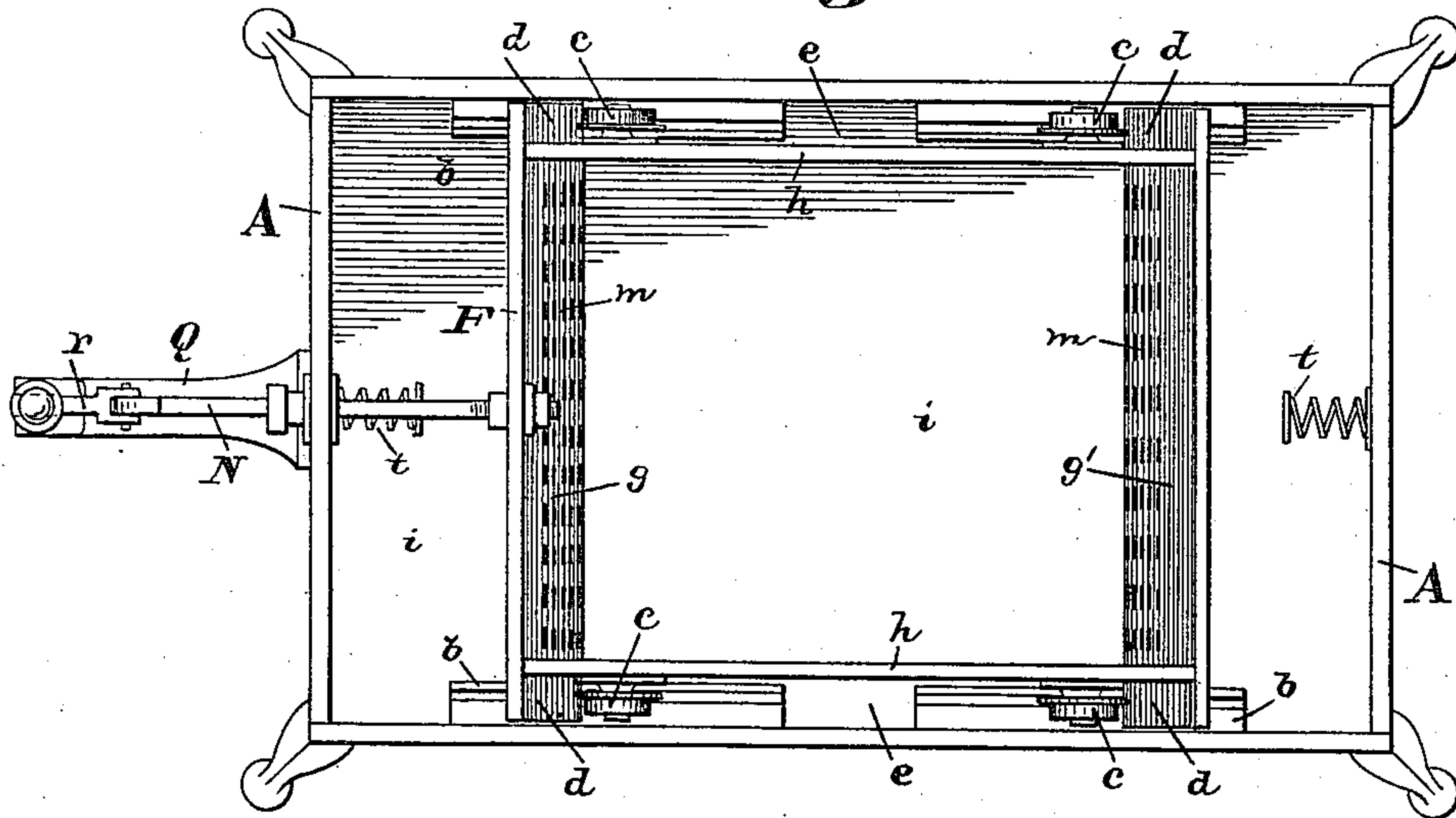
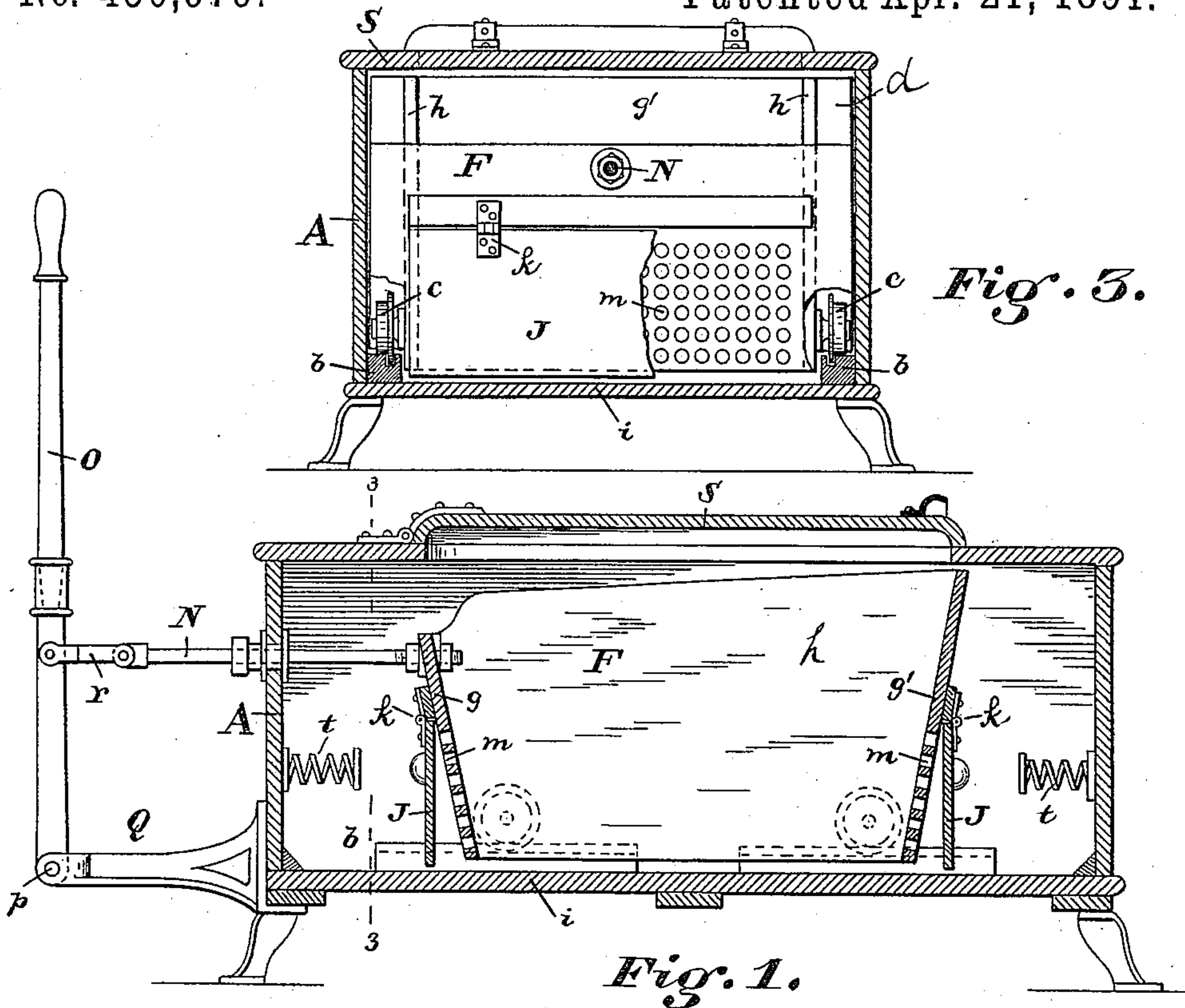


(No Model.)

H. R. SMITH & J. E. SWAIN.
WASHING MACHINE.

No. 450,979.

Patented Apr. 21, 1891.



Witnesses
A. O. Babendreier
Otto H. Ehlers.

Fig. 2.

Inventors
Henry R. Smith
James E. Swain
By this Attorney
Chas B. Mann

UNITED STATES PATENT OFFICE.

HENRY R. SMITH AND JAMES E. SWAIN, OF BALTIMORE, MARYLAND,
ASSIGNORS OF ONE-HALF TO GEORGE K. HUTCHINS AND WILLIAM
T. HENDERSON, OF SAME PLACE.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 450,979, dated April 21, 1891.

Application filed July 9, 1890. Serial No. 358,143. (No model.)

To all whom it may concern:

Be it known that we, HENRY R. SMITH and JAMES E. SWAIN, citizens of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification.

This invention relates to a machine for washing clothes, sheeting, linen, and like articles, and is illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of the machine. Fig. 2 is a top view of the machine, the cover being removed. Fig. 3 is a cross-section of the machine.

A rectangular box A has in its bottom two fixed longitudinal slide-bars *b*. Within this box is a movable frame or box F, which is constructed to reciprocate upon the said slide-bars *b*. We prefer to use rollers *c*, which are attached to the sides of the frame or box F, and which travel on the slide-bars. The ends *d* of the front and rear boards *g g'* of the movable frame project beyond the side boards *h* thereof, and thereby form a recess *e* at the sides between the frame and box sides, wherein the rollers *c* are housed. This movable frame has no top or bottom, and is to receive the clothes or articles to be washed, and when these are in it they (the articles) will either rest on the bottom *i* of the water-box or will be submerged and partly float in the water, while the frame F is moved backward and forward on the slide-bars *b*. The end boards of the reciprocating frame are preferably inclined, the bottom edges of the two boards being nearer to each other than the top edges. Each is provided with holes *m*, arranged as shown in Figs. 1 and 3.

Each end *g g'* of the movable frame on the outer side has a flap-valve J, which will alternately open and close the holes *m* therein. This valve in the present instance consists of a board J, covering or extending over all the holes *m* of the frame, and is secured to said ends by hinges *k*, so that one edge of the valve-board will be free to swing away from the said frame end, and thereby open the holes *m*, and on the other hand free to swing

toward and in close contact with said frame end, and thus close or cover the said holes.

A horizontal draw-bar N is attached to the front end board *g* of the frame and projects through a hole in the end of the box A. An actuating-lever O on the outside of the box A has its lower end secured by a pivot *p* to the box-front or to an arm Q thereon, and said lever projects upright. A link *r* connects the draw-bar N and lever O. By this construction a person may grasp the upright lever O and by working it back and forth on its pivot cause the frame F to reciprocate within the box A.

Each end of the box A has a spring-buffer *t*, against which the ends of the movable frame come when it is reciprocated. In the present instance the parts are so arranged that valve-boards J will strike the spring-buffers.

A cover S fits close on the box A and confines the water or suds.

The machine is operated as follows: The cover being removed, hot water is placed in the box. The clothes or linen to be washed should be wet and soaped and placed within the reciprocating frame F between the two end boards *g g'*. The cover S should then be closed and the operator take hold of the lever O and work it as already described. The reciprocating movement of the frame F will carry the soiled clothes or linen, which latter will receive the alternating rebuff of the end boards *g g'*. This reciprocating movement will alternately open and close the valves J, and thus cause a constant displacement and change of the water in the frame F, and the action of the water will cause the clothes to constantly change their position in the frame. The holes *m* in the two end boards allow the water and suds to pass out of the frame, which can come in again only from below and have free effect on the clothes confined in the frame.

Having described our invention, we claim—

1. The combination of a rectangular box A, provided with slide-bars, a reciprocating bottomless frame within the box, having side boards *h* and front and rear boards provided

with holes *m*, a flap-valve board hinged to the end board of the reciprocating frame, so as to cover the holes therein, and means to move the frame.

- 5 2. The combination of a rectangular box A, provided with slide-bars, a reciprocating bottomless frame within the box, having side boards *h* and front and rear boards provided with holes *m*, means to move the frame, and

a spring-buffer between each end of the movable frame and the outer box.

In testimony whereof we affix our signatures in the presence of two witnesses.

HENRY R. SMITH.
JAMES E. SWAIN.

Witnesses:

A. O. BABENDREIER,
JNO. T. MADDOX.