Feb. 8, 1927. 1,616,441

T. M. CONDIT ET AL

REFRIGERATOR BOX

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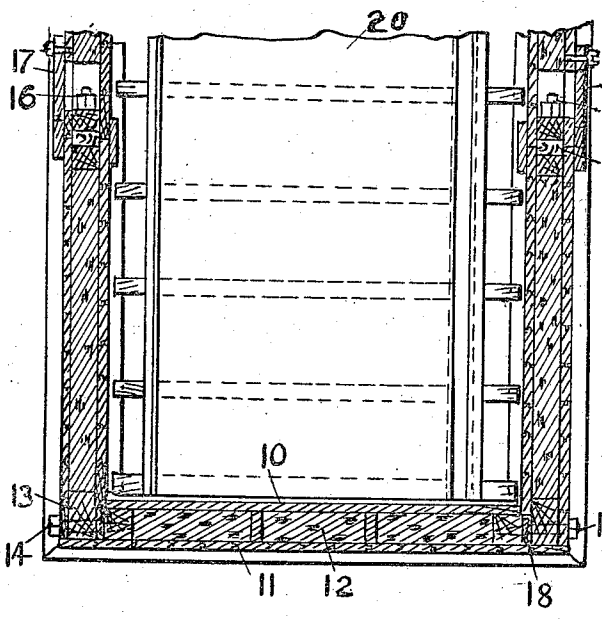


Fig. 1.

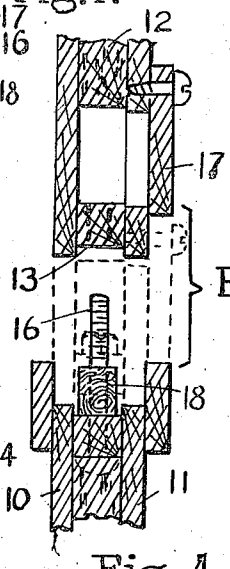


Fig. 3.

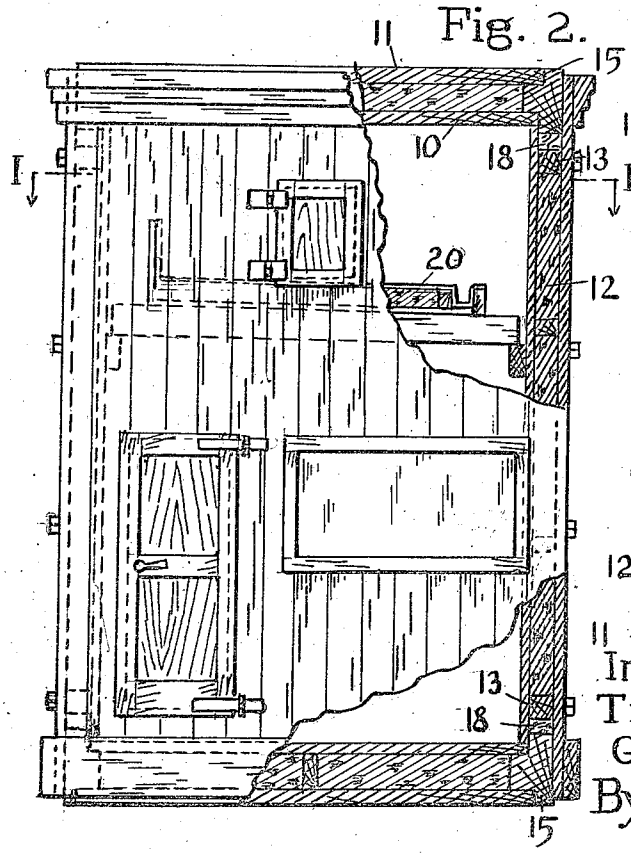


Fig. 2.

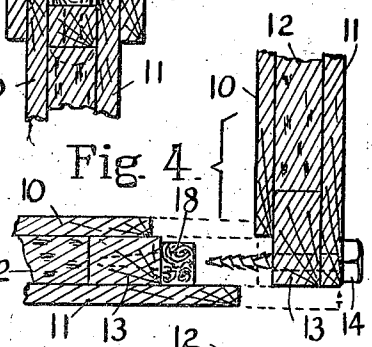


Fig. 4.

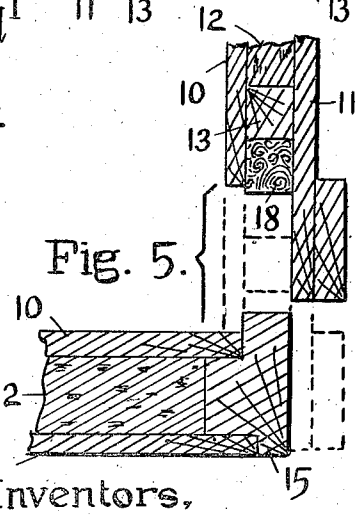


Fig. 5.

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UNITED STATES PATENT OFFICE.

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REFRIGERATOR BOX.

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The object of this invention is to provide a refrigerator box suitable for meat dealers and others who require refrigerating space greater than can be contained in a box which will pass through an ordinary door, and which can be shipped in knock-down form with each of the separate parts sufficiently small to pass through a store door, such parts being assembled and held together by means which will permit of repeated separation, shipment and reassembling without injury, the walls having good insulating properties and the joints being sufficiently tight to prevent air circulation therethrough which will appreciably impare the refrigeration.

In the accompanying sheet of drawings which forms a part of this description—

Figure 1 is a horizontal section on the line I—I of Fig. 2 through a refrigerator box which embodies this invention.

Fig. 2 is an elevation of the same with the front wall broken away.

Fig. 3 is a horizontal section to a larger scale showing separated the meeting edges of two sections of a side wall and in dotted line one moved into its closed relation with the other.

Fig. 4 is a horizontal section showing similarly the meeting edges of two side walls at a corner.

Fig. 5 is a vertical section showing similarly the meeting edges between a side wall and the bottom wall.

Each of the walls or sections of side walls consists of inner sheathing 10 and outer sheathing 11, suitably seven-eighth inch tongued and grooved spruce, between which is sheet cork board 12 which is three to six inches in thickness according to the insulation desired. This is applied with hot asphalt and insulation paper on both sides next to the sheathing, or any other insulating material may be used. Around the edges of the vertical side walls and sections of side walls is a framework 13 of rough sawed spruce studs set at the vertical edges of the walls so that the outer sides of the studs will project beyond the edges of the inner sheathing and so break joint when corners are brought together. Lag screws 14, 14 preferably set at about three feet spacing draw the sides together at the corners.

At the top and bottoms of the vertical side walls the horizontal stud members of the framework are set wholly within the edges of both the inner and outer sheathing. Surrounding the top and bottom walls constituting the roof or ceiling and floor of the box is a mitered frame of milled spruce studs 15, the edges being rabbeted to receive the edges of the sheathing. The rabbet on the inner side is deeper than the thickness of the sheathing so that the frame will project beyond the inner sheathing and lock behind the inner sheathing of the vertical walls and hold them in place at the top and bottom independently of the lag screws at the vertical corners.

If the refrigerator box is of such size that a wall in one piece is too large to pass through a door or for convenient handling and shipment, it is made in sections which are bolted together and held by carriage bolts 16, 16. Where the nuts of the carriage bolts come the cork insulation and the outside studding is cut away sufficiently for the insertion and setting up of the nuts. Covers 17, 17 close these openings.

It is necessary for the economical use of ice or other refrigerating means that there should be no perceptible leakage of air at the six or more joints where the sections are brought together and as the spruce studs in the framework may be warped so that they cannot be drawn snugly together along their entire lengths to make a sufficiently close joint it is necessary to compensate for such irregularities and warping as are usual by interposing strips of felt 18, 18 and drawing the parts together with considerable force between which the felt strips are placed. Since the packing lies in grooves between inner and outer sheathing which prevents it from spreading sidewise it is necessary to use a packing such as felt which will compress in volume instead of a packing which merely distorts under pressure without changing materially in volume. It has been found desirable to use one-half inch strips between sections of a side and the same thickness at corners where two vertical sides meet, and by tightening on the carriage bolts or lag screws compress these strips on an average to a thickness of one-quarter of an inch. For packing between the top or bottom framework and the horizontal framework members of the vertical sides one inch felt is used and will be compressed about one-third by the weight of the sides and

top without the use of screws, but screws may be used if needed in addition.

The usual tray 20 is set in the box for an ice-bunker or for supporting refrigerating coils. As the vertical sides are held together by lag screws at the corners the top is not essential for this purpose, and if mechanical refrigeration is to be used the coils are more conveniently installed before the top is put on.

As ice-boxes are usually constructed about one-fourth of the refrigeration which is provided is used in cooling the contents which is to be cooled and three-fourths is chargeable to losses from leakage through the walls and from changes in air which take place when entering to take out or replace stock. This loss is much increased in the case of a sectional box unless adequate means as here detailed is used to prevent the passage of air through any of the joints. Also prevention of air leakage is necessary to the durability of the box since at any point of inflow there will be a precipitation of moisture which will cause the wood to rot and further enlarge the point of inflow.

It will be noted that the felt packing is so placed that it is wholly concealed by the sheathing both inside and out and inaccessible to mice or other vermin.

What we claim, is—

A sectional refrigerator box comprising separable vertical side walls each of which consists of inner and outer sheathing with interposed non-conducting material and a framework breaking joint with the edges of the sheathing the framework at the tops and bottoms of the vertical side walls being set wholly within the edges of the sheathing, bottom and top walls separable from the side walls each of which consists of inner and outer sheathing with interposed non-conducting material and a surrounding framework which projects beyond the inner sheathing and locks behind the edges of the inner sheathing of the vertical side walls, a strip of compressible felt between each of the pairs of meeting framework edges, and means for tightly holding the sides in assembled relation.

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