

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

LASTING MACHINE.

APPLICATION FILED APR. 29, 1896.

1,017,124.

Patented Feb. 13, 1912.

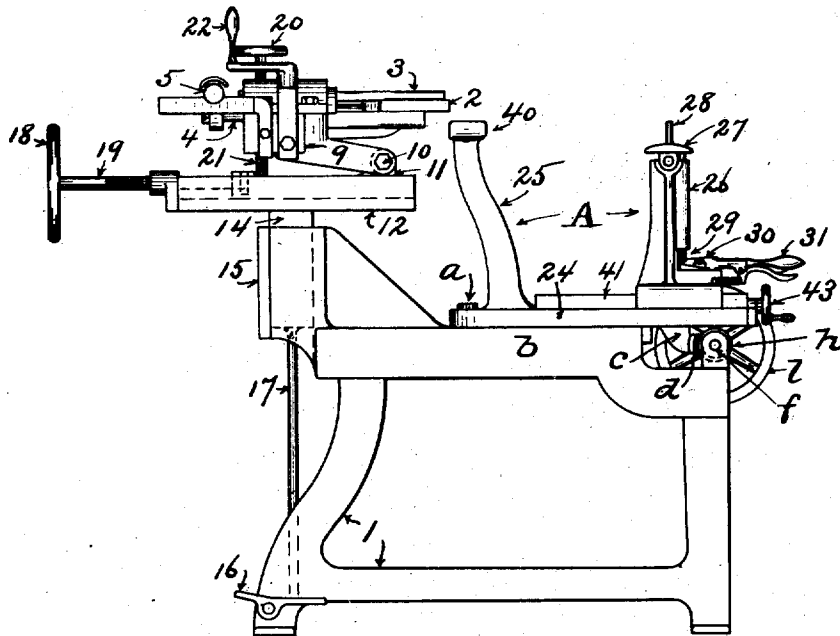


FIG. 1.

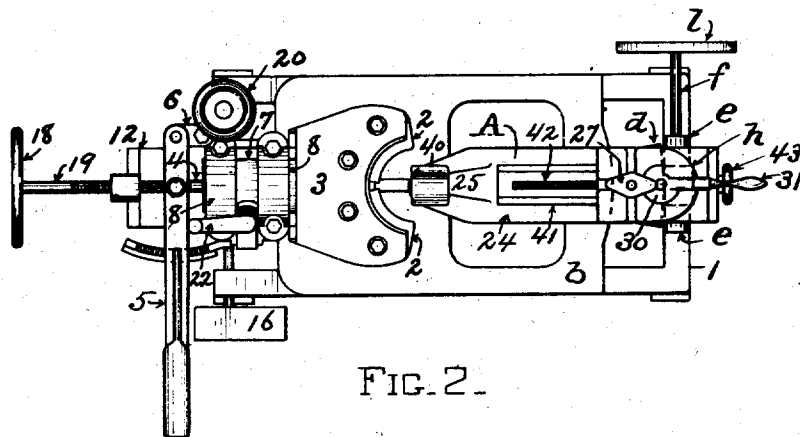


FIG. 2.

WITNESSES.

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UNITED STATES PATENT OFFICE.

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LASTING-MACHINE.

1,017,124.

Specification of Letters Patent.

Patented Feb. 13, 1912.

Application filed April 29, 1896. Serial No. 589,804.

To all whom it may concern:

Be it known that we, ERASTUS E. WINKLEY and FREDERICK L. ALLEY, citizens of the United States, and residents of Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented a new and useful Improvement in Lasting-Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to lasting machines, and more particularly to lasting machines of the type termed "bed-lasters" which embody in their structure lasting devices comprising folding plates, or wipers, by means of which the upper at the ends of the last is stretched and drawn into position to be secured to the insole by suitable fasteners.

In the above designated class of machines, it has heretofore been customary to use different sets of end wipers in lasting right and left shoes on crooked lasts owing to the reverse swing of the last in rights and lefts. This, in order to gain speed, necessitated the lasting of a series of right shoes and then an adjustment to the machine of a new set of wipers in order to finally last a series of left shoes, or vice versa. As is obvious, this method is open to serious objections because of the inconvenience and delay incurred.

The object of the present invention is to provide a machine of the type referred to in which the end portions of right and left shoes may be lasted without the necessity of a removal of the wipers and replacement by another set in order to accommodate the machine to the reverse swings of the lasts.

In accordance with this object, one feature of the invention consists in a last supporting jack, suitably positioned relatively to the wipers, having provision for lateral curvilinear adjustment to adapt the swing of the last being operated upon, whether a right or a left, to the alinement of the lasting devices. In its preferred form the last supporting jack will be mounted for lateral angular movement about a pivot substantially under the toe of the last when adjusted on the jack.

Another feature of this invention consists in providing for relative angular adjustment of a shoe support and end lasting de-

vices, together with actuating mechanism, whereby said devices and the last may be relatively positioned to adapt the devices to a right or left crooked last and the lasting devices will then be advanced substantially in the direction of the median line of the adjacent end portion of the shoe being lasted.

In the embodiment of the invention herein shown, the lasting devices are arranged to be advanced by their actuating mechanism in the direction of the median line of the machine and the last support is arranged for angular movement with relation to said devices and their actuating mechanism to position the shoe with the median line of the fore part of a right or a left crooked last in the median line of the machine and therefore in the line of advance of the lasting devices.

The drawing herewith submitted illustrates a preferred form of our present invention, Figure 1 showing the same in side elevation and Fig. 2 in plan.

Like figures and letters of reference are used to designate similar parts in the several views.

In the drawings 1 represents a frame suitable to support the working parts of the machine.

The reference numerals 2, 2 represent the wipers, which are supported by the wiper plate 3 and actuated by the rod 4, which is reciprocated by a lever 5, pivotally connected with a link 6, which is pivotally mounted upon the carriage 9. The wiper plate 3 is supported by a sleeve 7, through which the rod 4 extends and which is mounted in suitable bearings 8, 8, in which it is free to rotate upon the tipping carriage 9. The carriage 9 is pivoted at 10 to a carriage 11, arranged to reciprocate longitudinally on suitable ways in a bed 12. The bed 12 is carried by the vertical standard 14, free to reciprocate vertically in suitable bearings 15, on the frame 1, the vertical movement of said standard 14, being controlled by a treadle 16, to which it is connected by a connecting rod 17. The longitudinal movement of the carriage 11 is controlled by means of a hand wheel 18, on the threaded shaft 19, the tipping movement of carriage 9, by hand wheel 20 on the threaded bolt 21, and the rocking movement of sleeve 7 is

controlled by a crank 22 and connected mechanism not shown.

All the devices hereinbefore referred to may be and conveniently are similar to the devices shown and described in Letters Patent No. 552834, Jan. 7, 1896, granted to E. F. Grandy, and we do not consider any further description thereof as necessary herein. We desire to say in this connection however, that the form and arrangement of said devices is not an essential feature of our present invention, and many variations may be made therein without involving any departure from our present invention.

A represents a shoe supporting jack suitable to support the shoe during the lasting operation. The jack A in itself forms no part of our present invention, and may be of any suitable form.

The form shown in the drawings is old and well known in the art, consisting primarily of a supporting plate 24, upon which is mounted the usual toe standard 25 with the toe rest 40 and heel support 26. The heel support 26 is provided with the usual tipping heel block 27, with its spindle 28. The block 27 is thrown forward to clamp the last upon the toe rest 40, by means of a rod 29, which bears against the back of the block 27, and is fitted to a sleeve on the standard 26, in which it is free to reciprocate vertically. The vertical movement of the rod 29 is controlled by a face cam 30, pivotally mounted upon the support 26, and arranged to be actuated by a handle 31. The heel support 26 is conveniently movable along the ways 41 on the plate 24 toward and from the toe standard 25, said movement being controlled by the threaded bolt 42 and its hand wheel 43. All the above devices are common in several forms of shoe jacks, and no detailed description thereof is considered necessary herein.

Having described what is old in the machine, we will now describe our novel means for adjusting the lasting devices and shoe to permit both rights and lefts on crooked lasts to be operated on without a removal of the lasting devices and replacement by other lasting devices of a different form.

As shown in the drawings the result above referred to is secured by swinging the jack A about a center substantially under the toe of the last when adjusted upon the jack, which as shown is accomplished by the following mechanism. The supporting plate 24 of jack A is pivoted at *a*, a point substantially under the toe rest 40, to a bed *b*, over which it is free to turn, being supported in any required position thereby. The bed *b* is supported by, or forms a part of, the frame 1. The plate 24 projects beyond the bed *b*, the end portion of which is conveniently cut away, and to the bottom of the plate 24 is secured a downwardly and

forwardly extending bracket *c*, upon the end of which is formed, or suitably secured, a segmental worm gear *d*. In suitable bearings *e, e* on the frame 1 is mounted a shaft *f*, free to rotate in said bearings, and which carries between the same a worm *h* (see Fig. 1 and dotted lines in Fig. 2) which meshes with the worm gear *d* hereinbefore described. The shaft *f* may be conveniently actuated by means of a hand wheel *l*, and the foregoing arrangement is such that a rotation of the wheel *l* produces a rotation of the plate 24, and hence of the jack, across the bed *b*, and around the pivot *a* as a center, and by turning the wheel *l* in opposite directions the jack A may be turned about its center *a*, in opposite directions.

The correlative functions of the several features of our present invention have been sufficiently described in connection with the foregoing description of their form and arrangement, we desire however to say that, as our improved lasting machine has heretofore been operated by us, for practically straight shoes the jack may remain on center (*i. e.* substantially in line with the center of the wipers) for both rights and lefts. When the machine is used for operating upon shoes having more or less longitudinal curvature, throwing the center of the toe more or less off the median line of the shoe, and on opposite sides of said median line in the case of right and left shoes, after such a shoe has been adjusted upon the jack A, by means of the wheel *l*, the jack A is turned about the pivot *a*, and along the bed *b*, to the right or left of the center as the case may require, until the center of the toe is brought into its proper position under the wipers.

Having thus described our invention and its mode of operation we claim as novel and desire to secure by Letters Patent of the United States.

1. In a lasting machine, the combination, with suitable toe lasting devices, of a jack capable of a laterally swinging movement about a center substantially under the toe of a last when adjusted upon the jack, and means for actuating the jack to adjust the toe lasting devices for right and left shoes, substantially as described.

2. In a lasting machine the combination with suitable toe lasting devices, of a jack capable of a laterally swinging movement, a supporting frame, a shaft mounted in suitable bearings in said frame in which it is free to rotate, and suitable connections between the shaft and jack whereby a rotation of the shaft in opposite directions produces a laterally swinging movement of the jack in opposite directions, and the parts are adjusted for right and left shoes, substantially as described.

3. In a lasting machine, the combination

with suitable toe lasting devices, of a jack capable of a laterally swinging movement about a center substantially under the toe of a last when adjusted upon the jack, a supporting frame, a shaft mounted in suitable bearings in said frame, and connections between the shaft and jack for swinging the jack about the center to properly position the jack for right and left shoes, substantially as described.

4. In a lasting machine, toe lasting devices, a last supporting jack composed of a bottom plate pivoted substantially in vertical alinement with the center of the toe of the last on the jack and carrying a toe and a heel support for the last, and means permitting said plate to be moved about said pivot to adapt the swing of the last to the toe lasting devices.

5. A lasting machine, comprising toe lasting devices and a last supporting jack composed of a plate provided with a heel pin and a toe support, said plate having its inner end mounted to turn about a pivot occupying a vertical position immediately below the toe end of the last, said pivot being located between the toe support and the toe lasting devices, the heel pin supporting the heel end of the last having a sliding movement toward and from the toe support.

6. In a lasting machine, toe lasting devices, and a last supporting jack movable about a vertical axis in alinement substantially with the toe of the last supported by said jack, the pivot for the jack standing substantially at right angles to the length of the last.

7. In a lasting machine, the following instrumentalities, viz:—toe lasting devices, a jack capable of lateral curvilinear movement to adjust the toe end of the last to the toe lasting devices for right and left shoes, and means for moving said jack to locate the toe end of the last whatever its swing in proper operative position with relation to the toe lasting devices.

8. In a lasting machine the combination with laterally fixed toe lasting devices of a last supporting jack having provision for angular lateral adjustment to adapt the swing of the foreparts of right and left crooked lasts to the fixed lateral position of the toe lasting devices, substantially as described.

9. In a lasting machine, the combination with toe lasting devices of a last supporting jack mounted to swing about an axis substantially in alinement with the toe of the last supported by the jack to adapt the swing of the last to the toe lasting devices, substantially as described.

10. A machine adapted for lasting shoes on crooked lasts, having, in combination, end lasting mechanism, shoe supporting means comprising a toe rest and a heel post, and

mountings for said heel post arranged to permit lateral curvilinear movement thereof relative to the toe rest.

11. A machine for lasting shoes on crooked lasts, or lasts in which the median line of the fore part is oblique to the median line of the rear part, having, in combination, an end lasting mechanism movable lengthwise of the shoe in the median line of the machine, and a last supporting jack, said machine having provision for adjustment of the jack to position both right and left crooked lasts with the median line of the part or end being lasted in the said median line of the machine.

12. A lasting machine, having, in combination, a shoe support, toe lasting mechanism, and means for actuating the toe lasting mechanism in the median line of the machine, said support being movable angularly relatively to the toe lasting mechanism and its actuating means to position the median line of the fore part of a right or a left crooked last in the said median line of the machine.

13. A machine adapted for lasting shoes on crooked lasts, having, in combination, an end lasting mechanism movable lengthwise of the machine in the median line thereof, and a last supporting jack arranged to turn about a center located under the end of the shoe adjacent to said lasting mechanism whereby a shoe on a crooked last may be positioned with the median line of the part or end to be lasted in alinement with the said direction of movement of the lasting mechanism.

14. A lasting machine, having, in combination, a carriage supporting toe lasting devices, a jack comprising a toe rest and a heel post, means for both rocking and tipping the lasting devices, means for angularly swinging the heel post of the jack laterally relatively to the toe rest, and means for moving the toe carriage into and out of operative position.

15. A lasting machine, having, in combination, end lasting devices, a last support, and provision for adjusting said support angularly about a center under the end portion of the last adjacent the end lasting devices to adapt the swing of right and left crooked lasts to a single position of said lasting devices, substantially as described.

16. A lasting machine, having, in combination, end lasting devices, a last support movable angularly about a center under the end portion of the last adjacent said devices, to adapt the swing of right and left crooked lasts to a single position of said lasting devices; and provision for retaining said support in its position of angular adjustment, substantially as described.

17. In a machine for use in lasting shoes the combination with toe-lasting mecha-

nism, of a support for the heel portion of the last movable laterally about a center located to permit the forepart of the last to be so positioned relatively to the toe-lasting mechanism that said mechanism while occupying a constant lateral position will act uniformly upon a right or a left crooked last.

18. In a machine of the class described, the combination with a toe rest and a toe-lasting mechanism including wipers, of a heel support arranged for lateral curvilinear adjustment relatively to such mechanism and rest so that the direction of the longitudinal movement of the wipers will coincide with the median line of the forepart of the last.

19. The combination with toe-lasting mechanism, of a toe rest and a heel support arranged for lateral curvilinear adjustment relatively to cause the median line of the foreparts of lasts having different degrees of swing to coincide with the median line of the machine.

20. A machine of the class described, having in combination, end lasting mechanism and last supporting mechanism comprising a centrally located rest for the end of the last which is adjacent to the lasting mechanism and a rest which is laterally shiftable

in a curvilinear path for supporting the opposite end of the last.

21. A machine of the class described, having in combination, toe lasting mechanism, shoe supporting means including a rest for the heel end of the shoe which is movable laterally to adapt it to support the heel ends of right and left crooked lasts whose foreparts are presented in symmetrical relation to the toe-lasting mechanism, and means independent of the shoe for retaining the rest in laterally adjusted position.

22. In a machine for use in lasting shoes, the combination with toe-lasting mechanism, for a support for the forepart of a last, and a support for the heel portion of the last which is movable laterally with relation to the forepart support about a center located to effect such adjustment of the forepart of the last that said mechanism will act uniformly upon the forepart of a right or a left crooked last.

In testimony whereof we have hereunto set our hands in the presence of two attesting witnesses this 18th day of April, 1896.

ERASTUS E. WINKLEY.

FREDERICK L. ALLEY.

Witnesses:

BENJAMIN PHILLIPS,
A. E. WHYTE.

Correction in Letters Patent No. 1,017,124.

It is hereby certified that in Letters Patent No. 1,017,124, granted February 13, 1912, upon the application of Erastus E. Winkley and Frederick L. Alley, of Lynn, Massachusetts, for an improvement in "Lasting-Machines," an error appears in the printed specification requiring correction as follows: Page 4, line 45, first occurrence, for the word "for" read *of*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 5th day of March, A. D., 1912.

[SEAL.]

C. C. BILLINGS,

Acting Commissioner of Patents.

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18. In a machine of the class described, the combination with a toe rest and a toe-lasting mechanism including wipers, of a heel support arranged for lateral curvilinear adjustment relatively to such mechanism and rest so that the direction of the longitudinal movement of the wipers will coincide with the median line of the forepart of the last.

19. The combination with toe-lasting mechanism, of a toe rest and a heel support arranged for lateral curvilinear adjustment relatively to cause the median line of the foreparts of lasts having different degrees of swing to coincide with the median line of the machine.

20. A machine of the class described, having in combination, end lasting mechanism and last supporting mechanism comprising a centrally located rest for the end of the last which is adjacent to the lasting mechanism and a rest which is laterally shiftable

in a curvilinear path for supporting the opposite end of the last.

21. A machine of the class described, having in combination, toe lasting mechanism, shoe supporting means including a rest for the heel end of the shoe which is movable laterally to adapt it to support the heel ends of right and left crooked lasts whose foreparts are presented in symmetrical relation to the toe-lasting mechanism, and means independent of the shoe for retaining the rest in laterally adjusted position.

22. In a machine for use in lasting shoes, the combination with toe-lasting mechanism, for a support for the forepart of a last, and a support for the heel portion of the last which is movable laterally with relation to the forepart support about a center located to effect such adjustment of the forepart of the last that said mechanism will act uniformly upon the forepart of a right or a left crooked last.

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