2 Sheets--Sheet 1.

T. T. PROSSER.

Machine for Inserting Metalic Pegs in Boots and Shoes.

No. 133,798. Patented Dec. 10, 1872.

Fig 1

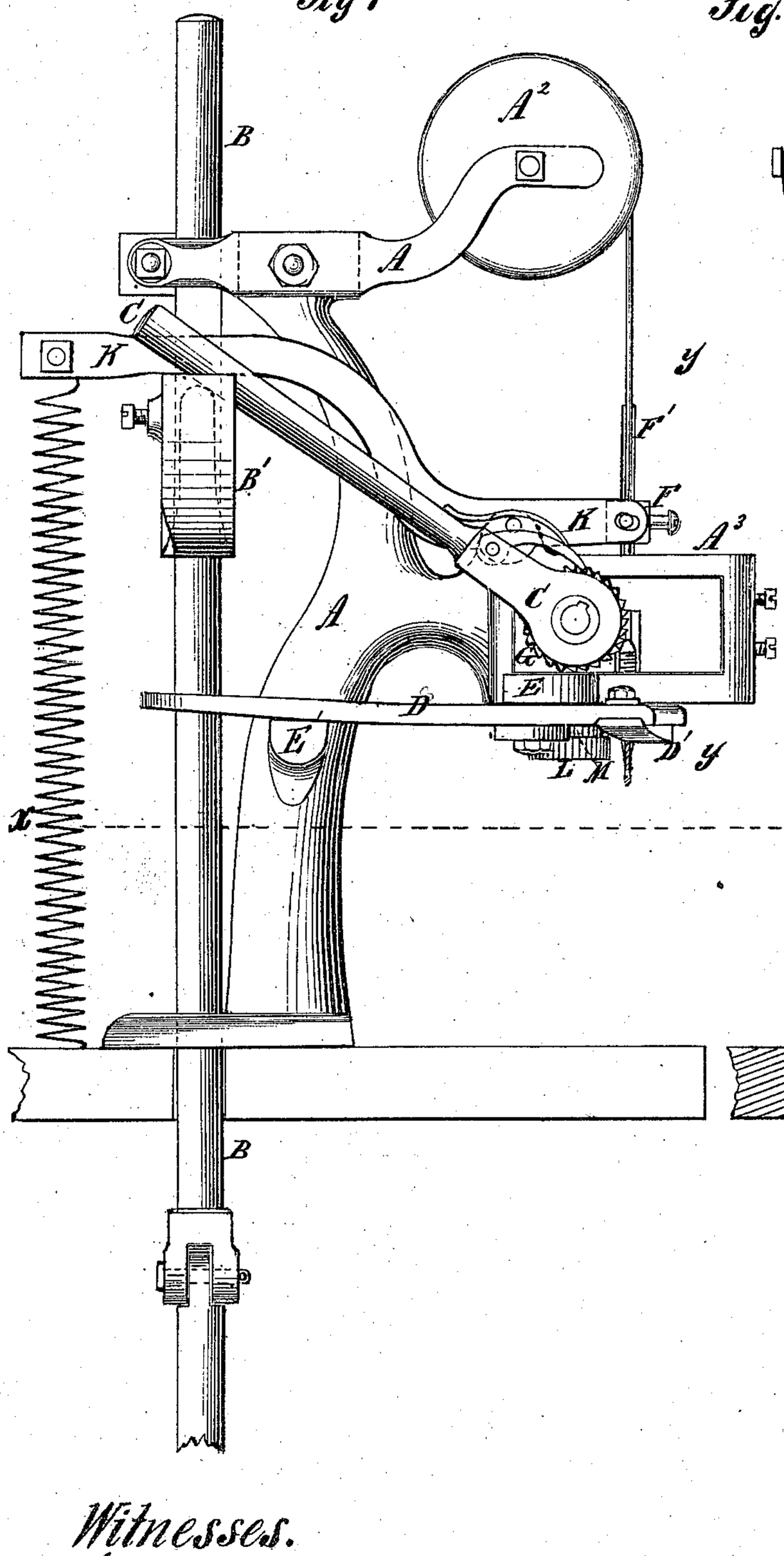
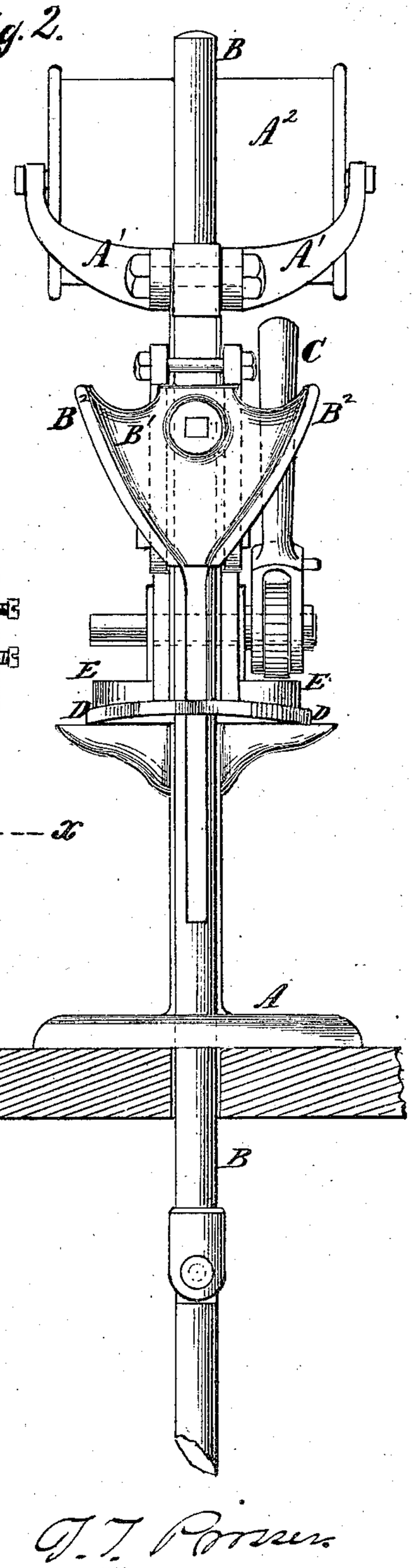


Fig. 2.



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2 Sheets--Sheet 2.

T. T. PROSSER.

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Fig. 3.

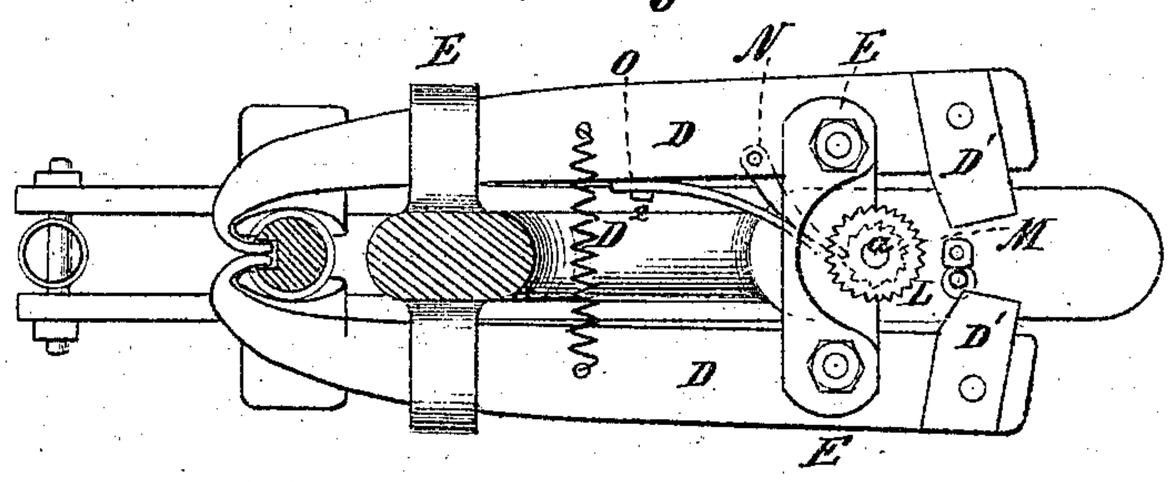


Fig. 4.

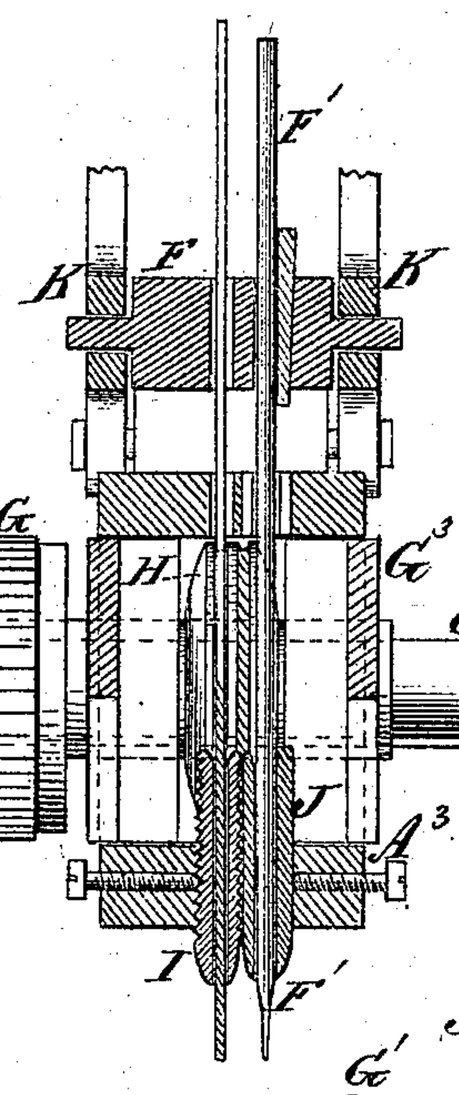


Fig. 6.

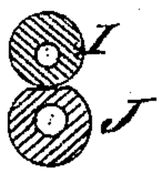
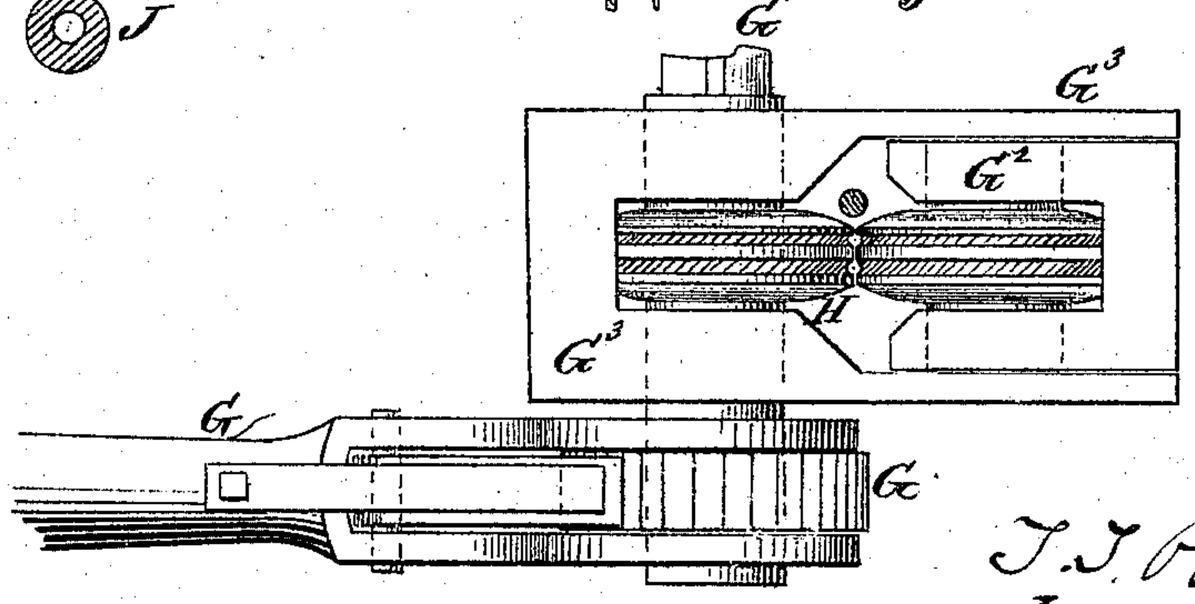


Fig. 5.



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UNITED STATES PATENT OFFICE.

TREAT T. PROSSER, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN MACHINES FOR INSERTING METALLIC PEGS IN BOOTS AND SHOES.

Specification forming part of Letters Patent No. **133,798**, dated December 10, 1872.

To all whom it may concern:

Be it known that I, TREAT T. PROSSER, of Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Machines for Inserting Metallic Pegs into Boots and Shoes, of which the following is a specification:

This invention relates to that class of machines which form grooved or serrated pegs upon rods or wire, insert them into the soles of boots and shoes, and then sever them from the rod or wire; and it consists in the construction, combination, and arrangement of some of the parts, as will be more fully described hereinafter.

Figure 1 is a side elevation of my improved machine, showing the frame to which the operating parts are attached, the rod which operates the feeding mechanism and the shears, the reel upon which the wire from which the pegs are cut is wound, the wheel which feeds the shoe while being pegged, the ratchet which moves the rollers which crease or groove the pegs, and an awl for puncturing the leather. Fig. 2 is a front elevation, showing the grooved cam which operates the shears, and its arrangement upon the rod which operates it, the reel, and the method of attaching it to the frame, and the ratchet as being operated by the cam. Fig. 3 is a transverse section on line *x x* of Fig. 1, showing the shears for severing the pegs from the wire, the cam which operates the same, the pawl-spring and ratchet-wheel which operate the shoe-feeding wheel, the apertures through which the awl and the wire pass, and a spring for reopening the blades of the shears after they have been closed by the cam. Fig. 4 is a vertical section on line *y y* of Fig. 1, showing the arms which carry the awl, the cross-head to which the awl is secured, the ratchet-wheel, the eccentrically-formed tubes through which the awl and the wire pass, and a portion of the frame. Fig. 5 is a plan view of the serrated rollers which crease or groove the pegs, and the case or box in which they work together, with their arrangement with reference to the ratchet which operates them. Fig. 6 is a section of the tubes through which the awl and wire pass.

Corresponding letters refer to corresponding parts in the several figures.

In constructing machines of this character, I employ a frame, A, which may be of the form shown in the drawing, or of any other that will adapt it to receive and hold the operating parts of the mechanism. The base of this frame is made to rest upon any suitable table or support, while its vertical portion rises to a sufficient height to allow the arms A^1 which carry the wire-reel A^2 in their outer ends to be secured to it. About midway of frame A, or at any suitable point, there is cast or otherwise secured a box or case, A^3, for the reception of the feeding mechanism and of the serrated rollers or dies which form the serrations or grooves upon the pegs. Through the base of the frame A a rod, B, passes, one end of which is pivoted to any suitable connecting-rod, the opposite end of which may be attached to a crank upon a shaft driven by any prime motor. The rod B passes up to or above the upper end of the frame A, in which there is a suitable guide provided for it. Upon the rod B there is placed a cam, B^1, as shown in Figs. 1 and 2, it being held in any desired position by means of a set-screw, and so adjusted when in use as to operate the ratchet-handle C of the feed motion upon the termination of its upward stroke by coming in contact with the handle, in the manner illustrated in Figs. 1 and 2. By referring to Figs. 2 and 3 it will be seen that the vertically-moving rod B has a groove formed in it, and that the ends of the shear-levers D D are so bent as to cause their outer ends to enter said groove, and from it pass into the slots or grooves B^2 B^2 in the cam B^1; the object being to cause said grooves to open or spread apart the rear ends of the levers at the proper time, and thus cause the shear-blades D^1 D^1 to be closed upon the wire, and thus sever from it the peg the moment it has been inserted in the shoe. If preferred, the outer surfaces of the cam may be made to close the shear-blades, and a spring, D^2, may be attached to the levers to open them again after a peg has been severed from the wire. These levers are held in position by being pivoted to lugs E E upon the frame A, as shown in Fig. 1, their outer ends being prevented from being pressed downward by the cam by lugs E^1 E^1 attached to the frame A. In order that the wire may be held in a proper position

to be fed to the grooving-rollers, the reel A^2 is placed in the arms A^1, and in such a position that as the wire is unwound from it by the feeding mechanism it shall pass through an aperture in the cross head or bar F, which carries the awl F′, and thus be guided to the space between the grooving-rollers. The mechanism for feeding the wire to the rollers consists of a ratchet-wheel, G, which is placed upon the shaft G′, to which one of the serrated grooving-rollers is attached. Motion is imparted to the ratchet-wheel G by means of the ratchet-lever C, which is moved by the cam B^1, as above described. This lever is so arranged with reference to the terminal point of the movement of the cam that its outer end shall be raised just far enough to cause the dog upon the lever C to engage one of the notches upon the wheel G, and thus cause it and the grooving-rollers to partially rotate far enough to carry forward the wire such a distance as is required to give the desired length of peg, which length may at any time be increased or diminished by giving more or less movement to the ratchet-lever C. The serrated or milled grooving-rollers H H′ are arranged, as shown in Fig. 5, they being placed upon shafts G^1 and G^2, which have their bearings in a frame, G^3, which is placed in the box A^3 formed in the frame A, they being so arranged that the space between them formed by the grooves in their peripheries shall be directly over the point where the peg is to be inserted.

The construction of the rollers H H′ is substantially such as is shown in Fig. 5, their surfaces having formed in them grooves, the inner surfaces of which are segmental in form and of such depth as to cause the two, when the wire is being passed through them, to press upon such wire to such an extent as to cause the milled or serrated surfaces of said grooves to groove or serrate the surface of the wire, so that when the peg has been inserted there will be no danger of its falling out of the shoe.

It will be observed that the arrangement of these rollers is such that while they are inserting a peg into the sole of a boot or shoe they are at the same time creasing a portion of the wire which is soon to form another peg, and that thus one upward movement of ratchet-lever C causes a peg to be driven and a portion of wire of sufficient length to form another one to be grooved. From the rollers H H′ the wire passes down through a tubular guide, I, the aperture through which is eccentric to its outer surface for a purpose soon to be described.

In order that the sole of the boot or shoe may be punctured to receive the peg an awl, F′, is provided, it being secured to the cross-head F, as above described, its lower portion passing through a tubular guide, J, which is screwed into the lower portion of box A^3 of the frame, and in line with the guide I through which the wire passes. The aperture in the awl-guide J, like that in the wire-guide I, is eccentric to its outer surface in order that by properly turning them in the frame the space between the pegs may be made greater or less at pleasure, the guides, when properly arranged, being held in position by set-screws.

The mechanism giving motion to the awl F′ consists of a lever or levers, K, which are pivoted to the frame A, as shown in Fig. 1, and carry in the ends of their short arms the cross-head, to or in which the awl is secured. The opposite long arms of the levers are carried upward, or otherwise made to pass to and rest upon the heel of cam B^1 or upon a collar secured upon the vertically-moving rod B, in order that when said rod is carried upward to the point which causes the feed mechanism to insert a peg into the shoe it shall at the same time or at about the same time cause the awl to be carried downward, and thus puncture a hole for the insertion of a peg upon the next upward movement of the rod B, thus, as it will be seen, causing each upward movement of said rod to insert one peg and puncture the sole for the insertion of another, while upon its downward movement it causes the shear-blades to be closed and the peg to be severed from the wire.

The boot or shoe to be pegged is to be placed upon any suitable stand, which may be placed under the awl and peg driving mechanism, and in order that said shoe or boot may be properly and automatically moved while being operated upon a wheel, L, is placed upon a vertical shaft, *a*, which passes up through a portion of frame A, and carries upon it just above the wheel L a ratchet, M, the last-named wheel being operated by a pawl, N, the outer end of which is made fast to one of the shear-blades D, its inner end being kept in contact with the ratchet-wheel M by a spring, O, which arrangement insures a partial rotation of the wheel L at each inward movement of the lever, and as said wheel is so arranged as to press against the edge of the sole of the shoe, it follows that the same will be moved the proper distance to cause the perforations to be made by the awl at the required distances apart, which distances may be varied by changing the point at which the pawl or dog is attached to the lever D.

I am aware that machines for fastening soles to boots and shoes have heretofore been made, which machines have been capable of grooving and inserting such pegs, and afterward of severing the peg from the wire or rod upon which it was formed. I do not, therefore, claim broadly such a machine; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with the peg forming and driving mechanism and the perforating mechanism the vertically-moving rod or shaft B, and cam B^1, the parts being arranged substantially as and for the purpose set forth.

2. I claim the eccentrically-formed guide-tubes I and J for determining the distances between the pegs as they are driven, substantially as set forth.

3. I claim the vertically-moving rod B, cam B^1, the peg forming and driving mechanism, and the shears for severing the pegs from the wire, the parts being arranged substantially as set forth.

4. I claim the combination of the shoe-turning mechanism and the shears which sever the peg from the wire, the parts being arranged substantially as set forth.

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

T. T. PROSSER.

Witnesses:

B. EDW. J. EILS,

A. RUPPERT.