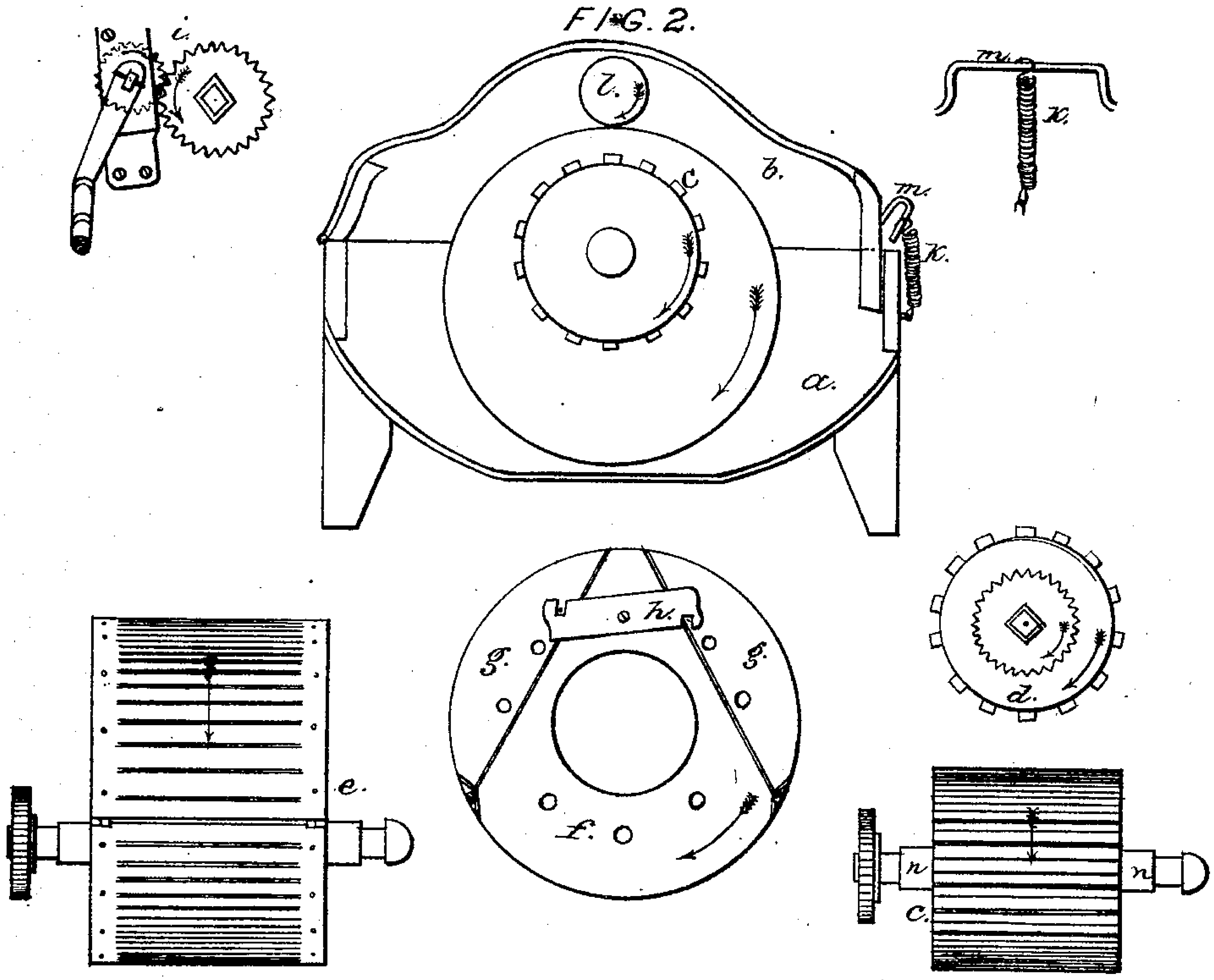


FIG. 2.



Witnesses;

[illegible]

George W. Myggatt

Inventor;

William E. Hillson

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

WILLIAM E. HILLSON, OF OSHKOSH, WISCONSIN.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **162,550**, dated April 27, 1875; application filed October 21, 1874.

To all whom it may concern:

Be it known that I, WILLIAM E. HILLSON, of Oshkosh, in the county of Winnebago and State of Wisconsin, have invented a new and useful Improvement in Washing-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a perspective view of the two cylinders—the main working parts of the machine. The wings of the outer cylinder are shown when opened. Fig. 2 is a longitudinal section, showing parts of the machine in their places.

Letter *a* indicates the bottom part of the case which incloses the cylinders. The lid or upper half of the case is shown at *b*. The pace of the inner cylinder is shown at *c*, and an end view thereof at *d*. The outer cylinder is shown at *e*, and an end view thereof at *f*. The wings of the outer cylinder closed, are shown at *g g*; when opened they are shown in Fig. 1. *h* is a clasp fastening the wings in place when the machine is in operation. The common device of cog-wheel and crank for communicating motion is shown at *i*. The spiral spring *k* serves to press the roller *l*, which is attached to the lid of the case, upon the outer cylinder. The spiral spring is connected to the lid of case by means of staple *m*.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and mode of operation.

The machine consists of a case which may be made of wood or metal, a section of which is shown at Fig. 2, letters *a* and *b*. The lid of this case is hinged at one end, and at the other is, when the machine is in use, connected to the lower part of the case by means of the spiral spring *k*, and also fits over the central shaft *n* by means of half-circles cut into its sides. This case incloses the two working-cylinders, and is the receptacle for the water used in the washing process. The roller *l* at the top and interior of the lid of the case may be constructed of wood, and its object is to press upon the top of the outer cylinder, thereby communicating pressure to the articles to be washed placed between the cylinders. The outer and inner cylinders working together form the device for cleansing the stuffs or articles intended to be washed. The outer cylinder is perforated by longitudinal slots, which appear at E, and the inner cylinder has its entire circumference provided with ribs or cleats, which are shown at *c*. The sides of the outer cylinder are perforated with round openings, which appear at *f*, and the slots and openings in this cylinder serve for the ingress and egress of water used in the washing process. The cylinders may be constructed of wood or metal, as preferred. The inner cylinder or drum has a stationary center, while the outer cylinder has a varying center of motion, and is in no place attached to the inner, although resting upon the shaft of the inner, when not in use, and upon the articles to be washed when in motion. This end is accomplished by allowing the outer cylinder free play through the open circles cut in the center of its sides, as shown in the center of the side *f*. The round holes or openings in the sides of the outer cylinder are open to the ingress of water when at the bottom of the case, but when they reach the top they are closed by the inside drum, and by this device a movement of the water is produced, which forces it through the articles to be washed, and out of the slots of the outer cylinder.

The mode of operation of my machine is as follows: The clothing or other stuff to be washed is placed between the cylinders, and the case is about half filled with water—that is, one half of the lower part. The machine is then put in motion after attaching the spiral spring to the staple in the lid of the case. At each revolution of the inside cylinder its cleats strike and press the articles being washed in a different place. This result is produced by the difference in size of the two cylinders, while the free play of the outer cylinder permits the articles to turn or revolve with the inner cylinder, and to reach the point at the apex where they are subjected to

the pressure of the roller *l*, which forces out the water from them, and this water on account of the side openings being closed, finds egress through the slots, and thus the water is briskly forced through the articles to be washed at each revolution of the inner cylinder.

The thorough cleansing of the articles placed within the cylinders is accomplished as follows: The spiral spring *k* causes the roller *l* to press upon the upper part of the outer cylinder, thus tightly pressing or squeezing the articles inside as they pass at that point between the two cylinders. The cleats of the inner one at each revolution strike in a different place, and the articles to be washed are rolled over and over, and every part of them subjected to the process effected by this combination of cylinders, and with pressure applied at one point. These revolutions being repeated a sufficient number of times, the ordinary dirt of soiled clothing or other articles is all washed out. The soap or other cleansing material may be placed on or with the articles being washed on the inside of the cylinders.

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

The combination of the two cylinders *c d* and *e f* with the roller *l*, spiral spring *k*, the shaft *n*, and the case *a b*, substantially as described, and for the purposes set forth.

In testimony whereof I, the said WILLIAM E. HILLSON, have hereunto set my hand.

WILLIAM E. HILLSON.

Witnesses:

FRANCIS D. WELLS,

GEORGE W. MYGATT.