(No Model.) 6 Sheets—Sheet 1.

J. E. JACKSON.

SEWING MACHINE FOR LASTING BOOTS OR SHOES.

No. 539,481. Patented May 21, 1895.

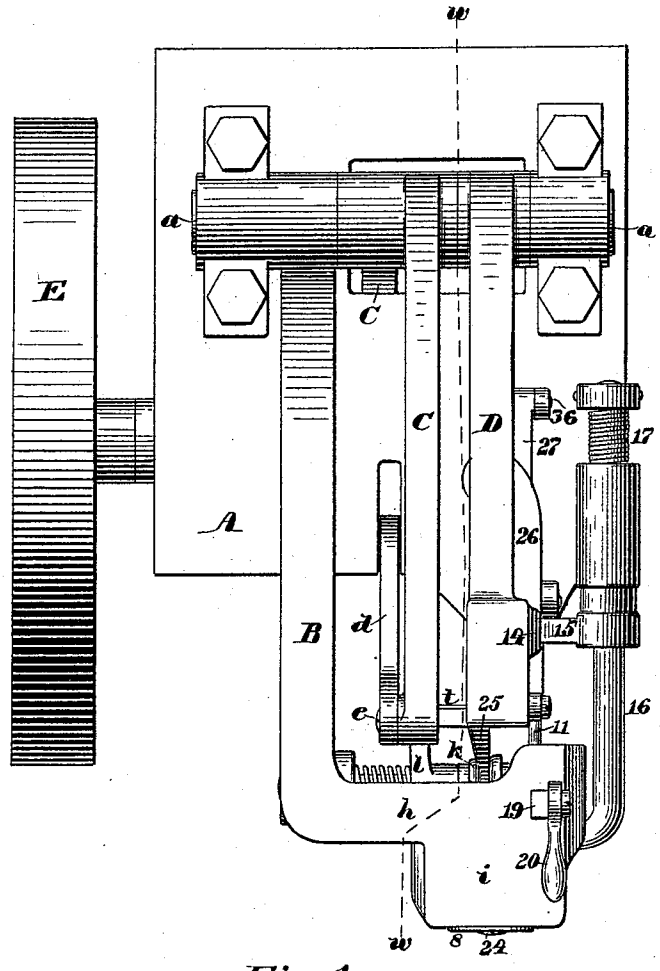

Fig. 1.

Witnesses:
Walter E. Lombard
James D. Thomson

Inventor:
James E. Jackson
per J. W. Porter Atty

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(No Model.) 6 Sheets—Sheet 2.

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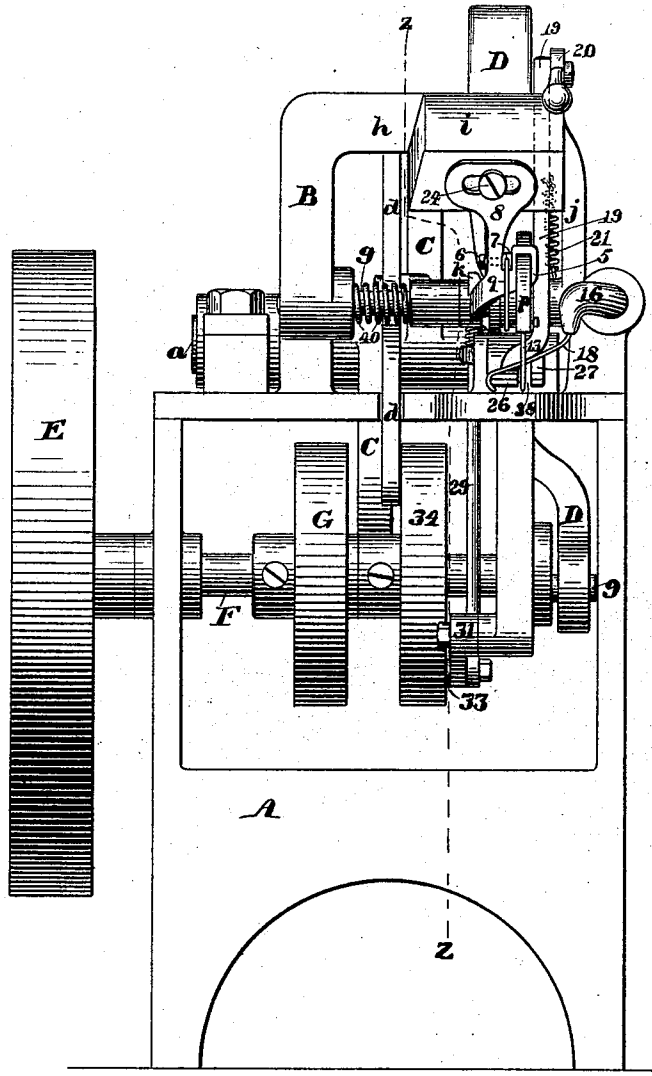

Fig. 2.

Witnesses:
Walter E. Lombard
James D. Thomson

Inventor:
James E. Jackson
per T. W. Porter Atty

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(No Model.) 6 Sheets—Sheet 3.

J. E. JACKSON.

SEWING MACHINE FOR LASTING BOOTS OR SHOES.

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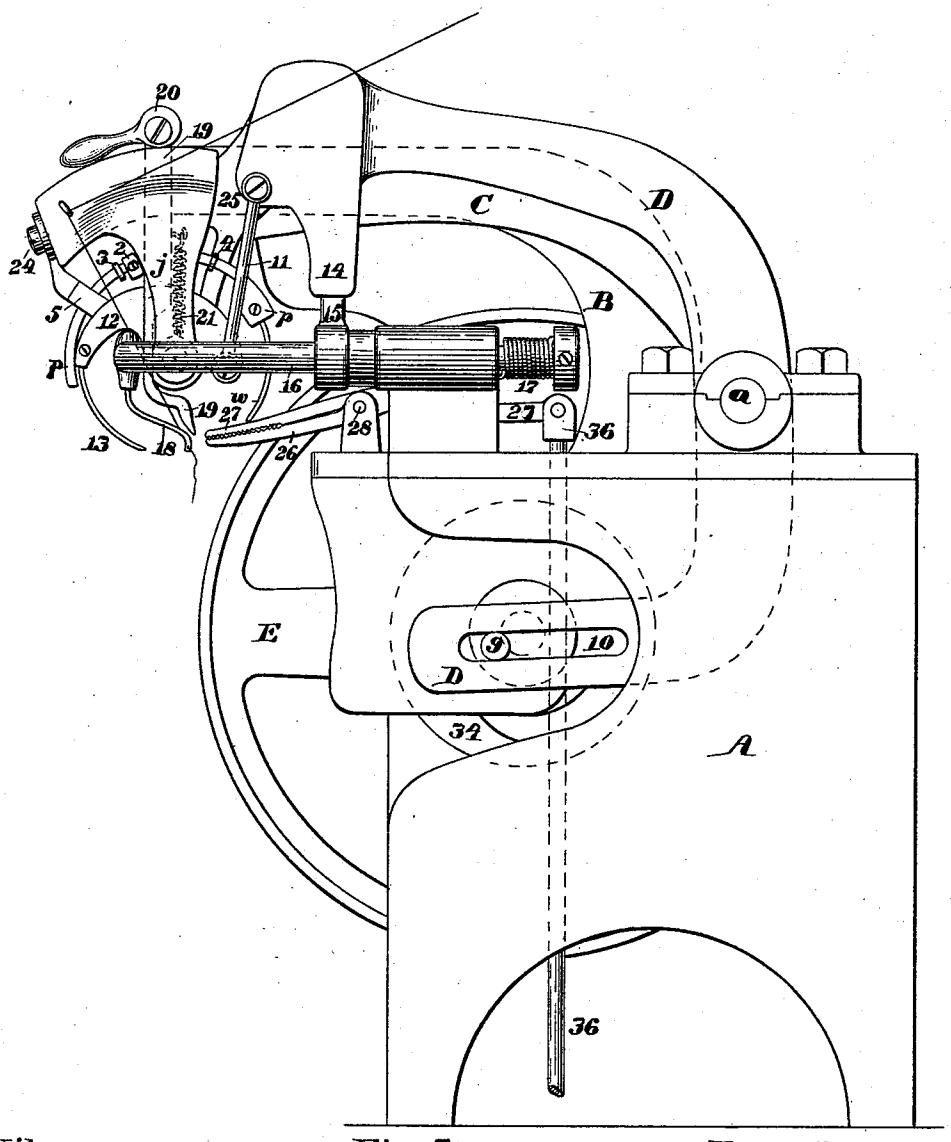

Fig. 3.

Witnesses:
Walter E. Lombard
James D. Thomson

Inventor:
James E. Jackson
per F. W. Baxter Atty

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J. E. JACKSON.

SEWING MACHINE FOR LASTING BOOTS OR SHOES.

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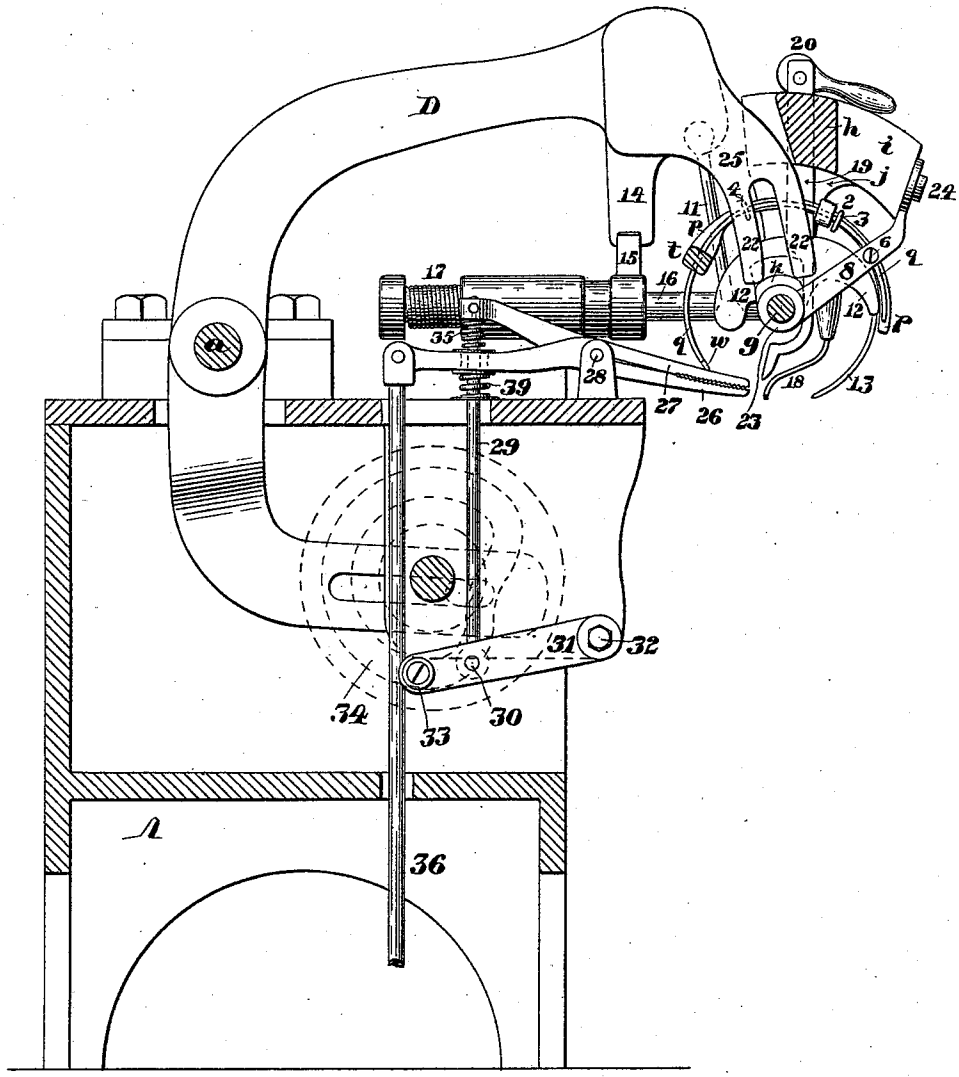

Fig. 4.

Witnesses:
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James D. Thomson

Inventor
James E. Jackson
by J. W. Porter Atty

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(No Model.) 6 Sheets—Sheet 5.

J. E. JACKSON.

SEWING MACHINE FOR LASTING BOOTS OR SHOES.

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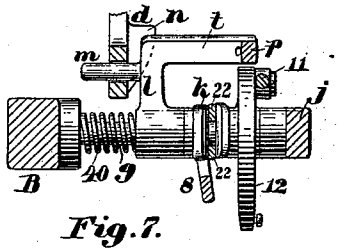
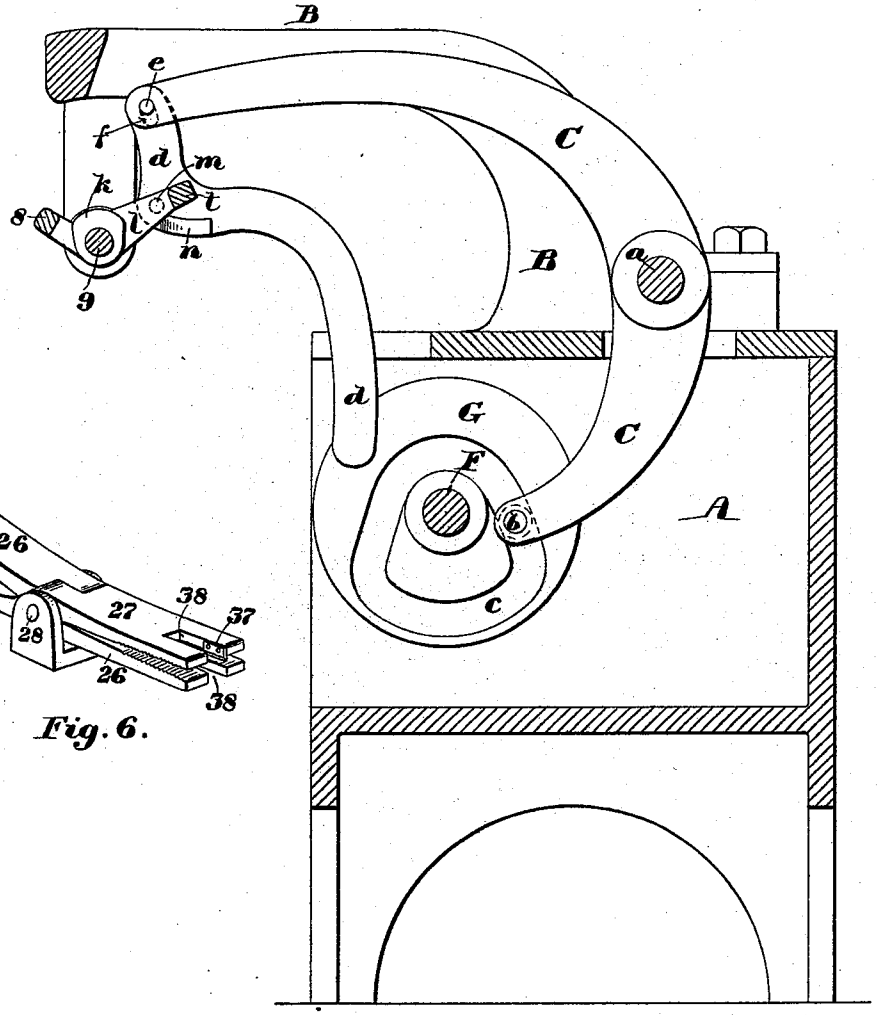


Fig. 7.



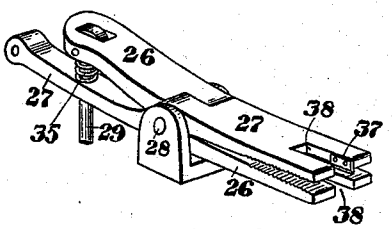


Fig. 6.

Fig. 5.

Witnesses:
Walter E. Lombard.
James D. Thomson

Inventor:
James E. Jackson
per W. W. Porter Atty.

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J. E. JACKSON.

SEWING MACHINE FOR LASTING BOOTS OR SHOES.

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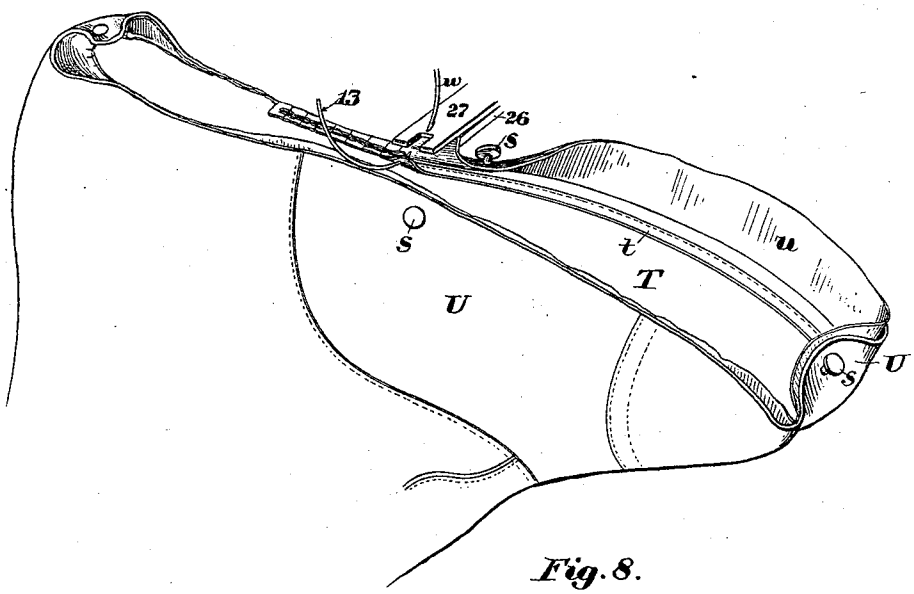

Fig. 8.

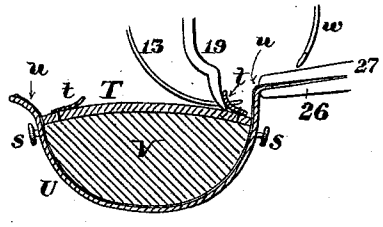

Fig. 9.

Witnesses:
Walter E. Lombard.
L. W. Howes

Inventor:
James E. Jackson
by T. W. Porter Atty

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES E. JACKSON, OF LYNN, MASSACHUSETTS.

SEWING-MACHINE FOR LASTING BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 539,481, dated May 21, 1895.

Application filed September 13, 1894. Serial No. 522,934. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. JACKSON, of Lynn, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Sewing-Machines for Lasting Boots or Shoes, which will, in connection with the accompanying drawings, be hereinafter fully described, and specifically defined in the appended claims.

In said drawings, Figure 1 is a top plan view of my improved lasting-machine. Fig. 2 is a front elevation of the machine shown in Fig. 1. Fig. 3 is a side elevation taken at the right of Figs. 1 and 2. Fig. 4 is a vertical section taken on line *z*, Fig. 2, and viewed as from the left in Figs. 1 and 2. Fig. 5 is also a vertical section, but taken on line *w w*, Fig. 1. Fig. 6 is a perspective view showing the clamping pinchers and the cutting-blade attached to the upper jaw of said pinchers. Fig. 7 is a top plan view of shaft *g* and certain attached parts. Fig. 8 is a perspective view of a shoe as being lasted by my machine, certain parts of the machine being also shown. Fig. 9 is a transverse section of the shoe near the toe and showing certain parts of the machine.

The object of my invention is to last shoes rapidly and well by stitching the upper to the sole; and I accomplish said result by means of a machine that takes the shoe when drawn upon the last and that is self-feeding the distance of a stitch just before each stitch is set, that is provided with a pair of pinchers that hold the border of the upper while being lasted, the shoe being moved laterally stitch by stitch, thereby feeding or moving it after each stitch is set, and that has a cutter attached to the upper jaw of the pinchers to cut or "shingle" the upper at each stitch so that it will lie level upon the sole; also in a stitching mechanism provided with devices for inserting a stitch at each movement of the shoe, which stitching mechanism consists of an awl, a needle, a cast-off and a looper so constructed and arranged as to sew the upper to the sole, as will be next herein described and then pointed out in the claims.

Referring again to said drawings, A is the frame of the machine, which may be set upon a table or bench or it may have a special base or legs provided for it.

B is a gooseneck or arm that is secured to and extends above frame A and supports the upper portions of the machine.

E is a pulley secured upon shaft F that is mounted in bearings of frame A, and by a belt acting on said pulley the several parts of the machine are actuated.

C is a bent lever or arm mounted to vibrate on shaft *a* and is actuated by cam G secured on shaft F, a trundle *b* attached to the lower end of said lever being arranged to move in the cam groove *c*, Fig. 5.

The upper front end of lever C has connected with it the curved piece *d* which is supported by pin *e* that plays in slot *f* in said piece *d;* the lower portion of which merely serves to hold the same in proper balance, as it is moved up and down by the vibrations of lever C. A rod or shaft *g* is supported in gooseneck B at the left as shown in Figs. 1, 2, and 5, while its opposite end is supported by the part *j* that depends from head *i* of angle *h* of said gooseneck B.

Mounted on shaft *g* is the hub *k* from which extends rearward a short arm *l* to which bar *d* is pivoted by pin *m*, as is shown in Figs. 5 and 7. Upon bar *d* is a cam *n* that bears against arm *l* and relieves pin *m* of a portion of the strain that would otherwise be exerted upon it.

Extending to the right from arm *l* is the small arm *t* that carries the cast-off guide *p* that is formed as an arc of a circle and is in part guided by guide 5, shown in Fig. 2, through which it moves. The cast-off *q* is arranged at the side of said guide *p* and is held in relation thereto by clasps 3, 4, that inclose guide *t* and are secured to the cast-off; while an abutment 2 secured to said guide serves as the means of moving the cast-off in alternate directions as said abutment is brought in contact with said clasps. At the front of the machine said cast-off is frictioned by a screw 6, that presses it between the parts 7 of leather placed between the guiding loop 5 and main part 8, to be hereinafter described. The needle *w* is also secured in said arm *t* and is also formed as an arc of a circle and is actuated by the oscillation of hub *k* on its shaft *g*.

Arm D is actuated by crank pin 9 carried by shaft F, which acts in slot 10, formed in the lower bent end of said lever, which lever

is pivoted and vibrates on shaft *a* as shown in Fig. 3. Said arm D actuates pitman 11, that at its lower end is pivoted to awl carrier 12, that is mounted and reciprocates on shaft *g*, and it carries the awl 13. Projecting down from arm D is a short stud 14, that contacts with arm 15 secured on rock shaft 16, which at its front end carries the looper 18; said arm 14 tending to move the looper outward, while the helical spring 17, mounted on shaft 16, returns it to place.

A presser foot 19 is arranged in head *i* of gooseneck B to enter the channel already formed in the sole and to hold the same open to the action of the sewing mechanism; a cam 20 being arranged to raise said foot when a shoe is to be placed in position for lasting, and a helical spring 21 being arranged to depress said presser foot when released from the cam.

For the purpose of holding the shoe in proper position for the action of the stitching mechanism, and at the same time to cause it to be fed forward stitch by stitch, I arrange a pair of pinchers the lower jaw of which is shown at 26 and the upper jaw at 27, the two jaws being pivoted at 28; a rod 29 being pivoted to the rear end of jaw 26, while its lower end is pivoted at 30 to lever 31 that at its front end is pivoted at 32 to frame A while its rear end carries a trundle 33 that is actuated by cam 34; a coiled spring 35 arranged on rod 29 between said jaws serving to open the pinchers when permitted by the action of said cam 34, said pinchers being formed to cross each other in the well known manner of pinchers, shears, and like implements.

To feed the shoe forward I arrange an arm 25 that extends downward from the front end of lever D and which is bifurcated at its lower part as shown at 22, 22, which parts are wedge shaped so as to act against said hub 23, and they pass on opposite sides of shaft *g* and at the right of hub 23 of arm 8, as viewed in Fig. 2, said hub being loose on shaft *g* while its arm 8 (that supports the cast-off support *p* and cast-off *q*) is slotted at its upper end and is supported by screw 24 in the end of lever D, so that said arm 8 can move laterally with hub 23, while said arm 25 is descending, so that at each depression of lever D its arm 25 will force hub 23 and hub *k* to the left, thereby, through the contact of needle *w* with the shoe, causing the latter to be fed to the left, the parts being so timed that when such feeding takes place the pinchers are being held open and the stitching devices being returned to position by the action of spring 40.

The shoe to be lasted may be held in the hands of the operator or if preferred it can be mounted upon a jack, and the edge of the upper is placed in the pinchers which for that purpose are opened by the action of a foot treadle (not shown) acting through rod 36; which when released is raised by spring 39; a cutting blade 37 being secured to jaw 27, in the slot 38, so that at each closing of said jaws after the shoe has been fed forward, the edge of the upper will be cut to allow its lying flat upon the sole, and while the shoe is held by said pinchers the awl punctures the sole and upper ready for the entrance of the needle, the taking of the stitch and the feeding forward of the shoe.

In Fig. 8, T, represents the insole secured to the last V. Shown in Fig. 9. The upper of the shoe is shown at U, and it is held upon the last and insole by the lasting tacks S. The upper is seized and held by the pinchers as shown, they being manipulated as described. The stitching by which the upper is secured to the insole commences near the heel on the side as shown, the shoe being moved the distance of a stitch at each movement of the pinchers shown at 26, 27, they being opened and closed for that purpose as explained. The awl 13 passes under the welt *t*, which may be stitched to the insole or it may be cut and raised thereon, and needle 13 co-operates with the awl in setting the stitch, and as each stitch is taken a cut in the edge of the upper is made by knife 37, secured to the pinchers.

Having thus described my invention, what I claim as new is—

1. In combination with the stitching mechanism of a shoe lasting machine, a pair of pinchers formed with a slot through the jaws, a knife arranged in said slot and attached to one of said jaws, a cam actuated mechanism to open said jaws for the purpose of allowing the shoe to be fed, and a treadle mechanism arranged for opening said jaws to release the shoe therefrom, substantially as specified.

2. In an organized lasting machine the combination of gooseneck B mounted on frame A, the pivoted levers C, D, the shaft *g* mounted in said gooseneck, the hub *k* carrying the needle, the cast-off and cast-off guide, all actuated by said lever C, and the awl connected to and actuated by lever D, connections between said lever and looper carrying rock shaft, whereby the looper is actuated, and a cam-shaped arm on said lever D for moving laterally the needle carrying hub *k* to feed the shoe forward, substantially as specified.

JAMES E. JACKSON.

Witnesses:
THOMAS W. PORTER,
L. W. HOWES.