E. E. WINKLEY.

MAGAZINE FOR HOLDING BLANKS.

APPLICATION FILED MAR. 4, 1920.

1,366,549. Patented Jan. 25, 1921.

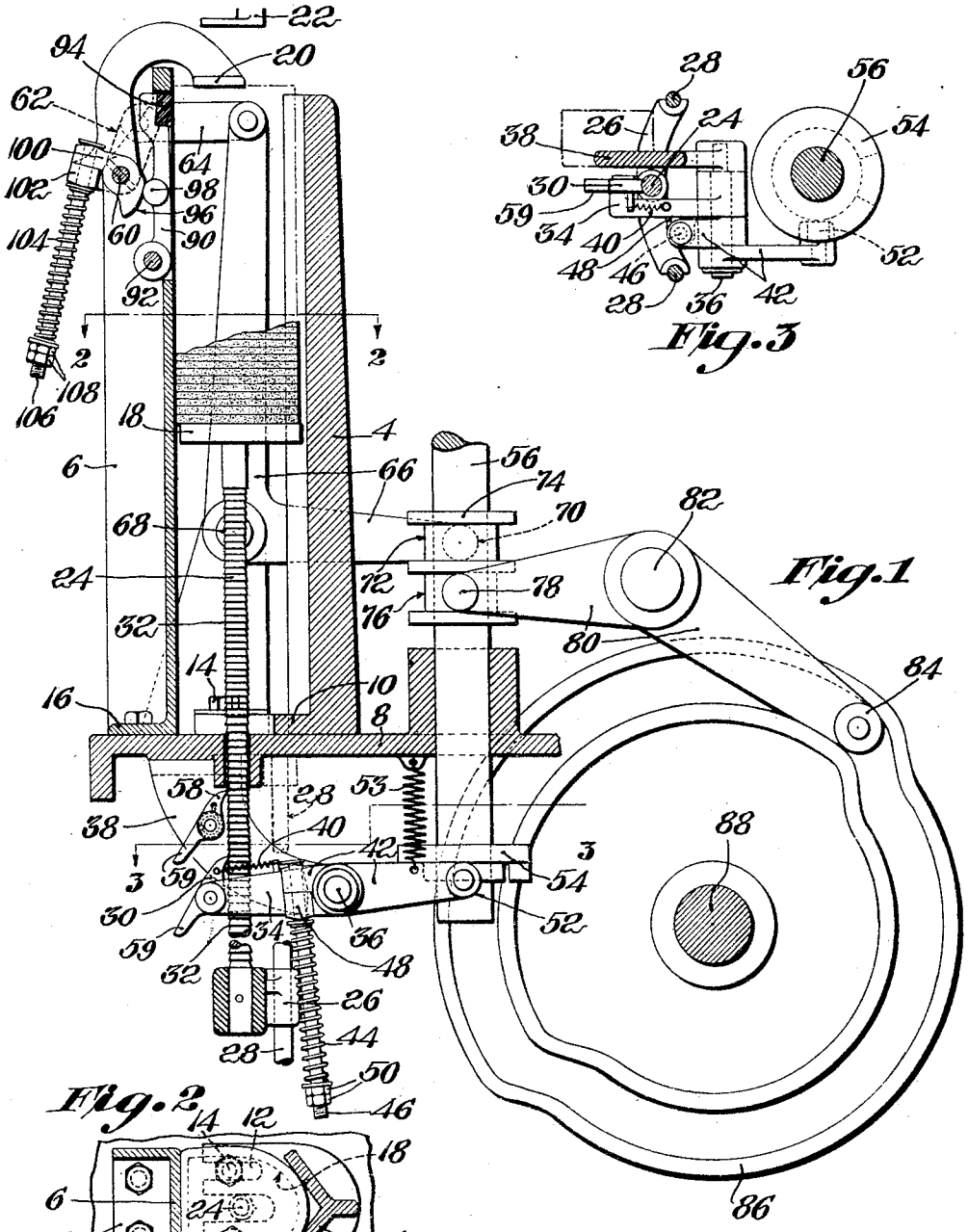
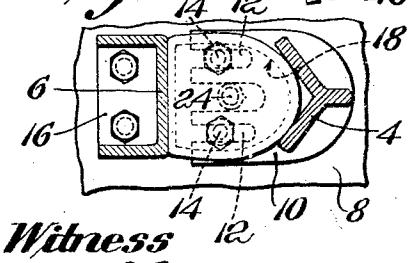


Fig. 1

Fig. 3

Fig. 2



Witness

John J. Ellery.

Inventor

Erastus E. Winkley

by his attorneys

Van Everen, Fish & Hildreth

UNITED STATES PATENT OFFICE.

ERASTUS E. WINKLEY, OF LYNN, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY CORPORATION, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

MAGAZINE FOR HOLDING BLANKS.

1,366,549. Specification of Letters Patent. **Patented Jan. 25, 1921.**

Application filed March 4, 1920. Serial No. 363,278.

To all whom it may concern:

Be it known that I, ERASTUS E. WINKLEY, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Magazines for Holding Blanks; and I 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 to magazines for holding blanks in stack formation, in which the stack is advanced to bring the blanks successively to a predetermined position in the magazine from which they may be automatically removed. More particularly the invention relates to heel-lift magazines of the type disclosed in the applicant's copending application, Serial No. 252,769, filed Sept. 5, 1918, and assigned to the United Shoe Machinery Corporation.

The object of the present invention is to provide certain improvements in the construction and mode of operation of magazines of the above described general character for the purpose of increasing their efficiency and reliability.

To this end the invention contemplates the provision, in a magazine for holding blanks in stack formation, having means for advancing the stack toward one end of the magazine, of a stop member which is normally positioned to limit the advance of the stack and adapted to be withdrawn from operative position to permit the removal of the endmost blank, and normally inoperative clamping means, which is rendered operative by the withdrawal of the stop member, for preventing movement of the stack in the magazine.

The features of the present invention will be best understood from a description of the preferred embodiment thereof, illustrated in the accompanying drawings, in which:—

Figure 1 is a vertical sectional view of a heel-lift magazine embodied in an automatic heel-building machine, showing the mechanism associated with the magazine for feeding the lifts successively into the field of operations of a picker by means of which they are transferred to the assembling station of the machine; Fig. 2 is a detail sectional view taken on the line 2—2 of Fig. 1; and Fig. 3 is a detail sectional view taken on the line 3—3 of Fig. 1.

As shown in the drawings, the lifts are stacked in a vertical column within a magazine having side walls consisting of two upright members 4 and 6, which rise from a supporting plate 8. The upright member 4 is V-shaped in cross-section and serves to position the rear or curved edges of the lifts contained within the magazine. The lower end of the V-shaped member 4 is provided with a laterally extending base 10 having a plurality of elongated slots 12 (Fig. 2) through which suitable clamping devices 14 project for the purpose of adjustably clamping the member 4 in position on the plate 8. The upright member 6 is channel-shaped, having a flat vertical surface opposed to the V-shaped member 4, for engaging and alining the breast edges of the lifts, and a base 16 that is suitably secured to the supporting plate 8. The stack of lifts rests upon a vertically movable follower plate 18.

The stack of lifts is fed upwardly in the magazine by successive yielding feed-movements so as to raise the lifts, one after another, into engagement with a stop-member 20 at the top of the magazine, and into the field of operations of a picker 22. The picker 22 is of the paste-picker type disclosed in the application above referred to and is periodically brought to rest above the magazine, depressed to bring its flat under surface, which is coated with paste, into engagement with the uppermost lift therein and then raised, with the lift adhering thereto, and moved to one side to transfer the lift to the assembling station of the heel building machine. The stop-member 20 is adapted to be withdrawn from its operative position above the stack of lifts after each feed movement of the stack to permit the descent of the picker 22 and the removal thereby of a lift from the stack.

In order to provide for the upward feeding of the stack of lifts in the magazine the follower plate 18 is carried at the top of a follower rod 24 which is movable vertically through suitable openings in the supporting plate 8 and in the base 10 of the upright magazine member 4. To the lower end of the follower rod 24 is secured a guide

26 having oppositely extending arms which engage and slide upon suitably supported stationary guide-rods 28.

The means for actuating the follower rod 24, to effect the feeding of the lifts, comprises a feed-pawl 30 which engages rack teeth 32 on the follower rod. The feed-pawl is carried by a feed-arm 34 that is pivoted on a stud 36 projecting from a bracket 38 that is secured to the underside of the supporting plate 8. A spring 40, one end of which is secured to the feed-pawl and the opposite end to the feed-arm, holds the pawl in operative engagement with the rack teeth on the follower rod. The feed-arm 34 is actuated to raise and lower the feed-pawl by means of a lever 42 which is pivoted alongside the feed-arm on the stud 36. The arm of the lever 42 which extends toward the feed-pawl is yieldingly connected with the feed-arm 34 by a spring 44. The spring 44 is coiled around a rod 46 which projects downwardly from the lever 42 and extends through an opening in a lug 48 on the side of the feed-arm 34 beneath the adjacent arm of the lever, the spring 44 being interposed between the lug 48 and a pair of nuts 50 on the lower end of the rod 46. The opposite end of the lever 42 carries a cam-roll 52 which is held by a spring 53 against the under face of the cam 54 which is secured to a vertical shaft 56. The shaft 56 is continuously driven and is adapted to make one revolution for each cycle of operations of the machine. At each revolution of the cam 54 the lever 42 is rocked in a direction to impart a single feed movement to the lifts in the magazine.

The movement of the lever 42 in the direction to raise the feed-pawl 30 is transmitted to the latter through the spring 44 so that the stack of lifts is yieldingly raised until its movement is arrested by the stop-member 20. Return movement of the follower is prevented by a spring-actuated holding-pawl 58 which is pivoted on the bracket 38. At the completion of each feed movement the lever 42 moves in the opposite direction under the influence of the spring 53, engaging the lug 48 on the feed-arm 34 and retracting the feed-pawl to normal position. The feed-pawl 30 and the holding-pawl 58 are severally provided with downward extensions 59, by means of which they may be manually disengaged from the rack teeth of the follower rod to permit the follower plate to be lowered when it is desired to replenish the supply of lifts in the magazine.

After each upward movement of the stack of lifts the stop-member 20 is withdrawn from the top of the magazine to permit the removal of the uppermost lift by the picker 22. In order that the stop-member 20 may be withdrawn for the above purpose it is secured to a rock-shaft 60 which is journaled in the side-webs of the channel-shaped upright 6. The means for operating the rock-shaft 60 comprises an arm 62 which is secured thereto and connected by a link 64 with an upwardly extending arm of a bell-crank lever 66 that is fulcrumed upon a fixed pivot 68. The other arm of the bell-crank lever 66 is provided with a pin 70 which enters a groove 72 in a sleeve 74 that is mounted to slide on the vertical shaft 56. A similar groove 76 in the sleeve 74 is entered by a pin 78 projecting from a cam lever 80 which is fulcrumed upon a fixed pivot 82. The cam lever 80 carries a cam-roll 84 which rides in a groove in a cam 86 that is secured to a cam-shaft 88 of the heel-building machine. The cam-shaft 88 is continuously driven and is adapted to make a single revolution for each cycle of operations of the machine, and the cam 86 is so designed that the stop-member is withdrawn and returned once at each revolution of the cam.

Inasmuch as the lifts are fed yieldingly against the stop-member 20 the stock is more or less compressed between the stop-member and the follower plate 18, at each feed movement. When the stop-member is withdrawn from operative position it is desirable to prevent upward movement of the stack due to the expansion of the somewhat compressed lifts, in order to maintain the lifts under control and prevent the possibility of the uppermost lifts becoming laterally displaced as they rise beyond the upright magazine member 4. To this end a movable clamping member 90 is mounted in an opening near the top of the transverse web of the upright magazine member 6, the lower end of the clamping member being pivoted upon a rod 92 that is supported by the side webs of said magazine member. The clamping member 90 is actuated so as to clamp the lifts near the top of the stack between the inner faces of the upright magazine member 4 and a clamp-jaw 94 of yielding material which is carried at the upper end of the clamping member 90.

The means for actuating the clamping member 90 comprises a cam 96 that is pivoted on the rock-shaft 60 and is adapted to engage a projection 98 on the clamping member. The cam 96 is provided with an operating arm 100 which is normally held in engagement with a lug 102 on the side of the stop-member 20 by means of a spring 104. The spring 104 is coiled about a rod 106 which projects downwardly through an opening in the arm 100 and extends through an opening in the lug 102, the spring being confined between said lug and a pair of nuts 108 at the lower end of the rod 106. With this construction the movement of the stop-member 20, as it is withdrawn from opera-

tive position, is transmitted through the spring 104 to the arm 100 so as to rock the cam 96 yieldingly in a direction to force its cam face against the projection 98. The yielding rocking movement of the cam 96 presses the clamp-jaw 94 against the edges of the adjacent lifts thus firmly clamping them against upward movement in the magazine. The clamp-jaw 94 falls short of extending to the top of the stack by a sufficient distance to insure that the uppermost lift, at least, will not be clamped but will be free to be removed by the picker. When the stop-member is returned to operative position the arm 100 is engaged by the lug 102 and positively rocked thereby in the opposite direction from that in which it was yieldingly rocked, thus releasing the clamping member 90 and leaving the lifts free to be advanced upwardly by the feed mechanism.

The employment of a stop-member for limiting the extent of upward movement of the stack of lifts in the magazine, and the provision of feed mechanism which acts, between successive operations of the picker, to yieldingly advance the uppermost lift into engagement with the stop-member, insures the feeding of said lift to a predetermined position within the field of operations of the picker 22 before the picker is depressed toward the top of the magazine. It will be apparent that by means of the clamping member 90, the uppermost lift in the stack is prevented from being displaced, upon the withdrawal of the stop-member, and is maintained in the proper position to be seized by the picker as the latter operates, immediately after the clamping operation, to remove a lift from the magazine.

While it is preferred to employ the specific construction and arrangement of parts shown and described, it will be understood that this construction is not essential except so far as specified in the claims and may be changed or modified without departing from the broader features of the invention.

The invention having been described, what is claimed is:—

1. The combination with a magazine for holding blanks in stack formation, of means for advancing the stack toward one end of the magazine, a stop member normally positioned to limit the advance of the stack and adapted to be withdrawn from operative position to permit the removal of the endmost blank, and means rendered operative by the withdrawal of the stop member for preventing movement of the stack in the magazine.

2. The combination with a magazine for holding blanks in stack formation, of means for advancing the stack toward one end of the magazine, a stop member normally positioned to limit the advance of the stack and adapted to be withdrawn from operative position to permit the removal of the endmost blank, and a normally inoperative clamp member operated by the withdrawal of the stop member to engage the blanks near the leading end of the stack to prevent movement of the endmost lift.

3. The combination with a magazine for holding blanks in stacked formation, of means for advancing the stack through the magazine, a pivoted stop member normally projecting into the path of movement of the stack for limiting its advance and adapted to be swung aside to permit the removal of the endmost blank, a clamp member for holding the stack against movement in the magazine, and a cam actuated by the withdrawal of the stop member for operating the clamp member.

4. The combination with a magazine for holding blanks in stacked formation, of means for advancing the stack through the magazine, a pivoted stop member normally projecting into the path of movement of the stack for limiting its advance and adapted to be swung aside to permit the removal of the endmost blank, a clamp member for holding the stack against movement in the magazine, and means actuated yieldingly by the withdrawal of the stop member for operating the clamp member.

5. The combination with a magazine for holding blanks in stacked formation, of means for advancing the stack toward one end of the magazine, a stop member alternately moved into position to limit the advance of the stack and withdrawn to permit the removal of the endmost blank from the magazine, and a clamp member actuated yieldingly by the withdrawal of the stop member to hold the stack against movement in the magazine and positively by the return of the stop member to operative position to release the clamping member.

6. The combination with a magazine for holding blanks in stacked formation, of intermittently actuated feed mechanism for advancing the stack toward one end of the magazine, a stop member moved into position prior to each feed movement to limit the advance of the stack and withdrawn at the completion of the feed movement to permit the removal of the endmost blank from the magazine, and a clamp member operated by the withdrawal of the stop member to hold the stack against expansion in the magazine.

7. The combination with a magazine having side walls for holding blanks in stacked formation, of feed mechanism for advancing the stack through the magazine, a stop member pivoted near one end of the magazine and adapted to be alternately swung inwardly to engage the outer face of the endmost blank in the stack to limit the movement of said blank and to be swung outwardly to

permit the removal of said blank from the magazine, a clamp member pivotally mounted in an opening in one of the side walls adjacent the discharge end of the magazine for engaging the edges of a plurality of blanks near the leading end of the stack to prevent the advance of the stack through the magazine, and means actuated by the outward movement of the stop member for moving the clamp into operative position and by the inward movement of the stop member for releasing the clamp.

ERASTUS E. WINKLEY.