(No Model.)

J. W. ROGERS.

BEATING OUT MACHINE FOR BOOT OR SHOE SOLES.

No. 294,506. Patented Mar. 4, 1884.

Fig. 1.

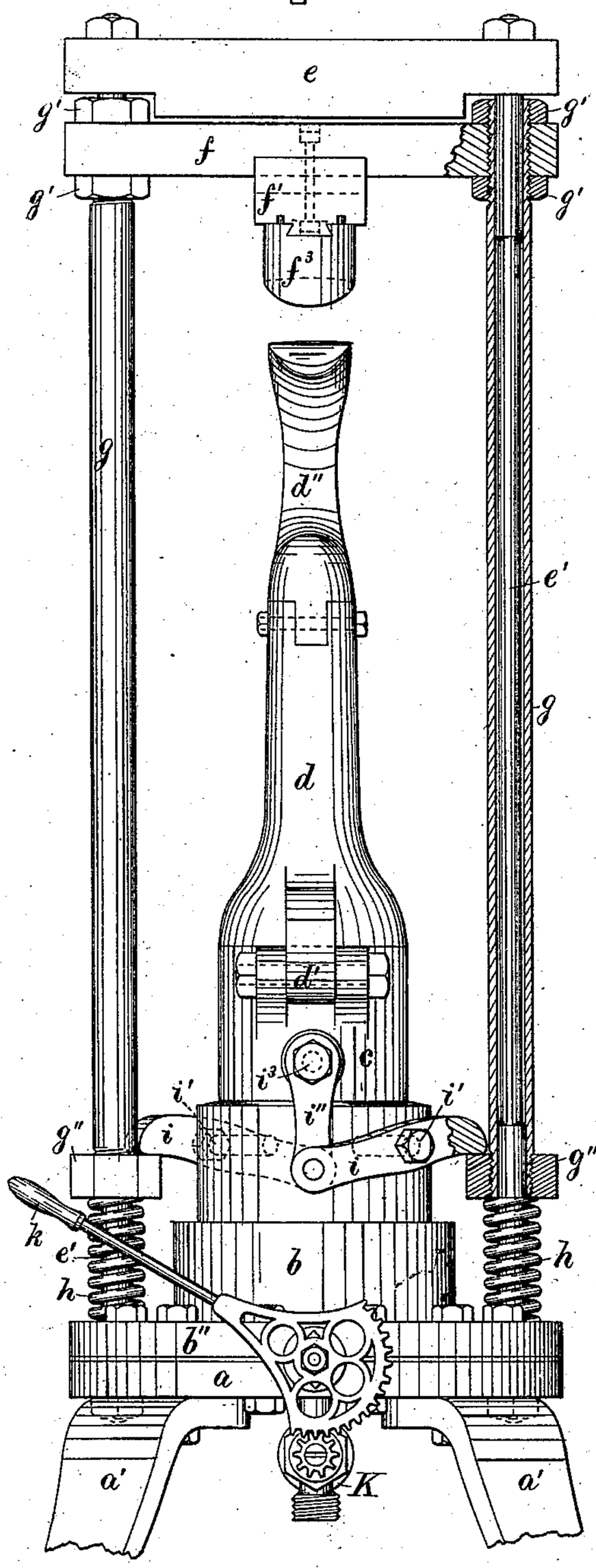
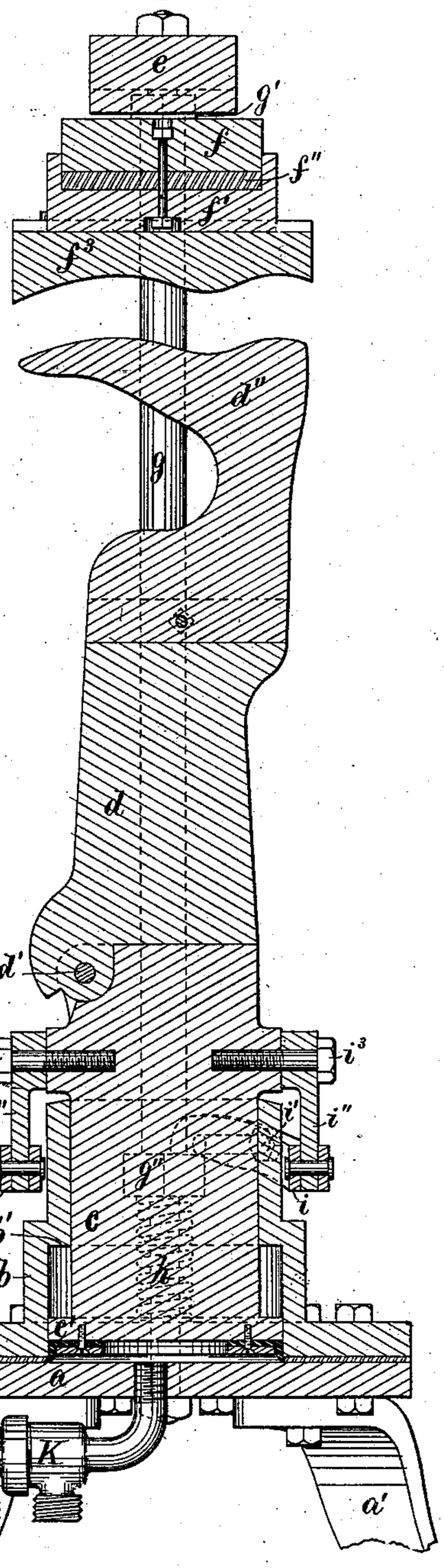


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

JOSIAH W. ROGERS, OF BEVERLY, MASS., ASSIGNOR TO THE WINSLOW BEATING-OUT SHOE MACHINERY COMPANY, OF SACO, ME.

BEATING-OUT MACHINE FOR BOOT OR SHOE SOLES.

SPECIFICATION forming part of Letters Patent No. 294,506, dated March 4, 1884.

Application filed January 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH W. ROGERS, a citizen of the United States, residing at Beverly, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Beating-Out Machines; and I do hereby declare that the same are fully described in the following specification and illustrated in the accompanying drawings.

This invention relates to improvements in hydraulic beating-out machines for boots and shoes, and it is carried out as follows, reference being had to the accompanying drawings, where—

Figure 1 represents a front elevation, and Fig. 2 represents a central longitudinal section.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

Hydraulic beating-out machines have heretofore been made with a jack attached to and made to move up and down with the hydraulic plunger, combined with a stationary head, to the under side of which the stationary sole-former was secured. In my present invention the jack is made to move by and with the hydraulic plunger, and as it is moved up and down the head carrying the sole-former in the upper end of the machine is caused to move in an opposite direction to the said jack and its plunger, and in this manner the speed of the machine, and consequently its capacity for doing the desired work, is doubled, or very nearly so. The machine may be varied in its details, and I do not wish to confine myself to the exact mechanism as shown in the drawings, as these may be changed without departing from the essence of my invention, which is, in an hydraulic beating-out machine, a movable jack combined with a diametrically-opposite movable sole-former, as will now be more fully shown and described.

In the drawings, *a* represents the lower plate or bottom of the machine, resting on legs or supports *a' a'*, as usual. To the top of plate *a* is secured the hydraulic cylinder *b*, provided with an annular inwardly-projecting offset, *b'*, to serve as a stop against the flange *c'* of the hydraulic plunger *c*, as is usual, to prevent the plunger from being forced out through the upper end of cylinder *b* in case of breakage of the upper cross-bar or either of its vertical supporting rods or pillars.

To the upper end of plunger *c* is hinged at *d'* the jack-post *d*, carrying in its upper end a suitable jack, *d''*, in the usual manner.

e is a stationary cross-bar secured in a firm and substantial manner to the upper ends of the vertical guide rods or pillars *e' e'*, the lower ends of which are firmly secured to the plate *a*.

f is the vertically-movable head, located and guided on the vertical rods *e' e'*. Midway on the movable head *f* is secured the plate *f'* and interposed elastic packing, *f''*, in a suitable manner. To the under side of plate *f'* is secured the detachable former f^3, shaped on its under side to correspond with the curvatures of the upper end of the jack *d''*, as shown in Fig. 2. Each post or guide-rod *e'* is surrounded by a pipe or sleeve, *g*, fitting loosely on said rod and attached in its upper end to the movable head *f* by means of nuts *g' g'*, or in a similar or equivalent manner. To the lower end of each sleeve *g* is secured a nut or collar, *g''*, and between said collars and the lower flange, *b''*, of the hydraulic cylinder *b* is located on each rod *e'* a coiled spring, *h*, capable of automatically raising the head *f* to its normal position (shown in the drawings) as soon as the hydraulic pressure is relieved.

To the outside of cylinder *b* are the levers *i i*, hinged and supported on the respective fulcra *i' i'*, secured to said cylinder *b* in a suitable manner. The inner ends of said levers *i i* are hinged, respectively, to links *i'' i''*, the upper ends of which are hinged to the plunger *c* by means of the respective bolts i^3 i^3, as shown. The outer end of each lever *i* is made to rest on the top of the collar or nut *g''*, as shown. Thus it will be seen that when the plunger *c*, with its jack and jack-post, is moved upward by the hydraulic pressure within the lower part of cylinder *b* it causes the head *f* to move downward by the connecting mechanism, as above described, and both the jack *d''* and former f^3 continue to move in opposite directions toward each other until they are brought together with the boot or shoe sole compressed or beaten out between them; and in this manner a saving in time is effected, and the ca-

pacity of the machine for doing its work is materially increased.

K represents an ordinary duplex valve or cut-off, adapted to be operated by means of a lever or handle, *k*, or equivalent device for turning off and on the liquid under pressure to and from the lower end of the cylinder *b*.

I desire to state that I do not wish to confine myself to the exact connecting mechanism, as shown and described, between the movable plunger *c* and movable head *f*, as this may be done by other and equivalent means to equal advantage without departing from the essence of my invention. Neither is it essential to have the connections from the movable head *f* in the form of sleeves *g g*, surrounding the pillars *c' c'*, as solid rods located at the sides of the respective pillars *c' c'* may be used to equal advantage.

In the drawings the movable head *f* is shown as being operated downward by the hydraulic pressure, and upward by means of coiled springs as soon as the hydraulic pressure is relieved within the cylinder; but this is not essential, as I may modify my invention so as to operate the movable head *f* by the hydraulic pressure in both directions.

What I wish to secure by Letters Patent, and claim, is—

In a hydraulic beating-out machine, the stationary cylinder *b* and movable plunger *c*, carrying the jack *d''*, combined with the movable head *f*, carrying the former f^3, and suitable connecting mechanism, substantially as described, between them, for the purpose of causing the said jack and former to move from opposite directions toward each other by the hydraulic pressure, as set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

JOSIAH W. ROGERS.

Witnesses:

ALBAN ANDRÉN,

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