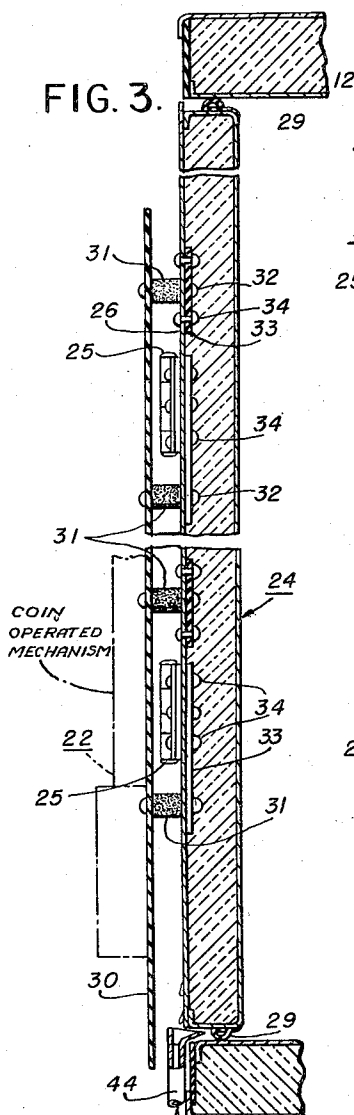
July 31, 1951 E. S. WEGMAN 2,562,288

VENDING APPARATUS

Filed Jan. 20, 1950

FIG. 3.



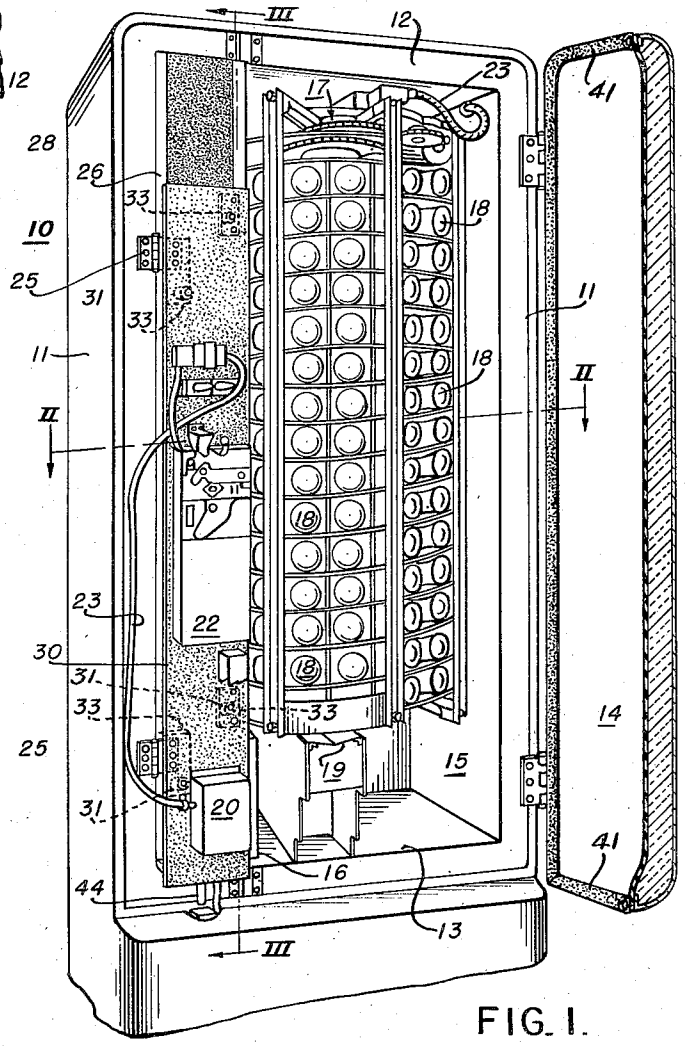


FIG. 1.

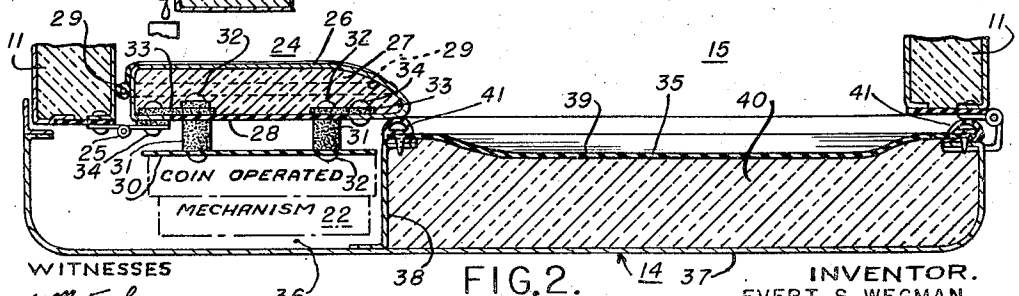


FIG. 2.

WITNESSES

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UNITED STATES PATENT OFFICE

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VENDING APPARATUS

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6 Claims. (Cl. 312—36)

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This invention relates to refrigerated cabinets having controls for dispensing chilled articles, and relates more particularly to refrigerated cabinets for vending beverages, which have coin operated dispensing controls.

This application is a continuation in part of my copending application Serial No. 82,324, filed March 19, 1949, now abandoned.

In the usual cabinet for automatically vending chilled, bottled beverages upon the insertion of a proper coin, the stored bottles are chilled by a mechanical refrigeration unit. The coin operated mechanism is usually mounted on the door which provides access to the interior of the cabinet for loading. This control mechanism is chilled, due to its location in the refrigerated space, to a temperature below the dew point temperature of the air surrounding the cabinet, so that when the door is opened for loading, moisture from the air condenses on the electric switches and the other electrical components of the control mechanism. The resulting intermittent wetting and drying of these parts causes corrosion, seriously affecting their lives and performances. This is particularly serious where such cabinets are installed outdoors where they are directly affected by changes in climatic conditions.

For preventing such condensation of moisture on the control mechanism, it has been proposed to provide, in addition to the regular door for providing access to the interior of the cabinet, a separate insulated inner door on which the control mechanism is mounted, and which separates the controls from the refrigerated space when it is closed. Such a construction would not only greatly increase the cost of such a cabinet but would involve complications in the wiring to the inner door which must be opened when the refrigerated space is loaded.

This invention overcomes the disadvantages described in the foregoing, by providing an insulated panel which extends between the control mechanism and the refrigerated space, and by spacing the control mechanism from the insulating panel whereby an insulating air space is provided between the control mechanism and the insulated panel.

An object of this invention is to prevent the condensation of moisture on the control mechanisms of refrigerated cabinets.

Another and more definite object of the invention is to prevent condensation of moisture on the coin operated, dispensing mechanisms of cabinets for vending chilled articles such as bottled beverages.

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The invention will now be described with reference to the drawing, of which:

Fig. 1 is a front perspective view of a refrigerated cabinet embodying this invention, with its door open, only a portion of the door being shown;

Fig. 2 is a sectional view along the lines II—II of Fig. 1; and

Fig. 3 is a sectional view along the lines III—III of Fig. 1.

The refrigerated cabinet 10 has the insulated side walls 11, top wall 12 and bottom wall 13, which with the hinged, insulated door 14, form a refrigerated storage and dispensing compartment 15. The compartment 15 is cooled by the evaporator 16 connected to a conventional condensing unit contained within the base of the cabinet and which is not illustrated.

The compartment 15 contains a conventional support 17 for the bottles 18 one of which falls upon the chute 19 when the proper coin is inserted in the control mechanism 22, and which is removable, as is the conventional practice, through an opening in the door. This bottle releasing and dispensing mechanism forms no part of the present invention and is not, therefore, described in detail herein.

The control mechanism 22 is a conventional one such as is commonly provided for automatically actuating the bottle dispensing mechanism when a proper coin is inserted. Since this mechanism forms no part of the present invention, it is not described in detail herein, it being believed that is is sufficient to state that it contains a collection of delicate instruments for testing coins, and delicate switches operated by the coins, all of which are adversely affected by corrosion resulting from the repeated condensation and drying of moisture. A flexible electric cable 23 connects the control mechanism 22, through a terminal box 20, with the motor which drives the dispensing mechanism and which is not illustrated.

The support for the coin operated mechanism 22 is an insulated panel 24 which is supported at one side from the cabinet by the hinges 25 whereby it can be swung outwardly for providing access to the entire interior of the storage compartment when the door 14 is opened, although for the ordinary loading of the cabinet this is not required.

The panel 24 comprises the thin wall 26 which extends around the block 27 of heat insulating material except for a space on the other side of the panel in which is fitted the sheet 28 of heat

insulating material. A sealing gasket 29 extends around the top, bottom and inner side of the panel, so that when the panel is in its normal operating position as illustrated by Fig. 2 of the drawing, it is sealed on these three sides against adjacent portions of the compartment walls.

The control panel 30 is a sheet of heat insulating material which is spaced from the sheet 28 by the tubular spacers 31 of heat insulating material through which the supporting bolts 32 extend. The bolts 32 attach the sheet 28 to the inner portions of the strips 33, the outer portions of which are attached by the bolts 34 to the wall 26. The coin operated mechanism 22 is attached to the panel 30.

The door 14 has an insulated portion 35 for closing that portion of the opening to the compartment 15 which is not closed by the panel 24, and has a non-insulated portion 36 which forms a compartment for the coin operated mechanism 22.

The door 14 comprises an outer, pan-shaped wall 37 extending the full width of the cabinet; an inwardly extending, vertical strip 38 which may be welded to the wall 37, an inner, pan-shaped wall 39 extending from the strip 38 to the edge of the door opposite the non-insulated portion 36, and the block 40 of heat insulating material enclosed between the walls 37 and 39 and the strip 38.

The sealing gasket 41 is attached to the door around the inner periphery of its insulated portion, and has a portion adjacent the inner edge of the strip 38, which contacts the inner edge of the control panel 24 along its length and which, when the door is closed, provides a seal between the refrigerated compartment 15 and the panel 24.

When the panel 24 is in its normal position, and the door 14 is closed as illustrated by Fig. 2 of the drawing, the non-insulated compartment 36 over the coin operated mechanism 22 is insulated from the refrigerated compartment 15 by the panel 24, the gasket 29 and that portion of the gasket 41 which contacts the panel 24, whereby the temperature of the non-insulated compartment and that of the coin operated mechanism supported therein, remains at or near room temperature.

When the door 14 is opened for loading, there may be some condensation of moisture on the insulating sheet 28 and which may be drained off through the tube 44. However, due to the air insulated space between the insulating control panel 30 on which the coin operated mechanism is mounted, and the panel 24, and to the very small conducting surfaces provided by the tubular spacers 31 between the spaced sheet 28 and panel 30, no condensation of moisture under ordinary operating conditions will occur on the components of the control mechanism. In addition to the air insulation provided by the space between the sheets 28 and 30, the passage therebetween acts somewhat as a chimney whereby air from the non-insulated compartment 36 is recirculated in convection currents between the sheet 28 and the panel 30, the overall effect being that the temperature of the control mechanism is maintained above the dew point of the air contacting same when the door 14 is opened.

Actual tests of a commercial cabinet embodying this invention in a space having a 90° dry bulb and 80° wet bulb temperature and a resulting relative humidity of 65%, resulted in some condensed moisture on the outer surface of the sheet corresponding to the sheet 28, with a very slight amount of condensed moisture on the panel corresponding to the panel 30, but in no condensed moisture on the control mechanism.

While I have shown my invention in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications without departing from the spirit thereof.

What is claimed is:

1. A cabinet for dispensing chilled articles comprising insulated walls forming a compartment having an access opening, for storing articles to be dispensed, mechanism for controlling the dispensing of articles from said compartment, an insulated panel for partially closing said opening, means for so supporting said mechanism in spaced relationship to said panel that an insulating air space is provided therebetween, and a closure member for said opening, said member having an insulated portion arranged to close that portion of said opening not closed by said panel, and having a non-insulated portion extending over and covering said mechanism.

2. A cabinet for dispensing chilled articles comprising insulated walls forming a compartment having an access opening, for storing articles to be dispensed, a control panel of insulating material, mechanism for controlling the dispensing of articles from the said compartment, mounted on one side of said panel, an insulated panel for partially closing said opening, means for so supporting said control panel from said insulated panel that an air insulating space is provided between its other side and said insulated panel, and a closure member for said opening, said member having an insulated portion arranged to close that portion of that opening not closed by said insulated panel, and having a non-insulated portion extending over and covering said mechanism.

3. A cabinet for dispensing chilled articles comprising insulated walls forming a compartment having an access opening, for storing articles to be dispensed, a control panel of insulating material, mechanism for controlling the dispensing of articles from said compartment mounted on one side of the said panel, an insulated panel for partially closing said opening, means for so supporting said control panel from said insulated panel that an air insulating space is provided between its other side and the insulated panel, said insulated panel having a member of insulating material facing said control panel, and a closure member for said opening, said member having an insulated portion arranged to close that portion of said opening not closed by said insulated panel, and having a non-insulated portion extended over and covering said mechanism.

4. The construction claimed in claim 1 in which the control panel is supported and spaced from the insulated panel by spacers of insulating material.

5. The construction claimed in claim 2 in which the control panel is supported and spaced from the insulated panel by spacers of insulating material.

6. The construction claimed in claim 3 in which the control panel is supported and spaced from the said member of insulating material by spacers of insulating material.

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No references cited.