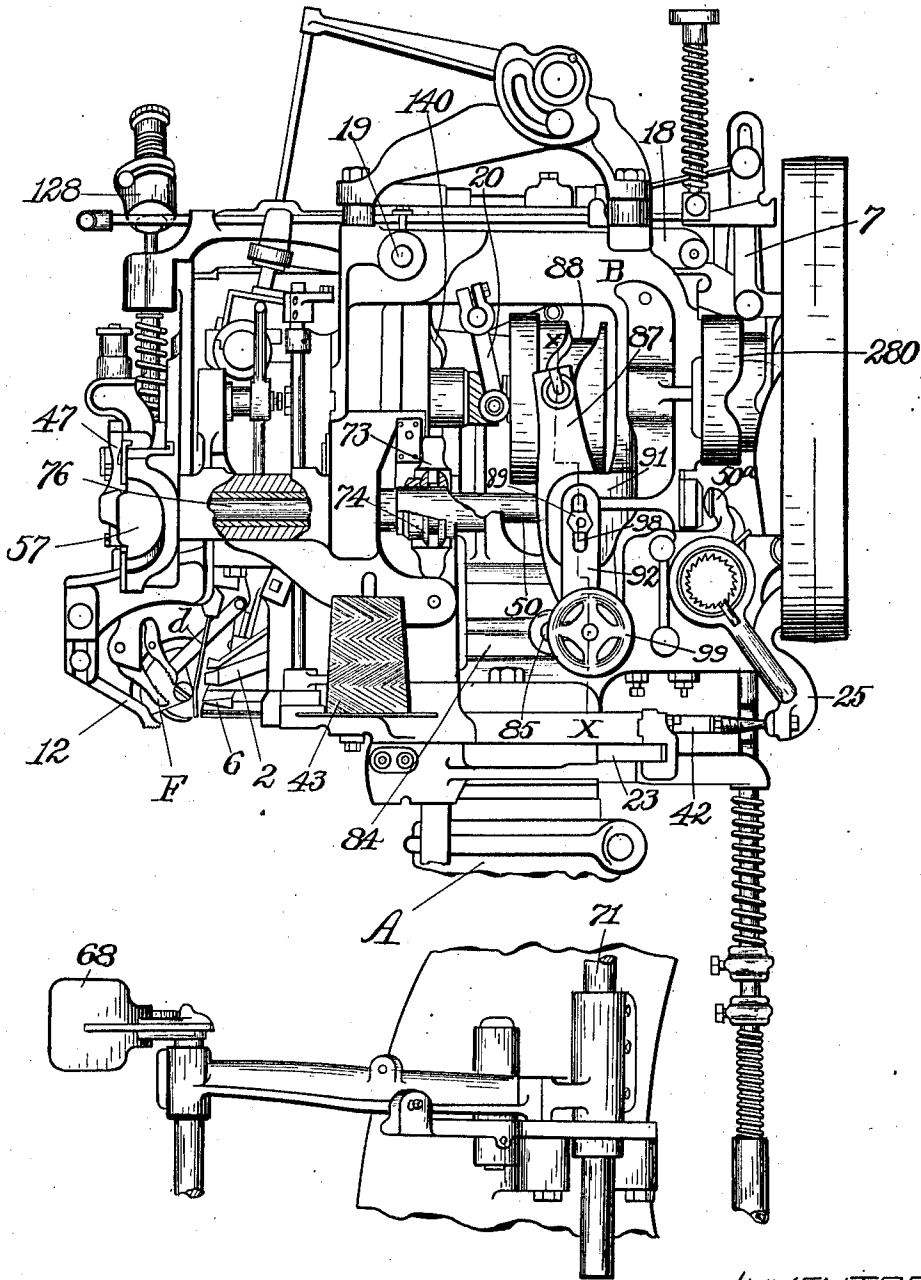


J. CAVANAGH.
TACKING MECHANISM.
APPLICATION FILED DEC. 1, 1910.

1,026,944.

Patented May 21, 1912.

2 SHEETS-SHEET 1.



WITNESSES.

Elizabeth C. Croft
J. Blanche Hargrave.

Fig. 1.

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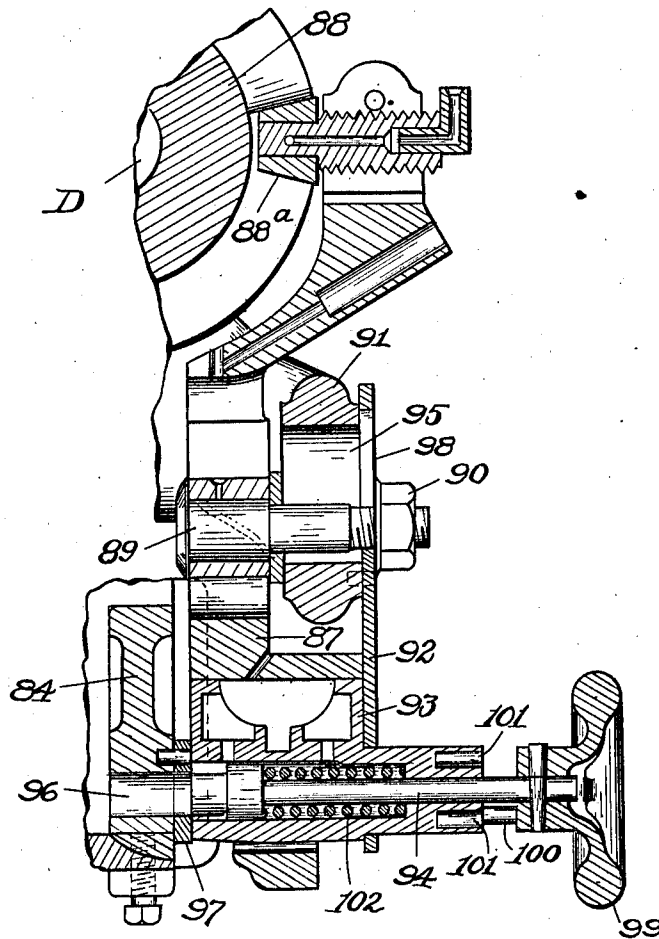


Fig. 2.

WITNESSES.

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UNITED STATES PATENT OFFICE.

JAMES CAVANAGH, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

TACKING MECHANISM.

1,026,944.

Specification of Letters Patent.

Patented May 21, 1912.

Original application filed December 1, 1909, Serial No. 530,816. Divided and this application filed December 1, 1910. Serial No. 595,078.

To all whom it may concern:

Be it known that I, JAMES CAVANAGH, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Tacking Mechanisms, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to tack-feeding mechanism, and more particularly to certain improvements in such mechanism which are especially useful in connection with lasting machines of the type illustrated in United States Letters Patent No. 584,744, dated June 15, 1897, and No. 873,018, dated December 10, 1907.

The invention is, by way of illustration, herein shown and described as embodied as a part of the lasting machine shown and described in application for United States Letters Patent, Serial No. 530,816, filed December 1, 1909, of which the present application is a division. It will be understood, however, that while the mechanism herein claimed, is in the specific form shown designed for use in the machine of the earlier application mentioned, said mechanism is capable of use without substantial change in machines of radically different construction.

In the lasting machine shown in Letters Patent No. 873,018, the successively overworked portions of the upper are temporarily secured to the innersole of the shoe at the heel, and along the sides by means of tacks, which are taken from a raceway by a tack separator and delivered thereby to a tack carrier which is advanced over the edge of the shoe during each complete operation of the machine and presents the tack held therein in position to be driven, a driver being actuated at the proper time to force the tack from the carrier into the work when the carrier has reached its proper position over the shoe. In lasting welt shoes it has been the practice to suspend the operation of the driver, the tack-carrier, and the tack separator which delivers the tack to the carrier, when the operation of lasting has progressed to a point adjacent the toe portion of the shoe, and to render operative certain

devices for laying a binding wire about the overworked upper material at the toe, and in the machine described in the application above referred to it was additionally contemplated to prevent the operation of the tack carrier, and hence of the tack separator also, at other points, as along the sides of the shoe, and to render operative certain instrumentalities for sewing the upper to the innersole at such points, when desired.

The present invention relates to improved means for controlling the operation of the tack supplying instrumentalities and comprises devices for connecting the tack carrier bar with its operating mechanism, or for disconnecting it therefrom at the will of the operator, without interfering with the operation of any other part of the machine.

In the embodiment illustrated herein the tack carrier bar is free from permanent connection with the lever through which it is actuated by the usual cam carried on the main power shaft of the machine, and is adapted for connection with said lever by a locking device, as a bolt, which is supported by the lever and may be provided with a suitable handle extending in position convenient for manipulation by the operator.

The preferred means of connection between the tack-carrier bar and its actuating lever selected for illustration, together with those parts of the lasting machine in which the invention is shown as being employed for a better understanding of one of its contemplated uses, will be more particularly described hereinafter, and the novel features of the invention will be pointed out in the claims.

In the drawings; Figure 1 is a side elevation of a lasting machine embodying the present invention, with certain parts shown in section; and Fig. 2 is an enlarged sectional view on the line X—X, Fig. 1.

The column A supports the head B in which is mounted the driving shaft D. A cam 280, fast on the shaft D, is provided with a suitable way to actuate a reciprocating member which is connected with the lever 18, fulcrumed at 19 to the frame of the machine. The grippers F are suspended from the front end of lever 18 and are lowered thereby into position for gripping the upper and raised for pulling the upper.

The grippers are closed by an arm 128 carried by a rock shaft which is actuated by a cam 140 on the shaft D. The grippers are guided through a block 47 which is connected to a slide rod 50 provided with a cam roll located in position to be engaged by a cam face on the rear side of cam 140 to move the grippers toward the machine in approaching gripping position, and a spring-actuated arm 50^a presses the slide rod 50 in the opposite direction to thereby hold the cam roll against the cam face on cam 140 in order to move the grippers away from the machine for drawing the upper over the last. The grippers are given other movements for plaiting the upper at the toe of the last by mechanism including the rocking segment 57, which is actuated from a groove formed in the face of cam 140. This mechanism is normally inoperative and is arranged to be rendered operative by means of a knee lever 68 connected to a vertical shaft 71, which has a forked arm 73 engaging a sliding collar 74. The collar has connection with an adjusting rod 76 whereby movement of the knee lever in one direction or the other will render operative or inoperative the mechanism for giving to the grippers their plaiting movements.

The construction and relative arrangement of the grippers mechanism and the mode of operation of the grippers in working the upper over the last, and in plaiting the upper at the toe, may and preferably will be the same as described and shown in the aforesaid Letters Patent Nos. 584,744 and 873,018.

The usual tack hopper, (not shown) supplies tacks to the raceway 2 and the tacks are individually removed from the raceway by a tack carrier 6, which is provided with a pocket to receive the tack, and preferably also with the usual presser for wiping the upper inwardly over the edge of the last as the tack carrier is advanced to carry the tack in position to be driven. The tack carrier is attached to a sliding bar 84 which moves in suitable guideways in the frame of the machine and at its rear end is connected with a lever 87, fulcrumed upon a pin 89 which passes through a slot 95 in an arm 91, rigid with the frame, and is adjustably clamped thereto by a nut 90. A plate 92, having therein a slot 98 registering with the slot 95 in the arm 91, furnishes a bearing surface for the nut 90, and the plate is furthermore provided with a laterally extending portion having a slot 85. The lever 87 carries at its upper end a roll 88^a which runs in a cam groove in cam 88, and at its lower end supports a block 93 having a reduced extension or neck which passes through the slot 85 in plate 92 and is guided thereby during the oscillations of the lever.

The block 93 has a bore or passage therein

as shown, and a bolt 94, having at its outer end a hand wheel 99 and at its inner end a reduced portion to enter an aperture 96 in the bar 84, is mounted to slide in said passage for locking the lever 87 fast to the bar 84, or for unlocking it therefrom as will be understood. A spring 102, which surrounds the bolt 94 and bears at one end against a shoulder formed by an enlargement of the bore in block 93 and at its opposite end against a shoulder on said bolt, acts with a normal tendency to force the bolt toward the aperture 96. The hand wheel 99 is preferably provided with a pin or stop 100 which is adapted to register with any one of a series of holes 101 in the block 93 when the hand wheel is turned an appropriate distance in order to permit the spring to force the end of the bolt into the aperture in the bar; and when the hand wheel is moved in a direction to withdraw the bolt from said aperture, and given a slight turn, the pin will move out of registry with the hole and may be caused to rest upon an imperforate portion of the outer end of block 93, and thereby retain the bolt out of locking engagement with the bar. When the lever is locked to the tack carrier bar and the machine is in operation the cam 88 will impart to the tack carrier a longitudinal reciprocation to move it from a tack receiving position to a tack delivering position, and vice versa.

The driver *d* for forcing the tack from the tack pocket into the stock may be operated by the usual driver bar, and the actuating mechanism therefor is preferably the same as disclosed in said prior Letters Patent.

The wire for binding in the lasted upper materials at the toe may be supplied by a reel or spool, which is supported in convenient position for use on the frame of the machine, as are also, preferably, suitable tension, guiding and severing devices for the wire.

Suitable sewing mechanism which is capable of being thrown into operation for sewing along the sides of the shoe, or along the sides and around the toe, according to the character of the work, and which may be thrown out of operation when desired, as more fully described in prior application above referred to, may also be employed in connection with the tack-supplying instrumentalities above referred to.

In the machine as thus described, preliminary to the operation of lasting, the end of bolt 94 will occupy the aperture 96 in the tack carrier bar in order that the bar may be reciprocated and tacks supplied to the tack carrier will be carried thereby in position to be driven when the machine is started, and be forced by the driver into the work in proper timed relation to the movements

of the grippers as the upper is drawn in overworked position over the last, the sewing mechanism at such time being inoperative.

5 Upon starting the machine, if a last with the usual materials properly assembled thereon for lasting is presented to the over-
working mechanism and tack driving
10 mechanism the upper and lining will be lasted and secured to the innersole at those portions of the shoe where it is desired to fasten the materials by tacks, as for example at the heel. When the supply of tacks is to be discontinued preliminary to bringing
15 into operation the sewing mechanism for securing the upper in position along the sides of the shoe, or preliminary to binding in the upper materials at the toe with wire, the machine will be stopped, and the bolt 94
20 withdrawn from the aperture in the bar 84, which will disconnect the bar from the lever 87, so that no movements will be imparted from said lever to said bar, and consequently tacks will not be fed in position to be driven into the work by the driver *d*. Either of the other fastening-supplying mechanisms will then be rendered operative for the desired securement of the upper materials to the innersole while the operation of the overworking mechanism proceeds at those portions of the shoe where the use of tacks is not desired. When the supply of tacks is to be resumed it is merely necessary to slightly turn the handle 99 until the pin 100 registers with one of the holes 101, and the spring 102 will act to force the end of bolt 94 against the tack-carrier bar so that the movement imparted to the bolt by the lever 87 will cause the bolt to come
40 into alinement with the aperture in the bar, and the spring will force the bolt into locking engagement with the bar. During the continued operation of the machine the movements imparted by the cam 88 will effect reciprocations of the tack-carrier bar to carry tacks in position to be driven into the upper materials and sole to secure these parts together.

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

1. In a machine of the class described, the combination with a tack-carrier bar, of actuating mechanism therefor including a lever, and a reciprocable member connecting

said bar and lever and capable of disconnecting said parts by a single movement.

2. In a machine of the class described, the combination with a tack-carrier bar, of actuating mechanism therefor including a lever, and manually-controllable means comprising a reciprocable member provided with a handle and arranged to normally connect said bar and lever, but capable of movement to disconnect said parts. 65

3. In a machine of the class described, the combination with a tack-carrier bar provided with an aperture, of actuating mechanism therefor including a lever, a yieldingly actuated locking bolt to cooperate with said aperture, and means for holding said bolt out of locking engagement with said bar. 70

4. In a machine of the class described, the combination of a tack-carrier bar, actuating mechanism therefor including a lever, a pin to pivotally sustain said lever, a support for said pin, a plate clamped to said support and provided with a transverse slot, a block carried by said lever and having an extension arranged to move in said slot, and a bolt movable in the block and adapted for locking engagement with said bar. 75

5. In a machine of the class described, the combination with a tack-carrier bar, of actuating mechanism therefor including a lever, a block carried by the lever and provided with an aperture, a bolt guided for movement in said block and arranged for locking engagement with said bar, and a pin connected with said bolt and arranged to enter said aperture for permitting such engagement, or to rest upon a shoulder of the block for preventing such engagement. 85

6. In a machine of the class described, the combination with a tack-carrier bar having an aperture therein, of actuating mechanism for said bar including a lever, a locking bolt carried by the lever and provided with a handle and an end to enter said aperture and lock the bar to the lever, and means carried by the bolt to temporarily hold the bolt out of said aperture. 100

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES CAVANAGH.

Witnesses:

ARTHUR L. RUSSELL,
HERBERT W. KENWAY.