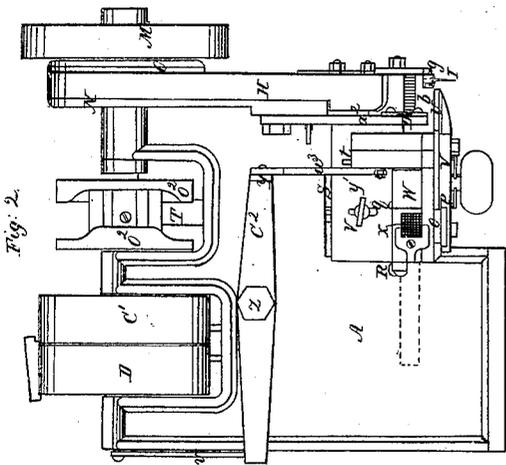
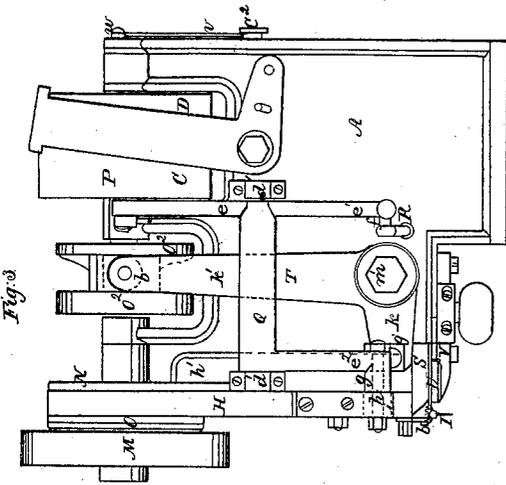
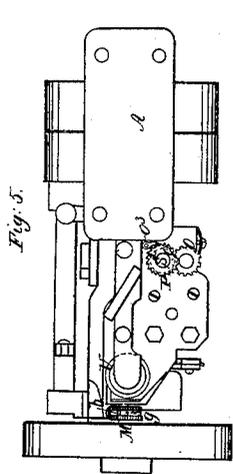
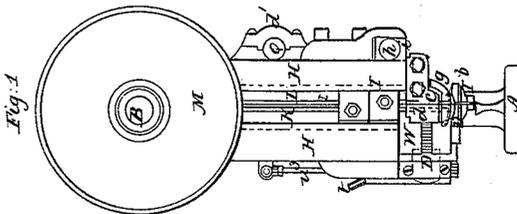
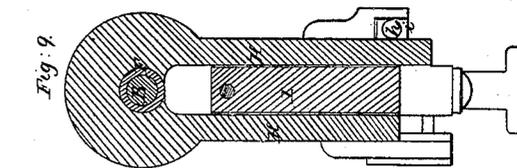
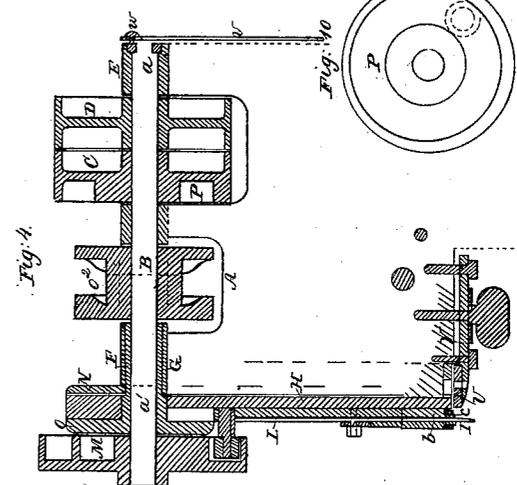
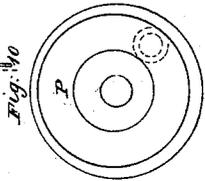
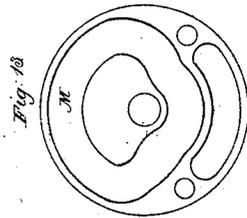
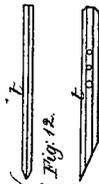
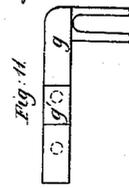
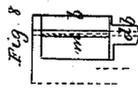
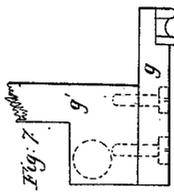
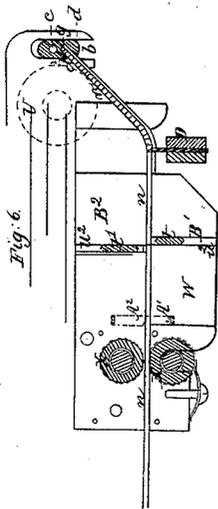


J. F. Sargent,
Pegging Machine,
No. 34,335, *Patented Feb. 4, 1862.*



Witnesses
F. D. Keale
J. R. Bampton.



Inventor,
J. F. Sargent.

UNITED STATES PATENT OFFICE.

JOSEPH F. SARGENT, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO ELMER TOWNSEND, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR PEGGING BOOTS AND SHOES.

Specification forming part of Letters Patent No. 34,335, dated February 4, 1862.

To all whom it may concern:

Be it known that I, JOSEPH F. SARGENT, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Machines for Pegging Boots or Shoes; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 denotes a front elevation; Figs. 2 and 3, side elevations; Fig. 4, a longitudinal central and vertical section, and Fig. 5 an under side view, of my improved machine. Fig. 6 is a horizontal section of the peg-box and the peg-wood feeding and pointing mechanism, while Figs. 7 and 8 are, respectively, elevations of the serrated retainer and the notched throat or block through which the awl and peg-driver work. Fig. 9 is a vertical and transverse section taken through the swing-piece.

In the drawings, A represents the frame for supporting the operative mechanism.

B is the driving-shaft which carries near one of its ends a fast pulley C and a loose pulley D. The said shaft B has one of its journals *a* supported in a box or bearing E, while its other journal *a'* is supported by a "quill" or sleeve F, which is sustained by a box or bearing G.

H denotes the swing-piece or pendulum which carries the awl I and peg-driver K. The said awl and driver are secured in a block or carrier L, which slides vertically in a dovetailed groove formed in the face of the swing-piece, as seen in Fig. 1. This carrier is made to move up and down in the groove in the swing-piece by means of a face-cam M, (shown in side view in Fig. 13,) which is so formed and connected to the carrier as to impart a constantly-accelerating motion to it during that part of the rotation of the cam which is employed to force the awl and peg into the work, (or such a motion is communicated as is given by a workman when driving a peg with a hammer.) By means of such cam a positive upward and downward movement is imparted to the carrier and of course to the awl and peg-driver, the range of motion in each direction being exact and positive at whatever velocity the machine may be driven.

The pendulum or swing-piece H is supported by the sleeve F, before mentioned, and is so connected or pivoted therewith as to be

capable of vibrating a short distance laterally about the axis of the shaft B or the sleeve F. The said swing-piece is maintained in vertical position by means of a face-plate N and a flange O, formed on the outer end of the quill. The lower end *b* of this swing-bar or that part which operates on the sole is serrated for the purpose of maintaining a firm hold when brought in contact with such sole. Holes *c d* are made vertically through the throat-piece *b* at the distance apart which it is desirable to have the pegs driven. One of these holes or tubes—viz., *c*—serves to support and guide the awl I while passing downward into and upward out of the sole, while the other—viz., *d*—is slotted through on one side, in order to allow the pegs to be fed into the tube in which the peg-driver is supported in its movements. The said swing-piece or pendulum (shown in vertical section in Fig. 9) is so constructed and applied as to be capable of having only a lateral vibrating motion of a definite distance, such distance being that which it is desired to have the pegs apart when driven into the sole of a shoe. The mechanism for giving the pendulum such movement are the face-cam P, the rocker-lever Q, the pitman R, and a slide-block *i*. The face-cam P is arranged upon the driving-shaft B, and a side view of it is given in Fig. 10. The rocker-lever Q has its journals arranged and supported in bearings *d' d'*, projected from the main frame, as seen in Fig. 3. The said rocker-lever has three arms *e e' e²* extending from it at right angles to its axis. The upper arm—viz., *e*—carries a stud or friction-wheel to operate with the said cam P, while the arm *e'* has a projection *f* extended from it, to which one end of a pitman R is fastened, the other end being connected to the rear part of the swing-piece H. The arm *e²* has a hollow projection or sleeve *g* extending from it, through which a stud *h* passes, and carries on its outer end a sliding block *i*, which is connected to the swing-piece, as seen in Fig. 1. This sliding block is capable of having a slight vertical movement imparted to it to compensate for the difference between the radius of the arm *e²* and the radius of the swing-piece.

S denotes what I term the "retainer," (a top view of which is given in Fig. 11.) The object of this device is to retain or hold the shoe stationary while the swing-piece is vibrated

so as to carry the awl backward the proper distance to make the next hole. When this point is reached, the retainer begins to rise and allows the sole to come in contact with the serrated face of the throat of the swing-piece. The awl is then forced into the sole, and the shoe is moved forward by the awl and serrated end of throat b until the last hole made is brought directly under the line in which the peg-driver is next to descend. This retainer is an angular-shaped bar, g being the horizontal part, and g' the vertical portion. The said upright portion is disposed and slides freely in a socket or chamber h' , attached to or forming a part of the frame of machine. The lower part of the retainer is bifurcated or formed with a slot to receive the lower part of the throat of the swing-piece and allow it to vibrate. The said retainer has only a short vertical movement of about one-eighth of an inch, such as will allow it to fall and hold the shoe stationary and out of contact with the throat b while the awl is moving backward to space a new hole. This retainer is actuated by means of a two-armed lever T , which is arranged as shown in Fig. 3, and is pivoted or connected to the frame A by a fulcrum or pin m' , the lower arm K of said lever being jointed or pivoted to the upright arm g' of the retainer, while its upper arm K' carries a friction stud or wheel l , which operates with a cylindrical cam O^2 , shaped so as to give the retainer the proper movement, the same being as shown in Figs. 1 and 2. The shaft B being put in rotation, the proper vertical movements are imparted to the retainer through the said mechanism at the exact intervals of time.

U is the friction guide-wheel, against which the edge of the sole is placed, in order to give the line of pegging its proper distance from such edge. The said wheel is disposed on the end of an adjustable sliding bar V , which by means of an eccentric thumb-pin can be moved so as to bring the line of pegging nearer to or farther from the edge, as circumstances may require.

The next part of my invention to be described is the peg-wood carrier or peg-box W , the same being connected with or forming part of the pendulum or swing-piece. Longitudinally through the said carrier W a grooved way n is made, the extreme front end of such way terminating with the groove d^2 , formed for the peg-driver, so that the pegs in succession when moved forward shall stand directly under such driver. The peg-wood is supplied to the machine by the action of two roughened feed-rollers $X X$, arranged on each side of the way n , so that the peg-wood passes directly between such rollers. These rollers have an intermittent partial rotation given to them, by which the strip of peg-wood is fed forward at regular intervals the breadth of a single peg at a time. Each of the said rollers carries a pinion $o o$ on its lower end, which gear into each other, while one of the said

rollers also carries a ratchet p , which operates with a pawl O^3 , pivoted on a fixed pin s^2 , which is secured to the frame A , as shown in Fig. 5. By the return-vibration of the swing-piece after feeding the sole along to the point to make a new hole in the sole the ratchet will be moved against the pawl and be caused to revolve the distance of one tooth, which will of course impart such movement through the pinions and rollers to the peg-wood.

Y'' is a slide-plate, which constitutes the top of the peg-box. This plate is made adjustable vertically to conform to the length of pegs required, and serves to aid in guiding the strip of peg-wood in a horizontal line. The said plate has a slot q made through it, in which a thumb-screw r works and serves to confine it to a plate or block s' , as seen in Fig. 2.

If desirable, the coil or ribbon of peg-wood to be used in the machine may be chamfered on each of its lower edges. For this purpose two knives $A' A^2$ are arranged just in front of each feed-roller. These knives may each have a pitman connected with it and be operated like the pointing-knives now to be described, or the knives may be stationary, having their cutting-edges so formed and arranged as to bevel each side of the strip of peg-wood as it is fed forward; but as it is not necessary to use the beveling-knives when the pointing devices are used, I have only shown the position of the knives without the operating mechanism.

$B' B^2$ denote two vertical blocks, which are arranged in front of the feed-rollers and on each side of the peg-wood passage n . Each of the said blocks has cut in it an inclined way or groove u^2 , in which the tools or pointers $t t'$ slide. Each of the said tools has its lower end beveled, and is of a prismatic shape in cross-section, as shown in Fig. 6. Fig. 12 denotes a side and edge view of one of the said tools. These tools are made to work on opposite sides of the coil or strip of peg-wood, one being arranged the distance of one or more pegs in advance of the other, in order to avoid the contact of the two edges of the tools when brought downward, for as each cuts entirely across the peg, were they disposed opposite to each other and both operate at the same time one would strike against the other; but it will be obvious that both may be made to operate opposite to each other by allowing each to operate alternately; but I consider the former way the more simple one. Fig. 14 is a perspective view of a peg as formed and pointed by my mechanism.

The cutters or pointers t receive their movements by means of pitmen $u^3 u^3$, the rocker-lever C^2 , the pitman v , and a crank w . The pitmen $u^3 u^3$ have their lower ends pivoted to studs projecting from the pointers, while their other ends are jointed to an arm y , extending from the rocker-shaft C^2 , as seen in Fig. 2. The said lever or shaft is pivoted to the frame A by a pin z . The rear end of the said lever

is connected to one end of the said pitman *v*, whose other end is pivoted to a crank or stud extending from one end of the driving-shaft B. Thus by each revolution of the shaft B the pointers are raised and depressed, each knife pointing one side of two pegs at every downward movement, the pointers or cutters operating while the strip of peg-wood and the peg-feed are at rest.

D^2 denotes the knife for cutting the pegs. This knife does not move with the swing-piece, but is secured to a stationary vertical piece a^2 , projecting from the main frame, as seen in Fig. 2. The said knife has its edge arranged at right angles to the line of points of the peg-wood, and its length should be equal to or a little greater than the longest peg used in the machine. At each forward vibration of the swing-piece the peg-wood is carried against the knife, which passes through it at right angles to its line of points, and thereby severs a peg from the main strip, the said strip being fed forward the distance equal to the width of a peg at each revolution of the shaft B. The pegs so separated are of one uniform size, whatever may be the grain of the strip, the knife not splitting the wood with the grain, but cutting it in a vertical line without regard to the direction of the fibers.

Having described the parts of my machine, I will now describe its operation.

If we suppose the shoe or sole which is to be pegged to be supported upon a proper swiveling-jack arranged under the awl and peg-driver and one edge of the sole to be resting against the friction-guide, and if we suppose the awl and peg-driver are being raised, the operation of the parts is as follows: The pendulum or swing-piece remains stationary or has no vibration while the awl and peg-driver are rising or falling; but when they have reached or nearly reached their highest position the retainer descends upon the sole and falls below the serrated throat or feed-surface, transferring the contact of the work from the feed-surface to that of the retainer, which is so fixed to the frame A as to have no lateral movement, thus holding the shoe stationary. The swing-piece is now vibrated and carries the awl backward the distance the pegs are to have when driven. When the swing-piece reaches such point, the awl and peg driver descend and the awl is driven into the sole, during which time the retainer is raised above the serrated throat of the feeder and the contact of the sole transferred to such throat. The pendulum or swing-piece and all connected with it are then vibrated forward in the direction in which the work is to be moved, and a peg is cut from the peg-wood by being forced upon the stationary knife. Next, the awl and peg-driver are raised, and the retainer is again forced downward on the sole, transferring the point of contact as before. The swing-piece is next vibrated back again, so as to bring the awl over the proper place for

making the next hole and the driver over the hole last made by the awl, and during this backward vibration of the swing-piece the peg is fed forward into the peg-tube by the means as described.

The teeth of the ratchet are so arranged with reference to the pawl that feed of the peg-wood will not take place till the swing-piece has moved the peg-wood clear from contact with the knife. This is effected by permitting the pawl to operate or move over nearly two teeth of the ratchet, but permitting it to take but one, the teeth of the ratchet being at such distance apart that at each revolution of the shaft B a peg is forced forward into the peg-driver tube, and, furthermore, during each interval of rest of the peg-wood the two pointing devices are caused to descend and perform their functions. Thus it will be seen that the vibration of the swing-piece effects the feed of the shoe; next, the cutting the peg-wood into separate pegs, and also the feed or supply of the pegs to the action of the peg-driver.

I claim—

1. As a new machine, the combination of the mechanism for operating the awl, peg-driver, and for feeding the work, with the mechanism for cutting and feeding the peg-wood, all being arranged compactly in the frame A or its equivalent and operated by the cams and levers, arranged substantially as and for the purposes described.

2. The pendulum or swing-piece H, having the awl and peg-driver carrier L, the throat-piece *b*, the peg-box W, the pointing mechanism, and peg-wood feeder arranged and applied thereto or connected therewith, as set forth, in combination with so applying such pendulum to a quill or sleeve F, disposed on the driving-shaft B, or on a stud or arm arranged just above or below the same, that the whole may be caused to operate together in manner, and for the purpose set forth.

3. Combining and arranging with a vibrating peg-box and peg-wood feeder, constructed as described, a stationary knife whereby the pegs are severed from the peg-strip in manner as set forth.

4. I do not claim transferring the contact between the sole of the boot or shoe and a stationary rest to a vertical moving block or awl-stock while the said boot or shoe is moved forward in manner as described and shown in Letters Patent No. 28,852; but what I do claim is, so constructing and applying the throat-piece or block *b* to the pendulum H as to have no vertical movement, in combination with so forming and applying the retainer that it may have a short vertical movement, whereby the two are made to operate together in manner as set forth.

JOS. F. SARGENT.

Witnesses:

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