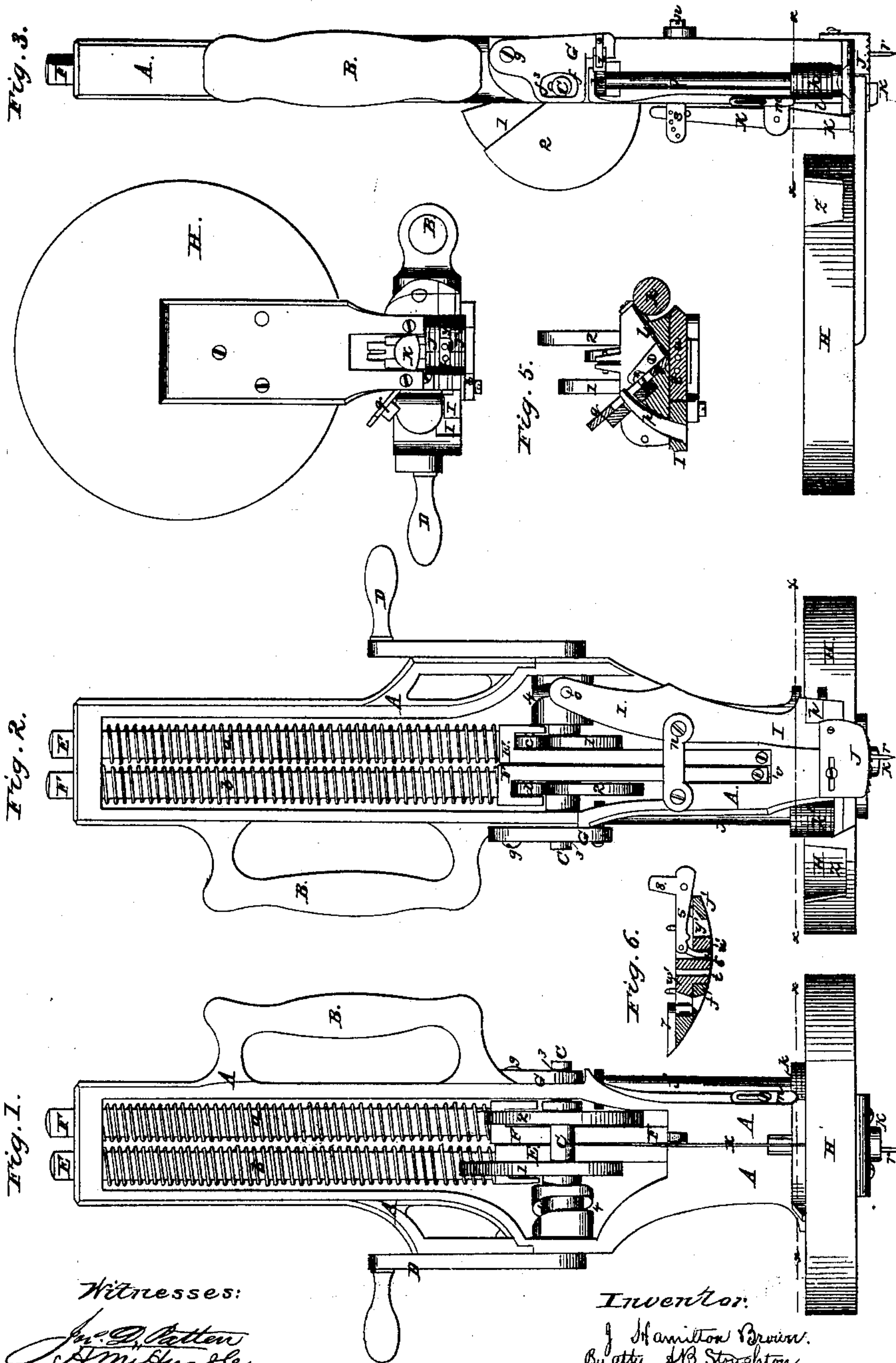


J. H. BROWN.
HAND PEGGING MACHINE.

No. 62,525.

Patented Mar. 5, 1867.



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Letters Patent No. 62,525, dated March 5, 1867.

IMPROVED HAND-PEGGING MACHINE.

The Schedule referred to in these Letters Patent and making part of the same,

TO ALL WHOM IT MAY CONCERN:

Be it known that I, J. HAMILTON BROWN, of Watertown, in the county of Middlesex, and State of Massachusetts, have invented certain new and useful improvements in Hand-Pegging Machines for pegging boots and shoes; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a front view of the machine.

Figure 2 represents a rear view.

Figure 3 represents a side view; and

Figure 4 represents a bottom view thereof.

Figure 5 represents a sectional view taken at the red lines *xx* of figs. 1, 2, and 3.

Figure 6 represents, partly in section, a feeding mechanism, which may be used as a modification of the feeding mechanism shown in the other figures, particularly in fig. 4.

Similar letters of reference, where they occur in the separate drawings, denote like parts of the machine in all cases.

There are two classes of pegging machines in use, viz, a power machine, which is stationary, and driven by steam, water, or other power, and in which the shoe or boot is fed up to and past the pegging devices or mechanism; and a portable or hand machine, which is fed up to, over, or past the boot or shoe whilst the latter remains stationary. The first-mentioned class, the power machines, are used exclusively in large factories, where steam, water, or other equivalent power is and must be used to operate them, and are, moreover, very expensive. The last-mentioned class, the hand machines, are portable, of light weight, cheap, driven by hand, and are designed for workmen in small shops. They, moreover, embrace all the elements of a power machine, viz, carry and feed up a strip or coil of peg-wood, make space off, and drive their own pegs, are self-feeding, and without the cost and expense of operating incident to the power machines. The difference in moving the shoe whilst the machine remains a fixture, as in the power machines, and in moving the machine along or over the shoe whilst the latter remains stationary, as in my hand pegger, involves an entire reorganization of the working parts. Besides, the power is furnished and applied to the power machines whilst the operator expends all his skill in managing and directing the shoe, whilst, in the hand peggers, the operator merely steadies the machine with one hand whilst with the other he turns a crank, the machine feeding itself step by step around the shoe, which remains fixed.

My invention relates to that class of machines which are portable, operated by hand, and feed themselves around the shoe, the operator simply holding the machine in a vertical, or nearly so, position, and turning a crank, which sets all its working parts in motion.

There is a third class of peggers, which are held and operated by hand, but they are not organized machines in the sense of that term, as the operator, whilst he holds, guides, and directs one instrument with one hand, applies a series of blows with a hammer held in the other hand, thus requiring two separate instruments, not united or timed in action, but worked by the eye or observation of the user. Of this class of machines or instruments I make no further mention, as they are not practical or useful, and bear no relevancy to pegging machines properly organized and timed for rapid operation.

My invention consists, first, in operating all the moving parts of the machine, as well as the machine itself, when periodically fed along the shoe from a single cam-shaft, by which said movements are timed and regulated. My invention further consists in so combining and arranging an awl and peg-driver as that both shall operate in a vertical line without lateral motion, and through separate holes in a rose-piece at the base of the machine, by means of cams and springs so arranged that the greatest resistance or force of the two separate springs shall not be exerted at the same time, but one tool lead the other, so that, when desired, a peg may be driven into the last hole made by the awl. My invention further consists in feeding the machine over the shoe and cutting off the peg from the strip or bolt of peg-wood by one and the same vibrating instrument, so that these two operations are perfectly timed and regulated. My invention further consists in a feeding mechanism for moving the

machine over, on, or around the boot or shoe, composed of a foot, through which a nose-piece, furnished with separate holes for the awl and for the peg-driver, passes, in combination with a pivoted lever and pivoted point, working also through the hole for the awl and into the awl-hole for this purpose. My invention further consists in moving back or setting the feeding-foot preparatory to its feeding the machine along and whilst the awl is in the sole, and allowing the feeding or moving of the machine to take place just after the awl is withdrawn from the sole and is still rising, so that the force exerted in withdrawing or raising up the awl shall be expended in holding or bringing the foot close to the sole to insure the moving of the machine along over or on the shoe. And my invention further consists in the arrangement by which the feeding of the machine along the sole takes place after the awl-hole is made and before the peg-driver descends to drive the peg. And my invention further consists in the arrangement by which the driving of the peg takes place whilst the awl is ascending, and the machine close down upon the sole, so that the peg shall be driven entirely down, and not project above the surface of the sole, as it would do if there were any rebound to the machine, which is thus avoided. And my invention further consists in combining with a portable hand-pegging machine, that moves around the shoe or boot that is being pegged by it, a cup for carrying around with the machine a bolt of peg-wood that is fed into the machine by drawing upon the end of the strip or ribbon, and without the use of any pushing device.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A represents a light frame, which may be cast in one piece, and with a handle, B, formed on it at one of its sides; or this handle may be at the top instead of the side, and grasped around, instead of into, as may be preferred. In this frame A there is arranged a shaft, C, turned by a crank, D, and upon the shaft C there are three projecting cams, 1, 2, 3, and a cam-groove, 4, which give motion to all the moving parts of the machine, as well as to the machine itself as a whole, when it is fed along or moved step by step around or over the shoe. The two large snail-cams, 1, 2, raise up, respectively, the awl-carrier or plunger E and the peg-driver carrier or plunger F against the action of their respective coiled springs *a b*, and when the cams have passed from under the friction-rolls *c d* of said carriers or plungers the recoil of the springs drives them down again with sufficient force to cause them to make the hole and drive a peg therein at stated intervals. Upon the end of the shaft C, and outside of the frame A, there is a small cam, *e*, which works in an oblong opening, *f*, in a swinging pawl-bearer, G, that is pivoted to the main frame at *g*, causing said bearer G to vibrate upon its pivot. Upon the lower end of the swinging-piece G there is a spring-pawl or dog, *i*, which works in a ratchet, *h*, on the top of a shaft, *j*, and as the piece G vibrates or oscillates by the action of the cam *e*, the dog *i* takes into the ratchet-teeth *h* and turns the shaft *j* a portion of a revolution. On the bottom of the shaft *j* there is a roughened wheel or surface, *k*, that turns with said shaft; and this roughened wheel seizes or takes the end of the bolt of peg-wood between itself and a throat-piece, *l*, with sufficient force or friction to draw the strip from the bolt of peg-wood, which lies in the cup or round box H, and feeds it into the machine. *m* is a gauge for holding the strip or ribbon of peg-wood in proper position whilst being fed in. On the back of the main frame there is pivoted at *n* a lever, I, in the upper end of which there is a stud, *o*, that projects into the cam-groove 4, on the shaft C, and by means of which stud and groove said lever I is caused to vibrate upon its pivot, *n*. On the bottom of this lever I there is a roughened feeding-foot, J, that bears upon the sole of the shoe, and, when it moves, causes the machine to move upon the sole to the extent of the throw or vibration of the lever I, which extent of motion is governed by the cam-groove 4, but may be made changeable by moving the pivot of the lever. Near the lower end of the lever I there is a curved arm, *p*, (fig. 5,) the end of which passes into or through a moving blade or cutter, *q*, and drives said cutter against the strip or ribbon of peg-wood and cuts off a peg therefrom at the proper time and place for the peg-driver to strike upon as it descends and drive into the hole, previously prepared by the awl *r*, and brought into position by the feeding-foot J; so that the cam-groove 4 and vibrating lever I perform two functions, viz: they feed the machine as a whole over or around the shoe and cut off a peg from the strip or ribbon of peg-wood at the proper time and place to be driven by the descent of the peg-driver. The movements coming from one and the same source, viz, the single shaft C, and being very direct in their transmission, can be timed and follow each other in such true and rapid consecutive order as to make this machine susceptible of a very great rapidity of motion and very great accuracy in its work. K is a gauge, made adjustable by a pin and series of holes, *s*. This gauge defines the distance from the edge of the sole that the row or rows of pegs are to be driven, and may be set accordingly. The awl *r* and the peg-driver *v* each move through a separate hole in the nose-piece *w*, that projects through or works in a slot, *y*, made through the feeding-foot J, as shown at *t u* in fig. 4. The feeding-foot J is moved back or set preparatory to its performing its feeding operation whilst the awl is, or before it is, raised up or withdrawn from the sole, and just after the awl is withdrawn from the sole, but still rising by the action of its cam, the feeding takes place, carrying the machine and the peg, just cut off, over the awl-hole, when the peg-driver descends and drives the peg home. By thus feeding the machine between the making of the hole and the driving of the peg several important advantages are attained, as follows: the setting of the feeding-foot before the awl is withdrawn makes that operation easy, inasmuch as the machine is not then so closely drawn to the sole, and the foot is more free to move. Whilst the awl is being withdrawn the machine is drawn closely in contact with the sole, and just as the awl clears the sole, and the feeding-foot is still in contact with the sole, the feed takes place, and is the more certain because of the contact between the feeding-foot and the sole; and a third advantage is, that when the feed takes place between the making of the hole and the driving of the peg the peg occupies the very last hole made by the awl, which could not be the case if the feed took place after the peg was driven, and which is the usual plan of feeding. By using two plungers and two springs I can make the machine much lighter, more easily driven, and with less rebound or reaction, as the springs are lighter, have less reaction or recoil, and are not exerted in their greatest force at the same time, the awl leading the peg-driver enough to allow one spring to be released

and expand before the other one is contracted to its working extent. When both the awl and peg-driver are operated by a single spring it must have a force equal to that of my two springs, and, of course, a reactionary force due to its increased strength. Now, when such a spring acts or reacts it causes the machine to jump from the sole so much that the peg is not driven entirely down, but will stand up some height above the sole. By using two separate springs I avoid all this injurious rebound. I have mentioned the peg-wood feeder *k* as being a roughened wheel; it may be simply a roller, covered with rubber, which, though smooth, would hold hard enough against the strip of peg-wood to draw it from the bolt and feed it into the machine. I am aware that a single piece or turn of peg-wood has been held in a trough and pushed forward into a machine by the reaction of a compressed spring. This plan seems to have no advantages over that of feeding in a straight strip by similar means, viz, a follower pushing behind the strip. To give my portable hand machine the characteristics of a power machine I use a whole bolt of peg-wood, and feed it into the machine by drawing the strip from the bolt by its end, and without the use of a follower, spring, or any other pushing device, as follows: a cup or box, *H*, is connected to the machine, capable of carrying a bolt of peg-wood, which, if unwound, would measure twenty or more feet in length. The outer end of this strip of wound peg-wood is passed through the opening *z* in the flange of the cup or box *H* and stuck in between the feed-roll *k* and throat-piece *l*, and the machine then draws it in from said end to the peg-cutter, whence it is cut and driven a peg at a time. In fig. 6 I have shown a modification of my feeding mechanism, which, instead of feeding by the roughened surface of the foot, feeds by a sliding nose-piece, *w'*, that moves in a slot, *y'*, in the stationary foot-piece *J'*, and a pivoted lever, *5*, and pivoted point, *6*, which latter, the moment that the needle rises up out of its hole *u*, drops into said hole and pulls the machine along by holding therein. In this modification the step of the shaft *j* would be in the hole *7*, and the shank *8* of the pivoted lever *5* would be connected to the vibrating lever *I*. The machine, by this device, would be fed along over the shoe at the same time relatively with regard to the motions of the awl and peg-driver, and only differs from the one for which it may be substituted in this, that the nose-piece is stationary, and the foot moves in the one case, and the nose-piece moves and the foot is stationary in the other case; and in this latter case the foot may be smooth and not roughened, and the machine be moved by the single point *6* taking into the awl-hole in the sole of the shoe.

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

Operating all the moving parts of the machine, as well as the machine itself, when periodically fed along or over the shoe from a single cam-shaft, by which said movements are timed and regulated, substantially in the manner and for the purpose set forth.

I also claim so combining and arranging an awl and peg-driver as that both shall operate in a vertical line without lateral motion, and through separate holes in a nose-piece at the base of the machine, and at separate times, by means of cams and springs so arranged that the greatest resistance or force of the separate springs shall not be exerted at the same time, substantially as and for the purpose herein set forth.

I also claim feeding the machine over the shoe and cutting off the peg from the strip or bolt of peg-wood by one and the same vibrating instrument, so that these two operations may be perfectly timed and regulated, as and for the purpose set forth.

I also claim a feeding mechanism for moving the machine over, on, or around the shoe or boot, composed of foot, through which a nose-piece, furnished with separate holes for the awl and peg-driver, passes, in combination with a pivoted lever and point working through the awl-hole to draw the machine along, substantially as described.

I also claim moving back or setting the feeding device preparatory to its feeding the machine along, and whilst the awl is in the sole, and allowing the feed to take place after the awl is withdrawn from the sole and is still rising, so that the force exerted in withdrawing or raising the awl shall aid in bringing the feeding-foot close to the sole, and thus, by impact, make the feed more certain and accurate, substantially as described.

I also claim the arrangement by which the feeding of the machine along the sole takes place after the awl-hole is made and before the peg-driver descends, substantially as and for the purpose described.

I also claim the arrangement by which the driving of the peg takes place whilst the awl is ascending and the machine close down upon the sole, so that the peg shall be driven entirely down and not project above the surface of the sole, substantially as and for the purpose set forth.

I also claim combining with a portable hand-pegging machine, that moves around the boot or shoe that is being pegged by it, a cup or box for carrying around with the machine a bolt or coil of peg-wood that is fed into the machine by drawing upon the end of the strip or ribbon, and without the use of any pushing device, substantially as described.

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Witnesses:

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