Nov. 24, 1931. H. B. HULL 1,832,904

REFRIGERATING APPARATUS

Filed Dec. 11, 1925 3 Sheets-Sheet 1

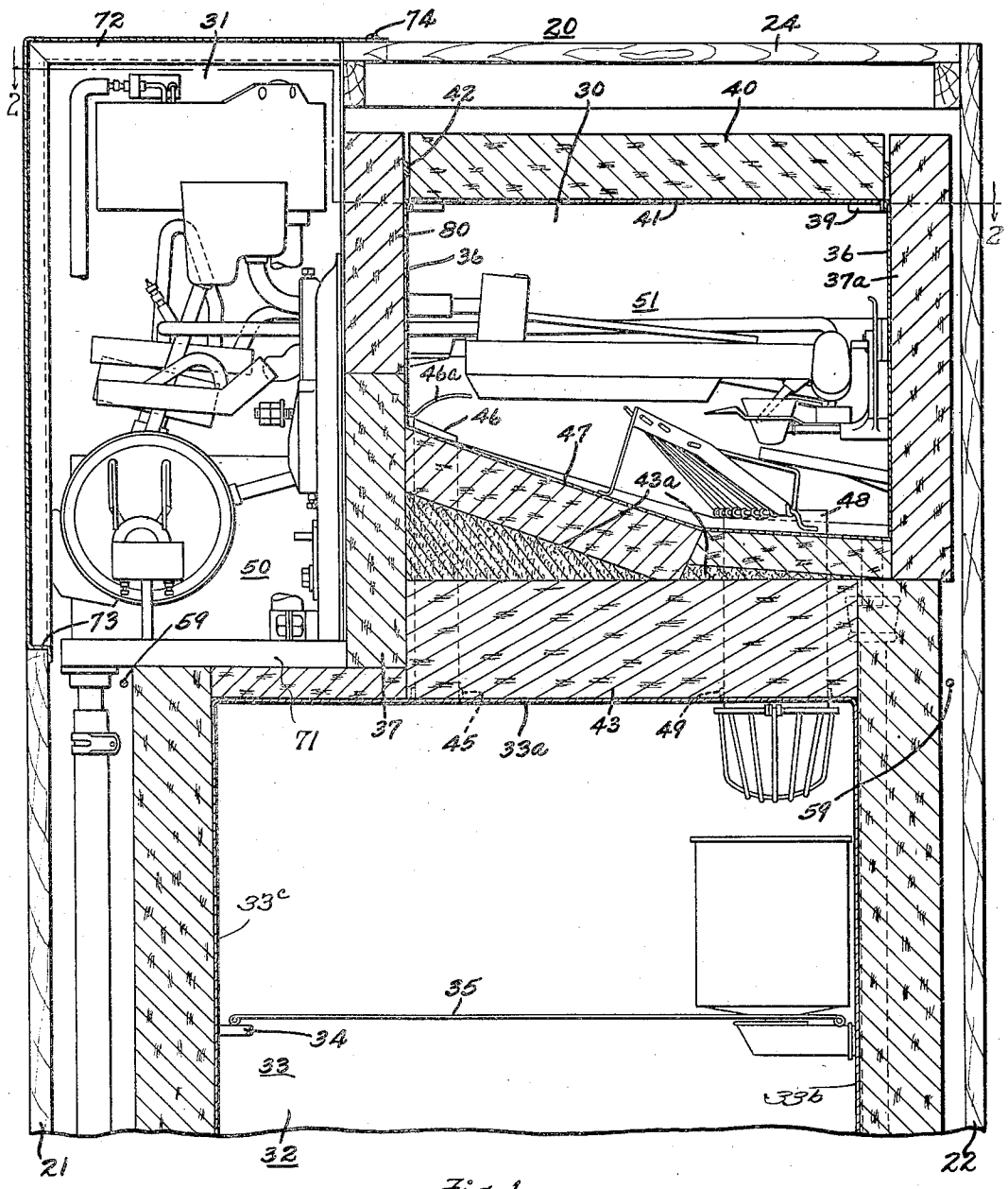


Fig. 1

Inventor

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REFRIGERATING APPARATUS

Filed Dec. 11, 1925 3 Sheets-Sheet 2

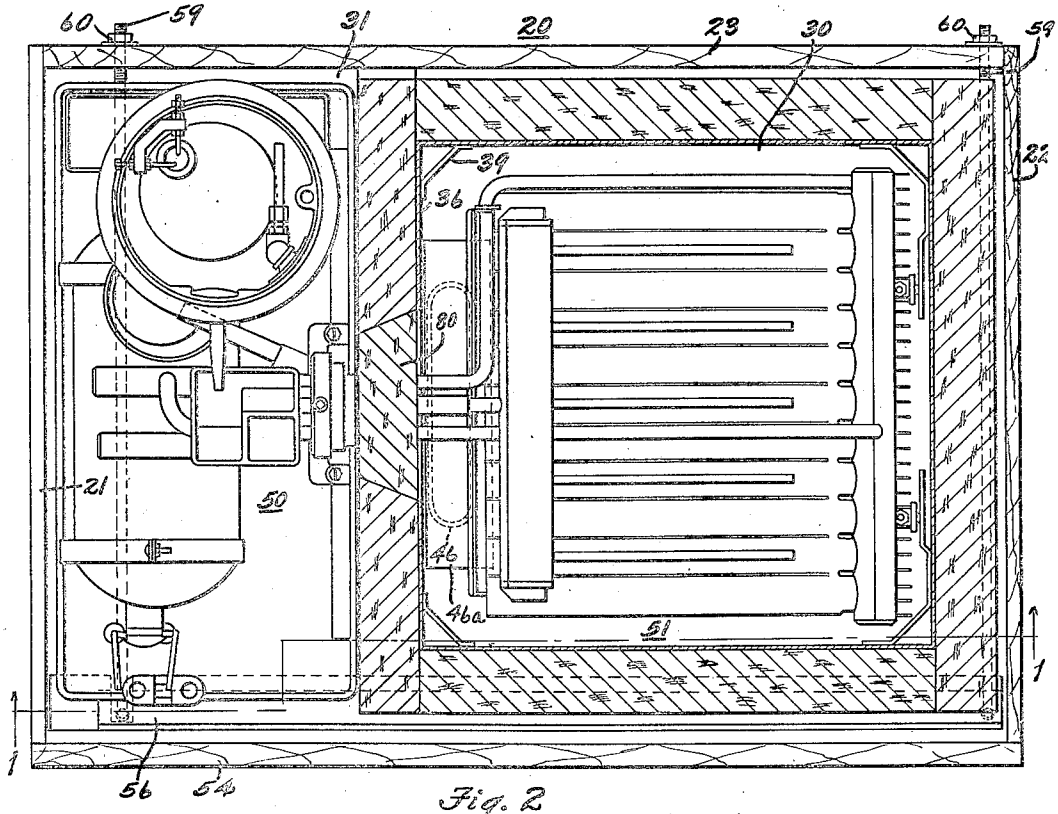


Fig. 2

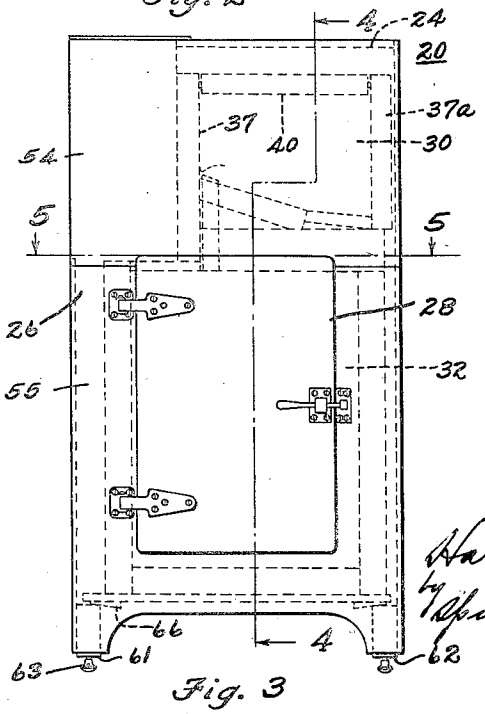


Fig. 3

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REFRIGERATING APPARATUS

Filed Dec. 11, 1925 3 Sheets-Sheet 3

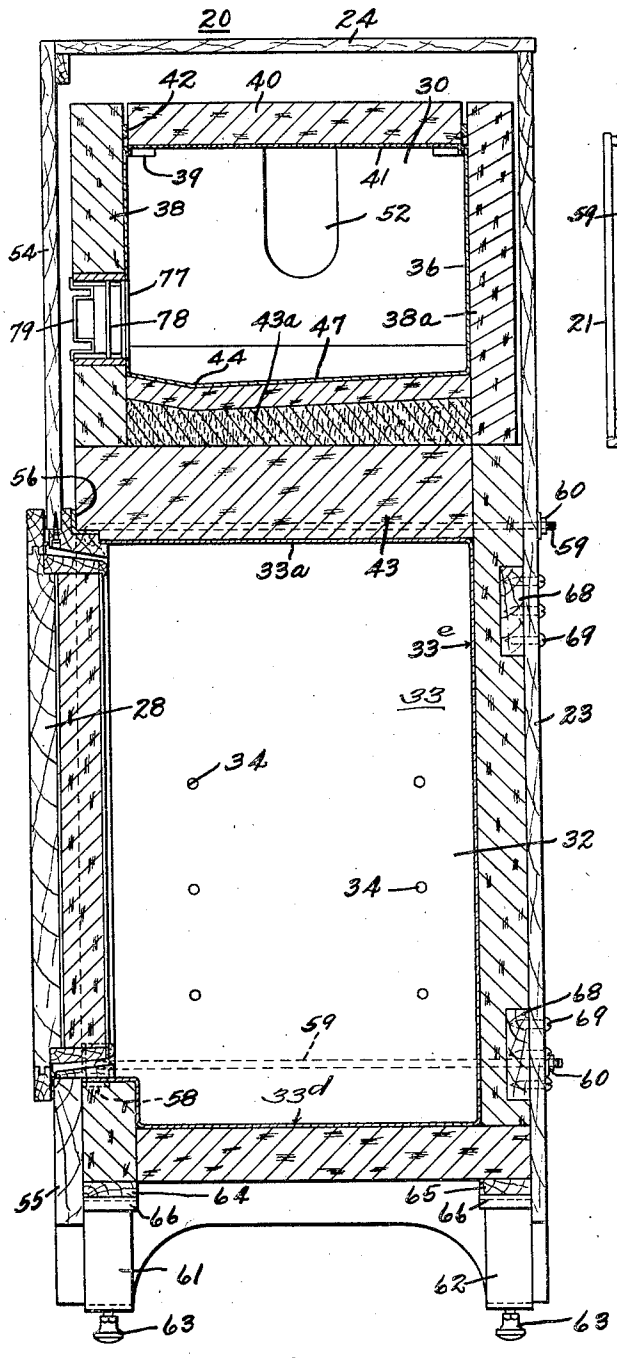


Fig. 4

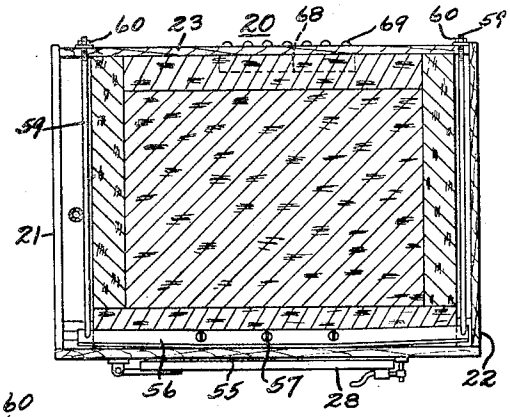


Fig. 5

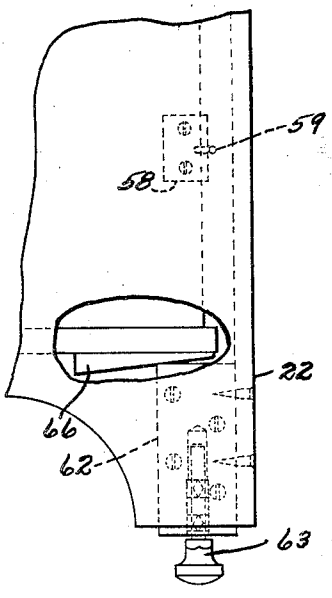


Fig. 6

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UNITED STATES PATENT OFFICE

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REFRIGERATING APPARATUS

Original application filed January 21, 1925, Serial No. 3,789. Divided and this application filed December 11, 1925. Serial No. 74,727.

The present invention relates to the construction of refrigerator cabinets and is a division of my copending application Serial No. 3,789, filed January 21, 1925.

One of the objects of the present invention is to reduce the cost and facilitate the manufacture of cabinets by constructing and arranging the parts of a cabinet in such a manner that the variations of dimensions of the inner parts of the cabinet will not affect the assembling of the outer walls of the cabinet.

Further objects and advantages of the present invention will be apparent from the following description reference being had to the accompanying drawings wherein a preferred form of embodiment of the present invention is clearly shown.

In the drawings:

Fig. 1 is a fragmentary section view of the upper portion of the improved cabinet, the section being taken on line 1—1 of Fig. 2, and showing a mechanical refrigerator machine in elevation applied thereto.

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1, showing the cover for one of the compartments removed and showing the machine in plan.

Fig. 3 is a front view in elevation.

Fig. 4 is a sectional view taken on line 4—4 of Fig. 3, showing the machine removed.

Fig. 5 is a sectional view taken on line 5—5 of Fig. 3, and

Fig. 6 is an enlarged fragmentary view in elevation of a lower portion of the cabinet.

Referring to the drawings, the refrigerator cabinet 20 is provided with side walls 21 and 22, a back wall 23, a top wall 24 and a front wall 26. Front wall 26 includes an opening closed by a door 28 providing access to the interior of the food compartment 32 of the cabinet.

The cabinet is divided into three compartments including a cooling compartment 30, a machine compartment 31 and the food compartment 32, which is located under compartments 30 and 31. The food compartment 32 is provided with a box like lining 33, having enclosing side walls 33*a*, 33*b*, 33*c* and 33*d*, and a back wall 33*e*. The sides 33*b* and 33*c* carry studs 34 which support shelves 35. Corkboard insulation is secured to the sides, back and bottom of the lining 33. Cooling compartment 30 is provided with a lining 36 surrounded by non-conducting vertical walls 37, 37*a*, 38 and 38*a* which extend above the lining 36. Near the upper edge, the lining 36 carries brackets 39 which support a removable top 40 of insulating material having an inside lining 41. The wall 40 is slightly smaller than the opening provided by the vertical walls 37, 37*a*, 38 and 38*a* to provide a space between the said vertical walls whereby an insulating material 42, such as rubber, can be jammed between the edges of the wall 40 and the surrounding vertical walls. After the insulating material 42 has been removed the top 40 can be readily removed to provide access to the interior of compartment 30. A bottom wall 47 of lining 36 slopes downwardly toward one side of the cabinet and provides a gutter 44 as shown in Fig. 4. This bottom wall 47 is separated from the top wall 33*a* of food compartment lining 32 by walls including corkboard 43 and ground cork 43*a*.

Lining 33 is provided with an oblong shaped flange 45 which receives a conduit 46 which extends through the walls 43 and 43*a* and projects slightly above the bottom wall 47 of cooling compartment 30. Conduit 46 provides a passage for air which is conducted from the food compartment 32 to the cooling compartment 30 and is located at one side of cooling compartment 30. The top side wall 33*a* of lining 33 is also provided with a cylindrical upwardly extending flange 49 adapted to receive the conduit 48 which extends through the wall 43 and projects above the bottom lining wall 47 of compartment 30. It will be noted that the conduit 46 enters the chamber 30 at the highest point of the bottom wall 47 and that the conduit 48 is located at the other end of compartment 30 and its cold air entrance is substantially at the lowest portion of said wall. The air which passes from compartment 32 to compartment 30 is cooled in said compartment 30 and passes through the conduit 48 into the compartment 32. A deflector 46*a* tends to cause the warm air entering the cooling chamber to be maintained

in the lowest and hence coolest part of the chamber.

The refrigerating mechanism is the same as that shown in the previously mentioned application and substantially the same as that shown in the patent to D. F. Kieth, 1,510,147, filed April 12, 1923. This mechanism comprises a generator-absorber 50 and an evaporator-condenser 51. The generator-absorber 50 is located in the machine compartment 31 and the evaporator-condenser is located within the cooling compartment 30. Suitable connections between the generator-absorber and evaporator-condenser extend through an opening 52 in the wall 37 and lining 36.

The front of the cabinet comprises two main portions 54 and 55. Portion 55 carries a horizontally disposed angle iron 56 adjacent the top thereof. The angle iron is secured adjacent the center thereof to the front 55 by screw 57. (See Fig. 5). Angle plates 58 are secured to the lower portion of front portion 55 adjacent the bottom thereof. When assembling the cabinet the portion 55 is placed face down and the lining 33 of food compartment 32 is secured thereto. After the cork insulation is placed upon the lining 33, the back 23 is then laid upon the insulation. Tie-rods 59 are connected to the ends of the angle iron 56 and to the anchor plates 58 and extend throughout the width of the cabinet and through the back 23. The ends of the tie-rod are screw threaded to receive nuts 60 by which the back 23 is drawn toward the front. When the nuts are tightened the food compartment 32 and insulation therefor are clamped between the front 55 and back 23. When the food compartment 32 and insulation are clamped in position as described, the angle iron 56 may tend to bend, as shown in Fig. 5, but since the angle iron 56 is secured to the front adjacent the center thereof, the iron is permitted to bend without distorting the front.

The lower corners of both the front 55 and back 23 carry posts 61 and 62 to which gliders 63 are secured. The upper ends of post 61 and 62 terminate below the bottom insulation for cabinet 32. A board 64 extends throughout the width of the insulation and above post 61 in the front of the cabinet and board 65 is similarly located above the post 62 in the back of the cabinet. Wedges 66 are driven between the posts 61 and 62 and boards 64 and 65 to support the cork insulation and lining 33. In this manner slight variations in the dimensions of the cork lining and posts are readily taken care of.

The insulation on the back of the lining 33 s cut away and carries wood inserts 68 and the back 23 is secured to these inserts by screws 69. The inserts are secured to the cork by a plastic material such as hydrolene and since the back 23 is secured thereto, the back of the lining 33 and insulation therefor cannot shift sidewise.

The cooling compartment 30, the lining 36 and the insulation therefor are built upon the insulation of top wall 33*a* of the lining 33. The sides 21 and 22 are then secured to the front and back of the cabinets. Then the top 24 is secured to sides 21 and 22. It will be noted that the back edge of the sides 21 and 22 do not engage the back wall 23 but can extend any distance beyond the back 23. Therefore, it is not necessary to provide sides of an accurate depth since said sides do not necessarily fit flush with the back 23. The top 24 and the sides 21 and 22 are made the same depth, therefore, the corners thereof meet in the back of the cabinet, and when the cabinet is placed against the wall, rear wall 23 cannot be seen, and, therefore, it is immaterial if said rear wall 23 does not fit flush with the back edges of sides 21 and 22 and top 24.

The side wall 21 extends only along the side of food compartment 32 and ends adjacent the bottom of the machine supporting base 71 and the top 24 extends only over the cooling compartment 30. An L-shaped cover 72 encloses the side and top of machine compartment 31. Cover 72 is carried by side wall 21 and is provided at its lower end with a flange 73 which hooks over the top of side 21. The top of cover 72 extends over top wall 24 and is secured thereto by screws 74.

The front section 54 is removably secured to side wall 22 and front section 55 and can be removed without removing the portion 55 whereby access may be had to the front of the refrigerating mechanism within machine compartment 31. The front insulating wall of compartment 30 is provided with an opening 77 which is closed by a plug 78 having a handle 79. When the front section 54 is removed, the plug 78 can be removed whereby the attendant may view the interior of compartment 30.

Wall 37 between compartments 30 and 31 includes a removable portion 80 which when removed lays bare that part of the mechanism which extends through said wall. Therefore, when the top 24, L-shaped cover 72, and the top 40 of the compartment 30 are removed, the entire refrigerating mechanism can be removed upwardly.

While the form of embodiment of the present invention as herein disclosed constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. A refrigerator cabinet, comprising a compartment, front and rear walls, a member secured to one of said walls, the ends of said member being adapted to bow toward the

other wall without distorting the wall carrying same, and means connected with the ends of said member and extending to said other wall for clamping the compartment between said walls.

2. A refrigerator cabinet, comprising a compartment, front and rear walls, a member secured adjacent the center of one of said walls and projecting adjacent the side of the cabinet, and means connected with the ends of said member and extending to said other wall for clamping the compartment between said walls.

3. A refrigerator cabinet, comprising a compartment, walls, members carried by said walls below the compartment, and wedge-shaped members adapted to be driven between said first members and the compartment for supporting said compartment.

4. A refrigerator cabinet, comprising a compartment, walls, supporting feet for the cabinet carried by said walls below the compartment, and wedge-shaped members adapted to be driven between the feet and compartment for supporting the compartment.

5. Apparatus of the character described comprising walls secured together to form a cabinet, a compartment secured to one of the walls, insulation secured to the compartment and means secured both to said insulation and to another of said walls to prevent the insulation and said other wall from sliding relative to each other.

6. Apparatus of the character described comprising in combination walls secured together to form a cabinet, one of said walls having an opening, an open ended compartment, the open end of said compartment being secured to said wall having an opening, insulation secured to the compartment, and means secured both to said insulation and to another of said walls to prevent the insulation and said other wall from sliding relative to each other.

7. A refrigerator, comprising an open-ended compartment, insulating material secured to the sides of the compartment, an insulating wall for the open end of the compartment, said wall being loosely and removably mounted on said compartment, and removable insulating material between said wall and the insulating material for the compartment for maintaining said sealing of said compartment and for maintaining said wall in position.

8. A refrigerator cabinet comprising front and rear walls, a compartment including enclosing side walls and a contiguous back wall, means holding the front and rear walls toward each other and clamping the compartment between said walls, and side walls for the cabinet enclosing the clamping means.

9. Apparatus of the character described comprising walls secured together to form a cabinet, a compartment secured to one of the walls, insulation secured to the compartment and means secured both to said insulation and to the wall opposite that to which the compartment is secured to prevent the insulation and said opposite wall from sliding relative to each other.

10. Apparatus of the character described comprising walls secured together to form a cabinet, a compartment secured to one of the walls, insulation secured to the compartment and a member imbedded in said insulation and secured to another of said walls to prevent the insulation and said other wall from sliding relative to each other.

11. A refrigerator cabinet comprising front and rear walls, a compartment including enclosing side walls and a contiguous back wall, insulation secured to said compartment, means holding the front and rear walls toward each other and clamping the compartment and insulation between said walls, and a member imbedded in said insulation and secured to one of said walls for providing vertical support for said compartment.

12. Refrigerator cabinet comprising front and rear walls, a compartment including enclosing side walls and a contiguous back wall, insulation secured to said compartment walls, means holding the front and rear walls toward each other and clamping the compartment between said walls, said means being disposed outside of said insulation, a member imbedded in said insulation and secured to one of said walls for providing vertical support for said compartment, and side walls for the cabinet enclosing said clamping means.

In testimony whereof I hereto affix my signature.

HARRY B. HULL.