

S. W. LADD & E. A. STIGGINS.
LASTING MACHINE.

APPLICATION FILED MAR. 20, 1901. RENEWED NOV. 30, 1910.

999,233.

Patented Aug. 1, 1911.

3 SHEETS—SHEET 1.

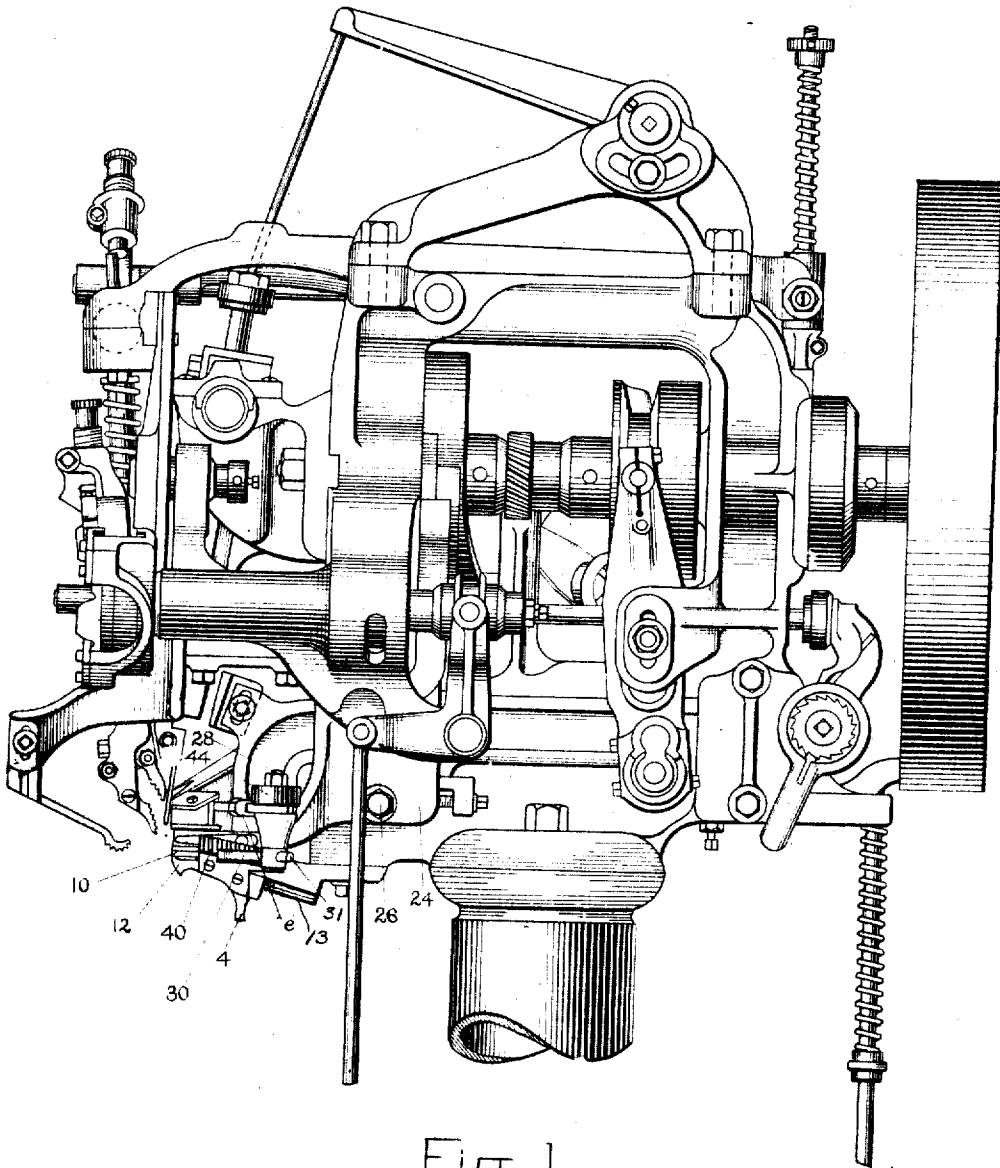


Fig. 1

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INVENTORS:

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999,233.

Patented Aug. 1, 1911.

3 SHEETS-SHEET 2.

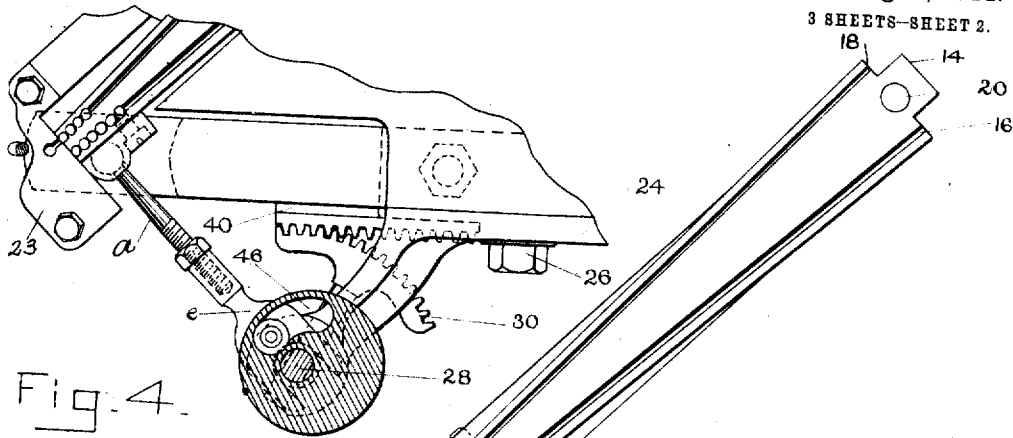


Fig. 4.

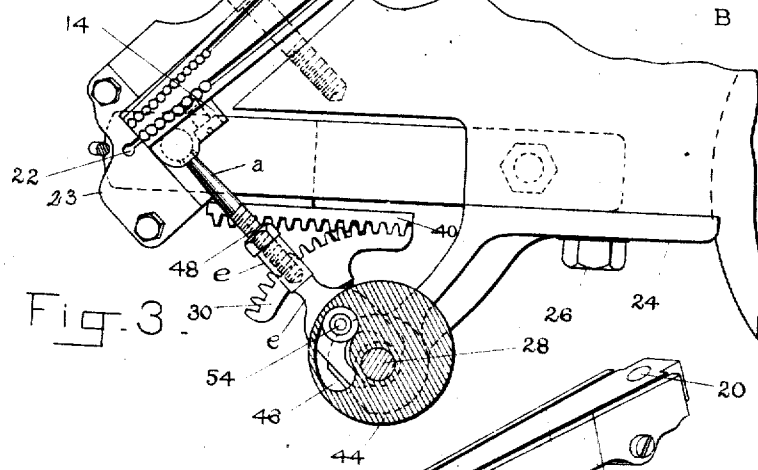


Fig. 3.

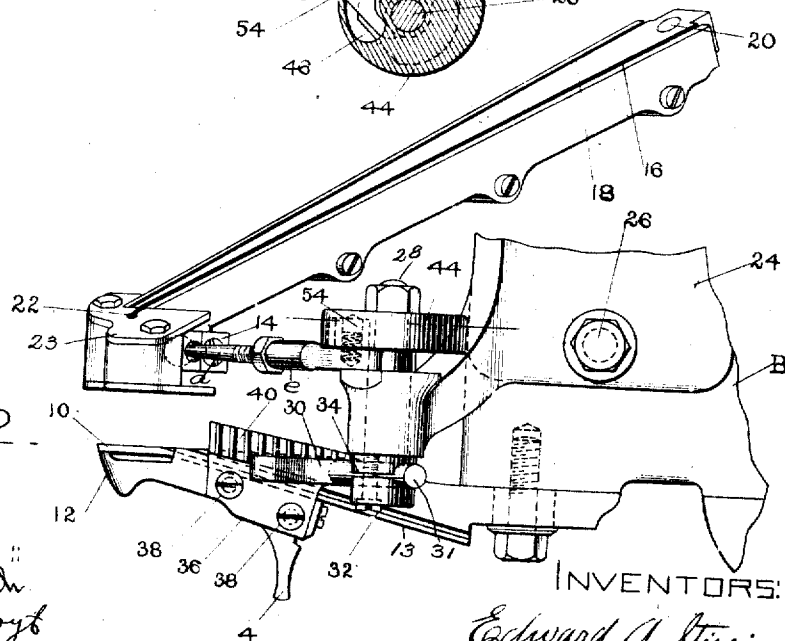


Fig. 2.

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3 SHEETS-SHEET 3.

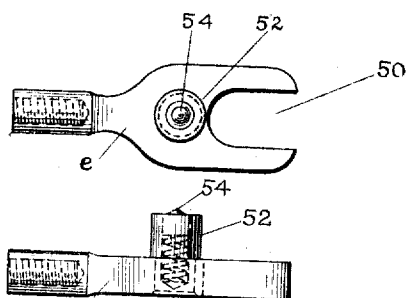


Fig. 6

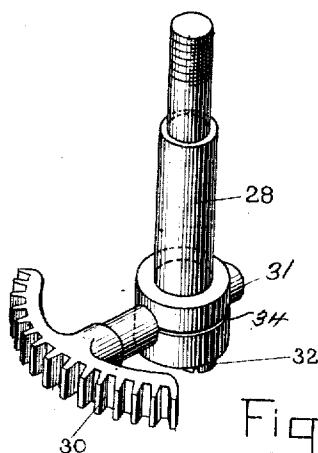


Fig. 7.

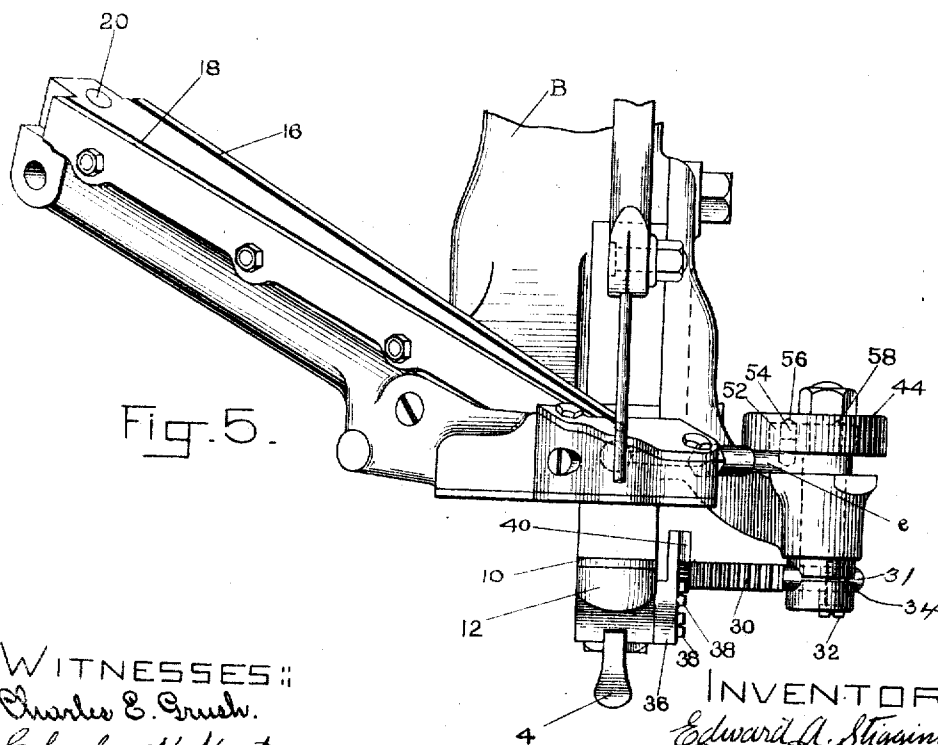


Fig. 5.

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UNITED STATES PATENT OFFICE.

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LASTING-MACHINE.

999,233.

Specification of Letters Patent.

Patented Aug. 1, 1911.

Application filed March 20, 1901, Serial No. 52,040. Renewed November 30, 1910. Serial No. 594,973.

To all whom it may concern:

Be it known that we, SHERMAN W. LADD and EDWARD A. STIGGINS, both of Beverly, county of Essex, Commonwealth of Massachusetts, have invented certain Improvements in Lasting-Machines, of which the following, read in connection with the accompanying drawings, is a specification.

This invention relates particularly to lasting machines of the type known as the "hand method" lasting machine. One form of this type of machine is illustrated in Letters Patent of the United States No. 584,744, dated June 15, 1897, and No. 597,321, dated January 11, 1898, to which reference may be had for a description of the general features of the machine. The machines illustrated in the above-mentioned patents are equipped with appliances for adapting them especially for lasting "Good-year" or "welt" shoes, whereas the present invention is shown as embodied in a machine for lasting "McKay" shoes and certain parts of a welt lasting machine are omitted from this machine.

In the drawings, Figure 1 is a side elevation of a lasting machine embodying our invention. Fig. 2 is a side elevation on an enlarged scale showing the parts of the machine with which our present improvements are connected. Fig. 3 is a plan view of the parts shown in Fig. 2 with the eccentric disk 44 shown in section. Fig. 4 is a view similar to Fig. 3, showing the parts in a different position. Fig. 5 is a front elevation of the parts shown in Fig. 2 and also of the driver bar. Figs. 6 and 7 show details of the new mechanism.

The lasting machine herein shown is provided with a thin edge-rest 10 secured to the frame of the machine and adapted to be used for guiding the shoe while the shank of the shoe is being lasted.

12 indicates an edge-rest arranged to be moved forwardly and backwardly with relation to the edge-rest 10. The edge-rest 12 has a thick acting face and is adapted to be used while the toe and the heel of a shoe are being lasted and is intended to be moved backwardly out of operative position while the shank of a shoe is being lasted. It is necessary to move the thick edge-rest

12 backwardly for lasting the shank because the shape of the shoe is such as to make it impracticable for a thick edge-rest to be used for guiding the shank of a shoe. The edge-rest 12 is arranged to slide on a guiding rib 13 which depends from the frame B of the machine, and the rest is provided with a finger-piece 4 by which the operator may conveniently move it forwardly and backwardly.

The edge-rests above described are fully disclosed in United States Letters Patent No. 562,119, granted on June 16, 1896, and need not be further described herein.

The lasting machine is provided with mechanism for supplying fastenings to be inserted for holding the successively lasted portions of upper in place. This mechanism will preferably be the same in construction and operation as that shown in Letters Patent No. 584,744, before mentioned, except as hereinafter explained.

The mechanism for supplying fastenings as herein shown comprises among its parts a movable guide, shown as a raceway section or block 14, provided with a plurality of channels 16 and 18, for holding different sizes of tacks. The block 14 is pivoted at 20 to the machine frame and is arranged to be moved for placing either of the channels 16 or 18 opposite the discharge opening 22 in the fixed plate 23. The tacks are acted upon by a tack separating mechanism located below the fixed plate 23 which allows them to escape one by one through the opening 22 into a tack carrying block. The tack separating mechanism and tack carrying block form no part of the present invention and are therefore not shown or described.

It is desirable to use tacks of one size when the machine is operating on those parts of the shoe where the thin edge-rest 10 is employed and tacks of a different size when the machine is operating on those parts of a shoe where the thick edge-rest 12 is employed. Heretofore in machines constructed for lasting McKay shoes the shifting of the tack supplying mechanism for causing it to supply the different sizes of tacks has been left to the workman, and as it constituted an independent adjustment,

he, in practice, omitted to make the change, and, therefore, used the same size of tacks for all the different parts of the shoe to the detriment of the work. It is, however, indispensable to the proper use of the machine that the workman change the position of the thick edge-rest 12 in going around the shoe and such changes in position are made at the time when the size of tacks should also be changed. Thus the thick edge-rest 12 must be in its forward, operative position when the heel and toe portions of the shoe are being lasted to afford a wide bearing against which the work may be firmly held, and in the lasting of the heel and toe portions of the shoe it is desirable, in what is known as McKay shoes, for which class of work this invention is especially intended, to use long tacks to compensate for the increased thickness of the stock caused by the flange of the counter and the folds of the upper at the heel, and by the folds of the upper at the toe. On the other hand, in lasting the shank and ball portion of the upper, the thin edge-rest 10 is used, and the rest 12 must be moved back into inoperative position. In lasting the shank and ball of McKay shoes, the upper stock to be secured is less bulky than at the toe and heel and, therefore, it is preferable to use shorter tacks than are used at the heel and toe. In this embodiment of our invention, therefore, we have connected the edge-rest and the tack raceway section 14 so that when the edge-rest is changed the raceway is also simultaneously shifted and caused to supply a different size of tacks. To this end mechanism is provided as follows:—A bracket 24 is secured, by bolt 26, to the machine frame B. In said bracket is journaled the shaft 28, in which the shank or radius bar 31 of a toothed segment 30 is clamped by a screw 32, the shaft 28 being for this purpose slotted at the point 34, see Fig. 7. A plate 36 is fixed to the edge-rest 12 by screws 38 and has toothed formations 40 in mesh with the toothed formations on the segment 30 for turning the segment and the shaft 28. A disk 44 is mounted eccentrically on shaft 28 to which it is secured and it is provided in its lower side with a cam groove 46, formed as the arc of a circle which is concentric with the disk 44. A connecting-rod 48, extending between the disk 44 and the tack supplying mechanism, is composed of sections *a*, *c*. The section *a* has on one end a ball which is socketed in the raceway section 14, and the other end is in screw-threaded engagement with the section *c*, which is slotted at its rear end, as at 50, for loosely embracing the shaft 28. Said section is provided with a hollow stud 52, wherein is arranged a spring-actuated plunger 54, which has a conical end for entering cavities 56, 58 in disk 44 at the upper side

of the groove 46 and frictionally holding the parts at one or the other limit of their movement. It will now be understood that a movement of the edge-rest 12 to the forward or working position turns the segment 30 and the eccentric 44 for placing the raceway section 14 with channel 16 in communication with the discharge opening 22 in the plate 23 so that one size or kind of tacks will be supplied, and movement of said rest 12 to its retracted or non-working position reversely turns said segment and disk for placing channel 18 in communication with said opening 22 for causing a different size or kind of tacks to be supplied.

It will be understood that the member 12, instead of being arranged to slide on the member 10 as herein shown, could be arranged to swing about a pivot, the only essential being that the edge-rest shall have a connection with the tack supplying mechanism such that the tack supplying mechanism will be caused to supply one size or kind of tacks when the thick edge-rest 12 occupies its operative position and said mechanism will be caused to supply a different size or kind of tacks when the thin edge-rest is operative and the thick edge-rest occupies its inoperative position. This invention is not, therefore, limited to the construction herein shown specifically.

It is an important feature of the invention that the adjustment of the fastening supplying mechanism for delivering one kind of fastenings or another determines which of the edge-rests shall be operative for guiding the work.

While the invention is herein shown as embodied in a lasting machine in which loose tacks are driven for securing the upper, it will be obvious that the invention may be employed in other machines and that it is not essential to the invention what kind of fastening material is handled by the machine.

Having indicated the nature of this invention and fully explained a preferred form of mechanism embodying the same, we claim as new and desire to secure by Letters Patent of the United States:—

1. In a lasting machine, a movable raceway for holding tacks of different sizes, a movably mounted rest, a rack bar carried by the rest, a cam for controlling the raceway, connections between the rack bar and cam, and means whereby said rest may be shifted to different positions and the cam thereby actuated for changing the position of the raceway to cause it to deliver different sizes of tacks.

2. In a lasting machine, a stationary shoe edge rest and a relatively movable shoe edge rest, a raceway for holding and delivering tacks of different sizes, and means actuated by a movement of the said movable edge rest

for shifting said raceway and causing it to stop delivering tacks of one size and deliver tacks of another size.

3. In a lasting machine, means comprising a plurality of parts adapted for supporting the shoe, one of said parts being movable, mechanism for delivering tacks of different sizes and means connected with the movable part of said supporting means which is put into operation by a movement of said part, for causing said mechanism to stop delivering tacks of one size and deliver tacks of another size.

4. In a lasting machine, mechanism for delivering tacks of different sizes, a fixed edge-rest for supporting the shoe and a movable rest adapted to be stationed in one position for supporting the edge of the shoe and adapted to be stationed in another position where it will be out of touch with the shoe, and means, actuated by shifting said movable rest, for causing said mechanism to stop delivering tacks of one size and deliver tacks of a different size.

5. In a lasting machine, mechanism provided with a plurality of channels for conducting tacks to a single delivery opening, a plurality of relatively movable edge rests and means actuated by a relative movement of said rests for placing one of said channels in communication with said opening and actuated by another relative movement of said rests for placing another of said channels in communication with said opening.

6. In a lasting machine, a movable raceway provided with a plurality of channels for holding and delivering tacks of different sizes, a manually actuated edge rest, and means rendered operative by movement of the edge-rest for shifting the raceway to cause it to stop delivering tacks of one size and deliver tacks of another size, said machine having provision for securing the raceway in the position to which it is shifted.

7. In a machine of the class described, mechanism for supplying fastenings of different kinds, a plurality of relatively movable rests, and means actuated by relative movement of said rests for causing said mechanism to stop supplying fastenings of one kind and supply fastenings of another kind.

8. In a machine of the class described, a tack delivering mechanism arranged to deliver tacks of different sizes, a thin edge-rest occupying a fixed position, a thick edge-rest, means for moving said thick edge-rest toward and from operative position, and means actuated by a movement of said thick rest for causing said tack delivering mechanism to stop delivering tacks of one size and deliver tacks of another size.

9. The combination with two gages ar-

ranged to be used alternatively, of means for supplying different sizes of tacks, and a device for controlling the operation of said tack supplying means and said gages whereby when one gage is operative one size of tack is supplied and when the other gage is operative a different size of tack is supplied.

10. The combination with a fixed edge-gage, of a movable edge-gage adapted to occupy an operative position for guiding the work and being movable into an inoperative position to permit the work to be guided by the fixed gage, of means for supplying different kinds of fastenings, and a connection between said movable gage and the supplying means for controlling the position of the movable gage whereby it is operative for guiding the work when one kind of fastenings is being supplied, and it is inoperative and the fixed gage is operative when a different kind of fastenings is being supplied.

11. The combination with tack supplying means for holding and delivering different kinds of tacks, and means for supporting the edge of the work, said supporting means comprising relatively movable members, of means connecting said tack supplying means and said supporting means whereby a relative movement of the supporting members effects automatically a change in the kind of tacks delivered by the tack supplying means.

12. The combination with a movable guide provided with a plurality of channels for supplying different kinds of fastenings, and means for supporting the edge of the work, said supporting means comprising relatively movable members, of means for connecting said guide and supporting means the arrangement being such that a relative movement of said supporting members will automatically effect a shifting of the guide to change the kind of fastenings supplied.

13. A lasting machine having, in combination, tack supplying mechanism, an edge rest, a cam, and operative connections from the cam to the supplying mechanism and from the cam to the edge rest for insuring movements of the rest and the said mechanism having predetermined relations as to time and direction.

14. A lasting machine having, in combination, tack presenting means, shoe positioning means, an eccentric block, a rack and pinion connection from the axis of the block to the shoe positioning means, and a connection from the tack presenting means to eccentric walls of the block, said connections being constructed and arranged to effect simultaneous movements of the positioning and presenting means in directions and planes oblique to one another.

15. A lasting machine having, in combination, an edge rest, a support for the rest, a raceway, an eccentric block, a shaft upon

which the block is fixed, connections between the shaft and the rest for effecting simultaneous downward and backward endwise movement of the rest upon its support, and
 5 connections between the eccentric walls of the block and the raceway for effecting movement of the raceway sidewise.

Signed by us at Beverly, Massachusetts,
 this 19th day of March, 1910.

SHERMAN W. LADD.
 EDWARD A. STIGGINS.

Witnesses:

NELSON W. HOWARD,
 THOMAS H. SEELY.