April 6, 1937. G. W. COCKS 2,076,173

COLD STORAGE CABINET

Filed Dec. 19, 1934 2 Sheets-Sheet 1

Fig. 1.

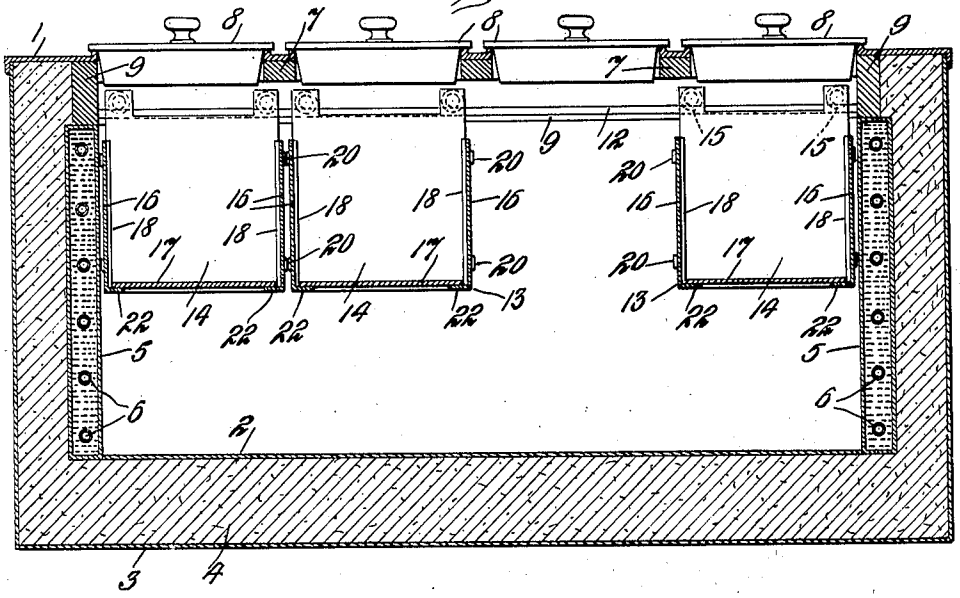
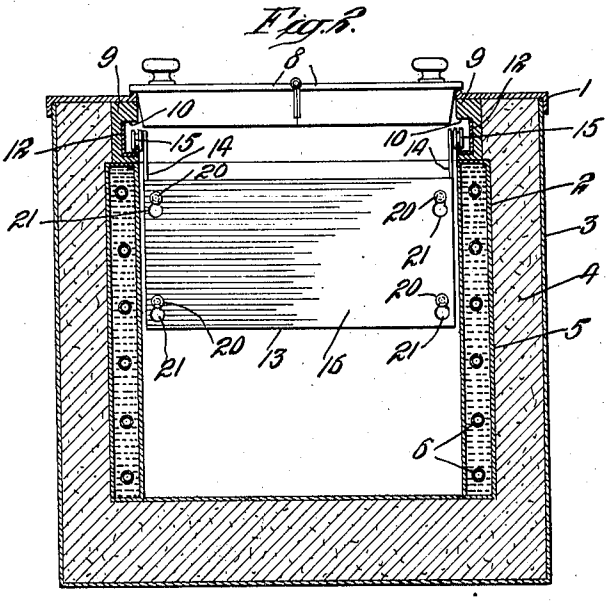


Fig. 2.



INVENTOR
GEORGE W. COCKS
BY
ATTORNEY

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Filed Dec. 19, 1934 2 Sheets-Sheet 2

Fig. 3.

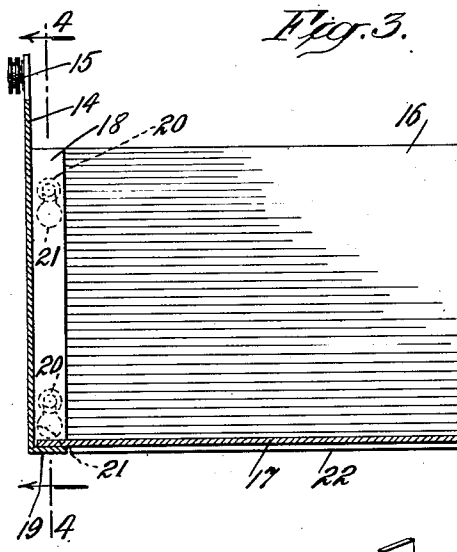


Fig. 4.

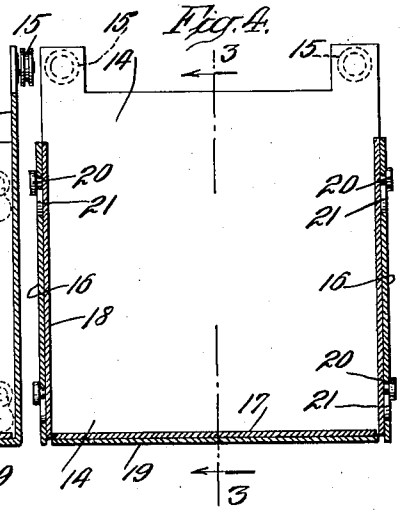
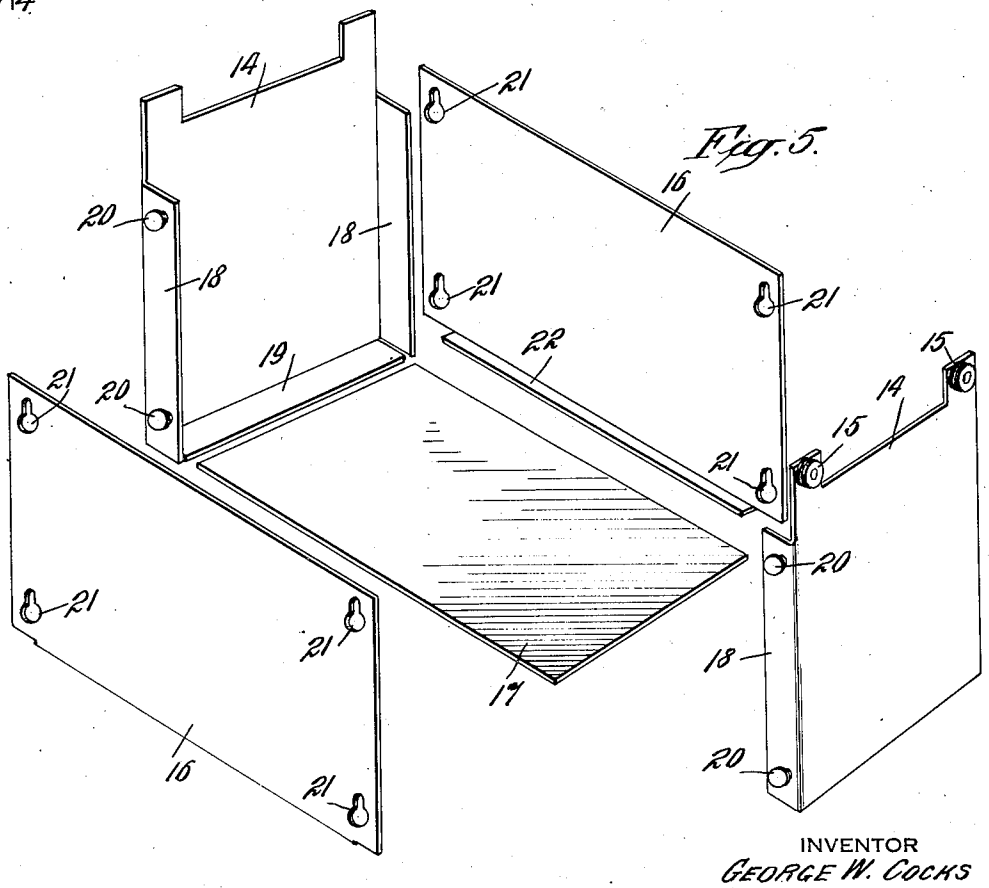


Fig. 5.



INVENTOR
GEORGE W. COCKS
BY
ATTORNEY

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COLD STORAGE CABINET

George W. Cocks, Upper Montclair, N. J.

Application December 19, 1934, Serial No. 758,192

(Cl. 312—150)

This invention relates to refrigerated cabinets employing movable receptacles for the storage of food products, etc., and has for its objects to provide increased capacity, convenience and accessibility in cabinets of this type and to prevent the formation of ice at points which would interfere with the free movement of said receptacles or contaminate the products stored therein.

My improved cabinet is of the type having an insulated cold storage area which is arranged in upper and lower tiers. The upper tier consists of movable receptacles or carriers suspended on roller bearings which ride on tracks running the full length of the cabinet. The number of receptacles is determined by dividing the interior length of the cabinet into any desired number of sections and providing receptacles for all but one section. This leaves a blank space in the upper tier which allows access to any desired portion of the lower area or tier simply by moving the carrier immediately above such portion toward the blank space. Cabinets of this type are refrigerated in various ways as by means of coils concealed in the side walls.

An important feature of my invention resides in the provision of an improved collapsible receptacle or carrier which may be inserted into the cabinet in sections and readily assembled on the inside, this construction enabling the various carriers to be made larger than the openings in the top of the cabinet thereby increasing the storage capacity of the upper tier. Another feature of the invention resides in an improved construction and arrangement of the tracks on which the carriers move, same preventing the formation of ice on the track and insuring free movement of the roller bearings. According to another feature of the invention the sides of the collapsible carriers are constructed and arranged to act as frost guards preventing frost ice chips from dropping into the product.

These and other features and advantages of the invention will be described in connection with the accompanying drawings, in which:

Fig. 1 is a longitudinal sectional view of a cold storage cabinet embodying the invention;

Fig. 2 is a transverse section thereof;

Fig. 3 is a vertical section through one of the collapsible carriers taken on line 3—3 of Fig. 4;

Fig. 4 is a vertical section taken on line 4—4 of Fig. 3; and

Fig. 5 is a perspective view illustrating the method of assembling the carrier.

In the drawings, 1 represents the cabinet or box composed of interior and exterior plates 2, 3, separated by heat insulation 4, and within plate 2 is a refrigeration space 5 supplied with refrigerant as by coils 6. The top of the cabinet is provided with cross bars 7 which form spaced openings permitting access to the interior. These cross bars carry pairs of hinged covers 8 which are also provided with heat insulation similar to the bottom and side walls of the cabinet.

Strips of insulating material 9 are disposed about the upper edge of the cabinet immediately above the heat absorption surface 5, and the strips which run lengthwise of the cabinet are provided with longitudinal grooves 10. Seated within these grooves 10 are opposite longitudinal rails 12 forming a track for the roller bearings of a plurality of movable receptacles or carriers 13 which will now be described.

As shown in Figs. 3 to 5, the carriers 13 comprise a pair of end plates 14 each carrying a pair of roller bearings 15 adapted to move on the tracks 12 of the cabinet, a pair of side plates 16, and a bottom plate 17. The end plates 14 each have inwardly projecting side flanges 18 and a bottom flange 19 as shown in Fig. 5. The side flanges 18 of said end plates 14 carry headed pins or buttons 20 adapted to engage corresponding slots 21 which are formed in the shape of inverted keyholes in the side plates 16 as best shown in Fig. 5. The end plates 14 and side plates 16 are assembled by the simple process of fitting the pins 20 into the wide bottom portions of the keyholes 21 and then dropping the plates 16 until the pins 20 engage the narrow portions of said keyholes as in Fig. 3. The side plates 16 likewise have inwardly projecting bottom flanges 22 which are spaced from the side edges of said plates by an amount slightly greater than the width of the side flanges 18 of end plates 14, whereby flanges 19 and 22 of the plates 14 and 16 form a support for the bottom plate 17 of the carrier when the parts are assembled as in Figs. 3 and 4.

The carriers 13 are larger than the openings formed by the cross bars 7 in the top of the cabinet, hence they must be disassembled and inserted through said openings in sections. The end plates 14 are first lowered through the openings and the roller bearings 15 hung on the respective rails 12. The side plates 16 are next lowered through the openings and fitted to the end plates 14 by engaging slots 21 with pins 20 as previously described. The respective bottom plates 17 are next lowered into the carriers,

these plates being slightly smaller in area than the carriers so that they are easily wedged into place on the flanges 19 and 22 as shown in Figs. 3 and 4.

The total space occupied by the carriers 13 is less than the length of the cabinet, the number of such carriers preferably being determined by dividing the interior length of the cabinet into a given number of sections and providing receptacles for all but one section, thus leaving a blank space in the upper tier which allows access to any portion of the lower storage area. To gain access to any part of the lower area, the carrier 13 immediately above it is moved toward the blank space, thus exposing the desired portion of the lower storage area and permitting the contents to be withdrawn.

In practice, the carriers 13 may be used for storing all manner of foodstuffs such as dairy products, ice cream, eggs, meats, etc., while the lower storage area may be used for similar materials or for soft drinks and other bottled goods, depending upon the situation in which the cabinet is used. In any case my improved carriers may be made larger than heretofore by virtue of their collapsible construction, thereby increasing the capacity of the carriers and of the cabinet as a whole.

The offset arrangement of the rails 12 in the grooves 10 of insulating strips 9 effectively insulates said rails from the heat absorption surface 5 of the cabinet, thereby preventing the formation of ice on said rails and insuring free movement of the roller bearings 15 thereon. This offset construction of the rails 12 and cooperating roller bearings 15 also enables the end plates 14 of the carriers 13 to be raised above the upper edge of the heat absorption surface and to partly overlap the adjacent insulating strips 9 as shown in Figs. 1 and 2, thus raising said plates 14 above the frost area and preventing ice chips from dropping into the product.

It will be evident that various changes may be made in the details of construction herein shown and described without departing from the scope and spirit of the invention as defined in the appended claims.

The invention claimed is:

1. A cold storage cabinet comprising an insulated box having openings in the top and closed sides and bottom forming an insulated area for articles to be cooled, a plurality of horizontally movable carriers mounted above the bottom of said box and occupying a total space less than the length of said box to permit selective movement of said carriers to expose any desired portion of the lower area of said box, said carriers being larger than the openings in the top of said cabinet and comprising separable end, side and bottom sections adapted to be separately inserted through said openings, and means for detachably connecting said sections within said cabinet.

2. A cold storage cabinet comprising an insulated box having openings in the top and closed sides and bottom forming an insulated area for articles to be cooled, opposite rails at the sides of said box above the bottom, a plurality of carriers movable on said rails and occupying a total space less than the length of said box to permit selective movement of said carriers to expose any desired portion of the lower area of said box, said carriers being larger than the openings in the top of said cabinet and comprising separable end, side and bottom sections adapted to be separately inserted through said openings, roller bearings carried by said end sections for suspending same from said rails, means for detachably connecting said side and end sections, and means carried by said side and end sections for supporting said bottom section.

3. A cold storage cabinet comprising an insulated box having openings in the top and closed sides and bottom forming an insulated area for articles to be cooled, opposite rails at the sides of said box above the bottom, a plurality of carriers movable on said rails and occupying a total space less than the length of said box to permit selective movement of said carriers to expose any desired portion of the lower area of said box, said carriers being larger than the openings in the top of said cabinet and comprising separable end, side and bottom sections adapted to be separately inserted through said openings, roller bearings carried by said end sections for suspending same from said rails, cooperating locking means on said side and end sections for connecting same together, and inturned flanges on the lower edges of said side and end sections for detachably supporting said bottom section.

4. A cold storage cabinet including an insulated container having an opening in the top thereof and closed sides and bottom forming an insulated area for articles to be cooled, a collapsible and separable carrier mounted in said cabinet, said carrier being larger than the opening in the top of said cabinet and including separable end, side and bottom sections adapted to be separately inserted through said opening and assembled within said cabinet, and means for detachably connecting said sections within said cabinet.

5. A cold storage cabinet including an insulated container having an opening in the top thereof and closed sides and bottom forming an insulated area for articles to be cooled, a collapsible and separable carrier mounted in said cabinet and including a pair of end plates, cooperating side plates and a bottom plate adapted to be separately inserted through said opening and assembled within said cabinet, inturned flanges on said side and end plates upon which said bottom plate rests when the carrier is in assembled condition and means for detachably connecting said side and end plates within said cabinet.

6. A cold storage cabinet comprising an insulated box having an opening in the top and closed sides and bottom forming an insulated area for articles to be cooled, a plurality of movable and separable carriers suspended within said box above the bottom of said box, said carriers each being larger than the opening in the top of said cabinet and comprising separable end, side and bottom sections adapted to be separately inserted through said opening, and means for detachably connecting said sections within said cabinet.

GEORGE W. COCKS.