

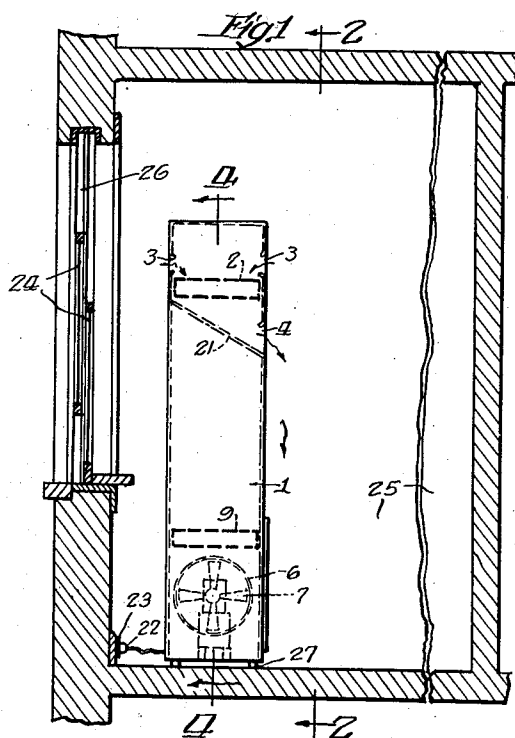
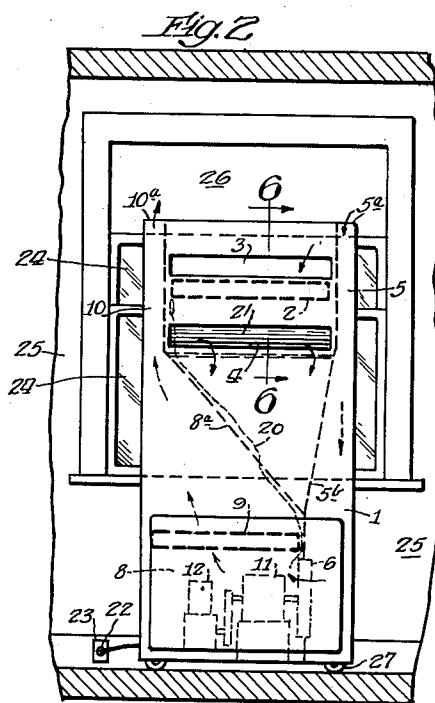
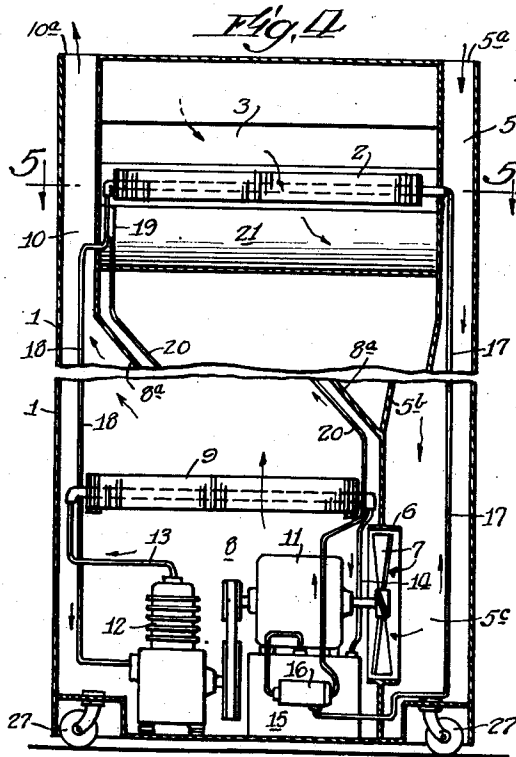
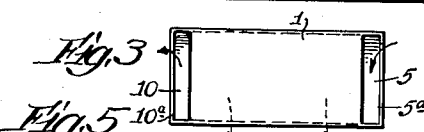
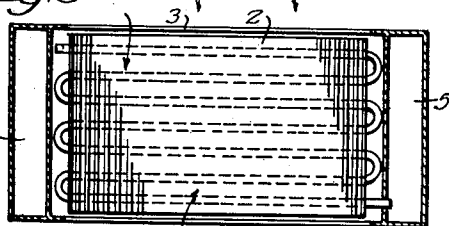
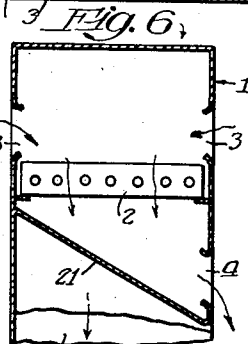
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2,154,466

AIR COOLING AND CIRCULATING DEVICE

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AIR COOLING AND CIRCULATING DEVICE

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3 Claims. (Cl. 62-129)

This invention relates to improvements in air cooling and circulating devices and has for its object to provide a new and improved device of this description.

5 The invention has as a further object to provide an air cooling and circulating device particularly adapted for cooling rooms. The invention has as a further object to provide an air cooling and circulating device which is portable and which may
10 easily be moved from room to room. The invention has as a further object to provide an air cooling and circulating device for cooling rooms when one or more of the windows are open. The invention has as a further object to provide an air
15 cooling and circulating device for rooms, whereby the entire refrigerating apparatus is in the room and which is provided with means for disposing of the heat of the refrigerating apparatus at a point above the cooled portion of the room.
20 The invention has as a further object to provide a simple, cheap and effective air cooling and circulating device for cooling rooms in buildings and particularly adapted for use where it is desirable to have ventilation by means of an open window.
25 The invention has other objects which are more particularly pointed out in the accompanying description.

Referring now to the drawing, Fig. 1 is a side view of one form of device embodying the invention, shown in the room of a building, with parts
30 omitted and broken away;

Fig. 2 is a section taken on line 2-2 of Fig. 1;

Fig. 3 is a plan view of the device shown in Fig. 2;

35 Fig. 4 is an enlarged cross sectional view taken on line 4-4 of Fig. 1 and having the central portion broken away;—

Fig. 5 is a sectional view taken on line 5-5 of Fig. 4;

40 Fig. 6 is an enlarged sectional view taken on line 6-6 of Fig. 2.

Like numerals refer to like parts throughout the several figures.

Referring now to the drawing, there is illustrated a cabinet or case 1 located in the room. Within this case is contained a refrigerating apparatus. A cooling element 2, and there may be one or more of them, is located in the cabinet below the upper end thereof and there is an opening 3 into which the air to be cooled passes. This
50 air being then cooled by the cooling element, passes out of the opening 4 into the room so as to cool the room. The cabinet is provided with a conduit or duct 5 which has its upper admission
55 end 5a located on a higher level than the open-

ing 3. This duct is preferably enlarged at its lower end to provide a chamber 5c and which has a wall 5b, the duct leading to the fan shroud 6. A fan 7 draws the air through this duct into a chamber 8, which has a wall 8a, and causes the
5 air to pass into contact with the condenser 9 of the refrigerating apparatus, removing heat therefrom so as to cool the condenser, the warm air passing out through the duct or conduit 10, the upper end 10a of which is located in a higher
10 horizontal plane than the opening 3.

The fan 7 is operated by a suitable motor 11 which may also drive the compressor 12. There is a liquid line connection 13 between the compressor and the condenser and a pipe line 14 from
15 the outlet of the condenser to the liquid receiver 15. The outlet of the liquid receiver 15 is connected to the expansion valve 16, which in turn is connected by the pipe 17 to the inlet of the cooling element 2. A pipe 18 connects the outlet
20 of the cooling element to the suction inlet of the compressor 12. For controlling the temperature of the cooling element, there is provided a gas filled bulb 19 connected through the capillary tube 20 to the expansion valve 16. A deflector
25 plate 21 under the cooling element guides the cold air out through the opening 4 and retains any condensation from the cooling element, see Fig. 6.

Any suitable refrigerating apparatus may be used and any suitable means for driving it may
30 also be used. When an electric motor is used, as illustrated, it may be plugged into any socket in the room and I have illustrated a plug 22 connected with the motor and connected to an outlet or socket 23 in the baseboard.

In this case the window is shown open at the top, the upper sash 24 being moved downwardly to secure this opening 25 for the purpose of ventilating the room 25 in which the apparatus is located. Any number of windows may be used
40 desired. I prefer to have the entire apparatus portable and for this purpose I prefer to have it mounted upon some suitable means for making it easily portable, as for example the wheels 27, so that it can be easily moved to any position in
45 the room and from room to room.

I have described in detail a particular construction embodying the invention, but it is of course evident that the parts may be varied in many particulars without departing from the
50 spirit of the invention as embodied in the claims hereto appended, and I therefore do not limit myself to the particular construction shown.

I claim:

1. An air cooling and circulating device com-

prising a cabinet located in the room to be cooled, a condenser in the lower part of the cabinet, two passageways in the cabinet extending from the condenser to the upper part of the cabinet for conducting air from the upper part of the room to the condenser and back to the upper part of the room and an evaporator in the upper part of the cabinet which induces air, from a point below the point where the warm air from the condenser is discharged into the room, to flow over said evaporator by thermosyphonic action, the air flowing over said evaporator being cooled thereby and discharged into the lower part of the room, said cooled and discharged air causing the warmer air in the lower part of the room to rise by thermosyphonic action and forming a zone of conditioned air below the top of the cabinet.

2. An air cooling and circulating device comprising a cabinet located in the room to be cooled, a condenser in the lower part of the cabinet, two passageways in the cabinet extending from the condenser to the upper part of the cabinet for conducting air from the upper part of the room to the condenser and back to the upper part of the room and an evaporator in the upper part of the cabinet which induces air, from a point below the point where air passing to the condenser enters the cabinet and also below the point where the warm air from the condenser is discharged into the room, to flow over said evaporator by

thermosyphonic action, the air flowing over said evaporator being cooled thereby and discharged into the lower part of the room, said cooled and discharged air causing the warmer air in the lower part of the room to rise by thermosyphonic action, and forming a zone of conditioned air below the top of the cabinet.

3. An air cooling and circulating device comprising a cabinet located in the room to be cooled, an evaporator in the upper part of the cabinet, said cabinet having an air admission opening for admitting air from the upper part of the room into contact with said evaporator, said cabinet having a discharge opening through which air cooled by the evaporator passes, said evaporator inducing air to flow over it by thermosyphonic action and out of said cabinet into the lower part of the room and displace the warmer air in the lower part of the room without drafts and cause said warmer air to move to the upper part of the room, a compressor in the lower part of the cabinet and two separate passageways in the cabinet, extending from the compressor to the upper part of the cabinet, one passageway conducting air from the upper part of the room to the compressor to cool the compressor, the other conducting air heated by the compressor to the upper part of the room above the point where the air passes to the evaporator.

WILLARD L. MORRISON.