

A. CAVALLI.

Machines for inserting Screw Pegs in Boots and Shoes.

No. 137,288.

Patented April 1, 1873.

FIG. 1.

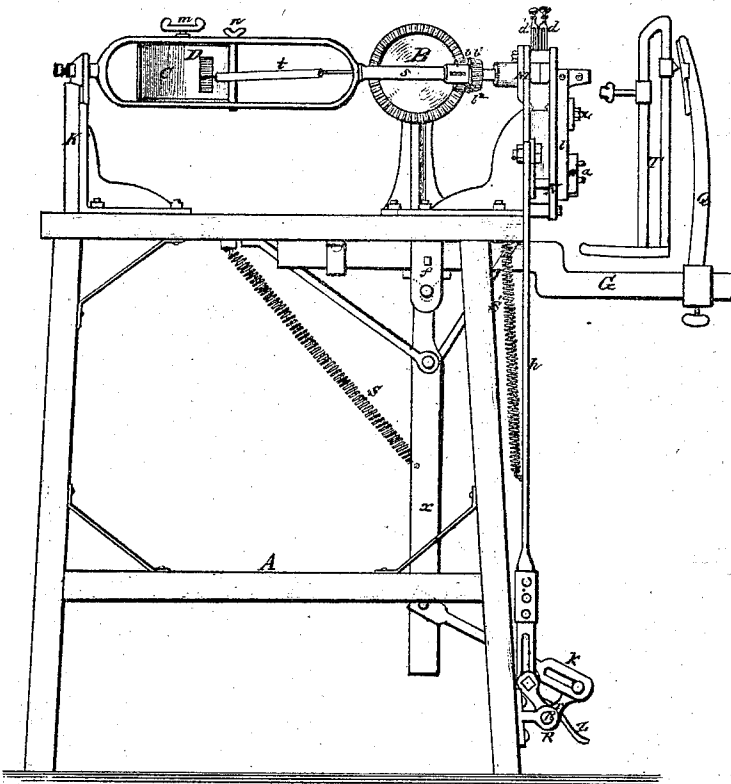


FIG. 2.

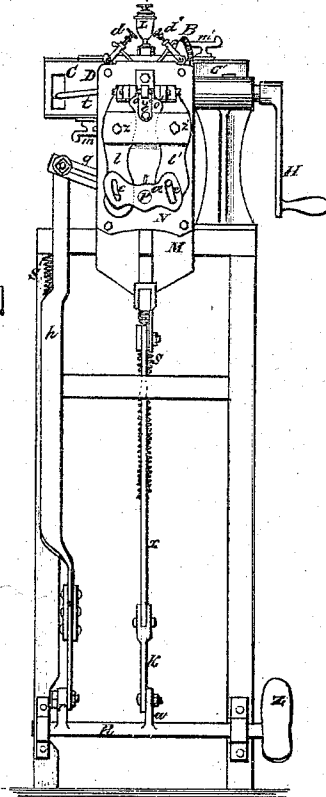


FIG. 3.

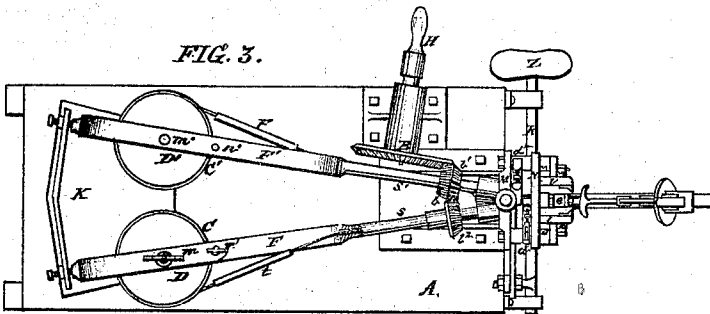
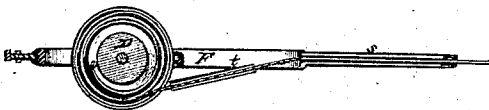


FIG. 10.



Scale 1 inch = 3/4 in.

FIG. 4.

FIG. 5.

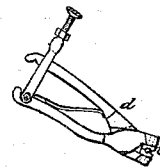
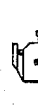


FIG. 6.

FIG. 7.

FIG. 8.

FIG. 9.



WITNESSES.

Lincol Vagstad
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INVENTOR.

Andrea Cavalli

UNITED STATES PATENT OFFICE.

ANDREA CAVALLI, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF ONE-HALF
OF HIS RIGHT TO VICTOR NOLY, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR INSERTING SCREW-PEGS IN BOOTS AND SHOES.

Specification forming part of Letters Patent No. **137,288**, dated April 1, 1873; application filed
May 17, 1872.

To all whom it may concern:

Be it known that I, ANDREA CAVALLI, of the city and county of San Francisco, State of California, have invented certain Improvements in Boot-Screwing Machines, of which the following is a specification:

The first and second parts of my invention relate to the arrangement of revolving forms containing wire-reels provided with casings for inclosing central thumb-screws for tightening and metallic tubes for conducting the wire for the purpose of uniting leather pieces together; the objects of these parts of my invention being, first, to have a single or double thread of wire supplied with equal facility; and, secondly, to obtain a more perfect method of tightening up such wire when on the reels, as also to keep it from twisting or breaking short by passing it through these tubes when being conducted to the head of the machine for receiving the requisite thread for entering the leather. The third part of my invention relates to the introduction of a metallic adjustable form or tube fitting into a centrally fixed piece at the head of the machine, so arranged that the two wires passing, the one through the form and the other through an aperture in the fixed piece, may be brought closer together or set wider apart, according to the relative distances required in the leather to be screwed together, without in any way affecting the other parts of the machine. The fourth part of my invention relates to adjustable dies within the holders, so that different thicknesses of wire may be used by inserting the corresponding dies.

Description of the Accompanying Drawing.

Figure 1 is a longitudinal elevation of a machine embodying my invention. Fig. 2 is an end view of Fig. 1 with the boot-frame G partly broken off. Fig. 3 is a plan of Fig. 1. Figs. 4 and 5 are the side and end views, respectively, of the screw-dies. Figs. 6, 7, 8, and 9 are the front, rear, side, and plan, respectively, of the centrally-fixed cutter-piece *e*, showing the adjustable form O for one of the wires. Fig. 10 is a sectional plan through the center of one of the drums D, form F, and tubular shaft *s*.

General Description.

A A is the wooden frame-work of the machine, which is made in as substantial a manner as possible. H is the handle which engages the bevel-gearing B and connecting double pinion *b b'* fitted onto the tubular shaft *s* of the form F. The form F holds the reel D and the form F' the reel D', with their respective coils of wire. On the tubular shaft *s'* of the form F' is an adjustable pinion, *b''*, which gears into the pinion *b'* when required. On the forms F F' are the thumb-screws *m m'* for tightening up and holding the reels D D', and side screws *n n'* for holding the inclosing casings C C' in position, as well as forming pivots for them to open to or close on the reels. The forms F F' are supported and revolve in opposite directions on their bearings provided in the stand K and head-plate M, and converge in direction from the stand K till they nearly meet at this head-plate M, so as to allow room for the reels D D', in their revolutions, passing each other. The coils of wire on the reels D D' are adjusted to the requisite tension by the screws *m m'*, and are kept from spreading by the casings C C', respectively. Openings in each of these casings admit of a right and left hand wire passing through the loose metallic tubes *t* and *t'*, respectively, which effectually preserve them from breakage or twisting in their passage to the central holes in the tubular shafts *s s'* of the forms F F' provided for their separate conveyance to the head-plate M. The ends of these tubular shafts *s s'* are tapered off and fitted with steel bushes for the bearings in the head-plate M, and the apertures through which the wires emerge are somewhat enlarged to admit of their taking a parallel straight direction in place of their previous angular course, the straight direction being maintained by holes provided in a small steel plate let into the front of the head-plate M. The front plate N is fastened by screws to the head-plate M, a certain space being left between them for the die-holders *d d'* and clipping machinery. The die-holders *d* and *d'* rest between stops, one on each side, in such position as to respectively meet the right and left hand wires as they emerge from the straight holes

in the steel plate aforementioned, and from thence are, to a certain extent, drawn into the dies $v v'$ by the forward movement communicated to them by turning the handle H. By the same motion the threaded wires are pushed through the holes in the front plate N, and also through two tubes, o and o' , in a centrally fixed block, e , fastened in front of the plate N. One of these tubes o is adjustable to the right or left, being held in position by the screw, so that the distance between the threaded wires can be regulated at will. At this stage the threaded wires are ready to enter the boot or shoe leather prepared to receive them, but have to be clipped off simultaneously to the required lengths. For this purpose a central pivot, P, passes through the plate N, on which, in front, a plate, a , is fixed, provided with slots $c c'$ inclined at the same angle. Between the plates M and N the lever-arm g is attached to the pivot P, connecting with the vertical rod h , and shaft-crank r of the shaft R; also, on the right-hand side of the machine, outside of the frame-work A A A, a foot-plate, Z, is fitted onto the shaft R, and another crank, w , connects with the rod h and lever x to the sliding frame G, the lever x working on a fixed pivot supported by two bars fitted to the wood-work of the machine. To the lever-arms g and x are attached from the frame-work A A the strong spiral springs S S' respectively, so that the motion of the foot on the foot-plate Z causes the plate a to describe a short arc of a circle with the pivot P as the center, and at the same time moves the sliding frame G backward and forward with an elastic return movement. Two levers, $l l'$, work on pivots $z z'$, respectively, having at the top projections to which knives are fitted facing each other, and at the bottom pins which fit into and run in the slots $c c'$ in such manner that by the motion of the foot up and down on the foot-plate Z, causing the plate a to describe an arc with the pivot P as the center, the levers $l l'$ will act like two jaws, flying apart, and closing on and nipping the threaded wires placed between them and the projecting portion of the central block e , which also has knife edges fitted to correspond with and meet those on the levers $l l'$. The threaded wires by this arrangement receive an angular cut on each side, which facilitates their entrance into the

leather prepared for the screwing process; also, when required, the pinion b^2 can be removed by adjusting the screw, securing the same, and the machine then becomes a single-wire boot-screwing apparatus. The sliding frame G consists of a solid piece of cast-iron of the shape represented in Fig. 1, one part of which slides between the strap, beneath the table A A, and the other portion projects through the front plate N for a considerable distance, and serves as a rest for the upright frame Q, on which the boot with inside last is adjusted according to the position required. When the boot or leather is brought up by this frame to the threaded wire-feeding apparatus, there to receive certain lengths of this wire, the wires are cut off close to the leather by this same movement of the foot-plate Z, and the rest Q with frame G and boot, are pushed forward on the release, and returned to their original position to receive a further supply of threaded wire.

I disclaim the reels D D', also the form Q, as I am aware that they are not new, but I claim as my invention—

1. The revolving forms F F', provided with reels D D', and gearing $b b^1 b^2$, placed in connection with the actuating-wheel B, stand K, head-plate M, and feed-block e , in the manner described, so that two or more nails or screws may be inserted at the same time into boot or shoe leather, substantially as and for the purpose hereinbefore set forth.

2. The adjustable casings C C', and tubes $t t'$, in combination with the wire feeding-reels D D', screws $m m' n n'$, and tabular shafts $s s'$, substantially as and for the purpose hereinbefore set forth.

3. The adjustable metallic form O, provided in the central block e , through which the two wires pass in combination with the reels D D' and tubular shafts $s s'$, substantially as and for the purpose hereinbefore set forth.

4. The adjustable dies v in the holders $d d'$, in combination with the supply wire reels D D', head-plate M, and tubular shafts $s s'$, substantially as and for the purpose hereinbefore set forth.

ANDREA CAVALLI.

Witnesses:

LIONEL VARIRCAS,
FRANK V. SCUDDER.