C. H. HERSEY.

PRESS.

No. 171,282. Patented Dec. 21, 1875.

Fig. 1.

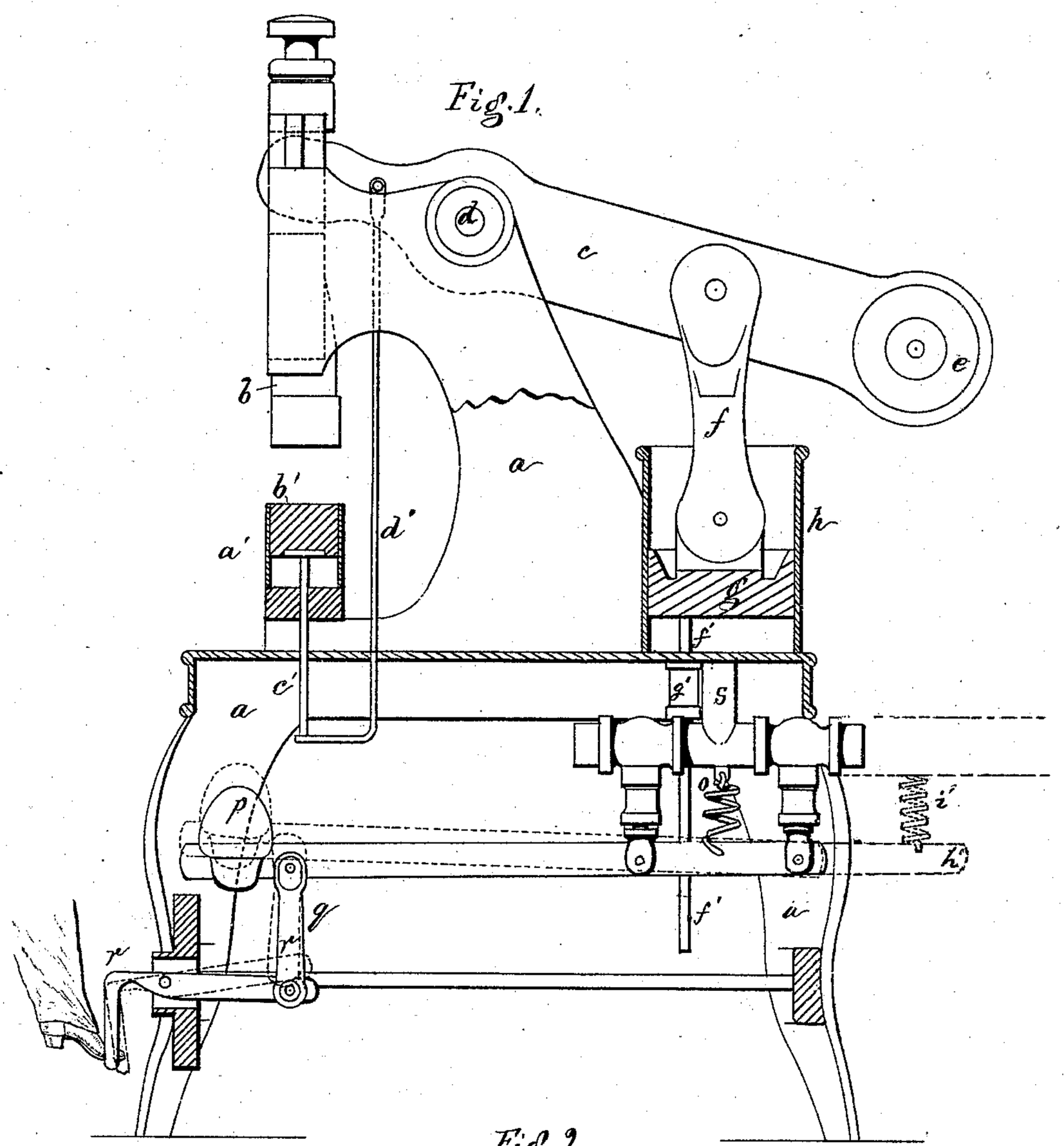
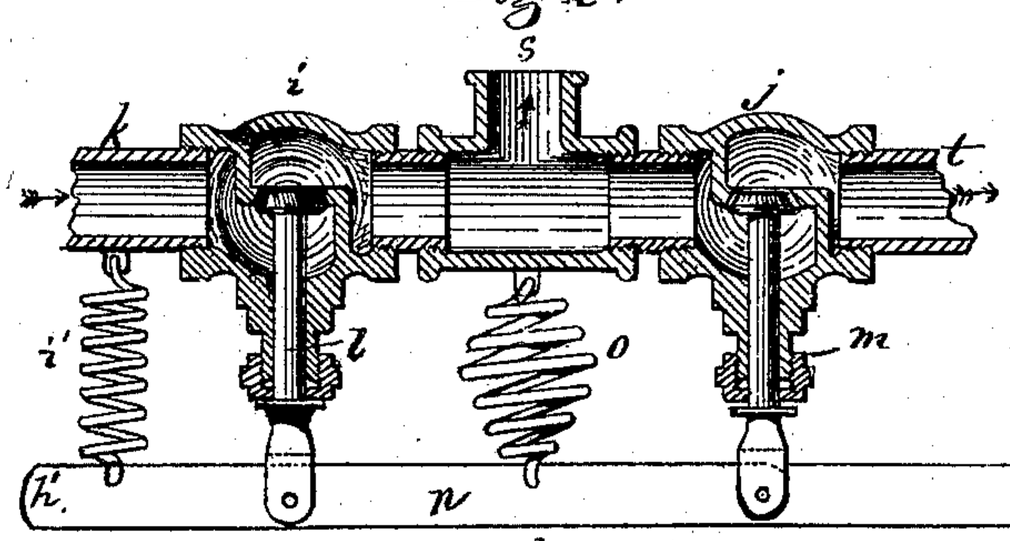


Fig. 2.



Witnesses.
L. M. Latimer.
W. J. Frost

Inventor.
Charles H. Hersey
per Crosby & Gregory Attys.

UNITED STATES PATENT OFFICE.

CHARLES H. HERSEY, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN PRESSES.

Specification forming part of Letters Patent No. **171,282**, dated December 21, 1875; application filed October 25, 1875.

To all whom it may concern:

Be it known that I, CHARLES H. HERSEY, of Boston, in the county of Suffolk and State of Massachusetts, have invented Improvement in Presses, of which the following is a specification:

This invention relates to a press adapted to press soap into a mold, and for other purposes; and the invention consists in a stamp or die carrier, and a walking-beam, combined with a piston and valves to control the entrance and exit of steam or compressed air into the cylinder, to raise the piston to operate the stamp or die, and to allow the piston to descend, and in other features hereinafter set forth.

Figure 1 is a side view, partially in section, of a machine provided with my improvements, and Fig. 2 is a section of the valve apparatus enlarged.

The frame *a* is of any suitable shape to sustain the working parts, and carries at its forward end a bar, *b*, which is the carrier for a stamp or die, and this bar is connected with a walking-beam, *c*, having its journal at *d*, and weighted at its other end *e*, and connected by link *f* with a piston, *g*, fitted to the cylinder *h*, the piston being packed in any well-known way, so as to fit the cylinder sufficiently snug to prevent the passage of steam or air. In connection with the cylinder I use two valves, *i j*, the inlet-valve *i* being supplied with steam or compressed air from a suitable reservoir through a pipe, *k*. The valve-stems *l m* are connected with a valve-operating lever, *n*, shown as held upward by a spring, *o*, and provided with a weight, *p*, and connected by a link, *q*, with a foot-lever, *r*. The weight is sufficiently heavy to keep the valve-operating lever *n* in the position shown in full lines, Fig. 1, except when positively lifted at that end by the foot-lever. When in the position shown in full lines the outlet or exhaust valve *j* is held partially open for the escape of steam or air from the cylinder through pipe *s t*, the inlet-valve *i* being closed, and the piston can then descend under the action of the weight *e*.

The lever *n*, during the operation of the machine, has a changeable fulcrum, the fulcrum at one time being the stem of the inlet-valve, and at another time the stem of the outlet-valve, and besides the valve-stems the lever has no other fulcra. When the outlet-valve is held partially opened, as described, by the weight or a spring, the stem of the inlet-valve serves as the fulcrum, and when the inlet-valve is opened for the admission of steam the stem of the outlet-valve serves as its fulcrum. During the time that the inlet is opened the outlet-valve and its stem are held up by the pressure of the steam on the under side of the outlet-valve, thereby holding up the fulcrum of the lever.

To force the stamp or die carrier or bar *b* down quickly, the end of the valve-operating lever *n* is raised by the foot-lever into the position shown in dotted lines, and then the exhaust-valve is closed and the inlet-valve *i* opened, and the steam or compressed air flows quickly into the pipe *s* and cylinder *h*, elevating the piston and depressing the opposite end of the walking-beam and rod *b*.

At the forward end of the machine is a box or frame, *a'*, in which is placed a die, *b'*, the latter fitting the frame, but free to be moved therein. This die is either plain or cut and stamped, or formed to produce a pattern on soap when being cut into cakes for toilet and other uses. This die has a rod, *c'*, by which it may be lifted from the box *a'*, and it is lifted by the end of the rod *d'*, connected and moving with the walking-beam.

With the parts as in Fig. 1, the soap to be cut into shape and stamped, or to be stamped or imprinted, is placed on the die and box *a'*, the lever *n* is raised through the lever *r*, the inlet-valve *i* is opened, and steam or air is allowed to pass into the cylinder *h*, elevating the piston, turning the walking-beam, and depressing the bar *b* or stamp quickly upon the soap, the end of the bar or stamp pressing the soap into the box or mold *a'*. The die or follower *b'* is pressed down by the soap crowded into the mold *a'*, and the soap is pressed sufficiently hard to give it the desired form, and to mold or imprint one or both sides. The soap is lifted from the mold by the action of rod *d'* against rod *c'*. The mold *a'* may be of any desired form.

Attached to and moving with the piston *g* is a small pipe, *f'*, to lead water of condensation from above the piston out of the cylinder.

This pipe extends through the bottom of the cylinder, passing through a stuffing-box, *g'*, so as not to allow the escape of steam or air.

The valves, lever, cylinder, piston, walking-beam, and bar *b* may be used in a machine for cutting out soles or heels from leather, or to drive nails into a heel, as the usual heel-nailing machines.

Instead of the weight shown in the drawing for depressing the end of the lever, I may extend the end of the lever, as at *h'*, and connect with such end a spring, *i'*, which, being fixed to a stationary part of the machine, will rock the lever *n* over its fulcrum-pin on the stem *m*, and will open the outlet-valve a little for the passage of steam.

It will be noticed that steam, acting on the under side of the inlet-valve, tends to crowd it up to its seat and hold up the lever *n* connected with the valve-stem *l*, and when said valve is depressed by the lever *n*, and the steam passes through to the other valve, the pressure of the steam in such valve acts to close or force the outlet-valve into its seat and hold the lever *n* up.

The spring *o*, in some instances, may be omitted, the pressure of the steam on the heads of the valves keeping the lever up. If both valves are opened steam will pass into the inlet at *k*, and directly through both valve-seats and the outlet. The steam-passage is therefore a continuous passage, and in this continuous or connected steam-passage I place two valves.

I claim—

1. The bar or stamp, the walking-beam, link, piston, and cylinder, in combination with the inlet and outlet valves, and valve-operating lever *n*, substantially as described.

2. The lever *n*, pivoted directly on the valve-stems, in combination with the inlet and outlet valves, and adapted to move on each valve-stem as a fulcrum when moving the other valve-stem, and to operate substantially as described.

3. The mold and die *b'*, in combination with the stamp *b*, walking-beam, and connected piston and cylinder, to operate the stamp, substantially as described.

4. The lever *n*, having its fulcrum on the stem of the inlet-valve, in combination with the stem of the outlet-valve, to which it is connected at a point between its ends, and with a connected lever adapted to operate it, and with a weight or spring to depress the end of the lever most remote from the inlet-valve to retain the outlet-valve partially open, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES H. HERSEY.

Witnesses:
GEO. W. GREGORY,
S. B. KIDDER.