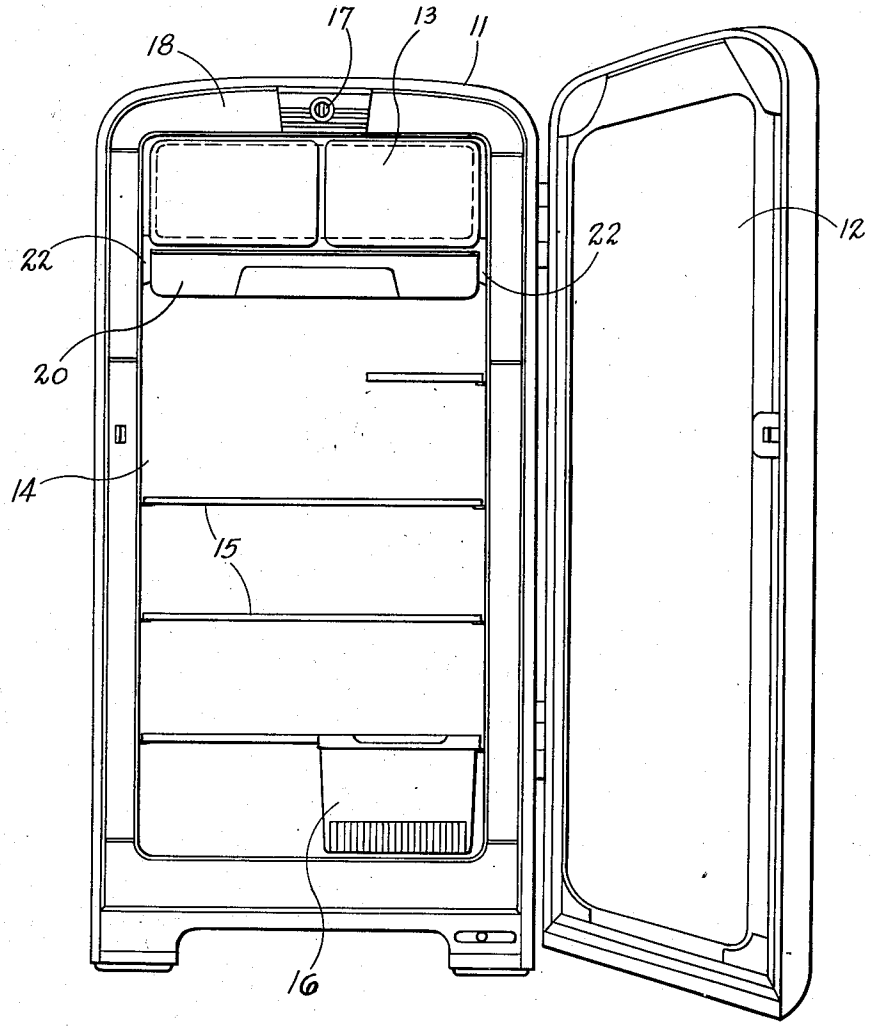
Nov. 3, 1953 H. C. MATHER 2,657,544

REFRIGERATOR TRAY

Filed March 7, 1950 4 Sheets-Sheet 1

Fig. 1



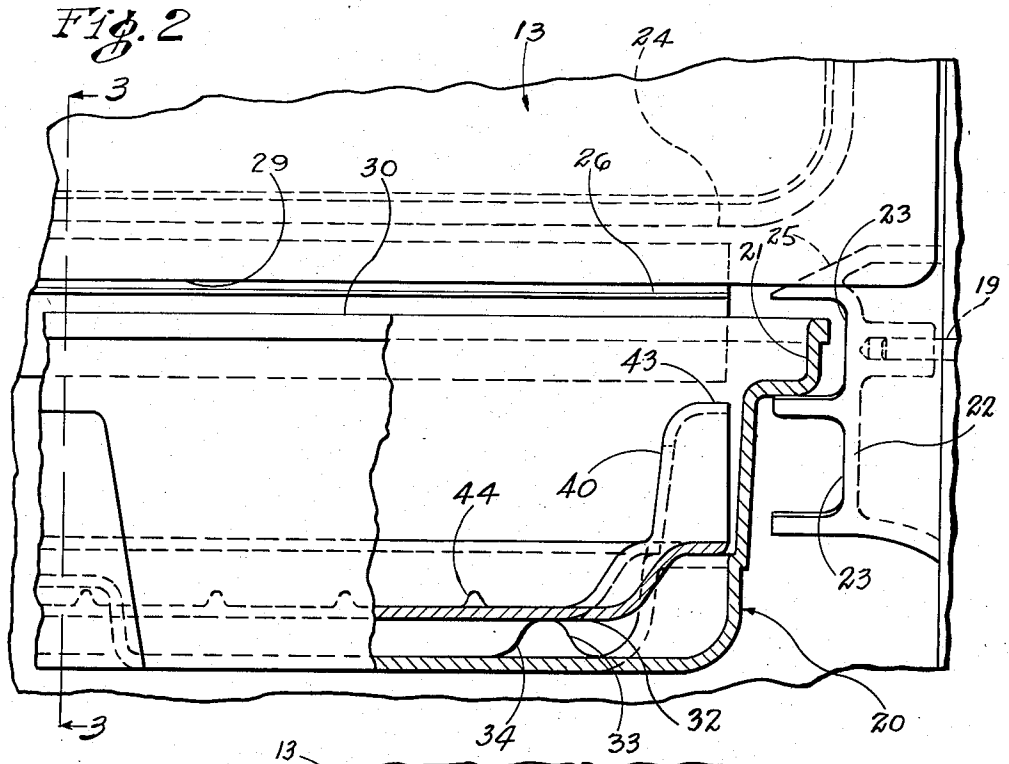
INVENTOR.
HAROLD C. MATHER
BY J. D. Douglas
his atty

Nov. 3, 1953 H. C. MATHER 2,657,544

REFRIGERATOR TRAY

Filed March 7, 1950 4 Sheets-Sheet 2

Fig. 2



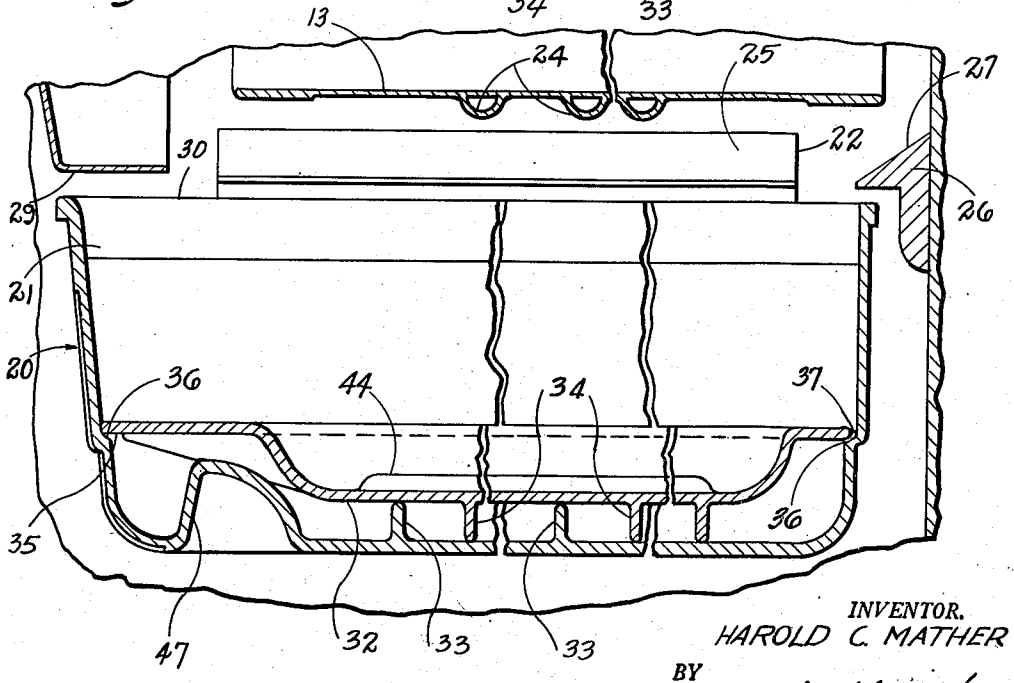


Fig. 3

INVENTOR.
HAROLD C. MATHER
BY
J. D. Cushman
His Atty.

Nov. 3, 1953 H. C. MATHER 2,657,544

REFRIGERATOR TRAY

Filed March 7, 1950 4 Sheets-Sheet 3

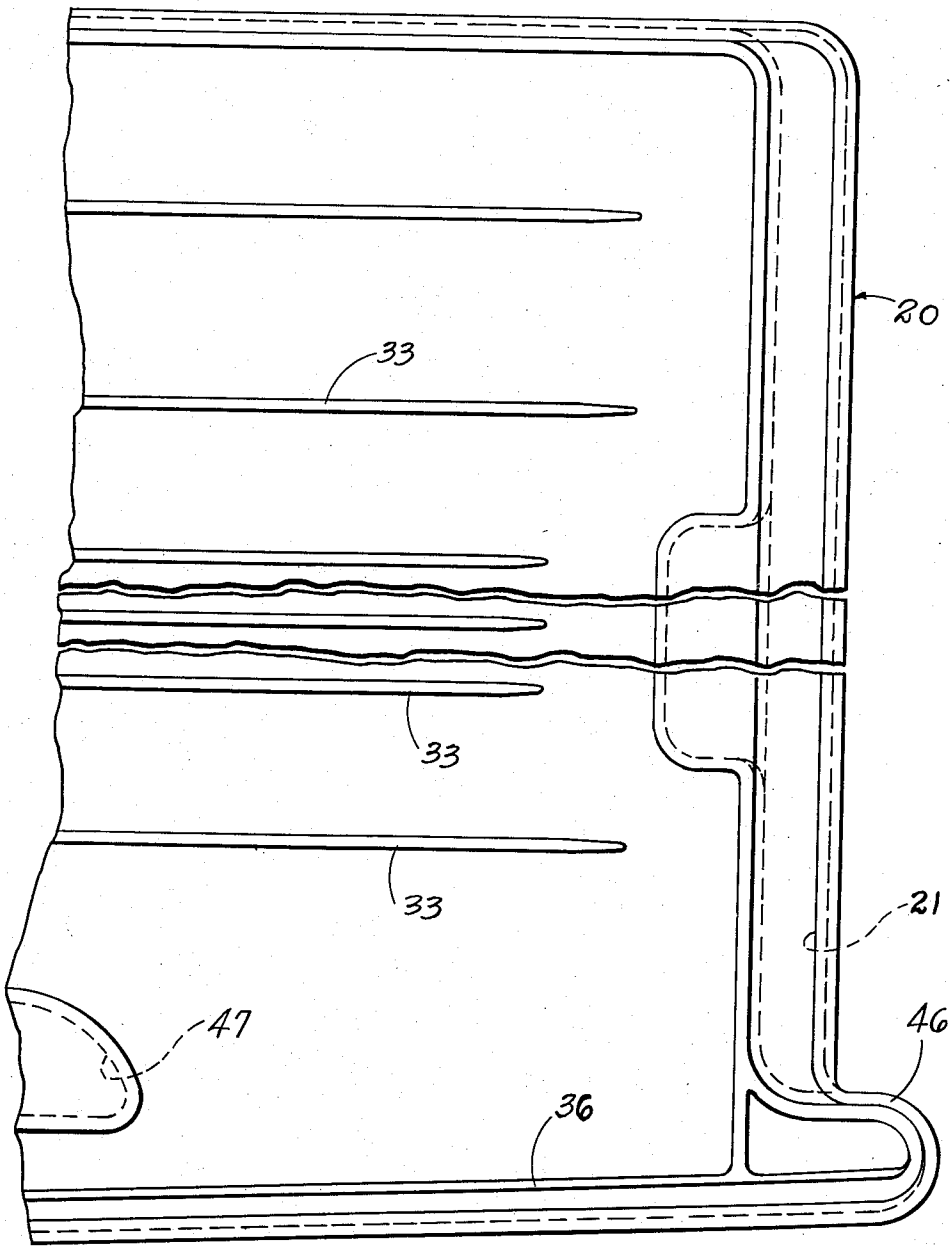


Fig. 4

INVENTOR.
HAROLD C. MATHER
BY J. D. Douglas
his atty.

Nov. 3, 1953 H. C. MATHER 2,657,544

REFRIGERATOR TRAY

Filed March 7, 1950 4 Sheets-Sheet 4

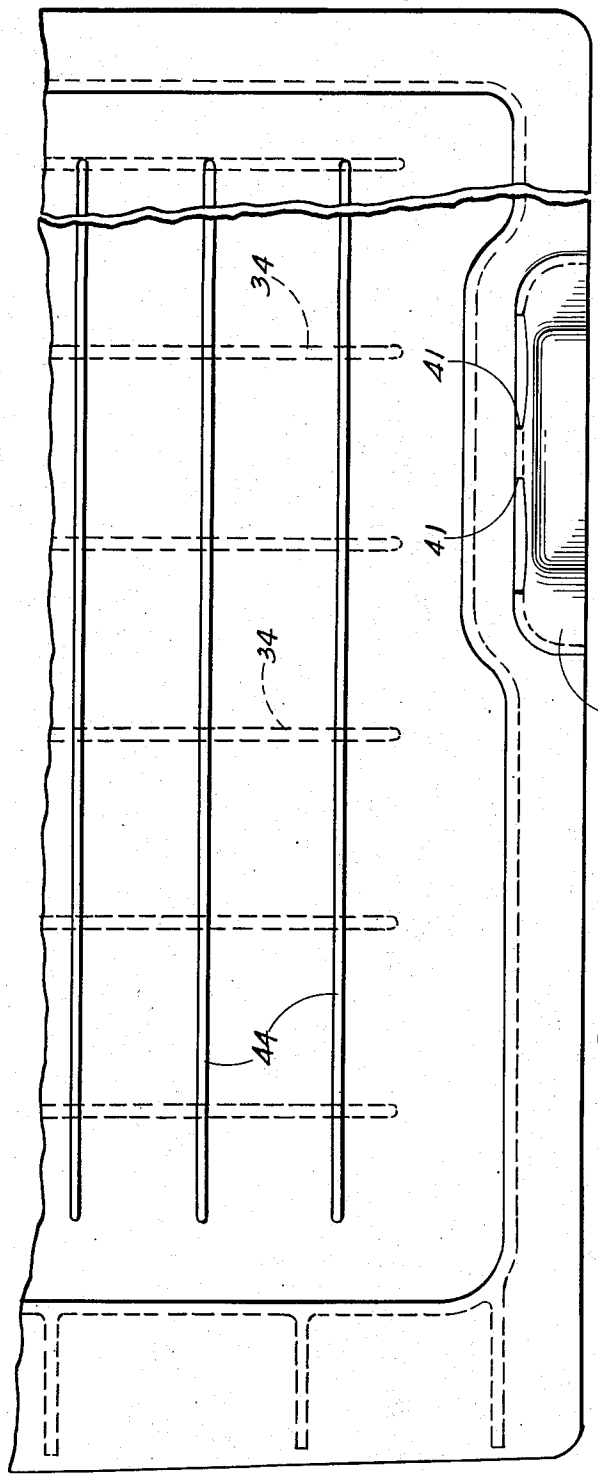


Fig. 6

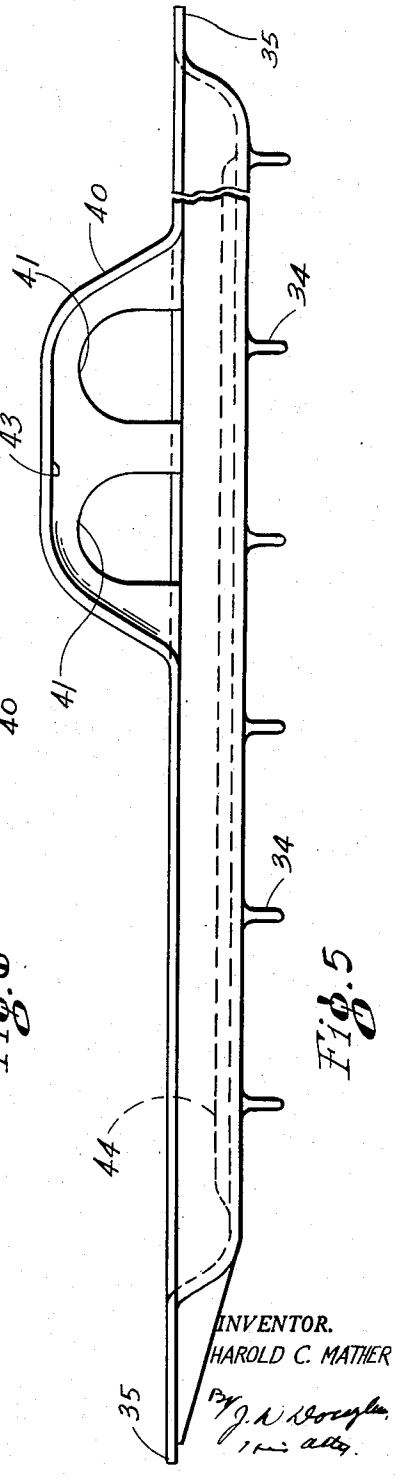


Fig. 5

INVENTOR.
HAROLD C. MATHER
By J. W. Douglas
his atty.

Patented Nov. 3, 1953

2,657,544

UNITED STATES PATENT OFFICE

2,657,544

REFRIGERATOR TRAY

Harold C. Mather, Elmwood Park, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware

Application March 7, 1950, Serial No. 148,109

6 Claims. (Cl. 62—89)

1

This invention relates to a household refrigerator, and more particularly to a refrigerator having a drawer adapted to be maintained at temperatures below the freezing point of water.

Most household refrigerators are presently supplied with a drawer beneath the freezing compartment to be used for the storage of meat or the like. Between the drawer and the freezer compartment is usually considerable space; in general taken up by some sort of tray for catching the condensate from the coils when the machine is "defrosted." This drawer is usually somewhat colder than the remainder of the refrigerator but is not cold enough for the storage of frozen foods.

The primary reason for the failure to utilize the space in such a drawer for frozen food storage has been the inability to fit the drawer close enough to the freezing compartment to maintain the low temperature, without, at the same time, allowing all the condensate and melting ice to fall into the drawer with the food.

The present invention makes possible the use of a drawer closely adjacent the lower surface of the freezing compartment and insulating the drawer and, by the same means, providing a catch basin for isolating the condensate from the article in the drawer.

A more complete understanding of the advantages of the invention, and the invention itself, may be had by referring to the accompanying figures which form a part of the specification.

In the drawings:

Fig. 1 is a partially perspective view of the refrigerator with the door opend;

Fig. 2 is a fragmentary front elevational view drawn to an enlarged scale of one side of the drawer with a portion broken away to show its mode of attachment to the cabinet;

Fig. 3 is a sectional view along line 3—3 of Fig. 2;

Fig. 4 is a fragmentary top plan view of the drawer alone;

Fig. 5 is an end elevational view of the inner tray alone; and

Fig. 6 is a partial top plan view of the tray alone.

Briefly, my invention comprises a refrigerator having a freezing compartment in the upper part of the cabinet. Immediately below the freezing compartment, a drawer is provided. Thus, the cold air currents from the freezer pass directly into the drawer. The drawer is provided with a false bottom which serves both to insulate the bottom of the drawer and to raise the food in the

2

drawer above the level of the condensate which may drain into the drawer.

More specifically, and in reference to the drawings, my invention comprises a refrigerator having a cabinet 11 to which a door 12 is hinged. A freezing compartment 13 is located near the top of the food compartment 14. The interior of the cabinet is of conventional type, in general. Shelves 15 are provided for most food packages and a vegetable drawer 16 is located near the bottom of the compartment 14. The thermostat controls 17 are located above the freezing compartment on the upper breaker frame 18.

As stated, the above recited elements are usual and customary. The novel element of my invention lies in the provision of a drawer 20 capable of storing frozen foods at the necessary low temperatures to prevent thawing. This is accomplished by means best illustrated in Figs. 2–5 inclusive.

The drawer 20 is formed with an outwardly offset wall 21 near its upper edge on both ends of the drawer. These offsets 21 are slidably disposed in grooved brackets 22 fixed to the side walls of the inner compartment 14 by screws 19. In the illustrated embodiment each bracket has two grooves 23 to allow adjustment of the level of the drawer 20. Since the brackets are continuous along the side wall, it is apparent that convection currents from the walls of the freezing compartment 13 and the tubes 24 of the evaporator will be deflected into the drawer 20 by the upper surface 25 of the bracket 22 along the sides of the cabinet. A bracket 26 having a similar sloping surface 27 is fixed to the rear wall of the cabinet to deflect cold air from that portion of the freezer 13 into the drawer 20. At the front of the drawer 20 the lower edge 29 of the doors of the freezing compartment 13 extend downward almost to the upper surface 30 of the drawer. This arrangement serves further to direct the coldest air into the drawer.

In the type of refrigerator illustrated having exposed evaporator tubes 24, the moisture in the air in the refrigerator condenses on the tubes 24 and on the walls of the freezing compartment 13 and either freezes there or drops down. In the prior refrigerators, this condensate was caught in a flat dish under the freezing compartment. In this embodiment, however, such an expedient is impossible since it would insulate the freezer drawer 20 from the cold air surrounding the freezing compartment 13.

A false bottom is provided in the drawer 20 in the form of a tray 32. The inner bottom of the

drawer is formed with upstanding ribs 33 and the tray is formed with downward extending ribs 34 which are spaced to lie between the ribs 33. The two sets of ribs 33 and 34 are the same height and, therefore, they combine to support the tray 32 in spaced relationship to the bottom of the drawer 20. Further support for the edges 35 of the tray 32 may be provided by a slight shoulder 36 formed on the inner surface of the drawer on which the edges may rest. These edges may, however, be spaced from the shoulder 36, as at 37, in order to allow condensate to run down the walls of the drawer 20. It is also envisioned that a small drain may be provided in the tray to allow moisture to drain into the drawer. Thus a false bottom is provided in the drawer allowing the condensate to flow down into the space between the bottom of the drawer and the tray. This space also insulates the interior of the drawer from the rest of the cabinet so that the conduction of heat from the cabinet to the drawer will not be so rapid as to raise the temperature in the drawer above the desired temperature.

Defrosting a refrigerator of this type having an open drawer directly below the evaporator coils also presents a problem, since the melting ice, frost and water will fall directly into the drawer. The present invention makes possible the ready removal of all food from the drawer to facilitate this operation. At each end of the tray 32 an upstanding boss 40 is provided, rising from the adjacent flange. A pair of finger holes 41 are formed in each boss 40. Thus, it is possible to remove the tray 32 from the drawer 20 by inserting the fingers outwardly through the holes 41 under the upper wall 43 and lifting the tray together with the food thereon from the drawer. Small upstanding ribs 44 may be provided on the tray 32 to support the food thereon and to stiffen the tray. Thus the drawer is left empty and is prepared to receive the water and ice from the coils above it. When defrosting is complete, the drawer may be withdrawn and emptied or may be provided with a plugged hole which may be opened to drain into a receptacle more convenient to handle in a manner well known in the art.

The front of the drawer is preferably formed with an extended portion 46 somewhat in the manner of a flange, at the sides. These portions further enclose the drawer 20 and prevent heat leakage in the form of convection currents from the main storage part of the cabinet into the drawer. A recessed hand-hold 47 may be formed in the underside of the drawer to provide for easy withdrawal. The tray 32 may easily be formed to avoid interference with this hand-hold, and since it does not extend above the tray, the hand-hold in no wise diminishes the storage capacity of the drawer.

Both the drawer and tray are preferably molded from a plastic material, in part because of the need for the numerous ribs and the like. It is recognized, however, that other materials such as glass may also be used.

Having thus described my invention, I am aware that numerous and extensive departures may be made therefrom without departing from the spirit or scope of my invention.

I claim:

1. A refrigerator comprising a cabinet, a freezer compartment disposed in the top of said cabinet, a drawer disposed in said cabinet beneath said compartment, said drawer being adjustable vertically in said cabinet to be held in close juxtaposition to said compartment, and being insulated to allow frozen foods to be stored therein, and deflection means mounted in said cabinet adjacent the lower edges of said freezer compartment adapted to deflect cold air currents into said drawer.

2. A refrigerator comprising a cabinet, a freezer compartment across the top of said cabinet, a drawer beneath said compartment; drawer support brackets in said cabinet having a plurality of slots; said drawer, when supported by one of said slots in each bracket, being disposed in close juxtaposition beneath said compartment to prevent convection currents in said cabinet from warming said drawer above a freezing temperature, and a false bottom in said drawer to insulate it from the rest of said cabinet.

3. A refrigerator comprising a cabinet, a freezer compartment across the top of said cabinet, a drawer beneath said compartment; drawer support brackets in said cabinet having a plurality of slots; said drawer, when supported by one of said slots in each bracket, being disposed in close juxtaposition beneath said compartment to prevent convection currents in said cabinet from warming said drawer above a freezing temperature, a removable tray fitted in said drawer forming an insulating chamber between said tray and the bottom of said drawer.

4. In a refrigerator having a freezing compartment, a freezer drawer adapted to fit closely below said compartment, said drawer being formed with ribs across the inner bottom thereof, and a tray adapted to fit snugly in said drawer, said tray being formed with ribs on the bottom thereof complementary to the ribs in said drawer.

5. In a refrigerator having a freezing compartment, a freezer drawer adapted to fit closely below said compartment, said drawer being formed with ribs across the inner bottom thereof, and a tray adapted to fit snugly in said drawer, said tray being formed with ribs on the bottom thereof complementary to the ribs in said drawer, said tray also being formed with a recessed handle at either end for removal of said tray from said drawer.

6. In a refrigerator having a freezing compartment, a freezer drawer adapted to fit closely below said compartment, said drawer being formed with ribs across the inner bottom thereof, and a tray adapted to fit snugly in said drawer, said tray being formed with ribs on the bottom thereof complementary to the ribs in said drawer, said tray also being formed with a recessed handle at either end for removal of said tray from said drawer, and said drawer being formed with a recessed handle for moving it slidably beneath said compartment.

HAROLD C. MATHER.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,975,177	Sherrick	Oct. 2, 1934
2,024,082	Woodruff	Dec. 10, 1935
2,042,993	Hopes	June 2, 1936
2,166,707	Schweller	July 18, 1939
2,177,306	Smith	Oct. 24, 1939
2,242,903	Crimmel	May 20, 1941
2,254,118	Kucher	Aug. 26, 1941
2,266,617	Steenstrup	Dec. 16, 1941
2,304,465	Maniscalco	Dec. 8, 1942
2,306,802	Harbison	Dec. 29, 1942
2,449,709	Mesite	Sept. 21, 1948