

March 4, 1930.

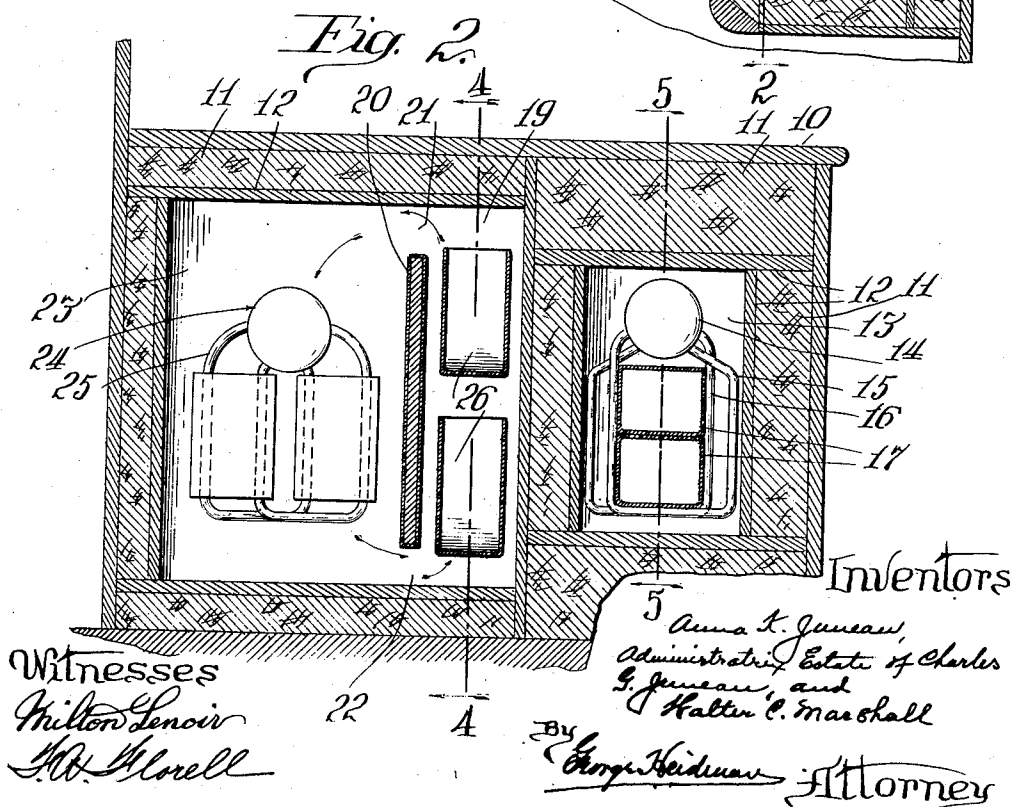
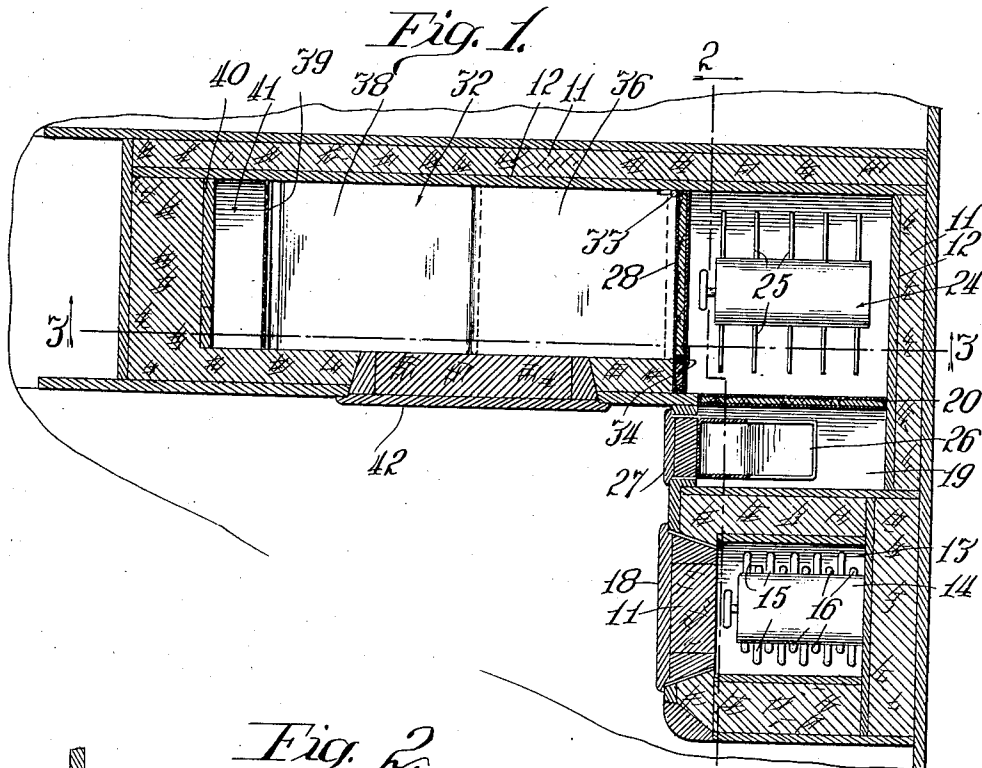
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1,749,484

COMBINED REFRIGERATOR AND ICE CREAM CABINET

Filed May 25, 1928

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 3

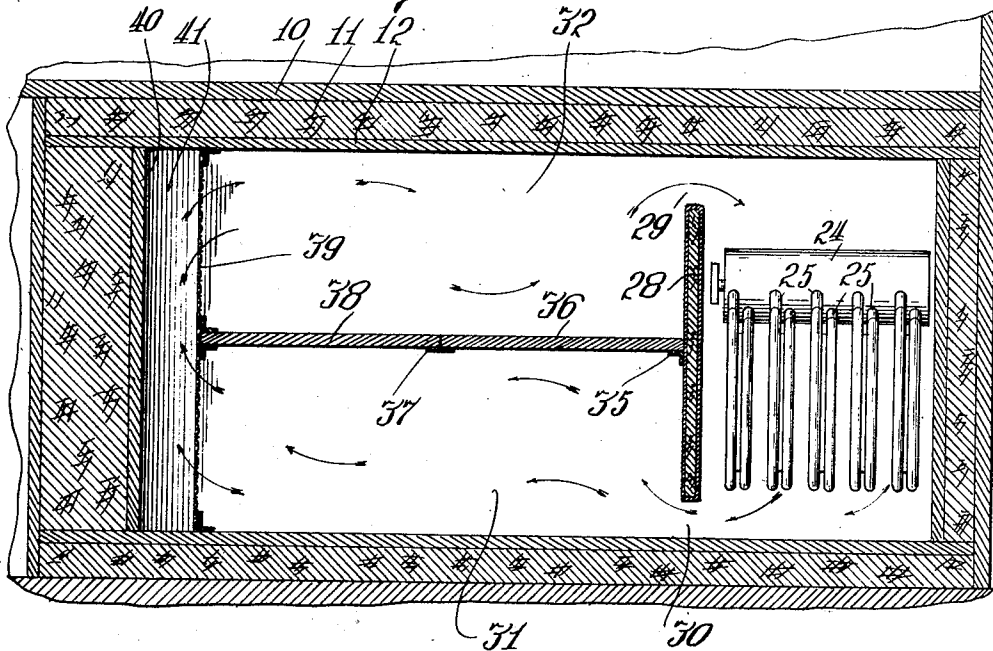


Fig. 4

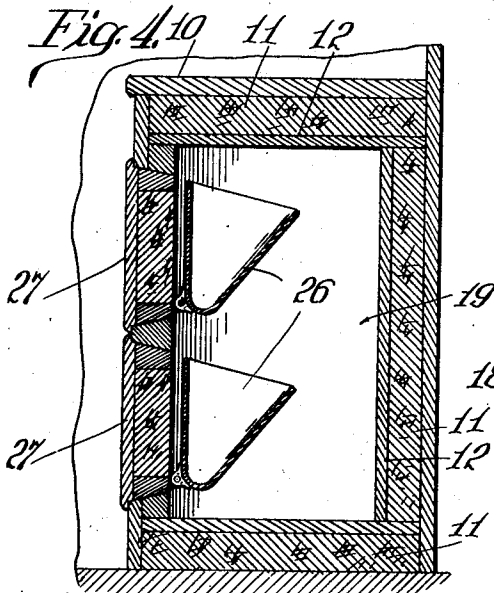
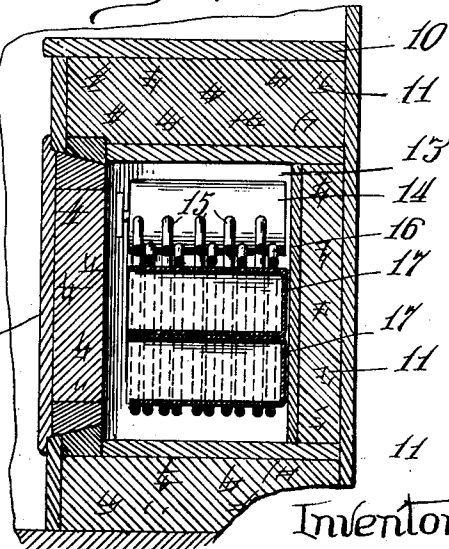


Fig. 5



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## UNITED STATES PATENT OFFICE

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## COMBINED REFRIGERATOR AND ICE-CREAM CABINET

Application filed May 25, 1928. Serial No. 280,538.

Our invention relates to what may be termed a pantry refrigerator and ice cream cabinet more especially designed for use in railroad dining cars where the limited space in the pantry or kitchen of the dining car necessitates a special arrangement of the refrigerator adapted to meet the restricted area and severe requirements encountered.

The refrigerator is especially designed for mechanical refrigeration and so constructed as to have a chilling temperature, at least in certain portions or chambers, requisite for the proper keeping of ice cream as well as ice cubes which are more or less extensively used in dining car service of various commodities.

The invention also has for its object the provision of a construction which will permit easy access to the respective compartments while at the same time enabling full access to the refrigerating unit to be had for the purpose of servicing said unit and to permit its removal and replacement when found necessary.

The objects and advantages of our invention will be readily comprehended from the detailed description of the accompanying drawings, wherein—

Figure 1 is a sectional plan view.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1 looking in the direction of the arrows.

Figure 3 is a cross sectional view taken on the line 3—3 of Figure 1 as indicated by the arrows.

Figure 4 is a cross sectional view taken on the line 4—4 of Figure 2 as shown by the arrows.

Figure 5 is a cross sectional view taken on the line 5—5 of Figure 2.

The refrigerator in its specific embodiment as disclosed in the drawings is shown of angular formation and construction to adapt it to the comparative close quarters encountered in the kitchen of a dining car; the refrigerator as shown being intended for location in a corner of the kitchen adjacent to the partition walls. The refrigerator is preferably of such height as to also constitute a tabletop shown at 10 in Figure 2 which pref-

erably consists of wood of suitable thickness, covered with a suitable metal such as Monel metal; the top, sides and bottom being provided with suitable insulating material of proper thickness, as for example cork board shown at 11 arranged and properly sealed intermediate of the outer walls of the refrigerator and the inner walls shown at 12 which may be of wood covered preferably with sheet metal.

While the refrigerator has been shown formed to fit into the corner of the kitchen and therefore with portions disposed parallel with two side walls or partitions, it is obvious that the general configuration of the refrigerator may vary to meet specific requirements and conditions, without sacrificing any of the advantages and without departing from the spirit of our invention.

The refrigerator, as illustrated, has one side or section provided with a refrigerating unit holding compartment 13 completely surrounded by insulated walls, see Figures 1 and 2; the compartment being provided with the usual liquid container 14 employed in a well known type of refrigerating unit and which is provided with the depending coils 15 and 16 disposed toward the bottom of the compartment 13 as shown in Figure 2.

We have shown certain of the coils, as for example coils 16 (of which there are a series extending from front to rear of the cylindrical container 14) with ice cream holding boxes or containers 17. The containers, of which two are shown in the specific exemplification, are preferably of sheet metal arranged one above the other and mounted within the coils 16 to which they may be secured if desired; the containers being preferably of rectangular formation and completely closed on all sides except the forward sides or ends which are disposed toward the door 18 (see Figure 5). These containers are especially intended for the storage of brick ice cream, which requires a low degree of temperature in order to maintain the ice cream in proper serviceable condition.

The door 18, like the walls of the compartment, is of suitable thickness so as to also contain suitable insulating material 11 which

may consist of cork-board sealed with a suitable non-odorant sealing cement; with the juncture between the door and side walls made as is usual in this art to provide a more or less air-tight closure.

The refrigerator, adjacent to the ice cream holding compartment, is provided with a separate chamber 19 formed by one wall of the ice cream chilling compartment and an insulated wall or baffle member 20.

The wall 20 preferably consists of a proper thickness of cork-board covered with sheet metal and extends from front to rear of the refrigerator, with an opening 21 of sufficient size above the baffle or partition and an opening 22 at the bottom thereof. In practice, the opening 21 at the top is preferably slightly greater than the opening at the bottom. The partition or baffle 20 separates the compartment 19 (except for the openings 21 and 22) from a refrigerant holding chamber 23. In the drawings, this chamber 23 is shown provided with a suitable mechanical refrigerating unit 24 properly mounted with its fin-coils 25 extending downwardly toward the bottom of the compartment 23.

The compartment 19 is also shown provided with a number of bins 26, preferably of the somewhat funnel shape, namely with the sides converging toward the bottom; the bins 26 being suitably fastened to the inner sides of the compartment doors 27 which latter are preferably hinged at bottom to the main outer casing of the refrigerator to swing outwardly and downwardly, thereby bringing the bins 26 into position where access thereto may be readily had. The bins 26 are preferably made of sheet metal and are primarily intended for storing ice cubes. The compartment 19, with the ice cube holding bins, is kept at proper temperature by means of the refrigerant unit 24; the cold air passing down, through opening 22 beneath the partition or baffle 20, circulating upwardly about the bins and passing out through opening 21 at top into the refrigerant holding chamber 23 where its temperature is again reduced and a constant circulation of cold air maintained.

In the particular exemplification, where the refrigerator and cabinet is intended to extend parallel with two side walls of a pantry or kitchen, the refrigerant holding portion 23 is shown arranged in the right angular corner of the cabinet and the wall adjacent to partition or baffle 20 shown in the nature of an insulated partition or baffle 28 which preferably also consists of a suitable thickness of cork-board covered with sheet metal. The partition 28 extends from front to rear of the refrigerator, with a suitable spacing or opening 29 at top and a spacing or opening 30 at bottom in order to permit circulation of cold air from the refrigerant holding compartment 23 into the adjacent compartments 31

and 32 shown arranged one above the other, see Figure 3. The partition or wall 28 is preferably hingedly secured at 33 to the rear wall of the refrigerator to permit the baffle or partition 28 to swing into the food holding compartments 31, 32, namely into a position against the rear wall of the refrigerator in order that ready access may be had to the refrigerant unit 24 for servicing or removal or replacement when found necessary. The free forward end of the partition or wall 28 may be maintained in proper position in any suitable manner, as for example, by the flange or lip 34 secured to the forward wall of the refrigerator on the refrigerant holding side of the partition as shown in Figure 1.

The baffle or partition 28, at a suitable point intermediate of the top and bottom ends thereof, is shown provided with an angle bar or flange 35 to support a shelf member 36. The opposite end of shelf 36 is supported by a cleat or bar 37 extending from front to rear of the refrigerator and this bar 37 in turn supports the shelf section 38 which is also supported in a suitable manner on the screen partition 39. This screen partition 39 extends from top to bottom and from front to rear of the refrigerator in suitable spaced relation with the end wall 40 of the refrigerator thereby providing an air chamber or passage 41 at the end of the compartment provided with the imperforate shelf sections 36, 38 which extend from front to rear of the refrigerator.

With the construction shown, it is apparent that the cold air from the refrigerant holding compartment 23 will pass through the opening 30 at the bottom of the baffle or partition 28, thence lengthwise of compartment 31 (because of the imperforate shelves 36, 38) through the wire mesh partition 39, into passage 41, and thence upwardly and lengthwise through compartment 32, returning into the refrigerant holding compartment 23 through the passage 29 above the baffle or partition 28.

When it is desired to have access to the refrigerating unit 24, shelf section 36 may be lifted out of place;—access to these compartments being had by a suitable door or doors as at 42, see Figure 1;—thus allowing the baffle or partition 28 to be swung against the rear wall on the hinge connection 33.

It will be understood, of course, that the various doors of the refrigerator are of proper insulated construction and formed to effect air-tight closures as is usual in refrigerator construction. With the ice cube holding bins 26 secured to the inner sides of the doors 27 (which are preferably hinged at their lower ends) these doors will be held tightly closed by the weight of the bins and their contents.

It is obvious that although the refrigerator and cabinet has been shown of right angular construction to adapt it to the limited space of a dining car kitchen, the refriger-

ator may be of any suitable configuration or shape involving the particular arrangement of compartments heretofore described which are especially adapted to the uses for which our improved refrigerator is intended, being provided with means for the special handling and storage of ice cream and ice cubes in compartments which are preferably independent of each other, in conjunction with separate chilling compartments for other food stuffs; the refrigerating unit holding compartments being arranged to permit proper access to said units when occasion requires. Therefore, alterations in the particular shape of the refrigerator may be made without departing from the spirit of our invention.

What we claim is:

1. A combined refrigerator and ice cream cabinet provided with insulated top, bottom and side walls, an insulated chamber provided with a refrigerating unit provided with loop-coils arranged intermediate of the front and rear walls, ice cream holding containers arranged within the loops of said coils, a second refrigerating unit chamber spaced from the first mentioned chamber, a chilling compartment arranged intermediate of the two chambers, air passages between the bottom and top of said compartment and said second chamber, said compartment having outwardly moving doors, and ice-cube holding vessels carried by said doors.

2. A combined refrigerator and ice cream cabinet provided at one end with an insulated chamber, a refrigerating unit mounted in said chamber and provided with cooling coils arranged in parallel vertically disposed loops, metallic containers arranged within said loops in contact with said coils, a pair of insulated partitions extending from front to rear in spaced relation with each other and with a side wall of said chamber, said partitions being formed to provide air passages at the tops and bottoms thereof, a second refrigerating unit arranged intermediate of said partitions, ice cube holding containers mounted intermediate of one of the partitions and the adjacent wall of said first mentioned chamber, a perforated partition arranged in spaced relation with an end wall of the refrigerator, and an imperforate horizontally disposed shelf intermediate of said perforated partition and the adjacent insulated partition whereby cold air from the second refrigerating unit passes beneath said insulated partition, lengthwise beneath said shelf, through said perforated partition, above said shelf and over the top of said insulated partition into contact with the second refrigerating unit.

3. In a refrigerator of the class described having insulated top, bottom and side walls, an insulated partition extending from front to rear intermediate of the ends of the re-

frigerator, said partition being hingedly connected to the rear wall of the refrigerator to swing into parallel relation therewith, air passages above and below said partition, a perforated partition adjacent to an end wall of the refrigerator extending from top to bottom and from front to rear, a sectional imperforate shelf supported at the ends by said insulated partition and said perforated partition and extending from front to rear of the refrigerator to provide food-stuff holding compartments above and beneath said shelf, and a refrigerating unit arranged intermediate of said insulated partition and the adjacent end wall of the refrigerator whereby cold air is caused to flow beneath said insulated partition, through the compartment beneath said shelf, through the perforated partition, upwardly into the compartment above said shelf and over the top of said insulated partition into contact with the refrigerating unit.

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