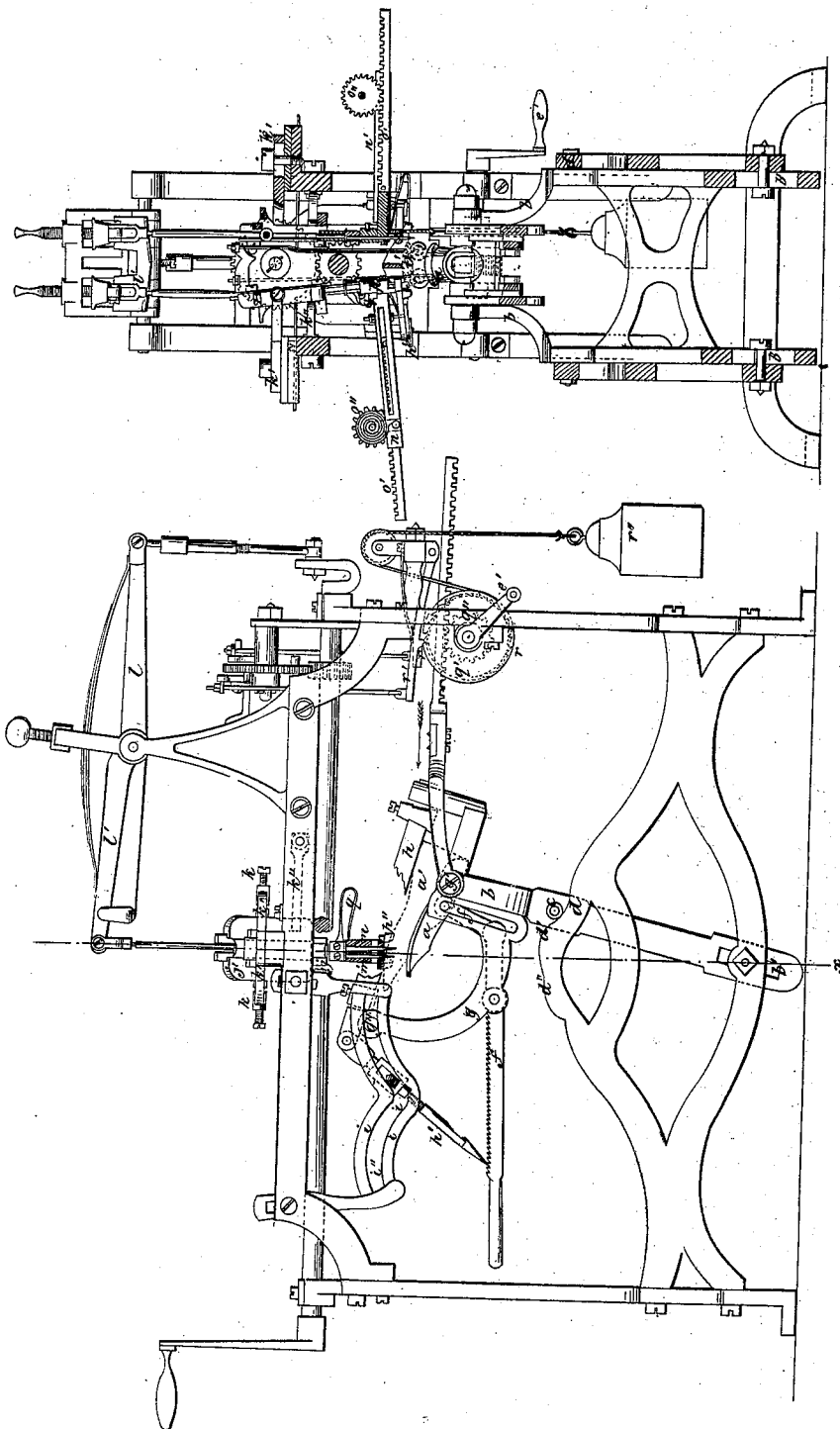


*J. Standish*

*Pegging Machine,*

*N<sup>o</sup> 10,521.*

*Patented Feb. 14, 1854.*



# UNITED STATES PATENT OFFICE.

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## MACHINE FOR PEGGING BOOTS AND SHOES.

Specification of Letters Patent No. 10,521, dated February 14, 1854.

To all whom it may concern:

Be it known that I, JOHN STANDISH, of Cuyahoga Falls, county of Summit, and State of Ohio, have invented certain new and useful Improvements in Machines for Pegging Boots and Shoes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being made to the annexed drawings, making a part of this specification, in which—

Figure I is a side view or elevation of my machine. Fig. II is a section on the line  $x, x$ , of Fig. I, and similar letters refer to similar parts throughout.

My invention consists in an improvement for pegging boots and shoes. The boot or shoe to be operated upon is placed under a clamp secured to a movable arm with the sole turned upward. This arm traverses along in a certain curve beneath a vibratory awl and driver or punch which brings the points of the awl so as to punch holes along the edge in the proper places for the pegs to enter the driver following and splitting off the pegs and driving them in at the same time, a pair of awls and drivers working on both sides of the boot at the same time. The rapidity of operation is such that a boot is fully pegged in about two minutes.

At ( $a$ ) is a socket for holding the shoe and is secured in a peculiar manner to a movable framing whose action is such that while the socket is being carried along with the shoe to be pegged within it, the unequal surface of the shoe will be brought within the action of the awls and peg driver. One part of the frame is shown by the pieces ( $b$ ). This consists of two posts passing down near the bottom of the main frame and terminate in slots ( $b'$ ) through which screws are passed to hold said punch in place. These slots are to permit the pieces ( $b$ ) to raise and lower but have no movement laterally. At ( $c$ ) is a pin having a friction roller upon it, this rolls upon a curved rail ( $d$ ) fixed to the main frame of the machinery. As the piece ( $b$ ) is made to play back and forth by the driving rack ( $e$ ) it will also have an undulating movement up and down by reason of the roller ( $e$ ) following the curves ( $d$ ). These several motions when compounded with others to be described bring the sole of the shoe into varying positions proper to receive the pegs.

The socket ( $a$ ) is not directly attached to the frame ( $b$ ) but is fixed to one end of the clamping lever ( $f$ ) by legs ( $f'$ ), the fulcrum of ( $f$ ) being upon the lower edge of a pair of crooked arms ( $g$ ); these latter are attached to the uprights ( $b$ ) by the pins ( $g'$ ), passing around behind the shoe socket ( $a$ ), where a stud sets up to hold one end of the clamping bar ( $h$ ). The other ends of ( $g$ ) terminate in a cross bar ( $g''$ ) the ends of which pass through the slots of two irregularly curved rails ( $i$ ) secured to the main frame.

The manner in which the boot or shoe is held in place while being pegged can now be described. Along the top of the clamping lever ratchet teeth are cut to receive the end of a detaining pawl ( $h'$ ) fixed to the end of the bar ( $h$ ) where it terminates upon the cross piece ( $g''$ ). By releasing this pawl from the ratchet teeth the end ( $f$ ) of the clamping lever will rise and in doing so drop the socket ( $a$ ) upon the legs ( $f'$ ), these being guided by pins in the slot seen at ( $f'$ ) as soon as it is dropped down the finished shoe ( $a'$ ) is taken out and one to be pegged put in its place with the sole turned upward as shown. Pressing down now the clamping handle carries up the shoe and brings the sole in contact with the narrow bar ( $h$ ); the point of the pawl ( $h'$ ) being put in the ratchet teeth maintains the pressure of the clamp bar upon the shoe and holds it firmly in the ratchet ( $a$ ). Now turn the crank ( $e$ ) and this will act upon the rack ( $e$ ) and draw back the movable frame ( $b, g$ ) and the parts in connection with them. This will bring the toe of the shoe under the awl and punch nearly in the position shown in Fig. I and is the proper position to begin pegging. The construction of that part of my machine will now be described. The awl is seen at ( $m$ ) and the punch at ( $m'$ ). These are of steel and are secured in a frame ( $j$ ) which can play up and down in guides ( $j'$ ) directed in such a manner as to project the points of the awl and punch upon the sole of the shoe. There are two guides and slides carrying awls and punches one on each side of the shoe and opposite to each other. The guides themselves while they secure a reciprocatory motion for the awls and punches yet do not maintain a permanent position but may vibrate upon centers the object of which

will be presently described. These centers are seen at (*k*) entering the slides on each side and by them the slides are supported and attached to the top rail of the main framing by the arms (*k'*). The object of suspending the slides upon centers is to allow them to vibrate back and forth the doing of which permits the awl and punch to follow the curve of the side of the shoe and also to bring the awl to shoes of different widths. To insure this there are springs seen at (*k''*) to keep the lower half of the slides pointing toward each other. To give the up and down motion to the awl and punch they are connected to one end of a spring lever beam (*l'*) which is operated upon by a crank at the other end of the main lever (*l*). The object of the spring is to prevent the breaking of the awl or punch should there by any means be an obstacle to the passing of said awl freely through the leather, the spring yielding to the resisting force although the vibrations of the lever (*l*) should continue to the full stroke.

In combination with the awl and punch is the peg rack and feeder. Each awl and punch has one attached; in Fig. 2, at (*n*) is a side view and (*n'*) a sectional view of the opposite sides of the machine. The feeder is a narrow groove just wide and high enough to receive the sheet of peg wood as seen at (*o*). In this groove a toothed rack (*o'*) also plays, and upon the feeder gearing into the rack a pinion (*o''*) with a spiral spring upon its axis exerting its force to drive the rack forward or toward the center of the machine. To apply a piece of pegwood the rack is drawn out of the groove and a piece of the wood inserted within with the cross cuts subdividing the piece into lengths for pegs placed downward. The act of pulling out the rack coils up the spring on (*o''*) so that the moment the wood is put in the tendency of the spring is to drive it out again at the opposite end; and this it does as fast as the driver or punch comes down and cuts off a peg for insertion in the shoe. The end of the feeder terminates within a metallic box shaped as seen at (*p*) and is so inserted that it can have slight play up and down in a slot or groove cut in said piece. The feeder is kept at the top of the slot by a spring (*p'*) fixed to an arm projecting from the under side of the pin (*p*). At (*p''*) is a pair of rollers set a little back from the lower edge of (*p*) these press against the side or edge of the sole of the shoe while the under side of (*p*) rests upon the surface of said sole. Through the top of the part (*p*) are two fine holes side by side these are for passing the awl and driver through. To apply the feeder to the machine the awl and driver are merely passed through these holes. The lower edge of the piece (*p*) is

brought down upon the surface of the sole of the shoe by a spring (*q*) shown in the several figures so that during the operation of pegging the said awl and punch play back and forth in the said holes.

The next part is that which effects the feeding or moving of the shoe or boot along at the proper time and rate to receive the pegs in their proper rows and order. At (*q'*) is a pulley upon a shaft having a pinion (*q''*) and also a pair of ratchet wheels (*r*) seen in dotted lines. Pawls (*r'*) play in these latter, being raised and lowered by gearing in connection with cam wheels operated by the main driving shaft. Around the pulley (*q'*) a cord is wound which has a weight (*r''*) at the end. The force of the weight is directed so as to send the frame (*b*), &c., forward in the direction of the arrow. Now as the pawls (*r'*) are lifted in the proper time they permit the rack (*e*) to be thrown forward notch by notch and of course properly space the distance the pegs are to be driven from each other. The cam wheels are of common construction and are combined with the main shaft turning so as to lift the pawls by the connecting wire at the proper time in a manner well known.

The operation is as follows: As soon as the shoe to be pegged is properly clamped in the socket (*a*), both guides (*j'*) are released from a vertical position, as shown at the drawing at A, (which position is given to them whenever a shoe is finished and to be removed for another) to an inclined one, as seen at B. This inclination brings the rollers against the side of the shoe and at the toe, the bottom part of the piece (*p*) resting on the top or rather on the reversed sole of the shoe. In this position the point of the awl is directed to the spot where the first peg is to be driven, the punch following immediately after. The rollers (*p''*) are kept against the shoe by the pressure of the spring (*k''*) upon the guides (*j'*). Thus as the shoe passes along the rollers will follow the curve of the sole and keep the direction of the awl and punch acting in the proper line. Motion is now given to the beam (*l*). The awl and punch being upon their downward stroke the point of the awl (*m*) which is longer than the punch precedes and makes the first hole in the leather, it then rises and prepares for a second in line with the first toward the heel. At the moment the second hole is being made a peg must be driven into the first one and the shoe must accordingly be moved along to allow that first hole to come under the line of motion of the punch which is the instrument for cutting off the piece forming the pegs and also driving them in. As before described the weight (*r''*) acting upon the rack (*e*) tends to drive it along

in the direction of the arrow which is the proper one to produce the row of holes and pegs in the shoe. This movement is prevented by the pawls (*r'*) and they must be raised. There are two of them which are lifted alternately by the cam wheels so that on being raised the rack (*e*) is allowed to move notch by notch and this is to be the distance the pegs are to be apart. The pawls are so timed as to allow the shoe to move along as soon as the awl and point have cleared it on the upward stroke. The punch (*m'*) passes through the piece (*p*) directly in front of the terminating end of the feeder (*n n'*) therefore the strip of peg wood is made to press against the said punch by the spring acting on the rack driver (*o''*). The point of the punch however rises so high on its upward stroke as to pass above the strip of pegwood and clear it, this allows it to be pushed forward and strike against the stop on the face of (*p*) a distance equal to the size of a peg and at the same time brings the wood directly under the punch. At the downward stroke therefore the punch strikes the wood and cuts or splits off a peg driving it through the hole in (*p*) (which hole is now directly over the hole in the shoe made by the awl in the previous stroke) and thence into the leather of the sole and so continually until the shoe or boot is pegged.

I now come to describe that part for elevating and lowering the shoe according to the curve or wave line of the face of the sole. The posts (*b*) and arm (*g*) are supported partly by two irregularly curved rails (*d, i*). Now as the pegs must be driven at right angles or nearly so to the surface of the sole the shoe must be handled accord-

ingly. It will be seen that as the hollow or shank part of the shoe is approaching the awl the roller (*e*) is commencing to ascend on the curve (*d'*) and the pin (*g''*) is about descending into the hollow (*i'*). By this compound movement as the shoe approaches the hollow of the shank it is gradually being lifted up to keep the right height and also leveled to the proper angle for the driving of the pegs. At the rise of the heel the roller (*e*) descends into the hollow (*d''*) and (*g''*) rises into the curve (*i''*). As soon as the pegging is completed the awl and punch are removed from the shoe by moving the guides (*j'*) to a vertical position a catch being fixed to the frame to keep them in this position while the finished shoe is taken out and another put in its place; the pegracks are then to be replenished and the operation goes on as before described.

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

1. The vibrating guides, in combination with the peg-feeding-rack, awl, and driver, as described.
2. The arrangement for feeding up the boot or shoe to be pegged, that is to say, the combination of the boot or shoe, held in a proper clamp, with the traversing frames (*b*), (*g*), and with the irregularly curved rails or guides (*d*), (*i*), as described.
3. The method of regulating the feed by the rack, pawls, and weight, or spring as described. The whole being constructed and operating substantially in the manner herein set forth.

JOHN STANDISH.

Witnesses:

L. BRADLEY,  
R. M. ASHBY.