L. A. HAWTHORNE.

CRATING APPARATUS FOR BOTTLES AND THE LIKE.

APPLICATION FILED MAR. 6, 1917.

1,243,406.

Patented Oct. 16, 1917.

2 SHEETS—SHEET 1.

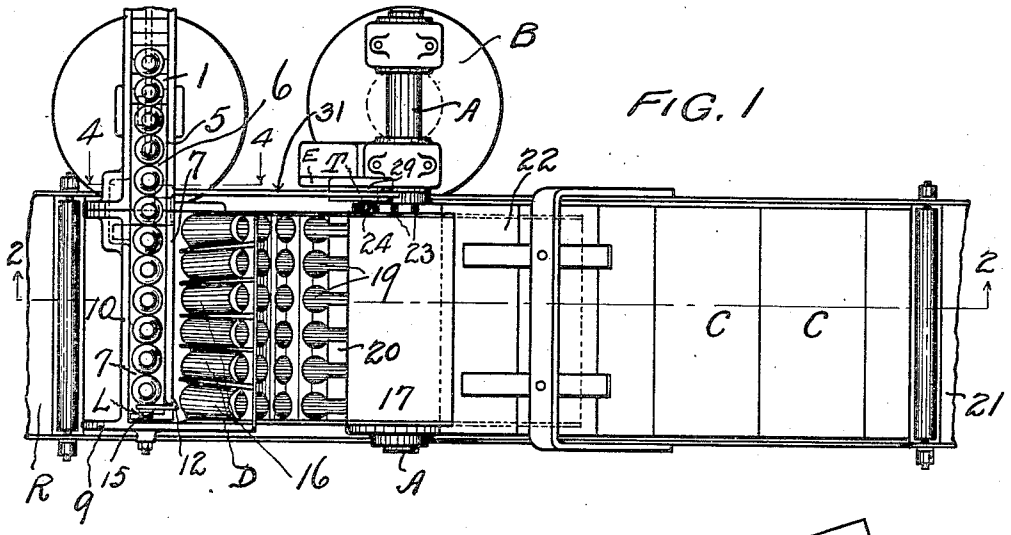
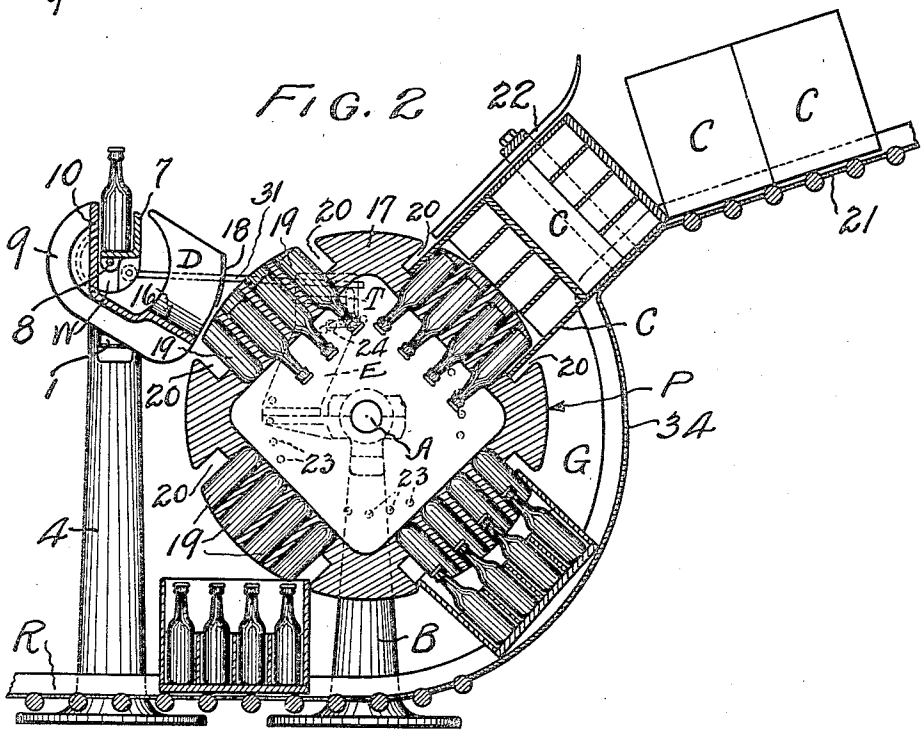


FIG. 1

FIG. 2



WITNESS

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2 SHEETS—SHEET 2.

FIG. 6

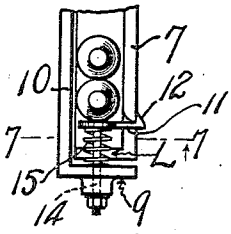


FIG. 7

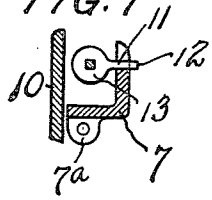


FIG. 5

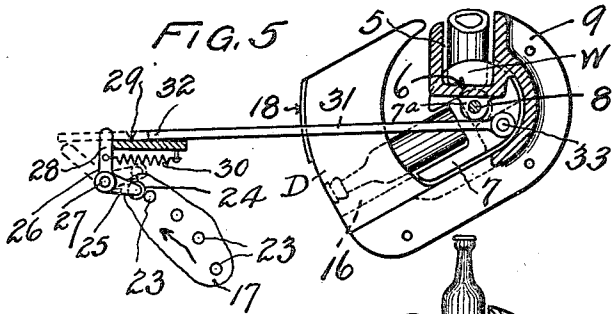


FIG. 4.

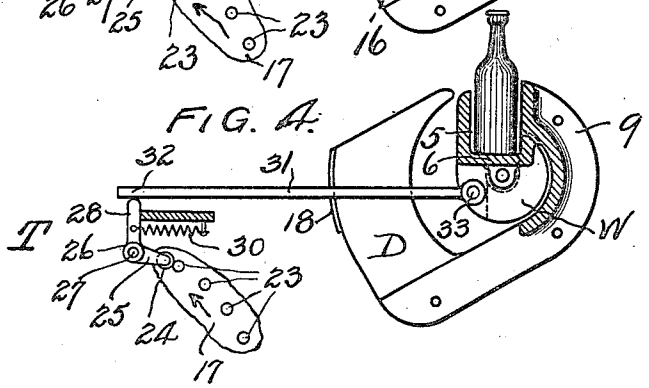
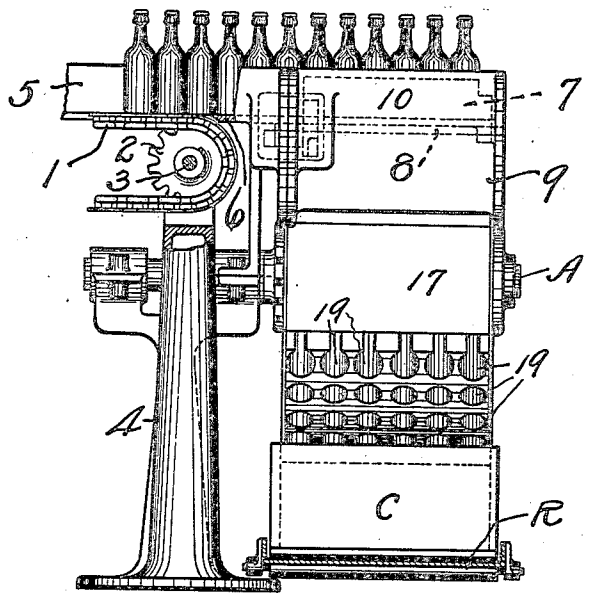


FIG. 3



WITNESS

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CRATING APPARATUS FOR BOTTLES AND THE LIKE.

1,243,406. Specification of Letters Patent. Patented Oct. 16, 1917.

Application filed March 6, 1917. Serial No. 152,960.

To all whom it may concern:

Be it known that I, LOUIS A. HAWTHORNE, a 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 Crating Apparatus for Bottles and the like, of which the following is a specification.

This invention relates to crating or packaging apparatus and has special reference to an apparatus of this kind possessing special utility as a means for expeditiously and economically crating bottles or similar containers in boxes or crates ready for shipment.

To this end the invention has for its object the provision of simple, practical and reliable means for automatically handling bottles or other containers in such a manner that the same may be quickly and automatically transferred from a delivery position into crates or boxes in properly spaced position therein, according to predetermined requirements, entirely ready for trucking and shipping.

A further object of the invention is to provide a crating or packaging apparatus which may be utilized to advantage in connection with machinery for filling and capping bottles so that the filled bottles may be fed directly from the delivery point of such machines into the present apparatus and there handled rapidly and expeditiously, without breakage, in the operations of being separated into packaging units and then introduced in properly spaced relation into the crates or boxes therefor, and the filled crates or boxes discharged to a delivery position for convenient handling.

Another object of the invention is to provide a self-contained crating or packaging apparatus embodying comparatively few working parts, and which parts are organized in a novel manner whereby the weight of the filled bottles or containers and crates may be utilized as the power element for operating the various parts of the apparatus, thus providing a machine which may be operated rather inexpensively, and which will be durable and reliable in its operation.

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.

The essential features of the invention involved in the novel construction and relation of parts are necessarily susceptible of modification without departing from the spirit or scope of the invention, but a preferred and practical embodiment thereof is shown in the accompanying drawings in which,—

Figure 1 is a top plan view of the apparatus, constructed in accordance with the invention.

Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 1, looking in the direction of the arrows.

Fig. 3 is a side elevation.

Fig. 4 is an enlarged sectional view taken on the line 4—4 of Fig. 1 looking in the direction of the arrows, and showing the bottle-receiving cradle in position in its relation to the drum-controlling mechanism.

Fig. 5 is a view similar to Fig. 4 showing the cradle in delivering position.

Fig. 6 is an enlarged detail plan view showing the latch mechanism for holding the cradle in position until a sufficient number of bottles are collected therein.

Fig. 7 is a detail sectional view taken on the line 7—7 of Fig. 6.

Similar references designate corresponding parts throughout the several figures of the drawings.

In carrying out the present invention it is proposed to utilize a conveyer belt 1, which may be the delivery element of a bottle-filling and capping or labeling machine and operating over the sprocket wheel 2 journaled as at 3 upon a suitable supporting standard 4. This conveyer belt 1 preferably constitutes the bottom of a bottle guideway 5, in the framework of the apparatus, as will be observed from Figs. 1 and 3 of the drawings, but at a point where the conveyer belt 1 passes around the sprocket wheel 2 the said guideway terminates at a fixed threshold plate 6, which bridges the space between the moving conveyer belt and the floor of a tiltable bottle feeding device or cradle, designated generally by the numeral 7.

This bottle feeding device 7 primarily consists of an open cradle or holder of sub-

stantially an L formation, as will be observed from Fig. 2 of the drawings. It is provided on its underside with the eccentrically located bearing eyes 7a for receiving a pivot rod 8 which is suitably journaled in the framework 9 carried by the conveyer stand 4. One end of the cradle carries a counterweight W which is so located with reference to the eccentric axis 8 of the cradle that it readily overcomes the weight of the empty cradle to return the same to normal position after it has been tilted as will hereinafter more fully appear. It also serves as a stop to arrest the on-comnig bottles while the cradle is dumping, being projected into the pathway of the on-coming bottles. As will be seen from Fig. 2, the fixed wall 10 of the framework 9 coöperates with the angular cradle 7 to provide, in effect, a continuation of the guideway 5, and since the cradle member 7 is mounted on the pivot rod 8, it will of course, be apparent that the same may readily tilt or rock, when unlocked and under load, away from the wall 10 to discharge the bottles contained therein into the distributing chute designated generally as D, and which is supported by the framework 9, previously referred to.

Referring further to the cradle 7, it will be observed that the end thereof opposite the conveyer 1, is provided with a suitable latch device designated generally as L for holding the cradle in its normal upright position to receive bottles from the conveyer belt 1. This latch device preferably comprises a latch member 11 having a shouldered keeper head 12 for engaging one edge of the vertical wall of the angular cradle 7, and also includes an enlarged bottle abutment plate 13 which is rigidly mounted on a stem 14 slidably fitted in one end of the framework 9. For the purpose of yieldably holding the latch member 11 in position, a spring 15 is interposed between the same and the wall of the framework in which the stem 14 is mounted. Thus, it will be observed from Figs. 6 and 7 of the drawings, that when the latch member 11 engages the outer face of the vertical wall of the cradle, the same is in position to receive bottles from the conveyer 1, and when the cradle becomes filled with a predetermined number of bottles the latter will be placed under the pressure of the bottles in the conveyer 1 to thereby exert sufficient presure against the plate 13 and the tension of the spring 15, whereby the keeper head 12 will be disengaged from the side of the cradle, and thereby permit the same to overturn under the weight of the containers thereon and dump the latter into the distributing chute D. That is to say, as the conveyer deposits its bottles one by one on the threshold plate 6, they are impelled forward onto the floor of the cradle, one against the other, only against their frictional resistance on the plate 6 and the floor of the cradle, and when a sufficient number of bottles has accumulated in the conveyer, the pressure of the following bottles pressing forward on the belt 1, will force the foremost bottle in the cradle against the abutment plate of the latch device L thereby compressing the spring 15 and releasing the shouldered keeper head 12 from engagement with the side wall of the cradle.

The distributing chute D into which the bottles are dumped when the cradle 7 is tilted, preferably has its bottom formed with a plurality of spaced bottle directing guides or channels 16, which are downwardly inclined and have their delivery ends in relatively close proximity to the periphery of a movable assembler 17 for collecting the bottles and placing or assembling them within the shipping box or crate. As will be observed from Figs. 1 and 2 of the drawings, the chute D is provided at one side with the longitudinally extending guard wall or plate 18, which terminates short of the floor thereof to provide ample bottle clearance at the mouth of the channels 16 and has the chief function of preventing the bottles from sliding out of the chute without being positively located in their proper channels or guides.

Referring now to the movable assembler 17, it will be observed that the same is preferably in the form of a relatively large intermittently rotatable drum which is mounted on a horizontal supporting axle A, carried by the support B, and provided at regular desired intervals with a plurality of bottle and crate receiving units each including a battery of substantially radially disposed bottle receiving pockets 19, which are of such shape as to accommodate the entry of the bottle without binding or permitting the same to extend beyond the periphery of the drum, and which are also accessible from the periphery of the drum. These pockets are suitably spaced and arranged in parallel rows corresponding to the number of bottles to be accommodated in the shipping case, and around each set or group of pockets there is provided a substantially rectangular crate-receiving socket 20 for receiving an inverted shipping crate. Therefore, it will be apparent that the drum 17 is provided with a plurality of sets or groups of bottle-receiving pockets which are arranged in spaced relation, and in the desired number of rows, and these pockets are surrounded by a crate receiving and holding socket which readily permits of an inverted shipping case being placed over the entire group of pockets, and the whole forming the unit referred to.

At the side of the drum opposite to that at which the cradle 7 is located, there is arranged a crate conveyer device 21, which

is adapted to feed shipping crates C in single order into the guide hopper 22, at the end of the conveyer, in such a manner that the crates will at the desired moment drop into the socket 20 around the bottles in the groups of bottle-receiving pockets 19 as will hereinafter more fully appear.

One side of the drum 17 is provided with a plurality of spaced check lugs 23 which cooperate with a cradle controlled trip device T to permit intermittent rotary movement of the drum to bring the rows of bottle pockets into position before the mouths of the channels 16 of the distributing chute.

As will be observed from Figs. 4 and 5 of the drawings, the check lugs are equidistantly spaced from each other and are also arranged in spaced groups as will be seen from Fig. 2. That is to say, these lugs are preferably arranged in groups on one side of the drum, between the bottle and crate receiving units, and each group contains as many lugs as there are rows of pockets in each unit so that at each movement of the drum for a predetermined period, a new row of pockets will be presented before the mouths of the channels 16, and then after all of the rows of pockets of the particular unit have been filled, the drum will be permitted to rotate a greater distance to bring the pockets of the next unit into position. These lugs are normally engaged by the roller 24 carried by one arm 25 of a bell crank lever 26 suitably journaled as at 27 upon a fixed part of the framework of the machine, and having its arm 28 normally held against one edge of the guide and abutment shelf 29 by means of a spring 30. This shelf is carried by a suitable bracket E, as will be seen from Figs. 1 and 2.

It will thus be apparent that in order to permit the movement of the drum in the direction of the arrow in Figs. 4 and 5, the roller 24 must be lifted upwardly and out of the path of the lugs 23, and to effect this movement of the roller, the arm 28 of the bell crank must be temporarily pushed away from the stop edge of the member 29. This movement of the bell crank to withdraw the roller from the path of the lugs is effected through a trip rod 31, the free end 32 of which normally rests on the crown of the arm 28 of the bell crank lever and the other end of which is pivotally connected as at 33 with the weighted portion W of the cradle 7.

As will be seen from Fig. 4, when the cradle is tilted to dump its contents into the distributing chute this rod is pulled off the crown of the arm 28 of the lever onto the guide shelf 29 (Fig. 5) and as the empty cradle returns to its normal position by virtue of the counter-weight W, the rod is pushed forward, and thereby forces the lever arm 28 in such a direction that the roller arm 28 is pushed away from the stop edge of 29 and the roller 24 is lifted. Hence the drum may rotate until the next lug abuts or engages with the roller 24 which has been quickly returned to its normal position by the spring 30. At this point, it may be noted that when the free end 32 of the rod 31 moves forward during the return of the cradle to normal position, it passes beyond the crown of the arm 28 a sufficient distance so that the same arm will, owing to its rounded crown and the tension of the spring 30, again become positioned beneath the end of the rod as shown in Fig. 4.

Every time the cradle is dumped, the bottles fall into the distributing chute and slide out of the delivery channels into the waiting rows of pockets 19 in the drum, which latter remains at rest during this operation because the dumping movement of the cradle merely pulls the end 32 of the rod 31 off the top of the arm 28 of the bell crank and onto the table 29, and the bell crank 26 under the tension of the spring 30 remains stationary. However, when the empty cradle 7 returns to its normal upright position, the rod 31 is moved across the table to tilt the bell crank and thus pull the stop roller 24 out of the path of the lug, and the drum rotates until the roller comes into engagement with the next lug, thus bringing a fresh unfilled row of pockets into position before the end of the delivery channel. Obviously, after the last lug of a group has been passed, the drum will rotate a sufficient distance to bring the first of an entirely new set of lugs into position for engagement with the stop roller 24 consequently bringing a new set of bottle receiving pockets into the bottle receiving zone. This operation is repeated as long as bottles are dumped out of the cradle.

Referring further now to the suitably rotated drum 17, it will, of course, be apparent that when the same is operated by gravity as shown in the present embodiment of the invention, it will be necessary in first starting up the apparatus, to overweight the drum on its delivery side by placing some bottles, a crate or the like, therein by hand, but after the machine starts to working full capacity, there will always be sufficient weight on the delivery side to offset the weight of the bottles on the receiving side. That is to say in the illustration shown, there will always be two sets of bottles and two crates on the delivery side of the drum as against a full or partially full set of pockets on the other side.

In connection with the delivery of the crates to the drum it may be noted that the crates C do not fit into the rectangular socket 20 around the set of bottle receiving pockets until the same is properly positioned

before the mouth of the hopper 22. That is to say, the rounded periphery P of the drum acts as a cut-off for the hopper and the upper edge of the inverted crate merely rests against the same until the drum comes into proper position to bring the socket 20 to receive the crate. After the crate is positioned over the group of bottles as shown in Fig. 2 by fitting in the socket 20, it becomes loosely engaged with the drum and rotates therewith, passing away from the mouth of the hopper 22 into the curved box guide G provided by the guard wall 34 which is spaced from the periphery of the drum. This guard wall 34 holds the crates in the sockets 20 and over the bottles as the drum moves, and as the same is struck on a radius whose center is somewhat lower than the shaft center of the drum, the boxes or crates gradually leave the drum as they reach the bottom of the guideway. It will therefore be apparent that as the drum revolves the bottles will gently slide from their pockets into the proper cells of the crate, and the crate will upon the further rotation of the drum, be delivered at the mouth of the guideway G on the roller platform R. This roller platform, therefore, receives the filled crates in their normal upright position ready for handling and shipping.

Briefly reviewing the operation of the apparatus, it will be observed that bottles are fed by the conveyer 1 to the cradle 7, over the threshold plate 6 until the cradle contains a sufficient number of bottles, in the present case six. Then, the latch device L releases the cradle and permits the same to rock or tilt on its eccentric pivots under the weight of its load, to thereby dump the bottles into the trough of the delivery chute D, whereby they will fall headfirst into the substantially wedge shaped inclined delivery channels 16, from whence they will pass into the row of waiting pockets 19 in the drum 17. As the cradle tilts forward due to the weight of the bottles therein overcoming the effect of the counterweight W, the latter will, because of its flange-like shape and location at the receiving end of the cradle act as a stop or cut-off for bottles being fed to the cradle by the conveyer 1. That is to say, as the counterweight W is in the nature of a flange located at the underside of one end of the eccentrically mounted cradle 7, as will appear from Fig. 4, when the cradle tilts to dump its contents into the delivery chute D, as shown in Fig. 5, the counterweight W will come into position at the end of the threshold plate 6, and thereby hold the bottles on the threshold plate until the cradle returns to normal position. In this connection, it may be noted that when the counterweight W acts as a wall to stop the feeding of bottles to the cradle, the bottles merely collect on the threshold plate 6, and also to a certain extent on the end of the conveyer, the latter merely continuing its movement and permitting the temporarily checked bottles to slide idly thereon.

When the cradle device tilts or rocks to empty the bottles, the end 32 of the rod 31 is pulled off the crown of the lever arm 28, and onto the shelf 29, and when the empty cradle resumes its normal position due to the counterweight W, the end of the rod 32 will push the bell crank 26, so that the roller 24 will be pulled out of the path of the lug 23 which has been in engagement with the roller, thereby permitting the drum to rotate a sufficient distance to bring a new row of pockets into position before the mouths of the channels 16 in the delivery chute. Of course, if the last row of pockets in a group has been filled, the drum will rotate the necessary distance to bring the first row of pockets of the next unit into position, as previously explained.

After the pockets of each unit are filled with bottles, and the drum rotates to bring the unfilled pockets of the next unit into position, the filled unit comes into a crate receiving position, that is, into a position where an inverted crate will pass from the hopper 22 into the rectangular socket 20 around the set of bottles, as shown in Fig. 2. Then the continued rotation of the drum step by step, will bring the assembled bottles and crates downwardly in the guideway G and transfer them onto the roller platform R, as previously explained.

From the foregoing, it is thought that the many features and advantages of the present invention will be readily apparent without further description.

I claim:

1. A crating apparatus including a combined container and crate assembler having container carrying means, and means for placing single crates over the container holding positions of the assembler.

2. A crating apparatus including a combined container and crate assembler having container carrying means, and means for placing single crates over the container holding positions of the assembler, and means for causing all of the containers for each crate to be discharged as a unit in the latter.

3. A crating apparatus including a combined container and crate assembler having means for carrying the containers and crates therefor, and means for feeding containers and crates to the assembler.

4. A crating apparatus including a combined container and crate assembler having means for receiving the containers, and means for placing an inverted crate over the container receiving position of the assembler.

5. A crating apparatus including a movable assembler having means for carrying

the containers and crates therefor, and separate means for separately feeding the containers and crates to the assembler.

6. A crating apparatus including a rotary assembler having bottle and crate carrying means and means for feeding the bottles in groups to the assembler.

7. A crating apparatus including an intermittently rotatable bottle and crate carrying device, and means located at one side thereof for feeding crates thereto and over the bottles.

8. A crating apparatus including an intermittently rotating bottle and crate carrying device, a bottle feeding and distributing device arranged at one side thereof, and a crate feeding device located at the other side thereof.

9. A crating apparatus including a bottle and crate carrying drum having a plurality of bottle and crate receiving cavities, a dumping bottle feeding device operating at predetermined intervals, and means for feeding crates to the drum.

10. A crating apparatus including an intermittently rotatable drum, a bottle feeding device synchronized with said drum, and means for delivering crates to the latter.

11. A bottle crating apparatus including a bottle and crate carrying device having a plurality of bottle and crate receiving units therein, and accessible from the periphery thereof, a tiltable cradle arranged at one side of the drum and synchronized therewith to deliver bottles thereto, and a crate conveyer device arranged at the other side of said drum for delivering inverted empty crates to the units of the drum.

12. A crating apparatus including an intermittently rotatable bottle and crate carrying device having a plurality of bottle and crate receiving units therein, a tiltable cradle arranged at one side of the drum, and means controlled by the movement of the cradle for releasing the drum as the cradle returns to its normal position after dumping bottles therefrom, and crate delivering means arranged at the other side of said device.

13. A crating apparatus including a rotatable drum having a plurality of bottle and crate receiving units therein, a tiltable cradle arranged at one side of the drum, means for engaging the drum to normally prevent the same from rotating, means carried by the cradle for operating said latter means to release the drum at predetermined intervals, and means for feeding crates to the drum.

14. A crating apparatus including a gravity actuated rotatable bottle and crate carrying drum having a plurality of bottle and crate receiving units therein, a tiltable cradle arranged at one side of the drum, a trough having guide channels arranged beneath the tiltable cradle and adapted to direct bottles delivered therefrom into the bottle receiving openings of the units in the drum, means for normally checking the movement of the drum, a rod carried by the tiltable cradle for tripping said means to permit rotation of the drum, and means for feeding crates to the drum.

15. A crating apparatus including a gravity actuated rotatable bottle and crate carrying drum having a plurality of bottle and crate receiving units therein, a plurality of check lugs carried by the drum, a device for engaging said studs, a tiltable cradle device arranged at one side of the drum, means carried by said cradle device for moving the means which engages said lugs and means for feeding crates to the drum.

16. A crating apparatus including a bottle and crate carrying drum having a plurality of spaced bottle receiving pockets arranged in horizontal rows, said rows being arranged in spaced groups around the periphery of the drum, and having a crate receiving socket thereabout, a dumping cradle for feeding bottles to the pockets in the drum, and a device for feeding crates in an inverted position to the socket surrounding the groups of bottle receiving pockets.

17. A crating apparatus including a bottle and crate carrying device having a plurality of bottle and crate receiving units, each unit comprising a plurality of regularly spaced and alined bottle receiving pockets, surrounded by a crate receiving socket, a dumping device for feeding bottles to the pockets in the drum at predetermined intervals, and means for feeding crates to the crate receiving socket of each unit.

18. A crating apparatus including a bottle and crate receiving drum having a plurality of bottle and crate receiving units therein, a tiltable cradle supported at one side of said drum, a crate feeding device arranged at the other side of said drum, and a guard wall spaced from the periphery of said drum to provide a guideway for delivering the combined bottles and crates from the drum.

19. A crating apparatus including a rotatable bottle and crate carrying device, said device having a plurality of bottle and crate receiving units therein, a tiltable cradle supported at one side of said drum, a delivery chute having guide channels for directing bottles dumped from the cradle device into the bottle receiving units of the drum, a crate feeding conveyer device arranged at the other side of said drum to feed crates in an inverted position to said bottle and crate receiving unit, a curved guard wall associated with said conveyer apparatus and arranged to provide a guideway

whereby the crates will be held over the bottles in each unit and will gradually leave the drum as it rotates.

20. A crating apparatus including a rotatable bottle and crate carrying drum having a plurality of bottle and crate receiving units therein, a plurality of lugs projecting from the side of the drum and arranged in spaced relation, said lugs also arranged in groups corresponding to the number of rows of pockets in each bottle receiving unit of the drum. a device for engaging said lugs to temporarily arrest the movement of the drum, said device comprising a bell crank lever having a roller at one end for engaging the lugs, a stop, a spring engaging the other arm of the lever to hold the same in normal position and against the said stop element, a tiltable cradle arranged at one side of the drum, a rod carried by said cradle for engaging the arm of said bell crank which is normally held against the stop, and means for feeding crates to the drum.

21. A crating apparatus including a rotatable bottle and crate carrying device having a plurality of bottle and crate receiving pockets therein, a tiltable cradle arranged at one side of the drum, a combined guide and distributing chute for receiving bottles dumped from the cradle and directing the same into the pockets of the bottle receiving units in the drum, a conveyer device for feeding bottles to the cradle, locking means for temporarily arresting the movement of the rotatable drum, means carried by the tiltable cradle for intermittently releasing said locking means, a device for feeding crates to the drum, and means for delivering combined bottles and crates from the drum.

22. A crating apparatus including a rotatable bottle and crate carrying drum having a plurality of bottle and crate receiving units therein, a tiltable cradle arranged at one side of the drum, a latch device for normally locking said cradle in upright position, a distributing chute arranged between the cradle and the drum, means for synchronously operating the cradle and drum, and means for feeding crates to the said units of the drum.

23. A crating apparatus including a rotatable bottle and crate carrying drum having a plurality of bottle and crate receiving pockets therein, a tiltable cradle mounted at one side of the drum, a conveyer for feeding bottles to the cradle, a bottle controlled latch device for normally holding the cradle in position to receive bottles from the conveyer, a distributing chute arranged between the cradle and the drum, and means arranged at the other side of the drum for feeding crates thereto.

24. A crating apparatus including a rotatable bottle and crate receiving drum, a tiltable cradle arranged at one side of the drum, means arranged between the cradle and the drum for transferring bottles thereto, a conveyer for feeding the bottles to the cradle, a bottle controlled latch device for normally maintaining the cradle in position to receive bottles from the conveyer, locking means for temporarily restraining the movement of the drum, means carried by the cradle for tripping the locking means to release the drum, and a crate feeding device arranged at the other side of said drum.

25. A crating apparatus including a rotatable bottle and crate-carrying drum having a plurality of bottle and crate-receiving units therein, a pivotally mounted cradle for feeding bottles to the drum, bottle feeding means for said cradle, and a counterweight carried at one end of said cradle for returning the same to normal position, and adapted to constitute a stop for bottles being fed to the cradle by said bottle feeding means when the cradle is in dumping position.

26. A crating apparatus including a rotatable bottle and crate-carrying drum having a plurality of bottle and crate-receiving units therein, a pivotally mounted cradle for feeding bottles to the drum, bottle feeding means for said cradle, bottle controlled means at one end of said cradle for releasing the same to tilt, and means at the other end thereof for checking the delivery of bottles from the bottle feeding means.

27. A crating apparatus including a rotatable bottle and crate-carrying drum having a plurality of bottle and crate receiving units therein, a pivotally mounted cradle for feeding bottles to the drum, bottle feeding means for the cradle, bottle controlled means at one end of said cradle for releasing the same to tilt, and a counterweight at the other end of said cradle and normally occupying a position beneath the same, a counterweight adapted to be brought into position to cut off bottles being fed from the bottle feeding means after the cradle is in dumping position.

28. A crating apparatus including a rotatable bottle and crate-carrying drum having a plurality of bottle and crate-receiving units therein, an eccentrically mounted cradle for feeding bottles to the drum, a conveyer for feeding bottles to said cradle, a threshold plate interposed between the cradle and the conveyer, bottle-controlled latch means at one end of said cradle, a counterweight at the other end of said cradle and constituting means for holding bottles fed from the conveyer onto the threshold plate when the cradle is in dumping position, and means controlled by the movement of the cradle for permitting the movement of the drum.

29. A crating apparatus including a de-

vice having a crate size container receiving units, and means for placing a crate over the said unit to receive the full contents thereof.

30. A crating apparatus including a device having a plurality of crate size container receiving units and means for positioning a crate thereabout, and means for feeding crates to said positioning means of the device, to receive the entire contents of said unit.

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

LOUIS A. HAWTHORNE.

Witnesses:

WILLARD L. HOAGLAND,

EDW. O. WURTS.