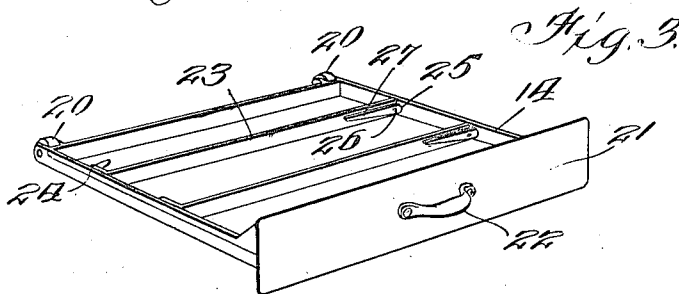
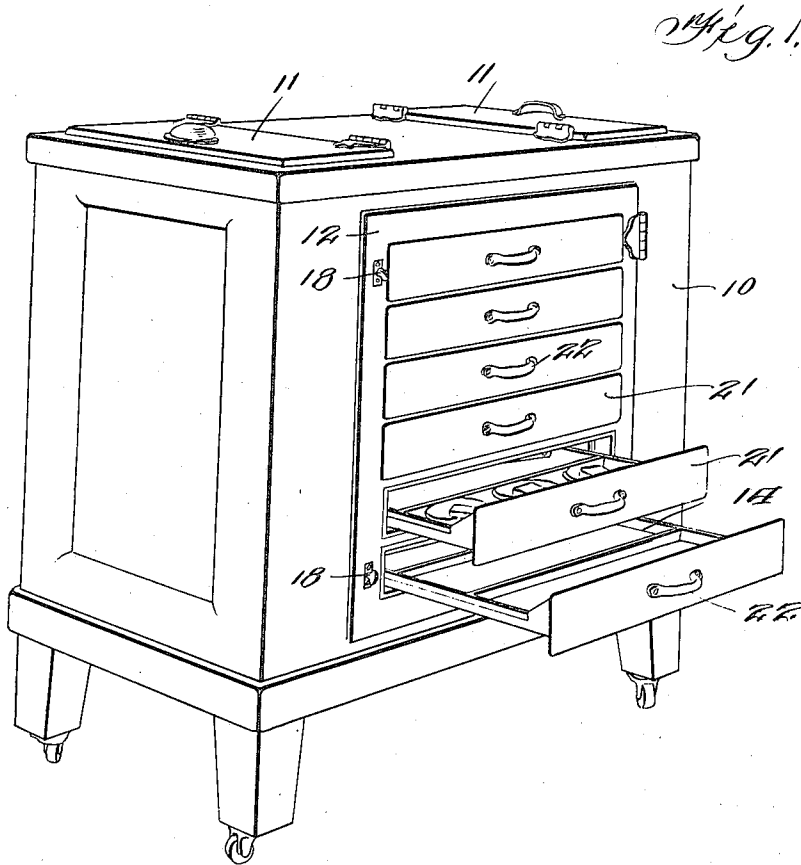


V. A. DE CANIO.
REFRIGERATOR.
APPLICATION FILED APR. 14, 1914.

1,204,347.

Patented Nov. 7, 1916.
2 SHEETS—SHEET 1.



Witnesses

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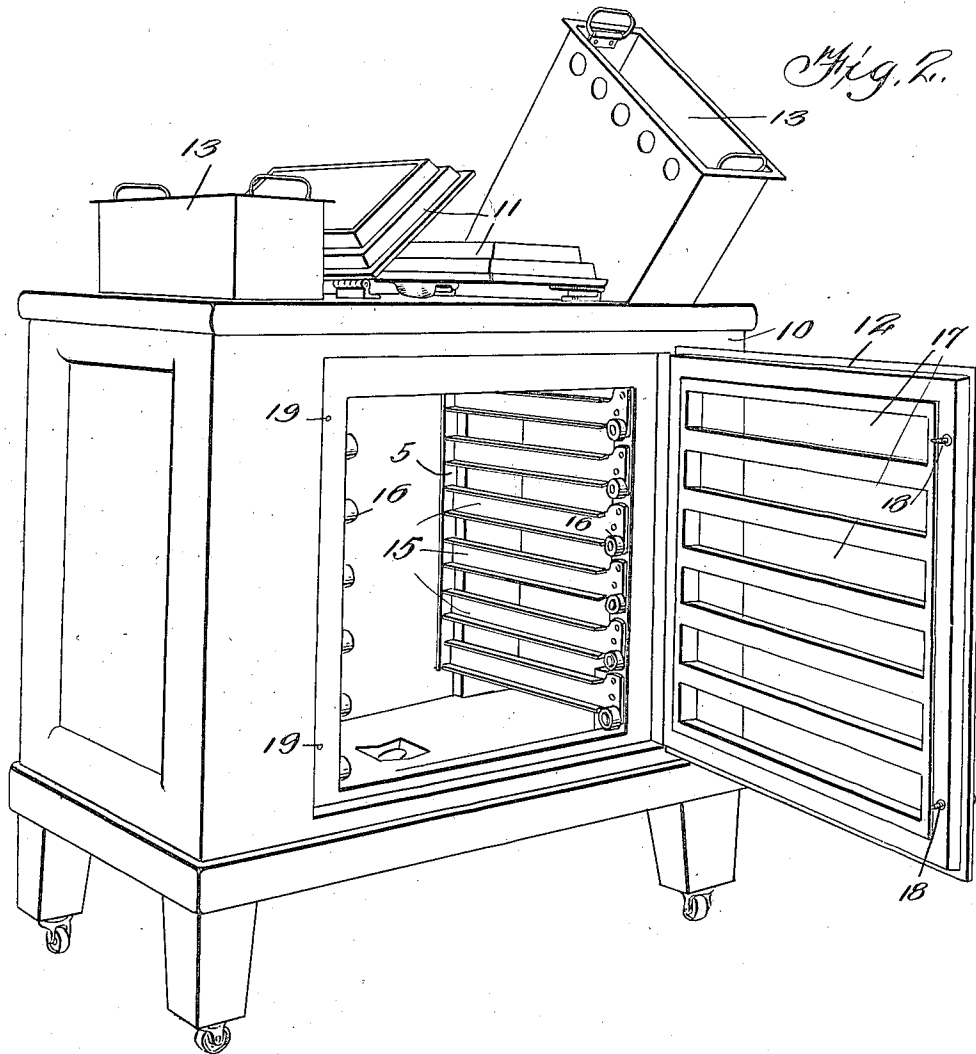
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Witnesses

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UNITED STATES PATENT OFFICE.

VICTOR A. DE CANIO, OF UNION HILL, NEW JERSEY, ASSIGNOR TO LORILLARD REFRIGERATOR CO., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

REFRIGERATOR.

1,204,347.

Specification of Letters Patent.

Patented Nov. 7, 1916.

Application filed April 14, 1914. Serial No. 831,820.

To all whom it may concern:

Be it known that I, VICTOR A. DE CANIO, a citizen of the United States, residing at Union Hill, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Refrigerators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to refrigerators and more particularly to that type wherein the articles stored in said refrigerators are placed in a series of drawers.

The primary object of the present invention is to secure the greatest results from the refrigerant by preventing the escape of cold air as far as possible, either when the ice is replaced or the food is inserted or removed.

The secondary object is to provide facilities for cleaning out all compartments, while avoiding complication in structure.

Further objects will be apparent from the following specification, appended claims and drawings, in which,

Figure 1 is a perspective view of the device with two of the drawers partly withdrawn, Fig. 2 is a perspective view of the device showing several of the parts moved revealing the construction thereof, and, Fig. 3 is a perspective view of one of the drawers removed.

Starting out with the well-known rule that cold air descends, I have directed my experiments along the line of trapping the cold air within this improved refrigerator as far as possible. Obviously this is accomplished by having it open at or near the bottom as little in space or time as may be. As for the ice, I insert that through the top. The melted ice or drippings must be carried off through the bottom, but the escape of cold air through the drain pipe is negligible. As for the food, that cannot always be conveniently inserted through the top and I therefore insert it through the front though not through the medium of the large door ordinarily employed. When such a door is swung open the entire front of a good-sized food compartment whose air is chilled, is exposed to and placed in direct contact with the warmer air of the room, with the result that the cool and heavier air in the box flows out at the bottom and the warmer and

lighter air in the room flows in at the top, and even while the user is inserting or removing a dish the current thus set up automatically will rob the food compartment of so much of its chilled air that by the time the front door is again closed the temperature in such compartment has risen materially. Thereafter the work of reducing that temperature or re-chilling the air in the food compartment from that in the ice compartment is resumed, and the ice depleted accordingly. Broadly speaking, I propose to avoid this condition which is prevalent in most makes of ice boxes, by adopting a structure in which, not only will the entire front not be swung open to gain access to the food compartment, but it is not even necessary to open it simultaneously at both a high point and a low point. Therefore there is no opportunity for the cold air at the bottom to flow out and the warmer air at the top to flow in and take its place. In other words, I have evolved the theory that if the front of the ice box be opened so as to expose the chilled food compartment to the warmer air in the room only in transverse strips or zones, the effect on the chilled air will be much less marked than usual.

Referring to the drawings in which similar reference numerals indicate similar parts throughout the several views, there is shown a frame or box 10 of usual construction for ice boxes, which is provided with openings in its top closed by hinged covers 11, and a hinged door 12 closing the otherwise open front, said hinged covers 11 when closed, cover side compartments in which tanks 13 are suspended, and into these tanks the cooling element such as ice is placed from above without opening the door 12.

The space between the tanks 13 is adapted to receive a series of slides made in the form of drawers 14, and these drawers are slidable in channeled guides 15 secured inside of the box 10 and separated from each other to allow space therebetween through which air circulation may be had. These guides may be secured at their ends to upright strips 5 within the corners of the box, and at the forward end of each guide is located an anti-friction roll 16, whose upper side alines with the lower flange of the guide to support the edges of the bottom of the drawer. The door 12 is provided with openings 17 to receive the several drawers, and this door is held securely closed by fastening means such

as the screws 18 which engage in the sockets 19 when the door is closed. Thus the two cooling compartments are separated from the intermediate food compartment by two upright partitions which are composed of slats spaced from each other to permit free passage of cool air, and the slats themselves constitute the drawer guides arranged in two upright series and spaced from each other as shown. When the drawers are all withdrawn and the front door opened as seen in Fig. 2, these guides and the entire interior of the food compartment may be cleaned with ease. When the drawers are all in place and the front door closed, there is no admission of warm air. But when the user comes to take something out of the food compartment, one drawer, or at most two drawers, are partly withdrawn as seen in Fig. 1, and a dish or dishes taken out without opening the door or without necessarily withdrawing any other drawer. Therefore the chilled air in the ice compartment is thrown into contact with the warm air in the room temporarily and only through a zone or at most two zones, each as wide as the front panel of a drawer; and there is no opportunity for a circulation to be set up which would as it were wash out the cold air as explained above.

At frequent intervals the careful housewife will thoroughly clean the interior of her ice box. The ice compartments can be reached through the top when the tanks 13 are withdrawn. The food compartment is reached by withdrawing all the drawers and swinging open the front door as seen in Fig. 2. Thus she has access to both sides of both upright partitions, and there is no complication of structure to prevent the insertion of the arm with a wash cloth or brush, or even to prevent her sprinkling the interior with lye or pouring water into it.

Each of the drawers 14 is provided with rolls 20 at the rear corners thereof, which roll in the guides 15, and the front is in the form of a panel 21 which is preferably about as long as the drawer is wide and somewhat wider than the drawer is deep, and which is large enough to completely close into and fill the opening in the door through which said drawer passes. Each panel is provided with a handle 22. Each of the drawers 13 is also preferably provided with partitions 23, which may be adjustable to form the desired compartments in each drawer. Each partition comprises a strip of metal having one end thereof bent as at 24, and a cam 25 pivoted to the opposite end thereof as at 26. This cam has a handle 27 extending therefrom by which it may be swung when the partition is placed as desired.

It will be seen from Fig. 1 that the panel

21 rises considerably above the body of the drawer so that when articles are disposed on the latter between its partitions they do not ordinarily rise high enough to be struck by the top of the opening 17 as the drawer is withdrawn. This view shows all of the drawers alike and their front panels of the same dimensions, but I do not wish to be limited in this respect.

The door 12 may be secured to both sides of the front opening by screws or the like instead of the hinges as shown.

Modifications may be made within the scope of this invention without departing from the spirit thereof, and the drawings are submitted for illustrative purposes only.

Having thus described my invention, I claim:—

1. In a refrigerator, the combination with a box-like body having an opening in its front, and two upright partitions in the body defining cooling compartments and a food compartment between them, each partition being composed of a series of spaced horizontal guides alined with the edges of the front opening; of a door hinged at one edge to said front and adapted to close the opening therein and itself having a series of transverse openings, means for fastening the door when closed, and a series of drawers each having a shallow body adapted to pass through one of the door-openings and engage a pair of said guides, each drawer also having a wide front panel adapted to fit into and close its door-opening when the drawer is closed.

2. In a refrigerator, the combination with a box-like body having openings in its top near the ends thereof and a large opening in its front between the other openings, two upright partitions in the body defining cooling compartments beneath said endmost openings and a food compartment between the cooling compartments, each partition being composed of a series of spaced horizontal guides alined with the edges of the front opening, and covers for closing said endmost openings; of a door movably carried by the refrigerator front and adapted to close the large opening therein and itself having a series of transverse openings, and a series of drawers slidable through said transverse openings and each having a shallow body whose edges engage a pair of said guides and a wide front panel adapted to close its respective opening in the door when the drawer is closed.

In testimony whereof I affix my signature in presence of two witnesses.

VICTOR A. DE CANIO.

Witnesses:

HUGO MOCK,
GEORGE L. THOM.