

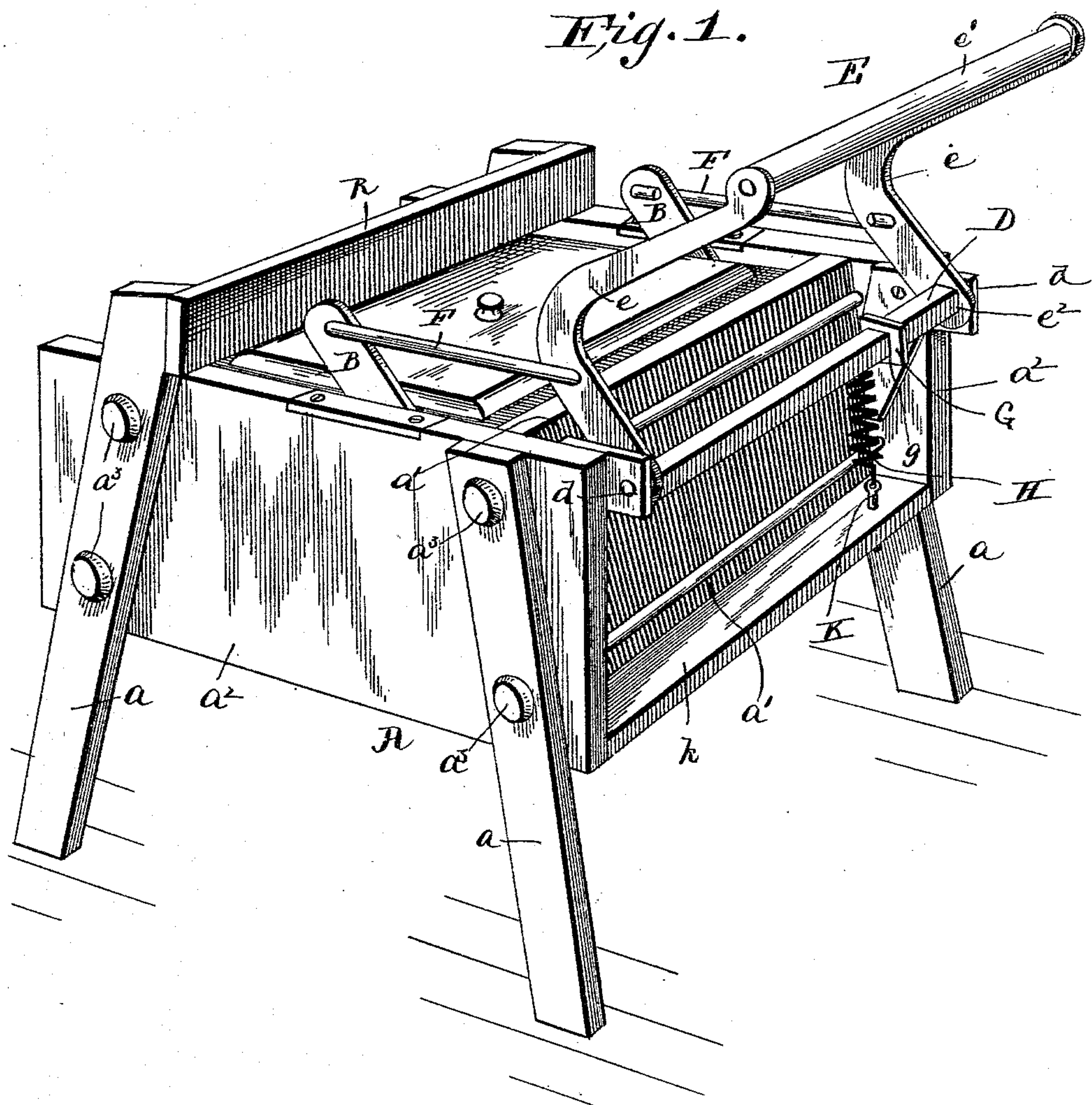
(No Model.)

2 Sheets—Sheet 1.

J. Q. LEFFINGWELL.
WASHING MACHINE.

No. 401,357.

Patented Apr. 16, 1889.



Witnesses.

Wm. A. Ober
R. J. Marshall Jr.

Inventor.
J. Q. Leffingwell,

By his Attorneys

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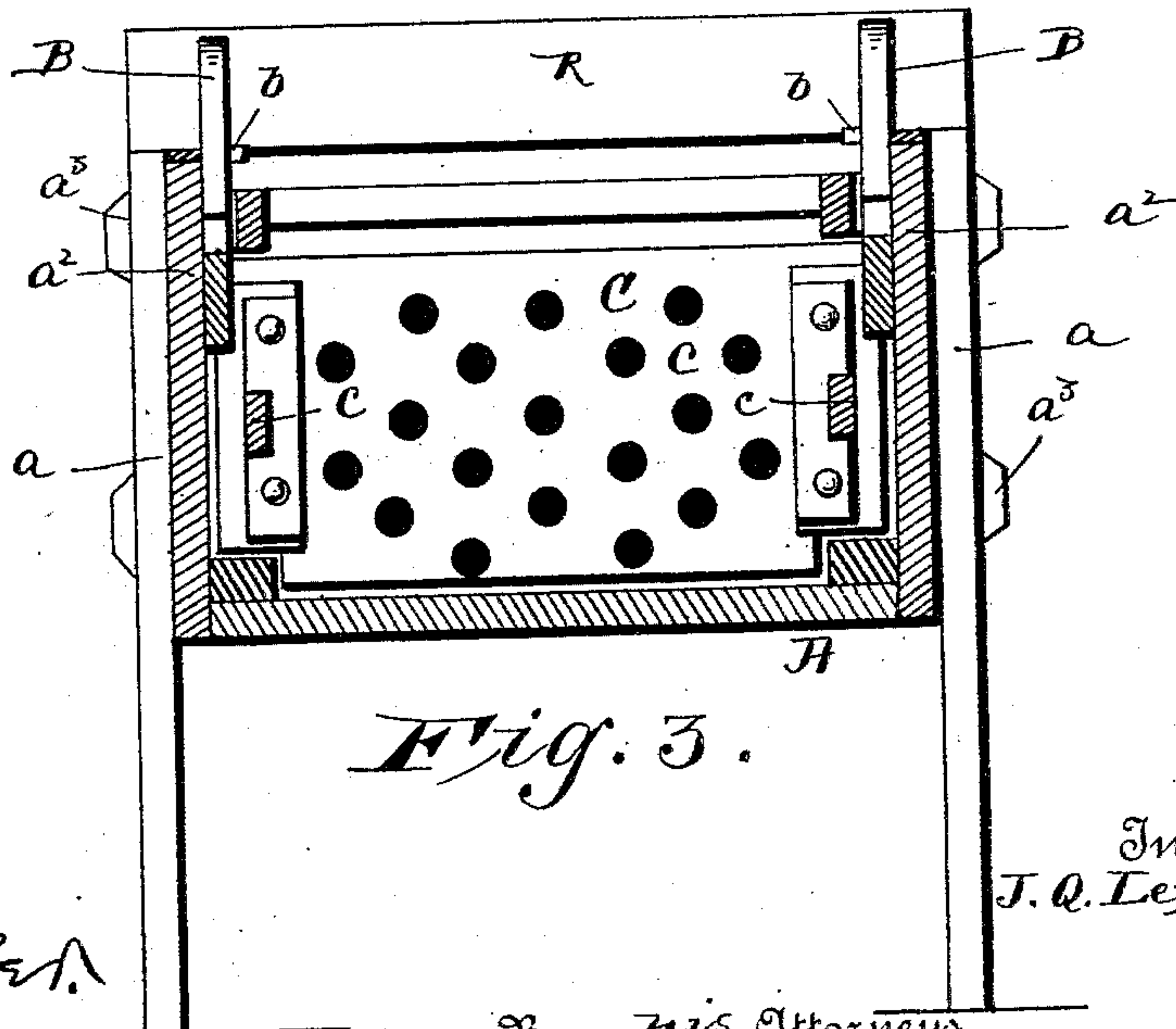
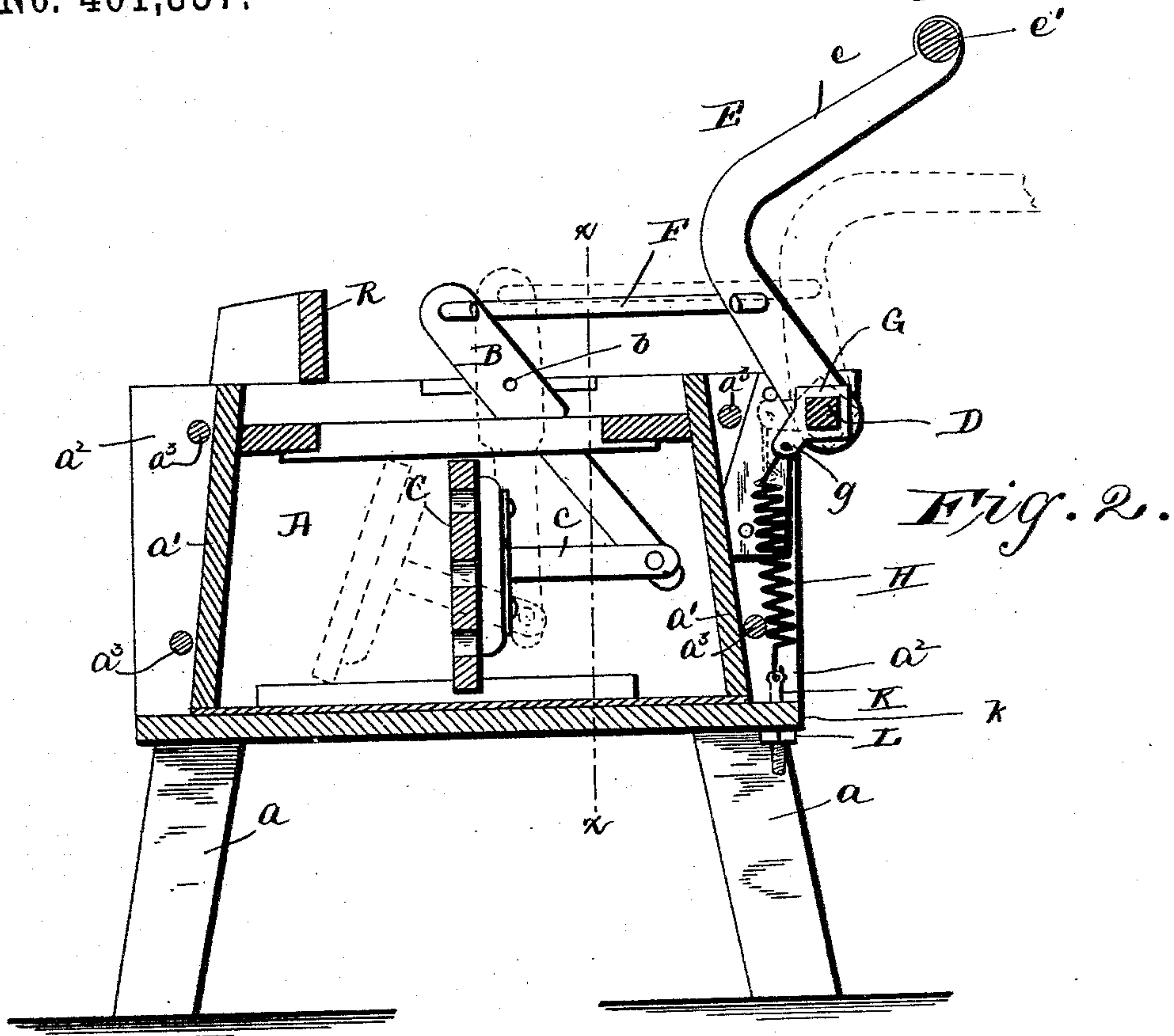
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2 Sheets—Sheet 2.

J. Q. LEFFINGWELL.
WASHING MACHINE.

No. 401,357.

Patented Apr. 16, 1889.



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Frank A. Ober.

R. J. Marshall Jr.

Inventor,
J. Q. Leffingwell.

By his Attorneys

C. A. Howard

UNITED STATES PATENT OFFICE.

JOHN QUINCY LEFFINGWELL, OF NEVADA, IOWA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 401,357, dated April 16, 1889.

Application filed August 4, 1888. Serial No. 281,995. (No model.)

To all whom it may concern:

Be it known that I, JOHN QUINCY LEFFINGWELL, a citizen of the United States, residing at Nevada, in the county of Story and State of Iowa, have invented new and useful Improvements in Washing-Machines, of which the following is a specification.

It is my object to provide a simple, cheap, durable, and effective machine wherein the movement on the operating-handle is vertical; and the invention consists in a certain novel construction and combination of devices, fully described hereinafter in connection with the accompanying drawings, and specifically pointed out in the appended claim.

In the drawings, Figure 1 is a perspective view of the washer embodying my improvements. Fig. 2 is a longitudinal central sectional view of the same. Fig. 3 is a transverse sectional view of the washer on the line $x x$ of Fig. 2.

Referring by letter to the drawings, A designates the tub or body of the washer, which is provided with the legs or standards $a a$, and on one end of the tub at its upper edge is arranged a vertical strip or flange, R, on which is adapted to be placed a wringer of any preferred form. The ends $a' a'$ of this body are inclined inward toward their upper edges, and the vertical sides $a^2 a^2$ are arranged vertically and are drawn tightly against the extremities of the ends a' by the bolts $a^3 a^3$. The bottom of the tub is covered on the inside with a lining of zinc or similar material. On outwardly-extending spindles $b b$ on opposite sides of the tub are mounted the operating-levers B B, and the lower ends of these levers are connected to opposite ends of the plunger C by the arms $c c$. This plunger consists of a flat board or plate having perforations throughout its surface; and it is further provided at its ends with the rearwardly-extending rigid arms $c c$, which are pivoted to the lower ends of the operating-levers. In suitable bearings or eyes, $d d$, at the rear end of the tub is mounted the rock-shaft D, (the portion of the shaft between the bearings being squared,) and E represents the handle, which consists of the curved or angle arms $e e$ and the hand-bar e' , connecting the outer ends of the said arms. The inner ends of the

said curved or angle arms are provided with square eyes $e^2 e^2$, which fit on the squared portion of the rock-shaft. Intermediate points of these curved or angle arms are connected to the upper ends of the operating-levers by means of the connecting-rods F F.

A small bracket, G, having an eye, g , is arranged on the rock-shaft at a suitable point, and to this eye is attached the upper end of a contractile spring, H, the lower end of which is attached to the upper end of an adjusting-bolt, K, which passes through a projecting edge, k , of the bottom of the tub, and is engaged by a suitable nut, L. The arm of the bracket having the eye g is arranged on the inner side of the rock-shaft, and therefore the tension of the spring thereon holds the handle raised, as shown in Fig. 2 of the drawings.

When the handle is in its raised or normal position, the levers B B are inclined, as shown in Fig. 2, and their lower ends are opposite the center of the plunger, thereby causing the arms $c c$ to maintain a horizontal and the plunger a vertical position. As the handle is depressed, as shown in dotted lines in Fig. 2, the lower ends of the levers swing down below the center of the plunger, and therefore incline the latter, causing its lower edge to bear first against the clothes. As the handle approaches the limit of its downward motion, the plunger gradually returns to its vertical position. Therefore it will be seen that the pressure of the plunger begins at the clothes which are close to the bottom of the tub and presses upward, thereby slightly turning them, and this motion being continued eventually brings all the clothes in the tub into a position to be pressed directly by the plunger. The plunger rides at its lower edge on suitable tracks, M M, at the bottom of the tub, to prevent wearing the said bottom.

It will be observed that the motion of the outer end of the handle is mainly vertical, and after being depressed by the operator it is immediately returned to its elevated or normal position by the spring, the tension of which may be regulated at will. It is obvious that the upward movement of the handle when no spring is employed is the more tiresome, and less power can be applied in this way; but when a spring is employed to accom-

plish the upward movement all the strength of the operator may be devoted to the downward movement.

Having thus described the invention, I
5 claim—

In a washing-machine, the combination, with the tub, the plunger arranged therein, and the operating-levers B B, connected to the plunger, of the rock-shaft provided with a
10 laterally-projecting bracket, G, having an eye, g, the tension-spring connected to the said bracket, for the purpose specified, and the hand-lever comprising the curved or angle

arms *e e*, connected, respectively, to the levers B B, and provided with squared eyes *e*², fitting on the squared portion of the rock-shaft, and the hand-bar connected to the free ends of the hand-levers, substantially as specified. 15

In testimony that I claim the foregoing as my own I have hereto affixed my signature in
20 presence of two witnesses.

JOHN QUINCY LEFFINGWELL.

Witnesses:

CURTIS A. WOOD,
H. L. CANELL.