May 3, 1949. F. N. JAMES 2,468,932

REFRIGERATING CABINET HAVING AN AIR PUMP CIRCUIT

Filed Nov. 29, 1946 2 Sheets-Sheet 1

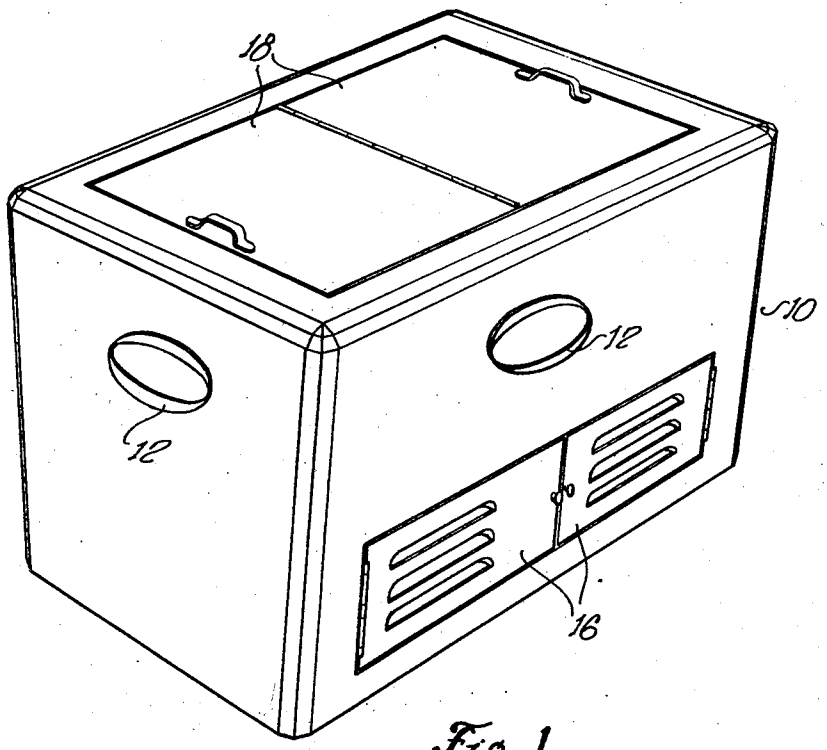


Fig. 1.

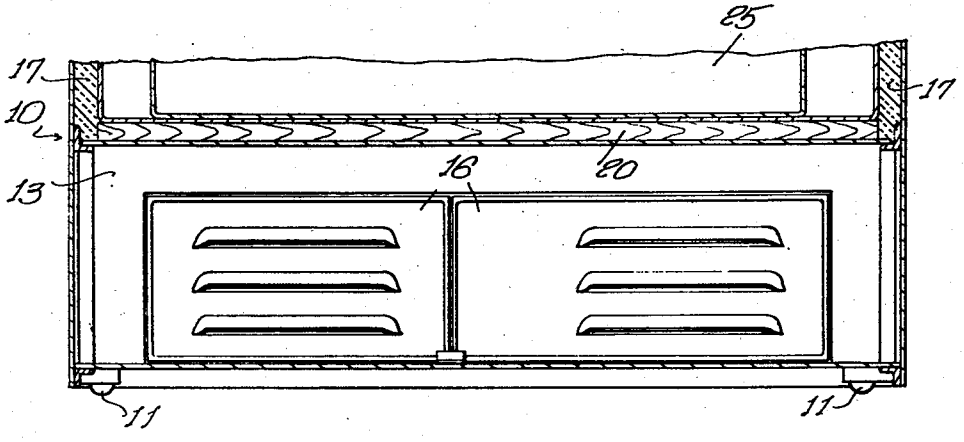


Fig. 4.

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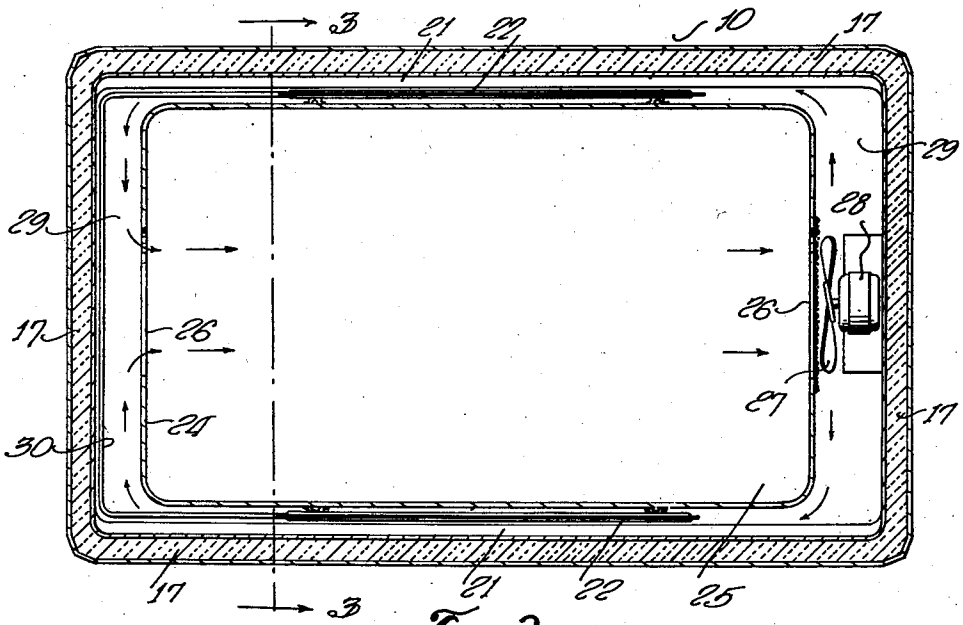


Fig. 2.

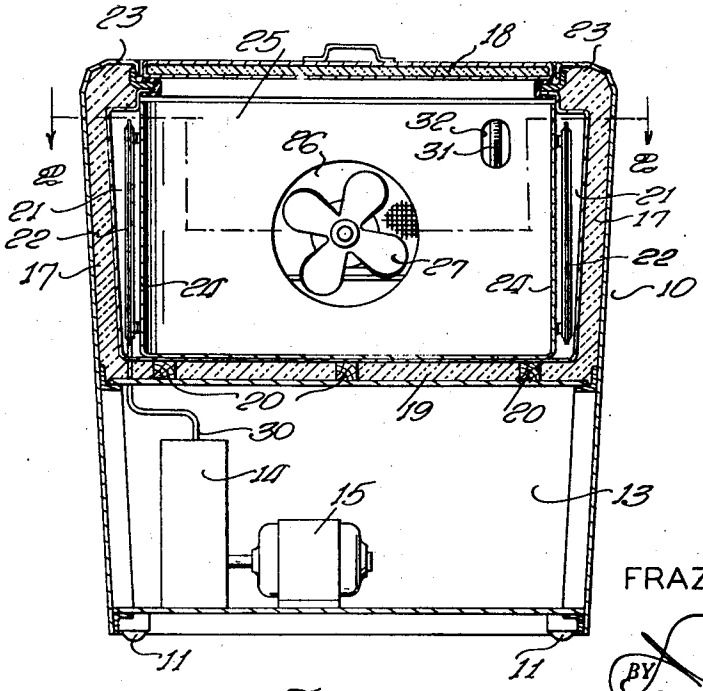


Fig. 3.

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Patented May 3, 1949 2,468,932

UNITED STATES PATENT OFFICE

2,468,932

REFRIGERATING CABINET HAVING AN AIR-PUMP CIRCUIT

Frazier N. James, Dallas, Tex., assignor, by mesne assignments, of thirty-three and one-third per cent to The Master Corporation, a corporation of Arkansas, thirty-three and one-third per cent to Frazier N. James, and thirty-three and one-third per cent to Richard A. Gump

Application November 29, 1946, Serial No. 712,867

1 Claim. (Cl. 62—102)

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This invention relates to refrigeration equipment and more particularly to dry cooling cabinets for bottled beverages and foodstuffs.

The principal object of the invention is to provide a cooling cabinet consisting of lower and upper compartments, the latter compartment being insulated against external temperature influences and whose inner side walls are recessed to define elongated chambers in each of which is installed a refrigerating coil through which a refrigerating medium is circulated by a conventional refrigerating unit installed in the lower compartment.

Another object of the invention is to provide a dry cooling or deep freezing cabinet in which the commodities placed therein for cooling or preservation are kept at low, uniformly distributed temperatures by a liner of a material having high heat conducting characteristics and which overlies and conceals the refrigerating coils and affords restricted passageways in communication with the coil recesses, through which air is recirculated by artificial means adjacent one end of the cabinet.

Still another object of the invention is to provide a dry cooler or deep freezer designed for economical operation in that repeated opening of the door of the cabinet, such as may occur when bottled beverages are dispensed therefrom, will have less effect to dissipate stored refrigeration than in conventional cabinets for similar purposes. This is due to the fact that the refrigerating coils of the invention are more or less isolated and shielded against the influence of warm air admitted into the cabinet, yet are highly effective to quickly restore original low temperatures in the refrigerating compartment by conduction through the walls of the latter.

With the foregoing and other objects in view the invention has further reference to other features of accomplishment which will become apparent as the description proceeds when taken in connection with the accompanying drawings wherein:

Figure 1 is a top perspective view of a dry cooler or deep freezer constructed according to the present invention.

Figure 2 is a plan view in section, taken on line 2—2 on Figure 3.

Figure 3 is an end elevational view in vertical section, taken on line 3—3 on Figure 2, and

Figure 4 is a fragmentary side elevational view in vertical section, showing the louvered doors through which access is gained to the enclosed lower compartment of the cabinet.

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Continuing with a more detailed description of the drawings, reference numeral 10 denotes a cabinet whose side walls are inwardly convergent towards the bottom to allow for "foot room" for one standing close to the cabinet. Casters 11 support the cabinet for convenient movement from place to place. The features identified at 12 in Figure 1 are merely decorative.

The cabinet has two compartments, the lower compartment 13 containing the refrigerating unit 14 of conventional manufacture, operated by motor 15, and accessible through doors 16 at the front of the cabinet which are louvered as shown, for dissipation of heat.

The upper or refrigerating compartment of the cabinet is completely enclosed by insulating walls 17, insulated closures or doors 18 and the insulated horizontal partition 19 which separates the upper from the lower compartment. The partition 19 is reinforced in the present case, by timbers 20, extending from end to end of the cabinet.

It will be observed in Figure 3 particularly that the side walls 17 are longitudinally recessed to define cavities 21 to accommodate refrigerating coils 22 whose confronting faces are disposed inwardly of the top of the cavity which is defined by the overreaching edges 23 of the opening in the top of the cabinet. Lying flush with the edges 23 are the side walls 24 of the liner or chamber 25, in which is stored the commodity to be preserved in or dispensed from the cabinet. This chamber is closed except for a preferably circular opening 26 in each end thereof, adjacent one of which openings is a fan 27, operated by a small motor 28 to create a suction through the chamber 25, causing air to circulate in the direction of the arrows, across the coils 22 and through the passages or spaces 29, in communication with the coil recesses 21 and which are defined at each end of the cabinet by the relative spacing of the walls of the latter and those of the chamber 25.

It is apparent that by recessing the coils 22 and closing the recesses by the side walls of the chamber 25 except at the ends, the coils are shielded against direct contact of warm air entering the chamber 25 when the doors 18 are opened, which they are frequently while dispensing bottled beverage from the cabinet. However, the circulation set up by the fan 27 establishes and maintains uniform distribution of refrigerated air throughout the chamber 25. The stored refrigeration in the coil recesses 21 quickly restores the temperature in compartment 25 when refrigeration losses occur and preserves low

temperatures for long periods after the refrigerating unit 14 has been made inactive to circulate a refrigerant through the coils 22 by way of the tubes 30.

In Figure 3 is shown a temperature indicator 31, visible through an aperture 32 in one end wall of chamber 25.

Manifestly, the construction as shown and described is capable of some modification and such modification as may be construed to fall within the scope and meaning of the appended claim is also considered to be within the spirit and intent of the invention.

What is claimed is:

In a dry cooling unit, the combination comprising a cabinet having upper and lower compartments and whose side walls are inwardly convergent at the bottom thereof, a refrigerating unit in the lower of said compartments, said upper compartment being insulated against external temperature influences and whose interior side and end walls are longitudinally recessed, a refrigerating coil lying wholly within each of said

sidewall recesses and through which a refrigerant is circulated by said refrigerating unit, a removable commodity chamber within said upper compartment whose side and end walls completely cover and separate said recesses from said chamber, the latter having an opening in each end thereof communicating with the end recesses, means for establishing and maintaining suction through said openings to effect circulation of air through said chamber and said coil recesses across said coils and a hinged cover closing the top of said cabinet and chamber.

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REFERENCES CITED

The following references are of record in the file of this patent:

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