J. F. Melcher,

Washing Machine,

No. 48,424. Patented June 27, 1865.

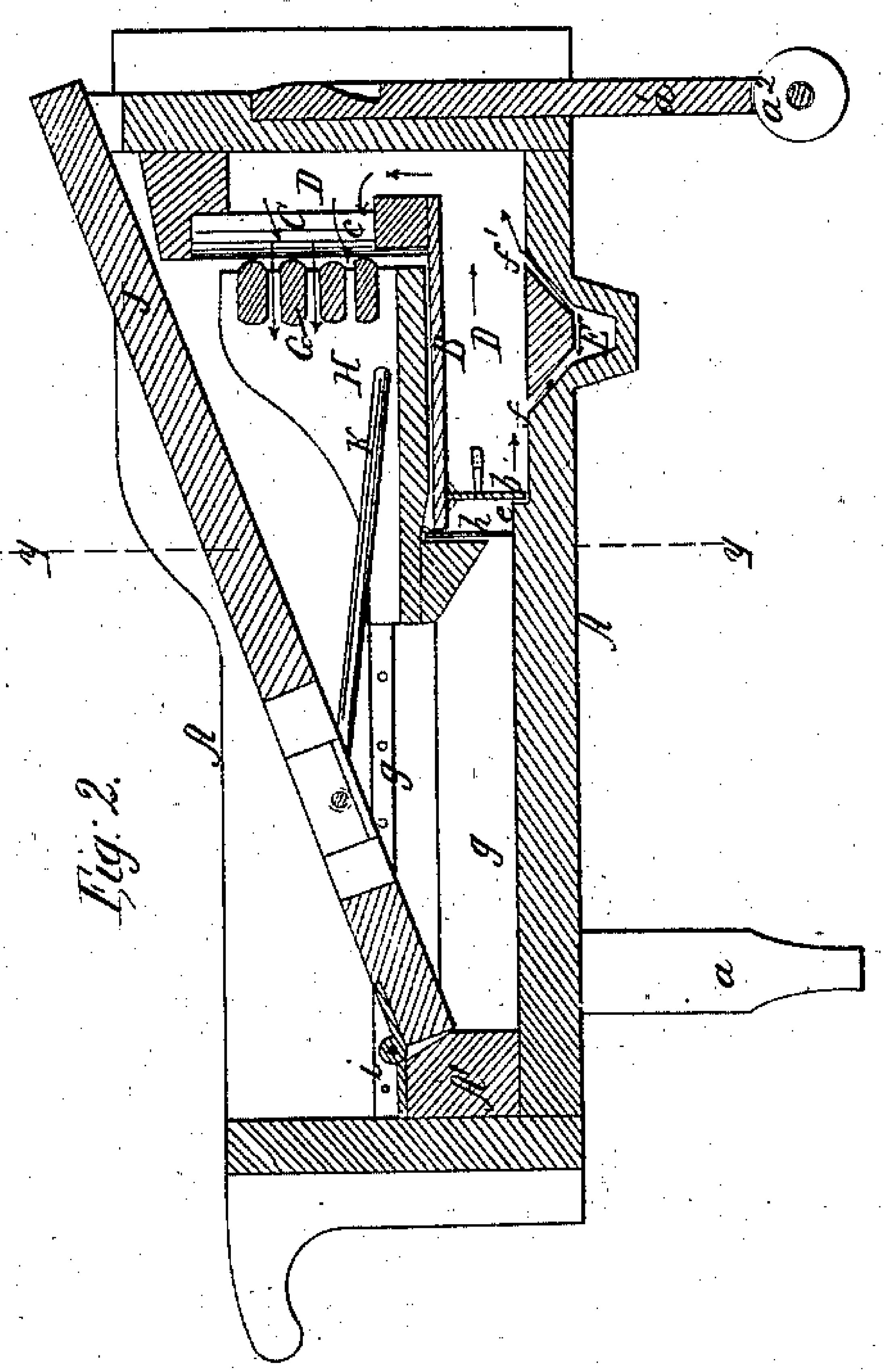

Fig. 2.

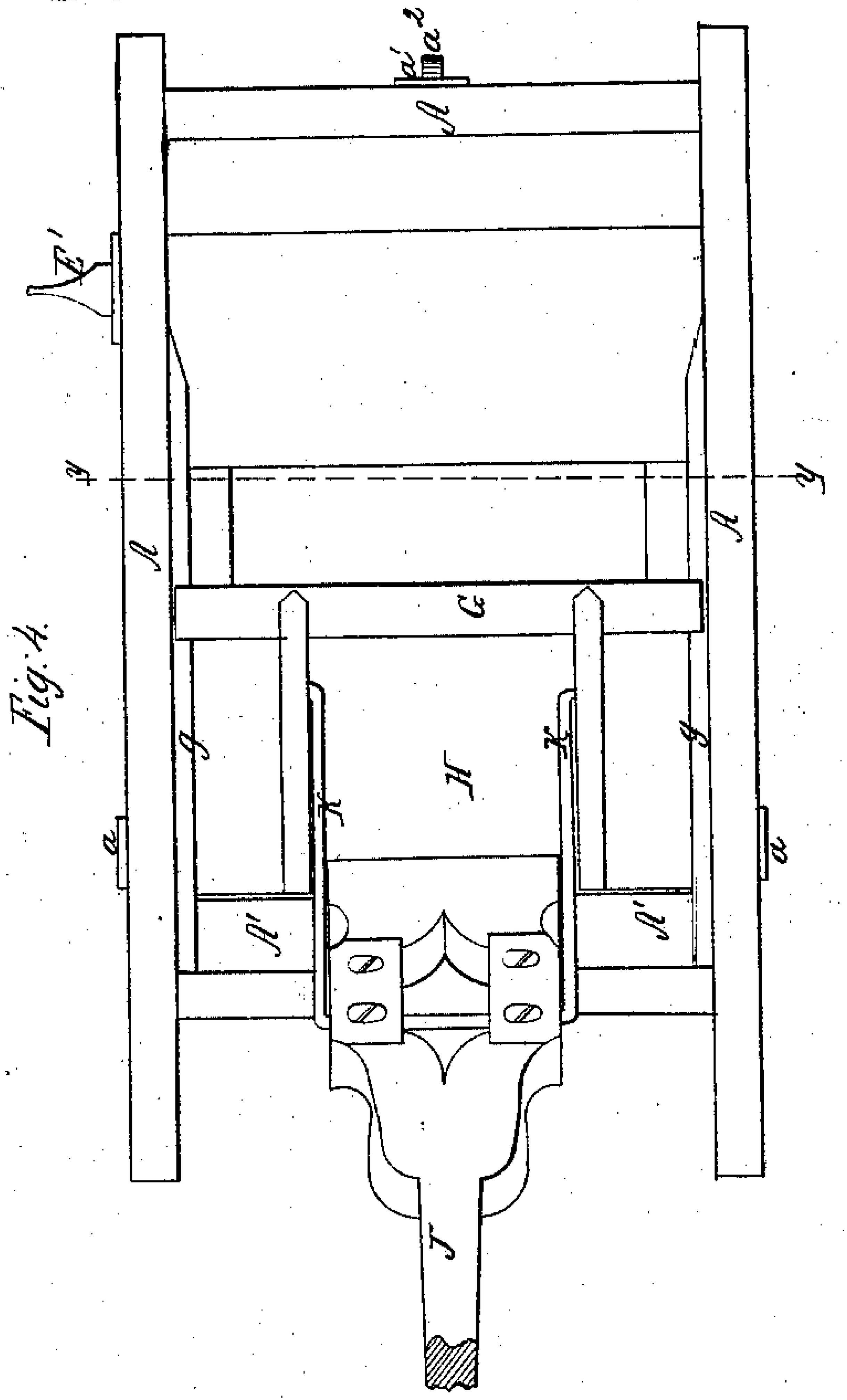

Fig. 4.

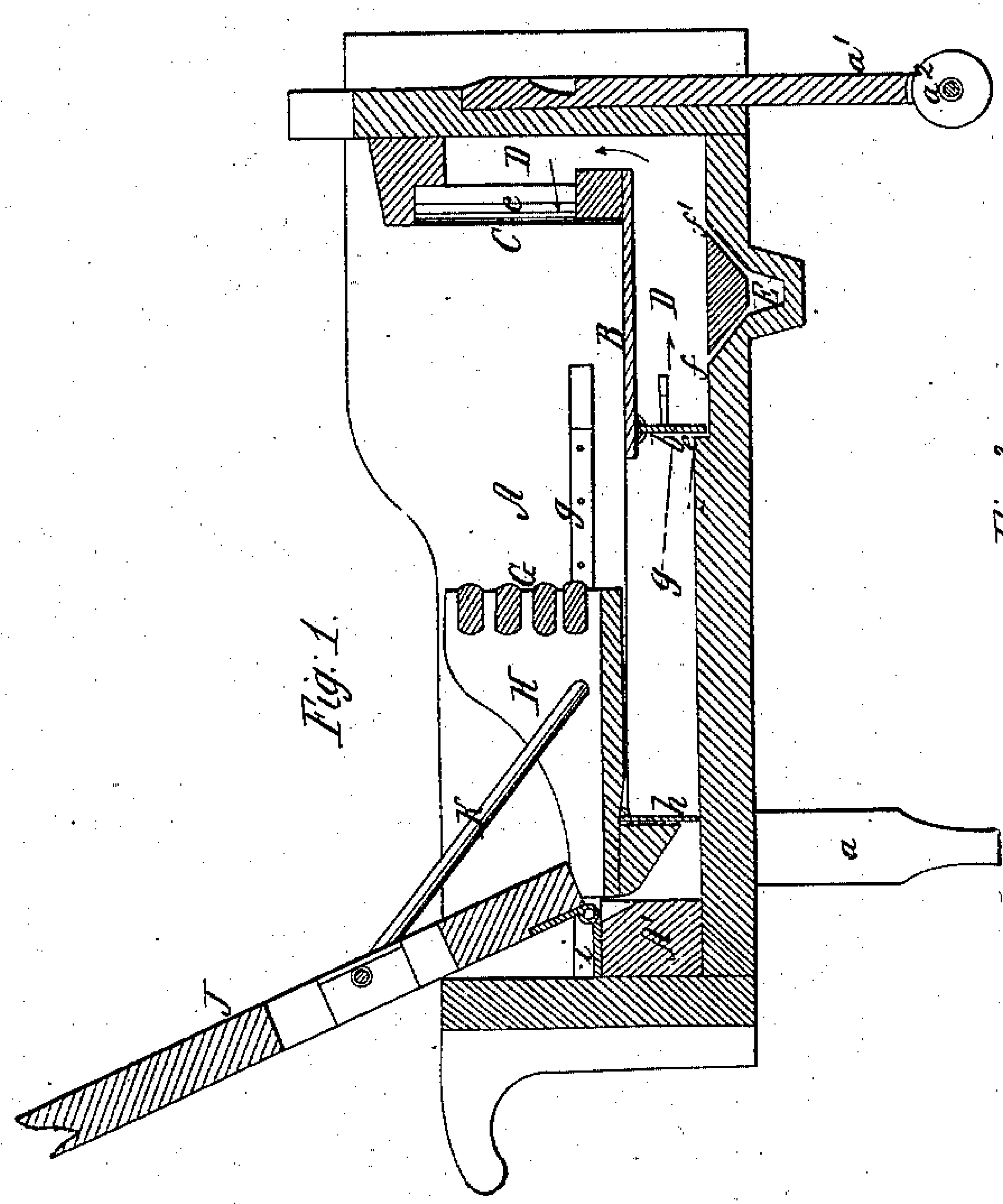

Fig. 1.

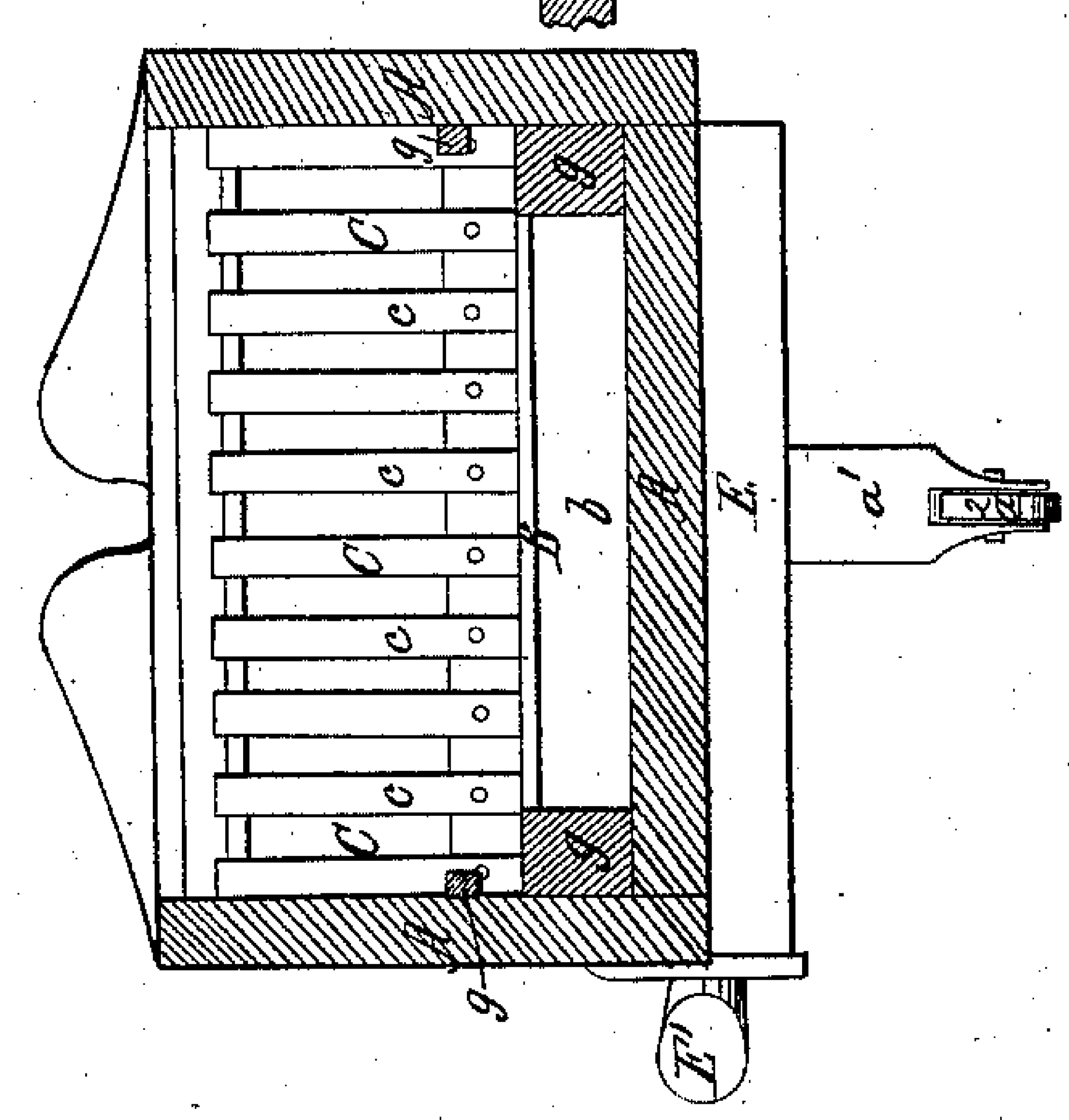

Fig. 3.

Witnesses;
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UNITED STATES PATENT OFFICE.

JOSIAH F. MELCHER, OF BLOOMINGTON, ILLINOIS.

IMPROVED WASHING-MACHINE.

Specification forming part of Letters Patent No. **48,424**, dated June 27, 1865.

To all whom it may concern:

Be it known that I, JOSIAH F. MELCHER, of Bloomington, McLean county, State of Illinois, have invented a new and Improved Washing-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical longitudinal section through the center of my improved washing-machine. Fig. 2 is a similar view, showing the plunger and its handle thrown forward or toward the wash-board. Fig. 3 is a top view of Fig. 1. Fig. 4 is a vertical transverse section through the machine, taken at the point indicated by red line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

The main object of my invention and improvement of washing-machines is to cause a flow of water toward the plunger during the act of forcing it up to its work, so that the water will be forcibly thrown upon and through the articles during the act of pressing them against the wash-board, as will be hereinafter described.

Another object of my invention is to provide for filtering or carrying off the solid particles of dirt from the water in the tub during the flow of water from one part of the tub to another part, so that the water will be kept comparatively clean for a considerable length of time, as will be hereinafter described.

Another object of my invention is to construct a washing-machine with a chamber beneath the bed upon which the articles to be washed lie for the free passage of water from one part of the tub to another through the wash-board, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

The wash-tub A is of a rectangular form, and may be made of any desired depth. It is provided with three legs, *a a* and *a'*, which latter has a roller, a^2, applied to it for facilitating the removal of the tub from one place to another. These three legs are fitted into dovetail grooves formed in the sides of the tub, and may be removed at pleasure when it is desired to pack the machine for transportation.

B represents a horizontal shelf or false bottom, which is arranged beneath the wash-board C, near one end of the machine, and elevated above the bottom of the tub to form a chamber, D, beneath it. This chamber extends from a valve, *b*, which opens into it back of the slats *c* of the wash-board, so that water which is forced through the valve-opening must pass back and thence upward and through the spaces between the slats of the wash-board. The valve *b* extends across the tub, and is acted upon by a spring of any suitable description, which will keep the valve closed, as shown in Fig. 1, against an abutment *e* on the bottom of the tub.

Beneath the chamber D is a trough, E, which extends transversely across the bottom of the tub and communicates with said chamber through the inclined perforations *f f'*. This trough forms a sink for receiving the dirt which escapes from the water during the operation of washing, and at one end of it is a hole which is closed by a stopple, E'.

The wash-board C consists of a number of upright slats, *c*, arranged at proper intervals apart, so as to form narrow spaces between them for the free escape of water from the chamber D, as indicated by the course of the arrows in Fig. 2. The upper and lower ends of the slats *c* are suitably secured to transverse pieces, the upper one of which forms a cover for that portion of the chamber D which is back of the slats, as shown in Figs. 1 and 2.

G represents the plunger or fuller, which is composed of a number of narrow slats arranged in planes parallel to each other and at right angles to the slats of the wash-board C. These horizontal slats are arranged with narrow spaces between them, and their ends are secured to the vertical side boards of a sliding carriage, H, which is supported and guided in its reciprocating movements toward and from the wash-board by the longitudinal bars *g g*. The bottom of this carriage H is in a plane corresponding to that of the top surface of the false bottom B, so that when this carriage, with its slatted plunger G, is moved toward the wash-board

the carriage will pass freely over the board B, as shown in Fig. 2. Near the rear end of the carriage H, and located beneath the same, is a valve, *h*, which swings forward as the carriage is moved backward, and which assumes the vertical position shown in Fig. 2 when the carriage is moved forward. This valve *h*, when taken in connection with the valve *b* and the chamber D, forms a kind of force-pump for causing a rapid flow of water from the rear end of the tub through the chamber D and through the wash-board C when the plunger G is thrown forward; and as soon as the bottom of the carriage H, or the forward end thereof, reaches the shelf B a chamber is formed beneath it, the only opening from which is through the valve *b*. Hence it will be seen that the water beneath the carriage and said shelf will be forcibly ejected through the wash-board C and through the articles which are between this board and the plunger. Thus during the operation of squeezing and pounding the articles we have a stream of water rushing through them and carrying off the dirt. As the solid particles of dirt will settle to the bottom of the tub, I have provided the trough E for trapping this dirt and purifying the water considerably. This trap or trough E receives the dirt through the inclined holes *f* and allows the water to escape through the holes *f'*, as indicated by the arrows in Fig. 2.

The plunger G is reciprocated by means of a vibrating lever, J, which is hinged at *i* to the stationary piece A' of the tub. This lever is connected to the carriage H of the plunger by means of two pivoted rods, K K. If desirable, a crank-shaft and connecting-rods may be used for giving motion to the plunger-carriage. The plunger, as well as the wash-board, may be made in any suitable manner, though I prefer to construct said parts substantially as described.

It will be seen from the above description of my washing-machine that the articles do not rest upon the bottom of the tub, but are supported upon a shelf, from which the dirt is washed at every forward stroke of the plunger. I produce a rapid rotation of the water in the tub during the movements of the plunger and force the water through the articles under considerable pressure, which soon deprives them of their dirt and obviates the necessity of subjecting them to much rough usage between hard substances.

My machine not only serves as a washer, but it also serves an excellent purpose as a rinser and for pressing the water out of the articles preparatory to hanging them up to dry.

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

1. Forcing a stream of water through or upon the articles to be washed, simultaneously with the operation of the plunger and in a contrary direction to the movement of the plunger, by means substantially as described.

2. The valves *b h* and chamber D, in combination with a perforated wash-board, C, and a plunger, G, substantially as described.

3. The combination of a reciprocating plunger, G, a water-passage, D, and a perforated wash-board, C, substantially as described.

JOSIAH F. MELCHER.

Witnesses:

JOHN M. STILWILL,
JOHN W. EVANS.