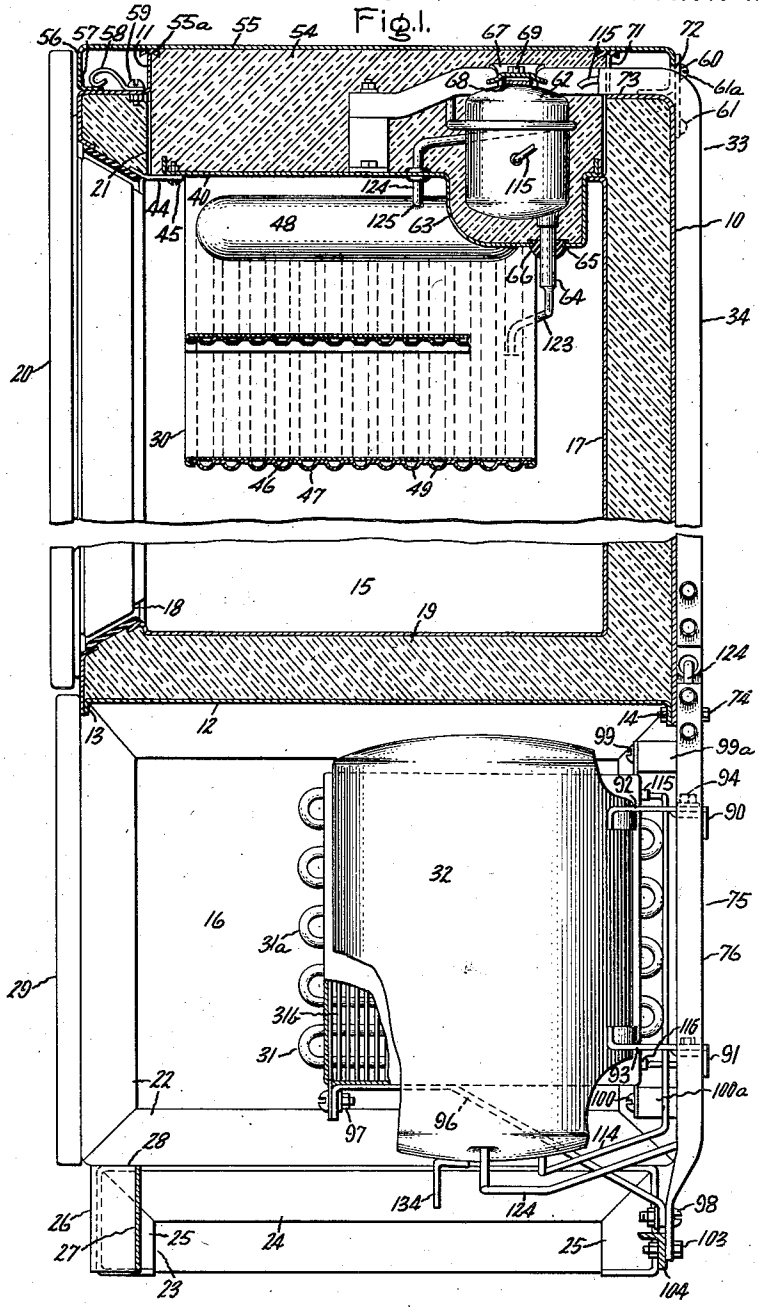
Feb. 18, 1936. L. W. ATCHISON 2,031,450

REFRIGERATOR

Filed May 22, 1935 2 Sheets-Sheet 1

Fig. 1.



Inventor:
Leonard W. Atchison,
by Harry E. Dunham
His Attorney.

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REFRIGERATOR

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Fig. 3.

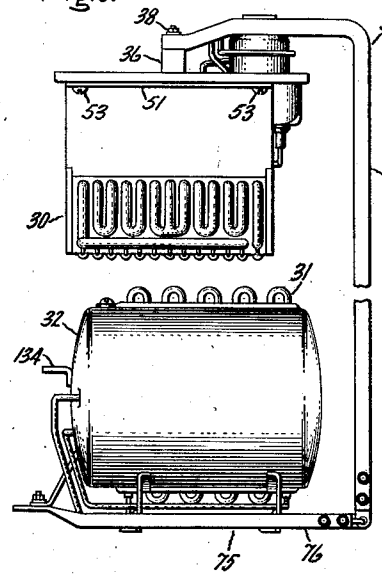


Fig. 2.

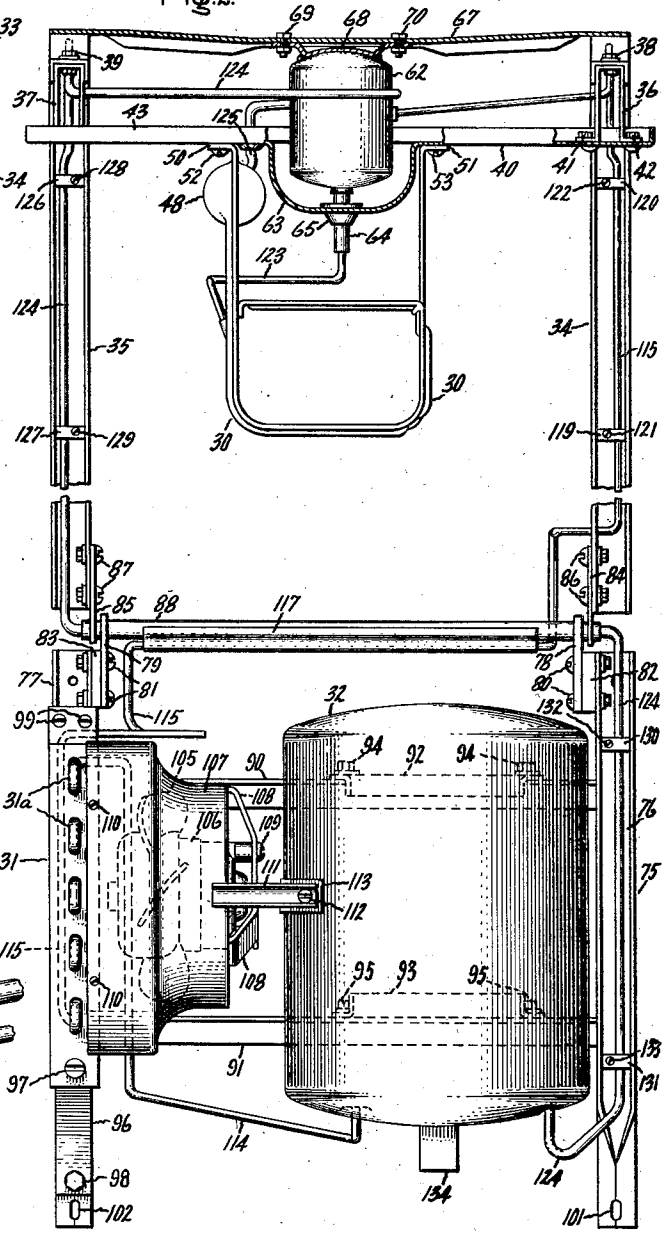
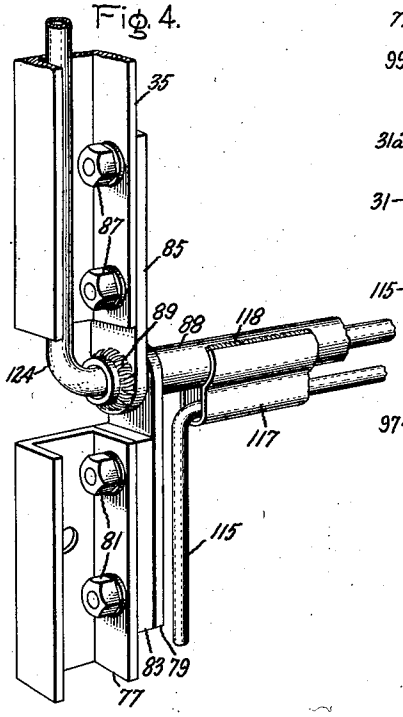


Fig. 4.



Inventor:
Leonard W. Atchison.
by Harry E. Dunham
His Attorney.

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UNITED STATES PATENT OFFICE

2,031,450

REFRIGERATOR

Leonard W. Atchison, Schenectady, N. Y., assignor to General Electric Company, a corporation of New York

Application May 22, 1935, Serial No. 22,763

17 Claims. (Cl. 62—116)

My invention relates to refrigerators.

Refrigerators, and especially those designed for domestic use, ordinarily include a heat insulated cabinet and a refrigerating machine associated therewith. Such a refrigerating machine ordinarily includes a refrigerant evaporator and a refrigerant circulatory unit. The refrigerant circulatory unit may be a part of the refrigerant liquefying unit which, in compression type refrigerating machines, includes a refrigerant compressor driven by an electric motor, or the like, and a condenser in which the compressed liquid refrigerant is liquefied. The cabinet of the refrigerator is ordinarily provided with a machinery compartment in which the motor driven compressor unit is located and a cooling compartment in which the evaporator is located. The liquefied refrigerant supplied to the evaporator is vaporized by heat abstracted from the cooling compartment. The condenser is preferably cooled by air in order to simplify the apparatus and may be located in the machinery compartment. It is desirable that the refrigerating machine for such a refrigerator be readily separable from the cabinet in order to facilitate the assembly and repair thereof. This separable refrigerating machine should be arranged in such manner that it may be charged with refrigerant at the factory, or other place of assembly, and the refrigerant connections between the various elements made in a permanent form at that time. The cabinet should be arranged to receive the refrigerating machine in such manner that the refrigerant connections need not be altered when the refrigerating machine is mounted on or dismounted from the cabinet.

It is an object of my invention to provide a refrigerator, of the type described, having an improved arrangement of the elements of the refrigerating machine therefor, in order that the refrigerating machine may be quickly and easily mounted on or dismounted from the cabinet of the refrigerator.

It is a further object of my invention to provide an improved separable refrigerating machine for a refrigerator, of the type described, which forms a strong, compact unit for purposes of shipment when separated from the cabinet, or the like, used therewith.

Further objects and advantages of my invention will become apparent as the following description proceeds and the features of novelty which characterize my invention will be pointed out with particularity in the claims annexed to and forming a part of this specification.

For a better understanding of my invention, reference may be had to the accompanying drawings in which Fig. 1 is a side elevation, partly in section, of a refrigerator embodying my invention; Fig. 2 is a front elevation of the separable refrigerating machine shown in connection with the refrigerator in Fig. 1; Fig. 3 is a side elevation, on reduced scale, of the separable refrigerating machine shown in Figs. 1 and 2, the parts thereof being arranged in position for shipment; and Fig. 4 is a fragmentary perspective view of the pivotal frame connection of the refrigerating machine shown in Figs. 1, 2 and 3.

Referring to the drawings, in Fig. 1 I have shown a refrigerator embodying my invention including a cabinet and a refrigerating machine. The cabinet includes a rectangular outer sheet metal shell 10 having a rectangular opening in the top thereof surrounded by a vertical flange 11. The shell 10 is provided with a horizontal imperforate sheet metal partition 12 therein which extends entirely across the interior of the lower portion of the cabinet. The front and rear edges of the partition 12 are provided with downwardly extending flanges 13 and 14, respectively, which are welded, or otherwise secured, to the front and rear wall of the shell 10. The partition 12 divides the space within the rectangular shell 10 into an upper cooling compartment 15 and a lower machinery compartment 16, respectively. The cooling or food compartment 15 is provided with an open top inner liner 17 which covers the bottom and side walls thereof, and is provided with an aperture 18 in the front wall thereof. The liner 17 is surrounded by heat insulation 19 and the aperture 18 in the front wall thereof, is closed by a heat insulated door 20. The edge of the heat insulation 19, surrounding the opening in the top of the liner 17 is covered by a cloth band 21. The front and rear walls of the outer shell 10 extend downwardly only to the bottoms of the flanges 13 and 14, respectively, of the horizontal partition 12. The lower edges of the sides of the shell 10 are folded back on themselves at 22, thus reinforcing the lower side walls of the shell 10.

The cabinet thus formed is supported upon and reinforced by a base 23. The base 23 is made of a rectangular frame formed by horizontal angle irons 24 supported on legs 25, the base being surrounded on the front and sides by a metal mopboard 26 secured to the base. The rear of the base 23 is open. The mopboard 26 has an inset portion 27 in the front thereof which permits cooling air to enter the machinery com-

partment 16 at 28. The horizontal angle irons 24 are welded, or otherwise rigidly secured, to the legs 25. The front, rear, and bottom of the machinery compartment 16 are thus open. The front wall of the machinery compartment 16 is covered by a removable rectangular panel 29, which extends entirely across the same. When the door 20 and the panel 29 are closed, the front of the cabinet thus presents a smooth surface which may be easily cleaned and which has a pleasing appearance.

The cabinet base construction, described above, is not my invention, but is the invention of Ralph E. King, and is described and claimed in his application, Serial No. 747,879, filed October 11, 1934, and assigned to the General Electric Company, the assignee of my present invention.

The cabinet described above is provided with a separable refrigerating machine including as its principal elements a refrigerant evaporator 30 and a refrigerant liquefying unit including a finned coil type air cooled condenser 31 and a refrigerant circulatory unit which, in the illustrative form of my invention, is a motor driven compressor unit contained in a hermetically sealed casing 32. Gaseous refrigerant is compressed by the motor driven compressor unit in the casing 32, is liquefied in the air cooled condenser 31 and is vaporized in the evaporator 30 by the absorption of heat from the contents of the cooling compartment 15. The vaporized refrigerant is then returned to the compressor unit contained in the casing 32 and the cycle is repeated until the contents of the cooling compartment 15 reaches a predetermined temperature. The operation of the apparatus is described more in detail below.

The evaporator 30 is supported in the cooling compartment 15 by securing the same to the inside of an inverted L-shaped frame 33 having a horizontal portion extending above the opening in the inner liner 17 of the cooling compartment 15 and a vertical portion extending along the exterior side of the rear wall of the cabinet. The frame 33 includes a pair of channel-shaped side members 34 and 35, shown in Fig. 2. A pair of depending U-shaped brackets 36 and 37 are secured to the upper ends of the side members 34 and 35 by bolts 38 and 39, respectively. The lower ends of the U-shaped bracket 36 are secured to a rectangular top liner 40 of the cooling compartment 15 by bolts 41 and 42. The top liner 40 is also rigidly secured to the lower ends of the bracket 37 by similar bolts. The top liner 40 is provided with an upstanding peripheral flange 43 and when in position in the cabinet is secured by a bolt 45 to a horizontal flange 44 formed on the top edge of the inner liner 17 of the cooling compartment 15 surrounding the opening in the top thereof, as illustrated in Fig. 1.

In the illustrative form of my invention, the evaporator 30 is of the flooded type and is made of sheet metal. This evaporator includes complementary inner and outer sheet metal portions 46 and 47, respectively. A horizontal header 48 is formed by indentations in the sheets 46 and 47 near the top of one side wall of the evaporator 30, and a series of refrigerant circulatory passages 49 communicating with the header 48 are formed by corrugations in the outer sheet 47 and the cooperating, smooth, inner sheet 46. The upper edges of the evaporator 30 are provided with outturned flanges 50 and 51 which are secured by bolts 52 and 53, respectively, to the removable top liner 40 of the cooling compartment 15. A layer or pad of loosely packed heat insulation 54 is placed above the top liner 40 and the rectangular opening in the top of the shell 10 surrounded by the flange 11 is closed by a flat sheet metal cover 55. The sheet metal cover 55 is provided with a downwardly extending peripheral flange 56 having an inturned portion 57 along the front edge thereof. The inturned edge 57 of the cover 55 is held in place by a spring clip 58, the inner end of which is secured to the top of shell 10 by a bolt 59. The rear edge of the cover 55 is held in place by clips 60 which are secured by a screw 61*a* to the rear portion of the flange 56 formed on the cover 55, and secured to the rear wall of the shell 10 by a machine screw 61. A rubber gasket 55*a* extending entirely about the top of the flange 11 is arranged between this flange and the cover 55.

A flow controlling float valve contained in a casing 62 is supported beneath the cover 55 in a cylindrical depression 63 formed in the rear portion of the top liner 40. The float valve casing 62 has an outlet extension 64 secured to the bottom thereof, which extends through a hole 65 formed in the bottom of the cylindrical depression 63 in the top liner 40. A rubber gasket 66 surrounds the portion of the outlet extension 64 passing through the hole 65 to seal the opening and reduce conduction of heat from the top liner 40. The float valve casing 62 is supported by a horizontal channel 67, the opposite ends of which are flattened and welded to the horizontal portions of the side members 34 and 35 of the frame 33. A strap 68 is welded to the top of the float valve casing 62, the opposite ends of the strap 68 being secured to the channel 67 by bolts 69 and 70.

The horizontal portions of the side members 34 and 35 of the L-shaped frame 33 pass through notches 71 and 72 provided in the rear portions of the flanges 11 and 56, respectively, and rest directly on the top of the rear wall of the cabinet formed by an inturned portion 73 of the outer shell 10.

A second frame 75 is pivotally connected to the lower end of the vertical legs or portion of the frame 33. The frame 75 includes a pair of channel-shaped side members 76 and 77, the upper ends of which are provided with straps 78 and 79, respectively, secured thereto by bolts 80 and 81, spacing blocks 82 and 83 being provided to align the upper and lower frames. A similar pair of straps 84 and 85 are secured to the lower ends of the side members 34 and 35, respectively, of the L-shaped frame 33 by bolts 86 and 87, respectively. The second frame 75 is pivotally connected to the frame 33 by a metal tube 88 extending through aligned holes in the overlapped ends of the straps 79 and 85 and also through registering holes in the straps 78 and 84. One end of the tube 88 is rigidly secured to the strap 85 preferably by welding as indicated at 89, in Fig. 4, and the opposite end of the tube 88 is similarly rigidly secured to the strap 84. The tube 88 fits loosely in the holes formed in the upper ends of the straps 78 and 79 so that the latter may swing freely thereon, the tube 88 forming a journal therefor. The upper ends of the channel shaped side members 76 and 77 are held in position on the cabinet by a pair of bolts 74 which pass through the adjacent portion of the shell 10 and flange 14 on the partition 12. The channel-shaped side members 76 and 77 of the frame 75 are connected by a pair of upper and

lower angle irons 90 and 91, respectively, the ends of which are welded thereto. Brackets 92 and 93 are provided on the upper and lower angle irons 90 and 91. The compressor casing 32 is supported on the brackets 92 and 93, the inner sides thereof being arcuate in shape and conforming to the rear wall of the casing 32, to which they are welded. The brackets 92 and 93 are secured to the angle irons 90 and 91 by bolts 94 and 95, respectively. The fin type air cooled condenser 31 is rectangular in shape and is provided at the lower side thereof with a bracket 96, the upper end of which is secured by a bolt 97 to the condenser 31 and the lower end of which is secured by a bolt 98 to the lower flattened end of the side member 77 of the frame 75. The upper and lower rear ends of the condenser 31 are secured to the side member 77 of the frame 75 by screws 99 and 100, respectively, which pass through spacing blocks 99*a* and 100*a*. The lower ends of the side members 76 and 77 of the frame 75 are flattened and provided with slots 101 and 102, respectively. Bolts 103 passing through the slots 101 and 102 firmly secure the lower ends of the side members 76 and 77 of the frame 75 to a horizontal angle iron 104, the opposite ends of which are welded to the legs 25 of the cabinet base 23.

A fan 105, driven by an electric motor 106, is provided for circulating cooling air in the machinery compartment 16 over the surface of the air cooled condenser 31 and over the casing 32 surrounding the motor driven refrigerant compressor. The fan 105 and its motor 106 are supported within a casing 107 by brackets 108. The brackets 108 are secured to the motor 106 by screws 109 and the outer ends of these brackets are welded to the casing 107. The larger or flared end of the casing 107 is square and conforms to the edges of the condenser 31 and is secured thereto by screws 110. The rear portion of the casing 107 and the motor driven fan contained therein are supported on the compressor casing 32 by a bracket 111. One end of the bracket 111 is welded to the fan casing 107 and the opposite end thereof is secured by a screw 112 to a support 113, which is welded to the side wall of the casing 32.

The refrigerant circuit of the refrigerating machine described includes a conduit 114, which connects the discharge side of the compressor contained in the casing 32 with the inlet 115 of the condenser 31. A flexible conduit 115 made of copper tubing, or the like, connects the outlet 116 of the condenser 31 with the float valve casing 62 for supplying liquid refrigerant thereto. The central portion of the conduit 115 is supported adjacent the line of movement of the pivotal connection between the adjacent ends of the frames 33 and 75 by a horizontal bracket 117, which is formed by a sheet of metal having a U-shaped cross section, the upper edges thereof being rigidly secured to the tube 88, preferably by welding as indicated at 118, in Fig. 4. The upper portion of the conduit 115 is protected by supporting the same within the channel-shaped side member 34 of the frame 33. Strips 119 and 120 secured to the side member 34 by screws 121 and 122, respectively, are provided for holding the conduit 115 in its proper position within the channel-shaped side member 34. A liquid line 123 connects the outlet 64 of the float valve casing 62 with the refrigerant circulatory passages 49 of the evaporator 30. A flexible suction conduit 124 made of copper tubing, or the like, communicates with the header 48 of the evaporator 30 at 125 above the normal liquid level therein, and is connected to the casing 32, which is at low pressure substantially the same as the pressure in the evaporator 30, so as to return vaporized refrigerant from the evaporator to the inlet of the compressor contained in the casing 32. It will be noted that the conduit 124 extends about the float valve casing 62 in heat conducting relationship therewith. The upper portion of the conduit 124 is supported in a channel-shaped side member 35 of the frame 33 being firmly held in position therein by strips 126 and 127, which are secured to the channel-shaped side member 35 by screws 128 and 129, respectively. The central portion of the flexible conduit 124 passes through the tube 88 which pivotally connects the frames 33 and 75. The lower portion of the conduit 124 is supported in the channel-shaped side member 76 of the lower frame 75 by strips 130 and 131 which are held in position by screws 132 and 133, respectively. The conduits 115 and 124 thus provide a flexible connection between the evaporator and the refrigerant liquefying unit which are rigidly supported on the frames 33 and 75, respectively.

In the operation of the refrigerating machine, described above, gaseous refrigerant is compressed by the motor driven compressor contained in the casing 32 and is discharged therefrom through the conduit 114 and enters the condenser 31 at its inlet 115. The compressed gaseous refrigerant circulates through the tortuous series passages formed in the condenser 31 by the tubes 31*a* and is liquefied by the transfer of heat therefrom to the cooling air which passes over the surface of the tubes 31*a*, the heat conducting fins 31*b* which are in heat exchange relationship therewith aiding in the transfer of heat therefrom. The fan 105 draws air across the surface of the condenser 31 and discharges the same against the adjacent wall of the compressor casing 32. The air in the machinery compartment 16 is thus repeatedly circulated over the surface of the condenser 31 and the compressor casing 32. As the air in the machinery compartment 16 is warmed by the transfer of heat thereto from the condenser 31 and the compressor casing 32 it escapes through the open rear wall of the machinery compartment and passes upwardly therefrom along the rear wall of the cabinet. The channel shaped side members 34 and 35 of the frame 33 space the rear side of the cabinet from any adjacent room wall or similar obstruction so that a free passage for warmed air is always available. Cool air enters the machinery compartment 16 through the opening 28 in the lower front portion thereof and aids in displacing the warmed air in the machinery compartment 16, a natural draft of cooling air being thus set up. The movement of the air set up by the fan 105 also aids in discharging air from the compartment 16. Part of the air discharged from the fan 105 is deflected to the open rear side of the compartment 16 by the casing 32. The refrigerant in the condenser 31, which is liquefied by the transfer of heat therefrom to the surrounding cooling air, drains by gravity to the lower portion thereof and is forced through the outlet 116 by the pressure of the high pressure refrigerant vapor in the condenser above the level of the liquid refrigerant therein and through the conduit 115 to the float valve casing 62. The liquid refrigerant accumulated in the float valve casing 62 is supplied to the evaporator 30 through

the liquid line 123 in sufficient quantity to maintain the header 48 about half full of liquid refrigerant. The refrigerant circulatory passages 49 are thus flooded with liquid refrigerant. The refrigerant, which is vaporized by the absorption of heat from the cooling compartment 15, is collected in the header 48 above the level of the liquid refrigerant contained therein, and is drawn off to the compressor contained in the casing 32 through the suction conduit 124 and the cycle is repeated continuously during operation of the machine.

The refrigerating machine described may be removed from the cabinet, or the like, used therewith for purposes of shipment and is preferably arranged for shipment with the compressor casing 32 and condenser 31 supported above the frame 33 in the position shown in Fig. 3. When in that position, the refrigerating machine occupies a minimum amount of space and is in such a position that an ordinary rectangular wooden shipping frame may be readily fitted thereto. When removing the refrigerating machine from the cabinet, the bolts 103 are removed from the rear horizontal angle iron 104 thus freeing the lower end of the frame 75. The bolts 74 which secure the upper end of the frame 75 to the rear of the cabinet are removed and the frame 75 may then be swung to the rear at an angle of say 90° with respect to the adjacent portion of the frame 33. The compressor casing 32, the condenser 31, and the associated cooling fan, which are all rigidly supported on the frame 75, are thus swung free of the machinery compartment 16 and of the cabinet base through the open rear wall thereof. An L-shaped foot 134 is provided on the bottom of the casing 32 being welded, or otherwise rigidly secured thereto in order to protect the adjacent portions of the conduits 114 and 124 from damage. The cover 55 is removed from the cabinet after removing the screws 61 and disengaging the clip 58. The pad of insulation 54 may be lifted out and the bolts 45, which normally hold the top liner 40 in position on the flange 44, are removed. The entire refrigerating machine is then moved vertically upward, thus removing the evaporator 30 from the cooling compartment 15. The frame 75 may then be swung back through 180° to the position shown in Fig. 3 and the refrigerating machine is then in proper position for shipment.

In assembling the refrigerating machine on the cabinet, the operations described above are reversed, that is, the frame 75 is swung backwardly through 180° from the position shown in Fig. 3 and the refrigerating machine is positioned adjacent the cabinet with the evaporator 30 above the opening in the top thereof. The evaporator 30 is then moved vertically downward into its position in the cooling compartment 15 and the top liner 40 is secured in position on the flange 44 by the bolts 45. The frame 75 is swung into alinement with the vertical portion of the frame 33 thus moving the refrigerant liquefaction unit into its proper position in the machinery compartment 16. The frame 75 is then fastened securely in position by the bolts 74 and 103. It is thus unnecessary to alter any of the refrigerant connections in mounting the refrigerating machine on its cabinet or dismounting the same therefrom. Since the central portions of the flexible conduits 124 and 115 are located closely adjacent the line of movement of the pivotal connection between the frames 33 and 75, the minimum amount of bending is imposed on the conduits during the relative movement of the frames 33 and 75 described above. The larger exhaust conduit 124 is preferably arranged at the center of the pivotal movement, that is through the center of the tube 88, in order that most of the bending imposed on the conduit will be in torsion. Since the conduits 115 and 124 extend substantially entirely across the frames 34 and 75 the torsional stress per unit length in the conduits is minimized when the frames are pivoted with respect to each other. When so arranged, I have found that the likelihood of the breakage of the conduits due to bending is minimized. The tube 88 and bracket 117 also protect the conduits 124 and 115, respectively, from damage.

While I have shown a particular embodiment of my invention in connection with a compression type refrigerating machine, I do not desire my invention to be limited to the particular construction shown and described and I intend, in the appended claims, to cover all modifications within the spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. In combination with a refrigerator cabinet provided with a machinery compartment and a cooling compartment, a refrigerating machine for said cabinet and separable therefrom comprising, means including a refrigerant evaporator for abstracting heat from said cooling compartment, a vertical frame extending along the exterior side of a vertical wall of said cabinet, a refrigerant circulating unit, means including a second frame pivotally connected to said first mentioned frame for supporting said refrigerant circulatory unit in said machinery compartment, and means for supplying refrigerant from said refrigerant circulatory unit to said evaporator.

2. In combination with a refrigerator cabinet provided with a machinery compartment having an opening in the rear wall thereof and a cooling compartment above said machinery compartment, a refrigerating machine for said cabinet and separable therefrom comprising means including a refrigerant evaporator for abstracting heat from said cooling compartment, a vertical frame extending along the exterior side of the rear wall of said cabinet, a refrigerant circulatory unit, means including a second frame pivotally connected to the lower portion of said first mentioned frame and extending into said opening for removably supporting said refrigerant circulatory unit in said machinery compartment, and means for supplying refrigerant from said refrigerant circulatory unit to said evaporator.

3. In combination with a refrigerator cabinet provided with a machinery compartment and a cooling compartment having an opening in the top thereof and arranged above said machinery compartment, a refrigerating machine for said cabinet and separable therefrom comprising means including a refrigerant evaporator for abstracting heat from said cooling compartment, means extending above said opening in said cooling compartment for removably supporting said evaporator therein, a vertical frame extending along the exterior side of the rear wall of said cabinet, a refrigerant circulatory unit, means including a second frame pivotally connected to the lower portion of said vertical frame for supporting said refrigerant circulatory unit in said machinery compartment, and means for supply-

ing refrigerant from said refrigerant circulatory unit to said evaporator.

4. In combination with a refrigerator cabinet provided with a machinery compartment having an opening in the rear wall thereof and a cooling compartment above said machinery compartment, a refrigerating machine for said cabinet and separable therefrom comprising means including a refrigerant evaporator for abstracting heat from said cooling compartment, a vertical frame having an upper laterally extending portion resting on the top of the rear wall of said cabinet, a refrigerant circulatory unit, means including a second frame pivotally connected to the lower portion of said first mentioned frame and extending into said opening for removably supporting said refrigerant circulatory unit in said machinery compartment, and means for supplying refrigerant from said refrigerant circulatory unit to said evaporator.

5. In combination with a refrigerator cabinet provided with a machinery compartment having an opening in the rear wall thereof and a cooling compartment having an opening in the top thereof and arranged above said machinery compartment, a refrigerating machine for said cabinet and separable therefrom comprising an L-shaped frame having a vertical portion extending along the exterior side of the rear wall of said cabinet and a horizontal portion resting on the top of said cabinet and extending above said opening in the top of said cooling compartment, a refrigerant evaporator, means for securing said evaporator to said horizontal portion of said frame, a refrigerant circulatory unit, means including a second frame pivotally connected to the lower portion of said first mentioned frame and extending adjacent said opening in the rear wall of said machinery compartment for removably supporting said refrigerant circulatory unit in said machinery compartment, and means for supplying refrigerant from said refrigerant circulatory unit to said evaporator.

6. In combination with a refrigerating cabinet provided with a machinery compartment and a cooling compartment above said machinery compartment, a refrigerating machine for said cabinet and separable therefrom comprising means including a refrigerant evaporator for abstracting heat from said cooling compartment, a vertical frame having channel-shaped side members extending along the exterior side of the rear wall of said cabinet and carried by said cabinet, a refrigerant circulatory unit, means including a second frame pivotally connected to said first mentioned frame for supporting said refrigerant circulatory unit in said machinery compartment, and means including a conduit supported in one of said channel-shaped side members for supplying refrigerant from said refrigerant circulatory unit to said evaporator.

7. In combination with a refrigerator cabinet provided with a machinery compartment having an opening in the rear wall thereof and a cooling compartment above said machinery compartment, a refrigerating machine for said cabinet and separable therefrom comprising means including a refrigerant evaporator for abstracting heat from said cooling compartment, a vertical frame extending along the exterior side of the rear wall of said cabinet, a second frame pivotally connected to the lower portion of said first mentioned frame, a refrigerant compressor unit secured to and extending laterally from said second frame into said machinery compartment, an air cooled condenser extending from said second frame into said machinery compartment, and means including a fan for circulating cooling air over said condenser and said compressor unit.

8. In combination with a refrigerator cabinet provided with a machinery compartment having an opening in the rear thereof and a cooling compartment having an opening in the top thereof and arranged above said machinery compartment, a refrigerating machine for said cabinet and separable therefrom comprising an L-shaped frame having a vertical portion extending along the exterior side of the rear wall of said cabinet and a horizontal portion extending above said opening in the top of said cooling compartment, a refrigerant evaporator, means for supporting said evaporator on said horizontal portion of said frame in said cooling compartment, a second frame pivotally connected to the lower portion of said vertical frame, a refrigerant compressor unit carried by said second frame and extending laterally therefrom into said machinery compartment, an air cooled condenser carried by and extending laterally from said second frame into said machinery compartment, and means including a fan for circulating cooling air over said condenser and said compressor unit.

9. A refrigerating machine separable from a cabinet or the like used therewith comprising a supporting frame, a refrigerant circulatory unit, a refrigerant evaporator mounted on said frame, a conduit connecting said refrigerant circulatory unit and said evaporator, a pivotal connection between said refrigerant circulatory unit and said frame, and means for supporting said conduit adjacent the center of movement of said pivotal connection.

10. A refrigerating machine separable from a cabinet or the like used therewith comprising a supporting frame, a refrigerant evaporator, means for supporting said evaporator at one end of said frame, a refrigerant circulatory unit, a conduit connecting said refrigerant circulatory unit and said evaporator, and means including a bearing having an opening therethrough through which said conduit passes for pivotally connecting said refrigerant circulatory unit to the end of said frame opposite said evaporator.

11. A refrigerating machine separable from a cabinet or the like used therewith comprising an L-shaped supporting frame, a refrigerant evaporator, means for supporting said evaporator on the inside of one of the legs of said L-shaped frame, a refrigerant circulatory unit, a conduit connecting said refrigerant circulatory unit and said evaporator, and means including a bearing having an opening therethrough through which said conduit passes for pivotally connecting said refrigerant circulatory unit to the other leg of said L-shaped frame.

12. A refrigerating machine separable from a cabinet or the like used therewith comprising a supporting frame, a refrigerant evaporator, means for supporting said evaporator at one end of said frame, a refrigerant liquefying unit including a motor driven compressor and an air cooled condenser, a conduit connecting said refrigerant liquefying unit and said evaporator, means including a bearing having an opening therethrough through which said conduit passes for pivotally connecting said refrigerant liquefying unit to the end of said frame opposite said evaporator.

13. A refrigerant machine separable from a cabinet or the like used therewith comprising an

L-shaped supporting frame, a refrigerant evaporator, means for rigidly supporting said evaporator on the inside of one of the legs of said L-shaped frame, a refrigerant liquefying unit including a motor driven refrigerant compressor and an air cooled condenser, a conduit connecting said refrigerant liquefying unit with said evaporator, and means including a bearing having an opening therethrough through which said conduit passes for pivotally connecting said refrigerant liquefying unit to the other leg of said L-shaped frame.

14. A refrigerating machine separable from a cabinet or the like used therewith comprising an L-shaped supporting frame having channel-shaped side members, a refrigerant evaporator, means for supporting said evaporator on the inside of one leg of said L-shaped frame, a refrigerant liquefying unit including a motor driven refrigerant compressor and an air cooled condenser, a conduit connecting said evaporator and said compressor, a second conduit connecting said evaporator and said condenser, means including said channel-shaped side members for supporting said conduits, and means including a bearing having an open center through which said first mentioned conduit passes for pivotally connecting said refrigerant liquefying unit to the other leg of said L-shaped frame.

15. A refrigerating machine separable from a cabinet or the like used therewith comprising a refrigerant circulatory unit, a refrigerant evaporator, a conduit connecting said refrigerant circulatory unit and said evaporator, a pivotal connection between said refrigerant circulatory unit and said evaporator, and means for supporting an intermediate portion of said conduit adjacent the center of movement of said pivotal connection.

16. A refrigerating machine separable from a cabinet or the like used therewith comprising a supporting frame, a refrigerant circulatory unit, a refrigerant evaporator mounted on said frame, a conduit connecting said refrigerant circulatory unit and said evaporator, a pivotal connection between said refrigerant circulatory unit and said frame, and means for supporting an extended portion of said conduit adjacent the center of movement of said pivotal connection.

17. A refrigerating machine separable from a cabinet or the like used therewith comprising a supporting frame, a refrigerant evaporator, means for supporting said evaporator at one end of said frame, a refrigerant circulatory unit, a conduit connecting said refrigerant circulatory unit and said evaporator, and means including spaced apart bearings having aligned openings therethrough located at the end of said frame opposite said evaporator for pivotally connecting said refrigerant circulatory unit to said frame, said conduit extending through said openings in said bearings with the portion thereof between said bearings extending substantially across said frame.

LEONARD W. ATCHISON.