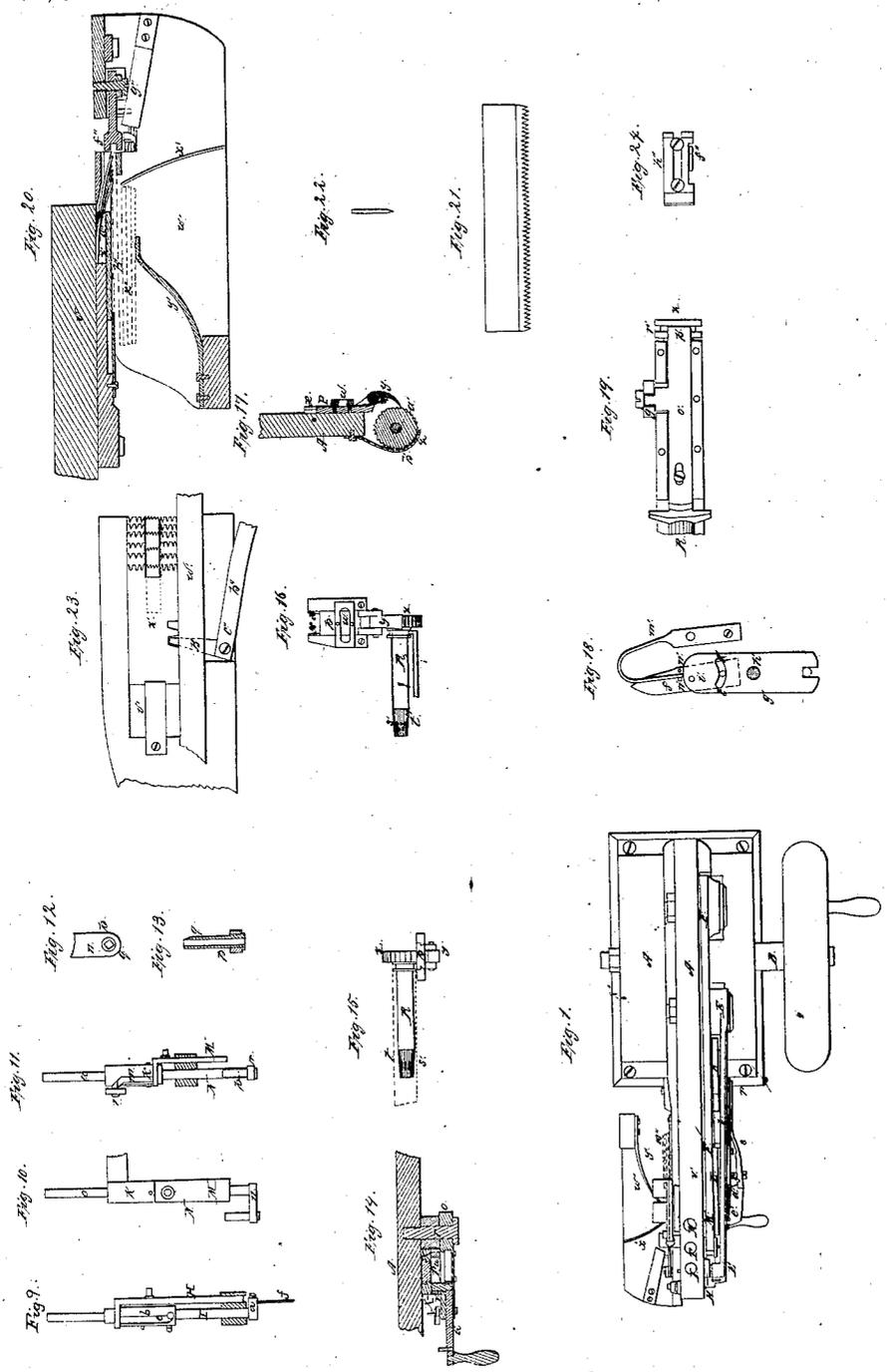


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Pegging Machine,

Patented June 9, 1857.

No. 17,544.

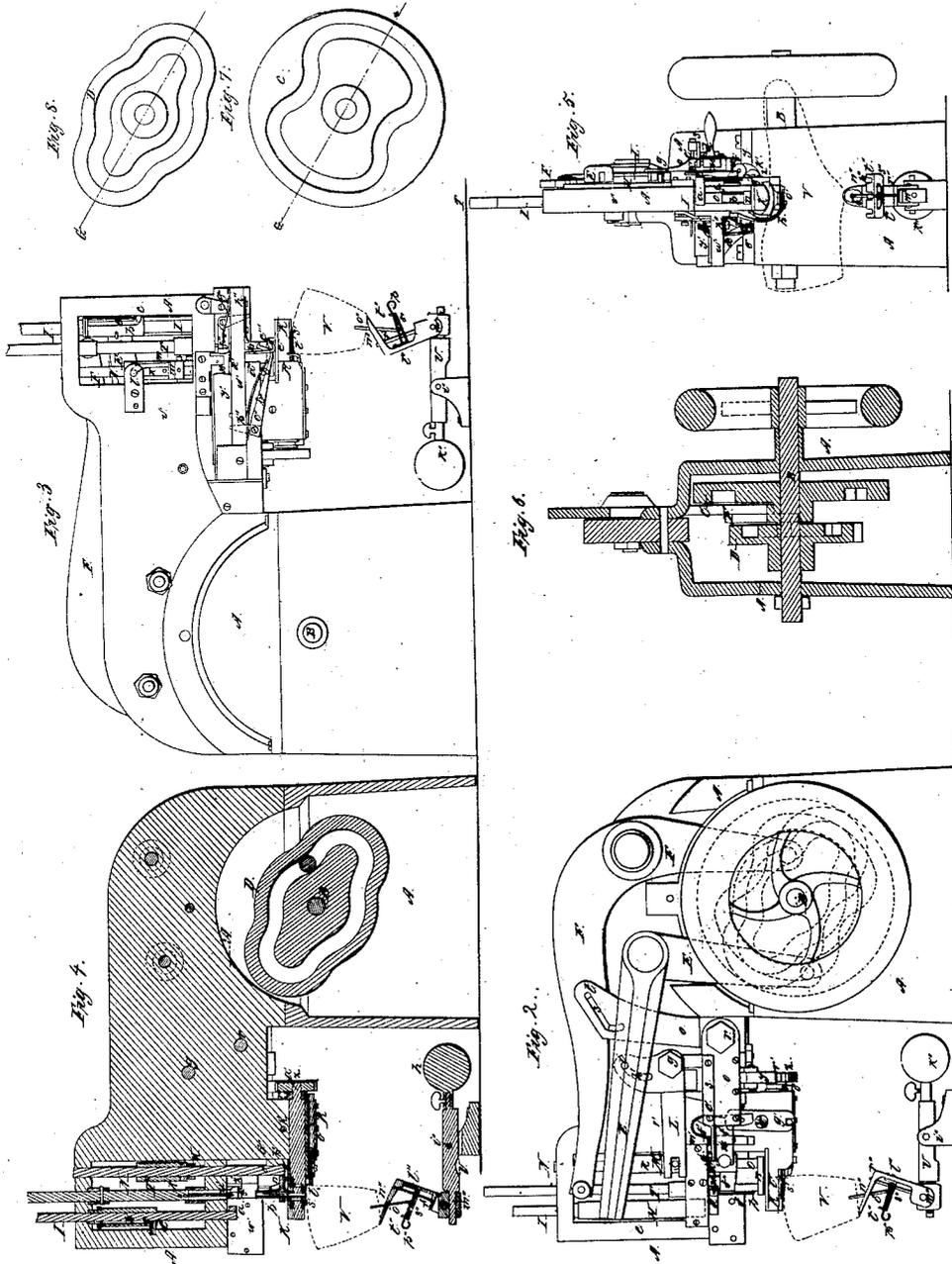


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UNITED STATES PATENT OFFICE.

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

MACHINE FOR PEGGING BOOTS AND SHOES.

Specification of Letters Patent No. 17,544, dated June 9, 1857.

To all whom it may concern:

Be it known that I, BENJAMIN F. STURTEVANT, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Machine for Pegging Either Boots or Shoes; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1, exhibits a top view of said machine; Fig. 2, a front elevation of it; Fig. 3, a rear elevation of it; Fig. 4, a central vertical and longitudinal section of it; Fig. 5, a front end view of it.

Such other figures as may be necessary to a complete description and delineation of said machine will be hereinafter referred to and explained.

In these drawings, A, denotes the frame of the machine, the same carrying a driving shaft, B, arranged therein as shown particularly in Fig. 6—which is a vertical and transverse section taken through the axis of the driving shaft. On the said driving shaft are fixed two grooved cams, C, D, side views of which are given in Figs. 7 and 8. These cams respectively operate two bent levers, E, F, a projection from each of the levers extending into the groove of its working cam. In Figs. 7 and 8 the dotted lines G, drawn across the face of each cam serve to illustrate the relative positions of the two cams on their shaft, these two lines being brought into one plane with one another at the time of fixing the cams on the shaft. The lever, E, at its front end is jointed to a carriage or slide, H, of the awl carrier, I, and serves to impart to such carriage, H, its longitudinal and vertical movements. The awl carrier is a cylindrical rod or slider constructed with an arm, a, extending from it at right angles as shown particularly in Fig. 9, which is a slide view of the carriage or slide, H, the awl carrier, I, and the slotted cylinder *b* applied to the awl carrier and operating in connection with a stud or roller, *c*, to impart to said awl carrier a reciprocating lateral motion such as may be necessary to carry the awl not only directly over the peg hole or passage, *d*, through the rest, K, but also to move the awl out of the way of the same as circumstances may require. In Figs. 3 and 4, the small stud or roller, *c*, is represented as pro-

jecting inward from the inner side of a rectangular opening made in the frame, A, and as entering the slot, *o*, of the slotted cylinder, *b*. Extending from the awl carrier downward is the awl, *f*. Behind the inner side of the upper arm of the lever E, there is arranged as shown in Fig. 2 another bent lever, L, which turns on a stationary fulcrum, *g*, and has a curved slot, *h*, made through its upper arm. Into this curved slot a stud, *i*, projecting from the lever, E, enters the slot in the arm serving to produce a vertical movement of the lever, L, while the lever, E, is being put in motion. At its front end the lever, L, is jointed to a vertical slide or carriage, M, of the peg carrier, N.

In Figs. 10 and 11 are represented side views of the peg carrier N, and its carriage, M, the same answering also to illustrate the slotted cylinder, *k*, that is fixed on the peg carrier and serves to rotate it transversely as may be required. A stationary stud, *l*, projecting from the frame A, (see Fig. 3) enters the groove, *m*, of the slotted cylinder, *k*. The lower part of the peg carrier N, consists of an arm, *n*, extending horizontally from the rotary and sliding rod or part, *o*, of the carrier, the said arm being made to support a vertical tube, *p*, whose office is to separate a peg from a strip of peg wood and transfer said peg directly over the peg passage, *d*, of the rest K, in order that the peg driven may be forced downward through the tube *p*, and so as to force the peg down out of the same and into and through the peg passage, *d*, and from thence through the rotary feeder wheel to be hereinafter described.

Fig. 12 exhibits a top view of the peg tube *p*, and represents it as formed with a cutting edge *q*. Fig. 13 is a vertical section of said peg tube.

The bent lever, F, serves to operate the bent lever, O, formed and arranged as shown in Figs. 1 and 2, and made to turn on a fulcrum pin. An angular slot, S, is formed in the upper arm of the lever, O, and receives a stud or projection, *t*, extended from the lever F. The lower arm of the bent lever, O, is provided with a slide *r*, *u*, that slides longitudinally in it, see Fig. 14, which is a horizontal section of the slider and arm. From the inner side of the said slider

a stud, v , projects and enters a groove, w , made in a slider, P , which is arranged in rear of the lever, O , and plays vertically between guides x, x . The said slider, P , at its lower end has a spring pawl, y , hinged to it and made to extend downward and work in the teeth of a ratchet, z , fixed on the rear end of the shaft, a' , of the feed wheel R , the said ratchet shaft and feed wheel being particularly shown in Fig. 4 and also in Fig. 15, the latter figure being a top view of them as detached from the frame.

Fig. 16 exhibits a front view of the slider, P , while Fig. 17 is a transverse section of the same, the spring pawl y , the ratchet z , and the spring retaining pawl of the said ratchet, such spring retaining pawl being exhibited at b' , in the said figure and also in Fig. 3.

From the above it will be seen that when the bent lever, O , is moved on its fulcrum it will produce vertical motions of the slider P , and its pawl y , whereby an intermittent rotary motion will be imparted to the ratchet z and as a matter of course to the feed wheel R .

Before proceeding farther it may be remarked that the object of the feed wheels, R , is to move the shoe and last along with an intermittent motion such as may be necessary to enable the pegs to be driven into the sole of the shoe. For this purpose the feed wheel has the shoe borne up against it by mechanism which will be hereinafter described.

The object of the slider, u , is to enable the bent lever, O , to impart to the pawl y , variable vertical movements. For instance, when the slide is drawn out to its greatest extent it carries its stud v , twice the distance from the axis of the fulcrum r that it is when the slider is pushed entirely backward. Consequently during the reciprocating movements of the lever, O , the ratchet will be moved twice as far when the slider, u , is drawn out as it will when the said slider is forced entirely backward with respect to the lower arm of the lever, O . The faster rotary movement thus imparted to the feed wheel, R , is for the purpose of enabling the machine to perform the pegging of but a single row of pegs at one operation. Two rows of pegs are introduced into the sole when the slower movement is given to the ratchet as will be more particularly understood from what follows. Attached to the lower arm of lever, O , (as shown) and so as to project therefrom as shown in the drawings is a spring, S , carrying a pin or stud, c' , that extends through the lever and slides therein. This spring is provided with an inclined cam, d' , which rests against the side of a pin or stud, e' , which extends upward from the slider, u , the whole being ar-

ranged so that when the slider is drawn forward it shall cause the spring, S , to move laterally away from the lever to the extent sufficient to draw the pin, c' , out of engagement with the tripping click, f' , of a lever, g' , arranged on the frame and on a fulcrum h' , as shown in the drawings.

Fig. 18 exhibits a view of the lever, the tripping click and the spring for operating the same the whole being exhibited in rear elevation. The tripping click made tapering at its upper end turns on a fulcrum i' and has a stud k' extended from its lower arm into a short slot l' formed in the lever g' . The slot determines the extent of the vibration of the tripping click relatively to the lever g' . A spring, m' , fastened to the frame, A , and shaped as shown in the figure last mentioned extends between two pins, n', n' , projecting from the rear side of the tripping click. The foot of the lever g' , is jointed to a slide rest, o' , see Figs. 4 and 5, such slide rest being also shown in underside view in Fig. 19. A projection p' from the rear end of said slide rest enters a groove v' made in a shaft a' , the same causing said shaft to move endwise with the slider. During the reciprocating movements of the bent lever, O , the pin c' will be carried first against one side and next against the other side of the tripping click f , so as to produce intermittent vibratory movements of the lever, g' , on its fulcrum, h' , whereby an intermittent forward and back or longitudinal movement of the slide rest o' and the feed wheel, R , will be produced and so as to so move the shoe that pegs may be inserted in two rows into its sole, the pegs being driven alternately in said rows.

The feed wheel, R , is formed with two ranges or series of holes extending radially through it as shown at, s' , and t' , those of one range being disposed so that each one of them shall not be exactly opposite one of the other ranges, but be between two of them as shown in the drawings. Besides this the external surface of the feed wheel is fluted so as to enable it to move the shoe when pressed against the same and the feed wheel is in rotation. During the operation of pegging a shoe, this feed wheel has imparted to it an intermittent rotary motion and every time its movement is arrested one of its holes will be brought directly under and in a straight line with the passage d , so as to enable either the awl or a peg to be driven down through it and into the shoe.

A peg driver carrier or slider, T is arranged so as to stand vertically and to play up and down directly over the peg passage, d , and it is moved by the lever, F , with which it is jointed. This slide T , carries a peg driver u' , which consists of a steel wire or rod of a length sufficient when driven downward to force the peg through the peg

carrier N, and into the sole as far as may be necessary. On the rear side of the goose-neck n' or projecting arm of the frame A, is a shelf w' which is provided with a projecting guide x' , and a broad spring y' , arranged on it as shown in the drawings. The said spring serving to press one or more strips x'' of peg wood up against a feeder z' , see Fig. 20 which is a horizontal section of said feeder and spring and made to represent the shelf w' and a pack of peg wood arranged thereon, the latter being shown in dotted lines.

Fig. 21 is a side view of one of the strips of peg wood as prepared for the machine, Fig. 22 being an end view of the same.

When each strip is being applied to the machine it is placed on a shelf w' and so that the guide x' shall pass into the space between the first two teeth or angular points of the said strip. The guide x' serves not only to properly adjust the peg wood strips but it prevents all but the one which is directly against the feeder z' from being moved forward or backward by the action of the feeder. This feeder is serrated or provided with spring teeth as shown in Fig. 23, which is a side view of it, and besides this there is a retaining serrated spring a'' extending through the feeder and fastened to the goose-neck v' and made to rest against the inner strip of peg wood so as to prevent it from being drawn backward during a retraction of the feeder. The feeder slides horizontally and is moved by the action of a bent lever, b'' , which turns on a fulcrum e'' , is jointed to the feeder and rests at its front end on a bracket, or stop, e'' , arranged as shown in Figs. 3 and 5. A spring, d'' , is applied to the shelf w' and so as to press downward the lower arm of the lever b'' . From this arm there is an extension shaped as shown at, e''' . While the slide, M, of the peg carrier, N, moves laterally toward the peg wood its arm on which the peg carrier is situated passes directly underneath the extension e''' and so that when the peg carrier is lifted upward it shall so move the lever b'' as to cause the feeder z' to be retracted. On the descent of the peg carrier, N, the lever b'' will be moved in the opposite direction by the spring d'' , and consequently will force the feeder forward so as to advance a strip of peg wood against the end of a stop lever f'' arranged as shown in the drawings. This stop lever is forced downward by a spring g'' , acting against a projection from its upper arm. The tail of the lever extends through a locking slide h'' which is placed against the under side of the shelf, and slides endwise. An underside view of this locking slide is given in Fig. 24. The position of the tail of the stop lever and the recess of the slide in which said tail acts being therein shown. When the peg

carrier rises upward to separate a peg from the strip of peg wood it elevates the stop lever f'' and this latter forces the locking slide h'' underneath the end of the lever b'' , which at the same time is raised upward, and this lever will be so held upward or prevented from moving the feeder forward until the peg carrier has passed downward beyond the strip of peg wood. As soon as this takes place the tail of the stop lever f'' , acting against the locking bolt retracts it so as to allow the lever b'' to descend; the peg wood being driven forward at the same time. The stop lever and its bolt or slide thus prevent the feeder from being driven forward while the peg carrier is directly in front of the strip of peg wood, as under such circumstances, should the feeder be advanced it could not carry the peg wood with it, but would be likely to cut into and injure it.

The next portion of the machine to be described is that for holding the shoe in a proper position to receive the pegs during the entire operation of pegging its sole. For this purpose there is employed a jack of peculiar construction. It consists first of a lever, U, which turns vertically on a fulcrum as shown at, i'' , and has a weight k'' so applied to its rear arm as to be capable of being adjusted in position nearer to or farther from the fulcrum as occasion may require. The front arm of this lever is connected by a universal joint, m'' , with a standard l'' . The standard being shaped as shown in the drawings. On an arm or projection n'' from the standard the last, V, is supported as shown in the drawings. This last has a rod o'' projecting down from it and through the arm n'' and a lever p'' extending from the standard and turning on a rod, r'' , as a fulcrum. This lever rests on a shelf s'' , projecting from the standard and carrying a rack t'' arranged on it as shown in Figs. 2 and 5. The hole made through the arm n'' for the reception of the rod o'' should be constructed somewhat larger than the said rod in order to enable the last to turn or move on the arm n'' as occasion may require. The rod o'' inclines backward a little from the vertical line so as to tip the sole of the last in such manner as to bring properly against the feed wheel, R, during the rotation of the shoe, that portion of the sole of the shoe into which the pegs are to be driven. The object of the lever p'' connected with said rod o'' is to enable the workman or attendant to tip the last, V, longitudinally more or less during its rotations in order that the pegs may be driven as near as possible at right angles to the outer surface of the sole. The weighted lever u'' maintains the shoe in close contact with the feed wheel, R, and enables it to move upward or downward as occasion

may require while it is being turned around under the operation of the feed wheel. It also serves to press the soles firmly together, and to the last, while the pegs are being

5 driven.

Having thus described the construction of said machine, I would remark that while its driving shaft is in rotation the awl will be turned around laterally and driven down-
10 ward through the peg passage and into the sole. Immediately afterward the awl will be drawn from the sole and peg passage, and the peg carrier will be turned around so as to come directly over the peg passage.
15 Next the peg driver will be forced downward through the peg carrier and peg passage and so as to drive into the sole the peg which may be in the peg carrier. Immediately afterward the peg driver will be
20 raised upward out of the peg carrier. Next both peg carrier and awl will be moved laterally, the former being carried directly under the strip of peg wood while the other will be moved immediately over the peg
25 passage. Next the peg carrier will be raised up and the awl forced downward, the former during its upward movement separating a peg from the strip of peg wood. In order to insert but one row of pegs into
30 the sole the slider, *u*, is to be drawn forward but when two rows are to be inserted it is to be pushed backward.

Having thus described my improved machine what I claim therein as of my invention
35 is as follows,

1. I claim in combination with the feeder wheel, *R*, and its rotary mechanism a mechanism for imparting to said feeder wheel and the last reciprocating, intermittent end-
40 wise movements whereby the pegging of two ranges of pegs may be effected as described.

2. I do not claim a toothed or corrugated feeding wheel, nor one made with a series
45 into, but what I do claim is constructing

the feed wheel, *R*, with two series of radial holes arranged in it as specified.

3. I also claim the stop lever *f''* and its locking slide *h''* in combination with the peg wood feeding mechanism and made to
50 operate therewith substantially as explained.

I do not claim a tubular peg carrier provided with a cutter as shown in the patent granted to A. C. Gallaher August 16th 1853.
55

4. I also claim the tubular peg carrier when provided with a cutter for separating the peg from the peg wood, and when arranged and made to operate with the peg
60 wood feeder and the feeder, *R*, substantially as specified.

5. I also claim the combination of mechanism for producing a reciprocating intermittent endwise movement of the
65 feeder wheel, *R*, the same consisting of the slider *u* the stud, *v*, the groove *w* the spring *S* the pin *c'* the inclined cam *d'* the pin *e'* the tripping click *f'* the lever *g'* and the slide rest *o'* the whole being applied together substantially as specified.
70

6. I also claim combining with the mechanism for producing the reciprocating endwise movement of the feeder, *R*, a weight
75 ed arm or its equivalent applied to the pegging jack substantially as above specified whereby the shoe and last are maintained in close contact with the feeder and permitted to move in correspondence therewith
substantially as set forth.

7. I also claim the method of effecting the
80 feeding of the peg wood, that is by the slider, *M*, of the peg carrier the lever *b²* the serrated feeder *z'* and the spring *d²* operating together as specified.

In testimony whereof I have hereunto
85 set my signature.

B. F. STURTEVANT.

Witnesses:

R. H. EDDY,
F. P. HALE, JR.