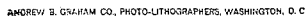


TOP LIFT HOLDER FOR HEELING MACHINES.

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UNITED STATES PATENT OFFICE.

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TOP-LIFT HOLDER FOR HEELING-MACHINES.

958,041.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM C. STEWART, a subject of the King of Great Britain, residing at Lynn, in the county of Essex and State of Massachusetts, have invented an Improvement in Top-Lift Holders for Heeling-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like figures on the drawings representing like parts.

The invention to be hereinafter described relates to shoe heeling machines, and more particularly to the top lift holders of such machines for holding and carrying the top lift from receiving position into operative relation, with means for securing the top lift to the heel of a shoe.

The aims and purposes of the invention are to provide a top lift holder or carrier of such construction that top lifts may be readily placed in and firmly held by the carrier and be transferred to attaching position regardless of varying thickness or dimensions, all as will hereinafter more fully appear in connection with the following description and accompanying drawings of one form of means for putting the invention into practical effect, it being understood that the invention is not restricted to details but in its true scope is definitely pointed out in the claims.

In the drawings, Figure 1 is a side elevation and part sectional view of the upper portion of a heeling machine showing the features of the present invention and the general relation thereof to the associated parts; Fig. 2 is a face view of the top lift holder or carrier shown in Fig. 1; Fig. 3 is a section on the line 3—3, Fig. 2; and Fig. 4 is an enlarged detail sectional view showing a top lift and one of its holding gages at the conclusion of the attaching operation.

The cross-head 1 and its actuating rods 2, whereby it may be reciprocated from suitable actuating means as, for instance, such as fully shown and described in application Serial No. 478,954, filed February 19, 1909, may be of any usual or desired character.

Mounted on the shaft 3, carried by the cross-head 1, are the top-lift carrying arms 4 to which the top-lift block 5 is secured. The shaft 3 has an arm 6, shown by dotted lines in Fig. 1, to which is connected the carrier actuating rod 7 by which the top-

lift carrier is swung either into top-lift receiving position shown by full lines, Fig. 1, or into attaching position beneath the cross-head, as shown by dotted lines in said Fig. 1. The connection between the arm 6 and the actuating rod 7 is preferably made yielding by means of a spring 8, one end of which is seated under a head 9 secured to the upper end of the rod 7 and the other end of which rests upon a washer or plate 10 supported by an adjusting screw 11 threaded into the cap 12 which is jointed at 13 to the arm 6. From the construction thus far described it will be evident that reciprocating motion of the rod 7 will impart a yielding swinging movement to the top-lift holder or carrier.

The top-lift plate 14 is preferably connected to the top-lift block 5 by a movable wedge 15, whereby the top-lift plate 14 may be adjusted toward or from the top-lift block through the medium of an adjusting screw 16, substantially as set forth in the application to which reference has been made.

Passing loosely through an opening 18 in the arm 17 carried by the top-lift plate is a rod or stem 19, the end portion 20 of which has a threaded engagement with a lug 21 secured to or projecting from a slide 22. Between the arm 17 and an adjusting nut 23 on the upper end portion of the rod or stem 19, Figs. 1 and 2, is a spring 24 normally acting to draw the slide 22 upward, Fig. 2, response to the action of the spring 24 being limited by a collar 25 or other suitable means.

Mounted for endwise movement in a support 26 carried by the slide 22 are the breast holders or gage carrying arms 27 and 28, each provided with rack teeth 29 which engage an idle pinion 30 carried by the support, the construction being such that movement of one of the arms 27 or 28 imparts corresponding movement to the other of said arms in an opposite direction. Secured to one of the arms, as 28, is a threaded rod 31, Fig. 2, having a head 32 between which and a fixed gland on the support 26 is a spring 33, the construction being such that the spring 33 normally acts to move the arm 28 to the left, Fig. 2, and, perforce, move the arm 27 to the right to clamp a top-lift 34 between their holding portions 36, as indicated, a suitable stop 35 being em-

ployed, if desired, to limit the movement of said arms. The holding portions 36, as indicated in Fig. 2, engage the top-lift at the breast corners and for purposes of identification, regardless of their particulars of construction, they may be referred to as the breast gage.

Disposed to engage the top-lift at the rear thereof, or, in other words, to engage the top-lift at a point opposite the breast gage, is the back gage 37 which may be of the general character of the similar part in my prior application Serial No. 409,142, filed January 3, 1908, except in so far as it is modified or improved, as will hereinafter appear.

The back gage 37 comprises a plate secured to the supporting stud 38, Fig. 3, by means of the flexible plates 39 and 40, whereby it may yield in a direction toward and from the tread face of the top-lift, and said stud 38 is permitted to have swinging movement in its bearing 41 to permit the back gage to center the top lift in a manner similar to that described in said prior application Serial No. 409,142. In the present instance the self centering or swinging movement of the back gage is limited in extent by means of a stop pin 42 secured to the bearing 41 and engaging a slot or recess in the head of the supporting stud 38, as indicated in Figs. 2 and 3. The bearing 41 is carried by an arm 43 connected to the top-lift plate or other part movable with the top-lift carrier or holder, the construction being such that the spring 24 acting upon the rod 19 normally tends to move the breast gage and back gage relatively toward each other to clamp a top lift between the engaging or holding portions of said gages.

It will thus be clear to those skilled in the art that the top lift 34 will be held between the breast and back gages by the yielding action of the spring 24. As the top lift carrier or holder swings from receiving position, full lines Fig. 1, to top-lift attaching position, dotted lines Fig. 1, it will be evident that there is some liability of the top lift being detached or thrown from its holding devices, and the present invention contemplates means to obviate or overcome this possible defective action.

One form of means to the above end is indicated in Figs. 1 and 2, wherein there is pivotally mounted at 44 on an arm 45 projecting upward from one of the arms 4 carrying the top-lift holder a lever 46, the lower end of which at 47 has connected thereto a wedge 48 which is adapted to slide on the lugs 49 beneath the collar 25 on the rod 19 as said lever 46 is swung upon its supporting axis 44. Connected to the lever 46 is an arm 50 to which one end of a spring 51 is secured, the other end of said spring being connected to the top-

lift carrier arm 4, the construction being such that when free to act, the spring 51 normally tends to move the wedge 48 forward into position between the collar 25 and the lugs 49, and when in said position, said collar will obviously lock the slide 22 carrying the breast gage, so that it cannot move away from its clamping position, or away from the back gage 37. It is obviously desirable that this characteristic locking of the gages in their top lift holding position shall be effective as the top-lift carrier or holder moves from its top-lift receiving to its top-lift attaching position, as indicated in Fig. 1, and to this end there is also connected to the arm 46 and likewise to the arm 50 a finger 52, the end of which is adapted to contact with the end of a stop 53 projecting from the cross-head 1 when said top-lift carrier or holder is moved by its actuating rod 7 into its full line position, Fig. 1, that is, its top-lift receiving position, whereby when the carrier assumes such position, the wedge 48 is withdrawn from between the collar 25 and lugs 49 to thereby unlock the breast gage and free it to the yielding action of the spring 24, as will be readily understood. The breast gage being thus unlocked, the top lift 34 can readily be placed between the breast and back gages by merely pressing the breast gages away from the back gage, and upon movement of the top-lift carrier or holder toward the top-lift attaching position, see dotted lines Fig. 1, the spring 51 will actuate the wedge 48 and force it forward between the collar 25 and lugs 49 to maintain the gages in the position assumed by them when a top lift is placed between them, and said wedge will remain in this position as the top-lift carrier moves to top-lift attaching position and back again, it being understood that this locking characteristic does not preferably impart movement of the gages toward each other, but merely holds them in the position assumed by them in accommodating themselves to a top lift placed between them.

As well understood by those skilled in the art, it is desirable that the breast and back gages of a top-lift holder should have their top-lift engaging edges of sufficient thickness to properly hold the top lift and yet not interfere with the proper action of the machine as it spans the top-lift onto the heel. On the other hand, top lifts vary in thickness, so that gages which would be of proper character for one set of top lifts might be unsuited for another set of less thickness, said gages in such case contacting with the tread face of the heel and interfering with the proper application of the spanning pressure. The present invention contemplates means to overcome these and other objections as will now be explained, it being understood that this feature of

the invention is not restricted to the details which are illustrated as one embodiment thereof.

Each of the holders 36 of the breast gage 5 is provided with a top-lift engaging portion 54, which may embrace the corners of the top lift as shown, Fig. 2, or otherwise. These top-lift engaging portions 54 project somewhat from the surface of the breast gage which will be next to the heel as the top lift is attached thereto, and are provided with sharpened or pointed edges 55, Fig. 3, so that as the top-lift carrier plate 14 is forced downward to attach the top lift to the heel, the sharpened edges 55 will readily sink into the adjacent surface of the heel 56, as indicated in Fig. 4, without interfering with the proper application of the pressure to the top lift and its consequent attachment to the heel, as will be understood by those skilled in the art. The back gage 37 may also be provided with a top-lift engaging portion 57 projecting from that face of the back gage that will be next to the heel as the top lift is attached, but in the case of the back gage 37 the top-lift engaging portion 57 is preferably, though not necessarily, formed as curved in the general direction of the top-lift contour at the rear thereof, and, like the breast engaging portions, it is provided with a sharpened edge 58, which, as pressure is applied to attach the top lift to the heel, may sink into the surface of the heel lift. Inasmuch as the top-lift is the part to which the heel is trimmed to conform, it will be noted that the cuts or indentations formed by the edges 55 and 58 in the heel lift will serve as guides for subsequent heel trimming.

From the construction described, it will be apparent to those skilled in the art that the formation of the engaging portions 54 and 57 with beveled or sharpened projecting edges enables top lifts of any usual thickness to be held by the gages and in case the top lifts are unusually thin, these sharpened or beveled edges 55 and 58 simply sink into the heel lift and form cuts or indentations that may subsequently serve as guides in trimming the heel.

By reason of the swinging character of the back gage and the normal tendency of the breast and back gages to yieldingly move toward each other, it will be apparent that there will be a self centering action for the top lift, as described in my said prior application, such action in the present case being limited by the stop pin 42.

It will be understood that the top-lift engaging portions of the gages having sharpened edges may be variously formed and that the invention is generic in this respect and inclusive of various changes that may occur to those skilled in the art. It will also be obvious that while the invention has been

described and shown in connection with top lifts only, features thereof are applicable for use in other relations and the invention, of course, includes such uses.

What is claimed is:

1. In a machine of the character described, the combination of a carrier, means for moving the carrier, a plurality of gages mounted for movement therewith to hold the work as it is transferred to operative position, a lock for preventing the separation of said gages during movement of the work to operative position, and means actuated upon movement of the carrier for operating said lock.

2. In a machine of the character described the combination of a carrier, means for moving the carrier to transfer the work to operative position, means for engaging and holding the work on the carrier, a lock to prevent release of the work as the carrier is moved, and means operated upon actuation of the carrier to operate said lock.

3. In a machine of the character described, the combination of a carrier movable to and from work receiving and operating positions, a plurality of gages mounted for movement with the carrier, means acting automatically to lock the gages from relative movement as the carrier moves from receiving to operating position, and means acting automatically to free the gages from such lock when the carrier is moved to receiving position.

4. In a machine of the character described, the combination of a carrier, a plurality of gages mounted for movement therewith, yielding means normally acting to cause said gages to clamp the work placed between them, means to prevent relative movement of the gages to release the work as it is moved to operative position, and means to free the gages to the control of the said yielding means when the carrier is moved to receiving position.

5. In a top-lift carrier or holder, the combination of a top-lift plate, breast and back gages, means for moving one of said gages relatively toward the other to hold a top lift between them, and means to prevent separation of said gages as the carrier or holder moves to operative position and to free said gages for separation when the carrier is moved to inoperative position.

6. In a machine of the character described, the combination of a top-lift holder or carrier, means for yieldingly moving the holder or carrier to operative position, a back gage and breast gage to hold the top lift during movement of the holder or carrier to operative position, and means acting automatically to lock and unlock the gages as the holder or carrier moves to and from operative position.

7. In a machine of the character described,

the combination of a top-lift holder or carrier, means for yieldingly moving the holder or carrier to operative position, a back gage and breast gage to hold the top lift during movement of the holder or carrier to operative position, and means for locking the gages in work holding position during movement of the holder or carrier to operative position.

8. In a machine of the character described, the combination of a cross head, a top-lift carrier movable to and from operative position, means for swinging the top lift carrier in a vertical plane to operative position with respect to the cross head, a plurality of gages for engaging and holding a top lift placed between them, and means operating to lock the gages in work holding position during movement of the carrier to operative position.

9. A top-lift carrier, comprising a plurality of gages for holding a top lift placed between them, and having top-lift engaging portions, said top-lift engaging portions having sharpened edges to engage the face of a heel lift as the top lift is applied to the heel.

10. In a top-lift carrier, the combination of a breast gage and a back gage, and means for acting upon said gages to cause them to hold a top lift between them, said gages having top-lift engaging portions provided with sharpened or beveled edges to contact with a heel lift as the top lift is applied to the heel.

11. A top-lift holder having a top-lift plate against which a top lift may rest as it is being applied to the heel, and top-lift holding devices having top-lift engaging portions to contact with the edges of the top lift, said portions having sharpened edges extended from the holding devices in a direction away from the top-lift plate and toward the heel lift to contact with and sink into the heel lift as the top lift is being applied to the heel.

12. In a machine of the character described, the combination of a top-lift plate against which a top lift may bear as it is being applied to a heel, and means for holding the top lift in position with reference to said plate, said means being provided with a top-lift engaging portion having sharpened or beveled edges projecting in a direction away from the top-lift plate and adapted to engage and sink into the heel lift as the top lift is being applied to the heel.

13. In a machine of the character described, the combination of a top-lift plate against which the tread face of the top lift bears as it is being applied to a heel, a breast gage, and a back gage having top-lift engaging portions to contact with the edge of the top lift and hold it in position with respect to said top-lift plate, the edges of said top-lift engaging portions being beveled or sharpened and directed toward the heel lift as the top lift is being applied.

14. A top-lift holder for boot and shoe machines, comprising breast and back gages provided with top-lift engaging portions and 57 respectively, said portions having edges 55 and 58 respectively directed away from the tread surface of the top lift when in position between the gages.

15. A top-lift holder for boot and shoe machines, comprising breast and back gages provided with top-lift engaging portions 54 and 57 respectively, said portions having edges 55 and 58 respectively directed away from the tread surface of the top-lift when in position between the gages, one of said gages being yieldingly supported to move toward the tread surface of the top lift as it is applied to the heel.

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

WILLIAM C. STEWART.

Witnesses:

ROSWELL F. HATCH,
REDFIELD H. ALLEN.