E. L. KEYS.

Washing-Machine.

No. 211,746. Patented Jan. 28, 1879.

Fig. 1.

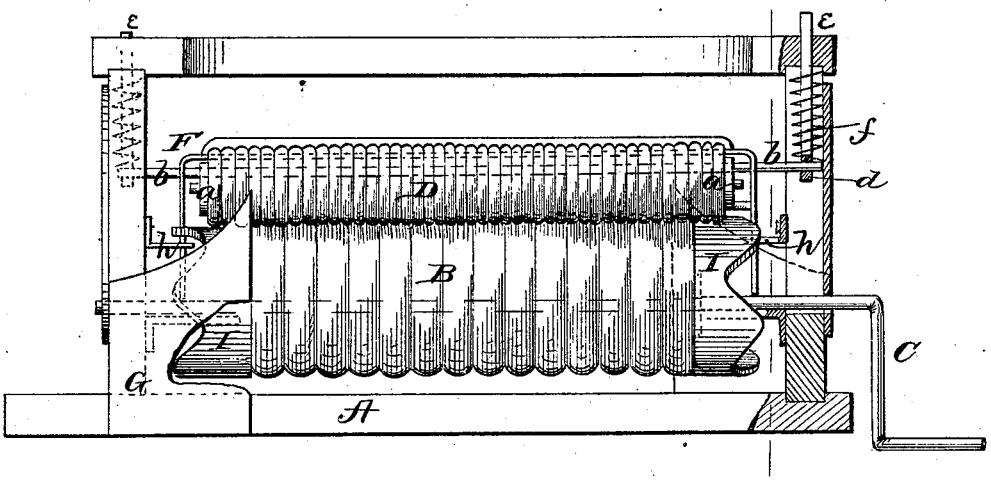
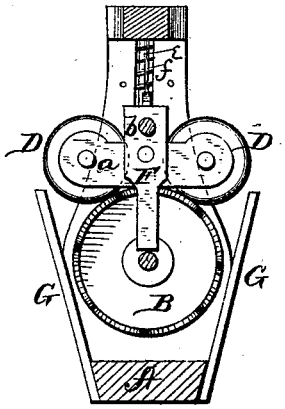


Fig. 2.



WITNESSES

F. L. Ouraud

J. J. McCarthy.

By his Attorneys

INVENTOR

Erasmus L. Keys

Munn & Fraser

UNITED STATES PATENT OFFICE.

ERASMUS L. KEYS, OF MUNCIE, INDIANA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JAMES BOYCE, OF SAME PLACE.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **211,746**, dated January 28, 1879; application filed November 11, 1878.

To all whom it may concern:

Be it known that I, ERASMUS L. KEYS, of Muncie, in the county of Delaware, and in the State of Indiana, have invented certain new and useful Improvements in Washing-Machines; and do hereby declare that the following is a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a washing-machine, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a front elevation of my washing-machine. Fig. 2 is a transverse vertical section of the same.

A represents a frame of any suitable dimensions, in which is mounted a large roller, B, having its journal-bearings in the ends of the frame and one of the journals provided with a crank, C, for rotating the same. Above the large roller, B, are two smaller rollers, D D, which are hung in the ends of plates *a a*, pivoted to a metal frame, F. This frame F is placed on a rod, *b*, which enters bearings *d*, placed in vertical slots in the end pieces of the main frame A. Each bearing *d* has a vertical guide-rod, *e*, with spiral spring *f* surrounding the same, for holding the rollers D down upon the roller B, and yet allow them to yield to the varying thickness of the clothes passing through the machine. The ends of the metal frame F project downward and enter guides *h*, attached to the main frame, and they are acted upon by cams I I, secured on the ends of the main roller B.

It will readily be seen that, as the main roller is rotated, the frame F, carrying the smaller rollers, D D, is moved from side to side, thus giving the same action on the clothes as when rubbing over an ordinary wash-board.

The rollers B D are corrugated circumferentially, as shown.

During the operation the frame F is held constantly in proper position by the guides *h h*, and the rollers are held down by the springs *f*.

At each end of the main frame A is a shield or wing, G, to prevent the clothes getting over the ends of the rollers or in contact with any metal part of the machine.

The machine may be arranged to be fastened to a wash-tub or any other place, as may be desired. It is simple, cheap, and not liable to get out of order. At the same time it is durable and effective in its operation.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the rotating roller B, provided with a cam, I, at each end, and the frame F, hung upon a rod, *b*, and carrying the rollers D D, substantially as and for the purposes herein set forth.

2. The combination of the rod *b*, placed in bearings *d*, actuated by springs *f*, the frame F, pivoted plates *a*, rollers D, and the cams I on the roller B, substantially as and for the purposes herein set forth.

3. The guides *h h*, in combination with the frame F, rollers D D, and roller B, provided with cams I, for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 23d day of September, 1878.

ERASMUS L. KEYS.

Witnesses:
RALPH S. GREGORY,
ADOLPHE C. SILVERBURG.