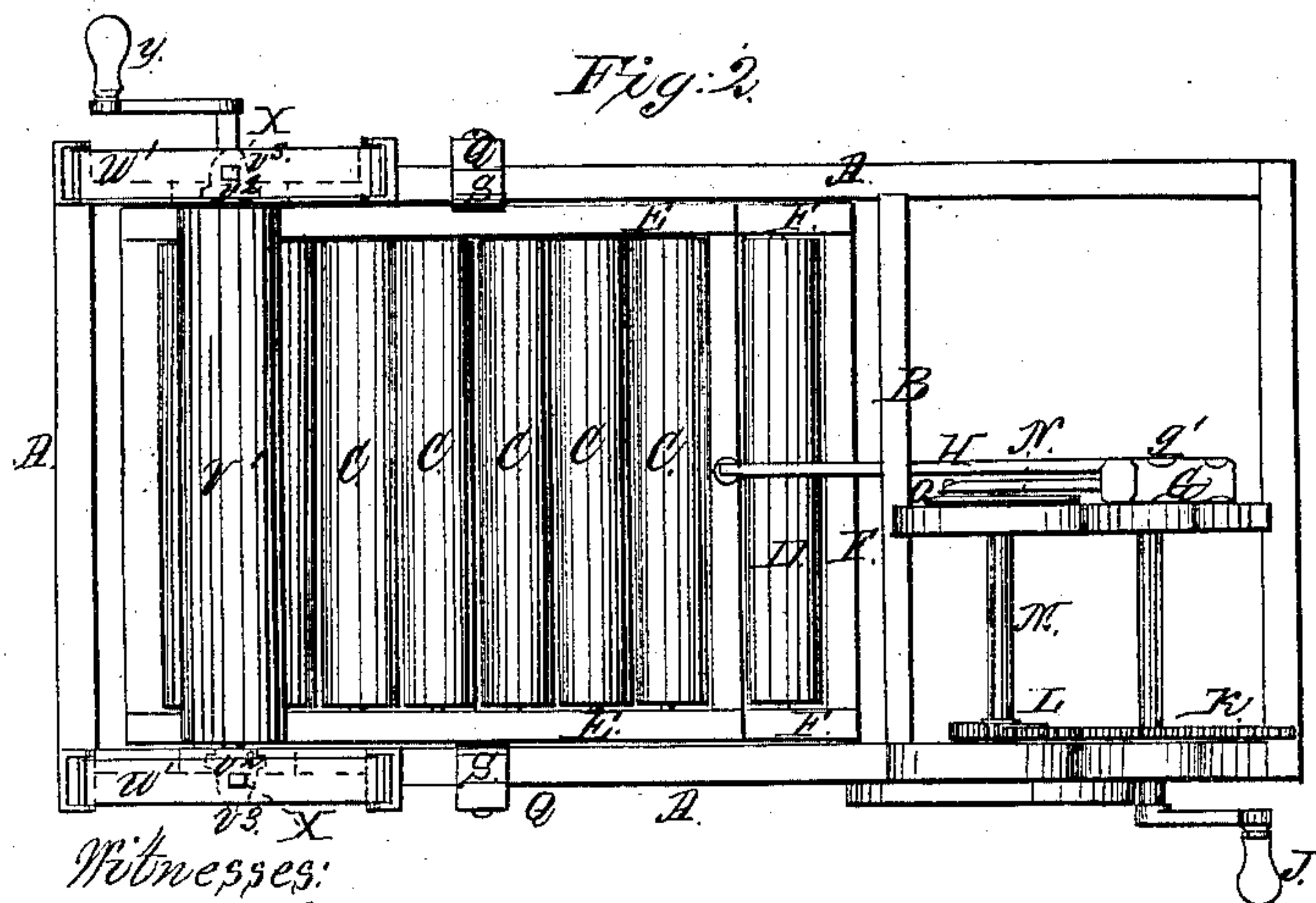
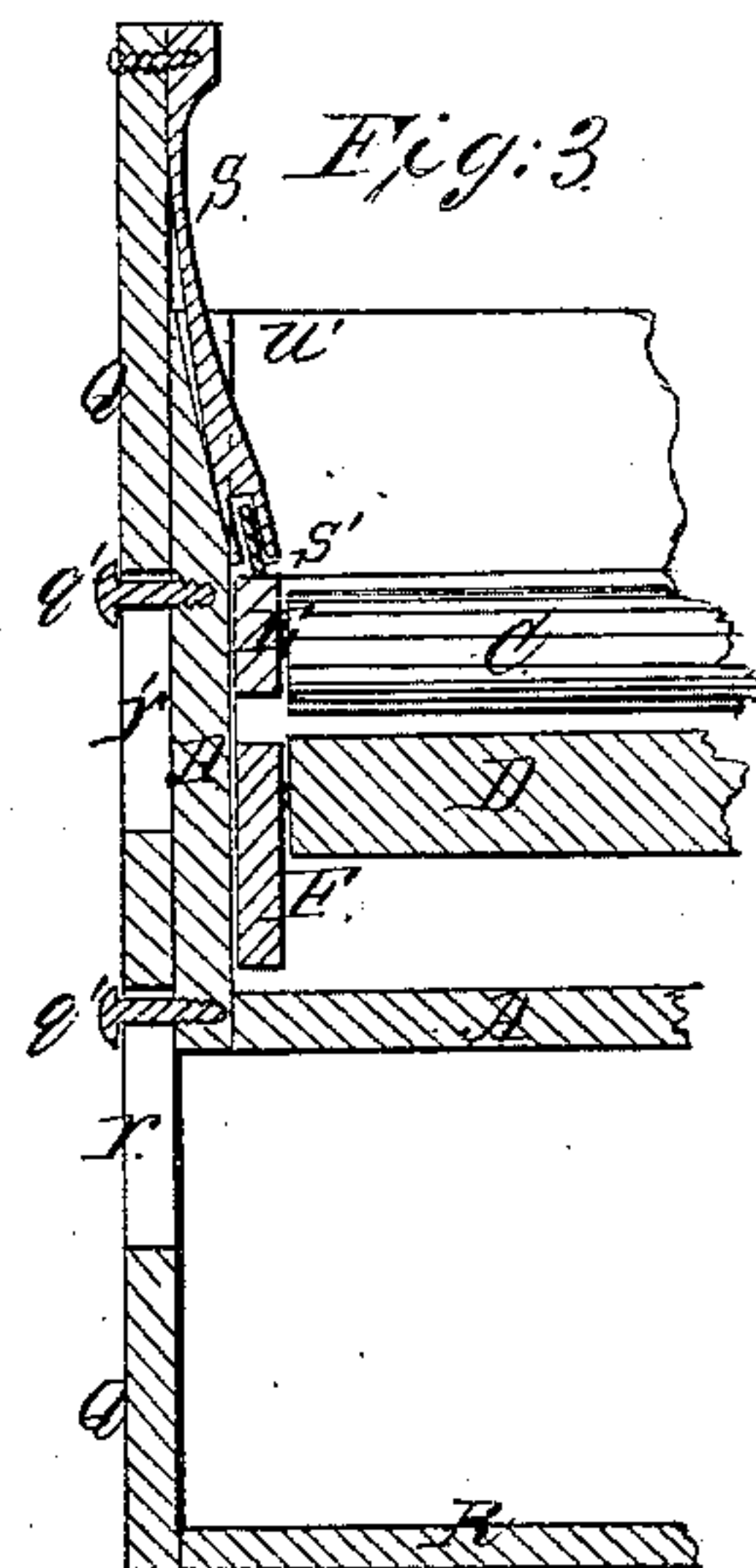
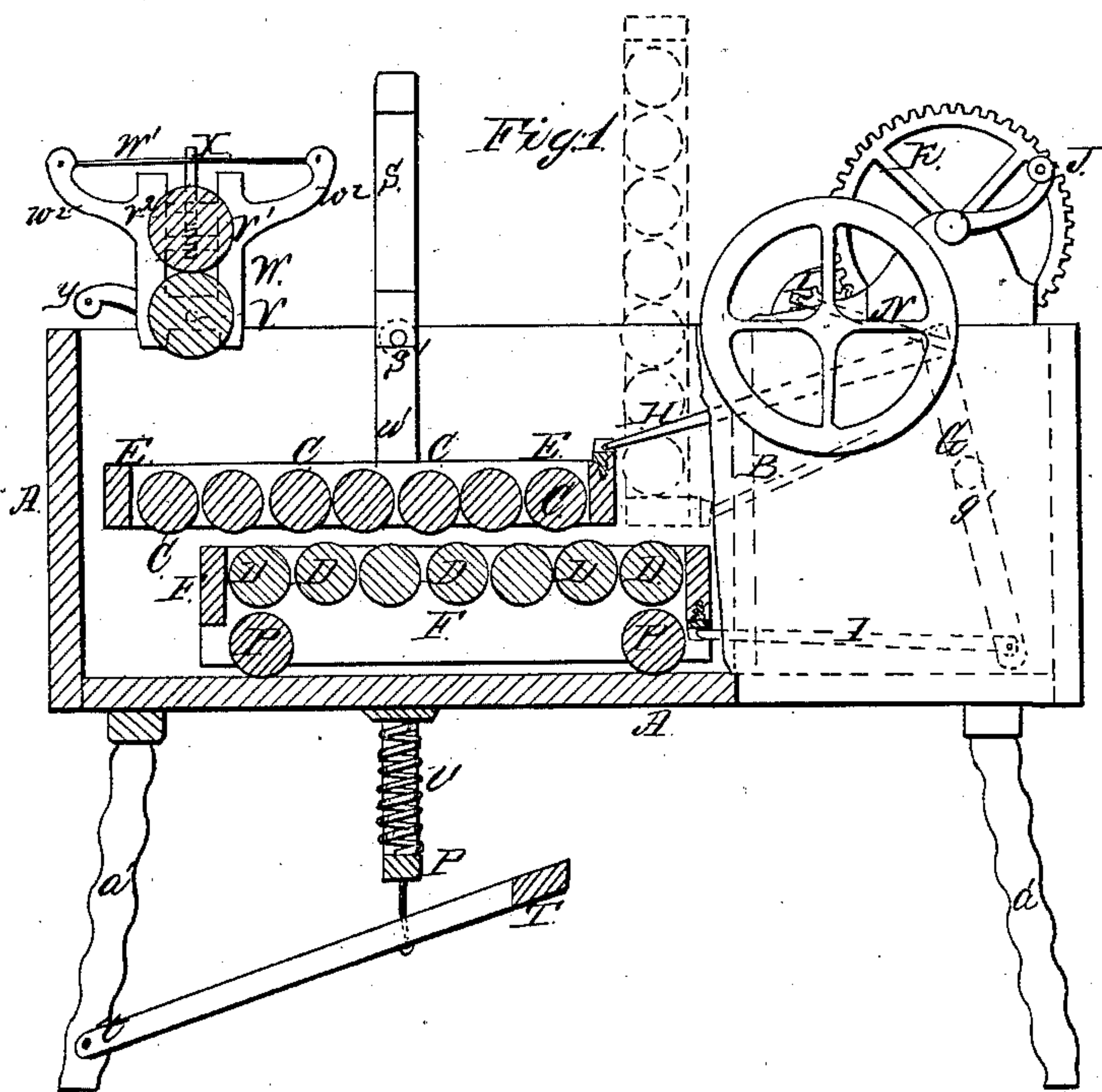


H. Boies,
Washing Machine,
No 32,615, *Patented June 25, 1861.*



Witnesses:

J. W. Mullen
W. H. Fortus

Inventor:
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UNITED STATES PATENT OFFICE.

HORACE BOIES, OF WHITES CORNERS, NEW YORK.

WASHING-MACHINE.

Specification of Letters Patent No. 32,615, dated June 25, 1861.

To all whom it may concern:

Be it known that I, HORACE BOIES, of Whites Corners, Erie county, and State of New York, have invented certain new and useful Improvements in Washing and Wringing Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and the letters of reference marked thereon, in which—

Figure I is a partial longitudinal section of my improvements. Fig. II is a plan of the same and Fig. III is a partial section (transverse) of the arrangement for giving the required pressure upon the rollers.

Letters of like name and kind refer to like parts in each of the figures.

A represents a wash tub or box rectangular in form, and supported upon legs (*a'*).

B is a bulkhead which separates the box A into two unequal compartments the larger to receive the clothes and rubbing apparatus the smaller to receive and support the arrangement of levers and gearing for giving motion to the same.

C and D are two series of rollers hung or supported in the rectangular frames E and F and constituting the rubbing apparatus the clothes to be washed being placed between them.

G is a lever working upon the fulcrum bolt *g'* its arms being of equal length.

H is a connecting rod connecting the upper end of the lever G with the upper roller frame E. I is a connecting rod of equal length connecting the lower end of the lever G with the lower roller frame F. These connecting rods work through slots or openings in the bulkhead B and through them the lever G gives a horizontal reciprocating motion to the roller frames E and F, the lever being operated by the winch handle (J) spur wheel (K) pinion (L) (upon crank shaft M) and short connecting rod (N) connecting the upper end of the lever G with the crank pin (O).

P, P, are friction rollers connected to the lower frame F and rolling upon the bottom of the tub.

Q, Q, are two perpendicular bars connected to the outside of the side pieces of the tub A by the screws or bolts *q'* which pass through slots (*r'*) (see Fig. III) in the

bars and allow them a vertical movement. The bars are connected together at their lower ends by the cross bar R.

S, S, are two spring arms connected at one end to the upper ends of the bars Q Q and having in their lower ends the small wheels or sheaves *s' s'*.

T is a lever connected to the cross bar R and having its fulcrum upon one of the legs *a'* as represented at (*t'*) and by means of which a descending movement is given to the bars Q Q and spring arms S, S. These spring arms slide down in the incline grooves (*u'*) (in the side pieces of the tub) which gradually lessen in depth so as to throw the ends of the arms inward and cause the sheaves in their ends to press down upon the side rails of the upper frame E as represented in Fig. III.

V is a coiled spring which will cause the bars and spring arms to assume their first position as soon as the pressure upon the lever T is removed and the spring of the arms S, S, will cause them with the sheaves *s' s'* to withdraw into the grooves. This is necessary in order to allow the upper frame to be thrown over as represented by the dotted red lines Fig. I to allow the clothes to be properly laid upon the under frame.

Operation: The upper frame and rollers are first raised into the position shown by the dotted red lines Fig. I. The clothes to be washed are then properly spread upon the lower rollers, the proper quantity of water placed in the tub and the upper rollers lowered into their horizontal position upon the clothes. The operator by turning the winch handle J will through the means before described give an alternate reciprocating motion to the upper and lower frames, and rollers C, D, and by pressing down with his foot upon the end of the lever T will bring the sheaves in the ends of the arms S, S, down upon the side rails of the upper frame E as before described and so cause the upper rollers C to roll with any required amount of pressure upon the clothes. As the upper and lower frames and rollers move in opposite directions and in horizontal planes at the same time, it is evident that the clothes will not "roll or wad up" but will lie evenly spread upon the rollers and that the action of the rollers

upon the clothes must clean them effectually and in the shortest possible time.

The device for wringing or more properly, drying the clothes consists of two rollers 5 V and V'. The lower roller V is made of wood and revolves in stationary bearings in the metal standards W bolted to the side pieces of the tub. The upper roller V' has journal bearings in the movable boxes (V²). 10 It has a wood or metal shaft for a center upon which are wound layers of cotton or cloth the whole being covered, with gutta percha, (w') are flat springs held at their ends by the arms (w²).

15 x, w, are pressure screws their lower ends working in internal screws cut in the projections (v³) of the journal boxes (v²). Their upper ends pass through the center of the springs with a shoulder beneath and 20 a square head above by which to turn the screw.

Motion is given to the rollers by means of the winch handle (Y) on the end of the shaft of the lower roller. The clothes are 25 taken from the tub and passed between the rollers the necessary amount of yielding pressure being given by the springs (w') the stiffness and power of which are increased or diminished by the screws (x).

I claim:

1. A series of rollers C, D, supported in 30 two rectangular frames E, F, which rollers and frames constitute two movable rubbers, the one being supported upon the other, in combination with mechanism for transmitting 35 to said rubbers, alternate and simultaneous movements in opposite directions, and in parallel planes for the purposes and substantially as described.

2. The arrangement of the bars Q (including slots r') and spring arms S, (including sheaves s') with incline slot u', spring 40 V, and lever T, so that the downward movement of the lever T, will bring the spring arms into such position as to cause the 45 sheaves to bear with a due amount of pressure, upon the rubber frame E while the rubbers are in motion, and so that said spring arms will withdraw automatically 50 from such position when the pressure is removed, and allow the rubber to be turned up into a vertical position for the purposes, substantially as described.

HORACE BOIES.

Witnesses:

A. M. WHEELER,
W. H. FORBUSH.