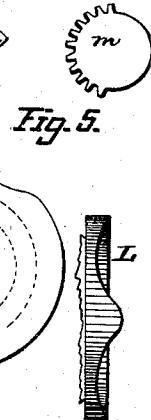
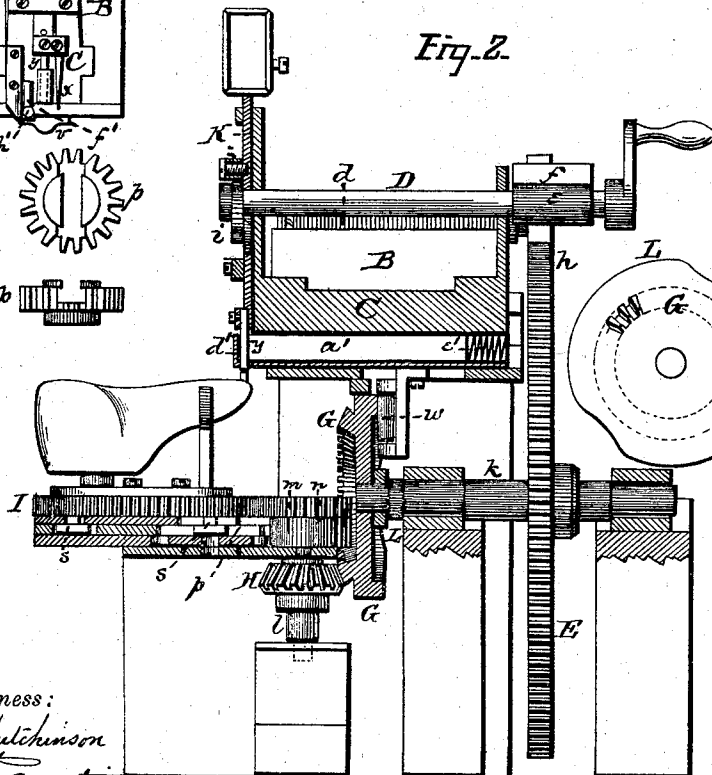
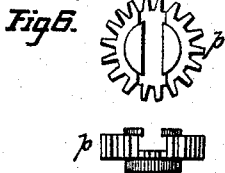
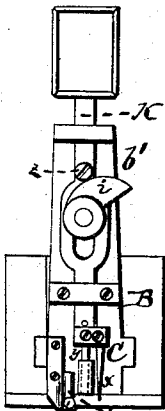
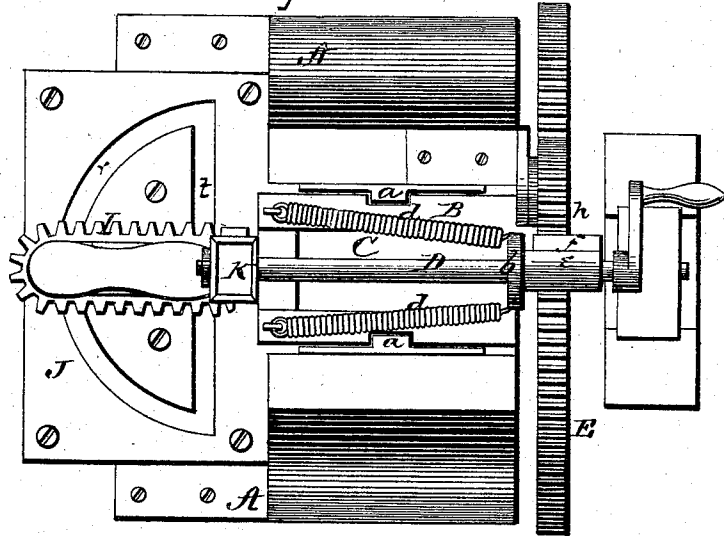


Patented April 15, 1873.



R. E. Draper
per
H. H. Mason
Attorneys.

UNITED STATES PATENT OFFICE.

ROBERT E. DRAPER, OF ENFIELD, NORTH CAROLINA.

IMPROVEMENT IN SHOE PEGGING AND TRIMMING MACHINES.

Specification forming part of Letters Patent No. **137,897**, dated April 15, 1873; application filed December 12, 1872.

To all whom it may concern:

Be it known that I, ROBERT E. DRAPER, of Enfield, in the county of Halifax and in the State of North Carolina, have invented certain new and useful Improvements in Shoe Pegging and Trimming Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a "machine for pegging and trimming shoes and boots," whereby they can be pegged, trimmed, and heeled in a shorter time than by the usual process. After the shoe to be pegged is adjusted no manipulation by the operator is required, for, by the motions of the machine, the shoe is properly presented, and the whole work is done without changing or taking it out of position. The pegging is to be commenced at the beginning of the heel. One revolution of the shoe has it ready and in position to receive the heel, and that is then put on. Either wood or metal pegs can be used, and the shoe can be pegged and trimmed at the same time, or the pegging can be done first and the trimming afterward.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a plan view, and Fig. 2 a longitudinal vertical section, of my machine. Fig. 3 is a front view of the pegging mechanism; and Figs. 4, 5, and 6, show some of the gear-wheels in my machine.

A represents the frame-work of my machine, which may be constructed in any suitable manner, to contain the working parts of the same. Upon vertical guides *a a*, in the frame A, moves up and down a carriage, B, which is slotted longitudinally and provided with a follower, C, moving upon suitable guides horizontally back and forth in said slot. From the back end of the follower C rises a stand-

ard, *b*, from which two spiral springs, *d d*, connect with the front end of the carriage B to draw the follower forward. At the front end of said follower is another standard, *b'*, and through said two standards passes the driving-shaft D, upon the rear end of which is a crank or pulley, to be connected with any suitable power to drive or operate the machine. Upon the driving-shaft D is a wheel, *e*, provided with a single cog or tooth, *f*, which, for each revolution of the shaft, turns a pinion, *h*, the distance of one of its cogs, and this pinion meshes with and imparts motion to a large gear-wheel, E, upon the shaft *k* below. On the other or front end of the driving-shaft D is a cam, *i*, which raises the awl and the pegger or hammer.

In a full-sized machine two cogs or teeth may be on the wheel *e*, and the cam *i* have two arms, thereby increasing the strokes of the awl and pegger or hammer double the number shown in the drawing.

The devices to guide the shoe are dependent on the horizontal shaft *k*, upon the rear end of which is the large cog-wheel E, as above mentioned. On the other end of this shaft *k* is a bevel-wheel, G, which works in another bevel-wheel, H, and drives the vertical shaft *l*, which carries two pinions, *m* and *n*, on its upper end. One-half of the pinion *m* is blank, and the cogged half works in another pinion, *p*, of the same dimensions, so that during one-half of each revolution of the pinion *m* the pinion *p* will remain stationary, while during the other half of the revolution the pinion *p* will turn one-half around its own axis. The pinion *n* is situated above and on top of the pinion *m*, and works into the oblong cog device I, to which the shoe to be pegged is attached. The oblong device I, just referred to, is made to move on the table J, along the diameter of the same circle it describes, and thereby, with the additional devices hereinafter described, presents every point of the shoe which is to be pegged to the awl and pegger or hammer. This oblong device I has on its under side two buttons, *s s*, which run through the semicircular groove *r* and straight diametrical groove

t in the table or plane J upon which it moves. The pinion p is located in the center of the diametrical groove t , and its upper side is grooved in a suitable manner to allow the buttons $s s$ to pass through the same. The pinion n working in the cogs of the oblong device I, causes it to travel along the diameter t of the circle r to the circle of the toe or heel of the shoe; then the half-pinion m gears in the pinion p , and causes the same to make one-half of a revolution, which turns the oblong plate I, and, of course, the shoe, around the heel or toe ready to retravel the diameter of the main circle, and so continues to the completion of the shoe. The awl x and the pegger y are adjusted to the lower end of a vertical stem, K, which is placed in suitable guides on the standard b' of the follower C, and has an up-and-down stroke caused by the cam i on the driving-shaft D. The awl and pegger are adjusted to the irregularities of the bottom of the shoe, while the same is in motion by a cam, L, upon and moving with the shaft k . A projection, v , on the bottom of the carriage B, bears on the outer edge of the cam L, and causes the same to rise and fall at the proper times; and a projection with a roller, w' , extending from the bottom of the follower C, through a slot in the bottom of the carriage and bearing against the back of the cam L, causes the follower to be moved back and forth at the proper times, the springs $d d$ causing the roller w to follow the shape or contour of the cam. The stem K is hoisted by the cam i , which works on a friction-roller, Z, on the stem above said cam, the stem relying upon its own weight for the down stroke.

In the working machine another roller will be worked on the stem below the cam, and upon which said cam in its evolutions will press downward, thereby doing away with the necessity of any extra weight on said stem. The awl and pegger are to be attached by any suitable means, so that they can be readily moved up or down sufficiently for the heel and thickness of the sole of the shoe.

If wooden pegs are to be used, a slip of peg-wood, a' , with a beveled edge the thickness of the peg desired, and the width corresponding to the length of the peg, is placed, bevel edge down, in a narrow box, d' , and that box put in a slot in the follower C to the right of the pegger, so that the end of the slip a' will stand immediately under said pegger y and above the hole in said box, and the hole made by the awl in the sole of the shoe. The down-stroke of the pegger y will push off sufficient of said strip of wood to form the peg, and continue it down through the hole in the bottom of the box and through the sole of the shoe. When the pegger is raised the said slip of peg-wood is pushed under by a spiral spring, e' , behind it, ready to form another peg, and so the process is continued. If metal pegs

are to be used they will have to be placed straight side touching each other in said box, and the process of pegging is the same as with wooden pegs.

In a working machine a proper device is to be made for holding the box d' in the follower, and also for raising and lowering the same to correspond to the thickness of the sole and heel of the shoe. The shoe is held on the oblong plate I by a concave anvil and side clamp or other suitable devices. On the front end of the follower C is a clamp for holding the trimmer or knife f' immediately behind the pegger. This clamp should project the proper distance and admit of the proper adjustment of the knife at right angle and perpendicular to the sole of the shoe. The knife f' has a ball, h' , at its point or terminus, said ball bearing, when the trimmer is being used, on the upper-leather of the shoe just at its junction with the sole, thereby preventing the knife from cutting the upper-leather.

The cutting and confining the leather around the last being done, the operator, by hand, makes one hole for a peg in the sole and places that hole immediately under the awl before the machine is put in motion. The machine being put in motion, a hole is made and a peg driven by every stroke of the stem K. The knife f' standing just in the rear of the pegger trims the sole as the shoe moves along by it; or the trimming, after the pegging, can be done by stopping the awl and pegger and putting the driving power on the shaft k , which will revolve the shoe to the knife or trimmer in the same manner as to the awl and pegger, without changing the position of the shoe.

The working machine can be provided, on the same principle as herein described, with two awls and two peggers, and, of course, will put in two rows of pegs.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for pegging shoes, an up-and-down moving carriage, B, containing a horizontally-reciprocating follower, C, to which the awl and the hammer or pegger are attached, whereby said implements are made to follow the contour of the sole of the shoe, as herein set forth.

2. The combination of the carriage B with projection v , follower C with projection and roller w , the springs $d d$, and the cam L, whereby the implements attached to the follower are moved up and down and back and forth at the proper times, for the purposes herein set forth.

3. The combination of the bevel-gears G H, shaft l , pinions $m n p$, and cogged shoe-carrier I, all constructed and arranged to operate substantially as and for the purposes herein set forth.

4. The combination of the bevel-gears G

H, shaft *l*, pinions *m n p*, cogged shoe-carrier I with buttons *s s*, and the horizontal plane or table J having semicircular groove *r* and diametrical groove *t*, all substantially as and for the purposes herein set forth.

5. The combination of the stem K carrying the awl *x* and pegger *y*, the horizontally-reciprocating follower C, and the up-and-down moving carriage B, all substantially as and for the purposes herein set forth.

6. The knife *f'* provided with a ball, *h'*, and attached to the follower C, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 28th day of September, 1872.

ROBT. E. DRAPER.

Witnesses:

J. M. MASON,

EDM. F. BROWN.