

U. MILLER.
Washing-Machine.

No. 223,938.

Patented Jan. 27, 1880.

Fig. 1.

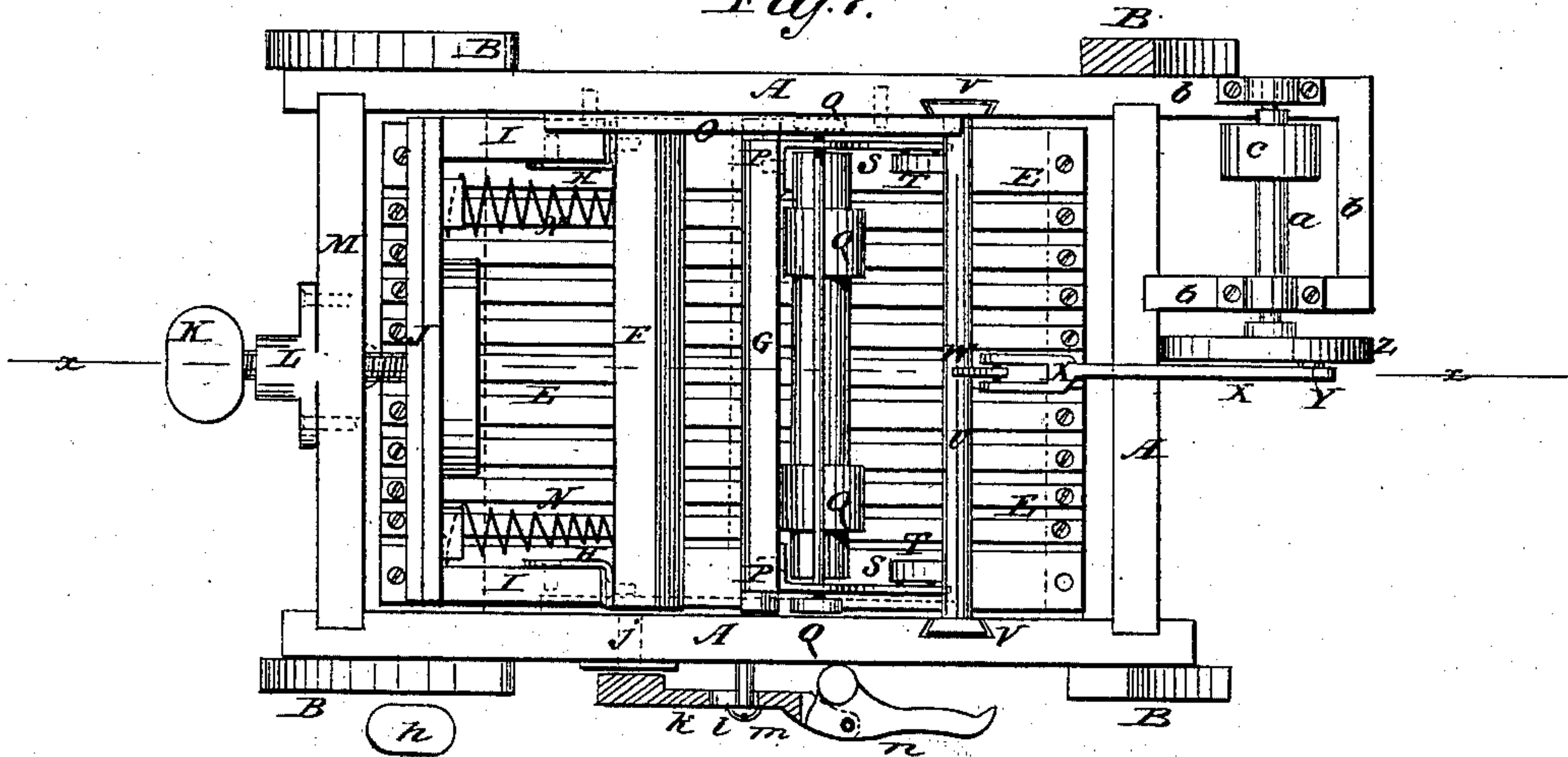


Fig. 3

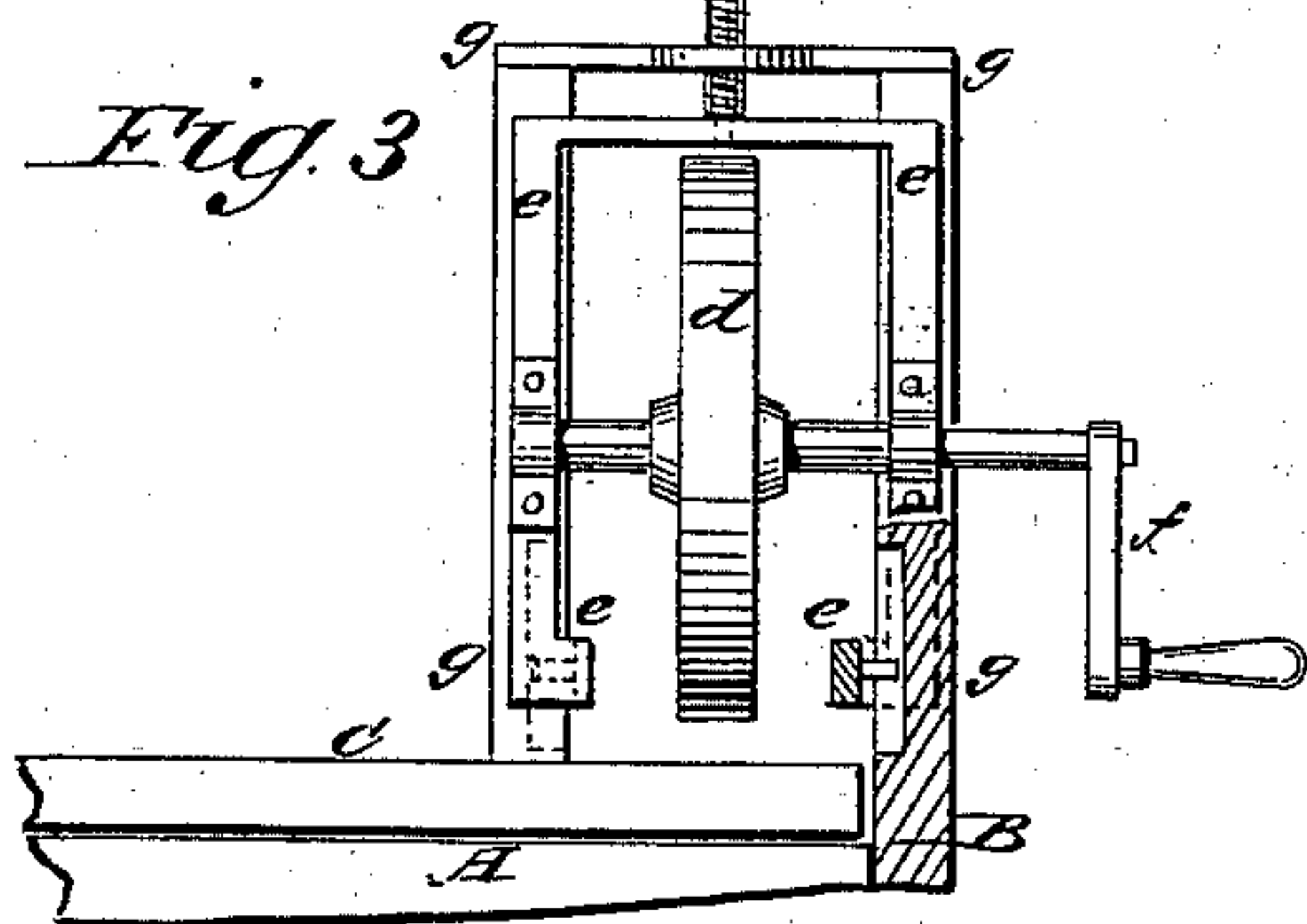


Fig. 2

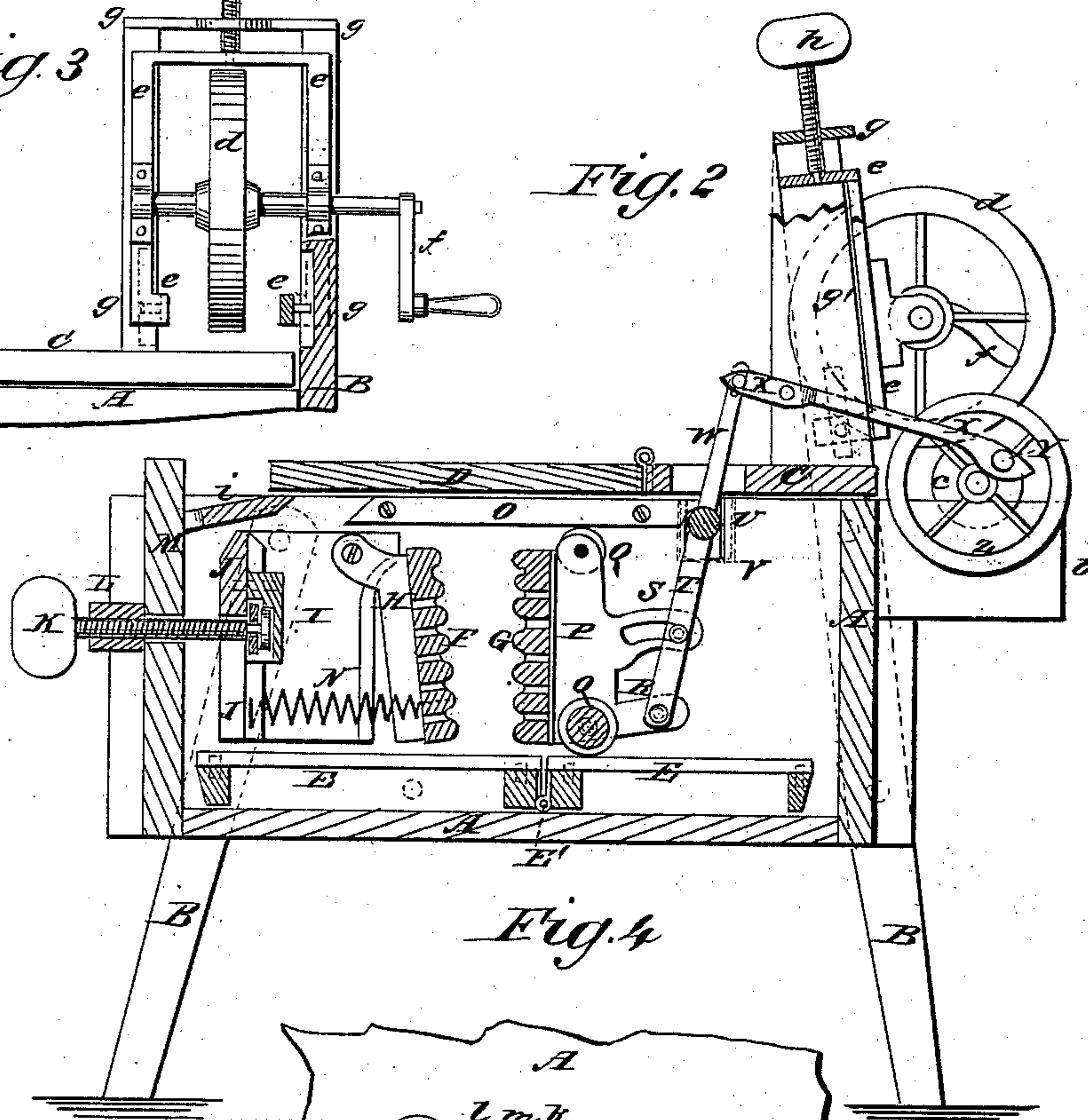
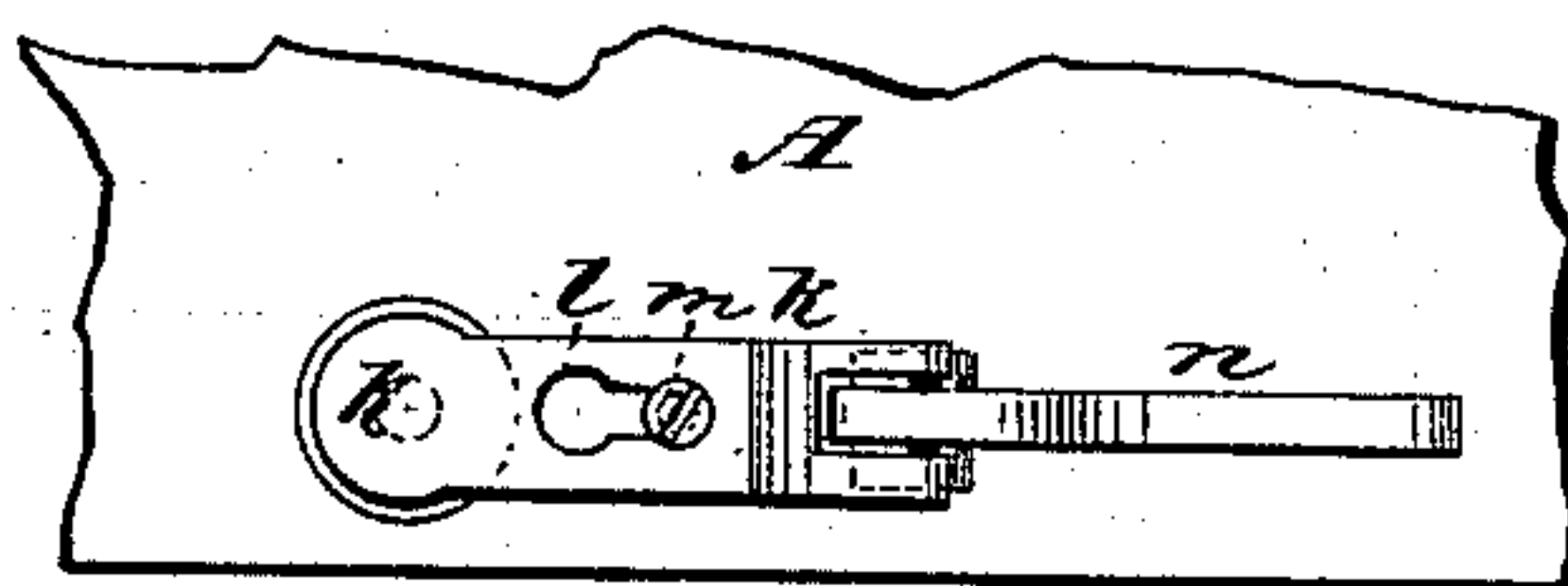


Fig. 4



WITNESSES:

Francis McArdle
C. Sedgwick

INVENTOR:

U. Miller

BY

ATTORNEYS.

UNITED STATES PATENT OFFICE.

UPTON MILLER, OF MOUNT MORRIS, ILLINOIS.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 223,938, dated January 27, 1880.

Application filed November 21, 1879.

To all whom it may concern:

Be it known that I, UPTON MILLER, of Mount Morris, in the county of Ogle and State of Illinois, have invented a new and useful Improvement in Washing-Machines, of which the following is a specification.

Figure 1 is a plan view of my improvement, the cover being removed. Fig. 2 is a sectional side elevation taken through the line *x x*, Fig. 1. Fig. 3 is a front elevation of the drive-wheel and its support. Fig. 4 is a side elevation of the stopper.

This invention relates to that class of washing-machines in which the clothes are compressed between reciprocating pressing-boards.

A represents the tub or box, which is made rectangular in form and of any desired size, and is supported by legs B, of such a length as to raise the machine to a convenient height.

The tub A is provided with a cover, made in two parts, C D, the part C being stationary and the part D being hinged at its inner edge to the inner edge of the part C. Upon the bottom of the tub A is placed a rack, E, for the dirt from the clothes to settle through to the bottom of the tub A, so that it will not be continually stirred up by the movement of the clothes.

The rack E is made in two parts, connected to each other at the lower part of their adjacent edges by hinges E', so that it may be more conveniently put in and taken out.

F G are the pressure-boards, which are corrugated upon their faces, and are slotted between the corrugations to allow the water squeezed from the clothes to escape freely.

The pressure-board F is strengthened by bars or plates H, attached to the end parts of its rear side. The upper ends of the bars H project rearward and upward, and are pivoted to the upper forward corners of the boards or bars I. The outer ends of the boards I are attached to the ends of the cross-board J.

To the center of the cross-board J is swiveled the end of a hand-screw, K, which passes through a nut, L, attached to the end M of the tub A. The board J is slotted from its lower edge to the screw K, so that it may be lifted off the said screw when desired.

With this construction, by turning the screw the boards I J I, and with them the press-

ure-board F, will be moved forward or back, as less or more clothes are to be operated upon at a time.

The side boards, I, rest against the sides of the tub A, and cause the cross-board J and the pressure-board F to move forward and back squarely.

To the lower part of the pressure-board F are attached the forward ends of two or more spiral springs, N, the rear ends of which are attached to the lower part of the board J, or to bars or other supports attached to the said board, so that the lower part of the pressure-board F may yield to adjust the said pressure-board to the clothes pressed against it.

The frame I J I is held down to its place by cleats O, attached to the upper part of the sides of the tub A. The pressure-board G is strengthened by bars or plates P, attached to the end parts of its rear side.

To the ends of the bars or plates P are pivoted wheels or rollers Q, the lower ones of which roll along the bars of the rack E. The upper rollers, Q, rest against the lower side of the cleats O.

By this arrangement the pressure-board G can be moved forward and back to compress and release the clothes very easily, the rollers Q preventing it from binding and greatly reducing the friction. Upon the lower and middle parts of the bars or plates P are formed, or to them are rigidly attached, two arms, R S.

To the outer ends of the lower arms, R, are pivoted the lower ends of two arms, T, formed upon or attached to the rock-shaft U. The upper arms, S, have curved slots formed in them to receive the bolts that pivot them to the arms T, so that the pressure-board G may adjust itself to the mass of clothes being pressed between it and the pressure-board F. The rock-shaft U works in bearings V, inserted in grooves in the upper parts of the side boards of the tub A, and to its middle part is attached, or upon it is formed, an arm, W, which passes up through a slot in the stationary part C of the cover, and its upper end is pivoted to the end of a connecting-bar, X. The shaft U, in connection with the arms T T W, acts as a three-armed lever. The other end of the bar X is pivoted to a crank-pin, Y, attached to the crank-wheel Z. The crank-wheel Z is

made heavy to serve as a fly-wheel, and is attached to the end of a shaft, *a*. The shaft *a* revolves in bearings attached to a small horizontal frame, *b*, attached to the end of the tub A.

To the shaft *a* is attached a small friction-wheel, *c*, against the face of which rests the face of a large friction-wheel, *d*. The journals of the friction-wheel *d* revolve in bearings attached to the frame *c*, and to the end of the outer journal is attached the crank *f*, by means of which the machine is operated. The frame *e* slides up and down in ways in an upright frame, *g*, attached to a corner of the tub A, and is held down to hold the friction-wheel *d* against the friction-wheel *c* with any desired pressure by a set-screw, *h*, which passes down through a screw-hole in the top bar of the frame *g*, and rests against or is swiveled to the top bar of the frame *e*.

The forward end, *M*, of the tub A projects upward to serve as a flange to receive a clothes-wringer. To this end part of the tub A is attached an inclined board, *i*, to receive the water wrung from the clothes and guide it back into the tub A. The lower edge of the inclined board or apron *i* is notched to allow the water wrung from the clothes to flow into the tub A along its end board.

In the lower part of one side of the tub A is formed a hole, *j*, through which the water may be drawn off when desired. *k* is a lever, the forward end of which fits over the outer end of the hole *j*. The inner side of the forward end of the lever *k* is recessed, and may have a packing attached to it, or the packing may be attached to the side of the tub A around the hole *j*.

In the middle part of the lever *k* is formed a slot, *l*, to receive the fulcrum-screw *m*, attached to the side of tub A. The forward end of the slot *l* is made large enough to allow the head of the screw *m* to be passed through it; but the rear part of the slot *l* is only large enough to receive the body of the said screw *m*, as shown in Fig. 4. The rear end of the lever *k* is inclined outward slightly, is slotted, and to it is pivoted a cam-lever, *n*. The part or cam of the lever *n* that bears against the side of the tub A is made in cylindrical form, as shown in Fig. 1 and in dotted lines in Fig. 4.

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

1. In a washing-machine, the rack E, made in two parts, hinged together, in combination with the boards F G and removable cleats O, as and for the purpose specified.

2. In a washing-machine, the combination, with the pressure-board G, of the arms R, the slotted arms S, and the three-armed rock-shaft T T U W, substantially as herein shown and described, to give a forward and backward movement to the pressure-board and allow it to adjust itself to the clothes, as set forth.

3. In a washing-machine, the combination, with the perforated side of the tub A, of the stopper formed of the slotted lever *k*, the cam-lever *n*, and the fulcrum-screw *m*, substantially as herein shown and described, for closing the discharge-orifice *j* of the tub A, as set forth.

UPTON MILLER.

Witnesses:

J. H. SWINGLEY,
WILL. H. MILLER.