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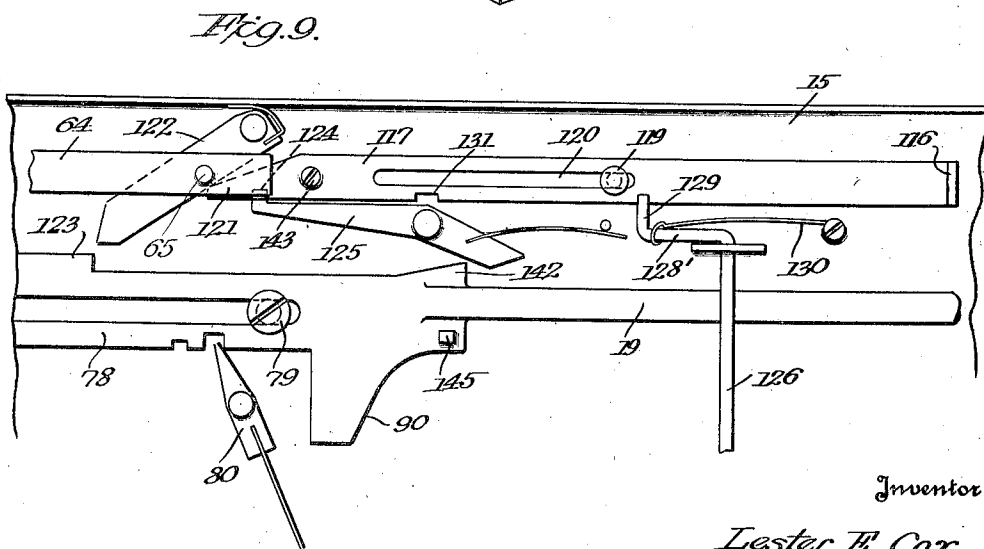
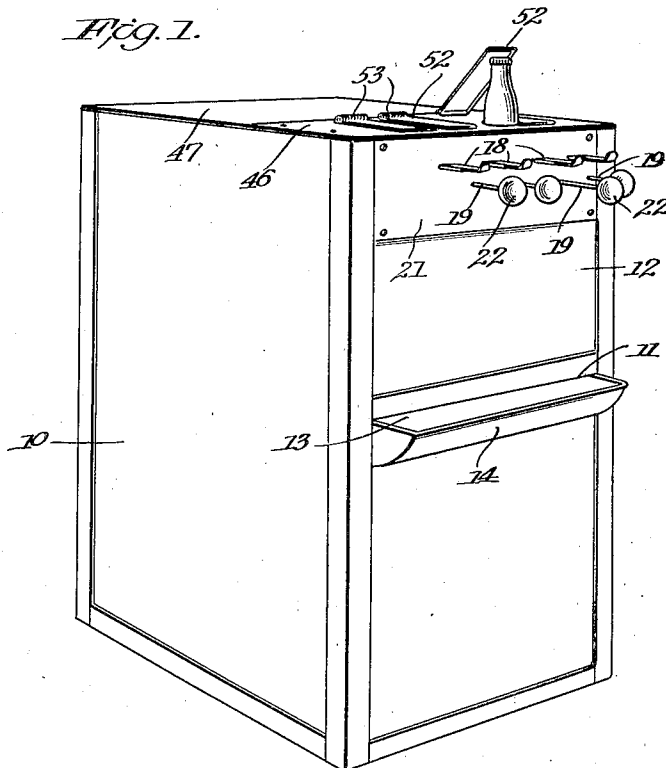
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DISPENSING APPARATUS

Filed Feb. 11, 1931

5 Sheets-Sheet 1



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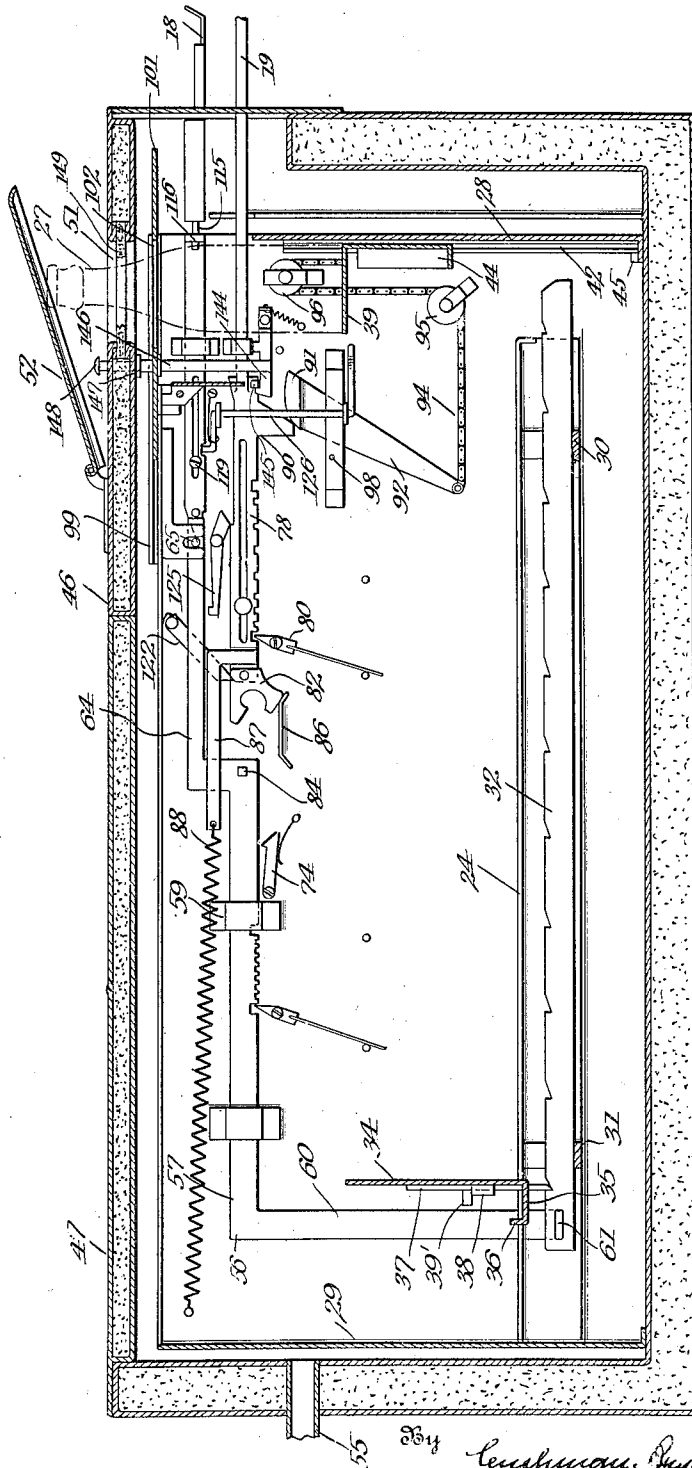
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FIG. 4.



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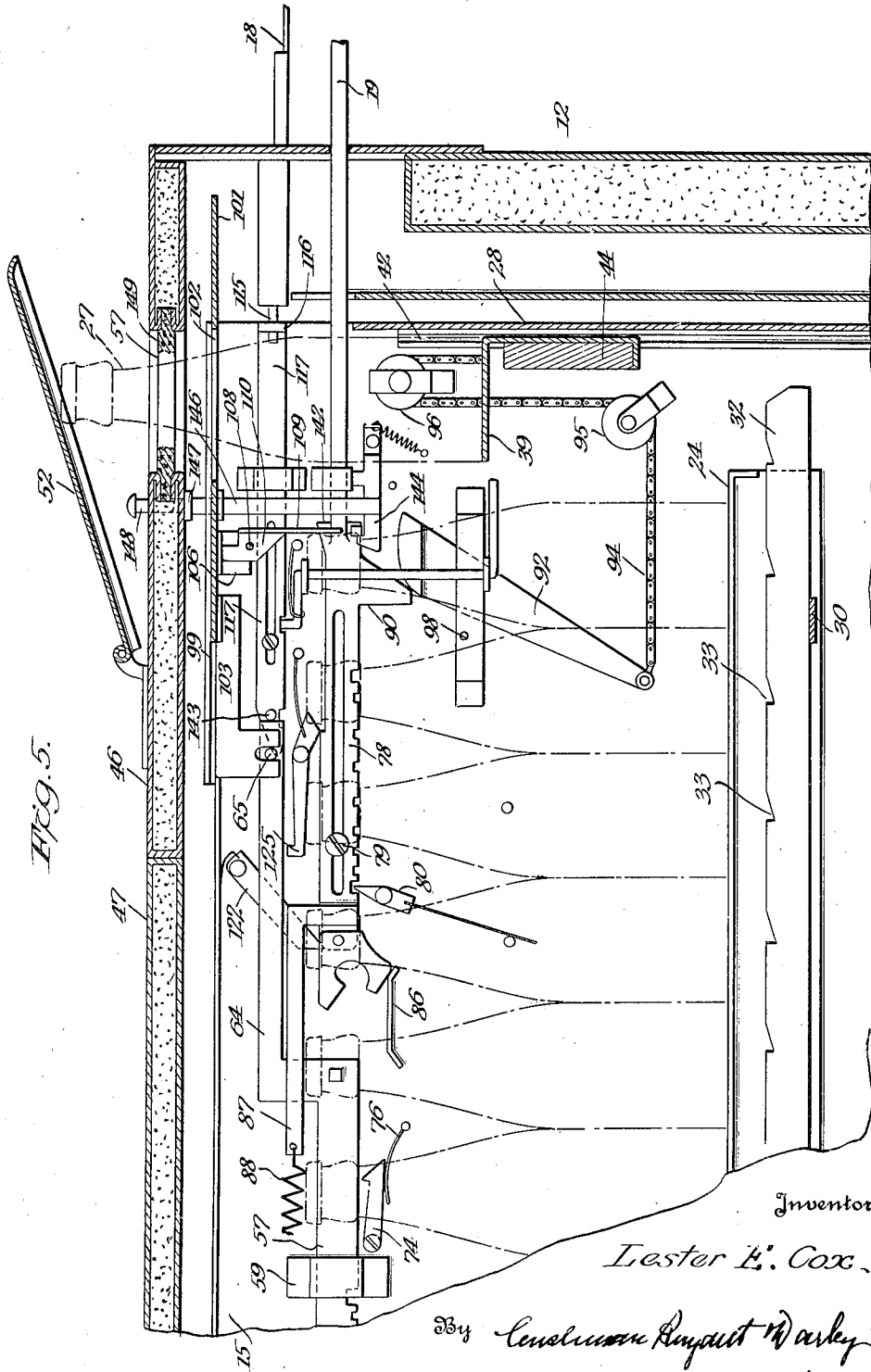


FIG. 5.

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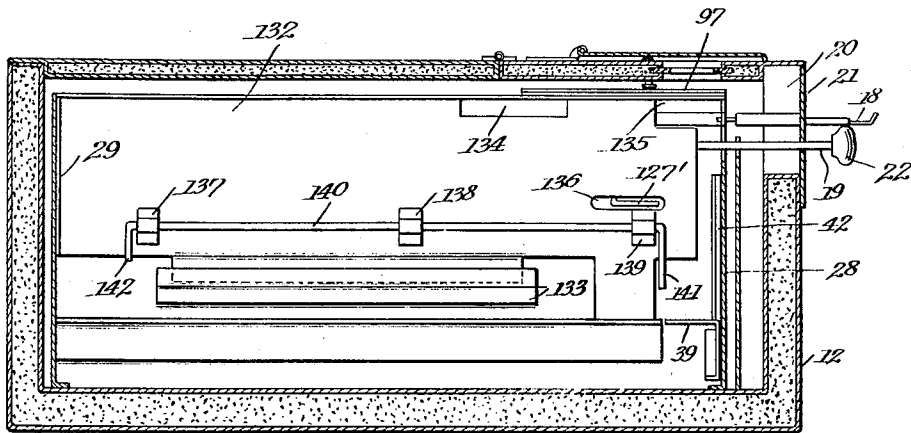
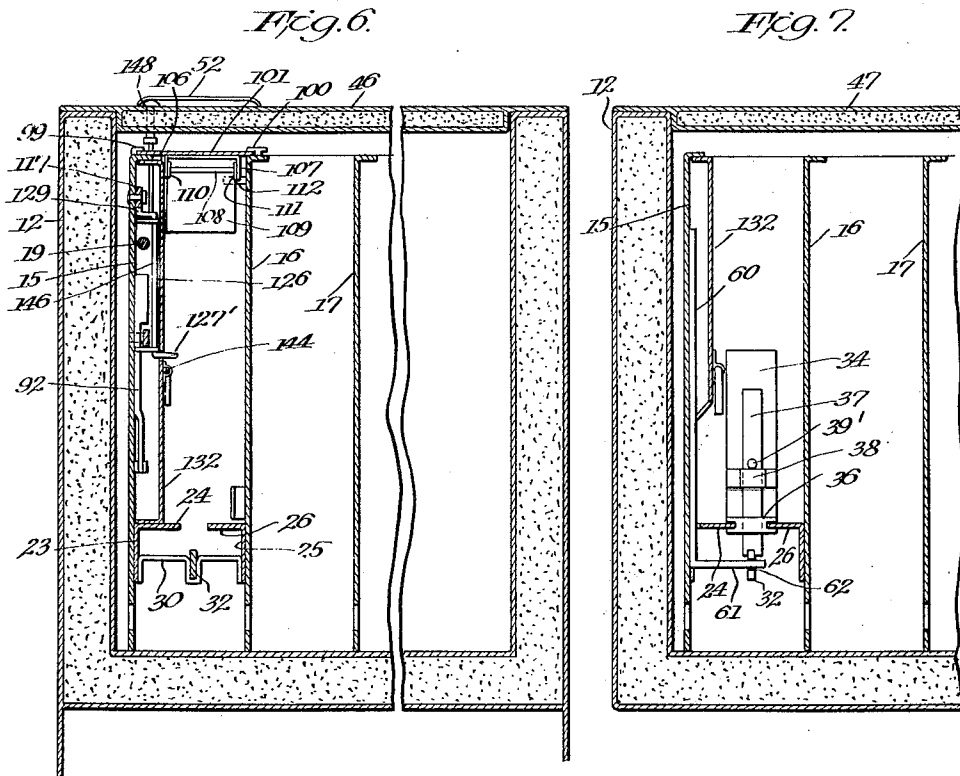
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DISPENSING APPARATUS

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5 Sheets-Sheet 5



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UNITED STATES PATENT OFFICE

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DISPENSING APPARATUS

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Application February 11, 1931

Serial No. 515,088

6 Claims. (Cl. 312—36)

The present invention relates particularly to invention, the various objects of which will be apparatus for dispensing articles such as pack- evident as the description progresses.

ages, containers, or objects generally.

In the accompanying drawings:

Figure 1 is a perspective view of a dispensing cabinet embodying the present invention. 80

Figure 2 is a vertical section through the cabinet and through an article magazine, parts being removed.

Figure 3 is a section on line 3—3 of Figure 2.

Figure 4 is a section similar to that of Figure 3, but showing the parts in a different operating position. 65

Figure 5 is an enlargement of the right hand end of Figure 4.

Figure 6 is a section on line 6—6 of Figure 2. 70

Figure 7 is a section on line 7—7 of Figure 2.

Figure 8 is a section similar to that of Figure 2 with the removed parts replaced, and

Figure 9 is an enlargement of certain mechanism appearing in Figures 2, 4 and 5. 75

Referring to the drawings, 10 indicates generally a cabinet whose upper portion above the line 11 is constituted as a tank 12. Below the line 11 the front wall of the cabinet is provided with a transversely extending aperture 13, through which empty bottles may be guided to a storage place by a trough 14. The tank 12, as shown in Figures 2 to 8, is provided with insulated walls, and is adapted to receive a liquid which is brought to the desired temperature by means of ice or a refrigerating coil. 80

A number of magazines defined laterally by vertical walls as at 15, 16 and 17, Figures 6 and 7, are adapted to be inserted in the tank 12, each magazine having associated therewith a coin slide 18 and an operating rod 19 projecting through a cut out 20 at the top of the front wall of the tank and through a closure plate 21 which covers the cut-out. Each operating rod 19 is provided with a knob 22 and assuming there to be four magazines in the tank, as shown in Figure 1, there will be four coin slides 18 and four operating rods 19. The coin slides 18 are comprised in coin controlled mechanism of well known design and are operative upon the insertion of a proper coin to release the operating rods 19, as will be hereinafter fully described. 85

Since the feeding and ejecting mechanism for all the magazines is the same, only that associated with one of the magazines need be described. In proceeding with the description, therefore, reference will be had to the magazine furthest to the right in Figure 1. 90

Referring to Figures 2 to 8, the side wall 15 has secured thereto adjacent its lower margin an 95

According to the invention, a cabinet is provided for housing one or a series of magazines containing lines of the articles to be dispensed, and means are provided for feeding an article from any one of the lines and ejecting it to a position wherein it may be readily grasped and removed, the feed being in a horizontal direction and the ejection in a vertical direction and both being preferably accomplished by a single movement of an operating element. The operating element, of which there is one for each line, may or may not be under the control of coin controlled devices. In any event, the mechanism is so designed that in the latter case correct operation is amply safeguarded so that upon insertion of a proper coin in a coin controlled device, one article, and one only, will be dispensed or made accessible, and a coin will not be received unless an article is present in the line under the control of the coin device sought to be operated.

The new apparatus is particularly applicable to the dispensing of articles such as bottles containing beverages, and it is in such use that a particularly important feature of the invention arises. When the invention is to be embodied in a bottled beverage dispensing apparatus, the cabinet above mentioned takes the form of a tank adapted to receive a liquid refrigerant, or a refrigerant largely in liquid form, such as a water and ice mixture. The lines of bottles are supported on horizontal trackways always in upright position, the liquid level in the tank being maintained always below the bottle caps and closures, and the bottles are ejected upwardly still in upright position. Means are present which effectively prevent submersive tilting (i. e. such tilting as to submerge the caps) of the bottles. 100

Cooling of bottled beverages is most quickly accomplished by circulating a liquid refrigerant directly in contact with the containers. In former apparatus employing this system, sanitary provisions have been for the most part entirely overlooked so that such devices present a real health menace. The bottles have been permitted to become submerged so that the hand must be plunged in the refrigerant to withdraw them. Contamination of the refrigerant results as does also rusting of the bottle caps. These disadvantages are obviated by the apparatus about to be described as illustrative of the present 105

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angle strip 23 so that one of its webs 24 will lie in a horizontal plane. A similar angle strip 25 is secured to wall 16 with its web 26 lying in the same plane as web 24, the opposed edges of the two webs being spaced apart as is clearly shown in Figure 6. The webs form a trackway for supporting a line of articles to be dispensed here assumed to be bottles 27, which are indicated in broken lines. The trackway extends from substantially the rear end of the magazine, that is the left end of Figure 2 to within one bottle's width of the front end of the magazine. The side walls 15 and 16 are spaced apart a sufficient distance to accommodate operating mechanism which is mounted on the inside wall 15 and at the same time to guide a bottle in freely sliding relation along the trackway.

As may be seen from Figure 3, the side walls of the magazines are connected by front and rear walls 28 and 29, the bent over ends of the side walls being preferably united to the front and rear walls by means of bolts, so that by merely changing the length of the front and rear walls, side walls may be added or taken away to increase or decrease the number of magazines. As has been mentioned, the operating mechanism for feeding and ejecting the bottles in the magazine bounded by side walls 15 and 16 is located on the inside of wall 15. Wall 16 cooperates with walls 15 and 17 to define two magazines, and is thus common to both. The operating mechanism associated with the magazine defined by walls 16 and 17 is mounted on the inside of wall 16, but since it is the same as that mounted on the wall 15, it has not been thought necessary to show it in the drawings.

Slidably guided in straps 30 and 31 immediately beneath webs 24 and 26 and centrally of the elongated aperture existing therebetween is a bar 32 provided on its upper edge with notches 33 spaced apart slightly more than the diameter of the bottles to be dispensed. An upright arm or pusher 34 has a lower horizontal portion 35 angularly bent at its extremity as at 36, Figures 2 and 7. Immediately above horizontal portion 35, the arm and portion 36 are recessed as shown in Figure 7, so that by engaging the opposed edges of webs 24 and 26 in the recess, arm 34 is slidably supported and guided between the webs. A latch 37 is guided for vertical movement in an aperture in the horizontal extension 35 of arm 34 and in a clip 38 fixed to arm 34. The latch is provided with a projecting pin 39 which may be grasped to lift the latch.

Ordinarily, latch 37 is gravitationally engaged in a notch 33 of bar 32. Means which will be later described are provided for reciprocating rod 32, and it will be noted that the shape of notches 33 is such that on movement of rod 32 to the right, Figure 2, a vertical abutment face will be presented to the end of the latch so that the latter will be coupled with the bar to move therewith. Upon movement of the bar in the opposite direction, however, the end of the latch will be engaged by an oblique face of the notch to be cammed out of the notch. Thus, when bar 32 is moved in the feeding direction, arm 34 will move therewith to advance the entire line of bottles in the magazine by the space of one bottle, and upon return of the bar to its initial position, the arm will be uncoupled therefrom, and the latch will fall into the preceding notch when the bar reaches initial position.

At the forward end of the trackway constituted by webs 24 and 26, is a platform 39 normally

lying in the plane of the webs. Platform 39 has a downwardly bent extension 40 which, at its extremity, is bent backwardly parallel to the platform as at 41. Adjacent portion 40 of the platform and portion 41 are recessed in the manner indicated in Figure 3, a pair of vertical guides 42 and 43 fixed to front wall 28 engaging the recesses. A counterweight 44 is mounted on portion or lip 41, which latter is adapted to abut a stop 45 to position the platform 39 in the plane of the trackway.

The tank is provided with a top wall comprising two portions 46 and 47, of which the former extends across the front ends of the magazines and is rigidly fixed in place. The rear portion 47 is hinged to the forward portion and may be raised to give access to the tank interior. It may be secured in closed position, however, as by means of a hasp 48, staple 49 and padlock 50, as indicated in Figure 2. Directly above platforms 39, one being associated with each magazine, top wall portion 46 is provided with discharge openings as at 51, Figure 2, each of such openings being provided with a hinged cover plate 52 spring-pressed to closed position by springs 53.

In the operation of the machine, each magazine is filled with bottles throughout the extent of the trackway, as shown in Figure 3, the foremost bottle being accurately positioned by means of a spring clip 54. Feeding movement of arm 34 advances the leading or foremost bottle 27 to a delivery point on platform 39, whereupon feeding movement of the line ceases, and the platform is elevated to eject the leading bottle through opening 51 to a position in which it projects above top wall portion 46, lifting cover 52 as shown in Figures 1 and 4. In this position, the bottle may be readily grasped and withdrawn, whereupon the cover is closed by means of its associated spring 53. It will thus be seen that throughout its feeding and ejecting movements the bottle is maintained in upright position. Arm 34 is of sufficient height to prevent backward tipping of the rearmost bottle, while forward submersive tilting of the leading bottle is prevented by wall 28 and also by platform 39 when it is in an elevated position shown in Figure 4. During the initial upward movement of the platform or elevator 39 the bottle thereon is held against forward tilting by wall 28 and against backward tilting by the next succeeding bottle which is positioned at the delivery end of the trackway. As soon as the neck of the bottle reaches aperture 51, the walls of the latter, of course, positively guide the bottle.

The tank 12 is provided with an outlet 55 so as to maintain the liquid level below the bottom of the cut-out 20 of the front wall and well below the closure caps of the bottle. Thus, the bottles being positively restrained against submersive tilting not only while in storage, but also during the dispensing operations, it will be evident that no contamination of the pouring ends of the bottles can result through contact with the refrigerant.

An L-shaped member 56 has a horizontal portion 57 slidably guided in clips 58 and 59 fixed to the inner face of side wall 15 and a downwardly projecting portion 60 whose lower end 61 is rectangularly bent and engaged in a slot 62 of bar 32, so that movements of member 56 in the longitudinal direction of portion 57 are directly transmitted to bar 32. In the position of parts shown in Figure 2, portion 57 terminates

slightly forwardly of clip 58, and has secured thereto in perpendicular relation an arm of a further L-shaped member 63 whose other arm 64 projects forwardly and is provided adjacent its end with a pin 65 projecting toward the interior of the magazine.

Intermediate clips 58 and 59, arm 57 is provided with a series of square teeth 66 bounded at each end by recesses 67 and 68. A pawl 69 pivoted on a pin 70 has a spring tail 71 oscillatable between two abutments 72 and 73. Upon movement of arm 57 to the right, the nose of pawl 79 being at recess 68, the pawl will be swung until its tail reaches abutment 72, whereupon the nose of the pawl will cooperate with teeth 66 to prevent movement of the arm to the left until the nose of the pawl falls into recess 67. Hereupon, the action of the pawl is reversed, and upon movement of arm 57 to the left, it cannot be again moved to the right until the nose of the pawl reaches recess 68. The two limit positions of arm 57 are shown, respectively, in Figures 2 and 4.

When arm 57 is in the position of Figure 2, movement to the right is possible, but is not desired, under all conditions. Hence a latch 74 pivoted on pin 75 and urged toward arm 57 by means of a spring 76 is adapted to engage the front end of the arm under certain conditions to prevent its movement in the feeding direction, that is to the right. Operating rod 19 is guided in a clip 77 secured to side wall 15, and at its inner end has fixed thereto a slotted bar 78 in the slot of which is engaged a guide pin 79 secured to side wall 15. Bar 78 is provided at its underside with teeth and notches for cooperation with a pawl 80 in the manner as described above in connection with pawl 69. At its inner extremity bar 78 has pivoted thereto on a pin 81 a substantially U-shaped catch 82, the top arm of which is provided interiorly with a nose 83 adapted to engage a lug 84 at the end of arm 57. The lower arm of the catch is provided exteriorly with a hump 85 engaged upon movement of the bar 78 to the right by a cam 86 fixed to the side wall 15, whereby catch 82 is swung about its pivot to disengage nose 83 from lug 84. Secured to the bar 78 somewhat forwardly of catch 82 is an L-shaped member 87 to the rearwardly projecting end of which is secured a tension spring 88 whose other end is secured to a pin 89 on side wall 15.

Adjacent its forward end bar 78 is provided with a downwardly projecting cam nose 90 adapted upon movement of the bar to the right, that is in the feeding direction, to abut a cam face 91 formed on the upper end of a lever 92 pivoted to the side wall 15 on a pin 93. To the tail of lever 92 is fixed one end of a flexible chain 94 trained forwardly and upwardly about a pulley 95 and downwardly about a pulley 96 to be secured at its other end to an arm 97, Figure 3, projecting laterally of platform 39 and secured to the latter. The position of lever 92 is normally that shown in Figure 2, wherein the swinging movement of its upper end to the left is limited by an abutment pin 98.

Slidable in guideways 99 and 100 at the top of walls 15 and 16 is a slide 101 provided with an aperture 102 which, in the position of parts shown in Figure 2, is immediately above the leading bottle on the trackway and is of sufficient size to pass the bottle. The slide has a rearward extension 103 having a pair of downwardly extending fingers 104 and 105 between which is engaged pin 65 at the end of arm 64. The slide has depending side flanges 106 and 107, Figure 6, supporting a

transverse pin 108 from which is pivotally supported a flap 109 by means of angularly bent ears 110 and 111 perforated to receive pin 108, these ears extending upwardly to the rear of pin 108 into substantial abutment with the underside of the slide when the flap is in the vertically depending position shown in Figures 2, 4 and 5. Swinging movement of the lower end of the flap to the left is thus prevented. The flap is of such length as to project downwardly below the tops of the bottles in the magazines, and in the position of parts shown in Figure 2 extends between the two leading bottles. When the line of bottles is advanced, the slide is advanced concurrently therewith, inasmuch as it derives its movement from arm 57 which is the motive element for the pusher 34. Consequently, when the leading bottle has moved on to elevator 39 the slide aperture 102 is directly above this bottle and in register with aperture 51 in the top wall. Flap 109 has, of course, also moved with the slide and takes up a position immediately behind an abutment pin 112, so that it is unable to swing in the feeding direction of the line. Upon ejection of the bottle on the elevator, it is impossible to reach under the flap and extract the next bottle, the removal of the latter being also partially blocked by the elevator itself which is in the position of Figures 4 and 5.

The coin slide 18 forms a part of a device of well known form supported on brackets as at 114, Figure 2, secured to the end wall 28 of the magazine exteriorly of the latter. Upon placing the coin in slide 18, the slide may be pushed inwardly to project a plunger 115 at the rear of the device 113. Plunger 115 is connected to an angular portion 116 of a slide 117 which is guided in a clip 118 and by means of a screw 119 engaged in a longitudinal slot 120 of the slide for reciprocating movement parallel to bar 78. As slide 18 is pushed inwardly slide 117 is propelled thereby and a proper coin having been placed in the slide, the nose 121 of the slide will abut a spring-pressed pawl 122 which, in the initial position of the parts as in Figure 2, is engaged in front of an abutment 123 of bar 78 as shown in Figure 2, swinging the pawl free of the abutment to release bar 78. Hereupon the nose 124 of a pivoted pawl 125 engages in a recess in the end of slide 117 to hold pawl 122 in the released position shown in Figure 9. Bar 78 being thus released, rod 19 may be pulled out to operate the feeding and ejecting mechanism.

A vertical rock shaft 126 is journaled in brackets 127 and 128 supported by side wall 15 and has a lower angular foot portion extending somewhat over the trackway. At its top, the shaft has an angular portion 128 terminating in an upwardly extending finger 129 tending to be swung toward slide 117 by means of a spring 130. Assuming slide 117 to be in an initial position to which it is returned upon each operation, and assuming the magazine to be empty, spring 130 has caused finger 129 to engage in a notch 131 formed in the underside of slide 117, so that slide 18 cannot be pushed inwardly even if a coin has been placed therein, and the coin can be retrieved. If there is a bottle at the forward end of the trackway, however, it has rocked the shaft 126 through abutment with foot 127 to swing finger 129 out of notch 131, thus releasing slide 117.

As shown in Figures 6, 7 and 8, the mechanism mounted on wall 15 is covered by means of a shield 132 which has an angular flange at its

top underlying a top flange of side wall 15, as shown in Figures 6 and 7, so as to be bolted thereto. At its lower edge, Figure 8, the shield has an inwardly and downwardly bent flange in the nature of a tongue adapted to be engaged between wall 15 and a clip 133. At the leading end of the trackway, as shown in Figures 6 and 8, the shield extends down to the trackway so as to form a fully effective lateral guide for the bottle at the leading end of the line. At its upper edge the shield is provided with a cut-out 134 in which pin 65 travels and also a cut-out 135 along which the angular portion 116 of the slide 117 travels without interference. The shield is also provided with an aperture 136 through which foot portion 127 of rock shaft 126 is adapted to project.

Supported below aperture 136 by means of clips 137, 138 and 139 fixed to shield 132 is a rock shaft 140 having rectangularly bent ends 141 and 142 lying substantially in the same plane. End 141 is positioned at the end of the trackway, while end 142 is at the position of the last bottle in the magazine when the magazine is fully loaded. In loading, the feeding arm 34 is released from bar 13 by upward movement of latch 37 and pulled back to the rear end of the magazine which brings it somewhat to the rear of end 142. End 142 is now grasped and swung up to substantially horizontal position, thus rocking shaft 140 and bringing end 141 also to substantially horizontal position. The bottles are now placed on the trackway and pushed forwardly until the foremost abuts end 141, thus assuring its correct position, since it will be understood that prior to the operation of the apparatus elevator 39 must be vacant. As the last bottle is inserted in the line by a downward movement, it strikes end 142 and moves it and also end 141 to the downwardly extending position shown in Figure 8, thus releasing the leading bottle for movement on the platform when the apparatus is operated.

The magazine being thus filled, the operation of the machine is as follows:

A coin being inserted in slide 18 the slide is pushed in as far as it will go, thus lifting pawl 122 from the position shown in Figure 2 to that shown in Figure 9, the pawl being locked in this position as has been hereinbefore described. The knob 22 is grasped and pulled and catch 82 engaging lock 84, as shown in Figure 2, arm 57 imparts feeding movement to bar 32 and pusher 34 so that the entire line of bottles is advanced to bring the leading bottle onto platform 39. The leading bottle having reached this position, hump 85 is moved through engagement with cam 86 to lift catch 82 releasing nose 83 from lug 84 so that arm 57 will no longer participate in the movement of rod 19 and bar 78.

At the initiation of the movement of bar 78 a projection 142 at the upper leading end thereof strikes the tail of pawl 125 to release the nose of the latter from nose 132, and thereupon the end of arm 64 striking a pin 143 on slide 117 begins the return of the latter. It will be recalled that arm 64 is fixed to arm 57 to travel therewith.

At the completion of the feeding movement and upon the release of lug 84 by nose 83 cam nose 90 has reached cam face 91, so that upon continued movement of bar 78 lever 92 is swung to move platform 39 upwardly from the position of Figure 2 to that of Figures 4 and 5, projecting the bottle thereupon upwardly through slide

opening 102 and top opening 51, the former having been brought in register with the latter in the manner hereinbefore described. As the platform 39 reaches its uppermost position, a spring-pressed latch 144 moves upwardly into engagement with a lug 145 at the lower leading edge of bar 78 to lock the bar in its forward limit position. A vertically slidable push rod 146 resting in its lower end on latch 144 is in contact at its upper end, which projects above the top of slide 101, with an expanded foot portion 147 formed on the lower end of an upwardly headed pin 148 slidable in an aperture in top portion 46 beneath cover 52. Push rod 146 extends through a suitably elongated slot in slide 101 so as not to interfere with the movements of the latter. The weight of cover 52 ordinarily holds latch 144 in the position shown in Figure 2. When the cover is lifted by the ejected bottle as in Figures 1, 4 and 5, latch 144 swings upwardly in position to engage lug 145.

Platform 39, then, being locked in its upper position by means of latch 144 and lug 145, the upwardly projecting bottle may be removed at leisure. In its upward movement the bottle is passed in wiping contact with a wiping ring 149 set in an annular groove intermediate the top and bottom edges of aperture 51, the ring being formed of some compressible substance, for example sponge rubber, and provided with a hole of such size that the ring will exert circumferential wiping contact on the bottle during its upward movement to dry it.

The bottle being removed, cover 52 is closed by means of spring 53, striking pin 148 and through the intermediary of push rod 146 moving latch 144 downwardly to release lug 145 whereupon bar 78, together with operating rod 19 are drawn rearwardly by spring 88, the end of bar 78 striking the end of arm 57 and returning the latter with it so that all parts again take the position shown in Figure 2. As hump 85 of latch 82 passes from cam 86 during the return movement, nose 83 gravitates into engagement with lug 84. Inasmuch as the adjacent ends of arm 57 and bar 78 are in abutting relation, latch 74 is unable to engage the arm 57 so as to impede forward movement of the latter, forward movement of all the parts, however, being prevented by pawl 122 which has fallen in front of abutment 123 of bar 78. Platform 39 and lever 92 are returned to the initial position shown in Figure 2 by weight 44.

If upon removal of the ejected bottle it is attempted to reach within the magazine through openings 51 and 102 to grasp the bottle which has been fed to the leading position on the trackway, flap 109 will prevent the top of the bottle being reached, as has been described. It will be recalled that while bar 78 is locked in its forward position, arm 57 is disengaged from the bar so that the locking means are inoperative as to the arm. The nose of pawl 69 is in recess 67. Now in attempting to reach rearwardly within the magazine through slide opening 102, the slide will be moved rearwardly and pawl 69 with its spring tail 71 in engagement with abutment 73, will engage teeth 66 so that forward movement of the slide will be rendered impossible and the slide opening will thus be locked out of register with opening 51 so that the removal of a bottle would be rendered impossible in any event. If through such tampering with the slide, arm 57 is returned to the initial position shown in Figure 2, the nose or

pawl 69 passes into recess 68, thus unlocking the arm for feeding movement. However, at this point, latch 74 engages over the end of the arm to prevent feeding movement. Upon release of latch 144 from lug 145 bar 78 is returned to the position of Figure 2, its end striking the cam head of latch 74 and forcing the latch downwardly out of engagement with arm 57. The cam surface in advance of nose 83 of the latch 82 causes the nose to ride up over lug 84 to drop down in engagement behind it.

It will be seen that I have provided an apparatus very simple in operation and yet fully safeguarded. Pawls 69 and 80, cooperating with arms 57 and 78, prevent the return of the latter from any intermediate positions of advance so that should knob 22 at any time slip from the grasp of the operator, the apparatus will be held against return to initial position. It will further be noted that the coin control apparatus having been operated, the mechanical dispensing functions are all accomplished by a simple movement of the operating rod 19 in one direction. After the operation of the device, the return of the parts to initial position is assured by the inforced closing of cover 52 which, as it closes, operates the releasing mechanism.

The apparatus may be relatively cheaply manufactured, since substantially all of the parts are metal stampings. To assure a perfect operation, the moving parts subject to contact with the refrigerant are preferably made of rustless steel. The tank is, of course, made of sufficient size to accommodate the desired number of magazines and also a quantity of ice or a refrigerating coil. Circulation of the refrigerant between the tank and the magazines is effected through the elongated slots running longitudinally of the trackways, that is between webs 24 and 26, although, if desired, the side walls of the magazines may also be provided with suitable perforations.

While I have shown and described in detail an apparatus embodying the invention in practical form, I wish it understood that I do not necessarily limit myself to structure, except as in the following claims.

I claim:

1. In an article dispensing apparatus, a horizontal trackway for supporting a line of articles, means for feeding the articles at the leading end of the line along the trackway to a delivery point, means for ejecting in a vertical direction the article at the delivery point, a movable operating member, means engaging the feeding means with the operating member during an initial movement of the latter, means for disengaging said engaging means, and means operable upon continued movement of the operating member in the same direction to actuate the ejecting means.

2. In an article dispensing apparatus, a horizontal trackway adapted to support a line of articles, means to feed the line of articles to move the leading article to a discharge point, a slide movable above the leading end of the line, a de-

pending flap pivoted to said slide on an axis extending transversely of the line, the lower end of the flap extending between the leading article and the article next behind the leading article, means positively preventing swinging of the flap past a substantially vertical position in a direction counter to the feeding direction of the leading article, means operable upon feeding the line to move the slide in the feeding direction concurrently with the leading article, and a fixed abutment external to the slide and immediately in advance of the flap when the leading article reaches the discharge position, said abutment preventing swinging of the flap in the feeding direction.

3. Structure according to claim 2, wherein the slide is provided with an aperture above the leading article of a size to pass the latter.

4. In an article dispensing apparatus, a horizontal trackway for supporting a line of articles, means for feeding the article at the leading end of the line to a delivery point, a top wall having a discharge aperture above the delivery point, a horizontal slide having an aperture above the leading article, means for advancing the slide from an initial position to bring its aperture into register with the discharge aperture as the leading article comes under the latter, the slide being returnable to initial position by retrograde movement, and means automatically operable upon such retrograde movement to lock the slide against advance again before its initial position has been reached.

5. In an article dispensing apparatus, a horizontal trackway for supporting a line of articles, a top wall having a discharge aperture adjacent one end of said trackway, a hinged cover overlying said aperture, a platform at said end of said trackway and beneath said aperture, means for feeding an article from the trackway onto the platform, means for elevating the platform to project the article through said aperture, the article lifting the cover, means for locking the platform in elevated position, and releasing means for said locking means actuated upon closing of the cover.

6. In an article dispensing apparatus, a magazine having a delivery and a loading end and comprising a horizontal rectilinearly extending trackway for supporting a line of articles, an elevator at the delivery end of the trackway, a rock shaft extending parallel to the trackway above and at one side of the trackway, an arm on said shaft and movable across the delivery end of the trackway to confine the leading end of the line of articles to the trackway when loading the magazine, a second arm on the shaft substantially in the plane of the first and at the loading end of the magazine, said second arm being engageable by the last article upon its downward insertion in the magazine to rock the shaft and swing the first arm out of the feeding path of the line.

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