Jan. 19, 1943. W. C. FERRIS 2,309,055

DELIVERY COOLER FOR PACKAGED GOODS

Filed Nov. 12, 1940 5 Sheets-Sheet 1

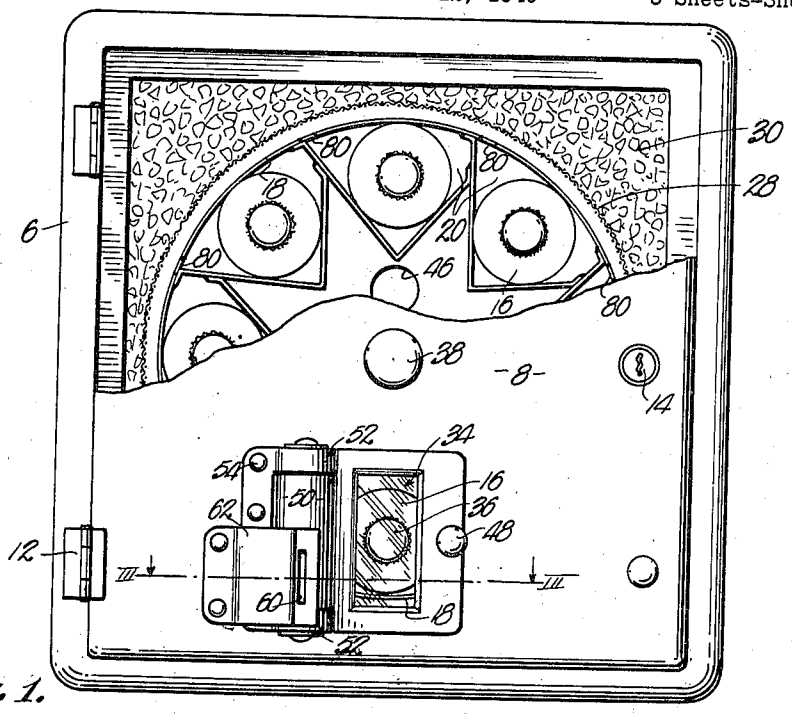


Fig. 1.

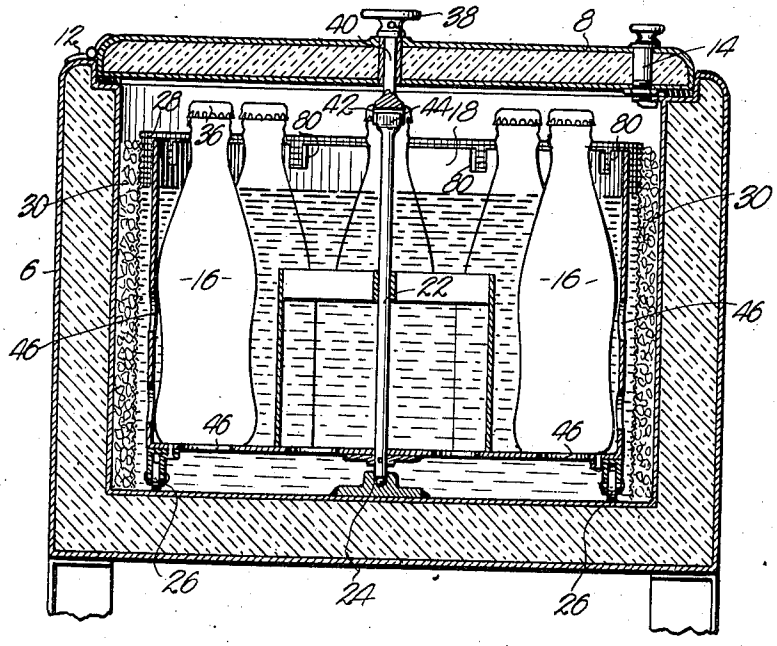


Fig. 2.

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DELIVERY COOLER FOR PACKAGED GOODS

Filed Nov. 12, 1940 5 Sheets-Sheet 2

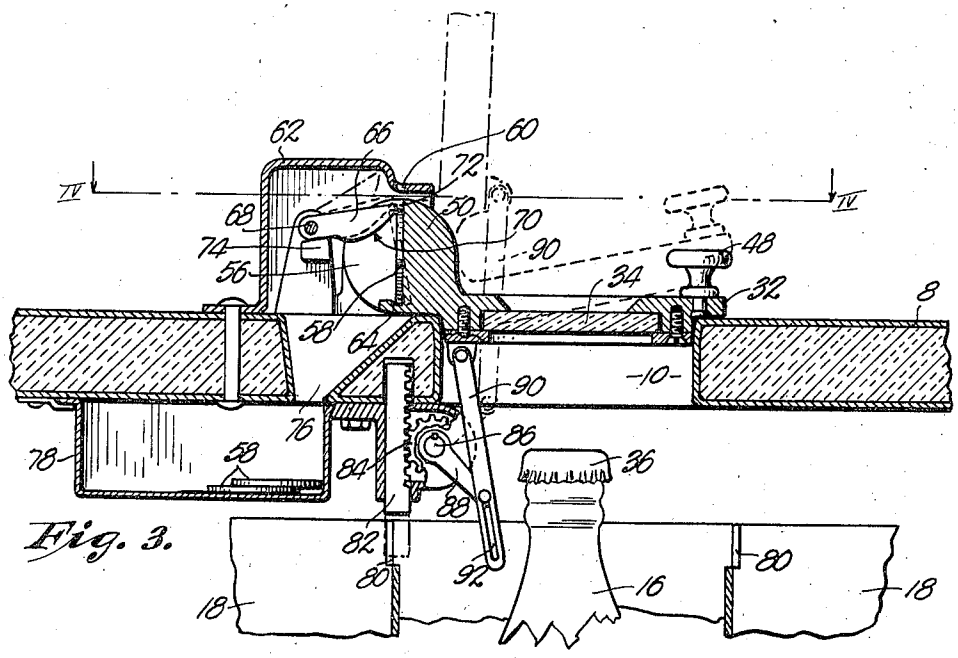


Fig. 3.

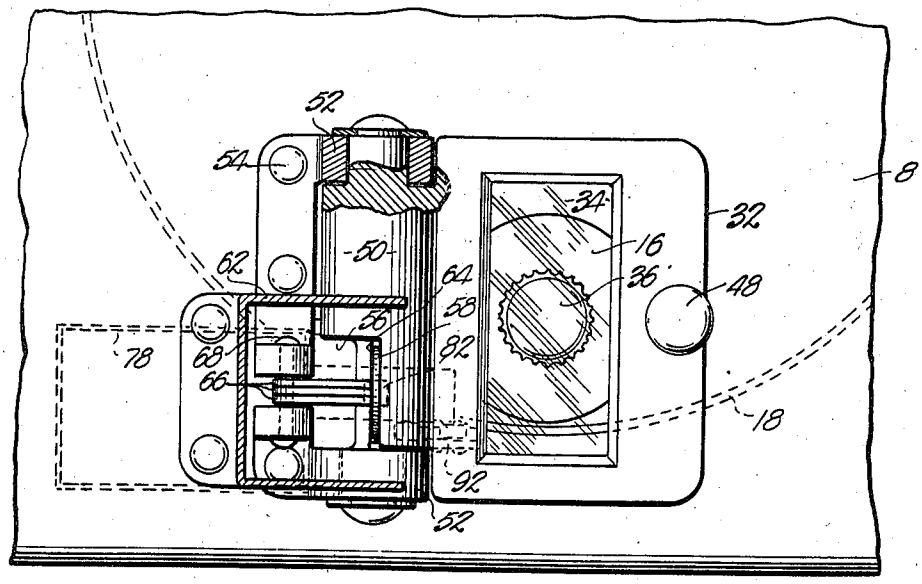


Fig. 4.

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DELIVERY COOLER FOR PACKAGED GOODS

Filed Nov. 12, 1940 5 Sheets-Sheet 3

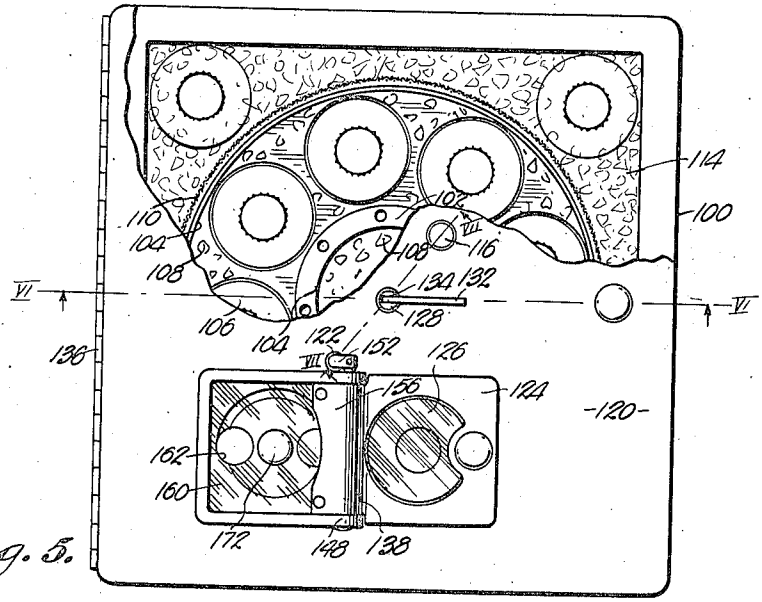


Fig. 5.

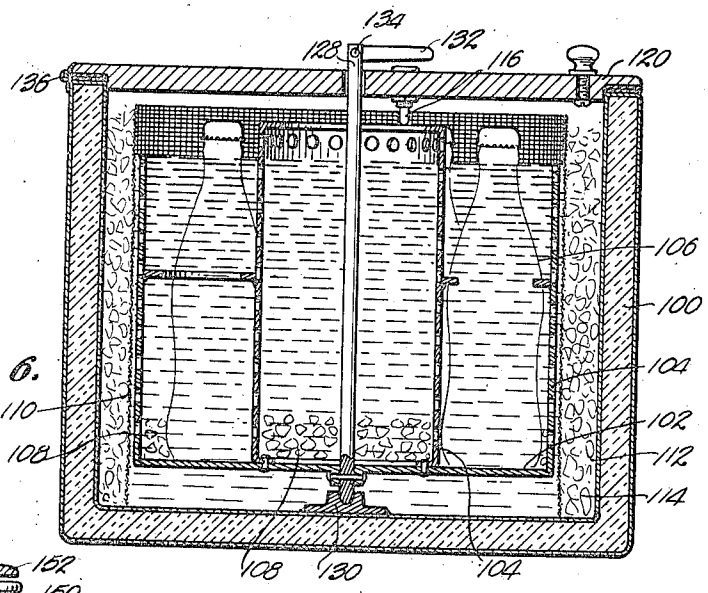


Fig. 6.

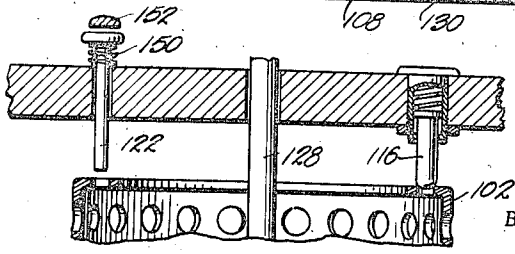


Fig. 7.

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DELIVERY COOLER FOR PACKAGED GOODS

Filed Nov. 12, 1940 5 Sheets-Sheet 4

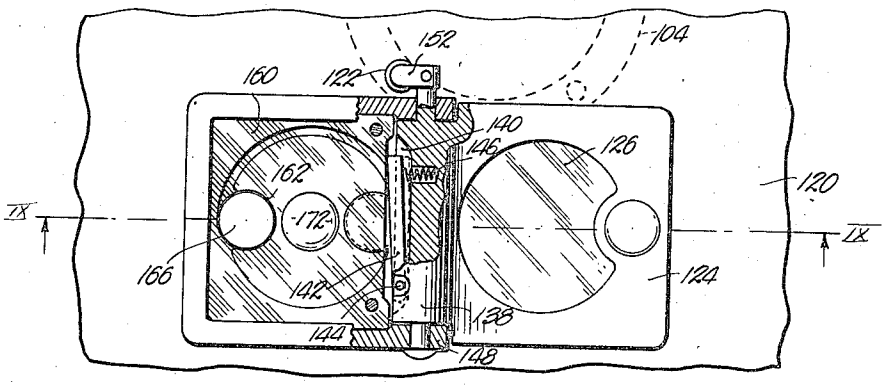


Fig. 8.

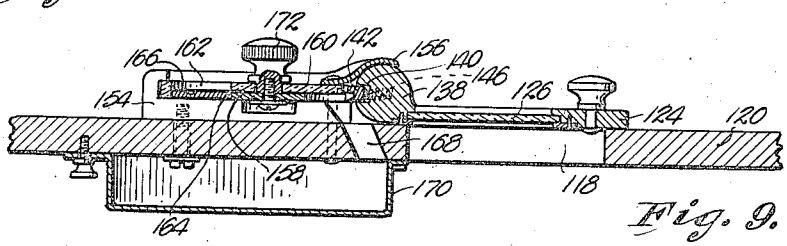


Fig. 9.

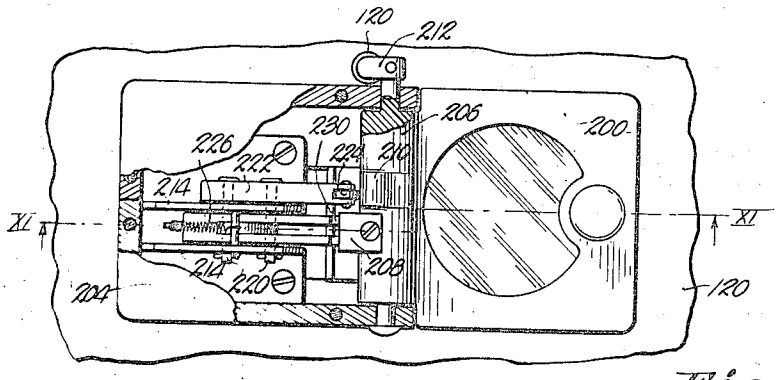


Fig. 10.

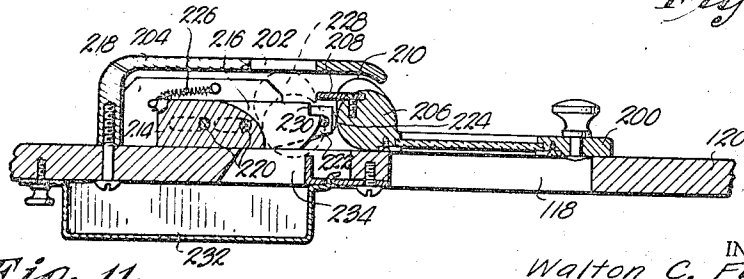


Fig. 11.

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Jan. 19, 1943. W. C. FERRIS 2,309,055

DELIVERY COOLER FOR PACKAGED GOODS

Filed Nov. 12, 1940 5 Sheets-Sheet 5

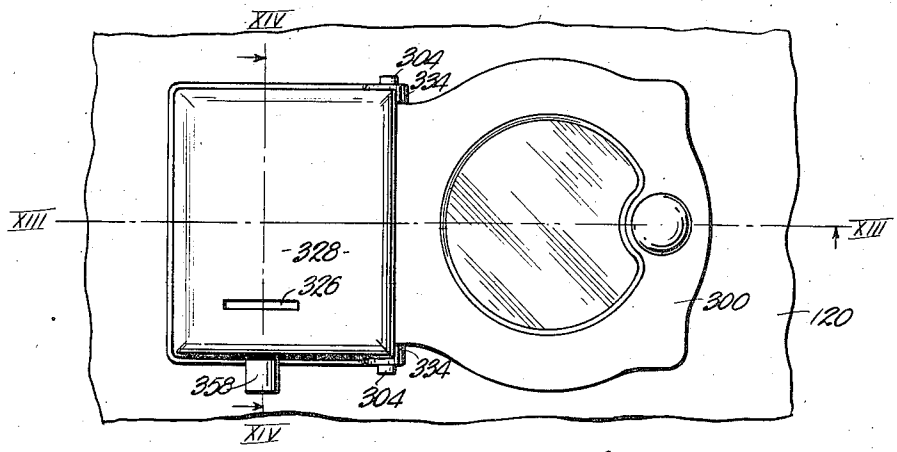


Fig. 12.

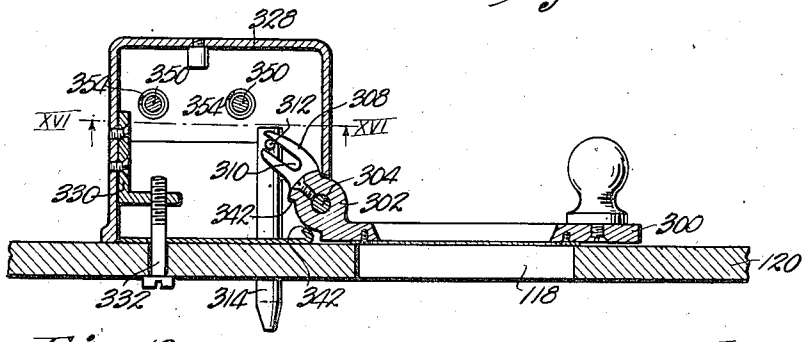


Fig. 13.

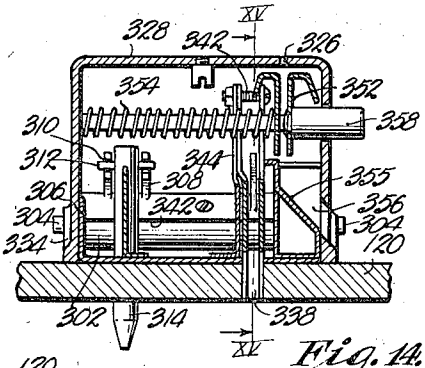


Fig. 14.

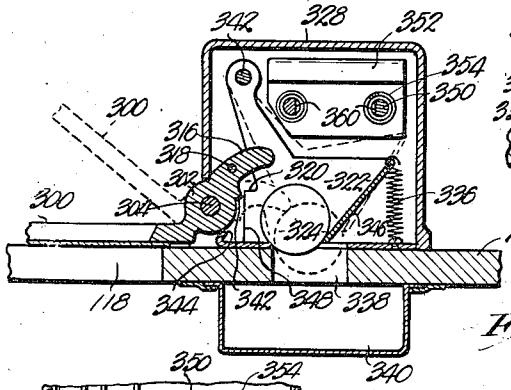


Fig. 15.

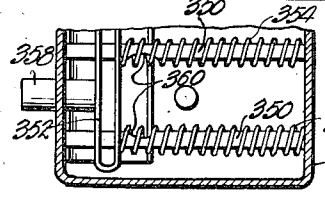


Fig. 16.

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Patented Jan. 19, 1943 2,309,055

UNITED STATES PATENT OFFICE

2,309,055

DELIVERY COOLER FOR PACKAGED GOODS

Walton C. Ferris, Lincoln, Nebr., assignor, by mesne assignments, to Carton Coolers, Inc., Lincoln, Nebr., a corporation of Nebraska

Application November 12, 1940, Serial No. 365,203

7 Claims. (Cl. 194—65)

This invention relates to package cooling and dispensing means in the nature of a delivery cabinet for bottled goods particularly, and the primary object is the provision of a relatively small case for the goods, which case has means for permitting the purchaser to select the package to be withdrawn therefrom; means for locking the door to the delivery opening until a coin is moved to place in specially formed coin controlled structure associated with the door; and means for latching the package magazine against movement when the door of the case is open.

This invention has for one of its important aims the provision of a delivery cooler for bottled goods, having parts operable by a coin whereby the door of the cooler is released for opening without the employment of expensive, complicated and bulky coin chutes or similar mechanism now commonly used on vending equipment.

An even further object of the present invention is the provision of unique, novel and simple door controlling mechanism for portable delivery coolers, mounted directly upon the case of the cooler to cooperate with specially formed hinging elements for the door, and employing a coin as a unit of the mechanism.

Heretofore, vending machines for bottled goods have been relatively large and equipped with slug ejectors, coin chutes, and other elaborate and expensive apparatus, whereby the machines may be used in a public location without danger of loss due to tampering and the introduction of pieces of metal other than genuine coins. This invention contemplates the provision of a small portable delivery cooler for packaged goods, which cooler is made to maintain the contents at a desirable, low temperature, yet which has means for permitting the operator to select the desired bottle that may, after selection, be quickly withdrawn from the cooler when a coin of proper denomination is positioned to become an element of the door hinge itself, and that will serve to release the door lock when the said door is moved toward the open position.

A delivery cooler made in accordance with the present invention may be moved into an office or other place of business after the distributor has charged the cooler with a relatively small number of bottles and enough ice to keep the same cold. It is picked up and replaced after the bottles have been taken therefrom by the employees of the particular office or place of business. Because the general public does not have access to the cooler, and further, because only employees of any establishment being served with the equipment contemplated use the same, it is unnecessary to utilize expensive coin controlled and slug ejecting apparatus.

Coolers embodying several forms of the present invention are shown in the accompanying drawings, wherein:

Figure 1 is a top plan view of a delivery cooler for packaged goods made in accordance with the present invention.

Fig. 2 is a vertical central sectional view through the cooler.

Fig. 3 is an enlarged fragmentary detailed sectional view through the door of the cooler, taken on line III—III of Fig. 1.

Fig. 4 is a fragmentary horizontal sectional view taken on line IV—IV of Fig. 3.

Fig. 5 is a top plan view of a delivery cooler for packaged goods made to embody a modified form of the invention.

Fig. 6 is a vertical sectional view through the same taken on line VI—VI of Fig. 5.

Fig. 7 is an enlarged fragmentary detailed sectional view through the cooler shown in Fig. 5, taken on line VII—VII of Fig. 5.

Fig. 8 is an enlarged fragmentary elevational view of a portion of the cooler shown in Fig. 5, parts being broken away for clearness.

Fig. 9 is a vertical sectional view through the door and associated parts, taken on line IX—IX of Fig. 8.

Fig. 10 is a fragmentary elevational view of a portable cooler door and associated mechanism made to embody a still further modification of the invention.

Fig. 11 is a sectional view taken on line XI—XI of Fig. 10.

Fig. 12 is a fragmentary plan view of a portion of a portable cooler made to embody a still further modification of the invention.

Fig. 13 is a vertical sectional view taken on line XIII—XIII of Fig. 12.

Fig. 14 is a vertical cross sectional view through a portion of the door controlling mechanism taken on line XIV—XIV of Fig. 12.

Fig. 15 is a vertical cross sectional view taken on line XV—XV of Fig. 14; and

Fig. 16 is a detailed sectional view taken on line XVI—XVI of Fig. 13, looking in the direction of the arrows.

In the embodiment of the invention illustrated in Figs. 1 to 4 inclusive, the heat insulated case 6 is relatively small and provided with a cover 8 through which is formed a delivery opening 10. Cover 8 is hinged as at 12 to case 6 and a lock

14 may be provided to prevent unauthorized entrance into case 6.

The packaged goods in this instance, is shown to be bottled soft drinks of commercial form, and the bottles 16 thereof are arranged in a circular path below delivery opening 10 and in a magazine 18 that is divided into a number of compartments 20, each of which receives a bottle 16.

Magazine 18 is mounted for rotation upon a rod 22 having a bearing 24 on the bottom of case 6 and to prevent rocking, the edge of magazine 18, remote from rod 22, is equipped with a series of rollers or casters 26.

A cylindrical shell 28 of foraminous material circumscribes magazine 18 to prevent cracked ice 30 from retarding the movement of magazine 18 when bottles 16 are being disposed beneath door 32 for the purpose of selecting the desired flavor.

The door, generally designated by the numeral 32, has a transparent panel 34 therein through which the top of caps 36 on bottles 16 may be viewed. An operating handle 38 secured to stub shaft 40, journalled in cover 8, allows the operator to turn magazine 18. The lower end of stub shaft 40 has a transverse slot 42 therein that receives squared head 44 created on the upper end of rod 22, thus driving connection between 38 and 22 is effected while covering 8 is permitted to swing about hinges 12 when the case is being charged with bottles or ice 16 and 30 respectively.

Magazine 18 is provided with a number of perforations 46 so that water resulting from the melting of ice 30, may rise around bottles 16 to cool the contents thereof.

Door 32 has a knob 48 at the free edge thereof that may be grasped by the operator when the door is to be swung to the open position about the axis of hinge cylinder 50. Hinge cylinder 50 is journalled in bearings 52 mounted directly upon cover 8 through the medium of rivets or the like 54.

Cylinder 50 is integral with door 32 and provided with a specially formed notch 56 that receives coin 58 when it is dropped through slot 60 formed in housing 62. Housing 62 overlies the notched part of cylinder 50 to protect the same and to permit the introduction of coins 58 in the proper manner.

A coin supporting ledge 64 integral with cylinder 50 supports coin 58 until the door is open, as will be more fully hereinafter described.

A plurality of dogs 66 swingably mounted upon pintle 68 and each having a cam face 70 formed thereon, lie in the path of travel of flat face 72 formed on cylinder 50 until coin 58 is introduced. Dogs 66 are held by the action of gravity in the position shown in full lines of Fig. 3. A lock 74 precludes dropping of dogs 66 farther than the position shown in Fig. 3, but permits the dogs to be lifted by coin 58 when it is in the position illustrated in full lines of Fig. 3.

A chute 76 through cover 8 communicates with coin box 78 in order that coin 58 may drop into said box when door 32 is lifted to the fully open position.

Latching means for precluding rotation of magazine 18 after door 32 is open, is operated by the door and one embodiment of such means is illustrated in Fig. 3. Magazine 18 has a series of notches 80 to receive rack 82 when any one of bottles 16 is at a station directly beneath delivery opening 10 for withdrawal therethrough. Rack 82 is moved downwardly by the rotation of pinion 84 that is rotated about the axis of its supporting shaft 86 by links 88 and 90. The latter is slotted as at 92 to permit a certain amount of freedom of movement and to establish the proper relation between coin 58, dogs 66, notches 80 and rack 82.

The operation of this delivery cooler for packaged goods has been made clear during the foregoing specification, and it will be obvious to one skilled in the art that when coin 58 is positioned as shown in Fig. 3, the edge thereof will engage cam faces 70 of dogs 66 to lift the same out of the path of travel of a part of the door 32. In this instance, that part is formed on cylinder 50 and is the flat surface 72.

When door 32 has been moved to the completely open position, coin 58 will drop into box 78 and when door 32 is returned to its closed position, it cannot again be opened until a coin is dropped through slot 60.

Such construction as has been described and illustrated, may be inexpensively manufactured to permit the use of a large number of coolers without a prohibitive investment. The parts are rugged, durable and not likely to become maladjusted. A sufficient number of bottles 16 may be supplied for the personnel of a given department of a business establishment, for instance, and instead of reloading the cooler at the point of purchase, the cooler in its entirety is taken away for recharging and another left in its place.

A modified form of the invention is illustrated in Figs. 5 to 9 inclusive, and the numeral 100 designates a case having heat insulated walls within which is rotatably mounted a magazine 102 having walls 104 of foraminous material confining a number of bottles or packaged goods 106.

Cracked ice 108 may be loaded directly into magazine 102 around bottles 106, if it is desired to lower the temperature rather quickly. As shown in Fig. 6, a screen partition 110 is also usable to set off a chamber 112 for cracked ice 114 that is not in direct contact with bottles 106. Such a magazine may be employed in the form of the invention illustrated in Figs. 1 and 2 or as will later become apparent, with the form shown in either Figs. 10 and 11 or 12 to 16 inclusive.

Magazine 102 cooperates with plunger 116 in yieldably stationing one of bottles 106 beneath the delivery opening 118 in hinged cover 120. A latch 122 extending into case 100 through cover 120, engages a portion of magazine 102 as door 124 is swung toward the open position after the insertion of a suitable coin. Door 124 has a transparent panel 126 therein for the purpose of exposing to view, the caps of the bottles 106 as magazine 102 is rotated.

Easy rotation is afforded through the medium of rod 128 journalled in bearing 130 mounted on the bottom of case 100. Handle 132 is swingably attached as at 134 to rod 128 for the purpose of permitting cover 120 to be swung to an open position about hinges 136.

The structure defined to this point and illustrated in Figs. 5 and 6 is capable of having associated therewith, door latching parts shown in either Figs. 5 to 9 inclusive, Figs. 10 and 11, or Figs. 12 to 16 inclusive.

Referring now to details of construction illustrated in Figs. 5, 8 and 9. Door 124 has a hinge cylinder 138 longitudinally milled to form a cavity 140 within which is swingably disposed a locking bar 142. One end of bar 142 is pivotally secured in cavity 140 by pintle 144, while the other end thereof is urged outwardly through the medium

of spring 146. Hinge cylinder 138 has reduced end portions journalled in bearings 148 mounted directly upon cover 120.

Latch 122, normally edged out of engagement with magazine 102 by spring 150, is beneath arm 152 projecting radially from the axis of hinge cylinder 138. Lifting door 124 will move arm 152 against latch 122 to force the latter into the path of travel of a part of magazine 102 to preclude its rotation when door 124 is open. Locking bar 142 normally overlies the upper face of member 154 beneath shield 156 carried thereby.

Coin plate 158 mounted for rotation on member 154 underlies a sheet of transparent material 160, through which coin receiving slot 162 is formed. Coin plate 158 has a coin receiving cavity 164 to receive the coin 166.

Passage 168 is in communication with coin box 170 mounted on the under side of cover 120. When coin 166 is positioned as seen in Figs. 8 and 9, knob 172 is manipulated to turn the coin to a point against grooved locking bar 142 where the same will be moved inwardly against the force of spring 146 and away from engagement with the top of member 154. In this condition, door 124 may be raised to withdraw bottle 106 underlying delivery opening 118.

As door 124 is lifted, the coin will be tipped into passage 168 and dropped by gravity into coin box 170. When the door is dropped to the normal closed position, locking bar 142 will be snapped to a place where opening the door cannot again occur until a coin has forced the bar to the unlocked position.

Figs. 10 and 11 embody a modification of the invention but still include the opening of door 200 through a coin of proper denomination dropped through coin slot 202 formed in shield 204 mounted on cover 120.

It is notable that this cover 120 remains the same in form throughout the various modifications and that the same has the delivery opening 118 therein.

Door 200 in this instance however, has a hinge cylinder 206 from which extends ear 208 and upon which is formed a cam face 210. An arm 212 serves to lock magazine 102 when door 200 is open in precisely the same fashion as above set down.

A locking bar 214 having a longitudinal groove 216 at one end thereof is mounted for rectilinear reciprocation by the pair of walls 218, both of which are slotted to receive pins 220. These pins are passed through locking bar 214 and carry an arm 222, on the end of which is mounted roller 224. Spring 226 yieldably maintains locking bar 214 and its associated parts in a normal position, illustrated in Figs. 10 and 11.

When a coin 228 is dropped through coin slot 202, it will rest in groove 216 against the outer edge of ear 208 and a portion of bar 214. When door 200 is lifted, the movement is imparted to locking bar 214 to withdraw shoulder 230 thereof from beneath ear 208. When ear 208 passes below shoulder 230, coin 228 drops into coin box 232 through passage 234. Cam face 210 maintains locking bar 214 out of the path of travel of ear 208 until door 200 has returned to the closed position.

Parts of the portable cooler illustrated in Figs. 12 to 16 inclusive, embody a still further modification of the invention and are usable on cases constructed precisely as shown in Fig. 6.

Door 300 over delivery opening 118 of cover 120 is rigid with a hinged cylinder 302, the journalled, reduced ends of which, in this particular instance, are created by rod 304 having the ends thereof journalled in bearings 306. The arm 308 having a slot 310 therein to receive cross pin 312 in latch 314, functions to move said latch into the path of travel of a portion of magazine 102 that may be of conventional form, within the case with which the mechanism being described is combined.

When door 300 is open, cross pin 312 will ride along slot 310 to force latch 314 into the underlying case, not shown in Figs. 12 to 16.

Hinge cylinder 302 has a laterally extending finger 316 integral therewith that carries pins 318 to strike shoulder 320 on locking member 322 when a coin 324 is not in place. Thus, the movement of door 300 is limited and unless coin 324 has first been dropped to the position shown in full lines of Fig. 15, through coin slot 326 in housing 328, the door 300 cannot be opened a sufficient distance to withdraw the underlying bottle.

Housing 328 is secured to cover 120 through the medium of a bracket 330 and bolt 332. Hinge rod 304 passes not only through previously mentioned bearings 306, but through ears 334 integral with housing 328.

When coin 324 is resting in locking member 322, spring 336 is yieldably holding member 322 against the edge of coin 324 to preclude its dropping through passage 338 into coin box 340. Lifting the free edge of door 300 will move the end of finger 316 against the edge of coin 324 and swing member 322 about its pivotal connection 342 with bracket 344. Locking member 322 has spaced apart parallel walls between which coin 324 lies when as shown in Fig. 15, and tipping is thereby prevented. Continued movement of finger 316 against coin 324 will flex spring 336 and lift the inclined wall 346 of member 322 away from a position overlying a part of passage 338 until coin 324 clears the lower edge thereof to drop into box 340.

Obviously, as member 322 is moved toward the position shown in dotted lines of Fig. 15, shoulder 320 will be carried away from the path of travel of pin 318. Shoulder 342 on hinge cylinder 302 strikes stop 344 to limit the opening travel. When coin 324 has escaped into box 340, pins 318 will come into friction engagement with edge 348 until the door has been closed, whereupon spring 336 will again yieldably maintain member 322 in the normal position.

As indicated in the objects hereinabove set down, it is desirable to use portable coolers made as described in semi-public locations where those receiving bottles will not attempt to introduce coins of undesired denominations. To render the mechanism just described as effective as possible however, without the employment of expensive slug ejecting equipment, a novel carrier for coins of proper denominations is provided.

A pair of guide rods 350 mounted in housing 328 below coin slot 326 are spaced apart a distance that is slightly less than the diameter of coin 324, which is intended to be used in releasing door 300. A holder 352 slidably mounted on rods 350 is normally set beneath coin slot 326 and there held by springs 354 coiled about each rod 350 respectively. The spaced apart walls of holder 352 support coin 324 in an upright position and resting upon rods 350 when a five cent piece, for example, is dropped through coin slot 326.

If a coin having a diameter smaller than that authorized, is dropped through slot 326, it will be passed between rods 350 and the walls of

holder 352, against deflector 355 and thence out through opening 356 in the side of housing 328. It will slide onto the top of cover 120 where the depositor may recover the same.

When the proper coin is dropped to rest upon rods 350, plunger 358 is depressed to move holder and coin 352 and 324 respectively, longitudinally along rods 350 until opposed notches 360 are reached. These notches increase the distance between the proximal edges of rods 350 to a dimension greater than the diameter of the proper coin, and therefore, when notches 360 are reached, the coin will drop by gravity between the walls of locking member 322 to the position shown in full lines of Fig. 15. Thus, it is clear the manner in which a coin of proper denomination is deposited in the working position where it will cooperate with finger 316.

The simplicity of the mechanism just described and illustrated in Figs. 12 to 16, render the same desirable and effective. The cost is low, time consumed in the manufacture and assembly is not prohibitively great, and the parts are durable and not complicated—all to the end that the portable cooler may be used in transporting bottled goods to the point of sale and there caused to collect consideration for each bottle vended without a great investment.

It is obvious that the broader concepts of this invention might be embodied in equipment having widely varying physical characteristics, and therefore, it is desired not to be confined by details of construction illustrated in the modified forms shown in the accompanying drawings.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a delivery cooler of the character described having a delivery opening through which a selected package is withdrawn from the cooler, a door for the opening provided with a coin-receiving notch; a dog, having a cam face thereon, normally in the path of travel of the door to preclude movement thereof to the open position; and means on the door for supporting a coin in the notch, the said coin serving to move the dog out of the normal position as the door is moved to the open position.

2. In a delivery cooler of the character described having a delivery opening through which a selected package is withdrawn from the cooler, a door for the opening provided with a coin-receiving notch; a dog, having a cam face thereon, normally in the path of travel of the door to preclude movement thereof to the open position; and means on the door for supporting a coin in the notch, the said coin serving to move the dog out of the normal position as the door is moved to the open position, said coin supporting means on the door being formed to drop the coin therefrom when the door is open.

3. In a delivery cooler of the character described having a delivery opening through which a selected package is withdrawn from the cooler, a door for the opening provided with a coin-receiving notch; a dog, having a cam face thereon, normally in the path of travel of the door to preclude movement thereof to the open position; and means on the door for supporting a coin in the notch, the said coin serving to move the dog out of the normal position as the door is moved to the open position, said door having a housing over a portion thereof provided with a slot therein in register with the notch in the door.

4. In a delivery cooler of the character described having a delivery opening through which a selected package is withdrawn from the cooler, a door for the opening; a notched hinge cylinder on the door; at least one dog normally extending into the notch to preclude movement of the hinge cylinder; and means on the cylinder for holding a coin in place as the hinge cylinder is rotated by movement of the door toward the open position.

5. In a delivery cooler of the character described having delivery opening through which a selected package is withdrawn from the cooler, a door for the opening; a notched hinge cylinder on the door; at least one dog normally extending into the notch to preclude movement of the hinge cylinder; and means on the cylinder for holding a coin in place in the said notch to move the dog out of the normal position as the hinge cylinder is rotated by movement of the door in one direction.

6. In a delivery cooler of the character described having a delivery opening through which a selected package is withdrawn from the cooler, a door for the opening; a notched hinge cylinder on the door; at least one dog normally extending into the notch to preclude movement of the hinge cylinder; and means on the cylinder for holding a coin in place to move the dog out of the normal position as the hinge cylinder is rotated by movement of the door toward the open position, said dog having a cam face formed thereon to be engaged by the coin during said rotation of the cylinder.

7. In a delivery cooler of the character described having a delivery opening through which a selected package is withdrawn from the cooler, a door for the opening; a notched hinge cylinder on the door; at least one dog normally extending into the notch to preclude movement of the hinge cylinder; and means on the cylinder for holding a coin in place to move the dog out of the normal position as the hinge cylinder is rotated by movement of the door toward the open position, said dog being maintained in the normal position by the action of gravity.

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