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H. H. SCHUTZ

1,831,825

COOLING DEVICE

Filed July 10, 1926

2 Sheets-Sheet 1

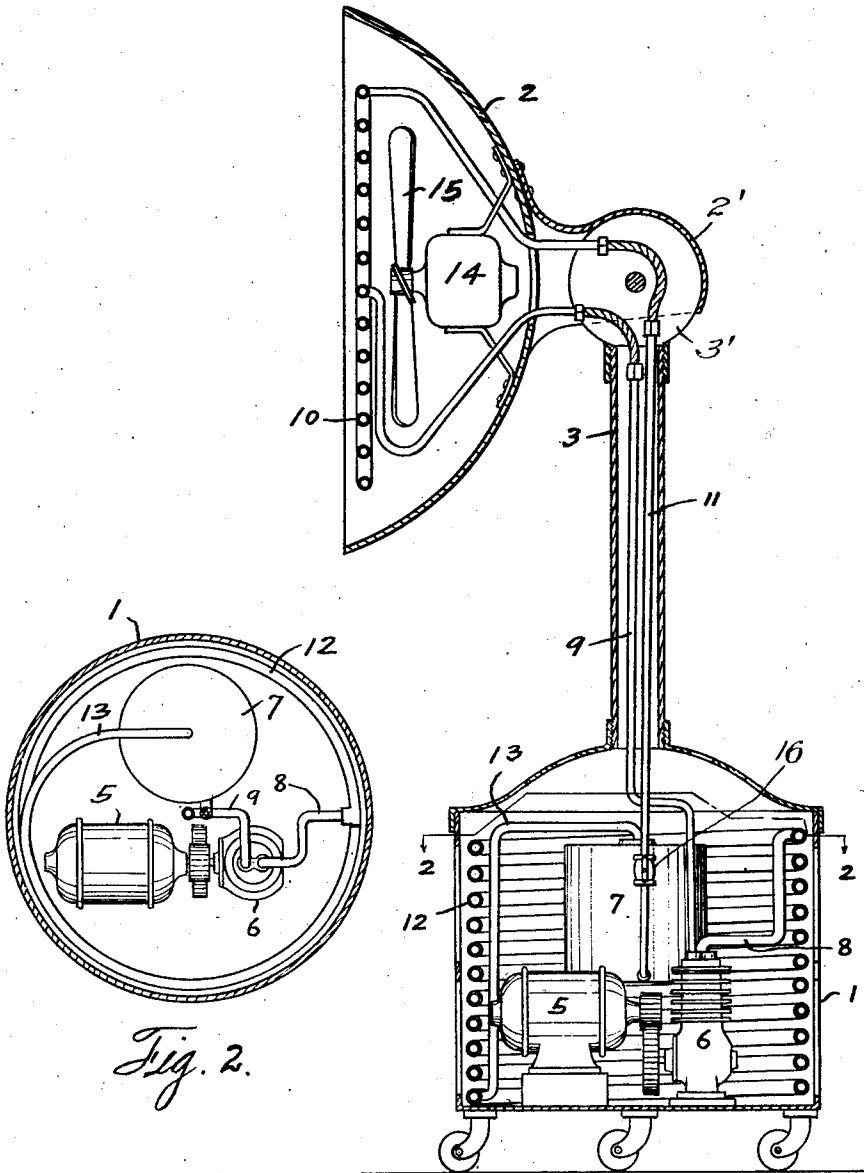


Fig. 2.

Fig. 1.

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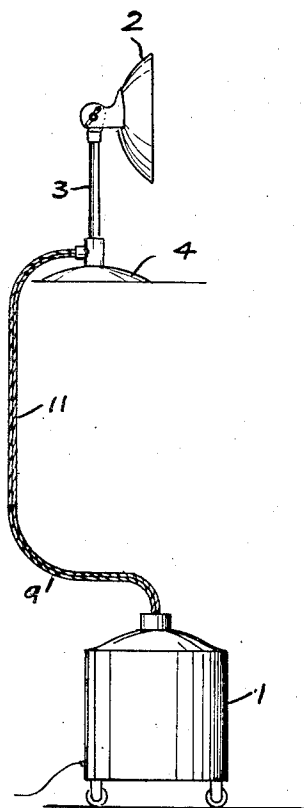


Fig. 4.

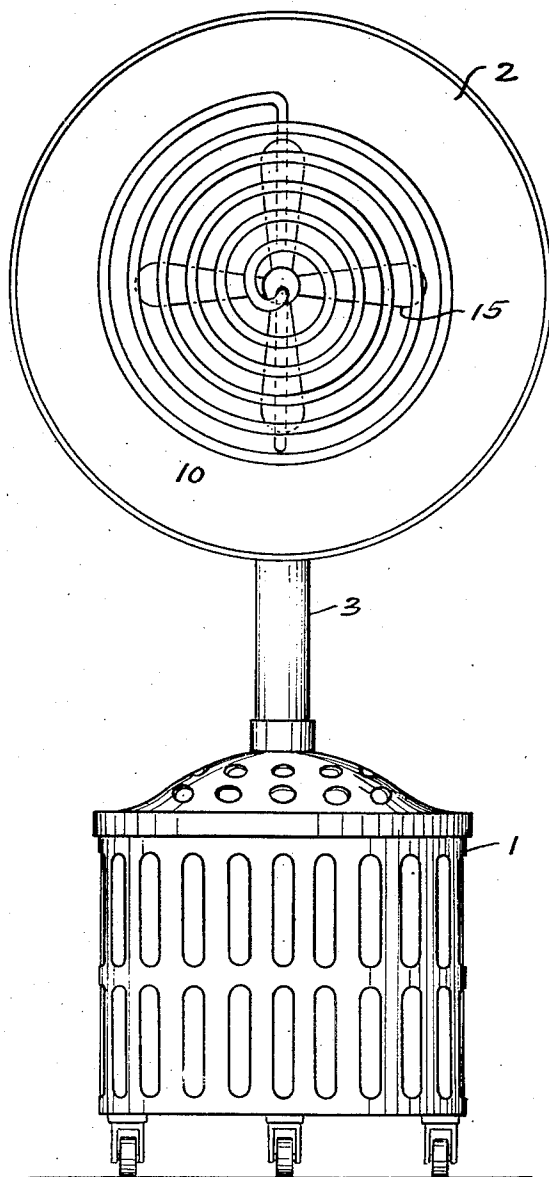


Fig. 3.

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COOLING DEVICE

Application filed July 10, 1926. Serial No. 121,666.

This invention relates to new and useful improvements in a cooling device.

One object of the invention is to provide a cooling device of the character described, specially designed for use in buildings, and rooms for the purpose of maintaining a low temperature therein.

Another object of the invention is to provide a device of the character described embodying the use of an evaporation coil and means for inducing the circulation of a refrigerant therethrough by the evaporation of which, in said coil, the atmosphere surrounding said coil will be cooled.

A further feature of the invention resides in the provision of a portable device, of convenient construction and arrangement whereby ammonia or some other suitable refrigerant may be utilized through the instrumentality of coils to lower the temperature of the surrounding atmosphere.

With the above and other objects in view the invention has particular relation to certain novel features of construction, operation and arrangement of parts, an example of which is given in this specification and illustrated in the accompanying drawings wherein:—

Figure 1 shows a vertical sectional view of the device.

Figure 2 shows a cross sectional view, taken on the line 2—2 of Figure 1.

Figure 3 shows a front elevation of the device, and

Figure 4 shows the side view of a modified form of the device.

Referring now more particularly to the drawings, wherein like numerals of reference designate similar parts in each of the figures the numeral 1 designates a suitable housing, preferably mounted on casters so that it will be portable and located outside of the room to be cooled. The housing may be in the form of an open-work cage-like structure, as illustrated in Figures 1 and 3. The numeral 2 designates a concavo-convex deflector which is connected to the upper end of a tubular support 3. The upper end of the support 3 carries a ball 3' and the deflector has a socket member 2' which receives this ball

and forms therewith a ball and socket joint. This support may be connected to the top of the housing 1, if desired, as shown in Figures 1 and 3, or it may be mounted on a separate pedestal 4, if desired, as shown in Figure 4. This deflector 2 is intended to deflect the cold air in any desired direction.

Within the housing 1 there is an electric motor 5 which is operatively connected, in the conventional manner shown, with the conventional type of compressor 6. There is also a tank 7 within the housing 1 provided as a receiver for a suitable liquid refrigerant such as ammonia. An outlet pipe 8 leads from the compressor 6 and leading into the compressor there is a delivery line 9 which leads through the tubular support 3 and is formed into a helical evaporation coil 10 within the deflector 2 and is connected with a flow line 11 which is located in said support 3 and is connected into the top portion of the tank 7. The pipe 8 is formed into a spiralled condenser coil 12 which in turn is connected into the top of the tank 7, through the pipe 13. A suitable expansion valve 16 is incorporated into the line 11.

The gaseous refrigerant is withdrawn from the coil 10 through the line 9 by the compressor 6 and is then delivered through pipe 8 to the condenser coil 12 where it is liquefied. From the condenser coil 12 the liquefied gas flows to the receiver tank 7, through pipe 13 and passes thence through the line 11, to the evaporation coil 10 in which it evaporates assuming the form of gas. The temperature of the coil 10 and the surrounding atmosphere will be thereby lowered.

Mounted within the deflector 2 there is the blow fan 15 mounted behind the coil 10 in the deflector and adapted to blow the cool air out into the room.

What I claim is:—

A combination with a housing, of a support, a concave-convex deflector having an adjustable universal connection with the upper end of said support and provided with an opening, a compressor in the housing, an electric motor having a driving connection with the compressor, a refrigerant tank within the housing, a liquid supply pipe

leading from said tank to a helical evaporator coil in said deflector, a gas suction pipe leading from the evaporator to the compressor, a spiralled condenser coil connected
5 between the compressor and the refrigerant tank and an air current generator within the deflector behind the evaporator coil so that air will be drawn through said opening and forced through the evaporator coil.

10 In testimony whereof I have signed my name to this specification.

HARRY H. SCHUTZ.

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