E. E. WINKLEY & F. L. ALLEY.

LASTING MACHINE.

APPLICATION FILED JULY 22, 1896.

1,018,025. Patented Feb. 20, 1912.

3 SHEETS—SHEET 1.

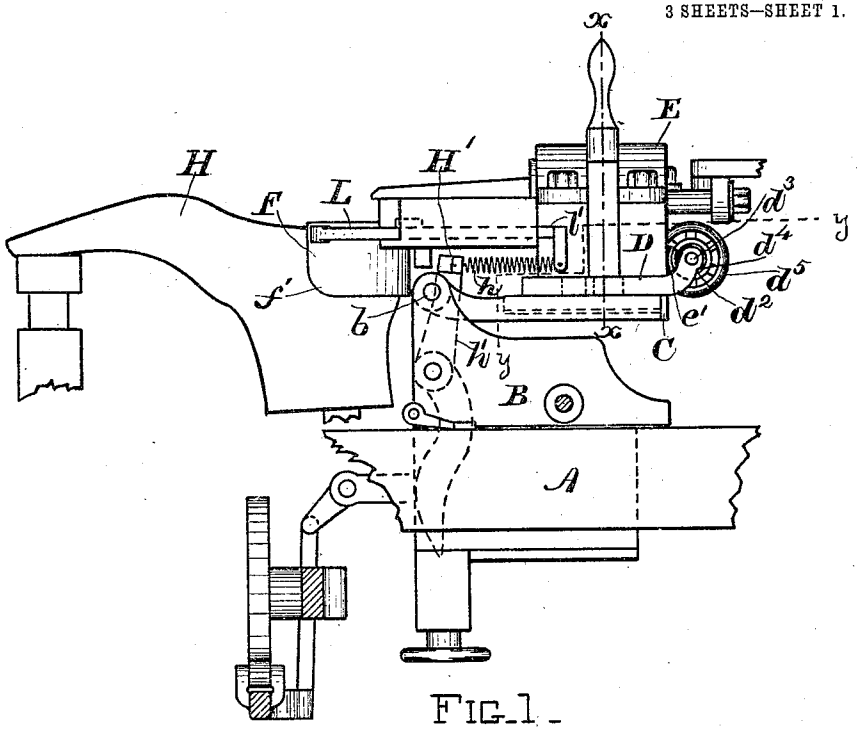

FIG. 1.

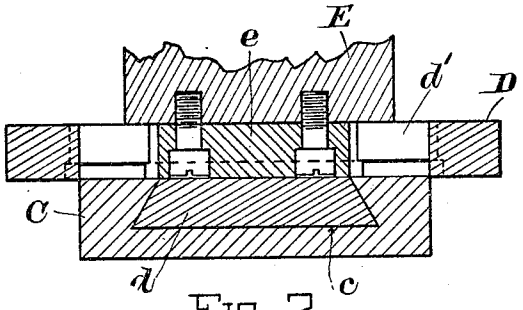

FIG. 2.

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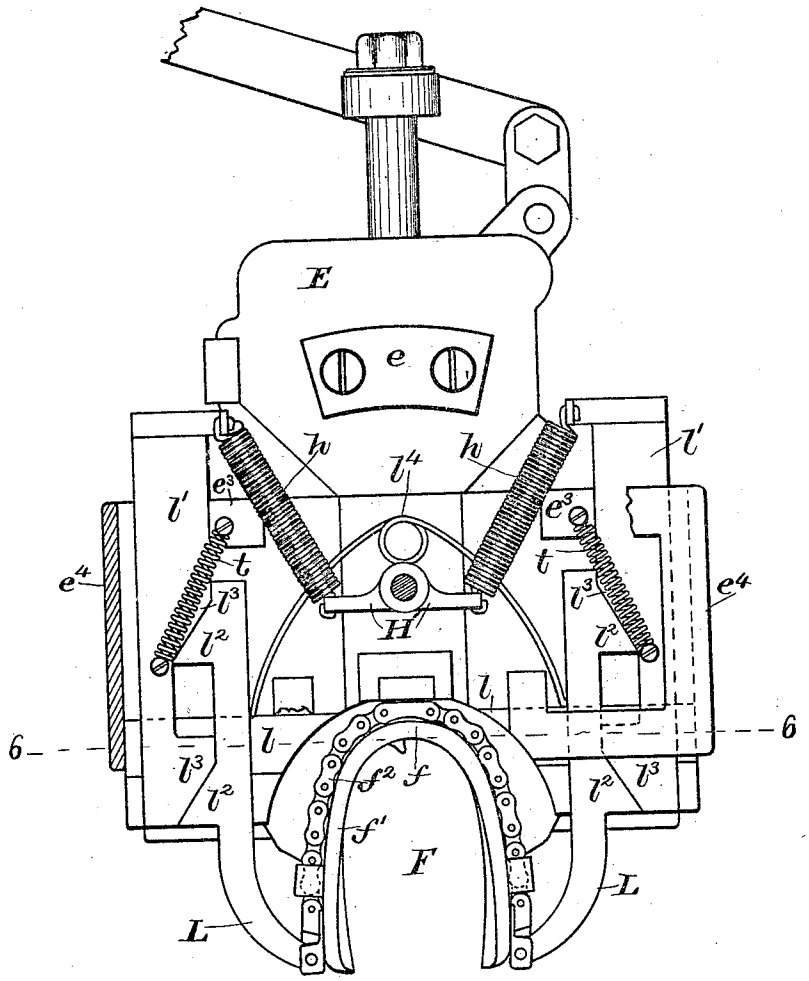
3 SHEETS—SHEET 2.

FIG. 3.



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3 SHEETS—SHEET 3.

Fig. 6.

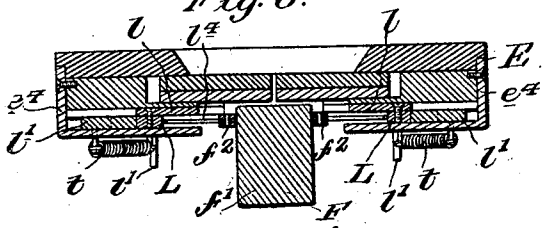


Fig. 4.

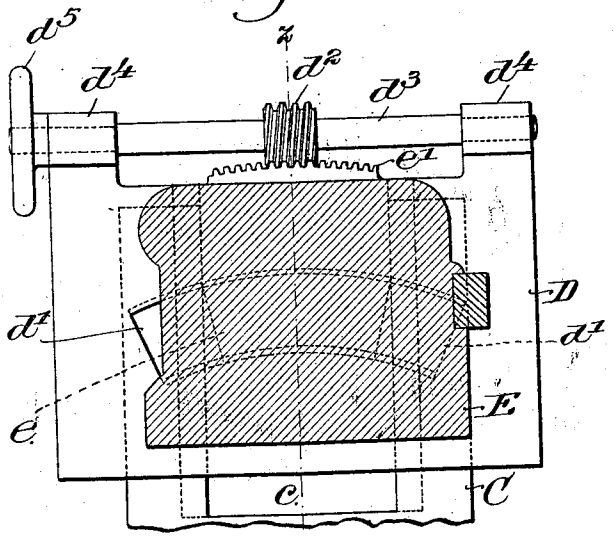
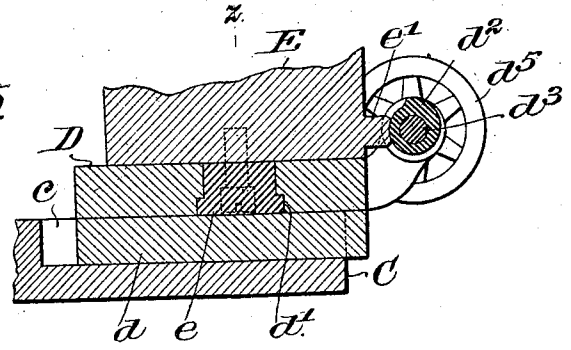


Fig. 5.



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UNITED STATES PATENT OFFICE.

ERASTUS E. WINKLEY AND FREDERICK L. ALLEY, OF LYNN, MASSACHUSETTS; SAID ALLEY ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

LASTING-MACHINE.

1,018,025. Specification of Letters Patent. Patented Feb. 20, 1912.

Application filed July 22, 1896. Serial No. 600,133.

To all whom it may concern:

Be it known that we, ERASTUS E. WINKLEY and FREDERICK L. ALLEY, citizens of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Lasting-Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates generally to machines of the class above designated, and more particularly to that type of lasting machine which is provided with a last clamp or band whereby the upper is conformed to the contour of the side faces of the last and is held to the last during the operation of the lasting devices.

The object of the present invention is to provide means for controlling the last band or clamp whereby the same is made to conform more closely to the lateral contour of the last, and may be readily adjusted for right or left lasts.

To the above end the present invention consists of the devices and combinations of devices hereinafter more specifically set forth in this specification and defined in the claims.

The present invention is illustrated in the drawings herewith submitted in which—

Figure 1 is a side elevation partially in section showing a portion of the frame, the head which carries the heel lasting devices, and other associated parts of a lasting machine embodying the present invention, Fig. 2 is a section on line x x Fig. 1, the upper portion of the head being removed, Fig. 3 is a reverse plan view of the head, some of its associate parts being shown in section. Fig. 4 is a sectional plan view on the line y—y, Fig. 1, Fig. 5 is a sectional elevation of the parts shown in Fig. 4 on the line z—z of said figure, and Fig. 6 is a detail sectional view taken on the line 6—6 of Fig. 3.

Similar letters of reference refer to similar parts throughout the several views.

In the drawing A represents a portion of the frame which supports the working parts of the machine and which may be and conveniently is of substantially the same construction as that of the machine shown and described in Letters Patent of the U. S. No. 521,954 issued to the Goodyear Shoe Machinery Company as assignee of E. F. Grandy, dated June 26, 1894.

In the frame A are formed suitable longitudinal ways (not shown) in which is mounted a carriage B free to slide along said ways substantially as in said patented machine.

Pivotally supported at b on the carriage B is the tipping bed plate C, in which is formed the longitudinal, preferably dovetailed, groove c, to which is fitted a correspondingly shaped block d on the sliding bed D. In the bed D is formed the segmental slot d^1, to which is fitted a block e, on the laterally movable head E. The head E carries the last clamp or band F, from the central portion f of which as a center the slot d^1 is struck. The head E also carries the usual lasting plates or wipers which may be like those in said prior patent to Grandy, hereinbefore referred to. The above described arrangement is such that the clamp or band F is movable from or toward the last H independently of the carriage B, and has a laterally swinging movement about its center f as a center. In other words the movement of the block e in its guiding slot d' transmits to the last clamp or band F a curvilinear lateral movement to adapt it to the position of the end of the last adjacent the band.

By the swinging movement of the clamp or band F above referred to we accomplish the adjustment of the clamp or band F for right and left shoes and said movement may be conveniently secured by means of a segmental worm gear e^1, fixedly secured to the head E, and which engages with worm d^2, which is mounted upon and rotates with a short shaft d^3, mounted in suitable bearings d^4 on the bed D. The shaft d^3 may be actuated by a hand wheel d^5, or any other suitable means.

The heel band or clamp F may conveniently consist of the strip or chain f^2, carrying the yielding facing pad f^1, as is common in this class of machines.

In accordance with the present invention the clamp or band F is pivotally secured at opposite sides to the inwardly bent arms L, L, which are arranged to move laterally toward and from the median line of the

carriage E, with a parallel lateral motion so that the ends of the clamp F are thereby moved toward and from the median line of the last.

In the form of our invention shown in the drawings we secure the above suggested movement as follows:—Each of the arms L, L is fixedly secured to transverse blocks or plates 1, mounted and free to slide in suitable transverse grooves in the under side of the forwardly projecting portion of the head. To suitable longitudinal ways in the under side of the forwardly projecting portion of the head E, are fitted the slides l^1, l^1, which are free to slide in said ways, but are held by said ways from any lateral movement. On the arms L, L are formed or secured the inclined shoulders l^2, l^2 and l^2, l^2, which abut upon the oppositely inclined shoulders l^3, l^3, and l^3, l^3 upon the slides l^1 and l^1. A suitably placed spring preferably the bent spring l^4 is provided, which is arranged to bear against the arms L and keep the shoulders l^2 and l^3 in contact, when the slides l^1 are moved as hereinafter described.

The slides l^1 and l^1 are each connected to the head E by means of a suitably placed spring, preferably the coiled springs t, each of which is connected at one end to the head E, or projections e^3 thereon, and at the other end to one of the slides l^1. The arms, L, blocks l, and slides l^1, are supported on the under side of the forwardly projected portion of head E, by means of gibs e^4, e^4 or other suitable means, and the above described arrangement is such that a forward motion of the slides l^1 causes the blocks l to move inwardly in their transverse grooves carrying the arms L inward with a parallel lateral movement, advancing the ends of the band or clamp F toward the median line of the last and causing the clamp or band F to closely embrace the upper upon the last. When the slides l^1 are advanced as above stated to laterally close in the clamp or band F, they act also by means of their spring connections t, t, with the head E, to slightly advance the head E to insure a proper pressure of the band or clamp F at the back of the heel.

Each of the slides l^1 is connected by an independent yielding connection, preferably a coiled spring h, with a movable cross head H′, or other suitable device, the arrangement being such that while the slides l^1 l^1 are simultaneously advanced by a forward motion of the head H′, if either side of the clamp or band F is brought into contact with the upper on the last before the other side, the spring h on the side so brought in contact will yield sufficiently to allow a further forward motion of the head H′ to bring the other side into contact with the upper, thus insuring the proper set of the clamp or band F on both sides of the last. The head H′ may be conveniently advanced and retracted by means of a lever h^1 (Fig. 1), upon which it is formed or secured, and which may be conveniently actuated by mechanism shown in part in the drawings, but of which no further description is regarded as necessary herein, substantially the same mechanism being shown and described in Letters Patent of the United States, No. 521954 hereinbefore referred to.

As heretofore stated the bed plate C has a longitudinally tipping movement and may be conveniently supported and adjusted by mechanism similar to that shown and described in Letters Patent of the United States No. 552834 issued to the Goodyear Shoe Machinery Company June 7, 1896 on the invention of E. F. Grandy, and which, as we claim no invention therein, we have not herein described or illustrated in the drawings.

In the foregoing specification and in the claims we have made use of the terms "inward", "outward", "lateral" and "longitudinal", as descriptive of the action of the various instrumentalities; thus the frame A has suitable longitudinal ways which extend in the direction of the length of the last when in the machine, in which the carriage B has a sliding movement. The tipping bed C has a groove running in the same direction as the ways in the frame A. The band F has a lateral or sidewise swinging movement about the center f. The arms L, L which carry the band F have a lateral movement toward and from each other. The blocks l have an inward and outward movement toward and from each other.

We do not consider our present invention as limited to the specific construction herein shown and described, but

We claim as novel and desire to secure by Letters Patent of the United States—

1. In a lasting machine the combination with a last clamp or band, of arms connected with opposite sides of said band, longitudinally movable slides, coöperating bearing surfaces on the arms and slides, and mechanism for actuating the slides, substantially as described.

2. In a lasting machine the combination with a movable head carrying lasting devices, and a last band or clamp connected therewith, of means for closing said clamp, and connected mechanism connecting said clamp and head whereby the closing of said clamp will impart a forward movement to said head, substantially as described.

3. In a lasting machine the combination with a last clamp or band, of arms connected to the opposite sides thereof, longitudinally movable slides, coöperating bearing surfaces on said slides and arms for imparting parallel lateral movement to said arms, elas

tic means for keeping said bearing surfaces in engagement, and mechanism for actuating the slides.

4. In a lasting machine, the combination with a head carrying lasting devices, of a last clamp or band, means for imparting to said band a longitudinal movement toward and from the last, opening and closing movements and a laterally swinging movement, substantially as described.

5. In a lasting machine the combination of a last clamp or band, and connected mechanism operating whenever it is actuated to impart to said band both a longitudinal movement toward and from the last, and an independent opening and closing movement, substantially as described.

6. In a lasting machine the combination with lasting devices of a laterally swinging head supporting the same, a longitudinally sliding bed supporting said head, and a longitudinally tipping support for said bed, whereby the plane of the sliding movement of the lasting devices may be varied, substantially as described.

7. In a lasting machine the combination with lasting devices of a laterally swinging head supporting the same, a longitudinally sliding bed supporting said head, a tipping support for said bed, and a longitudinally movable carriage carrying said head, its bed and the support for the bed, substantially as described.

8. In a lasting machine, the combination with a head carrying lasting devices, of a last clamp or band, means for opening and closing said band, and for swinging said band laterally, substantially as described.

9. In a lasting machine, the combination with a head carrying lasting devices, of a support therefor, a last clamp or band carried thereby, means for opening and closing the clamp or band and means for swinging said head on its support whereby the last clamp or band is swung laterally, substantially as described.

10. In a lasting machine, the combination with a head carrying lasting devices, of a last clamp or band, supports for the ends of said clamp or band carried by said head, means for moving said supports to open and close the clamp or band and an adjustable connection between the head and its support whereby the head and clamp supports can be swung laterally, substantially as described.

11. In a lasting machine, the combination with a head carrying lasting devices, of a last clamp or band, supports for said band, slides for actuating said supports to open and close the band, and mechanism for moving the head toward the last and for actuating the slides comprising a yielding connection to each slide, substantially as described.

12. The combination with a head carrying lasting devices, of a last clamp or band carried thereby, and mechanism common to the head and clamp or band operating to move the head and clamp or band toward the last and to impart a closing movement to the clamp or band independent of the movement of the head, substantially as described.

13. In a lasting machine the combination with a head carrying lasting devices, of a last clamp or band, arms connected with opposite sides of said clamp or band and mounted to slide laterally in said head, and mechanism for actuating said arms to open and close said band, substantially as described.

14. In a lasting machine the combination with a head carrying lasting devices, of a last clamp or band, arms connected to the opposite sides thereof and mounted to slide laterally in said head, and mechanism including movable slides mounted in said head for actuating said arms, substantially as described.

15. In a lasting machine the combination with a head carrying lasting devices, of a last clamp or band, arms connected to the opposite sides thereof and mounted to slide laterally in said head, mechanism including movable slides mounted in said head for actuating said arms, and mechanism for actuating said slides including a yielding connection to each slide, substantially as described.

16. In a lasting machine the combination with a head carrying lasting devices, of a last clamp or band, supports for said band, means for actuating said head to move the clamp or band toward the last and mechanism for actuating said supports after the head is moved toward the last to close the clamp or band, said mechanism including a yielding connection to each of said supports, substantially as described.

17. In a lasting machine, the combination with a head carrying lasting devices and a last clamp or band and arranged for lateral swinging movement to position the lasting devices and band relatively to the last, arms connected to the opposite end portions of the band, and mechanism for imparting lateral movements to said arms to close the band against the sides of the last.

18. In a lasting machine, the combination with a head carrying a last clamp or end embracing band, of arms connected to the opposite end portions of the band, operating means for said arms to close the band upon the sides of the last, and means for permitting angular lateral movement of the band, and connected parts about an axis located adjacent to the clamped end of the last.

19. In a lasting machine, a last clamp or band to embrace an end portion of a last, means for adjusting the band by an angular

movement of its two sides together in the same direction about an axis adjacent to the closed end of the band, and means to close and open the band by oppositely directed movements of its sides with relation to its closed end.

20. In a lasting machine, the combination with means for supporting a shoe, of an end embracing band mounted for a curvilinear lateral movement, and means for closing the band including independently yielding means for forcing the end portions of the band laterally against the differently formed sides of the last.

21. In a lasting machine the combination with a last clamp or band mounted for curvilinear lateral movement to adapt it to the position of the last relative thereto, of arms connected to opposite end portions of the band, and mechanism to actuate the arms to close the band, said actuating mechanism having provision for permitting a variable movement of the two end portions of the band as it is conformed to the two sides of the last within the band.

22. In a lasting machine, the combination with a heel band mounted for curvilinear lateral movement, of arms connected to the opposite ends of the band, an actuator for said arms, and independently yielding connections to the two arms to permit the ends of the band to adapt themselves to the formations of right and left lasts at the inner and outer sides of the shank.

23. In a lasting machine, the combination with a head carrying a last clamp or end embracing band, said machine having provision for lateral angular adjustment of the band, and operating means for closing the band arranged to permit automatic angular lateral movement of the ends of the band.

24. In a lasting machine, the combination with a last support, of a last end band or clamp, means for laterally adjusting the clamp angularly to adapt it to the swing of the last and additional means for further actuating the band or clamp to embrace the last end.

25. In a lasting machine, the combination of a last band or clamp, arms having connection with opposite sides of said clamp and provided with bearing surfaces, means movable longitudinally of the machine and having inclined bearing surfaces to coöperate therewith, an actuator, and yielding connections between said means and its actuator so arranged that a closing movement may be imparted to one side of the clamp in excess of that imparted to the opposite side.

26. In a lasting machine, the combination of a last band or clamp, arms having connection with opposite sides of said clamp and provided with bearing surfaces, means movable longitudinally of the machine and having inclined bearing surfaces to coöperate therewith, an actuator, and independently yieldable devices connecting said means and actuator arranged to permit a closing movement to be imparted to one side of said clamp in excess of that imparted to the opposite side.

27. A lasting machine, comprising heel-lasting mechanism including a heel-embracing band, and means, independent of the shoe, constructed and arranged for effecting a lateral adjustment of the band into different positions to cause the band to act uniformly upon the two sides of the heel of a right or left shoe in the direction of the median line of the heel part.

In testimony whereof we affix our signatures, in presence of two witnesses.

ERASTUS E. WINKLEY.
FREDERICK L. ALLEY.

Witnesses:
T. HART ANDERSON,
A. G. CLIFFORD.