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R. J. TENPAS

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COIN CONTROLLED AUTOMATICALLY COOLED VENDING MACHINE

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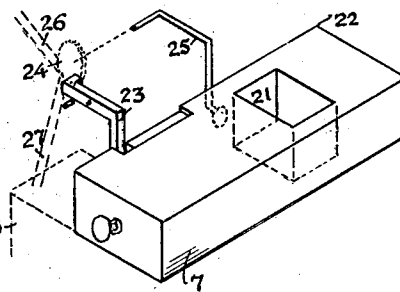
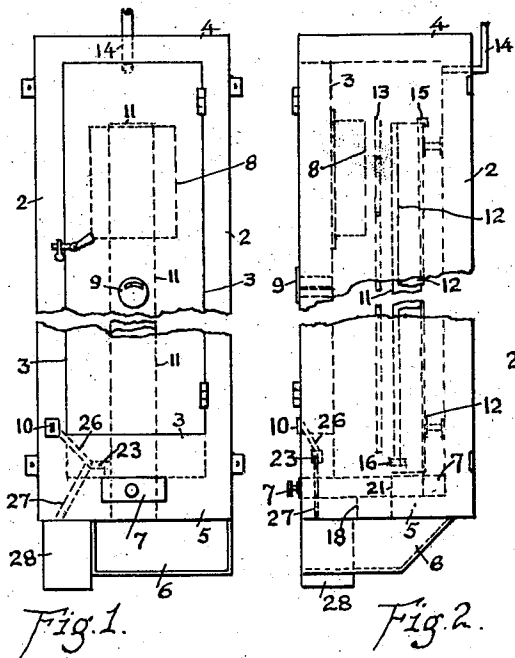


Fig. 5.

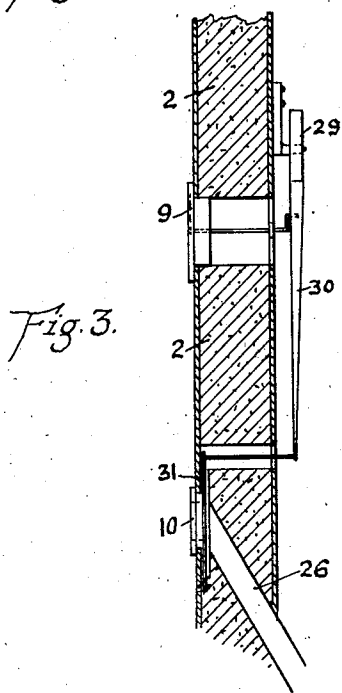


Fig. 3.

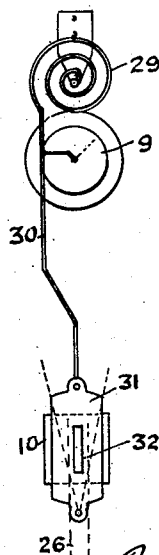


Fig. 4.

By *Rubens Tenpas* Inventor
H. S. Amstutz Attorney

UNITED STATES PATENT OFFICE

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COIN CONTROLLED AUTOMATICALLY
COOLED VENDING MACHINEReuben J. Tenpas, Valparaiso, Ind., assignor of
one-half to Moses W. Uban, Valparaiso, Ind.

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4 Claims. (Cl. 194-1)

My invention relates to improvements in coin controlled automatically cooled vending machines and it more especially consists of the features pointed out in the claims.

5 The purpose of my invention is to provide a vending machine attachable to a wall or supported on a stand which utilizes a dry-ice container as the refrigerant; that has a removable and refillable container or carrier in which the confection etc., is stored; that may also have a temperature indicator visible from the outside of the cabinet and, if desired, a vent leading to a flue or outside of the room in which the machine is installed; that may use any cooperating de-
10 frosting steps when such are necessary; that provides an automatic coin controlled lock on the delivery tray; and that further provides a suitable form of delivery chute.

With these and other ends in view I illustrate
20 in the accompanying drawing such instances of adaptation as will disclose the broad underlying features of the invention without limiting myself to the specific details shown thereon and described herein.

25 Figure 1 is a front elevation of an assembled machine.

Fig. 2 is a side elevation of Fig. 1.

Fig. 3 is a fragmentary section of Fig. 2, on an enlarged scale showing the coin slot closure.

30 Fig. 4 is a diagrammatic view of Fig. 3.

Fig. 5 is a diagrammatic perspective view of the delivery tray associated with the coin control.

Figure 6 is a diagrammatic side elevation of
35 an automatic actuated coin slot closure.

Figure 7 is an elevation of Figure 6 showing the diagrammatic relation of the thermostatic control of the coin slot closure.

In marketing my invention I may use whatever
40 alternatives or equivalents of construction that the exigencies of varying conditions may demand without departing from the broad spirit of the invention.

I may use any desired form of cabinet 1 that
45 may be attached to the wall or supported on a suitable pedestal. It will have its side walls 2, top 4 and bottom 5 insulated in any desired manner. In order to easily service the machine a door 3 is provided lengthwise of one of the sides. It is
50 also insulated and provided with any suitable form of handle which serves to hold the door closed. Any form of lock may be used to prevent access to the cabinet by unauthorized persons.

In the form of my invention, instanced on the
55 drawing, I support a cold-ice container (solid

CO₂) 8 on the inside of the door 3, near its top, in an easily attachable and detachable manner or it may be positioned elsewhere as desired. The goods to be vended are usually enclosed in unitary cartons so as to readily drop by gravity while
60 stored in a carrier 11. This carrier may have a continuous back, integral with side walls and narrow front flanges. At the upper end the back may terminate in a hook-end 15. At the lower end the side walls may terminate into laterally
65 projecting toes which serve to form runways for a safety slide. This slide prevents the goods dropping out of the carriers 11 as they are being placed in the machine during the servicing pe-
70 riods. When the carrier is placed in the trough-like guide 12 it is, as stated, hung onto the back wall of the guide and the bottom end is held in place in the guide by any desired form of spring-held gate 16 or otherwise and the safety slide
75 is removed by the attendant. As this slide is taken from beneath the stored cartons, they all drop by gravity as the lowest one falls into the recess 21 of the delivery tray 7, ready to be re-
80 moved whenever the required coin 24 is placed in the coin slit 10 preparatory to automatically unlocking the tray.

The unlocked tray 7 is pulled forward to de-
liver the product through the opening 18 formed in the bottom end 5 of the cabinet, into the de-
85 livery chute 6. As the tray is pulled forward its rear end 22 passes beneath the remaining cartons and holds them in place until the tray is pushed back into its original position. The op-
eration of the tray is controlled by a coin 24 as it descends from the slot 10 through a chute 26
90 onto the lighter end of a pivoted locking lever or arm 23. The weight of the coin raises the other end of the lever out of the deep notch 19. A suitable stop beneath the coin end of the lever
95 limits its movement. The locking end of the lever is just raised out of the notch 19 but not out of the long recess 20 which serves to prevent the tray being accidentally pulled out of the cabinet. The forward movement of the tray causes a pro-
100 jection 25 from its side to engage the coin and push it off from the lever 23 into a chute 27 that leads to the cash box 28. When the tray is re-
turned the lever 23 slides on the long recess 20 until the deep notch 19 is reached when it drops
105 into it by gravity, thus locking the tray against withdrawal until another coin 24 is in the coin slot 11. In order that the coin chute 26 and lever 23 will not be made inoperative through
freezing they may be suitably positioned in an in-
110 sulating side 2 and the insulated space beneath

the door. The tray 7 may be also insulated like the other portions of the cabinet.

The guide 12 is supported in any suitable manner so as to leave an air space between it and the wall of the cabinet. A partition wall 13 may be placed between the carrier 11 and the refrigerant container 8 but not closing a space at the top and the bottom to provide air circulation. Openings may also be made in the partition. A vent 14, if found necessary, may lead from the top of the cabinet to a flue. When the machine is reserviced the refrigerant container may be removed for the required time to defrost the interior to permit of an easy removal and replacement of the carrier.

An indicator 9 on the door indicates the temperature within the cabinet whether it is sufficiently low to keep the goods in a saleable condition. If desired an interlocking connection between the indicator and the coin slot may be provided that will automatically close the slot in case the temperature should accidentally rise so high as to make the products unsaleable. This safeguard may be secured in several ways, one of which is instanced diagrammatically in Figures 3 and 4 wherein the visible indicating thermometer 9 may be actuated by an internal expansion element 29 which has an extension 30 for operating a gate 31 which has an opening 32 through which coins intended for the slot 26 will pass unobstructedly into the slot 27 and the cash box 28 so long as the inside temperature is such as to maintain the goods in a saleable condition. As soon as the temperature rises sufficiently so that the contents of the cabinet should not be vended, the closure 31 is actuated by the extension 30 to draw the opening 32 away from the coin slot 26 thus preventing the insertion of a coin to operate the machine. If desired any kind of a visible indication may be given adjacent the coin slot 10, such for instance as, "not in operation" etc.

While I have shown and described a dry-ice container I do not limit myself to this form of refrigerant as I may also use any desired type of removable cartridge electric or gas accessory.

I have shown and described delivery of the goods from the bottom of the cabinet, but I do not limit myself to this expedient, as delivery may be made from the top instead in cooperation with suitable mechanism (not shown). When delivery is made at the bottom, as shown in the drawing, the space above the tray 7 between the portion of the front, beneath the door 3 and the carrier 11 may be covered with insulation.

In order to protect the purchasing public against depositing coins when the goods in the machine are unsaleable the indicator 9, previously described, is provided. To further protect the public I may install an indicator to show when the supply of goods is exhausted or to continuously inventory the remnant of goods on hand. In addition I may also provide an interlock (not shown) which on the delivery of the last article will close the coin slot 10.

What I claim is:

1. A refrigerating cabinet having a coin controlled vending means characterized by a temperature responsive device within the cabinet, a closure for the coin slot, and means for actuating the closure by the temperature responsive device when the temperature within the cabinet reaches a predetermined point at which the contents of the cabinet are rendered unvendable.

2. In a refrigerating and vending machine including a refrigerating cabinet having coin controlled vending means, in combination with a coin slot closure, a temperature responsive device on the interior of the cabinet, and means for actuating the coin slot closure by the temperature responsive device to close the slot against the admission of a coin whenever the interior temperature endangers the saleability of the contents of the cabinet.

3. In refrigerating and vending machines including a refrigerating cabinet housing, coin controlled vending means, characterized by having a storage space for goods deliverable through a coin controlled delivery tray, in combination with a temperature responsive device positioned within the cabinet and subject to the temperature therein, a closure for the coin slot, and a connection from the closure to the temperature responsive device whereby coins cannot be inserted in the coin-slot when the temperature within the cabinet reaches a point at which the character of the goods is rendered unvendable and the delivery tray remains inoperative and the coin slot remains closed.

4. A refrigerating cabinet housing, coin controlled vending means, a coin slot, a temperature responsive device within the cabinet, and actuating mechanism from the latter to the former adapted to close the coin slot against the admission of a coin when the temperature within the cabinet reaches a point at which the goods are rendered unsaleable.

REUBEN J. TENPAS.