June 25, 1940. V. E. VINING 2,205,781

FOOD CONTAINER

Filed Jan. 26, 1938 2 Sheets-Sheet 1

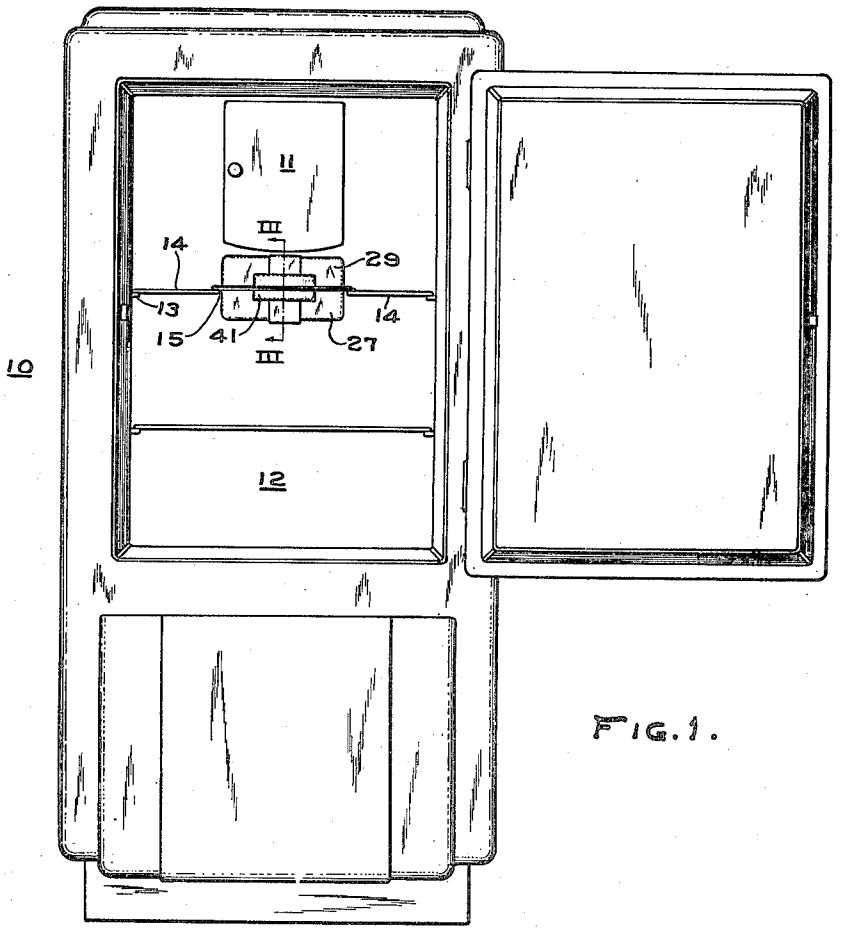



FIG. 1.

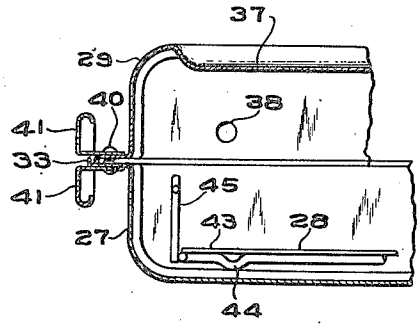



FIG. 3.

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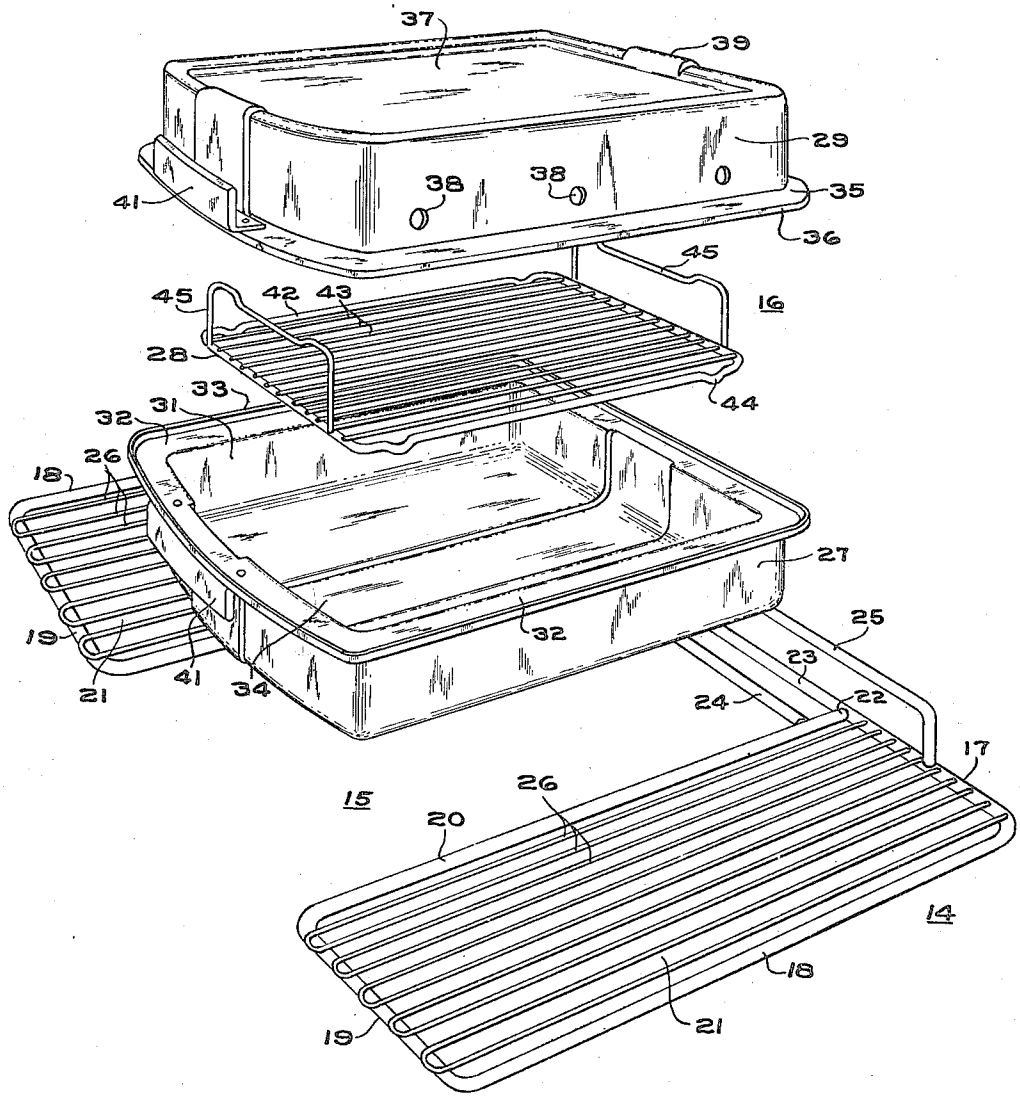



FIG. 2.

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Patented June 25, 1940

2,205,781

# UNITED STATES PATENT OFFICE

2,205,781

## FOOD CONTAINER

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Application January 26, 1938, Serial No. 186,954

10 Claims. (Cl. 62—1)

This invention relates to food storage containers in refrigerators and more particularly to storage containers for fresh meats and similar foods. It also relates to a combined food storage container and condensate pan for mechanical refrigerators.

One object of this invention is to provide a storage container for fresh meats and similar articles which keeps these articles in a palatable condition for a long period of time.

Another object is to provide a combined food storage container and condensate tray.

A further object is to provide an improved support for the combined food storage container and condensate tray.

These and other objects are effected by my invention, as will be apparent from the following description and claims taken in connection with the accompanying drawings, forming a part of this application, in which:

Fig. 1 is an elevation of a domestic refrigerator showing the combined food storage container and condensate tray of my invention in a position directly underneath the evaporating unit;

Fig. 2 is an exploded perspective view of the food storage container showing the rack therein and the supporting shelf; and

Fig. 3 is a partial vertical section through the combined food storage container and condensate tray taken on the line III—III of Fig. 1 and looking in the direction of the arrows.

Referring now to Fig. 1, a domestic refrigerator is shown generally at 10 with the evaporator or cooling unit 11 in the upper portion of the refrigerating chamber 12. Supported on the projections 13 in the sides of the refrigerating chamber 12 is a shelf 14. The shelf has a central opening 15 extending rearward from the front edge of the shelf 14 in which opening is supported the food storage container of this invention, shown generally at 16.

As shown in Fig. 2, the shelf 14 comprises a frame of heavy wire 20 formed to provide a straight rear member 17 which lies adjacent the back internal wall of the food chamber 12 of the refrigerator 10. The wire 20 is bent forward at right angles to form side members 18 lying adjacent the side wall of the refrigerating chamber 12 and is then bent inwardly at nearly right angles and slightly curved to form the forward curved edges 19 of the shelf member. The wire 20 is then bent backwardly to form loops 21 at each end of the shelf, leaving a large free area 15 in the central portion of the shelf 14. The ends 22 of the wire 20 are secured against the rear member 17 of the frame.

The portion 23 of the wire 20 between the two loops 21, 21 is reenforced by two similar heavy wires 24 and 25, the wire 24 being in the plane of the frame and joining the two frame members, adjacent the central opening 15, and the second wire 25 being bent in the form of a U and secured to the rear member 17 of the frame at right angles to the plane of the shelf 14. Across the two looped portions of the frame are secured a series of parallel U-shaped wires 26 which provide the platform of the shelf 14.

The food storage container 16 is shown in detail in Figs. 2 and 3 and comprises a metal pan-shaped container forming a condensate tray 27, a rack 28, and a metal cover 29 for said condensate tray 27. The condensate tray 27 is provided with outwardly turned flanges or shoulder portions 32 which are adapted to rest on the edges of the central opening 15 of the shelf 14. At their extreme edges 33, the flanges 32 of the condensate tray 27 are turned upwardly. The condensate tray 27 has a depressed panel 34 running longitudinally of the tray to the flanges 32. This panel 34 reenforces the tray 27. The tray 27 is sufficiently large to collect the moisture dripping from the evaporator unit 11 when this unit is being defrosted.

The cover 29 of the condensate tray 27 comprises an inverted pan-shaped element having outwardly turned flanges 35 which are turned downwardly at their edges 36. These flanges 35 are similar to the flanges 32 of the condensate tray 27 but are of smaller overall dimensions, so that the down-turned edges 36 of the cover rest on the outwardly turned portion 32 of the flanges of the food tray 27 and within the upwardly turned edge 33 of this tray. The flanges 32 of the tray 27 thus extend beyond the flanges 35 of the cover 29. The central area of the cover 29 is depressed to form a storage reservoir 37 for liquids. The end walls of the cover element 29 are provided with panels 39 to correspond with the panelling 34 of the condensate tray 27.

The front panels of the condensate tray 27 and the cover element 29 are provided with handles 41 for conveniently removing the container 16 from the refrigerator. The handles 41 are L-shaped in cross section and are secured by rivets 40 by one of their legs to the respective flanges 32 and 35 as shown more clearly in Fig. 3. The other leg of the handle 41 extends parallel to the side of the respective tray or cover element and its free edge is rounded by being

bent inwardly through an angle of about 180°. When the cover 29 is in position on the tray 27, the handles 41 form a combined handle by means of which the container 16 may be pulled outwardly to slide on the edges of the shelf 14.

In the sides of the cover element 29 are vent holes 38 for venting the interior of the container 16. A somewhat similar venting effect may also be secured by providing the condensate tray 27 and/or the cover element with irregularities or projections at their meeting edge so that the closure is imperfect. Venting is then effected through the gap between the cover element 29 and the condensate tray 27.

Within the food storage container is a rack 28 composed of a wire bent into the form of a rectangular frame 42. Across this frame 42 are welded supporting wires 43 which form the platform of the rack 28. Portions of the frame member are bent downwardly to form supports 44 which rest on the bottom of the condensate tray 27 so that the remainder of the frame member 42 is elevated above the bottom of this tray 27. Secured to the end elements of the frame 42 are welded U-shaped wires 45 which extend upwardly to form handles for the rack 28. As shown in Figs. 1 and 2, the width of the container 16 is approximately the same as the width of the evaporator 11 and the container 16 is longer than it is wide. The height of the side walls of the condensate tray 27 and the cover 29 are each approximately one-quarter of the width of the container 16. The area of the side walls of the cover 29 which is exposed to the interior of the container 16 approximates the area of the top wall of the cover 29, although more or less area for the side walls is permissible so long as the area chosen effects the transmission of heat from the side walls to the top wall in sufficient quantities to appreciably and measurably lower the temperature in the container 16.

The fresh meats and similar food articles which are to be stored are placed on the platform of the wire rack 28 in the condensate tray 27. The cover 29 is placed on the tray 27 and the entire container 16 is slid into position in the shelf 14 immediately below the evaporator unit 11. The shelf members 20 provide a sliding support for the flanges 32 of the lower tray 27, thus supporting the entire food storage container 16 in such a manner that it is readily moved into and out of the main food storage compartment 12, and occupies the minimum of usable space therein. The container being of metal permits of the rapid chilling of its contents.

The meat stored on the rack 28 is elevated above the bottom of the condensate tray 27 and is thus exposed on substantially all surfaces to the air passing through the venting openings 38. Because of the temperature difference between the cooling unit 11 and the walls of the refrigerator 10, convectional air currents are set up in the food compartment 12 of the refrigerator 10 and the condensate tray 27 and cover element 29 act as shields to protect the meat from excessive air currents which would tend to remove too much moisture from the meat. It has been found that meat stored in this manner retains its natural condition for long periods of time.

The evaporator unit 11 is preferably defrosted when there is no meat in the food container 16. During this period, the cover 29 and the rack 28 may be removed from the condensate tray 27 and this tray used for collecting the liquid dripping from the evaporator unit 11.

If, due to a failure of the electric power supply or similar causes, the operation of the refrigerator unit is stopped while the cover is on the food storage chamber, the liquid from the melting ice on the evaporator unit 11 will drip into the depressed portion 37 of the cover 29.

If the failure of the power supply is of long duration, the liquid may overflow the depressed portion 37 and run down the sides of the cover 29 where it will be caught by the flanges 32 of the condensate tray 27 and directed into the tray 27. It is deemed preferable to collect the condensate in this manner rather than let it drip down over the articles of food which may be stored in the refrigerator.

While I have shown my invention in the preferred embodiment, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications without departing from the spirit thereof and I desire, therefore, that only such limitations shall be placed thereupon as are imposed by the prior art or as are specifically set forth in the appended claims.

What I claim is:

1. In a refrigerator, the combination of an insulated cabinet, a cooling unit therein, and a food storage container below the cooling unit, said container comprising a pan and a cover therefor, an imperforate flange on the edge portion of the pan, said flange comprising shoulder portions and upturned edge portions, said cover being adapted to rest on the shoulder portions and within the upturned edge portion of the flange, the cover having a depressed portion, said food storage container being adapted to store a portion of the moisture which may drip from the cooling unit in the depressed portion of the cover, the excess moisture draining over the edges of the cover to the flange on the pan and thereupon into the pan.

2. In a refrigerator, the combination of an insulated cabinet, a cooling unit therein, a food storage container below the cooling unit, said container comprising a pan and a cover therefor, an imperforate flange on the edge portion of the pan, said flange comprising shoulder portions and upturned edge portions, said cover being adapted to rest on the shoulder portions and within the upturned edge portion of the flange, the cover having a depressed portion, said food storage container being adapted to store a portion of the moisture which may drip from the cooling unit in the depressed portion of the cover, the excess moisture draining over the edges of the cover to the flange on the pan and thereupon into the pan, and removable means in said container for supporting food above the bottom thereof.

3. In a refrigerator, the combination of an insulated cabinet, a cooling unit therein, a food storage container below the cooling unit, said container comprising a pan and a cover therefor, an imperforate flange on the edge portion of the pan, said flange comprising shoulder portions and upturned edge portions, said cover being adapted to rest on the shoulder portions and within the upturned edge portion of the flange, the cover having a depressed portion, said food storage container being adapted to store a portion of the moisture which may drip from the cooling unit in the depressed portion of the cover, the excess moisture draining over the edges of the cover to the flange on the pan and thereupon into the pan, ventilating means for said con-

tainer, and removable means in said container for supporting food above the bottom thereof.

4. In a refrigerator, the combination of an insulated cabinet, a cooling unit therein defining a freezing zone, two spaced apart shelf portions in said cabinet, and a food container comprising a lower pan and a cover therefor in the shape of an inverted pan, the cover having a depressed portion therein, flanges on the edges of the lower pan, said flanges comprising a shoulder portion and upturned end portions, said cover being adapted to rest on said shoulder portion and within the upturned edge portion of the flange, said food storage container being adapted to store a portion of the moisture which may drip from the cooling unit in the depresed portion of the cooler, the excess moisture draining over the edges of the cover to the flanges on the pan and thereupon into the pan, said flanges being supported on the shelf portions to afford horizontal sliding movement to the pan, said shelf being positioned in the cabinet to support the food container directly below the cooling unit.

5. In a refrigerator, the combination of an insulated cabinet, a cooling unit therein, and a substantially closed food storage container in the cabinet disposed immediately below the cooling unit, said container having side and bottom walls and a metal cover member, said cover member including a top wall and downwardly-extending metal portions formed integrally with the top wall, said downwardly-extending metal portions providing heat-absorbing surfaces of a large aggregate area exposed to the interior of the container, whereby said downwardly-extending metal portions absorb heat from the interior of the container and conduct it to said top wall of the cover member from which said heat is transmitted to the cooling unit.

6. In a refrigerator, the combination of an insulated cabinet, a cooling unit therein, and a substantially closed food storage container in the cabinet disposed immediately below the cooling unit, said container having upper, lower, and side walls, said container comprising a base and a cover therefor, said cover embodying the upper and a substantial portion of the side walls of the container in a unitary metallic structure, the portion of the cover forming side walls of the container providing heat-absorbing surfaces of a large aggregate area exposed to the interior of the container, whereby heat absorbed from the interior of the container by the portions of the cover which form side walls of the container is conducted to the portion of the cover forming the upper wall of the container and then dissipated to the cooling unit.

7. In a refrigerator, the combination of an insulated cabinet, a cooling unit therein, and a substantially closed food storage container in the cabinet disposed immediately below the cooling unit, said container having upper, lower, and side walls, said container comprising a base and a cover therefor, said cover embodying the upper and a substantial portion of the side walls of the container in a unitary metallic structure, the portions of the cover forming side walls of the container having large surfaces exposed to the interior of the container, whereby heat absorbed from the interior of the container by the portions of the cover which form side walls of the container is conducted to the portion of the cover forming the major portion of the upper wall of the container and then dissipated to the cooling unit.

8. In a refrigerator, the combination of an insulated cabinet, a cooling unit therein, a substantially closed food storage container in the cabinet disposed immediately below the cooling unit, said container having side and bottom walls and a metal cover member, said cover member including a top wall and downwardly-extending metal side wall portions formed integrally with the top wall, said downwardly-extending metal side wall portions providing heat-absorbing surfaces of a large aggregate area exposed to the interior of the container, whereby said downwardly-extending metal side wall portions absorb heat from the interior of the container and conduct it to said top wall of the cover member from which said heat is transmitted to the cooling unit, and food supporting means within said receptacle affording access of the air to a major portion of the bottom surfaces of food supported on said means.

9. In a refrigerator, the combination of an insulated cabinet, a cooling unit therein, a substantially closed food storage container in the cabinet disposed immediately below the cooling unit, said container having upper, lower and side walls, said container comprising a base and a cover therefor, said cover embodying the upper and a substantial portion of the side walls of the container in a unitary structure, the portion of the cover forming side walls of the container representing heat-absorbing surfaces of an aggregate area approximately equal to the area of said upper wall, whereby heat absorbed from the interior of the container by the portions of the cover which form the side walls of the container is conducted to the portion of the cover forming the upper wall of the container and then dissipated to the cooling unit.

10. In a refrigerator, the combination of an insulated cabinet, a cooling unit therein, a substantially closed food storage container in the cabinet disposed immediately below the cooling unit, said container having side and bottom walls and a cover member, said cover member including a top wall and downwardly-extending side wall portions formed integrally with the top wall, said downwardly-extending side wall portions providing heat-absorbing surfaces with a large aggregate area exposed to the interior of the container and having a high heat-conducting capacity, whereby said downwardly-extending side wall portions absorb considerable quantities of heat from the interior of the container and conduct it to said top wall of the cover member, said top wall of the cover member also having a high heat-conducting capacity, whereby heat conducted to the top wall of the cover member is readily dissipated to the cooling unit.

VERNON E. VINING.