June 18, 1929. F. A. BAUER 1,718,102

COOLING AND DISPENSING MACHINE

Filed Sept. 3, 1927 4 Sheets-Sheet 1

Fig. 1.

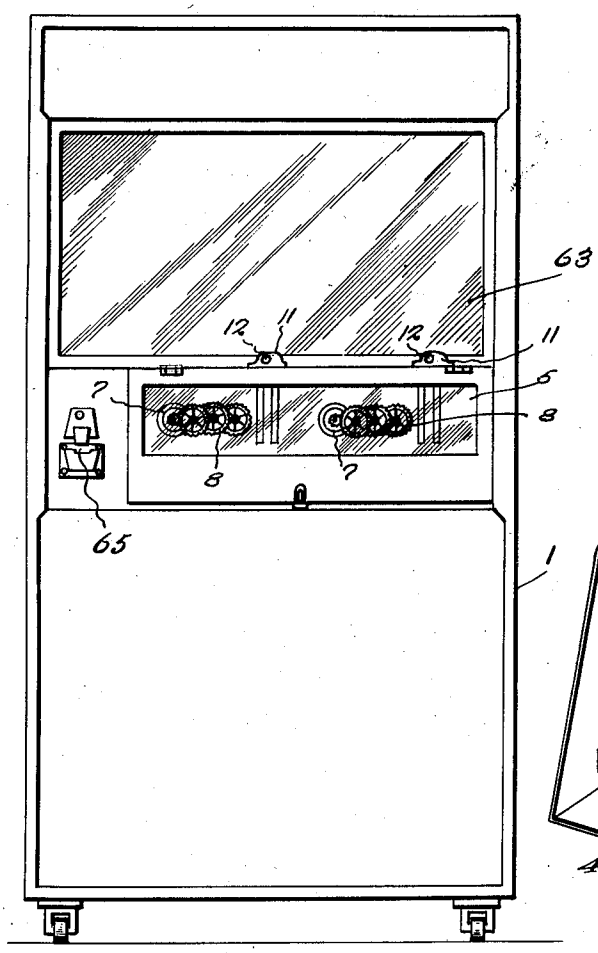


Fig. 10.

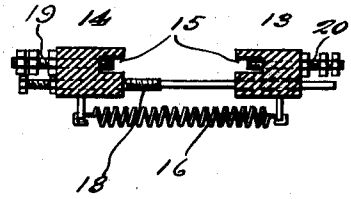


Fig. 7.

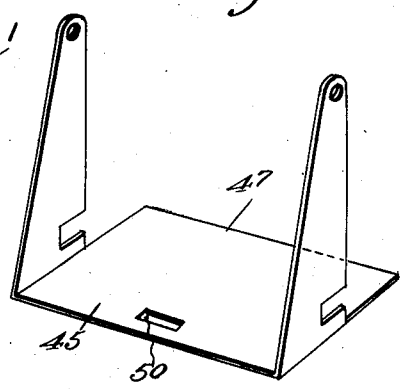
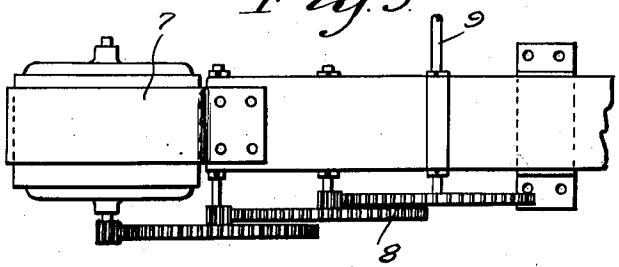


Fig. 9.



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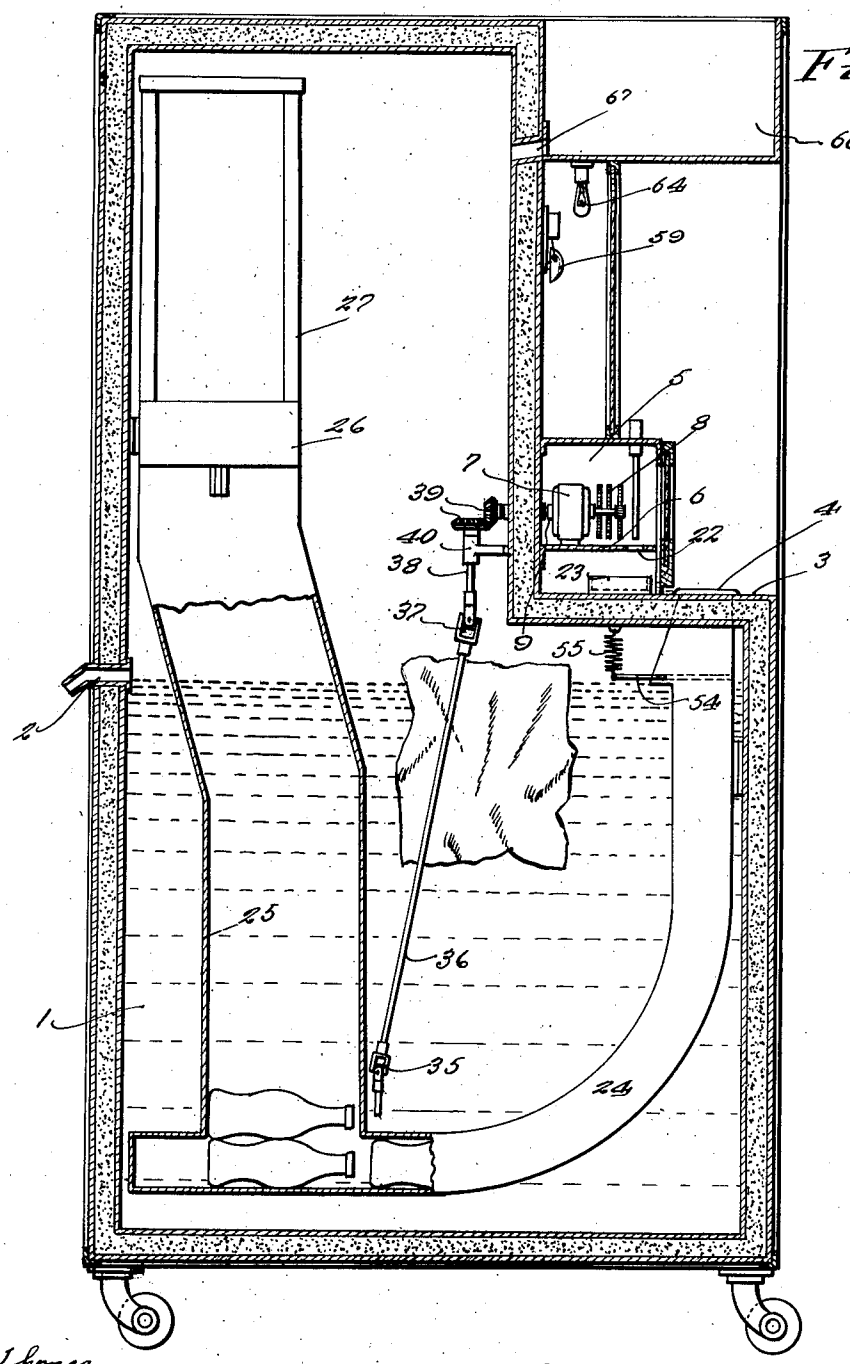
ATTORNEY

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COOLING AND DISPENSING MACHINE

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Fig. 2



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COOLING AND DISPENSING MACHINE

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Fig. 4.

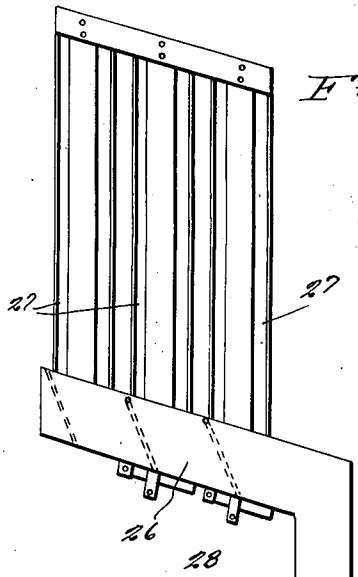
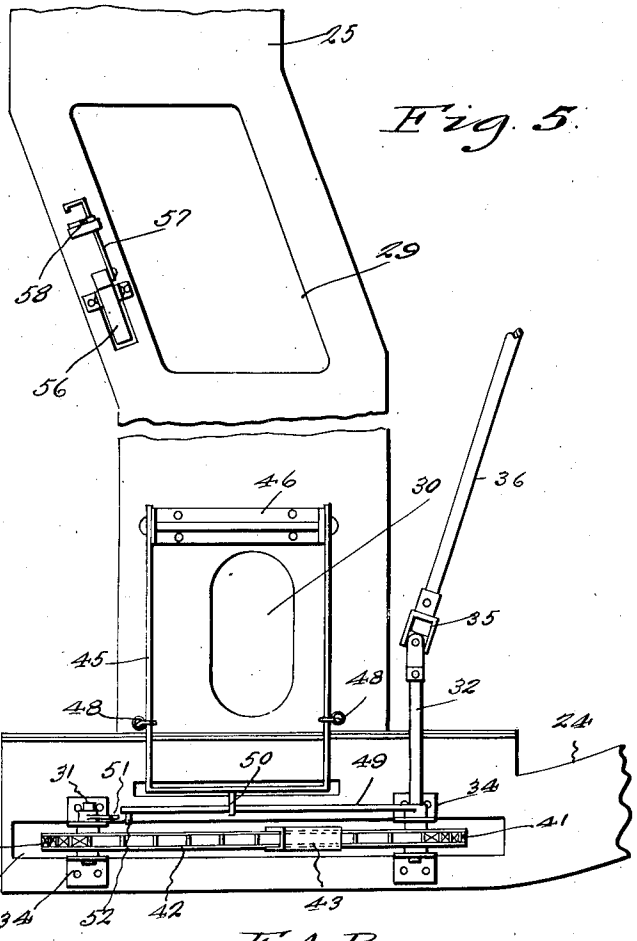


Fig. 6.



Fig. 5.



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COOLING AND DISPENSING MACHINE

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Fig. 8.

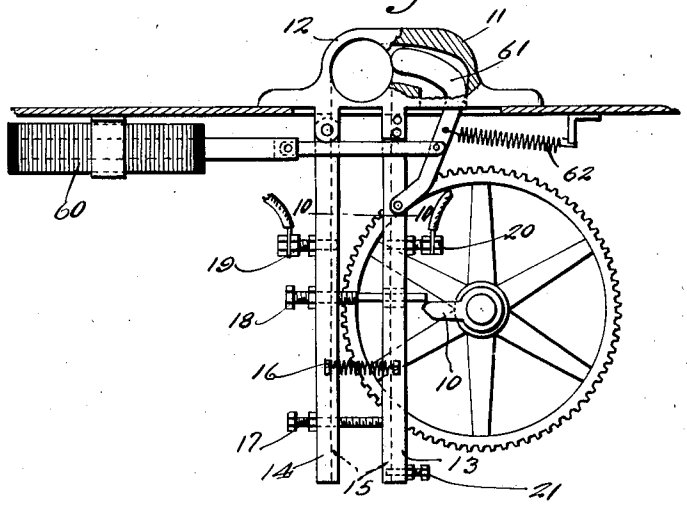
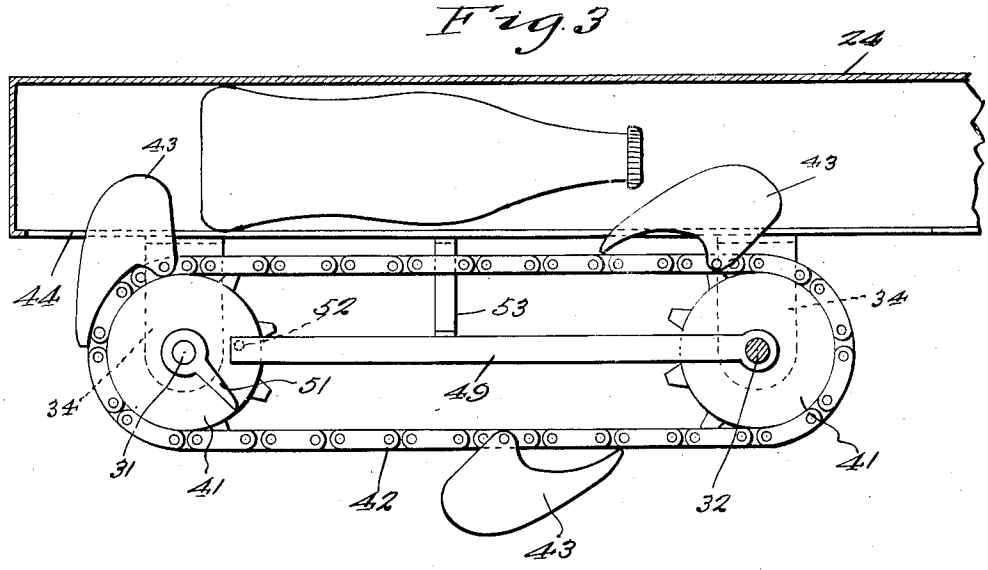


Fig. 3



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Patented June 18, 1929. 1,718,102

UNITED STATES PATENT OFFICE.

FRED A. BAUER, OF LOUISVILLE, KENTUCKY.

COOLING AND DISPENSING MACHINE.

Application filed September 3, 1927. Serial No. 217,406.

This invention relates to a cooling and dispensing machine for bottled goods, this invention being an improvement over that forming the subject matter of an application filed on January 17, 1927, by Charles F. Bauer, Serial No. 161,616.

The general object of this invention is to provide improved means for forcing the bottles from the device and for controlling the gravity movement of the bottles from a rack to the feeding means.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a front view of the entire apparatus.

Figure 2 is a vertical sectional view through Figure 1.

Figure 3 is a section on line 3—3 of Figure 4.

Figure 4 is a side view of one of the gravity chutes, its racks and the feeding means, parts being shown in section.

Figure 5 is an enlarged rear view of the feeding means and a portion of the chute.

Figure 6 is a sectional detail view of one of the dogs on the endless chain.

Figure 7 is a view of the member controlling the gravity feed of the bottles.

Figure 8 is a view of the coin controlled means.

Figure 9 is a plan view of the motor and its gears.

Figure 10 is a section on line 10—10 of Figure 8.

In these drawings, 1 indicates a cabinet which is provided with insulated walls and which has its lower part adapted to hold ice and water, the cabinet being provided with an overflow pipe 2 which keeps the water at a predetermined level, the cabinet being provided with suitable doors for providing access to the interior thereof.

As shown in Figure 1, the cabinet is provided with two units, one unit being arranged to handle bottles containing a certain beverage and the other unit bottles containing another beverage. Of course, it will be understood that other units may be added as desired.

A shelf 3 is formed at the front of the cabinet and a pair of outlet openings 4 pass through the shelf, one for each unit, through which the bottles pass and from which they can be taken by the customer. A casing 5 is arranged on the rear part of the shelf and this casing is divided by a partition 6 into two chambers, and I prefer to form part of the front of the casing of transparent material, as shown. A pair of motors 7 is arranged in the upper chamber and each motor is arranged to operate one of the units. Each motor drives a train of gears 8 to rock a shaft 9 and the last gear in the train has a projection 10 thereon for operating coin controlled mechanism hereinafter to be described.

A pair of small casings 11 is arranged on the top of the casing 5, each casing being provided with a coin slot 12. Each slot conducts the coin between the combined guiding and switch means which depend into the casing, such means comprising a stationary member 13 and a movable member 14 which is pivoted at its upper end to a part of each casing 11. Each member is provided with a groove 15 and these grooves form guideways for the coin. A spring 16 tends to pull the member 14 toward the member 13, but this movement is limited by a screw 17 carried by the member 14 and engaging the member 13. A long screw 18 is carried by the member 14 and extends through a hole in the member 13 to a point where it will be struck by the projection 10 of the train of gearing at each revolution of the gear which carries the projection and as the projection strikes the screw, it will move the member 14 away from the member 13. A contact 19 is carried by the member 14 and a contact 20 is carried by the member 13, these contacts being arranged opposite each other and having their inner ends extending into the grooves so that they will engage a coin passing between the two members 13 and 14 and thus prevent further movement of the coin, but as soon as the member 14 is moved away from the member 13 by the projection 10, the coin will be freed and will continue down the guideway until it strikes the projecting end of the screw 21 at the end of the member 13, which will prevent further movement of the coin. On the next move-

ment of member 14 by the projection 10, this coin will be released and it will drop through an opening 22 in the partition 6 into a coin box 23 in the lower chamber of the casing 5.

The contacts 19 and 20 are electrically connected with each motor so that when a coin rests on these contacts, the circuit to the motor will be completed and thus the motor begin to operate. It will continue to operate until the last gear of the train of gearing has made one revolution, when the circuit will be broken by the coin leaving the contacts, due to the outward movement of member 14 under the action of the projection 10 striking the screw 18. Thus the parts will come to rest and will remain stationary until another coin has been dropped into the apparatus.

A pair of curved tubes or chutes 24 is placed in the lower part of the cabinet, each tube having straight ends, with its discharge end vertically arranged and communicating with each opening 4 and its horizontal part being arranged adjacent the bottom of the cabinet and terminating short of the rear wall of the cabinet. A gravity chute 25 has its lower end in communication with the horizontal part of each chute 24 and an inclined chute 26 has it lower end connected with each of the chutes 25, the chutes 26 being arranged in the upper part of the cabinet. A plurality of bottle racks 27 have their lower ends in communication with each of the chutes 26 so that bottles placed in the racks will feed by gravity into the chute 26 and then roll down the same into the chute 25. Gates 28 are arranged in each chute 26 to prevent the feeding of the bottles from the rear racks until all the bottles have been fed from the next rack in front. These gates are held in closed position by the weight of the bottles coming from the front rack. After all the bottles have passed from the front rack, a spring will open the gate so that bottles can pass from the next rack. The construction and operation of these gates are fully described in the before mentioned application and as they form no part of this invention, it is not thought necessary to describe them in detail.

In order to relieve the feeding means from the weight of the bottles contained in each chute 25, I provide the chute with an offset part 25′, as shown in Figure 4, and in order to prevent the bottles from falling from the top of each rack 25 to the bottom thereof, I provide an opening 29 in each chute 25 so that bottles can be placed in the chute close to the top thereof so that the bottles coming from the racks will not fall any distance as they leave the chutes 26. The lower part of each chute 25 is also provided with an inspection opening 30. Vertically arranged shafts 31 and 32 are journaled in brackets 34 carried by the horizontal part of the tube or chute 24 and the shaft 32 is connected by a flexible joint 35 with a shaft 36 which is in turn connected by a flexible joint 37 to a shaft 38 which is connected by the bevel gears 39 with the shaft 9 driven by each motor, the shaft 38 being journaled in a projection 40 arranged within the cabinet. Thus the shaft 32 will be rotated each time a motor operates. The shafts 31 and 32 carry the sprockets 41 over which an endless chain 42 passes, this chain having pivoted thereto the dogs 43 which are of channel shape in cross section and having large front ends and their rear ends tapering off to a point. The endless belt is arranged adjacent a slot 44 formed in the horizontal part of the tube 24 so that the dogs will project through the slot as they travel forwardly and thus the dogs will engage a bottle in the chute 24 and carry it along with the dog until the dog leaves the slot as it passes over the front sprocket 41. Then the next sprocket will engage another bottle and move it forwardly and thus the bottles will be forced upwardly step by step through the chute 24 until the first one is projected through the opening 4 where it can be grasped by the customer. As a bottle is moved by a dog from under the chute 25, another bottle will take its place as the bottles move down through the chute 25 under the action of gravity, but in order to control the passage of the bottles from the chute 25 into the chute 24, I provide a stirrup-shaped member 45 which has its ends pivoted to the bracket 46 on the chute 25, the bight of this member having a knife edge 47 which extends through a slot formed in the chute 25 and prevents the lowermost bottle in the chute 25 from entering the chute 24. This member is held in operative position by the springs 48 and it is moved to releasing position by an arm 49 pivoted on the shaft 32 and engaging a tongue 50 depending from the bight of the member 45 and operated by a small arm 51 on the shaft 31 so that the member is moved to releasing position once every revolution of the shaft 31. The small arm 51 engages a pin 52 depending from the free end of the arm 49. A stop 53 limits the inward movement of the arm 49. Thus every time a bottle is moved forwardly by a dog on the endless chain, the member 45 moves to releasing position so that a bottle can drop from the chute 25 into the path of the next dog.

An upwardly moving gate 54 normally covers the upper end of the chute 24 by means of a spring 55 so that it is impossible to remove a bottle from the chute 24 by passing one's hand into the same through the opening 4. This gate is moved upwardly to open position by a bottle being forced toward the outlet opening 4.

A gravity trigger 56 is arranged in the chute 25 and when the last bottle passes this trigger, it will swing inwardly and thus bring the contact 67 against the stationary contact 58 and close the circuit to a bell 59, thus giving warning that the device needs refilling and at the same time it closes the circuit to a solenoid 60 which operates a closing arm 61 to close the coin slot 12 to prevent the entrance of a coin in the coin slot of the unit. A spring 62 normally holds the arm 61 in inoperative position.

From the foregoing it will be seen that when the racks are filled with bottles and a customer wishes to secure a bottle from the apparatus, he deposits a coin in the slot of the unit containing the bottles of the beverage which he desires and as the coin drops into the apparatus, it closes the circuit of the motor so that the motor begins to operate and thus the endless belt is turned so as to cause a dog thereon to move the row of bottles in the chute 24 forwardly and cause the topmost bottle to move to a point where its neck will project from the outlet opening 4, where the customer may easily grasp the same. At the same time the member 45 is moved outwardly so as to permit a bottle from the chute 25 to enter the chute 24 and thus take the place of the bottle just removed. The parts then come to rest, with the coin held by the screw 21 and then when another coin is dropped into the apparatus, the outward movement of the member 4 will release the coin previously deposited so that it can drop into the coin tray. As the bottles move down the chute 25, they are replaced by the bottles coming from the racks 27.

A casing 63 is arranged at the front of the cabinet and this casing contains the bell 59 and a lamp 63 and it is designed to hold the bottles being dispensed by the units so that the customer can see the kind of beverage he is buying. I also place a cap remover 65 on the cabinet for removing the caps from the bottles being dispensed. A chamber 66 is arranged at the top of the cabinet for receiving empty bottles and liquid flowing from the bottles placed in this chamber will pass into the ice chamber through the passage 67.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

I desire it to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:—

1. In a cooling and dispensing machine for bottled goods, a cabinet including a cooling chamber, a bottle dispensing tube arranged in said chamber and adapted to contain bottles in end to end relation, the outlet end of said tube passing through a wall of the cabinet, an endless member arranged in the cabinet adjacent the tube, projections thereon for engaging the bottles in the tube to force the bottles toward the outlet end of the tube, a motor for operating said member, a chute, a rack connected with the upper end thereof, the lower end of the chute being in communication with the inner end of the tube, a member for controlling the feeding of the bottles under the action of gravity from the chute into the tube and means actuated by the endless member for moving said controlling member into inoperative position.

2. In a cooling and dispensing machine for bottled goods, a cabinet including a cooling chamber, a bottle dispensing tube in said chamber and adapted to contain bottles in end to end relation, the outlet end of said tube passing through a wall of the cabinet, a pair of shafts journaled in the cooling chamber, sprockets on the shafts, an endless belt passing over the sprockets, one reach of the belt being arranged close to the inner end of the tube and said inner end having a slot therein, dogs on the belt adapted to pass through the slot to engage the bottles therein, a motor, means for connecting it with one of the shafts, a gravity chute having its lower end in communication with the inner end of the tube, a rack at the upper end of the chute, a member pivoted to the chute and having a projecting part extending into the same and upon which the lower bottle in the chute rests, and means actuated through one of the sprocket shafts for swinging said member to inoperative position.

3. In a cooling and dispensing machine for bottled goods, a cabinet including a cooling chamber, a bottle dispensing tube in said chamber and adapted to contain bottles in end to end relation, the outlet end of said tube passing through a wall of the cabinet, a pair of shafts journaled in the cooling chamber, sprockets on the shafts, an endless belt passing over the sprockets, one reach of the belt being arranged close to the inner end of the tube and said inner end having a slot therein, dogs on the belt adapted to pass through the slot to engage the bottles therein, a motor, means for connecting it with one of the shafts, a gravity chute having its lower end in communication with the inner end of the tube, a rack at the upper end of the chute, a member pivoted to the chute and having a projecting part extending into the same and upon which the lower bottle in the chute rests, an arm pivoted to one of the shafts, an arm fastened to the other shaft for engaging a part of the arm to swing the same outwardly and a depending projection on the pivoted member engaged by the first arm when it moves out-

wardly to move the pivoted member to inoperative position.

4. In a cooling and dispensing machine for bottled goods, a cabinet including a cooling chamber, a bottle dispensing tube in said chamber and adapted to contain bottles in end to end relation, the outlet end of said tube passing through a wall of the cabinet, a pair of shafts journaled in the cooling chamber, sprockets on the shafts, an endless belt passing over the sprockets, one reach of the belt being arranged close to the inner end of the tube and said inner end having a slot therein, dogs on the belt adapted to pass through the slot to engage the bottles therein, a motor, means for connecting it with one of the shafts, a gravity chute having its lower end in communication with the inner end of the tube, a rack at the upper end of the chute, a member pivoted to the chute and having a projecting part extending into the same and upon which the lower bottle in the chute rests, an arm pivoted to one of the shafts, an arm fastened to the other shaft for engaging a part of the arm to swing the same outwardly, a depending projection on the pivoted member engaged by the first arm when it moves outwardly to move the pivoted member to inoperative position, said chute having an offset portion therein.

5. In a cooling and dispensing machine for bottled goods, a cabinet including a cooling chamber, a bottle dispensing tube in said chamber and adapted to contain bottles in end to end relation, the outlet end of said tube passing through a wall of the cabinet, a pair of shafts journaled in the cooling chamber, sprockets on the shafts, an endless belt passing over the sprockets, one reach of the belt being arranged close to the inner end of the tube and said inner end having a slot therein, dogs on the belt adapted to pass through the slot to engage the bottles therein, a motor, means for connecting it with one of the shafts, a gravity chute having its lower end in communication with the inner end of the tube, a rack at the upper end of the chute, a member pivoted to the chute and having a projecting part extending into the same and upon which the lower bottle in the chute rests, an arm pivoted to one of the shafts, an arm fastened to the other shaft for engaging a part of the arm to swing the same outwardly, a depending projection on the pivoted member engaged by the first arm when it moves outwardly to move the pivoted member to inoperative position, said chute having an offset portion therein and a window in said chute for permitting bottles to be placed therein.

In testimony whereof I affix my signature.

FRED A. BAUER