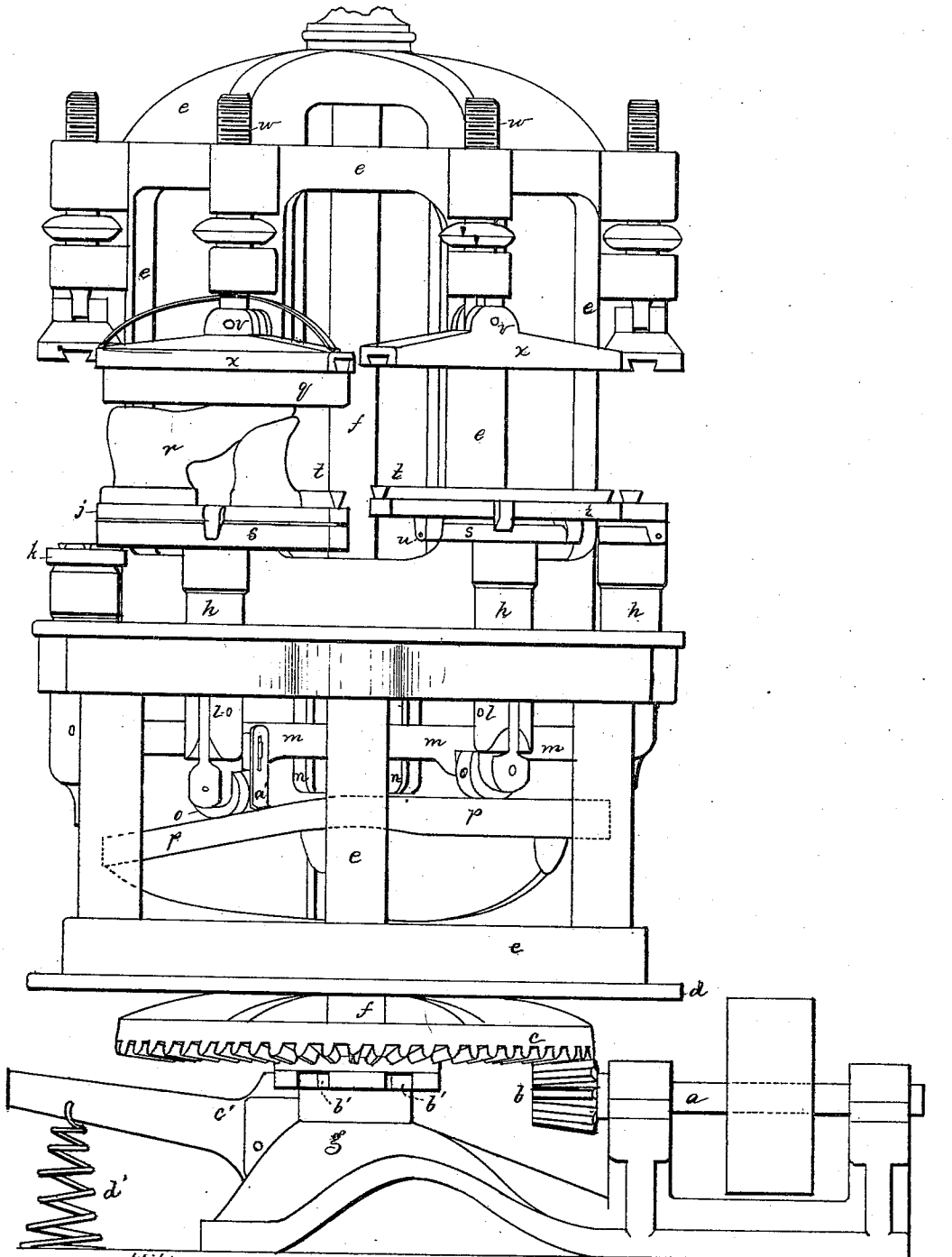


C. W. COLLYER.

MACHINERY FOR THE MANUFACTURE OF BOOTS AND SHOES.

No. 178,598.

Patented June 13, 1876.



Witnesses
P. B. Hilder.
L. H. Latimer.

Inventor.
Charles W. Collyer per
Lombard & Son, Attys.

UNITED STATES PATENT OFFICE.

CHARLES W. COLLYER, OF MARBLEHEAD, MASSACHUSETTS.

IMPROVEMENT IN MACHINERY FOR THE MANUFACTURE OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. **178,598**, dated June 13, 1876; application filed February 7, 1876.

To all whom it may concern:

Be it known that I, CHARLES W. COLLYER, of Marblehead, in the county of Essex and State of Massachusetts, have invented an Improvement in Machinery for the Manufacture of Boots and Shoes, of which the following is a specification:

This invention relates to a machine for attaching soles to boots and shoes, and is also adapted to perform the operation of "beating out" or pressing the channel-flap of sewed or nailed boots or shoes in place after uniting the sole.

The invention is an improvement on United States Patent No. 164,363, heretofore granted to me, and to which reference is made as to the general method of operation in attaching soles by means of cement. In that machine the rods attached to the jack-carrying plates are connected with and operated through a sliding cam on a horizontal shaft; a link, and a toggle-joint, and two treadles are used—one to engage a clutch to throw into operation the devices to rotate the traveling frame, and the other to slide the cam to cause it to operate the toggle and lift the jack. In this invention the jack-rods are connected with pivoted links provided with friction-rollers, acted upon by the face of an irregular jack-operating stationary cam attached to the shaft, about which the traveling frame with jacks and dies moves.

The drawing represents a side view of a machine provided with my invention.

The driving-shaft *a* will be provided with fast and loose or a clutch pulley, and with shipping mechanism of any well-known construction, and a bevel-pinion, *b*, thereon engages the teeth of a wheel, *c*, attached to the under side of the plate *d*, forming part of the traveling frame *e*, the toothed wheel and frame moving about a shaft, *f*, supported by the bearing *g*. The jack-rods *h*, provided with jack-plates *i*, or *j*, or *k*, slide up and down in openings in the traveling frame, each rod being connected at *l* with a link, *m*, pivoted to ears *n* on the traveling frame, and as the frame is rotated the links, provided, preferably, with friction-rollers *o*, are lifted by the inclined faced cam *p*, held, preferably, in fixed position on shaft *f*, such cam being made of proper shape to successively lower the jack-rods to permit

a jack, *r*, with its shoe, to be removed and another jack and shoe to be applied to the jack-plate, and then to raise such rods and hold them up, pressing the shoe-sole between the jack and mold or die *q* during the balance of the rotation of the traveling frame, thereby uniting the sole and upper previously connected, or effectually setting in place the channel-flap to cover the stitches or nails or pegs. The jack-plate *j* is pivoted at one end to a plate, *s*, at the upper end of the jack-rod, and the jack and toe-rest are provided with dovetailed grooves to fit a dovetail rib or cleat, *t*, on the jack-plate. Jack-plate *i* is pivoted at *u* to the part *s*, so as to turn over, and jack-plate *k* is circular and is pivoted at its center, so that it may be turned as required to remove a jack. The die-holders *x* or molds are hinged at *v*, to permit the dies or molds to adjust themselves to the sole being operated upon, and the die-holders are made vertically adjustable by screw-rods *w*. A scraper, *a'*, on link *m* clears the face of the cam of any impediments or dirt. The hub of the wheel *c* is notched at *b'*, to be engaged by one end of a pivoted foot-lever, *c'*, held up by a spring, *d'*, and each time that a notch, *b'*, comes opposite the end of *c'* the traveling frame is stopped, there being as many notches as there are jack-rods to permit the change of jacks at proper times, and in practice the lever *c'* will be connected with and so as to operate in unison with the belt-shipper, to shift the belt from the fast to the loose pulley when the lever *c'* engages a notch, *b'*.

This machine can also be used to mold soles separately, and instead of moving the frame I may move the cam and shaft and leave the frame stationary. The cam operates two or more jack-rods simultaneously, whereas in all other similar machines a single jack-rod is moved at each rotation of a cam, and the cam herein shown, besides acting to raise and lower the jack-rods, also holds them lifted up to press the soles between the molds or dies of ordinary construction.

The rods *h* might be provided with ribs or fins *c'*, or be made square, to prevent the rods from turning in the frame *e*, and then the rollers might be applied to the jack-rods, and the arms *m* might be omitted.

The cam *p* might be a hub grooved irregularly on its periphery, and in such case roller-pins on the jack-rods would enter such grooves and move the jack-rods.

I claim—

The frame and reciprocating jack-rods and pivoted jack-plates and molds or dies, in combination with a cam adapted to operate the jack-rods simultaneously two or more, as the

frame and cam change position with relation to each other, substantially as described.

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

CHARLES W. COLLYER.

Witnesses:

G. W. GREGORY,
S. B. KIDDER.