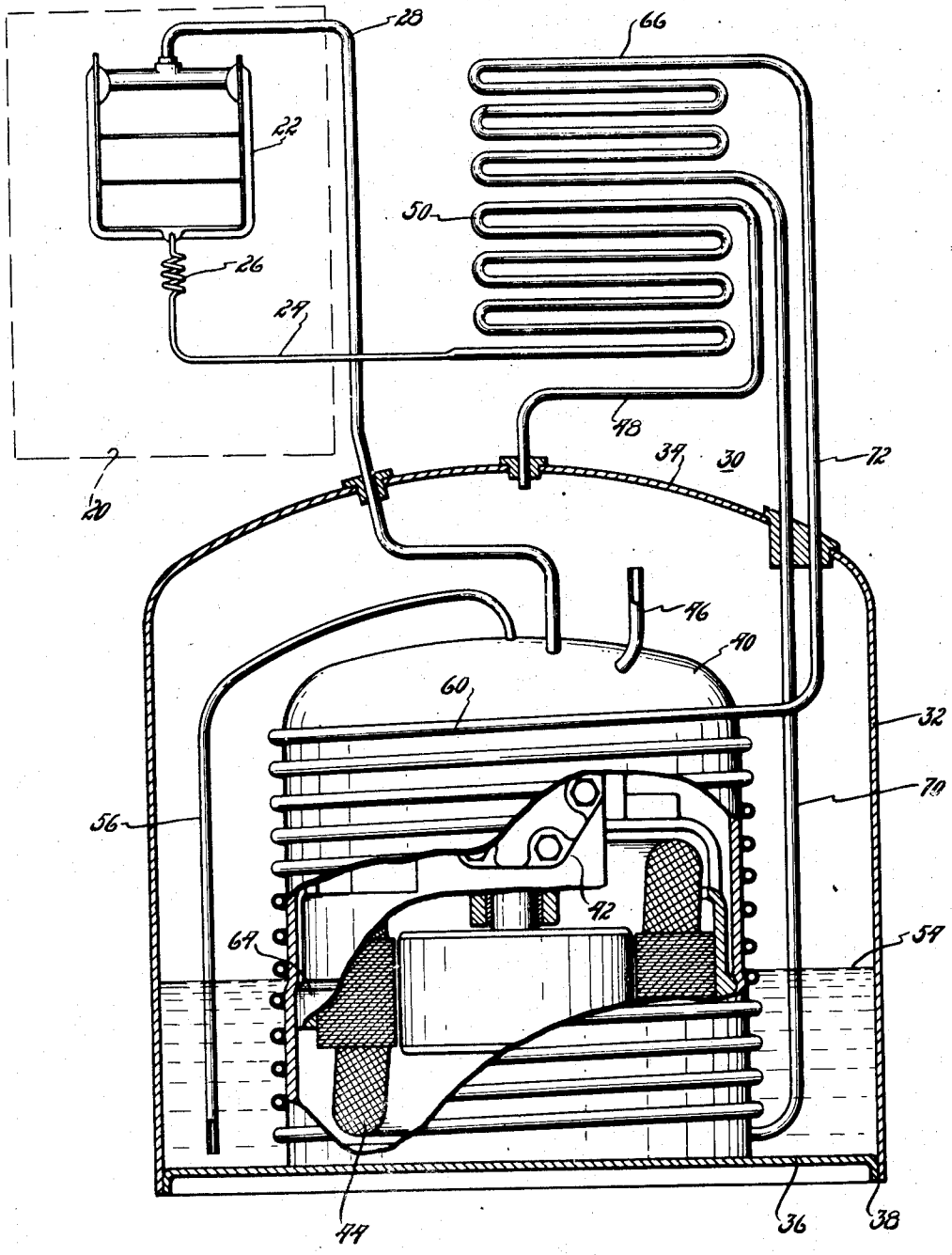
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REFRIGERATING APPARATUS

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REFRIGERATING APPARATUS

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2 Claims. (Cl. 62—115)

This invention relates to refrigerating apparatus and more particularly to the removal of heat from motor-compressor units employed in such apparatus.

One of the objects of my invention is to provide an improved arrangement for removing heat from a motor-compressor unit of a refrigerating system of the type wherein the unit is enclosed in a casing which stores lubricant for the system and which receives the discharge refrigerant from the compressor.

Another object is to provide an improved arrangement for removing heat from the lubricant in the aforesaid casing.

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

In the drawing:

The figure in the drawing is a schematic illustration of a refrigerating apparatus embodying features of my invention.

Referring to the drawing, the numeral 20 designates in general a compartment to be cooled which may be the food storage compartment of a household refrigerator. Within the compartment 20 there is shown a refrigerant evaporating unit 22 which is supplied with liquid refrigerant through conduit 24 under the control of a small diameter tube 26 which controls the amount of liquid refrigerant flowing into the evaporator 22. Gaseous refrigerant is withdrawn from the evaporator 22 through a vapor return conduit 28. The evaporator 22 is supplied with liquid refrigerant and the gaseous refrigerant is withdrawn therefrom by a condensing unit designated in general by the numeral 30.

The condensing unit 30 includes casing 32 which consists of a dome 34 and base member 36 which are preferably welded together as at 38 to form a sealed casing. Within the casing 32 is a second casing 40 which houses a compressor 42 and motor 44. Any suitable type of motor and compressor may be used as desired.

The compressor 42 withdraws evaporated refrigerant from the evaporator 22 through conduit 28 which extends through the casing 32 and leads to the intake of the compressor. The compressor compresses the evaporated refrigerant and discharges same through conduit 46 into the casing 32. The compressed refrigerant is then conducted through conduit 48 to a condenser 50 wherein the compressed refrigerant is condensed and from which it flows to conduit 24 into the evaporator 22.

The casing 32 forms a reservoir for lubricant, the level of which I have shown at 54. This lubricant is utilized for lubricating the compressor and since the lubricant is under the pressure of the discharge side of the compressor, lubricant will be forced through conduit 56 to movable elements of the compressor to lubricate same as is well understood in the art. Any surplus lubricant which enters the compressor will be discharged through discharge conduit 46 back into the casing 32 whence it will flow to the lower part thereof. The particular manner in which the compressor is lubricated forms no part of the present invention and further description thereof is deemed unnecessary.

In motor-compressor units which are enclosed within a casing it has been found that considerable heat is generated and that it is desirable to remove this heat for efficient operation of the unit. In the present invention I provide a coiled refrigerant containing conduit 60 which is wrapped around and in good thermal contact with the casing 40 so as to absorb heat from the motor and compressor within the casing 40. It is to be noted that the motor 44 and compressor 42 are supported by a common support 64 and that that common support is in contact with a wall of the casing 40 so as to transmit the heat from the motor and compressor to the casing 40. The conduit 60 also includes a portion 66 which extends outside of the casing 32 where it is exposed to the temperature of the environment air of the room in which the apparatus is located. If desired any suitable form of motor driven fan (not shown) may be used for blowing air over the condenser 50 and the portion 66 of the conduit 60. This causes the refrigerant in the conduit 60 to be condensed in the portion 66 whence it returns through return portion 70 of conduit 60 to the lower part of the casing 40 and as it evaporates will rise upwardly and pass through portion 72 of the conduit 60 to portion 66.

Some of the heat generated by the motor-compressor unit will pass to the body of lubricant in the lower part of casing 32 and since the conduit 60 which is wrapped around the casing 40 is immersed in the body of lubricant in the casing 32, the refrigerating effect of the conduit 60 aids in dissipating the heat from the lubricant since the heat of the lubricant is absorbed in the refrigerant in the conduit 60 and passes to the condenser 66 where such heat is dissipated.

From the foregoing it will readily be apparent

that I have provided an improved arrangement for removing heat from a motor-compressor unit of a refrigerating system of the type wherein the motor-compressor unit is enclosed in a casing which stores lubricant for the system and which receives the discharge refrigerant from the compressor and that the heat of the lubricant is removed also.

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 claims.

I claim:

1. Refrigerating apparatus comprising a motor-compressor unit, a casing enclosing said unit and being arranged in heat exchange relation therewith, a second casing enclosing the first casing for receiving refrigerant discharged by said compressor and being adapted to contain a quantity of lubricant, a condenser for condensing said refrigerant, and a volatile refrigerant containing member extending into said lubricant and being directly secured to said first casing adjacent said motor and said compressor for absorbing heat therefrom and including a condensing portion disposed exteriorly of said second casing.

2. Refrigerating apparatus comprising a motor-compressor unit, a casing enclosing said unit and being arranged in heat exchange relation therewith, a second casing enclosing the first casing for receiving refrigerant discharged by said compressor and being adapted to contain a quantity of lubricant, a condenser for condensing said refrigerant, a volatile refrigerant containing member extending into said lubricant and being directly secured to said first casing adjacent said motor and said compressor for absorbing heat therefrom and including a condensing portion disposed exteriorly of said second casing, and means for conducting the cooled lubricant to said motor compressor unit.

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