

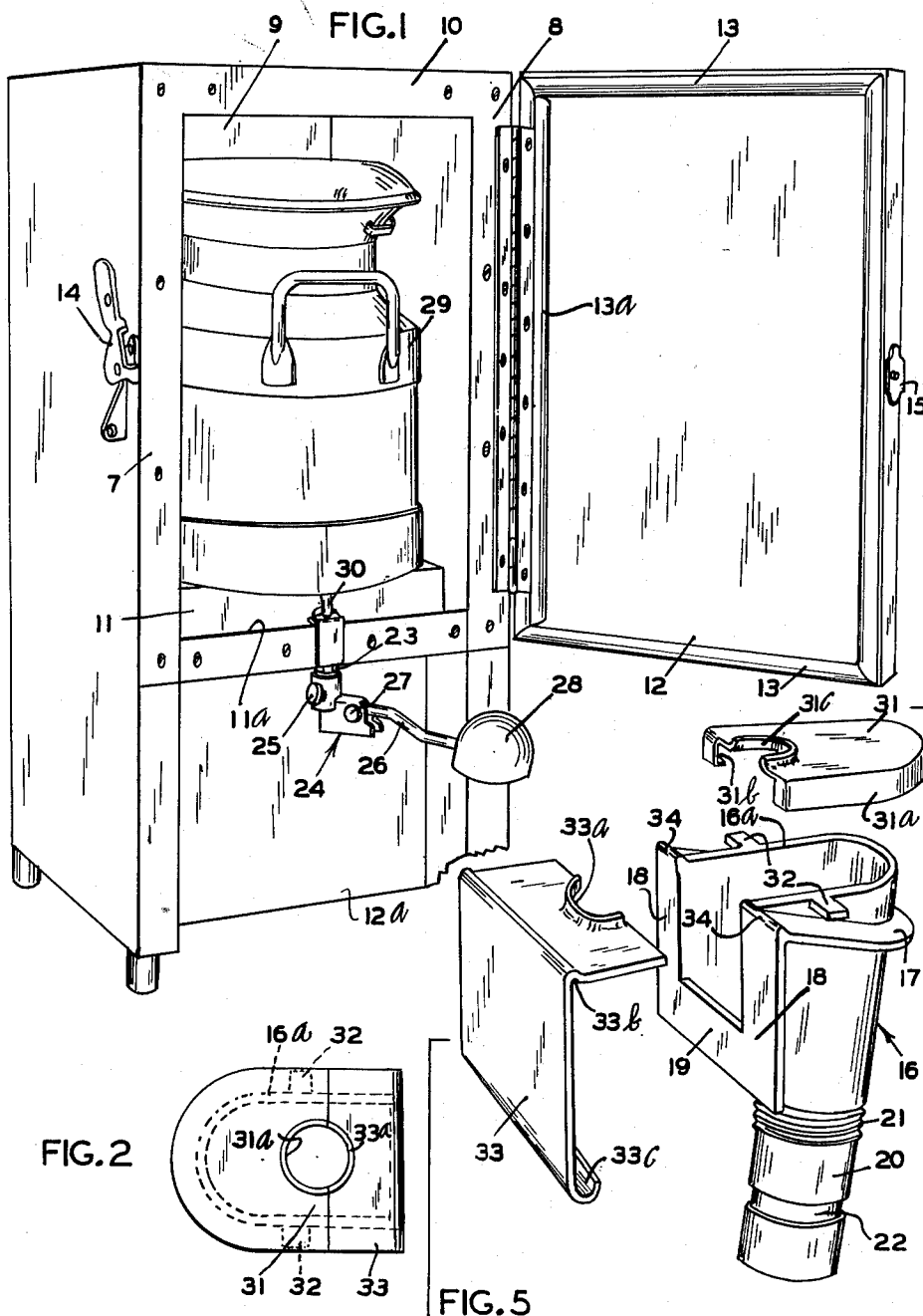
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L. F. NORRIS ET AL
LIQUID DISPENSING CABINET

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LIQUID DISPENSING CABINET

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8 Claims. (Cl. 222—184)

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This invention relates to insulated cabinets for refrigerating and dispensing liquids from relatively large containers.

It has been found that it is much more efficient and economical to dispense liquids such as milk from a large can obviating the necessity of packaging or bottling the milk and for subsequently opening said bottle or carton.

Our Patent No. 2,377,261 discloses conventional cabinet and pinch-cock valve mechanisms as well as the novel milk can with a flexible tube fixed to the bottom thereof to permit the milk to be drained from the can through said tube when the pinch-cock valve is open. The departments of health in the various states have approved this general type of milk can and dispenser since the flexible tube is so designed as to require complete replacement thereof and cannot be re-used. It has, however, been a difficult matter to produce a cabinet for refrigerating these large milk containers while permitting quick and easy insertion of the flexible tube through the pinch-cock valve mechanism and while providing an effective seal around the peripheral marginal portion of the hinged cabinet closure.

It is an object of our invention to provide a relatively simple yet highly efficient and ingenious cabinet and valve mounting member which combines to facilitate insertion of the replacement flexible tube through the valve mechanism while producing a highly effective seal with the flexible sealing gasket on the hinged cabinet closure.

It is another object to provide a valve mounting member adapted to be mounted adjacent the bottom of an insulated casing to permit a pinch-cock type of valve to be secured to the bottom portion thereof and provided with a removable closure plate for permitting substantially unrestricted access to the valve chamber when said plate is removed but closing the front and top portion of said valve mounting member to provide a seal across the front edge of the cabinet bottom when the cabinet closure is closed thereagainst.

More specifically, it is an object to provide a cabinet having insulated sides, top, bottom and rear panels and an insulated front closure with a flexible sealing gasket peripherally mounted around the marginal portion thereof. The front marginal portion of said cabinet bottom is depressed a substantial distance below the main bottom portion and is provided with a recess therein in which a valve mounting member is securely received, said valve mounting member

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being constructed with a front access opening therein which is normally closed by a removable closure plate which also extends inwardly across the top portion to closely embrace the tube extending downwardly through the valve mechanism.

Still more specifically, it is an object to provide a valve mounting member having a pair of top flanges sloping downwardly toward the rear thereof and adapted to engage and cooperate with a rearwardly sloping top surface of the depression formed in the front marginal portion of the cabinet bottom to hold said mounting member against forward shifting movement when said flanges are clamped tightly downwardly against said sloping depression.

These and other objects and advantages of the invention will more fully appear from the following description made in connection with the accompanying drawings, wherein like reference characters refer to the same or similar parts throughout the several views, and in which

Fig. 1 is a front perspective view of our improved insulated cabinet and valve mounting member showing the door in open position;

Fig. 2 is a top plan view of only the valve mounting member;

Fig. 3 is a fragmentary vertical sectional view showing the valve mounting member in operative position in the cabinet;

Fig. 4 is a front elevational view of only the valve mounting member; and

Fig. 5 is an exploded perspective view of the valve mounting member showing the front and top closure sections thereof.

As best shown in Fig. 1, we provide a cabinet having insulated sides 7 and 8, an insulated back panel 9 and top panel 10. An insulated bottom 11 interconnects intermediate portions of the sides and back panel forming an insulated compartment disposed in spaced relation above the lower extremities of the sides and back. The front marginal portion of said bottom 11 has a depressed step 11a in which the top surface thereof slopes downwardly toward the rear thereof and in which the bottom surface of said step 11a also slopes downwardly toward the rear thereof in substantially parallel relation to the top surface, as best shown in Fig. 3. The front edge of the sides 7 and 8 and top 10, as well as the front edge of the depressed step in bottom 11 are thickened to permit a front closure 12, hinged along one edge to the side 8, to be sealed thereagainst as by the compressible gasket elements 13 fixed around the peripheral marginal

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edge portion of the inner surface of said door 12. An upstanding gasket element 13a is fixed along the hinge member and forms the seal along the front edge of side 9. A latch mechanism 14 is pivotally mounted on the side 7 and engages a projection 15 fixed on the free edge of the door 12 to securely lock the same in closed position.

The compartments may be refrigerated by any conventional refrigeration system, not shown, and adapted to be positioned under the bottom 11 and enclosed by the downwardly extending sides and back panel. A front closure skirt 12a conceals the refrigeration mechanism from the front and extends across between the downwardly extending side portions.

The front edge of the step 11a has a recess formed therein to receive a valve mounting member 16. This valve mounting member 16 has a curved rear wall which is inclined forwardly toward the bottom thereof and the rear of the recess is shaped to conform thereto. A retaining and supporting peripheral flange 17 is mounted around the upper portion of said valve mounting member and slopes downwardly toward the rear thereof so that the two front edge portions of said flange are disposed substantially adjacent the horizontally disposed top edge 16a of said mounting member while the rear curved portion thereof is disposed a substantial distance below said top edge. The slope of this peripheral flange is designed to conform to the slope of the inclined step 11a and to engage against the top portion thereof surrounding said recess. A pair of vertically disposed front flanges 18 extend downwardly from the top front edge of flange 17 and have an access opening formed therebetween. A bottom flange 19 interconnects the lower extremities of said front flanges 18. The lower portion of the valve mounting member 16 has a tubular shank 20, in the form shown integrally formed therewith. This depending shank 20 has a threaded upper portion 21 and has an annular set screw receiving keyway 22 formed a short distance above the lower extremity thereof.

The valve mounting member is initially inserted into the recess formed in the step 11a as best shown in Fig. 3 and thereafter a clamping nut 23 is threadably mounted on the threaded portion 21 of the shank 20 and drawn up tightly against the sloping bottom surface of the step 11a, also as best shown in Fig. 3. A pinch-cock valve assembly designated as an entirety by the numeral 24 is mounted on the lower portion of the tubular shank 20 and is secured thereto as by a set screw 25, best shown in Fig. 1. The clamping lever 26 of the valve is pivoted on pin 27. A weight 28 holds the clamping end of lever 26 in tightly clamped closed position.

A relatively large container such as the milk can 29 is mounted in the refrigerated compartment and this container 29 is provided with a discharge sleeve 29a best shown in Fig. 3 and formed in the bottom thereof. A flexible tube 30 is connected to said sleeve 29a and is sealingly plugged at the free end thereof to retain the liquid in the container 29 before the tube is mounted in the pinch-cock valve assembly. The tube is easily inserted through the valve mounting member by the provision of the open slot between the front flanges 18 and when the valve lever 26 is raised the tube is pushed down through the tubular shank 20 as best shown in Fig. 3. The lever 26 is then released and the plugged end portion of the tube 30 is cut off as disclosed in my foregoing identified patent.

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The rear portion of the open top of said valve mounting member 16 is closed by a closure section 31 having a peripheral flange 31a extending around the entire rear portion thereof and having a pair of front retaining hooks 31b formed at the outer front portions thereof. A tube receiving recess 31c is formed in the upper cover portion thereof and closely embraces the tube 30 as best shown in Fig. 3. A pair of retaining dogs 32 are formed on intermediate portions of the sides of top 16a to receive the hooks 31b thereunder and retain the closure section 31 in closure position. A removable front closure section 33 is adapted to be received against the front flanges 18 and 19 and has a tube receiving recess 33a formed in the rear edge portion thereof to combine with the recess 31a to closely embrace the entire periphery of tube 30 a short distance below the bottom of the container 29 and to maintain the same in clean sanitary condition. The extreme front top edge of the valve mounting member 16 has a pair of upwardly extending projections 34 best shown in Figs. 3 and 5 and the section 33 has a cooperating recess 33b adapted to receive said projections 34 and combine with a flange receiving hook portion 33c formed in the bottom of said section 33 and adapted to receive the lower edge of bottom flange 19, to hold said section 33 in closed position across the front face of the upper portion of said mounting member 16 and the forward portion of the top thereof. This front closure section 33 is, of course, easily removable whenever a new container 29 is to be installed within the chamber of the cabinet and is made of any suitable material such as spring steel to permit the same to be repeatedly used.

It will be seen that we have provided an extremely ingenious cabinet and mounting member for simplifying and greatly facilitating the replacement of containers within the refrigerated compartment of the cabinet, as well as permitting a tight seal to be formed around the marginal periphery portion of the cabinet door 12. The opening provided when the front closure section 33 is removed greatly facilitates insertion of the flexible tube 30 into the shank 20 through the valve mechanism 24 by providing a relatively great accessibility thereto. When the closure section 33 is replaced across the front face of the mounting member 16 a flat surface is provided across the entire front edge of the step 11a and a tight seal is permitted around the entire peripheral marginal portion of the door 12. The closure section 33 is the same width as the distance from the extreme edges of the flanges 18 and completely covers the front surfaces of said flanges, as best shown in Fig. 4. It should be noted that the two cover sections 31 and 33 closely embrace a medial portion of the flexible tube 30 and provides a substantially dead air space surrounding said tube to eliminate a large portion of the heat loss experienced in previous structures.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the various parts without departure from the scope of the present invention, which, generally stated, consists in the matter shown, and described, and set forth in the appended claims.

What we claim is:

1. An insulated cabinet, particularly designed for dispensing liquids, such as milk, from relatively large containers, said cabinet comprising

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a casing having insulated side and back panels with insulated top and bottom panels fixed thereto, an insulated door hingedly connected at the front edge of one of said sides, a recess formed in the front edge of said casing bottom, a valve mounting member securely anchored in said recess, and having a hollow depending shank adapted to receive a pinch-cock valve mechanism thereof, said valve mounting member having an access opening formed in the front portion thereof, and extending a substantial distance downwardly from the top of said valve mounting member to facilitate insertion of a flexible tube downwardly through said valve mounting member, and a removable cover section removably closing said front opening and forming a sealing surface for engagement with the door to permit a peripheral seal to be formed around the marginal edge portion of said door.

2. A refrigerated cabinet comprising a casing having insulated side and back panels, insulated top and bottom panels interconnected thereto, and an insulated door hinged at the front edge of one of said sides with a latch mechanism for securely closing the same, sealing means around the peripheral edge portion of said door and cooperating with the sides, top and bottom to seal said casing, said casing bottom having a step formed across the front portion thereof, and the outer edge portion of said step having a recess formed therein, a valve mounting member received in said recess, a seal flange formed around the upper portion thereof for engagement with the upper surface of said step surrounding said recess, means for tightly clamping said flange against said step to securely hold said mounting member in said recess, said mounting member having a depending shank portion and extending downwardly at the rear thereof to receive a pinch-cock valve mechanism thereon, and the front portion of said mounting member having means associated therewith for sealing engagement with the sealing means on said door to form a continuous seal along the bottom edge of said door.

3. The structure set forth in claim 2, and said flange extending downwardly at the front of said mounting member, and having an opening therebetween, and extending downwardly substantially the full length thereof to facilitate insertion of a flexible tube into the lower shank portion of said mounting member and a snap on front closure section overlying said flanges, and said opening forming said cooperating means for sealing the lower edge of said door.

4. An insulated cabinet particularly designed for dispensing liquids from a relatively large container, said cabinet comprising insulated side and back panels with insulated top and bottom panels fixed thereto to form a compartment therein, a closure door hinged to one of said sides and having a sealing element mounted around the peripheral marginal edge portion of the inner surface thereof, said bottom panel having an inclined step formed across the front thereof, said step having a recess formed therein, a valve mounting member received in said recess and having a depending shank adapted to receive a pinch-cock valve thereon, an inclined flange fixed around the upper portion of said valve mounting member, and having a similar slope to that of the top surface of said step for sealing engagement with the portion thereof surrounding said recess, the upper portion of said shank being externally threaded to receive

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a clamping nut thereon to engage the lower surface of said step and securely clamp said flange against the upper surface thereof, and means across the front of said valve mounting member for cooperation with the sealing means on said door to form a continuous seal along the front edge of said casing bottom as well as along the front edges of the sides and tops.

5. An insulated cabinet particularly designed for dispensing liquids from a relatively large container, said cabinet comprising an insulated upstanding casing with an insulated top and bottom forming a compartment therein, and having a hinged closure door panel at the front thereof, said insulated bottom being provided with means for supporting the base flange of a bulk container, a valve mounting portion formed in the front marginal edge of said casing bottom, a valve mounting member secured in said valve mounting portion, said valve mounting portion and said valve mounting member being constructed to provide a substantial space below the base flange of a bulk container to facilitate insertion of a flexible tube through the valve mounting member and a valve attached thereto, and a shiftable front cover section mounted on said valve mounting member for closing at least a portion of said front opening and forming a sealing surface against which said hinged closure door will sealingly engage when in closed position, said cover section being adapted when closed to snugly embrace an intermediate portion of the dispensing tube.

6. An insulated cabinet particularly designed for dispensing liquids from a relatively large bulk container of the type having a base flange and a flexible dispensing tube connected to the container bottom, said cabinet comprising an insulated upstanding casing with an insulated top and bottom forming a compartment therein and having a hinged closure door panel at the front thereof, said insulated bottom being provided with means for supporting the base flange of a bulk container at a predetermined level, a valve mounting portion having a recess formed in the forward portion thereof and provided with a seat disposed below the container supporting means, a valve mounting member secured in said recess having a tube receiving passage extending downwardly therethrough and an opening in the upper front portion thereof communicating with said tube receiving passage to facilitate insertion of a flexible dispensing tube, and closure means normally closing the upper portion of said valve mounting member to closely embrace said tube and having a shiftable front section normally closing said front opening but shiftable to open said front opening to permit easy insertion of the tube through said passage.

7. A liquid dispensing cabinet comprising a casing having stationary side and back panels with top and bottom panels fixed thereto, a closure panel shiftable connected at the front edge of said stationary panels and having means for sealing the peripheral portion thereof relative to said stationary panels when in closed position, the casing bottom having a recess formed in the front edge thereof, a valve mounting member securely anchored in said recess and having a hollow depending shank portion extending below said casing bottom and adapted to receive a pinch-cock valve mechanism thereon, the upper portion of said valve mounting member having an access opening formed in the front thereof and extending a substantial distance downwardly

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from the top to facilitate insertion of a flexible tube downwardly therethrough, said access opening terminating above the lower extremity of the casing bottom panel, and a flat seal engaging portion formed across said valve mounting member below said access opening and disposed in flush relation with the front edge of said casing bottom to permit a tight peripheral seal to be formed around the marginal edge portion of the closure.

8. A liquid dispensing cabinet comprising a casing having stationary side and back panels with top and bottom panels fixed thereto, a closure panel shiftably connected at the front edge of one of said stationary panels and having peripheral sealing means for sealingly engaging the front edge portions of said stationary panels when in closed position, the casing bottom having an opening formed in the front portion thereof, a

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valve mounting member securely anchored to said casing bottom and extending through said opening with a hollow depending shank portion disposed below said casing bottom and adapted to receive a pinch-cock valve mechanism thereon, means for securely anchoring said mounting member to the portion of said casing bottom surrounding said opening, said casing bottom being formed on the inside of the casing to position a container mounted thereon in upwardly spaced relation above the top of said valve mounting member to facilitate insertion of a flexible tube connected with the container downwardly therethrough.

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No references cited.