Nov. 25, 1930. R. E. FRANKLIN 1,782,720

REFRIGERATOR

Filed Jan. 23, 1928

Fig. 1

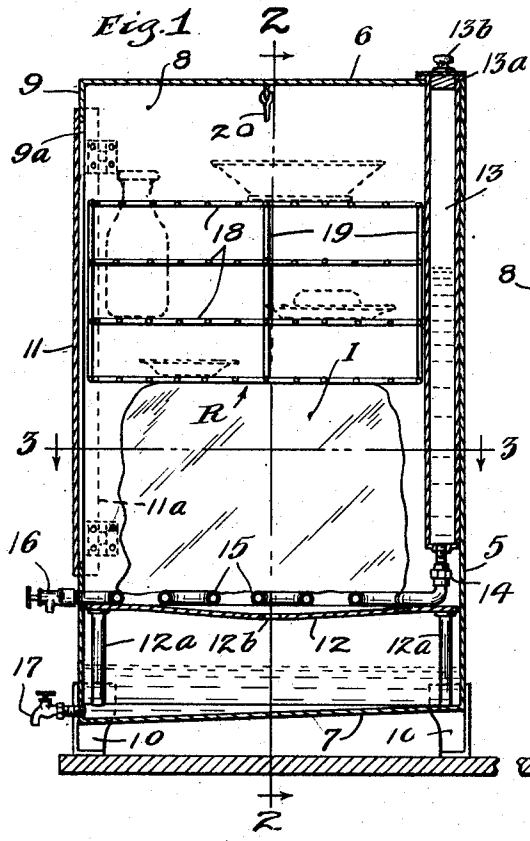


Fig. 2

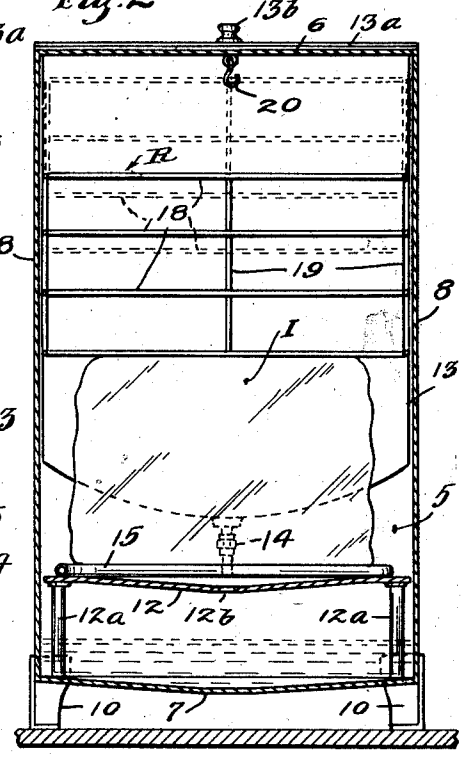


Fig. 3

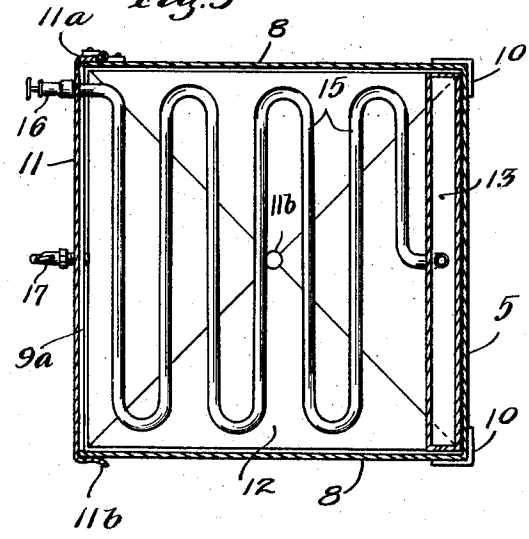
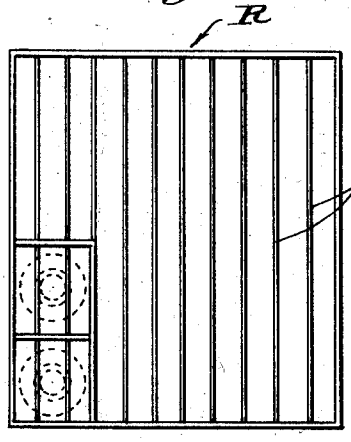


Fig. 4



INVENTOR.
RALPH E. FRANKLIN.
BY HIS ATTORNEYS.
Williamson Reid & Williamson

Patented Nov. 25, 1930 1,782,720

UNITED STATES PATENT OFFICE

RALPH E. FRANKLIN, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF ONE-HALF TO TILLFERD P. KNUTSON, OF MINNEAPOLIS, MINNESOTA

REFRIGERATOR

Application filed January 23, 1928. Serial No. 248,698.

This invention relates to refrigerators or ice boxes and especially to refrigerators designed for domestic use.

It is an object of my invention to provide an extremely simple but highly efficient refrigerator device or ice box capable of being manufactured at low cost and including a drinking water supply adapted to be cooled by the ice within the refrigerator.

A further object is to provide a simple ice box wherein fixed shelves and complicated structure is dispensed with but wherein nevertheless receptacles containing food may be conveniently supported and may always be kept cool and at substantially the same distance above the ice at all times without regard to the melting of the ice.

Another object is to provide a device of the class described wherein food may be kept at a relatively low temperature and wherein a supply of water may be kept and cooled without occupying any large amount of the space therein, means being provided for dispensing cool drinking water from the front exterior of the frame.

A more specific object of the invention is to provide an ice box wherein the ice is supported on a grate formed by a coil connected with a drinking water reservoir and wherein the supports for the food are vertically slidable within the walls of the device thus being horizontally maintained at substantially the same distance above the ice at all times.

These and other objects and advantages of the invention will be apparent from the following description made in connection with the accompanying drawings wherein like reference characters refer to similar parts throughout the several views, and in which

Fig. 1 is a vertical section of an embodiment of my invention taken on a line intersecting the front and rear sides of the device;

Fig. 2 is a vertical section taken on the line 2—2 of Fig. 1;

Fig. 3 is a cross section on the line 3—3 of Fig. 1; and

Fig. 4 is a plan view of the food supporting rack detached.

In the drawings, a preferred embodiment of my invention is illustrated comprising a rectangular box-like frame, which may be formed from wood or sheet metal having the vertical back 5, the top 6, the bottom 7 declined from its back edge to its front edge, the sides 8 and the front 9 having a relatively large door opening 9^a formed therein, as shown said door opening extending substantially the full width of the front and from a point adjacent the top of the box to a point at some height above the bottom. The frame described may be mounted on a plurality of relatively short legs 10 which may be of angle iron construction if desired. A suitable door 11 provided with inturned vertical flanges 11^a and 11^b may be hinged to one of the sides 8 of the box frame to close the door opening 9^a, said hinge connection preferably being made with said door at the flange 11^a, and flange 11^b being curved to frictionally engage the edge of the opposite side 8 to retain the door in closed position. Within the lower portion of the box frame I provide a substantially horizontal support 12 spaced from the bottom 7 by means of depending legs 12^a, which rest upon said bottom. The central portion of support 12 is preferably concave and provided with a central aperture 12^b through which water from the melting ice above may pass into the drain chamber between bottom 7 and support 12. A relatively narrow slot is formed in the top 6 of the box frame adjacent the rear edge thereof extending substantially the full width thereof to accommodate the water reservoir 13 of similar cross sectional shape. Water reservoir 13 carries at its upper end an outwardly projecting flange 13^a adapted to engage the edges of top 6 about said slot to retain and support said reservoir with its rear side disposed substantially flush against the rear of the box frame. Reservoir 13 terminates at its lower end in a curved or symmetrically and oppositely inclined bottom to facilitate drainage therefrom and the lower end of the water tank is connected by a suitable fitting 14 to a flat coil 15 horizontally disposed and supported on the partition or support 12, said coil preferably covering said support 12 and serving as a grate to receive

the ice. The forward extremity of coil 15 projects forwardly through the front of the box-like casing and below the door opening 9^a being connected with a suitable spigot or faucet 16. A drain cock 17 may be connected with the forward lower portion of the drain chamber above bottom 7.

A cake of ice I, is adapted to be supported on the grate formed by coil 15 and articles of food or receptacles containing the same are supported in a box-like rack R, which is slidably disposed within the box-like casing or frame. Rack R may comprise a plurality of horizontal spaced grates or shelves 18 secured together in spaced relation by vertical rods or other suitable upright members 19. The width and length of rack R are slightly less than the cross sectional dimensions of the box-like casing in order that said rack may rest upon the ice and fit within the casing with the several shelves 18 disposed in horizontal position, the height of said rack and shape thereof preventing tilting thereof as the ice melts, gravity causing said rack to always be supported upon the top of the ice with the shelves 18 disposed substantially the same distance above the ice regardless of the size of the cake within the box. Rack R is of such height that ample clearance will be left when a large cake of ice is used between the top of the rack and the top 6 of the box.

In order that the rack R may be temporarily held suspended from adjacent the top of the box, while a cake of ice is placed within the box, suitable means may be provided connected with the top 6 and as shown I may provide a hinged hook 20 adapted to engage one of the bars of the upper grate or shelf 18 of the rack to hold the same adjacent the top of the box when desired.

I prefer to provide my rack adjacent one corner thereof for holding relatively high receptacles, such as milk bottles and the like and this may be done by forming cut out portions as shown in Figs. 1 and 4 in the upper two shelves 18, the shelf next to the bottom acting as a support and milk receptacles being inserted from the front edge of the rack. As shown in dotted lines in Fig. 1, dishes, articles of food, etc., may be disposed on the shelves.

To insert ice in the refrigerator it is only necessary to slide the rack R upwardly to a height where hook 20 may be engaged with one of the bars of the upper shelf or grate of the rack. The ice may then be inserted into the box and supported on the coil 15. The construction of this flat coil will prevent the ice from slipping and damaging the water tank 13 disposed in the rear of the casing. Tank 13 may easily be filled by removing the plug 13^b at its upper end and if it is desired to remove the tank for repair or for cleaning, fitting 14 may be disengaged and the tank may be lifted vertically from the casing. Likewise, the coil may be removed after the spigot 16 has been disengaged.

After the box has been filled with ice rack R may be disengaged from hook 20 and will rest upon the top of the ice maintaining the various shelves 18 always at the same height above the top of the ice within the box. As the ice melts the rack will slide downwardly due to gravity, the box-like formation of the rack in slidable engagement with the interior of the casing preventing the rack from tilting regardless of its height in the refrigerator or regardless of the shape of the upper surface of the ice.

It will be apparent that the water passing through coil 15 will be thoroughly chilled by the ice supported thereupon and an adequate supply of cool drinking water is thus maintained.

The support 12 is provided with legs 12^a resting on the bottom 7 of the casing and may be easily removed through the door opening 9^a when the ice box is empty and when coil 15 is first removed. The space between support 12 and the bottom of the casing constitutes a chamber to receive drainage water and the water accumulating therein may be easily removed by manipulating the drain cock 17.

Rack R is disposed with the cut out portions of the upper two grates or shelves positioned forwardly with respect to the casing whereby milk bottles or other tall receptacles can be conveniently carried without interfering with the top of the casing. The food will always be kept cool due to the fact that it is positioned at all times directly above the ice and the receptacles containing the same will never be displaced by the vertical movement of the rack.

From the foregoing description it will be seen that I have invented an extremely simple but highly efficient ice box and water cooler capable of being manufactured at low cost and especially adapted for use in small apartments and homes.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts without departing from the scope of the invention.

What is claimed is:

1. In refrigerator structure, a box-like casing having vertical sides, a top and a door in one of said sides, a vertically disposed water reservoir of narrow cross section extending into said casing and supported from the top thereof disposed substantially flush against one side of said casing, a removable horizontal support mounted in the bottom of said casing, a flat coil upon said support, said coil being connected with said water reservoir and being adapted to support a chunk of ice and a food supporting rack telescoped within said casing and adapted to be supported upon a chunk of ice, said rack having vertical sides

adapted to slidably engage the vertical sides of said casing and the inner vertical side of said water reservoir.

2. In refrigerator structure, a casing having vertical sides and corners, and a door in one of the sides thereof covering in height a substantial portion of said side, a horizontal support within the lower portion of said casing adapted to receive and support a chunk of ice, and a rectangular box-shaped food support adapted to rest upon and be supported by ice upon said ice support, said food support comprising vertical corner members and horizontal shelves secured to said corner members, one of said shelves being adapted to engage the ice, said corner members slidably engaging the corners of said casing, whereby said food support may slide smoothly within said casing during the melting of the ice with said shelves always disposed horizontally.

In testimony whereof I affix my signature.

RALPH E. FRANKLIN.