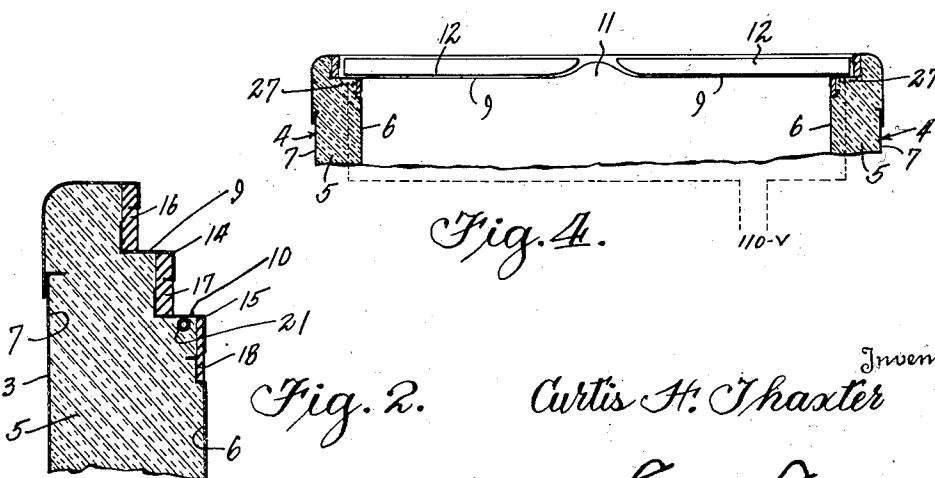
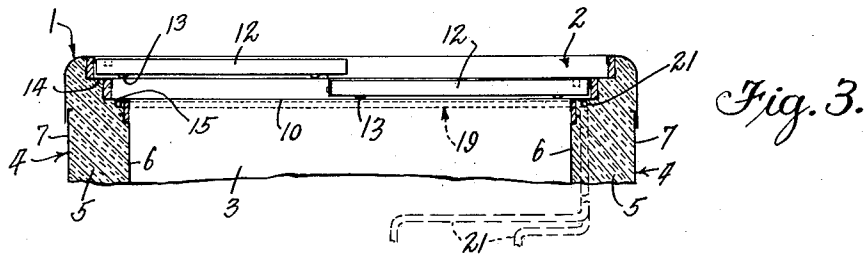
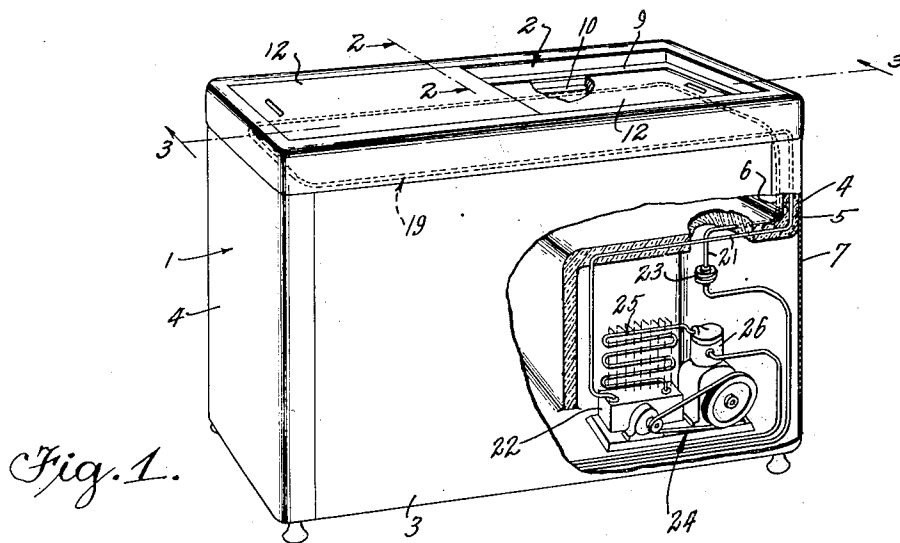


April 15, 1941.

C. H. THAXTER
REFRIGERATED CABINET
Filed March 12, 1940

2,238,511



Inventor
Curtis H. Thaxter

Bye. Love & Love

Inventor:

Attorneys-

UNITED STATES PATENT OFFICE

2,238,511

REFRIGERATED CABINET

Curtis H. Thaxter, Los Angeles, Calif.

Application March 12, 1940, Serial No. 323,539

7 Claims. (Cl. 62—89)

This invention relates to food storage cabinets, or refrigerated cabinets, particularly of the type composed of vertically extending insulated walls having a horizontal opening for access to the interior thereof.

In the construction and operation of food storage cabinets of the type permitting access through horizontal openings, considerable difficulty has been encountered in maintaining the door supports free of ice, which interferes with the operation of the doors, particularly the type of refrigerated cabinets having sliding doors positioned within the horizontal opening of such a cabinet.

It is therefore an object of this invention to provide a refrigerated food storage cabinet having a horizontal opening, and including sliding doors which provide access to the cabinet, of a means for eliminating the formation of ice within the said opening to interfere with the operation of the doors.

Another object of this invention is to provide a refrigerated cabinet having vertically extending insulated walls terminating in a horizontal opening and wherein tracks are mounted in the opening upon which the doors are mounted to slide, and means which are positioned adjacent said tracks for raising the track temperature to eliminate the possibility of ice formation upon the said track.

Another object of this invention is to provide a refrigerated food storage cabinet having a horizontal opening, sliding doors providing access to the cabinet, rails positioned within the cabinet, and heat insulated one from the other and upon which tracks the doors are adapted to slide, and means for raising the temperature of the tracks to a point to avoid the formation of ice thereon.

Another object of this invention is to provide a refrigerated food storage cabinet of the horizontal opening type and equipped with sliding doors with a means including circulation of the warmer refrigerant under the rails supporting the doors to avoid formation of ice between the rails and the door.

Other objects and advantages of this invention it is believed will be apparent from the following detailed description of a preferred embodiment thereof as illustrated in the accompanying drawing.

In the drawing:

Figure 1 is a perspective view of a refrigerated food storage cabinet illustrating the same as partly broken away to illustrate the refrigeration means included therein.

Figure 2 is an end sectional view taken substantially on the line 2—2 of Figure 1.

Figure 3 is a fragmental sectional view taken substantially on the line 3—3 of Figure 1.

Figure 4 is a fragmental sectional illustration of a modified form of construction embodying my invention.

In the drawing I have illustrated my invention as particularly adapted to an icecream cabinet. It is, however, apparent that my invention is equally applicable to other horizontal opening food cabinets, the horizontal openings 2 of which are closed by a door or doors 12.

As illustrated, the icecream cabinet 1 is a substantially rectangular container having vertical side and end walls 3 and 4. The walls 3 and 4 are formed of heat insulating material 5 interposed between the inner and outer shells 6 and 7. The shells 6 and 7 are, in the modification of my invention, illustrated formed of sheet metal such, for example, as stainless steel, monel metal, or the like. The structure of the icecream cabinet may, for example, be similar to that disclosed, and particularly described, in the copending application of Karl A. Weber Serial No. 313,909, filed January 15, 1940.

As illustrated, the doors 12 which close the horizontal opening 2 of the cabinet are mounted to slide upon tracks 9 and 10. The tracks 9 and 10 are vertically spaced so that one door 12 may slide over the other door. However, in the modification of my invention as illustrated in Figure 4, only one such track 9 is provided, and both doors 12 are adapted to slide along the said track and are raised one over the other in their sliding movement by the central riser 11.

My invention is particularly directed to the prevention or accumulation of ice upon the tracks 9 and 10 due to the fact that the interior of the cabinet is normally maintained at a temperature below the freezing point of water, and therefore obviously below the dew point of the air which tends to flow into the low temperature chamber within the cabinet when either of the doors 12 is opened, thus resulting in condensation of water from the air upon the tracks 9 and 10 and the consequent freezing of the water. The formation of ice upon the tracks then materially interferes with the free sliding of the doors along the track.

The doors 12 are mounted upon the tracks 9 and 10 upon rollers 13. The tracks 9 and 10 are preferably formed of some solid material such, for example, as metal strips, and are supported upon the steps 14 and 15 formed upon the walls

within the cabinet. The tracks 9 and 10 are also preferably heat insulated by the interposition between them along the risers of the said steps of breaker strips 16, 17 and 18 which heat-insulate the tracks from each other and from the inner and exterior shells 6 and 7.

In order to avoid the formation of ice upon the tracks 9 and 10, I mount heating means illustrated at 19 within the walls 3 and 4 adjacent the lower track 10. It will of course be apparent that similar heating means may be positioned adjacent the upper track 9 within the walls 3 and 4, but generally, except under the most severe conditions, I have found that the heat supplied by the heating means below the lower track 10 is sufficient to avoid the formation of ice upon either of the tracks 9 or 10.

The heating means 20 may be any suitable form of heating means, one form of which I have illustrated as including a conduit 21 through which the refrigerating medium utilized in cooling the interior of the food cabinet is conducted toward the expansion valve. The cooling medium is thus utilized at a time during its processing when it is at a temperature elevated sufficiently above the freezing point and to avoid the formation of ice or frost upon the tracks 9 and 10. Thus the conduit 21 which is mounted within the vertical walls of the cabinet is positioned substantially in contact with the lower track 10 and leads from the storage tank 22 to the expansion valve 23 of the refrigerating means or evaporator 24.

The storage tank 22 is the refrigerant storage container and receives the compressed refrigerant from the condenser 25 operating in conjunction with the compressor 26.

It will also be apparent that other heating means may be employed for heating the rails or tracks upon which the doors slide as, for example, illustrated in Figure 4 wherein I have shown electrical heating wires 27 connected in the electrical circuit to a suitable source of electrical current positioned within the walls of the cabinet and in position of substantial contact with the rail or track 10 over which the doors 12 are adapted to slide.

Having fully described my invention, it is to be understood that I do not wish to be limited to the details herein set forth, but my invention is of the full scope of the appended claims.

I claim:

1. A refrigerating cabinet including walls defining a food storage space and an opening for affording access to said space, tracks carried by the edges of said opening, a door slidably carried on said tracks for closing said opening, means for refrigerating said space and heating means for causing a rise in temperature substantially confined to said tracks, the heating capacity of the heating means being so related to the capacity of the refrigerating means and the heating means being so mounted that said tracks may be maintained at a temperature such as to prevent the formation of an ice bond between said door and tracks without appreciably disturbing the low temperature normally produced by said refrigerating means.

2. A refrigerating cabinet including walls defining a food storage space and an opening for affording access to said space, metal tracks carried by the edges of said opening, a door slidably carried on said tracks for closing said opening, means for refrigerating said space and heating means for causing a rise in temperature sub-

stantially confined to said metal tracks, the heating capacity of the heating means being so related to the capacity of the refrigerating means and the heating means being so mounted that said metal tracks may be maintained at a temperature such as to prevent the formation of an ice bond between said door and metal tracks without appreciably disturbing the low temperature normally produced by said refrigerating means.

3. A refrigerating cabinet including walls defining a food storage space and an opening for affording access to said space, stepped means including tracks carried by the edges of said opening, breaker strips for heat insulating the tracks from each other, a door slidably carried on said tracks for closing said opening, means for refrigerating said space, and heating means for causing a rise in temperature substantially confined to said tracks, the heating capacity of the heating means being so related to the capacity of the refrigerating means and the heating means being so mounted that said tracks may be maintained at a temperature such as to prevent the formation of an ice bond between said door and the tracks without appreciably disturbing the low temperature normally produced by said refrigerating means.

4. A refrigerating cabinet including walls defining a machinery compartment, a food storage space insulated from said compartment and an opening for affording access to said space, tracks carried by the edges of said opening, a door slidably carried on said tracks for closing said opening, means for refrigerating said space including a liquefied refrigerant storage tank in said machinery compartment, and means for conducting the refrigerant from said storage tank adjacent said tracks to cause a rise in temperature substantially confined to said tracks, said means being mounted in said walls and so related to the food storage space and said tracks that the latter may be maintained at a temperature such as to prevent the formation of an ice bond between said door and tracks without appreciably disturbing the low temperature normally produced by said refrigerating means.

5. A refrigerator comprising a cabinet having walls defining a food storage space and an excess opening for said space, an evaporator in heat exchange relation with said space, means for supplying liquefied refrigerant to said evaporator, tracks carried by the edges of said opening and a door for closing said opening slidably carried by said tracks, said refrigerant supply means including conduit portions carried by said walls in such heat exchange relation with said tracks and the walls of said space that the tracks may be heated sufficiently to prevent the formation of an ice bond between the tracks and door without appreciably disturbing the low temperature normally produced by said evaporator.

6. A refrigerating cabinet including walls defining a food storage space and for affording access to said space, tracks carried by the edges of said opening, a door slidably carried on said tracks for closing said opening, means for refrigerating said space and electrical heating means for causing a rise in temperature substantially confined to said tracks, the heating capacity of said heating means being so related to the capacity of the refrigerating means and the heating means being so mounted that said tracks may be maintained at a temperature such as to prevent the formation of an ice bond between

said door and tracks without appreciably disturbing the low temperature normally produced by said refrigerating means.

7. A refrigerating cabinet including vertical walls defining a food storage space and a horizontal opening for affording access to said space, vertically spaced tracks carried by the edges of said opening, a door slidably carried on each of said tracks for closing said opening, means for refrigerating said space, and means associated with said tracks for causing a rise in tempera-

ture substantially confined to said tracks, the heat dissipating capacity of the last mentioned means being so related to the capacity of the refrigerating means that said tracks may be maintained at a temperature such as to prevent the formation of an ice bond between said door and tracks without appreciably disturbing the low temperature normally produced by said refrigerating means.

CURTIS H. THAXTER.