

July 6, 1948.

L. A. PHILIPP
REFRIGERATING APPARATUS

2,444,667

Filed June 12, 1946

Fig. 1

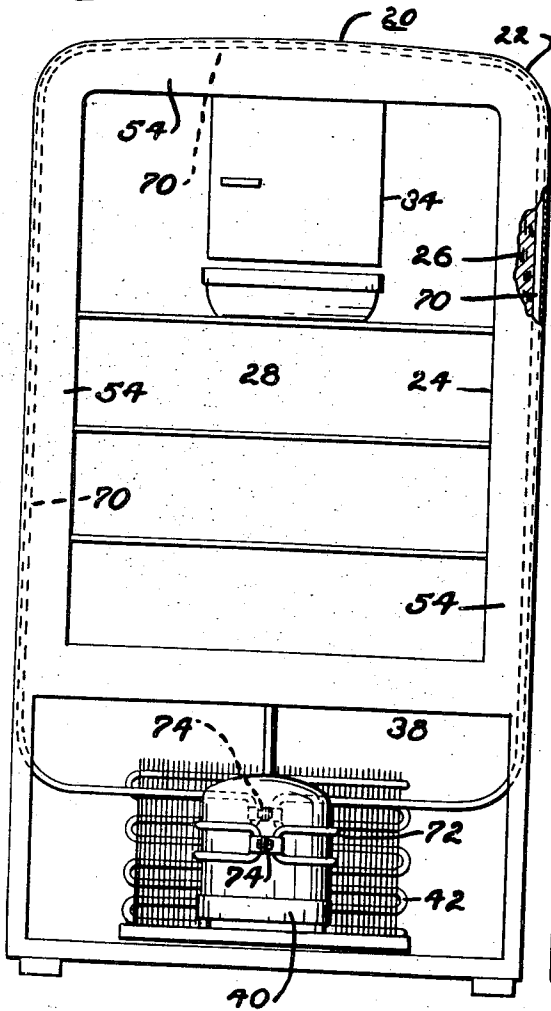


Fig. 2

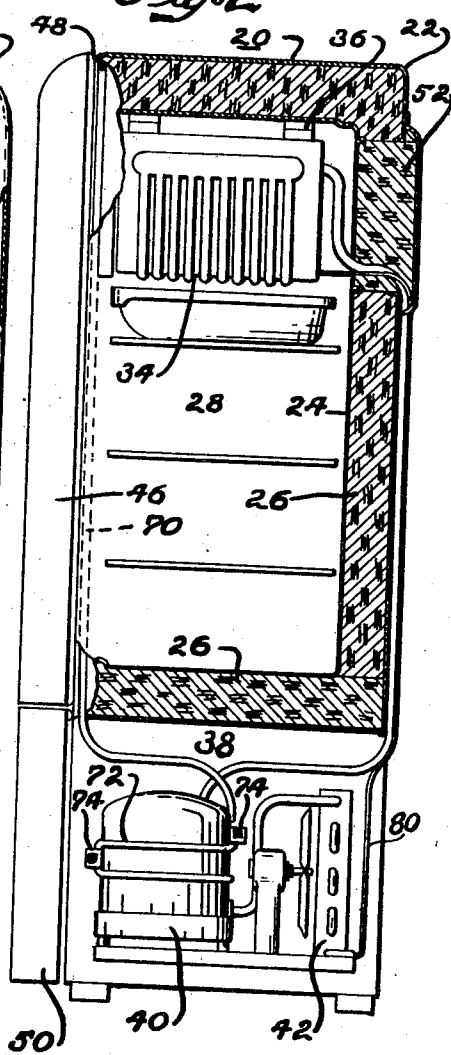
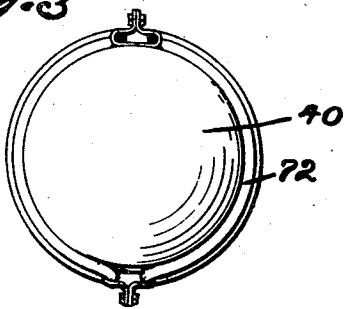


Fig. 3



INVENTOR.
LAWRENCE A. PHILIPP
BY
Ralph E. Baker
ATTORNEY

UNITED STATES PATENT OFFICE

2,444,667

REFRIGERATING APPARATUS

Lawrence A. Philipp, Detroit, Mich., assignor to
Nash-Kelvinator Corporation, Detroit, Mich.,
a corporation of Maryland

Application June 12, 1946, Serial No. 676,267

1 Claim. (Cl. 62-89)

1

The present invention relates to refrigerating apparatus.

It is an object of the present invention to provide means whereby the heat transmitted from the compressor shell may be directed to and dissipated through the front wall of the refrigerator cabinet.

Another object of the present invention is to provide a refrigerator cabinet wherein the food storage compartment is cooled by a primary refrigerating system, and a secondary refrigeration system is associated with said primary refrigeration system in the transmission of heat from the motor compressor of said primary system to the front walls of the cabinet, thereby cooling the motor compressor of said primary system and preventing the collection of moisture on the front walls of the cabinet.

In carrying out the foregoing object, it is another object of the present invention to make the primary refrigerating system removable from the cabinet so that it may be readily withdrawn in case of needed repairs while the secondary system remains within the cabinet inasmuch as it has no operating parts necessitating repairs.

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 the invention is clearly shown.

In the drawings:

Fig. 1 is a front view partly broken away and partly in elevation of a refrigerator embodying the features of the present invention;

Fig. 2 is a side view of a refrigerator in elevation and partly broken away showing the invention; and

Fig. 3 is a vertical view in elevation of a motor compressor embodying features of the present invention.

Referring to the drawings, and particularly to Figs. 1 and 2, there is shown a refrigerator cabinet, designated in general by the numeral 20. The cabinet includes an outer sheet metal casing 22 and an inner sheet metal liner 24. Suitable heat insulating material 26 is positioned between the outer casing 22 and the inner liner 24. The liner is adapted to form on its inner side thereof a food storage compartment 28. Within the food storage compartment I have positioned a removable evaporating section 34 affixed to the upper wall of the liner 24 by brackets 36. The outer metal casing 22 is extended so as to provide a machine compartment 38 adapted to house a

2

motor compressor unit 40 and a refrigerant condenser 42.

A door 46 having a gasket 48 serves as a closure member closing the opening to the food storage compartment 28. A suitable closure member 50 is provided to close the opening to the machine compartment.

A removable panel 52 is positioned in the rear wall of the refrigerator cabinet, thereby providing an opening through which the evaporating element 34 may be readily removed when the motor-compressor-condenser unit is removed from compartment 38.

As hereinbefore mentioned, outside air often will seep through the sealing gasket 48 and come in contact with the front wall 54 of the cabinet 20. Due to the low temperatures maintained in the food storage compartment the front wall 54 may be at a temperature lower than the dew point of the contacting air and, at such times, condensation will form on the front wall. In order to transmit heat to the affected sections I have provided a secondary refrigerating or closed refrigerant containing system in which the condenser 70 is in the form of a tubular rectangle bonded in heat exchange relation to the inside of the outer casing 22 at the front of the cabinet adjacent the door 46, and the evaporator 72 circumvents the motor compressor 40 and is removably clamped thereto by brackets 74.

The operation of the primary system is of a conventional manner, well known to those skilled in the art, wherein the motor compressor 40 evacuates vaporized refrigerant from the refrigerant evaporator 34, compressing it and delivering it to the condensing and liquefying element 42, whence it is liquified and delivered to the evaporator 34 by means of a small diameter or capillary tube 30 bonded in heat exchange relation with the vapor return conduit.

The secondary refrigerating system is a closed unit dependent upon circulation of refrigerant therein to changes of temperature of an outside source. The condenser 70, as hereinbefore stated, is bonded in heat exchange relationship with the outer casing 22 of the cabinet 20 and the evaporating portion 72 is removably affixed to motor compressor. Refrigerant absorbs heat transmitted from the motor compressor 40 and rises vertically within the condenser where the heat absorbed is dissipated through the outer casing 22 of the cabinet, thereby preventing the collection of moisture thereupon and providing a fixed path of circulation throughout the secondary system.

It will be readily seen by those skilled in the

3
 art that I have provided a simple and economical method of transferring heat emitted from a motor compressor to the front walls of a refrigerator cabinet, thereby preventing the collection of moisture thereupon and at the same time absorbing an appreciable amount of heat from the motor compressing unit.

In actual practice, the cabinet 20 would include a breaker strip between the outer casing 22 and the inner liner 24 like that disclosed in Patent No. 2,329,752 to Martin J. Goulooze, issued September 21, 1943, for Refrigerating apparatus.

Although only a preferred form of the invention has been illustrated, and that form described in detail, it will be apparent to those skilled in the art that various modifications may be made therein without departing from the spirit of the invention or from the scope of the appended claim.

I claim:

20 Refrigerating apparatus comprising a cabinet having a casing, said cabinet having an opening, a door for closing said opening, a unitary refrigerating system including a refrigerant evaporator,

4
 a condenser and a motor compressor unit removably mounted in said cabinet, a closed refrigerant containing system having a portion secured to said casing about said opening and two U-shaped portions arranged with one U-shaped portion being positioned on one side of said unit and the other of said U-shaped portions being positioned on the opposite side of said unit and a removable clamp engaging said U-shaped portions to removably hold said portions in engagement with said unit.

LAWRENCE A. PHILIPP.

REFERENCES CITED

15 The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,135,091	Newill	Nov. 1, 1938
2,141,918	Knight	Dec. 27, 1938
2,238,511	Thaxter	Apr. 15, 1941