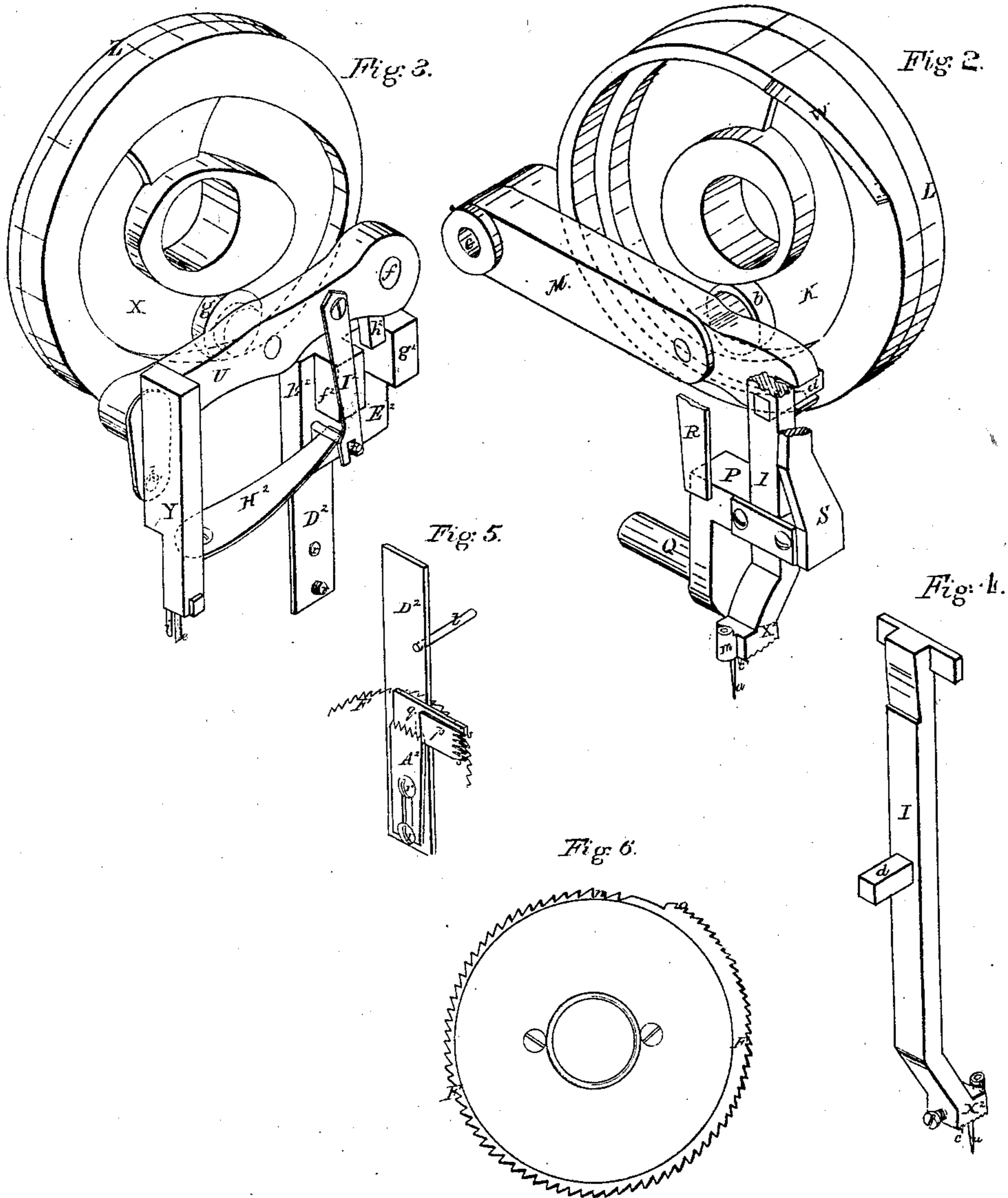


B.F. Sturtevant,
Pegging Machine,

No 21,593,

Patented Sep. 21, 1858.



UNITED STATES PATENT OFFICE.

B. F. STURTEVANT, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND ELMER TOWNSEND, OF SAME PLACE.

MACHINE FOR PEGGING BOOTS AND SHOES.

Specification of Letters Patent No. 21,593, dated September 21, 1858.

To all whom it may concern:

Be it known that I, B. F. STURTEVANT, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Machines for Pegging Boots and Shoes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this description, in which—

Figure 1 is a perspective view of my machine. Fig. 2 a view of the comb which drives the punching awl and hammer, and some of the parts immediately adjacent thereto. Fig. 3 a view of the cam which operates the peg driver. Fig. 4 a view of the hammer and awl and of the parts which operate the same. Fig. 5, details of the apparatus for feeding the pegs. Fig. 6 plan of the scroll formed saw detached.

I will first describe the construction and operation of my machine and then point out those features which I consider to be novel and of my own invention.

In the drawings A, is the bed of the machine, B the framework to which the operating parts are attached.

The last C, which carries the shoe to be pegged swivels upon the top of a holder D, which also is allowed to swing in a vertical plane around the rod x . This rod passes through a lever E, pivoted to a short standard F, rising from the bed piece A. The lever E is counterbalanced by the weight G, whereby the last is kept constantly pressed up to the rest H. When the shoe is to be removed from the machine it is forced down by pressure of the foot upon the lever E and swung out from beneath the rest.

The punching awl (a) that forms the holes for the insertion of the pegs is secured to the bottom of a bar I, which is caused to rise and fall for the purpose of inserting and withdrawing the awl by a cam groove K, upon the face of a plate L, attached to the driving shaft N. In this cam runs a roller b , upon a lever M, pivoted at c to the frame work, the other end of this lever being connected with the bar I by the pin d , which is secured to the bar and slides freely in a slot in the end of the lever. The cam groove K, is so formed that the awl shall descend and rise again once for every complete revolution of the cam plate L. The awl a , is also made use of for the purpose of

feeding the shoe as it is pegged, and to this end it is caused to move sidewise a distance equal to the distance between two adjacent pegs, after each descent into the shoe as follows: The bar I slides loosely at its upper end in a box or guide strap o , and near its lower end it passes through a guide P, which is allowed to vibrate a short distance around the pivot Q, and is borne over toward the plate L, by a strong spring R secured to the frame work. From the guide P rises an arm S, that carries at its upper extremity a roller T, this roller bears against a cam W, upon the periphery of the plate L, the roller being kept in contact with its cam by the spring R. The cam W, and cam groove K, are so formed and so placed upon the plate L, with reference to each other that the awl shall 1st descend vertically into the shoe penetrating the sole—2d, move horizontally a distance equal to the distance between two adjacent pegs carrying the shoe with it which as before stated is allowed to swivel not only in a horizontal plane around the support D, but also in a vertical plane around the rod x , in the lever E—3d, rise vertically out of the shoe sole—4th, return horizontally preparatory to making another descent.

The bar I carries upon its lower extremity a roughened foot X^2 , which I call a hammer the object of which is to hammer the leather and to press the upper and sole together at the instant when the peg is driven as will more fully appear when the peg driving apparatus is described. This apparatus is seen detached in Fig. 3. The lever U, pivoted to the frame work at f carries near its center a roller g which plays in a cam groove X, upon the plate 2. The other end of this lever is jointed at h , to the bar Y, which is caused by the cam groove X, to slide vertically up and down in the frame work and carries at its lower extremity the peg driver e , and an auxiliary driver i the object of which is to transfer the pegs one by one from the trough or passage through which they are fed along after being cut off, to the tubular carrier m , attached to the hammer X^2 and rising and falling with it.

In the pegging machines heretofore constructed the pegs have been split off one by one from a long blank as the pegging proceeded, but it frequently occurs that the

grain of the wood of which the blanks are made does not run straight and in such case the pegs are liable to be broken by the knife whereby the machine is clogged and imperfect work is made. To remedy this evil I employ a saw for the purpose of separating the pegs from the blank, the pegs after being so separated being fed forward to the point where they are driven into the shoe by the motion of the blank itself, which is fed forward each time a peg is cut off, a distance equal to the width of a peg plus the width of the saw-cut. The saw F is secured to a short shaft C² and receives motion in the direction of its arrow from the main shaft through the gears 1, 2, 3, 4. In lieu of being circular the saw is scroll shaped, and increases regularly in diameter from the point *n*, around to the point *o*. It is so set with reference to the trough or passage through which the pegs and peg blanks are fed that the portion *n*, of the saw does not enter this passage, while the portion *o*, enters it and passes a sufficient distance through it to entirely sever a peg from the blank. The blank is fed forward a distance equal to the width of one peg at the moment when the portion (*m*,) of the saw of least diameter is opposite to it, and thus as the saw revolves a peg is severed from the blank and the latter is again fed as before at the moment when the part of the saw of least diameter is opposite to it the pegs being pushed forward by the blank as it is fed.

In lieu of the scroll saw just described a circular or vibrating saw may be employed, but in such case it would be necessary that the saw be caused to approach the blank for the purpose of severing the peg and to recede from it again to permit it to be fed along for another cut.

Where the pegs are sawed off in the pegging machine instead of being split off, it becomes necessary that the blanks be held very firmly immediately adjacent to the point where the cut is made that the last peg may be held up while the one preceding it is being cut off; for this purpose I employ a retaining pawl *p* (Fig. 5) having a number of points S, each one of which is furnished upon its under side with a knife edge which indents itself slightly into the blank *q*, and holds it steadily and firmly while the saw is separating a peg. Where the blank is held thus firmly, were the necessary power to feed it applied in the ordinary way, the points of the pegs would be broken by the pawl or other contrivance used for the purpose. To avoid this I employ a device or pawl for the purpose of feeding the blanks, which engages with a sufficient number of points to prevent injury to any one of them. The feeding pawl A² (Figs. 3 and 5) is secured to a plate D² by the screws *r*.

The plate D² slides freely up and down in a block E² which is attached to a bar Q', that slides freely upon the frame, with which it is kept in contact by the spring P'. From the under side of the lever U, projects a pin *h*² which enters a cavity or slot in the block E², and thus as this lever vibrates up and down the pin *h*² strikes alternately upon the ears *f*² *g*² by which means the feeding pawl A² is vibrated an amount equal to the width of a peg each time the plate Z revolves. The pawl A² is pressed up against the blank to engage its teeth with the points of the pegs by a spring H² secured to the frame work and bearing upon the under side of the pin *t*, and in order to disengage the pawl from the blank previous to retracting it, an arm I² (Fig. 3) presses down the pin *t*, against the action of the spring H² and relieves the pawl from the blank before the latter commences to move horizontally.

At the point immediately above the feeding pawl the peg trough is covered at the top that the blank may be held down upon the pawl A². After the pegs are sawed off they are carried along the passage K² to a point where they are forced out by the auxiliary driver *i*. In Fig. 1, a portion of the trough or passage K² is seen broken away showing the pegs at *m*². At the forward end of the trough K² is a spring *p*² which projects through the side of the trough and rests upon the last peg; the object of this spring is two fold—1st it prevents the foremost peg from dropping through the opening in the bottom of the trough until it is carried down by the auxiliary driver *i*.—2d it prevents this peg from falling over after the driver *i* is raised and before another feed of the pegs takes place.

Operation: The last with the "upper" and "sole" properly secured to it is placed upon the holder D, the treadle E, is then depressed by the foot by which the weight G is raised and the shoe is placed beneath the stationary rest H. The machine is then set in motion by power applied to the shaft N, the bar I descends, the awl *a*, penetrating the sole and upper leather, and the auxiliary awl *a'* making a slight puncture at the point where the next hole is to be made and assisting the awl to feed the shoe. The hammer X² descends sufficiently low to press the shoe down entirely free of the stationary rest H. The bar I, is now fed forward by the cam W, sufficient to carry the awl *a*, and hammer a distance equal to the distance between two adjacent pegs and as this is done at the moment when the awl is in the shoe; and as the latter is freed from contact with the rest H, the shoe is fed forward an equal distance. The bar I, now rises, the shoe is again brought up in contact with the rest H, and the carrier *m*, attached to the hammer rises immediately beneath the opening in the

bottom of the peg trough K^2 . The bar Y , is now caused to descend by its cam groove X , and the auxiliary driver i forces down the foremost peg out of the trough K^2 into the carrier m , the driver i then rises slightly to free it from the carrier which is then carried back horizontally (the awl a being entirely free from the shoe) a distance equal to the distance between two adjacent pegs, the bar I now again descends the awl a , forming a new hole and the carrier m , falling over the last hole made. The driver e , now descends into the carrier m and forces the peg which it contains into the shoe. The operation of the carrier at this juncture is peculiar and causes the work made upon my machine to resemble that made by hand, which is not the case with any other machine with which I am acquainted. Where shoes are pegged by hand, the blow of the hammer that drives the peg, at the same instant forces the sole closely down upon the upper leather, and the different thicknesses of leather thus pressed together are prevented from separating by the pegs. The machines heretofore constructed have not been capable of thus compressing the materials as the pegs are driven and this end is accomplished in my machine by the hammer X^2 and particularly by that portion of it (m ,) through which the peg is driven, this (the carrier m) being forced down upon the sole, which is kept pressed up to it by the weight G , until after the peg is driven. The bar Y , with its drivers now ascends. The bar I , is fed forward as before and the operation continues after the driver e , has left the carrier m , the bar Y , continues to ascend until the driver i has risen above the trough K^2 . The pin h^2 upon the lever U , now strikes against the ear f^2 and the blank is fed forward a distance equal to the width of a single peg, all the pegs in the trough

being fed forward an equal amount, the forward one taking the place beneath the spring p^2 of the one just driven into the shoe, this feeding forward of the pegs and blanks takes place as before stated at the instant when the portion n , of the saw of smallest diameter is opposite to the opening in the trough into and through which the saw operates, and as the saw completes its revolution the peg is gradually sawed off.

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

1. Causing the hammer to descend each time a peg is driven, a short distance below the stationary rest, for the purpose of compressing the soles, as set forth and of relieving the shoe from contact with the rest, that it may be fed forward as described.

2. The arrangement of the hammer X^2 and stationary rest H , constructed and operating as described in connection with the weighted lever E , as above set forth.

3. I claim the peculiar holder p for the blank the same having several knife edges lying in the direction of the feed operating in the manner set forth to hold the last peg of the blank while it is being separated from the one preceding it.

4. And in combination with the holder p I claim the pawl A^2 operating upon several points of the blanks in the manner set forth for the purpose specified.

5. I claim sawing off the pegs in the machine by a saw operating into and through the trough through which the pegs are fed.

6. I claim the spring p^2 in the end of the trough operating as described for the purpose specified.

B. F. STURTEVANT.

Witnesses:

THOS. R. ROACH,
THOS. L. GLOVER.