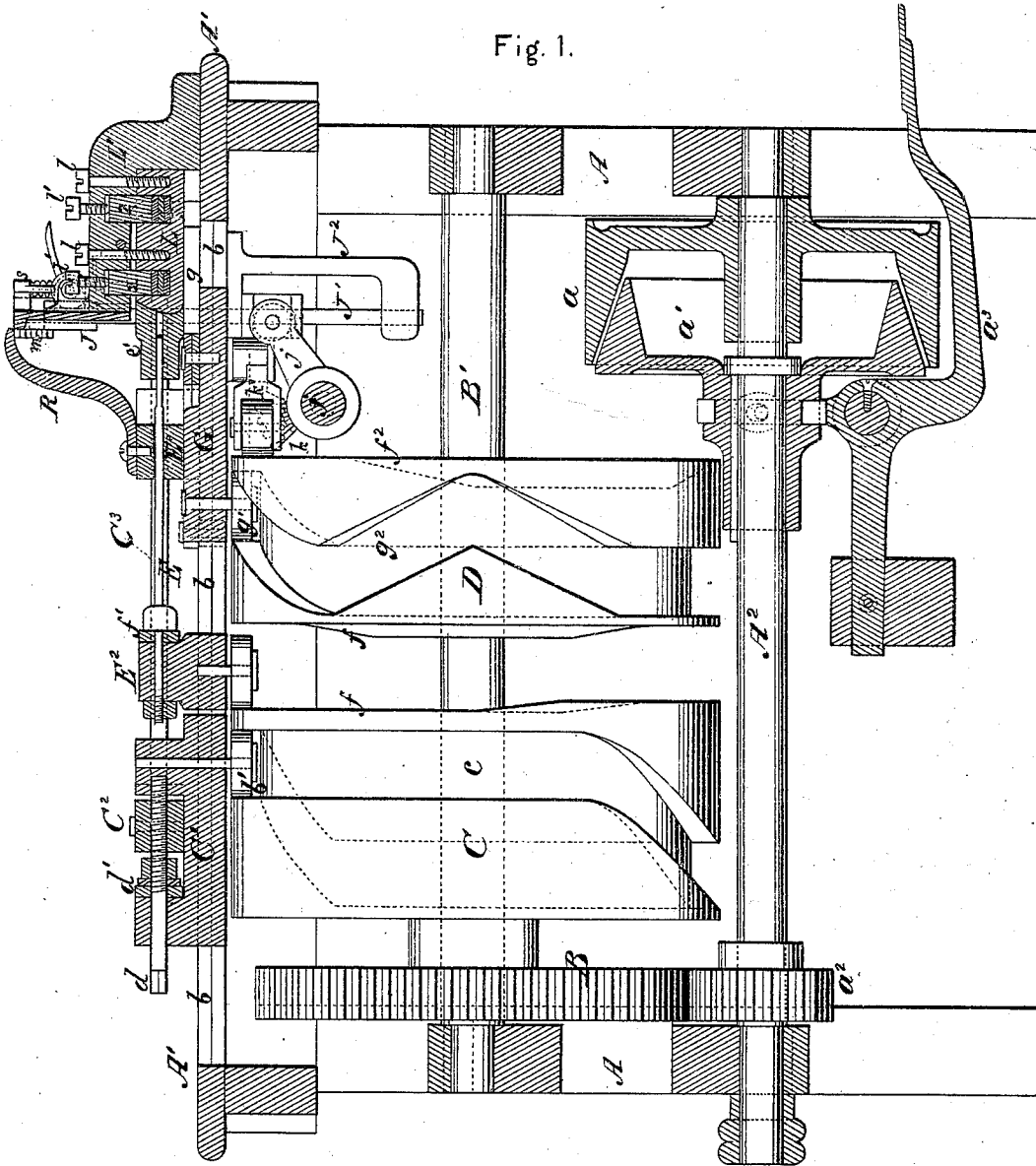


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Heel Crimping-Machines.

No.147,967.

Patented Feb. 24, 1874.

Fig. 1.



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Fig. 2.

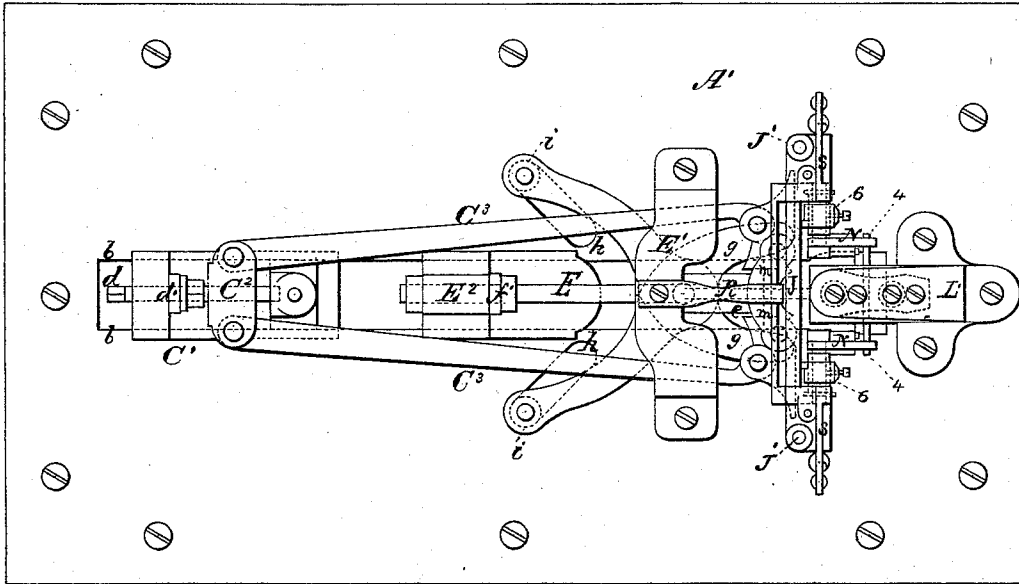
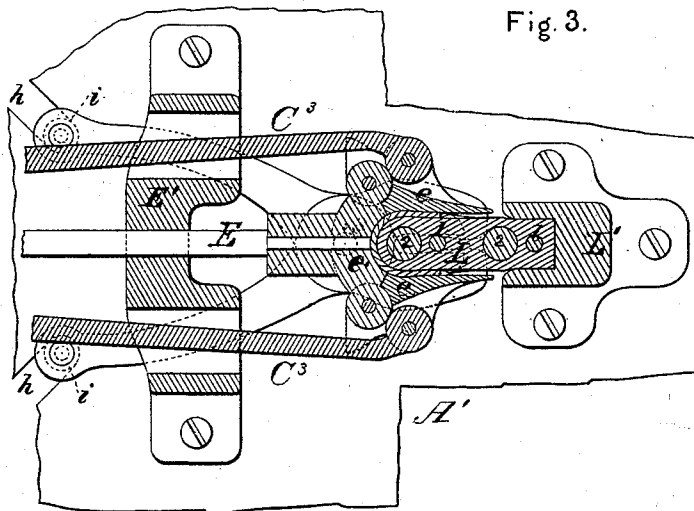


Fig. 3.



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Fig. 4.

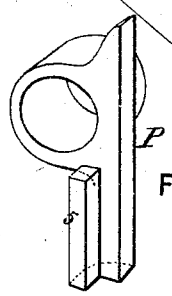
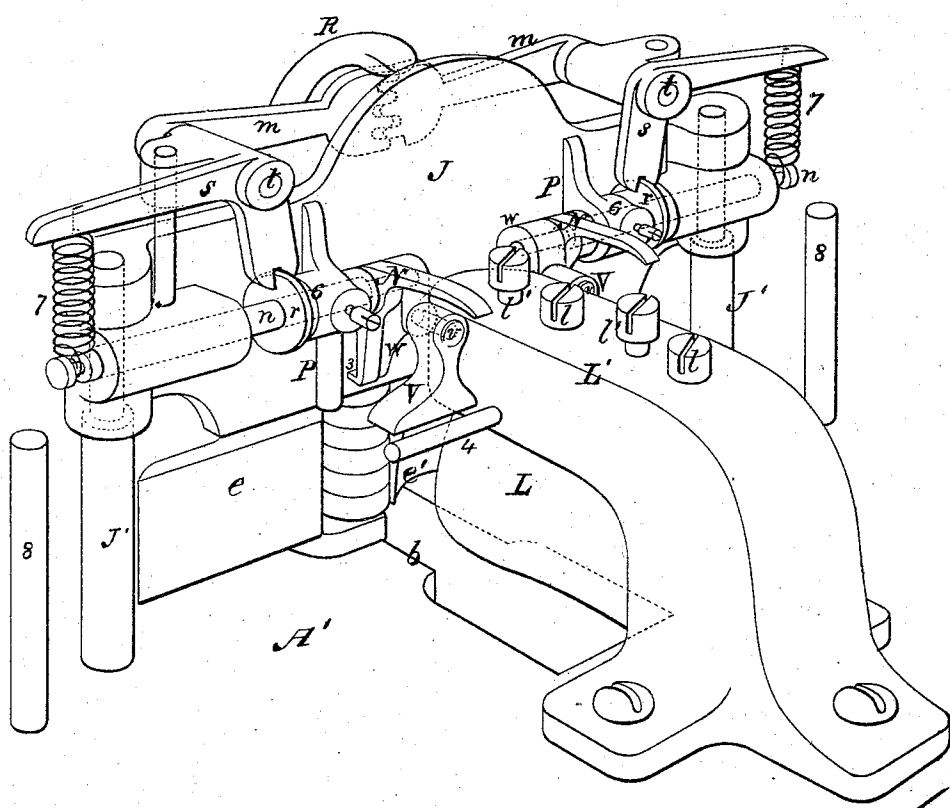


Fig. 5.

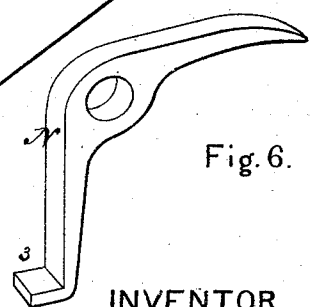
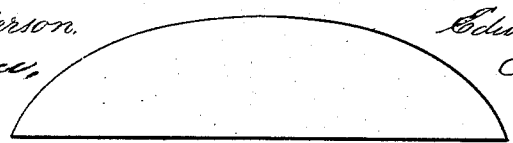


Fig. 6.

Fig. 7.



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IMPROVEMENT IN HEEL-CRIMPING MACHINES.

Specification forming part of Letters Patent No. **147,967**, dated February 24, 1874; application filed
January 10, 1874.

To all whom it may concern:

Be it known that I, EDWARD B. PARKHURST, of Woburn, in the county of Middlesex and State of Massachusetts, have invented a new and valuable Improvement in Heel-Crimping Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal vertical section of my heel-crimping machine. Fig. 2 is a top view of the same. Fig. 3 is a horizontal section, and Fig. 4 a perspective view, of the same. Figs. 5, 6, and 7 are detail views.

This invention relates to certain novel improvements on machinery which is designed for crimping the stiffenings of boot and shoe heels. My improvements have relation especially to means for holding and adjusting the last on which the leather is crimped; also, to two gravitating dischargers, which are applied to a vertically-reciprocating head, and arranged on opposite sides of the last, for the purpose of freeing the crimped stiffenings from the last after the crimping devices have receded out of the way. My invention also has relation to devices for holding the blanks, delivering them in front of the crimping devices, centering them with respect to these devices, and, finally, releasing them as they are taken by the crimpers; also, to a novel construction of devices for pressing and crimping the leather blanks on the last, and to certain novel mechanism for actuating the crimpers, and for giving two strokes to the bottom crimping-jaws to one stroke given to the side and back jaws, all as will be hereinafter explained.

In the annexed drawings, A represents the frame of the machine, and A¹ the horizontal top thereof, on which the feeding, crimping, and discharging devices are arranged. A² designates a horizontal driving-shaft, on which is applied a driving-belt pulley, a, a sliding friction-clutch, a¹, and a pinion spur-wheel, a². The clutch is actuated by means of a loaded treadle, a³, on which the operator places his foot when he wishes to give motion to the

crimpers. Pinion a² engages with a large spur-wheel, B, which is keyed on a horizontal shaft, B'. On this shaft B' are also keyed two drums, C D, having cam-grooves in their peripheries, and single-throw cams on their ends. C¹ designates a rectilinear sliding carrier, which moves between guides b b in the top A¹ of frame A, and which receives one movement back and forth during every revolution of the drum C by means of an anti-friction wheel, b', which plays in the cam-groove c in said drum. C² designates a transverse yoke, to the ends of which two rods, C³ C³, are pivoted. This yoke is connected to the carrier C¹ by means of a screw, d, on which an elastic washer, d', is applied. By turning the screw d, the yoke C² is adjusted forward or backward, and held wherever desired. The rods C³ C³ extend forward and outward, and are pivoted to the backs of two horizontally-vibrating jaws, e e, which are pivoted to ears formed on a tube, e', that slides on a centering-pin, E. The jaws e e are intended for crimping the blanks on the two opposite sides of a last, L, and the end of the sliding tube e' between the jaws e e is intended for crimping the blanks about the heel of the last, for which purpose the pressing-surfaces of the jaws and the tube are shaped so as to conform to the corresponding surfaces of the last. The sliding tube e' and the jaws e e are moved up to and from the last at proper times by the reciprocating movements given to the carrier C¹, and during the pressing action of said parts e e e' they are allowed to yield slightly by means of the washers d' and another washer, f¹, on the centering-pin E. The centering-pin E is guided by a bridge-bearing, E¹, fixed to the frame-top A¹, and the rear end of this pin is adjustably secured to a slide, E², working between the guides b b, and receiving longitudinal movements from the cam-faces f f on the ends of the drums C and D. Beneath the crimpers e e e' are two crimping-shears, g g, for crimping the lower edges of the blanks, and drawing these edges closely and forcibly under the bottom surface of the last, while the sides and heel ends of the blanks are closely held by the crimpers e e e'. These crimping-shears g g are pivoted to a reciprocating slide, G, which is moved between the guides

b b by means of a wheel, *g*¹, playing in a two-throw cam-groove, *g*², made into the periphery of the drum *D*. This groove *g*² is so shaped that it gives two strokes forward and back to the crimpers *g g*, while the crimpers *e e'* remain at rest, clamping the leather, thereby rounding and finishing the stiffeners in a much better manner than would be done if only one stroke were given to the crimpers *g g*. The laterally-vibrating movements are given to the crimpers *g g* by means of anti-friction rollers *i i*, applied on the rear ends of the griper-arms, which rollers play back and forth in two oblique slots, *h h*, made through the top of frame *A*. The last or former *L* is adjustably secured to an overhanging bracket, *L'*, fixed on the frame-top *A*¹ in front of and in line with the crimpers. Two screws, *l l*, secure the last to its bracket, and two other screws, *l' l'*, afford abutments for the last when properly adjusted by means of the screws *l l*. The last is firmly held against lateral displacement by means of two cylindrical blocks, *2 2*, which are recessed into the upper side of the last, and also into the lower side of the overhanging portion of the bracket *L'*, at the ends of which blocks india-rubber or other elastic substance may be applied. An end abutment for the last *L* is formed by recessing the end into the bracket *L'*, as shown in Fig. 2. *J* represents a vertically-moving head, which is guided by means of rods *J¹ J¹*, that pass through the frame-top *A*¹, and also through fixed pendants *J²*, secured to the under side of this top. Vertical movements are given to the head *J* by means of arms *j*, which are fixed on a rock-shaft, *j'*, and loosely attached to blocks, which are adjustably applied on the rods *J¹*. On one end of the rock-shaft *j'* a toothed segment, *k*, is keyed, which is engaged by teeth on one end of a vibrating lever, *k'*, the other end of which lever is held in contact with the cam-edge *f²* of the drum *D* by the weight of the head *J* and its attachments. The cam-edge *f²* is so shaped that it will hold up the head *J* during the crimping operation, and allow the crimpers to pass freely beneath this head. On each side of the middle of the length of the head *J*, and to the front side thereof, two horizontal rods, *n n*, are rigidly secured at their outer ends, which rods coincide with each other, and, if desired, they may be adjustable. On these rods are applied the devices for receiving the leather blanks, and holding them in proper position for being taken by the crimpers; also, the devices for releasing the blank-holders when the crimpers take hold of them, and also the devices for discharging the crimped stiffeners. These several devices I will now describe, commencing with the holders. *N N* are two angular levers, which are applied on the rods *n n*, so as to vibrate freely, the lower ends of which levers are hooked at 3, and held in contact with the front side of the head *J* by the weight of the upper projecting arms. The hooks 3 afford rests for the lower straight edges of the blanks, and these hooks are in a plane paral-

lel to the top of the frame *A*. When the head *J* descends to deliver a blank, the blank is released from the resting-hooks 3 by the upper arms of the levers *N* striking tripping-pins 4 4, fixed into the sides of the bracket *L'*. *P P* designate holders for the extremities of the blanks, which holders have vertical lips 5 formed on them, and they are formed on tubes 6, which receive, loosely through them, the rods *n n*. These end-holders *P* are held flatly in contact with the front face of the head *J*, and the tubes on which they are formed have annular grooves in their peripheries, which leave annular flanges *r* on their outer ends. These flanges *r* are received in notches made into the shortest arms of angular levers *s s*, which are fixed on rocking pivots *t t*, having their bearings in posts rising from and fixed rigidly to the head *J* near its extremities. The longer arms of the levers *s* are held down in proper position by springs 7 7, and when the head descends posts 8 8 are struck by said longer arms and the holders *P P* are both moved outwardly and caused to release the ends of the blanks confined between them. When the head *J* rises the holders *P P* are again moved outwardly to receive a blank by the following contrivance: On the rear ends of the rocking pivots *t t*, arms *m m* are keyed, the free ends of which are engaged by toothed segments, as indicated by dots in Fig. 4. When the head *J* rises, the free ends of arms *m m* are depressed by means of a goose-neck, *R*, which is fixed to the bridge-bearing *E*¹. This gives an outward lateral movement to the holders *P P*, and, as before stated, prepares them to receive the blanks. *V V* designate two dischargers, which are pivoted on pins *v v*, projecting horizontally from the heads of two vertical guides, *w w*, applied on the inner ends of the rods *n n*. These dischargers *V V* hang freely from their supporting-pins, and their lower loaded ends are so constructed that the inner angles of these ends will be held against the sides of the last *L*, and so adjust themselves thereto that they will positively discharge the finished stiffeners from the last during the descending movements of the head *J*.

Having described particularly the construction of the several parts composing my improved crimping-machine, I will now briefly describe the general operation of the machine.

The blanks from which the stiffeners are produced have a lower straight edge and an upper arched edge, as shown by Fig. 7. These blanks are adjusted one at a time into the blank-holders on the reciprocating head *J*, when this head is fully raised and said holders are in positions to receive such blank. The head *J* then descends, and the pin *E* is moved up so as to firmly hold the blank centrally against the heel end of the last *L*. The head *J* then rises, and the concave end of the tubular crimper *e'* is forced up against the last, after which the side crimpers *e e* are brought

into action and press the sides of the leather stiffener, as shown in Fig. 3. While the stiffener is thus held, the crimping-jaws *g g* operate twice upon the lower edge of the stiffener and crimp this edge against the bottom of the last. The crimping devices then recede and the head *J* is caused to descend, during which movement the dischargers *V V* free the finished stiffener from the last.

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

1. The last or former *L*, secured to the overhanging portion of a bracket, *L'*, by means of adjusting-screws *l l*, abutting screws *l' l'*, and guide-blocks *2 2*, substantially as described.

2. The gravitating dischargers *V V*, combined with the last *L* and a vertically-reciprocating head, *J*, substantially as described.

3. The reciprocating crimper *e'*, in combination with the pivoted side crimpers *e e*, and the crimping-shears *g g*, and last *L*, substantially as described.

4. The reciprocating centering and holding pin *B*, in combination with the last *L* and a vertically-reciprocating head, *J*, carrying the blank-holders, substantially as described.

5. The yoke *C²*, adjustably applied to the sliding carrier *C¹*, in combination with the rods *C³* and the side crimpers *e e*, substantially as described.

6. The pivoted angular levers *N*, constructed with blank-supports *3*, and combined with the head *J* and tripping-pins *4*, substantially as described.

7. The lipped blank-holders *P* on sliding tubes *6*, in combination with flanges *r*, forked levers *5*, springs *7*, fixed pins *8*, arms *m*, and goose-neck *R*, as and for the purpose described.

8. The drum *D*, provided with the zigzag groove *g³*, constructed to give two forward strokes to the shear-crimpers *g g* at each turn of shaft *B'*, in combination with drum *C*, provided with the groove *c*, constructed to give one stroke to the crimpers *e e e'*, at each turn of said shaft *B'*, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

EDWARD B. PARKHURST.

Witnesses:

PARKER L. CONVERSE,
JOHN WINN.