

March 2, 1937.

J. W. PRATT ET AL

2,072,213

LASTING MACHINE

Filed May 4, 1936

2 Sheets-Sheet 1

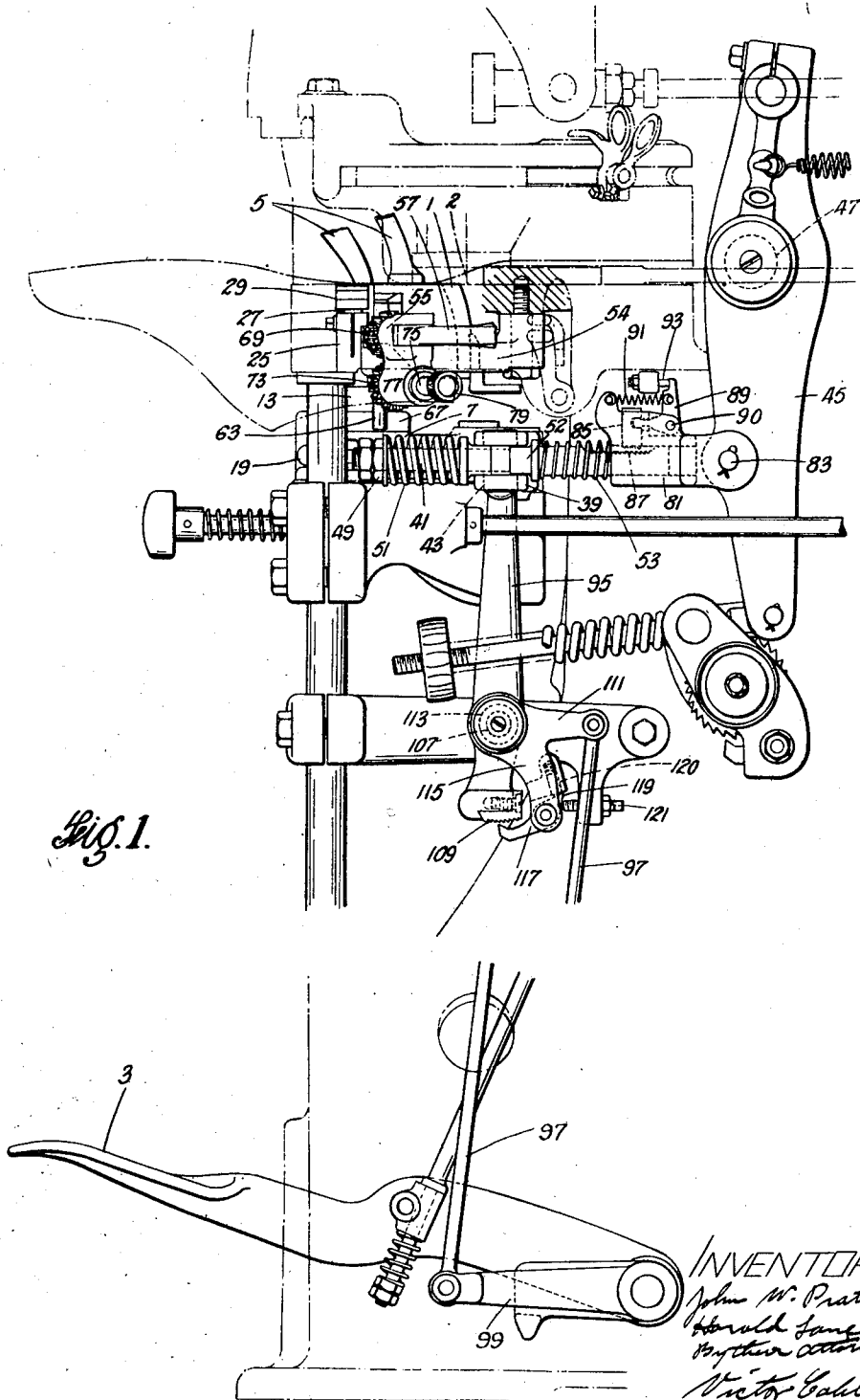


Fig. 1.

INVENTORS
John W. Pratt
Harold Lane
By their attorney
Victor Galt

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2 Sheets-Sheet 2

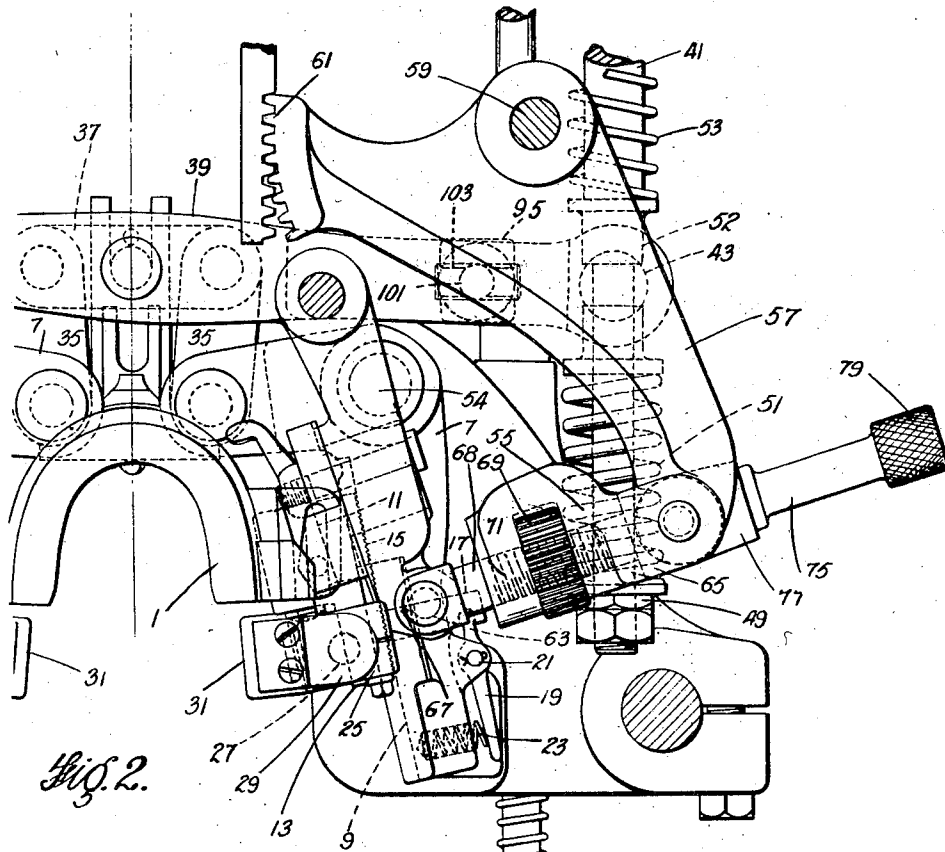


Fig. 2.

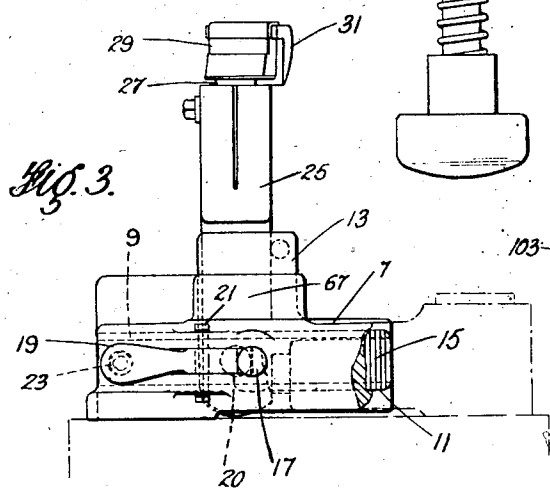


Fig. 3.

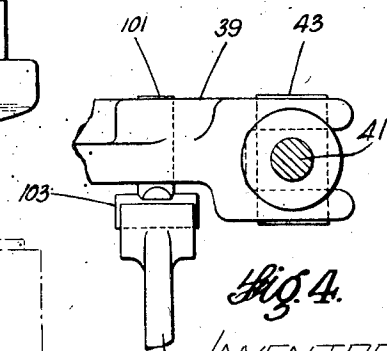


Fig. 4.

INVENTORS
John W. Pratt
Harold Lane
By their Attorney
Victor C. Cobb

UNITED STATES PATENT OFFICE

2,072,213

LASTING MACHINE

John William Pratt and Harold Lane, Leicester,
England, assignors to United Shoe Machinery
Corporation, Paterson, N. J., a corporation of
New Jersey

Application May 4, 1936, Serial No. 77,730
In Great Britain July 19, 1935

15 Claims. (Cl. 12-4)

This invention relates to lasting machines and more particularly to machines for lasting the heel ends of shoes. The invention is herein illustrated as applied to a machine of the type disclosed in United States Letters Patent No. 1,949,539, granted on March 6, 1934 upon an application of Joseph Gouldbourn, Fred Ricks and William T. B. Roberts, but it is to be understood that it is not limited to machines of that particular type.

Machines of the above-mentioned type are provided with heel-lasting wipers for wiping the marginal portion of the upper inwardly over an insole or other shoe bottom part on the last, a heel-end clamping device or heel band for clamping the upper materials about the heel end of the last prior to the operation of the wipers on the upper, a work support or jack movable to carry the shoe into position to be embraced by the heel band, and a treadle controlling the jack and by movement of which the shoe is forced upwardly against a holddown prior to the starting of the power operation of the machine. In United States Letters Patent No. 2,028,248, granted on January 21, 1936 upon an application of William T. B. Roberts, there are disclosed, in such a machine, clamping members arranged to clamp the upper materials (including, it may be, the usual heel-end stiffener or counter) against the last at its opposite sides in locations just forwardly of the heel-end portion of the last and of the heel band prior to the closing of the heel band against the sides of the shoe, in order to insure against any objectionable displacement of the heel-end portion of the upper materials relatively to the last by the action of the heel band and the wipers thereon. Further, in United States Letters Patent No. 2,013,057, granted on September 3, 1935 upon a later application of Harold Lane and Horace H. Dyson there are disclosed, as a modification of or improvement upon the Roberts construction, clamping members which are moved inwardly against the shoe by the jack-controlling treadle prior to the starting of the power operation of the machine, after the treadle has received a portion of its movement, and are forced more firmly against the shoe by power-operated mechanism including a spring after the starting of the machine. The present invention, in one aspect, provides improvements in an organization such as shown more particularly in the last-mentioned Letters Patent No. 2,013,057. In accordance with one feature of the invention the construction is such that the shoe-clamping members are subjected

to the action of the above-mentioned spring at substantially the same time in each cycle of operations of the machine, and are forced against the shoe with substantially the same pressure in each cycle, regardless of the positions to which the members may have been previously moved by the treadle to engage them with a shoe. For this purpose, as herein illustrated, the power-operated mechanism for forcing the clamping members against the shoe comprises different portions one of which remains stationary while another portion including the spring moves relatively to the stationary portion, without altering the relation of the spring to the part which it operates, in any treadle-effected movement of the members, after which in the power operation the different portions of the mechanism are automatically coupled together in any relative positions which they thus assume. This construction further serves to facilitate preliminary adjustment of the clamping members widthwise of a shoe by means provided for that purpose, as more particularly hereinafter described.

In accordance with another feature of the invention there is provided a novel construction such that any adjustment of the shoe-clamping members widthwise of a shoe does not alter the time in the depression of the treadle when the members are operated thereby, the construction shown comprising parts one of which moves relatively to another without disturbing the relation of the latter to the treadle in the adjustment of the clamping members and which are thereafter operatively coupled together in response to depression of the treadle. Still other features comprise novel means for adjusting the clamping members widthwise of a shoe with the heel band so that the members will always, when the machine is idle, occupy the same relation to the forward ends of the heel band, and also novel means for conveniently effecting such adjustment of the band for shoes of different widths.

The above and other features of the invention, including various novel details of construction and combinations of parts, will now be more particularly described with reference to the accompanying drawings and thereafter pointed out in the claims.

In the drawings,

Fig. 1 is a view in right-hand side elevation of a portion of a heel-end lasting machine in which the invention is embodied, with parts broken away;

Fig. 2 is a plan view, on an enlarged scale, of a portion of the structure shown in Fig. 1;

Fig. 3 is a view in right-hand side elevation of certain parts shown in Figs. 1 and 2; and

Fig. 4 is a view in front elevation of certain parts shown in Figs. 1 and 2.

5 In view of the disclosures of the several above-mentioned Letters Patent, only such parts as it is necessary to refer to for an understanding of the invention are herein shown and will be particularly described. It will be understood that the machine is provided with a shoe-supporting jack (not shown) carrying a spindle for engaging the heel end of the last in its spindle hole and arranged to be swung rearwardly by the operator from a forwardly inclined inoperative position to present the last and shoe in proper relation to an upper-conforming heel band 1 and wipers 2. After the jack has been swung rearwardly a portion thereof is lifted by a treadle 3 (similar to the treadle 7 shown in Letters Patent No. 10 2,013,057) to carry the heel end of the insole, when the shoe has an insole, or the heel-seat piece of a Veldtschoen shoe, into contact with a relatively stationary holddown 5 which positions the shoe at the correct height for the wipers 2 to wipe the margin of the upper inwardly over the insole or the heel-seat piece.

Similarly also to the construction shown in the last-mentioned Letters Patent, the machine is provided with a pair of bell-crank levers 7 having forwardly extending arms. As herein illustrated, these forwardly extending arms have horizontal dovetailed slideways 9 formed along their inner faces, and into these slideways extend dovetailed portions of slides 11 which are parts of upwardly extending brackets 13. In order to lock the slides 11 and brackets 13 in any desired positions of adjustment along the forwardly extending arms of the bell-crank levers 7, the slides 11 are provided on their dovetailed portions with vertical rack teeth 15 arranged to be engaged by corresponding teeth formed on the inner ends of plungers 17 mounted in horizontal bores extending through the forwardly extending arms of the bell-crank levers into the dovetailed slideways 9 approximately midway of the lengths of these slideways. The outer end of each plunger 17 has in one side thereof a transverse slot in which lies the rear end of a small thumb lever 19 pivoted between its ends on a vertical pin 21 in the forwardly extending arm of the bell-crank lever 7. A spring 23 located between this arm and the forward end of the lever 19 maintains the plunger 17 normally in locking relation to the slide 11. Each of the brackets 13 has pivoted to it at 20 an arm 25 which is normally retained in an upwardly extending position by a spring plunger and a cooperating stop pin, not herein shown, but similar to the plunger 41 and the pin 37 shown in Letters Patent No. 2,028,248. Each arm 25 has formed in its upper end a normally vertical bore in which is clamped, with convenience for heightwise and angular adjustment, a stem 27 having at its upper end a head 29 to which is rigidly secured a rubber shoe-engaging pad 31. The pads 31 are generally similar in shape to the similarly numbered pads shown in Letters Patent No. 2,013,057 and are similarly arranged to press against the opposite sides of the shoe in locations immediately in front of the forward ends of the heel band 1 with their upper edges but little, if any, below the level of the insole or heel-seat piece on the bottom of the last.

The shoe-engaging pads 31 are arranged to be forced firmly against the shoe by power early

in the cycle of operations of the machine by means in many respects similar to the construction shown in Letters Patent No. 2,013,057. For this purpose the bell-crank levers 7 are connected by links 35 and an equalizing lever 37 to a horizontal transversely extending lever 39 which is swung rearwardly to force the pads against the shoe through a rod 41 extending through a trunnion 43 on the lever. At its rear end the rod 41 is arranged to be coupled, by means hereinafter described, to the lower end of a substantially vertical lever 45 which is swung about a horizontal pivot 47 by a cam on the cam shaft of the machine. Mounted between a nut 49 on the forward end of the rod 41 and the trunnion 43 on the lever 39 is a comparatively strong spring 51 through which the rod acts on the lever in the power operation of the machine to force the pads 31 hard against the shoe. Rearwardly of the trunnion 43 is a comparatively light spring 53 in engagement with an enlarged portion 52 of the rod 41. This spring, in the construction herein shown, by reason of the character of the connections hereinafter described between the rod 41 and the lever 45, tends at all times when the machine is idle to swing the lever 39 in a forward direction and thereby to swing the pads 31 outwardly away from each other. In the construction herein shown the pads are further so controlled that when the machine is idle they will always occupy positions directly in front of the forward ends of the heel band 1 however the latter may be adjusted, so that without the necessity for adjustment of the pads separately from the heel band they will be spaced far enough apart to receive between them any shoe which the heel band is adjusted to receive. Substantially as heretofore, the forward ends of the heel band are connected to levers 54 which are coupled by outwardly directed links 55 to the forward ends of a pair of levers 57 mounted to swing about vertical pivots 59 and having arcuate toothed portions 61 formed on their rear ends through which the forward ends of the levers are swung automatically inward in the cycle of operations to close the heel band against the shoe. In the construction herein shown, however, the links 55 are connected to the levers 54 by vertical pins 63 which extend so far downwardly as to provide abutments against which faces 67 on the outer sides of the forwardly extending arms of the bell-crank levers 7, which carry the shoe-engaging pads 31, are held by the action of the light spring 53 on the lever 39. A definite normal relation is thus insured between the pads 31 and the forward ends of the heel band.

The machine is further provided with conveniently accessible means for adjusting the forward ends of the heel band for shoes of different widths. For this purpose each of the links 55 which connects the forward end of a lever 54 to the corresponding band-closing lever 57 is formed as a telescopic link comprising a horizontal socket member 65 pivoted at its outer end to the lever 57 and provided with a smooth bore into which extends a threaded stem 68 the inner end of which is connected to the lever 54 by the pin 63. A threaded pinion 69 is mounted on the stem 68 and is held against endwise movement by engagement at one end with the socket member 65 and at its other end with a lug 71 extending from the socket member partially around the pinion. A second pinion 73 (Fig. 1) meshes with the pinion 69 at the lower side of the latter and is se-

cured on the inner end of a horizontal spindle 75 rotatably mounted in an ear 77 depending from the socket member 65. The spindle 75 extends outwardly to a position just beyond the adjacent side of the machine head where it is easily accessible to the operator and has formed on its outer end a knurled head 79. By rotating the spindle 75 the threaded pinion 69 is rotated and the threaded stem 68 is accordingly moved axially through it, since the stem is held against rotation by its connection to the lever 54. Either of the forward ends of the heel band 1 may therefore be moved inwardly or outwardly in accordance with the width of the heel end of the shoe to be operated upon. It will be understood that as either forward end of the band is thus adjusted outwardly the corresponding pad 31 is moved outwardly with it by reason of the action of the spring 53 on the lever 39, and that as either end of the band is adjusted in an inward direction, the pad 31 is moved inwardly with it by the action of the pin 63 on the bell-crank lever 7.

As hereinbefore suggested, the machine is provided with means, to be hereinafter described, whereby the pads 31 are moved inwardly into engagement with the shoe by the jack-controlling treadle 3 prior to the starting of the power operation of the machine. The present invention further provides a construction such that regardless of the positions to which the pads are moved by the treadle in operating on shoes of different widths, the pads will always be subjected to the action of the strong spring 51 at substantially the same time in the cycle of operations of the machine and will be pressed against the shoe with substantially the same force through this spring, and also such that inward or outward adjustments of the pads may be effected as above described without altering the relation of the trunnion 43 on the lever 39 to the spring 51. For these purposes the rod 41 is not normally connected to its operating lever 45 but may, together with the spring 51, move bodily in a forward or a rearward direction simultaneously with such swinging movement of the lever 39 as accompanies the outward or inward movements of the pads 31 while the lever 45 is stationary. For connecting the rod 41 to the lever 45 there is provided a sleeve member 81 in which the rear end portion of the rod 41 is slidingly mounted and which extends forwardly from a pivotal connection 83 with the lever 45. The light spring 53 bears at its rear end against the forward end of the sleeve member 81 and tends to swing the lever 39 in a forward direction when the machine is idle, as hereinbefore described, by imparting forward movement to the rod 41 relatively to the sleeve member. A vertically movable pawl 85 having a series of teeth formed on its lower face is mounted in a bore in the sleeve member 81 over teeth 87 formed on the top of the rear end portion of the rod 41 within the sleeve member. The pawl 85 when moved downwardly is thus arranged to engage the teeth 87 and to lock the rod 41 and the sleeve member 81 together. Such downward movement of the pawl 85 occurs when the operating lever 45 begins to move rearwardly in the power operation of the machine. For controlling the pawl 85 as required there is provided a small bell-crank lever 89 pivotally mounted on a transverse horizontal pin 90 in the sleeve member 81, and the forward end of a substantially horizontal arm of this bell-crank lever is rounded and extends into a notch cut in the rear side of the pawl 85. The other arm of the bell-crank

lever extends upwardly and has a pair of springs 91, one of which is shown in Fig. 1, connected to it and to pins fast in the forward end of the sleeve member. It will be seen that these springs tend to swing the bell-crank lever 89 in the direction to move the pawl 85 downwardly into engagement with the teeth 87. Prior to the starting of the power operation of the machine a relatively fixed but axially adjustable screw 93 engages the upwardly extending arm of the bell-crank lever 89 and holds the latter in such a position that the pawl 85 is positioned out of engagement with the teeth 87 on the rod 41. The rod 41 is accordingly free to move lengthwise, as hereinbefore described, in any preliminary adjustment of the pads 31 or in movement of the pads by the treadle 3 without altering the relation between the trunnion 43 and the spring 51. When, however, the machine is later started and the lever 45 is swung rearwardly, the upwardly extending arm of the bell-crank lever 89 immediately moves out of engagement with the screw 93, thus permitting the pawl 85 to be lowered by the springs 91 to connect the rod 41 to the sleeve member 81. The rod 41 is accordingly operated by the lever 45 and acts through the spring 51 to force the pads 31 more firmly against the shoe at substantially the same time early in each cycle of the machine and with substantially the same pressure, regardless of the positions to which the pads may have been previously moved by the treadle in operating on shoes of different widths. It will also be evident that the construction described serves to facilitate adjustment of the pads with the heel band in the manner hereinbefore explained, and that such adjustment does not affect the operation of the automatic means for forcing the pads against the shoe since it does not alter the relation of the trunnion 43 to the spring 51.

For moving the pads 31 inwardly against the shoe by the action of the treadle 3 there is provided a double-arm lever 99 (substantially like the lever 61 shown in Letters Patent No. 2,013,057) arranged to be swung downwardly by engagement of the treadle therewith only during the latter portion of the downward movement of the treadle. The lever 99 acts through a link 97 and other parts hereinafter described on a lever 95 to swing the lever 39 in a rearward direction and thus to move the pads 31 inwardly in a manner generally similar to the disclosure of the above-mentioned Letters Patent. The construction herein shown, however, is such that the lever 39, whatever position it assumes by reason of adjustment of the pads 31, is always operatively connected to the lever 95. For this purpose the lever 39 has a pin 101 (Figs. 2 and 4) rotatably mounted in a bore formed in its outer end portion and extending vertically through the lever. The pin 101 is provided at its lower end with a transversely extending pin 103 which is slidingly mounted in a cylindrically curved seat formed in the upper end of the lever 95. The two levers are thus positively connected together at all times. The construction herein shown is further such that however the pads 31 may be adjusted, their adjustment does not disturb the relation of the lever 99 to the treadle 3 and accordingly does not alter the time when the pads are moved inwardly by the treadle relatively to the time when the shoe is raised thereby against the holddown. For this purpose the lever 95 is mounted to swing about a horizontal pivot 107 and extends downwardly below this pivot, its downwardly extending por-

tion being provided with an arcuate series of teeth 109 concentric with the pivot. A rearwardly extending lever arm 111 is freely mounted on a sleeve 113 extending laterally from the lever 95 in concentric relation to the pivot 107, and connected to the rear end of the arm 111 is the link 97. On a depending portion 115 of the arm 111 is pivotally mounted a pawl 117 arranged, when permitted, to engage the teeth 109 on the lower end of the lever 95. The arm 111 is controlled by a spring (not shown) which tends to swing it upwardly. On the pawl 117 is a tail 119 arranged to abut against a relatively stationary but adjustable stop screw 121 which maintains the pawl normally out of engagement with the teeth 109 and also by limiting upward movement of the arm 111 determines the normal position of that arm of the lever 99 which underlies the treadle. When the treadle, as it is depressed, engages the lever 99 and swings it downwardly, the arm 111 also is swung downwardly and the pawl 117 is carried away from the stop screw 121. A spring plunger 120 pressing against the tail portion 119 of the pawl thereupon swings the pawl into engagement with the teeth 109, so that by continued movement of the arm 111 the lever 95 is operated to move the pads 31 into engagement with the shoe. Any adjustment of the pads widthwise of the shoe before the treadle is depressed causes the lever 95 to swing relatively to the arm 111, but the series of teeth 109 nevertheless remain in position to be engaged by the pawl 117. However the pads may be adjusted, therefore, the arm 111 begins to act on the lever 95 when the treadle arrives at substantially the same point in its downward movement. This avoids any difficulty that might otherwise arise in properly positioning the shoe against the holddown if the pads 31 should be carried into engagement with the shoe before the shoe is fully raised into contact with the holddown.

The construction described permits a heel-end lasting machine to be used with special advantages in lasting the heel ends of Veldtschoen shoes, in which type of shoe the upper is fairly loose on the last, when presented for the heel-end lasting operation and in which a loose heel seat piece, as distinguished from a full length insole secured to the upper at least along its sides, is used to receive the lasted marginal portion of the heel end of the upper. In operating on such a shoe the operator can rest assured that the pads 31 will be moved into positions to clamp the upper against the last at the proper time in the depression of the treadle 3 however they may have been previously adjusted, thus relieving him of the necessity of holding the upper with his hands in the correct position relatively to the last until after the starting of the machine, and he can also rest assured that the pads will thereafter be forced more firmly against the shoe with adequate pressure regardless of the width of the shoe. The operator can also quickly and easily adjust the heel band and the pads for shoes of different widths, this being of special advantage in operating upon Veldtschoen shoes which are likely to vary more frequently in size, and therefore in width, than shoes of other kinds.

Having described the invention, what we claim as new and desire to secure by Letters Patent of the United States is:

1. In a power-operated lasting machine, the combination with means for clamping an upper about the heel end of a last, of members arranged to clamp the upper against the sides of

the last in locations forwardly of but near said end-clamping means, said members being movable inwardly into engagement with each shoe prior to the starting of the power operation of the machine, and power-operated means automatically operative thereafter in a cycle of operations of the machine to force said members more firmly against each shoe at substantially the same time and with substantially the same pressure in each cycle of operations regardless of the positions to which the members are moved prior to the starting of the machine.

2. In a power-operated lasting machine, the combination with means for clamping an upper about the heel end of a last, of members arranged to clamp the upper against the sides of the last in locations forwardly of but near said end-clamping means, means for moving said members inwardly into engagement with each shoe prior to the starting of the power operation of the machine, power-operated mechanism for thereafter forcing said members more firmly against the shoe, a portion of said power-operated mechanism being movable and another portion thereof stationary as said members are thus moved inwardly, and a device for automatically coupling said different portions of the mechanism together in any relative positions which they assume in response to such inward movements of the members.

3. In a power-operated lasting machine, the combination with means for clamping an upper about the heel end of a last, of members arranged to clamp the upper against the sides of the last in locations forwardly of but near said end-clamping means, means for moving said members inwardly into engagement with each shoe prior to the starting of the power operation of the machine, power-operated mechanism for thereafter forcing said members more firmly against the shoe, a portion of said power-operated mechanism being movable relatively to another portion thereof as said members are thus moved inwardly, and a device for disconnecting the different portions of said mechanism to permit such relative movement and for automatically connecting them together after the starting of the machine.

4. In a power-operated lasting machine, the combination with means for clamping an upper about the heel end of a last, of members arranged to clamp the upper against the sides of the last in locations forwardly of but near said end-clamping means, means movable by the operator to carry said members inwardly into engagement with each shoe prior to the starting of the power operation of the machine, power-operated mechanism including a spring for thereafter forcing said members more firmly against the shoe, a portion of said power-operated mechanism including the spring being bodily movable and another portion thereof stationary as said members are moved inwardly by the operator, and a device for automatically coupling said different portions of the mechanism together in any relative positions thereof each time said mechanism is operated to cause substantially the same pressure to be applied to each shoe through the spring regardless of the positions to which the members are moved by the operator.

5. In a power-operated lasting machine, the combination with means for clamping an upper about the heel end of a last, of members arranged to clamp the upper against the sides of the last in locations forwardly of but near said end-

clamping means, said members being movable inwardly into engagement with each shoe prior to the starting of the power operation of the machine, power-operated mechanism including a longitudinally movable rod for thereafter forcing said members more firmly against the shoe, a lever for operating said rod, the rod being movable relatively to said lever as the clamping members are moved inwardly into engagement with the shoe, and a device for automatically connecting said lever to the rod in the power operation of the machine regardless of the position assumed by the rod in the inward movements of the members.

6. In a power-operated lasting machine, the combination with means for clamping an upper about the heel end of a last, of members arranged to clamp the upper against the sides of the last in locations forwardly of but near said end-clamping means, said members being adjustable toward or from each other for lasts of different widths, mechanism for forcing said members against the shoe in the power operation of the machine, a portion of said mechanism being movable and another portion thereof stationary as the members are adjusted toward or from each other, and a device for automatically connecting said different portions of the mechanism together in any relative positions which they assume in the adjustment of the members.

7. In a power-operated lasting machine, the combination with means for clamping an upper about the heel end of a last, of members arranged to clamp the upper against the sides of the last in locations forwardly of but near said end-clamping means, said members being adjustable toward or from each other for lasts of different widths, mechanism including a spring for forcing said members against the shoe in the power operation of the machine, a portion of said mechanism including the spring being bodily movable relatively to another portion thereof as the members are adjusted toward or from each other, and a device for automatically connecting said different portions of the mechanism together each time the mechanism is operated.

8. In a power-operated lasting machine, the combination with means for clamping an upper about the heel end of a last, of members arranged to clamp the upper against the sides of the last in locations forwardly of but near said end-clamping means, said members being adjustable toward or from each other for lasts of different widths, a lever connected to said members and movable as they are thus adjusted, a rod longitudinally movable to operate said lever and force the members against the shoe in the power operation of the machine, a spring through which the lever is thus operated by the rod, the rod and spring also being movable bodily as the members are adjusted, a member for operating the rod in the power operation of the machine and relatively to which the rod is thus movable, and a device for automatically connecting said last-named member to the rod in each power operation of the machine.

9. In a lasting machine, the combination with means for clamping an upper about the heel end of a last, of members arranged to clamp the upper against the sides of the last in locations forwardly of but near said end-clamping means, said members being adjustable toward or from each other for lasts of different widths, a treadle for moving said members into engagement with the shoe, mechanism for thus operating the mem-

bers by the treadle, a portion of said mechanism being movable and another portion thereof stationary as the members are adjusted toward or from each other, and a device operative in response to depression of the treadle to couple the two portions of the mechanism together in any relative positions which they assume in the adjustment of the members.

10. In a lasting machine, the combination with means for clamping an upper about the heel end of a last, of members arranged to clamp the upper against the sides of the last in locations forwardly of but near said end-clamping means, said members being adjustable toward or from each other for lasts of different widths, a treadle for moving said members into engagement with the shoe, mechanism for thus operating the members by the treadle, a portion of said mechanism being movable and another portion thereof stationary as the members are adjusted toward or from each other, a pawl carried by one portion of said mechanism, a plurality of teeth on the other portion of the mechanism, and means for moving the pawl into engagement with the teeth for operating one portion of the mechanism by the other portion each time the treadle is depressed.

11. In a lasting machine, a heel band for clamping an upper about the heel end of a last, means for adjusting the forward ends of the heel band toward or from each other, members arranged to clamp the upper against the sides of the last in locations forwardly of but near the heel band, said members being operatively movable widthwise of the last independently of the heel band, and means to cause said members to partake of the adjusting movements of the forward ends of the heel band.

12. In a lasting machine, a heel band for clamping an upper about the heel end of a last, means for adjusting the forward ends of the heel band toward or from each other, members arranged to clamp the upper against the sides of the last in locations forwardly of but near the heel band, said members being operatively movable widthwise of the last relatively to the heel band, and spring-controlled means for maintaining said members normally in positions determined by the adjustment of the forward ends of the heel band while permitting the operative movements of the members relatively to the heel band.

13. In a lasting machine, a heel band for clamping an upper about the heel end of a last, means for adjusting the forward ends of the heel band toward or from each other, members arranged to clamp the upper against the sides of the last in locations forwardly of but near the heel band, said members being operatively movable widthwise of the last relatively to the heel band, spring-controlled means tending to move said members in outward directions away from the last, and devices connected to the forward ends of the heel band for limiting such outward movements of the members and for determining the positions of the members by the adjustment of the heel band.

14. In a lasting machine, a heel band for clamping an upper about the heel end of a last, band-closing levers movable in directions widthwise of the last, and connections between said levers and the band adjustable to vary the distance between the forward ends of the band, each of said connections comprising a threaded stem, a socket member having a smooth bore into which said stem extends, a member threaded on said stem

and held against axial movement relatively to said socket member, and means extending to a position conveniently accessible to the operator for turning said threaded member and thereby effecting relative movement of said stem and socket member to adjust one of the forward ends of the band inwardly or outwardly.

15. In a lasting machine, a heel band for clamping an upper about the heel end of a last, band-closing levers movable in directions widthwise of the last, and connections between said levers and the band adjustable to vary the distance between

the forward ends of the band, each of said connections comprising a threaded stem, a pinion threaded on said stem, means for holding said pinion against endwise movement during its turning movement, another pinion meshing with said threaded pinion, and a spindle extending from said other pinion to a position conveniently accessible to the operator for turning the pinions to adjust one of the forward ends of the band inwardly or outwardly.

JOHN WILLIAM PRATT.
HAROLD LANE.