Jan. 11, 1955 J. D. GAMBLE 2,699,369

TRAY GUIDE MEANS FOR REFRIGERATOR FREEZING COMPARTMENTS

Filed July 30, 1951

Fig. 1

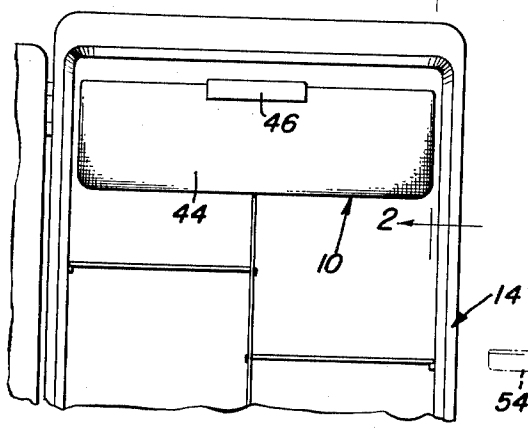


Fig. 2

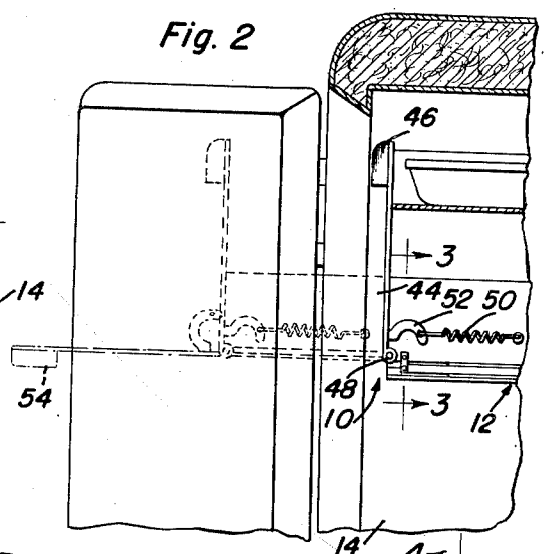


Fig. 3

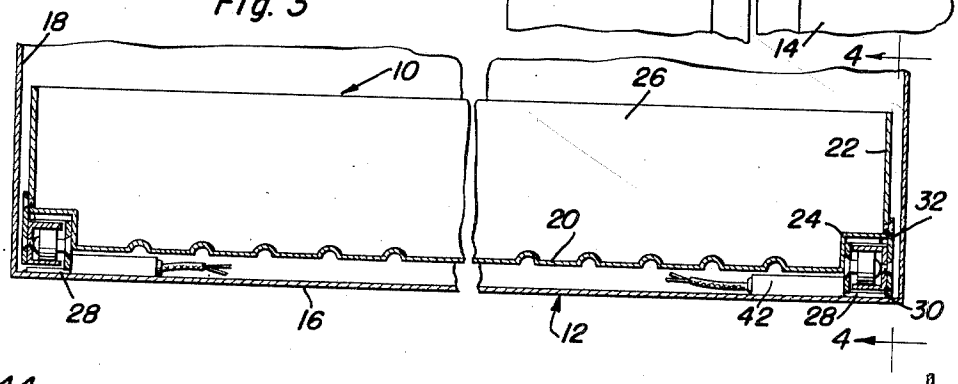


Fig. 4

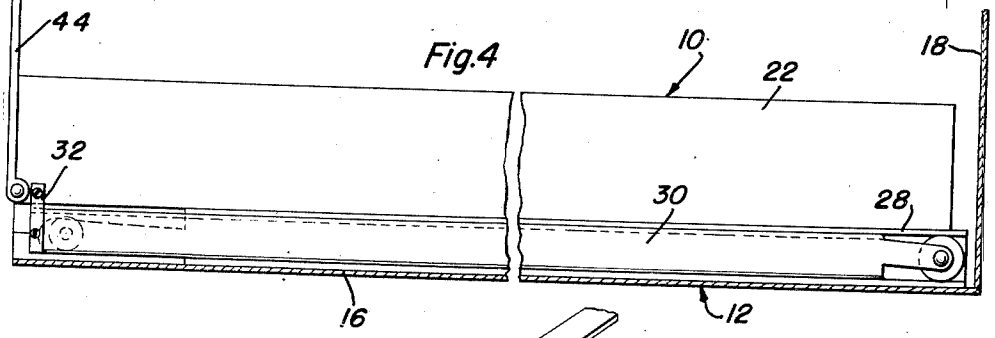
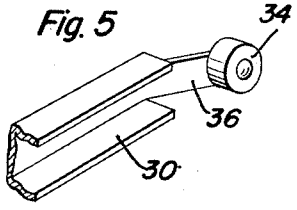


Fig. 5



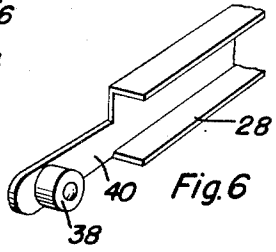


Fig. 6

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TRAY GUIDE MEANS FOR REFRIGERATOR FREEZING COMPARTMENTS

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Application July 30, 1951, Serial No. 239,228

3 Claims. (Cl. 312—343)

This invention comprises novel and useful improvements in low temperature cabinet construction, and more particularly pertains to the freezer compartments of refrigerators.

An important object of this invention is to facilitate the storage and removal of foods from the freezer compartments of refrigerators.

Another important object of this invention is to provide a sliding tray assembly for refrigerator freezing compartments which may be installed in conventional freezer compartments without necessitating a modification of the structure thereof.

Yet another object of this invention is to prevent the formation of ice on the tray assembly guides, thereby maintaining the tray assembly in operative condition.

An important feature of this invention resides in the provision of a tray assembly for a freezer compartment, which tray assembly has a front door vertically, pivotally attached thereto, and which door constitutes a closure for the freezer compartment when the tray is disposed therein.

Another feature of this invention resides in the provision of a tray guide assembly including a pair of oppositely facing channel members, one of which is slidably disposed between the legs of the other, with a roller on relatively opposite ends of each of the channel members in rolling engagement with the other channel member, which channel members are so arranged as to limit the circulation of air therebetween and limit condensation and ice formation thereon.

These, together with various ancillary objects and features are obtained by this device, a preferred embodiment of which is illustrated in the accompanying drawings, wherein:

Figure 1 is a fragmentary front elevational view of a refrigerator with the door open;

Figure 2 is a fragmentary side elevational view of the interior of the refrigerator showing the tray disposed in the freezer compartment;

Figure 3 is a fragmentary vertical sectional view of the freezer compartment and tray assembly, taken on the plane of the section line 3—3 of Figure 2;

Figure 4 is a fragmentary vertical section view, this view being taken on the plane of the section line 4—4 of Figure 3;

Figure 5 is a fragmentary perspective view of the rear guide roller; and,

Figure 6 is a fragmentary perspective view of the forward rollers shown attached to a channel guide.

Reference is now made more specifically to the accompanying drawings wherein like numerals designate similar parts throughout the various views.

The tray assemblage, indicated generally by the numeral **10**, is adapted for mounting in freezer compartment **12** of a refrigerator **14**, to facilitate insertion and removal of articles from the compartment. The compartment **12**, as is conventional, includes a bottom **16** and upstanding sides **18** which are secured, in any desired manner to the refrigerator.

The tray assembly **10** includes a bottom wall **20**, which may be foraminous to facilitate the circulation of air therethrough and around the comestibles disposed thereon, and side walls **22** which are attached, as by the angulated portion **24** to the bottom, the rear wall **26** being provided, if desired.

In order to slidably mount the tray in the compartment,

without necessitating the modification of the construction of the latter, there is provided a pair of guides, each of which includes an outer channel member **28** which is attached to the bottom **16** of the compartment **12**, in parallel registry with one of the sides **22** and inner channel member **30** which is slidably disposed between the legs of each of the outer channel members in opposing relation thereto. The inner channel member is secured, as by brackets **32** to the side wall **22** of the tray in such a manner that the outer channel member is disposed in angulated portion **24** of the tray.

A rear guide roller **34** is attached to the arm **36** on the rear end of the inner channel member, which rear guide roller engages the outer channel member, as is best shown in Figure 4, to support the rear end of the tray. A forward roller **38** is rotatably carried by the arm **40** on the forward end of the outer channel member, and it engages the inner channel member, as is best shown in Figure 3, to support the forward end of the tray when the latter is moved outwardly of the compartment. It will be noted, the nested channel members will serve to limit the free circulation of air therethrough, and consequently condensation and ice formation on the guide track is materially reduced. Further, heating elements, such as **42**, may be provided in the compartment, to further aid in the prevention of ice formation on the guides.

A door **44** having a handle **46** on the upper edge thereof is vertically swingably mounted, as at **48**, to the bottom wall **20** of the tray, and, is apparent from Figures 1 and 2, the door constitutes a closure for the compartment when the tray is disposed therein. A spring **50** has one end thereof attached to the side wall **22** of the tray, the other end being attached to the arm **52** of the door **44** to thereby yieldingly urge the door into an upright position. The door is thus swingable into the horizontally disposed position, shown in dotted lines at **54**, whereby it provides a shelf on which articles may be placed when inserting or removing articles from the freezer compartment. Since the tray is movable out of the compartment, it is deemed apparent that articles on the rear portion of the tray may be replaced or removed without disturbing articles in the forward portion thereof.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawings, it is not desired to limit the invention to the exact construction shown and described, but all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

Having described my invention, what is claimed as new is:

1. In combination with a refrigerator compartment having a bottom and upstanding sides, a tray having a lower wall and upstanding side walls slidably disposed in said compartment, said tray having longitudinally extending depressions adjacent the juncture of said bottom wall and said side walls, brackets mounted on the side walls of said tray and overlying said longitudinally extending depressions, a first set of channel members being disposed in said depressions and being secured at their web portions to said brackets, said channel members being spaced from the walls of said tray defining said depressions, a second set of channel members attached to the bottom of said compartment adjacent the longitudinal depressions of said tray, said first set of channel members being slidably disposed between the legs of said second set of channel members.

2. In combination with a refrigerator compartment having a bottom and upstanding sides, a tray having a lower wall and upstanding side walls slidably disposed in said compartment, said tray having longitudinally extending depressions adjacent the juncture of said bottom wall and said side walls, brackets mounted on the side walls of said tray and overlying said longitudinally extending depressions, a first set of channel members being disposed in said depressions and being secured at their web portions to said brackets, said channel members

being spaced from the walls of said tray defining said depressions, a second set of channel members attached to the bottom of said compartment adjacent the longitudinal depressions of said tray, said first set of channel members being slidably disposed between the legs of said second set of channel members, said first set of channel members having rear web extensions, rollers attached to said rear web extensions disposed between and in rolling engagement with the legs of said second set of channel members.

3. In combination with a refrigerator compartment having a bottom and upstanding sides, a tray having a lower wall and upstanding side walls slidably disposed in said compartment, said tray having longitudinally extending depressions adjacent the juncture of said bottom wall and said side walls, brackets mounted on the side walls of said tray and overyling said longitudinally extending depressions, a first set of channel members being disposed in said depressions and being secured at their web portions to said brackets, said channel members being spaced from the walls of said tray defining said depressions, a second set of channel members attached to the bottom of said compartment adjacent the longitudinal depressions of said tray, said first set of channel members being slidably disposed between the legs of said second set of channel members, said first set of channel members having rear web extensions, rollers attached to said rear web extensions disposed between and in rolling engagement with the legs of said second set of channel members, said second set of channel members having forward web extensions, rollers attached to said forward web extensions disposed between and in rolling engagement with the legs of said first set of channel members.

References Cited in the file of this patent

UNITED STATES PATENTS

241,439	Steinmetz	May 10, 1881
1,252,867	Wall	Jan. 8, 1918
1,788,328	Roberts	Jan. 6, 1931
1,820,548	Walter	Aug. 25, 1931
2,266,857	Field	Dec. 23, 1941
2,309,217	Ruthenburg	Jan. 26, 1943
2,399,963	Vinton	May 7, 1946
2,430,141	Reeves	Nov. 4, 1947
2,550,165	Richard	Apr. 24, 1951