Sept. 27, 1932. W. H. ROWE 1,879,884

VENDING MACHINE CABINET

Filed March 23, 1929 4 Sheets-Sheet 1

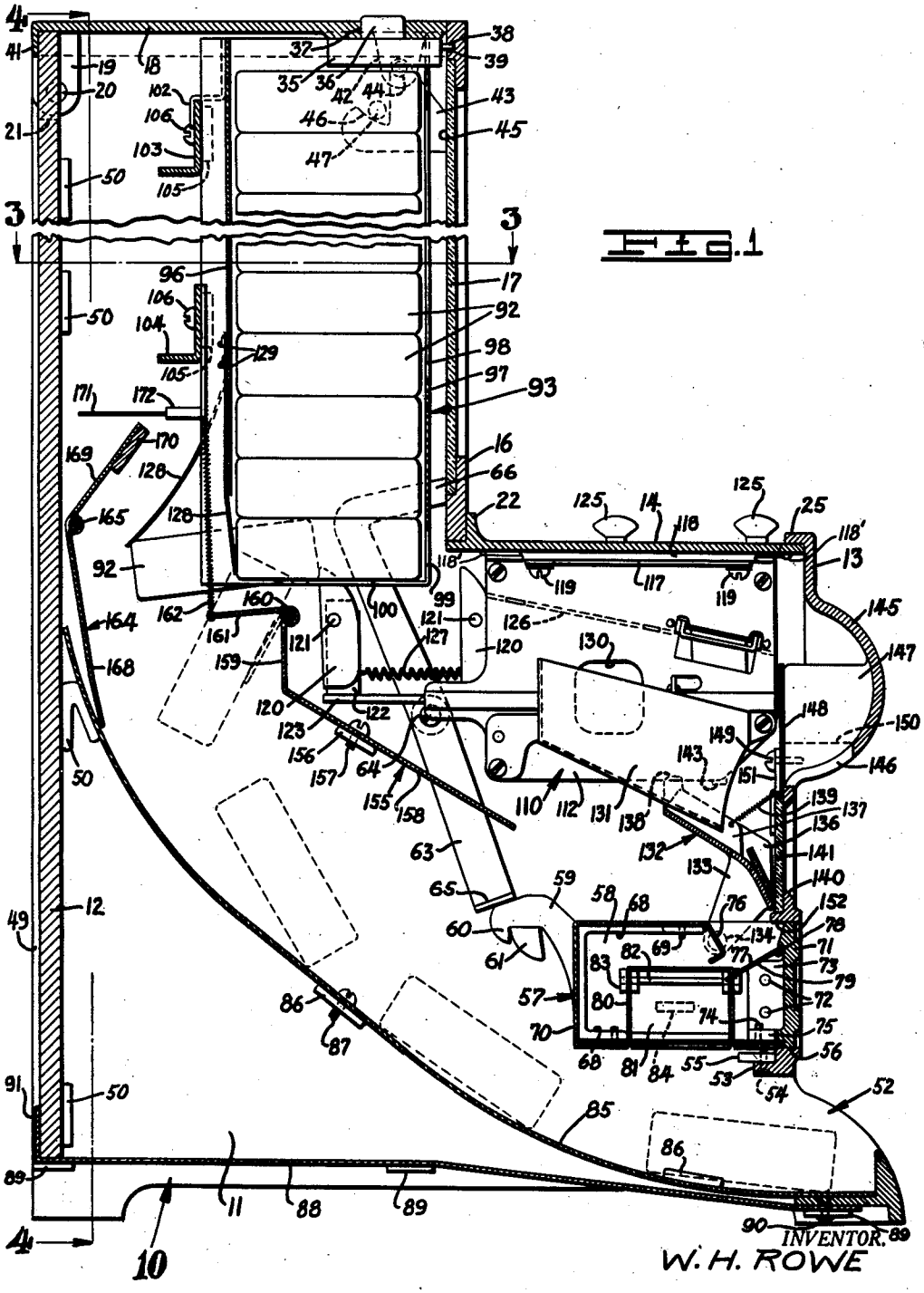


FIG. 1

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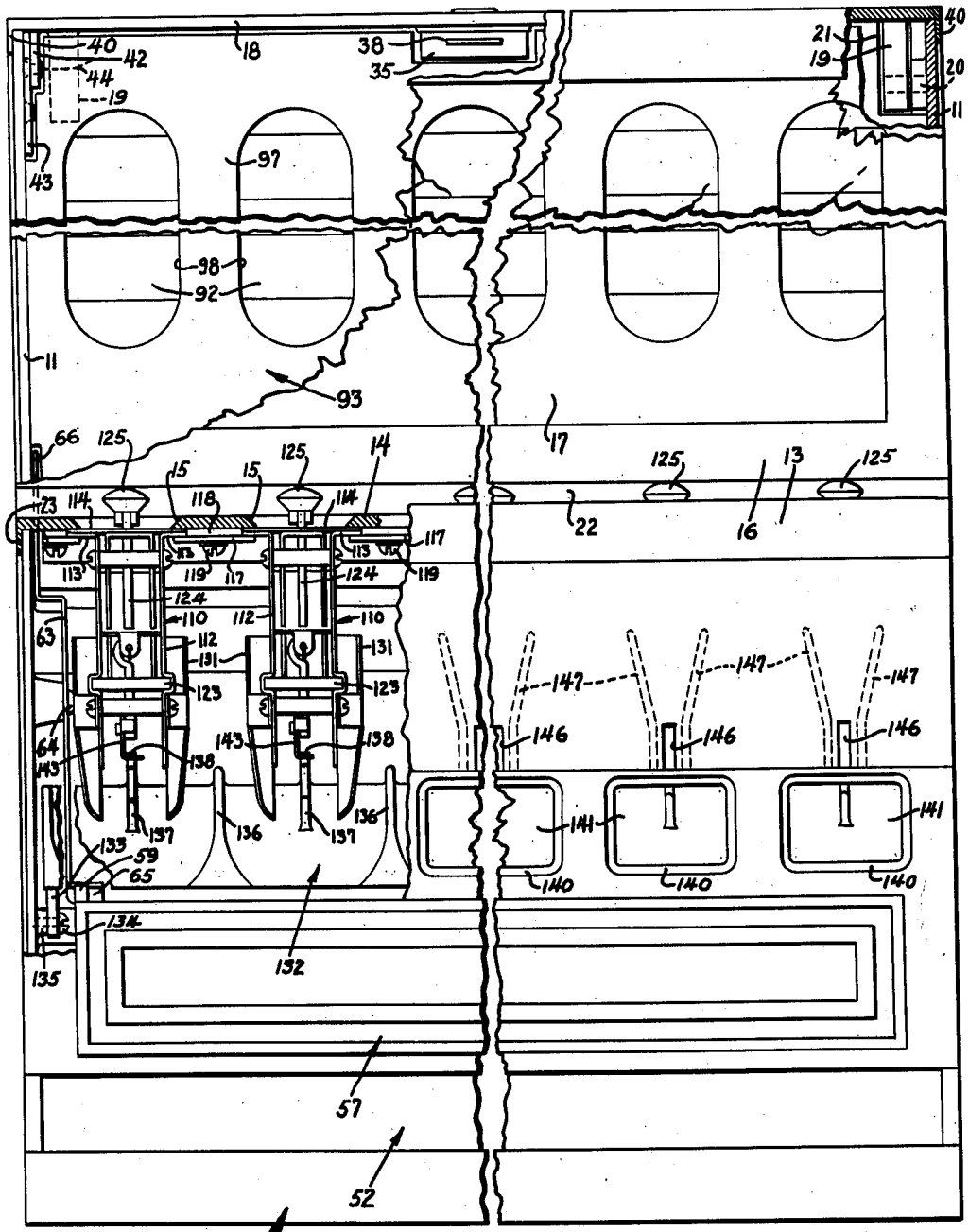



Fig. 2

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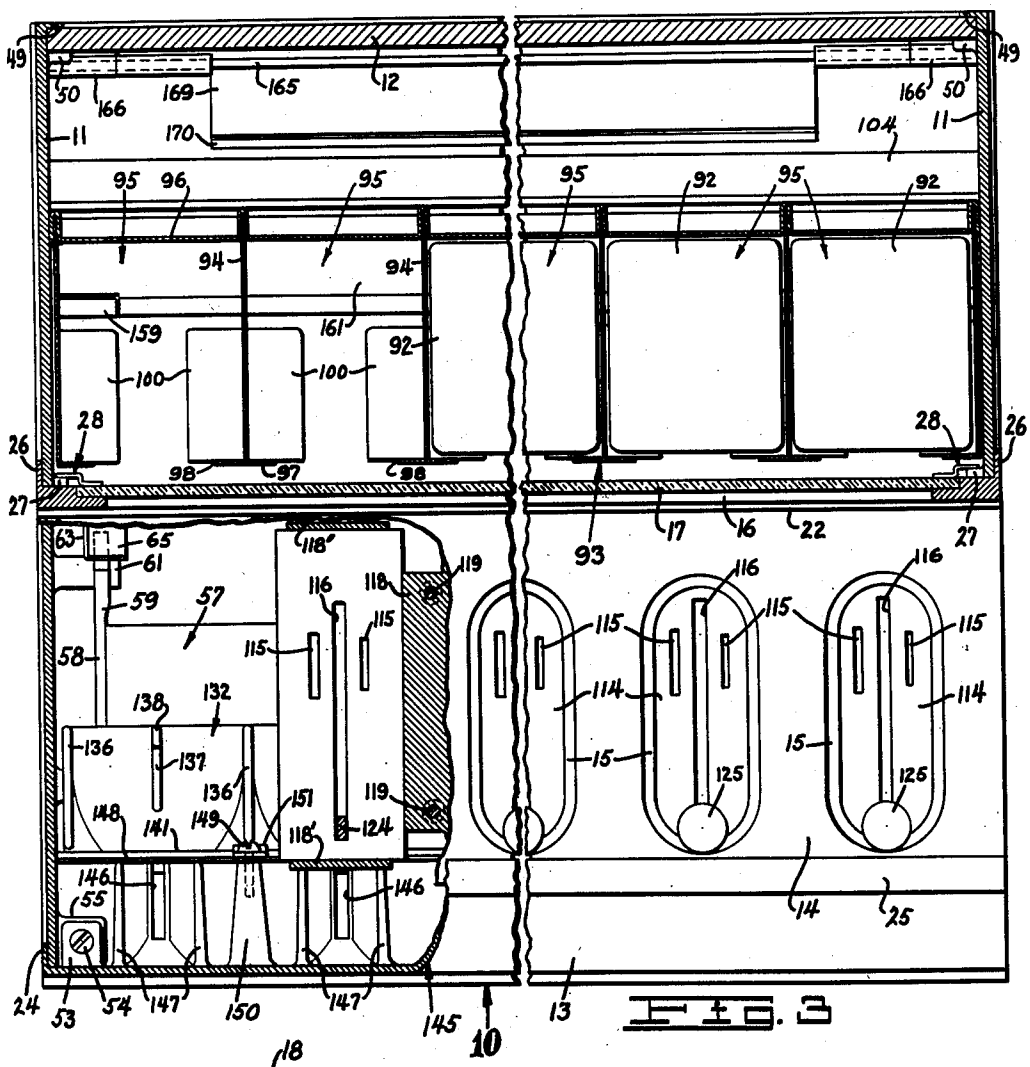



Fig. 3

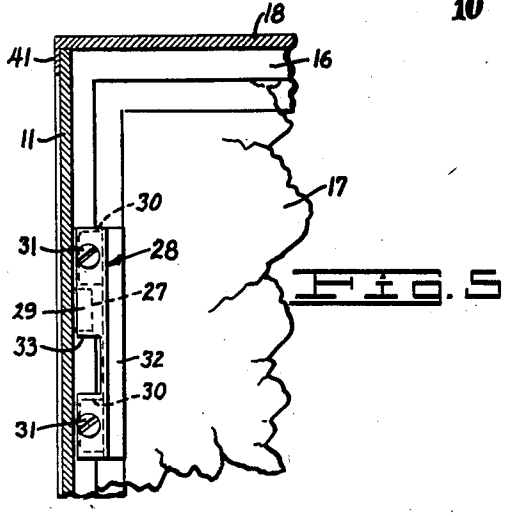



Fig. 5

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Filed March 23, 1929 4 Sheets-Sheet 4

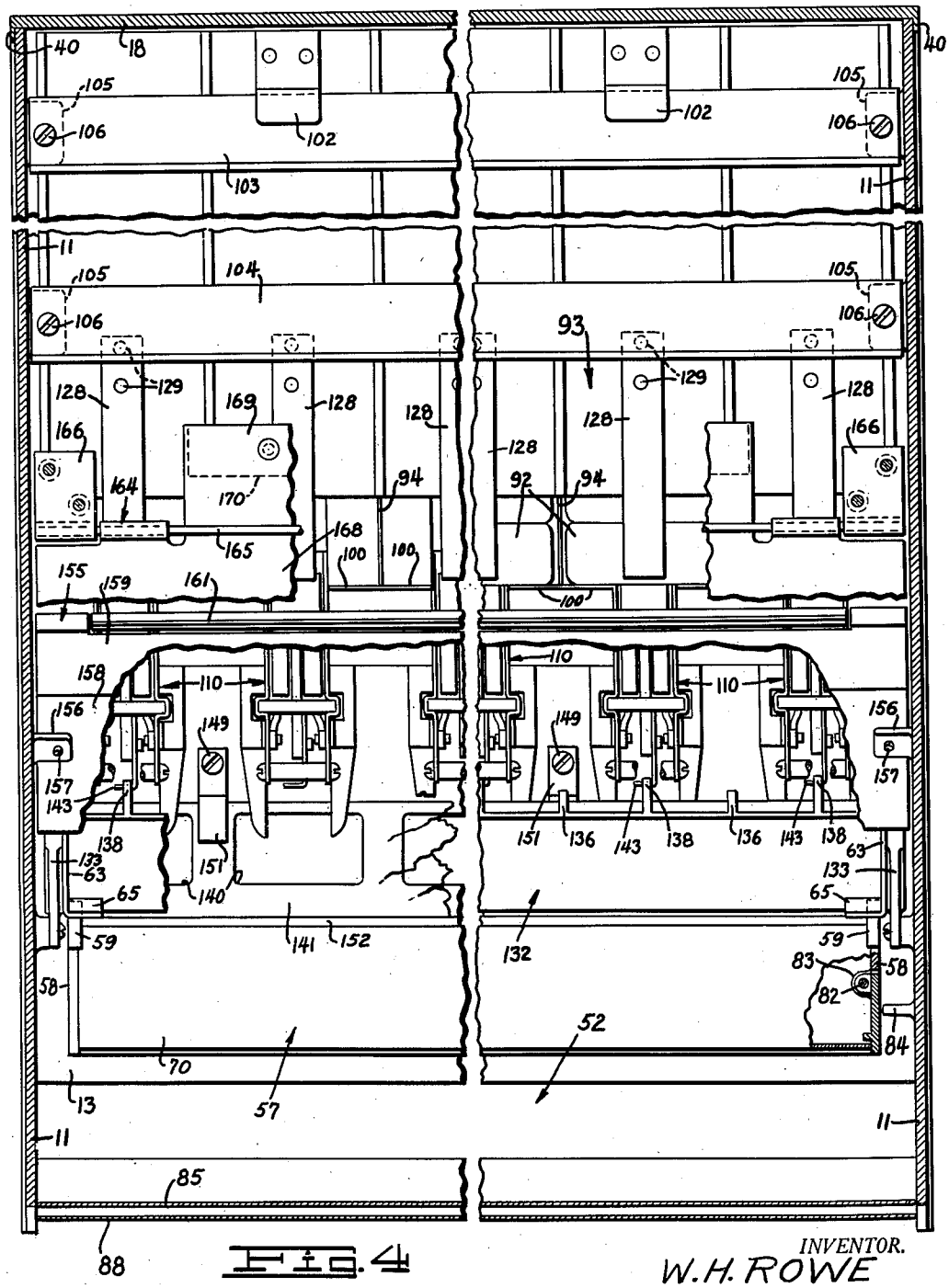



Fig. 4

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1,879,884

# UNITED STATES PATENT OFFICE

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## VENDING MACHINE CABINET

Application filed March 23, 1929. Serial No. 349,377.

This invention relates to vending machines.

The general object of the invention is to provide an improved cabinet for coin actuated vending machines.

Another object of the invention is to provide an improved vending machine cabinet wherein novel locking means is provided for locking the various parts.

A further object of the invention is to provide an improved vending machine cabinet wherein novel means is provided for displaying the coins used to operate the machine and for delivering the coins to a money container.

Still another object of the invention is to provide a novel coin receptacle for use in a vending machine.

A still further object of the invention is to provide an improved vending machine cabinet wherein novel means is provided for protecting the articles to be vended from theft.

Other objects and advantages of this invention will be apparent from the following description taken in connection with the accompanying drawings wherein:

Fig. 1 is a vertical cross section through my improved vending machine cabinet.

Fig. 2 is a front view of the vending machine with various parts broken away to more clearly illustrate the invention.

Fig. 3 is a section taken on line 3—3 of Fig. 1 with various parts broken away.

Fig. 4 is a section taken on line 4—4 of Fig. 1 with various parts broken away and

Fig. 5 is a fragmentary view of the cabinet showing one of the closure door fastening members.

This invention is an improvement on the invention shown in my co-pending application Serial No. 176,847, filed March 21, 1927, now Patent No. 1,754,527, granted April 15, 1930.

Referring to the drawings by reference characters I have indicated a cabinet embodying the features of my invention generally at 10. The cabinet includes L shaped side members 11 joined in the rear by a back 12 and in the front by a front plate 13. The cabinet is provided above the front plate with a shelf 14 in which are provided a plurality of apertures 15 and above the shelf 14 I provide a door 16 which includes a transparent panel 17 shown as a piece of glass.

The top of the cabinet is provided with a lid 18 which is provided adjacent each side with a depending lug 19, each of which is pivoted as at 20 to the adjacent side member 11. Apertures 21 are provided in the back 12 in which the lugs 19 are positioned (see Figs. 1 and 2).

The shelf 14 is adapted to be supported by the side members 11 and includes an upstanding flange 22 spaced from the rear end thereof to form angular portions and at each side a depending flange 23 is provided which is adapted to fit over the outside of the sides 11 (see Figs. 1 and 2).

The front plate 13 is provided at each side with a rearwardly extending flange 24 which is adapted to fit over the outside of the sides 11 (see Fig. 3) and at the top with a rearwardly extending flange 25 which is adapted to fit over the top of the shelf 14 as clearly shown in Fig. 1. The door 16 is adapted to be supported on the shelf 14 with the lower end thereof positioned to the rear of the upstanding flange 22 as shown in Fig. 1. At each side the door 16 is provided with a rearwardly extending flange 26 which is adapted to fit over the outer face of the sides 11 (see Fig. 3). The shelf 14 is not rigidly secured to any part of the cabinet but is free to be removed when the door 16 is removed and is held in position when the door is in a closed position by the front plate flange 25, the plate side flanges 23 and the door 16.

On each of the sides 11 adjacent the door I provide two inwardly extending lugs 27 which are adapted to be engaged by fastening members 28 on the door 16 (see Figs. 3 and 5). As shown each of the members 28 includes a portion 29 spaced from the rear surface of the door and secured to raised lugs 30 on the door as by screws 31 and a depressed portion 32 which is adapted to engage the glass panel 17 to hold it in position. A notch 33 is provided in the portion 29 through which the lugs 27 are adapted to pass.

To place the door 16 in position the notches 33 in the fastening members 28 are aligned with the lugs 27 on the sides 11 and then

the door is moved rearwardly and downwardly so that the lugs 27 are positioned between the rear face of the door and the portions 29 of the fastening members as shown in Figs. 3 and 5.

For locking the door 16 against upward movement I provide a lock 35 which is secured in any desired manner to the under face of the lid 18 and includes a keyway 36 which extends through an aperture 37 in the lid and a bolt 38 which is adapted to be positioned in a recess 39 provided in the rear face of the door 16.

The lid 18 is provided at each side with downwardly projecting flanges 40 which are adapted to fit over the outer faces of the sides 11 as shown in Fig. 2 and at the back with a downwardly extending flange 41 which is adapted to fit over the rear face of the back 12 as shown in Fig. 1. Adjacent each side of the lid 18 and positioned adjacent the door 16 I provide downwardly extending lugs 42, each of which has a dog 43 pivotally secured thereto as at 44 (see Figs. 1 and 2). The dogs 43 each includes a front surface 45 which is adapted to abut the rear surface of the door 16 and a radial surface 46 which is adapted to engage the under portion of a lug 47 provided on each of the sides 11.

From the foregoing description it will be apparent that when the door 16 is placed in a closed position as shown in Fig. 1 and the lock bolt 38 is positioned in the door recess 39 the bolt 38 will prevent upward movement of the door and the fastening members 28 together with the shelf flange 22 will prevent outward movement of the door. The door 16 when in this position will prevent upward movement of the rear edge of the shelf 14 and the front plate flange 25 will prevent upward movement of the front edge of the shelf while the shelf side flanges 23 will prevent longitudinal movement of the shelf 14 and the lock bolt 38 together with the dogs 43 prevent upward movement of the lid 18. Thus it will be seen that only one locking means, i. e. the lock 35, is required to lock the door 16, the lid 18, and the plate 14 in position.

The back 12 is shown as made of wood and is adapted to be positioned between flanges 49 and lugs 50 provided on the side members 11 as clearly shown in Figs. 1 and 3.

The lower end of the front plate 13 is spaced from the bottom of the cabinet to provide a discharge opening 52 and is provided with rearwardly extending lugs 54 by means of which it is secured by screws 54 to lugs 55 provided on the side plates 11 (see Figs. 1 and 3). This front plate 13 is provided adjacent its lower edge with an aperture 56 in which a coin receptacle indicated generally at 57 is adapted to be positioned. As shown the coin receptacle includes side members 58 having rearwardly projecting arms 59 which are provided with hooked ends 60 which are adapted to engage and be supported by inwardly projecting lugs 61 provided on the cabinet side members 11 (see Figs. 1 and 3).

To remove the coin receptacle 57 it is necessary for an operator to reach in the cabinet through the discharge opening 52 and raise the rear end of the receptacle thereby moving the hooked ends 60 of the arms 59 above the lugs 61 whereupon the coin receptacle may be readily removed by moving it towards the front plate 13. To prevent unauthorized removal of the coin receptacle I provide a locking means which comprises levers 63 pivotally secured intermediate to their length as at 64 to each of the side members 11. Adjacent the lower end of each of the levers 63 I provide an inturned lip 65 and adjacent the upper end I provide a forwardly extending arm 66. The lips 65 are adapted to engage the upper portion of the hooked arms 59 of the coin receptacle 57 and the arms 66 are adapted to be engaged by the door 16 when the door is in a closed position.

It will thus be seen that when the door 16 is in a closed position as shown in Fig. 1 the hooked ends 60 of the receptacle arms 59 cannot be raised above the lugs 61 so therefore the coin receptacle cannot be removed. To free the coin receptacle so that it may be removed it is necessary to remove the door 16 and swing the levers 63 on their pivots 64 so that the lips 65 thereof are out of engagement with the receptacle arms 59 whereupon the coin receptacle may be removed as previously described.

From the foregoing it will be seen that the lock 35 also is the medium by which the coin receptacle 57 is locked in position.

The sides 58 of the coin receptacle 57 are shown as provided with inwardly extending flanges 68 which have secured thereto, as by screws 69, a sheet metal member 70 which forms the top, bottom and rear walls of the receptacle. The front wall 71 of the receptacle is secured to the sides 58 by screws 72 which engage lugs 73 on the front wall and the member 70 is secured to the front wall 71 by screws 74 which engage lugs 75 on the front wall.

Adjacent the front of the coin receptacle the top wall thereof is bent downward as at 75 to form an entrance for coins and to prevent the coins from being expelled from the receptacle in case the cabinet is turned upside down I provide a plate 77 which is pivoted to the sides 58 as at 78. Normally the plate 77 rests on an inclined surface 79 provided on the lugs 73 and is spaced from the downwardly bent portion 76 of the receptacle top and allows free passage of the coins into the receptacle 57. Should the cabinet be inverted the plate 77 will swing on its pivot and the free end thereof will engage the portion 76 and close the coin entrance

thereby preventing the coins in the receptacle from being expelled therefrom.

In one of the coin receptacle sides I provide a discharge aperture 80 which is adapted to be closed by a door 81 pivotally mounted on a rod 82 which is positioned in inwardly extending lugs 83 on the side 58. When the coin receptacle 57 is in position in the cabinet an inwardly extending lug 84 on one of the side members 11 prevents the door 81 from swinging outward (see Fig. 4) but when the coin receptacle is removed from the cabinet the door 81 is free to swing outward to allow the coins in the receptacle to be poured out through the aperture 80.

Within the cabinet I provide a discharge chute 85 which is preferably made of a flat piece of metal and held in position between a plurality of inwardly projecting lugs 86 provided on each of the side members 11 and secured to some of the lugs as by screws 87.

The cabinet is also preferably provided with a bottom 88 which is preferably made of a flat piece of metal and held in position by a plurality of lugs 89 to some of which it is preferably secured as by rivets 90. The rear end of the bottom 88 extends under the back 49 and includes an upturned portion 91 which is adapted to fit over the outer face of the back.

For holding articles to be vended such as packages of cigarettes 92 I provide a holder 93 which is preferably made from thin sheet metal and is divided by a plurality of vertical partitions 94 into a plurality of article holding compartments 95 (see Figs. 1 and 3). This holder 93 further includes a rear wall 96 and a front wall 97 provided with vending apertures 98 which are aligned with each of the compartments 95 and with an aperture 99 at the lower end of each of the compartments. At the bottom and adjacent each side of each compartment 95 spaced flanges 100 are provided which are adapted to support the articles in the compartments (see Figs. 1 and 3). The flanges 100 terminate the short of the rear of the holder and the rear wall 96 terminates short of the bottom of the holder to provide discharge apertures for the articles in the compartments 95.

Secured to the rear wall 96 of the holder as by riveting or welding I provide a plurality of supporting hooks 102 which are adapted to engage an angle 103 for supporting the holder 93 within the cabinet (see Figs. 1 and 4). Adjacent the lower end of the holder I provide a similar angle 104 which is adapted to be engaged by the rear of the holder 93 to prevent rearward movement of the holder and maintain the holder in correct vertical alignment. The angles 103 and 104 are adapted to be secured to inwardly projecting lugs 104 provided on the cabinet side members 11 as by screws 106.

For expelling the contents of the storage compartments 95 I provide a plurality of coin controlled plungers indicated generally at 110. These plungers 110 may be of any suitable type and as the particular construction of the plunger mechanism forms no part of the present invention I do not deem it necessary to go into a detailed description thereof other than to set forth the parts which coact to make this invention operable.

As shown, each of the plunger mechanisms 110 include a casing 112 which is provided at the top with out-turned flanges 113 and with a top plate 114 having a pair of coin slots 114 and an elongated slot 116 therein (see Figs. 2 and 3). The housing 112 is adapted to be clamped to the underside of the cabinet shelf 14 by retaining plates 117 which are secured to bosses 118 on the shelf by screws 119 (see Figs. 1 and 2). The bosses 118 prevent sidewise movement of the plunger mechanism and to prevent endwise movement of the plunger mechanisms I provide other bosses 118′ which are adapted to engage each end of the plunger mechanisms (see Figs. 1 and 3). For ejecting the articles to be vended the plunger mechanism is provided with a delivery pawl 120 which is pivotally connected as at 121 to a post 122 on a slide plate 123. For actuating the slide plate 123 there is provided an operating post 124 which extends upwardly through the slot 116 in the plate 114 and is provided with an operating knob 125 (see Fig. 2).

To operate the plunger mechanism the proper coins are inserted in the coin slots 115 of the plate 114. The coins slide down a coin chute, the bottom of which is formed by an inclined plate 126, and free the plunger mechanism so that the slide plate 123 may be moved rearwardly by an operator moving the knob 125 rearwardly. Upon rearward movement of the slide plate 123 the upper end of the delivery pawl 120 engages the lowermost package 92 in a compartment and pushes it off the supporting flanges 100. After the package has been delivered the operator releases the knob 125 and a spring 127 returns the plunger mechanism to its initial position. On a return of the plunger the delivery pawl 120 is adapted to engage the under side of a package and swing on its pivot 121 to an inclined position and ride under the lowermost package.

Adjacent the lower end of each of the storage compartments 95 I provide a flat piece of spring material 128 which is secured to the rear wall 96 of the holder as by rivets 129 (see Figs. 1 and 4). The springs 128 are quite flexible but nevertheless prevent the contents of the storage compartment from being jostled out through the discharge openings in the holder. When a package is being expelled from one of the storage compartments 95 by one of the plunger mechanisms the associate spring 128 flexes rearwardly and

turns the package downward as clearly illustrated in Fig. 1. As the package turns downward off the supporting flanges 100 the tension of the spring 128 impels the package towards the front of the cabinet and the package slides down the discharge chute 85 to the discharge opening 52 where it is accessible to a person operating the device.

After the coins have freed the plunger mechanism they are expelled therefrom through apertures 130 in the plunger housing and slide down coin guides 131 which deliver them onto a coin tray 132. As shown the coin tray 132 is provided adjacent each side with a downwardly extending arm 133 which is pivotally secured as at 134 to a boss 135 provided on the cabinet sides 11. The coin tray includes a plurality of upstanding ribs 136 which form compartments to receive the coins from adjacent plunger mechanisms and between each of the ribs 136 I preferably provide an upstanding rib 137 which terminates short of the front of the tray and is provided at the rear end with an upstanding ear 138. For resiliently retaining the coin tray 132 in a forward raised position I provide a coiled spring 139 which is shown as secured at one end to one of the ribs 137 and suitably anchored at the opposite end to the front wall of the cabinet.

To allow the coins on the coin tray to be viewed from the outside I provide a plurality of apertures 140 in the front wall 13 which are adapted to be closed by a transparent member 141 which is shown as a piece of glass (Figs. 1 and 2).

When one of the plunger mechanisms moves rearwardly on a delivery stroke a finger 143 which is pivotally connected to the plate 123 engages one of the upstanding ears 138 on the coin tray 132 and swings the latter rearwardly until the finger 143 passes over the ear 138, whereupon the coin tray is returned to its normal position by the coiled spring 139. When the coin tray is swung rearwardly any coins thereon, which will be the coins used for the previous operation, will fall between the forward edge of the tray and the front wall 13 into the coin receptacle 57. As the plunger mechanism returns to its initial position the finger 143 engages the ear 138 on the coin tray and swings upwardly and rides over the ear after which it drops to its normal position.

The plunger mechanisms 110 include coin selectors which are adapted to reject improper coins, which coins are then disharged off the bottom 126 of the coin chutes at the forward end of the plunger mechanisms. To return the improper coins to the operator I provide a projecting bulbous portion 145 in the front wall and in the under side of the portion 145 I provide a plurality of coin return apertures 146, one for each plunger mechanism (see Figs. 1, 2, 3). To guide the coins from the plunger mechanisms to the coin return apertures 146 I provide in the bulbous portion 145 a plurality of ribs 147 which are integral with the front wall and a thin metal plate 148 which is adapted to be secured by screws 149 to bosses 150 on the front wall.

Each of the screws 149 are also adapted to secure in position a bracket 151 which is adapted to engage the transparent member 141 adjacent the top and clamp it to the front wall (see Figs. 1, 3 and 4). The bottom of the transparent member 141 is shown as adapted to be supported on a rearwardly projecting flange 152 on the front wall 13.

To prevent persons from surreptitiously inserting wires in the cabinet through the discharge opening and working the contents of the holder 93 out I provide a thin metal plate 155 which is adapted to be secured to inwardly projecting lugs 156 on the cabinet side members 11 by screws 157. This plate 155 includes an inclined portion 158 which is positioned to protect the plunger mechanisms 110 and a vertical portion 159 which is positioned to the rear of the plunger mechanism and has pivotally secured thereto as at 160 a thin metal flap 161 (see Figs. 1 and 4). This flap 161 is adapted to be normally retained in a substantially vertical position below the discharge openings in the holder 93 by a coiled spring 162, one end of which is secured to the flap 161 and the opposite end of which is suitably anchored to the angle 104. If endeavor is made to insert a wire in the machine to extract the contents of the holder it will engage the flap 161 and move it upward thereby closing the holder discharge openings and prevent access to the contents of the holder.

When the plunger mechanism is actuated and an article is pushed off the supports 100 the weight of the expelled article will swing the flap downward as shown by the dotted lines in Fig. 1, whereupon the package is free to pass the flap.

To prevent the packages from being jostled out in the event the cabinet is turned upside down and vigorously shaken I provide a plate 164 in the cabinet adjacent the back 12. This plate is pivotally mounted on a rod 165 which is supported in brackets 166 secured to the back 12 as by screws 167 and includes a lower portion 168 and an upper portion 169 (see Figs. 1 and 4). The lower edge of the lower portion 168 is adapted to normally engage the discharge chute 85 as shown in Fig. 1 and the upper portion is disposed at an angle to the back 12 and is provided with a weighted member 170. When the cabinet is upright the weight of the weighted member 170 retains the lower edge of the lower portion in engagement with the discharge chute 85 but when the cabinet is inverted the weight of the weighted member 170 causes the plate

164 to pivot on the rod 165 and swing the lower portion upward into engagement with the flap 161 both of which then close the discharge apertures in the article holder and prevent removal of the contents.

When the cabinet is inverted the plate 164 is adapted to be retained in a position to close the holder discharge opening by a thin spring member 171 which is supported by a bracket 172 which is secured to the angle 104 in any suitable manner.

As the upper portion 169 of the plate 164 swings towards the back 12 the weight of the weighted member 170 flexes the spring 171 and the portion 169 passes the spring to a position between the back 12 and the end of the spring 171, thereby retaining the portion 168 in a position to close the holder discharge apertures. The plate 164 remains in this position until it is manually reset.

To reset the plate 164 to allow actuation of the device the front door 16 and the article holder 93 must be removed whereupon an operator raises the spring 171 and the weight of the weighted member 170 swings the portion 168 away from the flap 161 and into engagement with the discharge chute 85. Thereafter the article holder 93 and the door 16 are replaced and the device is ready for further operation.

From the foregoing description it will be apparent that I have provided an efficient and serviceable vending machine cabinet which is simple in construction and includes many novel features.

Having thus described my invention, I claim:

1. A vending machine cabinet comprising side walls, a back member, a closure door, a top member for said cabinet, means on said side walls to hold said back member in position, means to hold said back member rigid when said top member is in a closed position, means for securing said closure door in closed position and securing means on said top member, said securing means coacting with said closure door and with fastening means on said side wall for retaining said top member rigid when said closure door is in a closed position.

2. A vending machine cabinet comprising side walls, a back, a front, and a closure door, said front having an aperture, a closure member positioned in said aperture, a lock for said closure door, and means whereby said lock holds said closure member in position when said closure door is in a closed position.

3. A vending machine cabinet comprising a pair of side walls, a back, a front and a closure door, a top member for said cabinet, said front having an aperture therein, a closure member positioned in said aperture, a lock on said top, means whereby said lock locks said top member and said closure door and other means coacting with said closure door and said closure member for holding said closure member rigid when said closure door is in a closed position.

In testimony whereof, I hereunto affix my signature.

WILLIAM H. ROWE.