N. A. BRIGGS & E. H. KNOWLES.

WASHING-MACHINES.

No. 193,802. Patented Aug. 7, 1877.

Fig. 1.

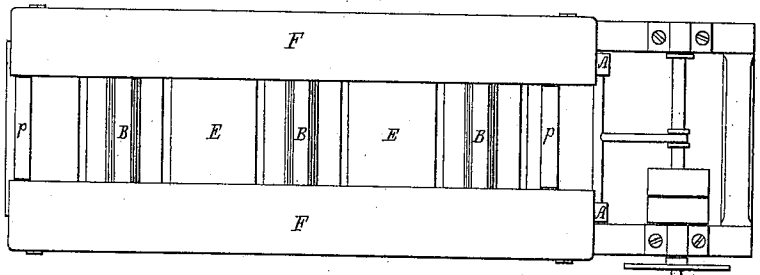


Fig. 2.

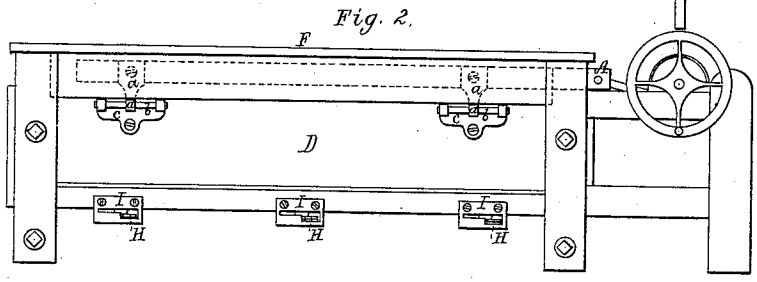


Fig. 3.

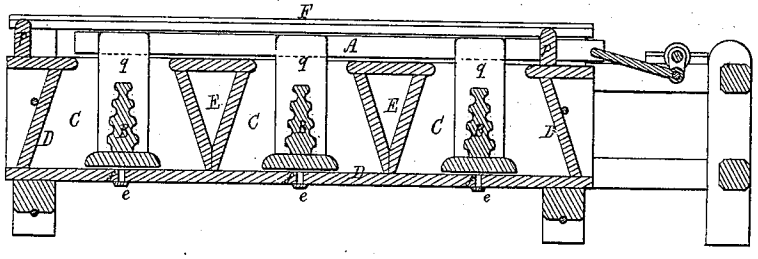


Fig. 5.

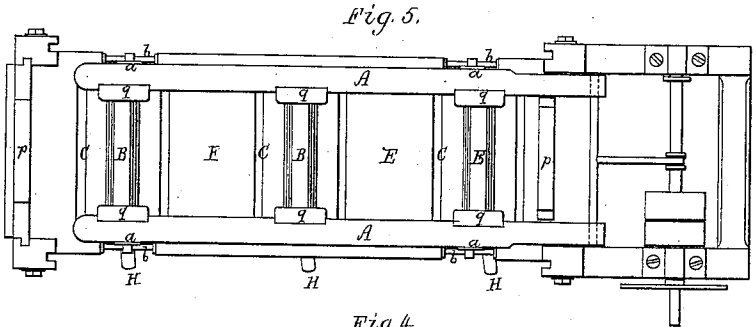
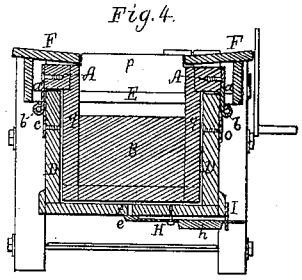


Fig. 4.



Witnesses.
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UNITED STATES PATENT OFFICE.

NICHOLAS A. BRIGGS AND ELIJAH H. KNOWLES, OF SHAKER VILLAGE, NEW HAMPSHIRE, ASSIGNORS TO SAID BRIGGS.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **193,802**, dated August 7, 1877; application filed May 17, 1877.

To all whom it may concern:

Be it known that we, NICHOLAS A. BRIGGS and ELIJAH H. KNOWLES, of Shaker Village, of the county of Merrimack and State of New Hampshire, have invented a new and useful Improvement in Washing-Machines; and do hereby declare the same to be described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 a front elevation, Fig. 3 a longitudinal section, and Fig. 4 a transverse section, of a washing-machine provided with our invention. Fig. 5 is a top view with the side-guards removed.

The washing-machine to which our invention is applicable is substantially like that described in the United States Patent No. 19,181—that is to say, it has a series of tubs or washing-chambers, a series of stocks, dashers, or rubbers, (one to each chamber,) and a frame or carrier for supporting and moving the dashers or rubbers. The said frame is provided with mechanism for imparting to it a reciprocating rectilinear motion, in order to move the rubbers or stocks forward and backward within their respective chambers.

In the drawings, this frame or carrier is shown at A, the rubbers or stocks at B B B, and their washing-chambers at C C C. These chambers are formed in a box, D, by means of transverse partitions E E, arranged therein in manner as represented. The rubber carrier or frame A, disposed above the box in manner as shown, has two short metallic arms, *a a*, projecting down from each of its opposite sides, and resting on and encompassing short horizontal rails or rods *b b*, supported by brackets *c c*, fixed to the sides of the box.

These bearing-rods and the parts of the arms encompassing them project outward beyond the side of the box in such manner that any oil or liquid that may drop from them shall fall wholly outside of the box and not upon its upper edge.

The above-described devices for sustaining the rubber-carrier are not only to prevent it from being accidentally forced upward by the dashers when pressed against the clothes in the washing-chambers, but to prevent any oil or dirt from the carrier-supporting surfaces from flowing into either of the washing-chambers or getting upon the clothes therein, to the injury or soiling of them.

Arranged over and in front of each side bar of the carrier, in manner as shown, is a guard or shield, F, which is supported in position by the box. This guard we usually not only place on the tops of the parts *p p* of the box-frame, but insert in grooves or sockets made in the posts, such being to enable the guard to be readily removed from the posts as occasion may require. These guards extend over the heads of the uprights *q q* of the rubbers, and also over the spaces between or on the flanks of such heads, and thereby serve to prevent a person's hand or arm from being accidentally caught and jammed between any one of such uprights and the next adjacent partition E of the box while the carrier may be in movement. Each of such guards also protects the dress of an attendant from being soiled by the bearings of the carrier, or of being wet by water that may flow over and upon the next adjacent part of the upper edge of the box. The guard also keeps the attendant from accidentally coming in contact with the carrier while the latter may be in rapid movement.

The machinery for moving the carrier is shown in the drawings; but as it is such as is in common use it need not herein be explained.

The box is provided on its bottom with a series of weighted valve-levers, H, each of which is pivoted to the box, and provided with a valve, *e*, to close a vent-hole, *f*, in the bottom of the chamber over it. Each lever passes through a plate, I, fixed to the side of the box, and slotted and projecting below the box, in manner as shown. Between the said plate and the fulcrum of the lever such lever has a heavy weight, *h*, fixed to or making part of it, such weight being sufficient, when the valve is closed over the vent-hole, to keep the valve up to its seat against the pressure of water over the valve. On raising the front arm of the lever and moving it into the narrower part of the slot the valve will be carried off its seat and will uncover the vent-hole.

Heretofore it has been customary to support

the carrier on balls or rollers. Such did not prevent it from being accidentally thrown or forced upward, and, besides, the oil used in lubricating the bearing-surfaces was liable to get or be washed into the chambers. All this is avoided by our mode of supporting the said carrier.

We do not claim, broadly, arms and rods for supporting and guiding an article in its rectilinear movements; but our arrangement and application of them, relatively to the carrier and tub of the washing-machine, is new and productive of special advantages therewith, as stated.

We claim, therefore—

1. In the washing-machine, the carrier-supporting arms *a* and rods *b*, applied to the box and carrier, and arranged therewith substantially as set forth.

2. The side guards F, combined and arranged, substantially as set forth, with the box D, the carrier A, and the uprights of the rubbers of the washing-machine.

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Witnesses:
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