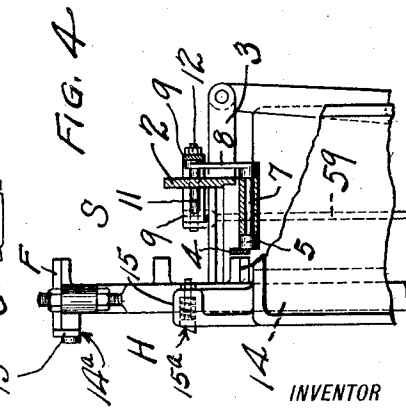
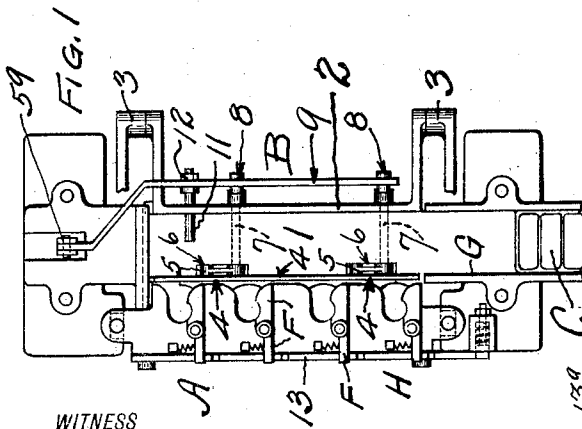
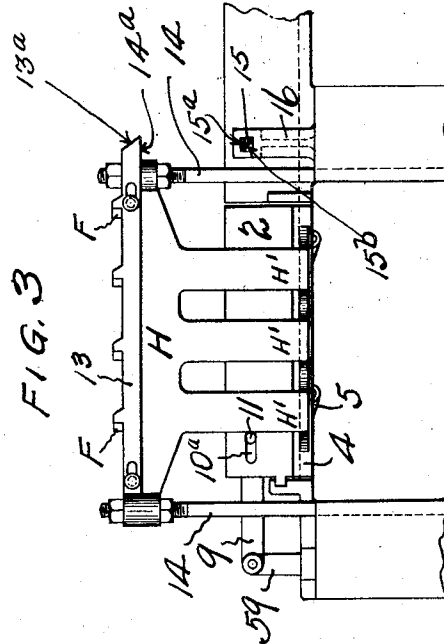
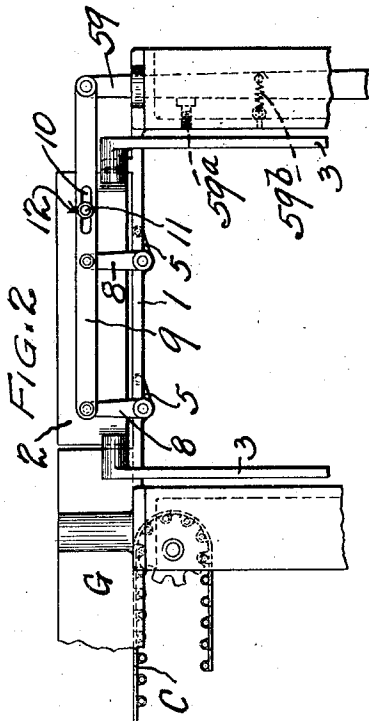


L. A. HAWTHORNE.
CONTAINER COLLECTING STATION FOR CRATING MACHINES.
APPLICATION FILED FEB. 15, 1919.

1,361,725.

Patented Dec. 7, 1920.

2 SHEETS—SHEET 1.



WITNESS

Emory S. Buff

INVENTOR

LOUIS A. HAWTHORNE.

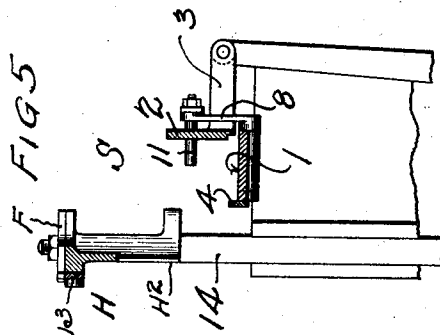
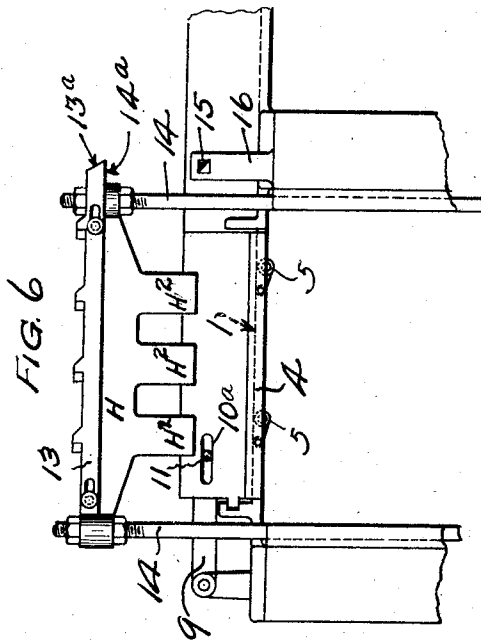
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J. M. McArthur
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WITNESS

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UNITED STATES PATENT OFFICE.

LOUIS A. HAWTHORNE, OF NEWARK, NEW JERSEY, ASSIGNOR TO STEEL UTILITIES
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CONTAINER-COLLECTING STATION FOR CRATING-MACHINES.

1,361,725.

Specification of Letters Patent.

Patented Dec. 7, 1920.

Application filed February 15, 1919. Serial No. 277,194.

To all whom it may concern:

Be it known that I, LOUIS A. HAWTHORNE, citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Container-Collecting Stations for Crating-Machines, of which the following is a specification.

This invention relates to certain practical improvements in crating machinery of the general type disclosed in my application for Letters Patent Serial No. 268,738, filed December 28, 1918, and primarily has for its object to facilitate, as well as to render safer, the operation of assembling bottles or other containers into convenient units or groups for transference to a shipping crate or box.

A distinctive object of the present invention is to provide a novel container collecting device which is automatically operative regardless of the movement of the means which transfers the assembled containers from the collecting station to the crates, thereby obviating the danger of the containers awaiting transfer from falling from their proper station while the transferring means is moved from its normal receiving position.

A further object of the invention is to provide means for releasing the containers into the crate so that the same will be gently deposited in final position without any appreciable shock or jar. That is to say, it is proposed to so construct and equip the transfer head, which constitutes a part of the collecting station, that the bottles or other containers may be lowered relatively close to or directly in touch with the floor of the crate and released by the holding means of the head as the same begins its upward movement. In this way the bottles or other containers will be placed or laid on the floor of the crate without any appreciable momentum or acceleration imparted thereto by the downward movement of the head.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of

the invention is shown in the accompanying drawings, in which:—

Figure 1 is a top plan view of the collecting station of the crating machine, showing the improved means for collecting the containers in a group.

Fig. 2 is a side elevation thereof, looking toward the side at which the placing device is located.

Fig. 3 is a side elevation of the station looking toward the side at which the transferring head is located, and clearly showing the improved container releasing means.

Fig. 4 is a combined elevation and transverse sectional view of the collecting station.

Fig. 5 is a vertical sectional view of a modified type of head to permit the bottles to reach the bottom of the crate before being released.

Fig. 6 is a side elevation of the construction shown in Fig. 5.

Similar reference numerals designate corresponding parts throughout the several figures of the drawings.

The bottle collecting station, designated in its entirety by the reference character S, includes a table-like supporting platform 1 having at one side thereof a container transfer device A. This device consists of a vertical reciprocating transferring head H fed with the containers from the platform by the placing device designated generally as B, and which primarily includes a pusher plate 2 actuated from the arms 3. At one end of the platform 1, the permanent guideway G is located, the floor of said guideway being an endless conveyor belt C for feeding and directing the filled bottles or containers onto the table or platform 1.

In my application Serial No. 268,738, the lower edge of the transferring head H when in normal position coöperates with the pusher plate of the placing device B to form a guideway extending across the platform 1 for the full width of the transferring head, but in the present invention, to insure the proper guiding of the bottles, in single file, across the platform 1 regardless of the position of the head H, it is proposed to provide a novel device which is automatically controlled by the containers themselves, to properly guide the same across the platform when the transferring head is lowered.

The novel device referred to includes a shiftable guard rail 4 which parallels the edge of the platform 1 at the transfer side, and normally projects a sufficient distance above the level of the platform to constitute an effective guide cooperating with the pusher plate 2 to keep the containers in proper alinement and thereby provide a temporary guideway over the platform 1 which is in effect a continuation of the permanent guideway G. The said guard rail 4 is suitably supported on the levers 5 normally flush with the top of the platform 1 and located in suitable cut-away portions 6 thereof as shown in Fig. 1 of the drawings. These levers 5 are carried upon shafts 7 having at their outer ends the upstanding lever arms 8 connecting at their upper ends with the angular control bar 9 which in turn is pivoted to the vertically disposed lever 59 which constitutes a part of a container-actuated control or stop motion device preferably as described in my application aforesaid. The said bar 9 is slotted as indicated at 10, and the wall or plate 2 of the placing device B is also similarly slotted as at 10^a, whereby a stop pin 11 carried in the slot 10 of the bar 9 may project through the wall 2, into the path of containers being fed onto the platform 1. In connection with the pin 11 it will be noted that the same is adjustably connected with the bar 9 by means of the nuts 12, whereby it may be adjusted within the slot 10 to meet various conditions of use.

From the foregoing it will be apparent that the normal position of the guard rail 4 is as shown in Fig. 4, and when a sufficient number of containers have collected on the platform 1, the foremost container will engage the stop 11 to thus shift the bar 9 which in turn will move the arms 8 on shafts 7 and cause the levers 5 carrying the guard rail to drop the rail below the plane of the platform 1, and thereby open a free and unobstructed path for the assembled containers as they are fed into the transferring head. The shifting of the arm 9, also sets into motion suitable instrumentalities which operate to cause the plate 2 of the placing device B to sweep across the platform 1, and feed the containers into the transferer.

After the assembled containers have been placed in the transferring head, the latter drops to place this group in the crate, and the guard rail 4 jumps back into its normal position due to the fact that the lever 59, which is connected with the bar 9, is returned to its normal position against the adjustable stop 59^a by means of a spring 59^b, as shown in Fig. 2 of the drawings. The wall 2 of the placing device B will also be returned to its normal or starting position, and with the rail 4 will again constitute

in effect a continuation of the walls of the fixed guideway G for guiding in proper alinement, additional containers across the platform while the head H is performing its cycle of operation.

The said transferring head H which receives the bottles from the platform 1 and transfers them into the crate is equipped with means for placing the bottles gently in their final resting place on the floor of the crate. That is to say, the transferring head H is especially designed and constructed to meet the requirement of gently depositing the containers on to the floor of the crate according to whether the latter has a plain open interior or is provided with the so called checkers or cells for receiving the individual containers. The head shown in Figs. 1 to 4 inclusive of the drawings is provided with the depending guide members H' whose lower ends register with the platform 1 when the head is in its raised position. This type of head will readily descend far enough into a crate having an open interior to permit of the containers being placed or deposited directly on or slightly above the floor of the crate before the upper ends thereof are disengaged by the holding means carried by the upper part of the head.

However, when a cellular crate is used, the construction shown in Figs. 5 and 6 of the drawings is preferred. From these figures it will be seen that the depending guide portions H² of the transferring head are relatively short as compared with corresponding members H' of the transferring head shown in Figs. 1 to 4 inclusive, to allow the containers to project approximately the same distance below the bottom edges thereof as the height of the checkers in the crate. This construction therefore permits of the containers being lowered to the bottom of the crate before being released by the gripping fingers F and insures the elimination of practically all shock or jar when being deposited into the crates. Although the guide portions H² are relatively short they are nevertheless sufficiently long to give the proper steadying and guiding effect to the containers while being transferred from the level of the platform 1 into the crate.

Accordingly, it will be apparent that when the containers are to be placed in a crate having no checkers the construction of the head H shown in Figs. 1 to 4 inclusive of the drawings will allow the bottles to reach the bottom of the crate, before they are released from the head, but in case the containers are to be placed in crates having checkers the head having the truncated guide portions H² may be used to advantage. In addition to being thus equipped for gently placing the bottles on the floor of the

crates the said transferring head H is provided with means for holding the containers until they are deposited onto or at a negligible distance above the floor of the crate, not releasing the same until the head begins its upward movement, thus eliminating the possibility of any of the momentum of the descending head being imparted to the containers. That is to say, the releasing bar 13 of the transferring head which performs the function of releasing the spring-pressed keeper fingers F from engagement with the necks of the bottles, is, in this embodiment of the invention, as in the arrangement set forth in my other application mentioned, mounted to shift longitudinally, and is provided at one end with a beveled latch portion 13^a. The inclination of the bevel 13^a is downwardly from the top of the bar toward the bottom edge thereof whereby as the entire transferring head H moves downwardly with the rods 14, the bar 13 will remain in its original position for the full length of the downward movement of the head, thus insuring that the bottles, at the end of this cycle of the operation of the head, are still held engaged by the keeper fingers F so that their emplacement will not in any way be accelerated by the head movement.

For the purpose of causing the head 13 to move at the proper time, namely at the start of its upward movement, a novel spring-pressed latch member 15 is provided. This latch is carried in a suitable standard 16, and has an upper beveled face 15^a which is adapted to be engaged by the straight edge portion 14^a of the bar 13 as it moves downward, and also has a bottom or undercut beveled face 15^b which is adapted to engage with the bevel face 13^a of the bar as soon as the head H starts its upward movement to thereby release the keeper fingers F from their gripping engagement with the necks of the bottles. Therefore, by the use of this novel type of latch it will be apparent that the bar will not be actuated on the downward movement of the head, but on the contrary will be shifted as soon as the same starts its upward movement so that the bottles or containers will be released without the accelerated momentum imparted thereto by the downward movement of the transferring head.

From the foregoing it is thought that the many features and advantages of the invention will be readily apparent, and it will be understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit of the invention or scope of the appended claims.

I claim:

1. A crating machine including a collecting station for the containers, a transfer de-

vice for the assembled containers, a placing device operating toward the transfer device, and a container controlled receding guard interposed between the placing device and the transfer device.

2. A crating machine including a collecting station for the containers, a transfer device for the assembled containers, a placing device operating toward the transfer device, and a container controlled receding guard rail interposed between the transfer device and the placing device and arranged to constitute a part of the guideway for the containers awaiting transfer.

3. A crating machine including a collecting station having a platform, a transfer device for the assembled containers operating at one side of the platform, a placing device operating over the platform toward the transfer device, means for guiding the containers onto the platform between the transfer device and the placing device, and a container controlled guard operating between the transfer device and the placing device and arranged to guide and hold the containers awaiting transfer.

4. In a crating machine, a collecting station including a transferring head and a container supporting platform, a pusher plate at one side of the latter, a guard rail at the leaving edge of the platform, and container controlled means for operating the guard rail.

5. In a crating machine, a collecting station including a transferring head and a container supporting platform, a pusher plate arranged at one side of the latter and constituting a container guide wall across the said platform, and a container actuated guard rail at the leaving edge of the platform constituting the other wall of the guideway across the platform.

6. In a crating machine, a collecting station including a transferring head and a container supporting platform, a pusher plate at one side of the latter, a guard rail arranged at the leaving edge of the platform, lever means for supporting the guard rail, and means adapted to be engaged by the containers for operating said lever means to lower the guard rail beneath the plane of the said platform.

7. In a crating machine, a collecting station including a transferring head and a container supporting platform, a pusher plate arranged at one side of the latter and constituting a container guide wall across the said platform, a guard rail arranged at the leaving edge of the platform and constituting the other wall of the guideway across the platform, and means actuated by the containers for causing said guard rail to drop below the plane of the platform.

8. In a crating machine, a collecting station including a container supporting plat-

form, a placing device at one side of the platform, including a pusher plate adapted to form one wall of a temporary guide-way across the platform, a guard rail arranged at the leaving edge of the platform and constituting the other wall of the said temporary guide-way, and container controlled means for causing said guard rail to drop beneath the supporting surface of the platform simultaneously with the movement of the pusher plate across the same.

9. In a crating machine, a collecting station including a container supporting platform, a placing device at one side of the platform including a pusher plate adapted to form one wall of a temporary guide-way across the platform, a guard rail arranged at the leaving edge of the platform and constituting the other wall of the said temporary guide-way, and means for causing the guard rail to drop below the supporting surface of the platform to permit the pusher plate to displace containers therefrom, said means including an abutment located in the temporary guide-way.

10. In a crating machine, a collecting station including a transferring head and a container supporting platform, a pusher plate arranged at one side of the latter and constituting a container guide wall across the said platform, a guard rail arranged at the leaving edge of the platform and constituting the other wall of the guide-way across the same, levers for supporting said guard rail, shafts for carrying said levers journaled in the bottom side of said platform, arms carried by the shafts, a bar connecting said arms, and means projecting laterally from said bar and into the guide-way extending across the platform, whereby the containers may actuate the bar by striking against said means.

11. In a crating machine, a container supporting platform, a vertically reciprocating transferring head arranged to receive containers from said platform and including container engaging means, a horizontally

shiftable bar for actuating said container engaging means, and means whereby as the transferring head descends to its downward limit the releasing bar will remain stationary, but at the beginning of its upward movement will be shifted horizontally to release the container engaging means from engagement with the containers.

12. In a crating machine, a collecting station including a container supporting platform, and a vertically reciprocating transferring head located at one side thereof, said head including container engaging means, and a horizontally shiftable bar for releasing said container engaging means, said bar having a beveled end portion, and a spring pressed latch member having reversely disposed latch faces for engaging with the straight edge and beveled end of the bar, whereby as the transferring head descends to its downward limit the bar will remain in its original position but at the beginning of its upward movement will be shifted to release the container engaging means.

13. In a crating machine, a container supporting platform, a vertically reciprocating transferring head arranged to receive containers from said platform and including container engaging means, a horizontally shiftable bar for actuating said container engaging means, and means for shifting said bar at the beginning of the return movement of the transferring head, said means consisting of a spring pressed latch having an upper inclined face for engaging with the straight bottom edge of the releasing bar as the same descends, and also having a lower under-cut inclined face for engaging with a correspondingly beveled face on the end of the releasing bar, as it ascends.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

LOUIS A. HAWTHORNE.

Witnesses:

C. M. WRIGHT,
FREDK. G. HOLZWORTH.