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E. HAMBLETON

2,132,263

AIR CONDITIONER

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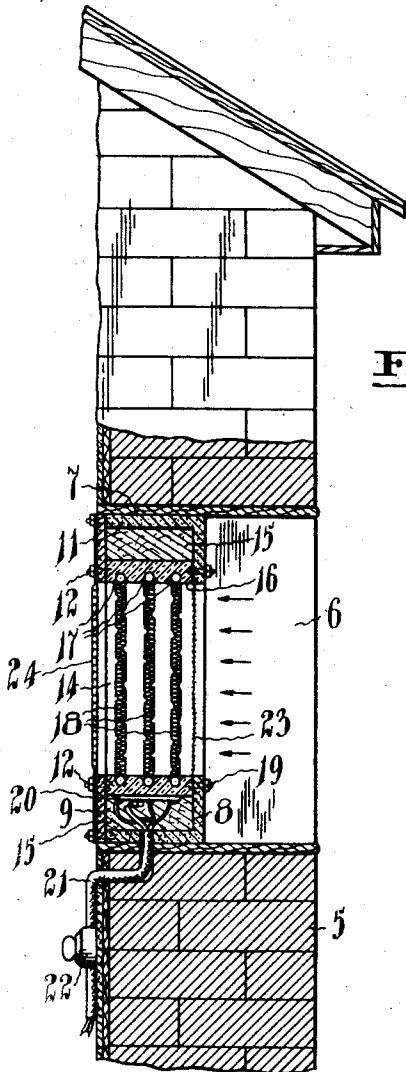


Fig. 1.

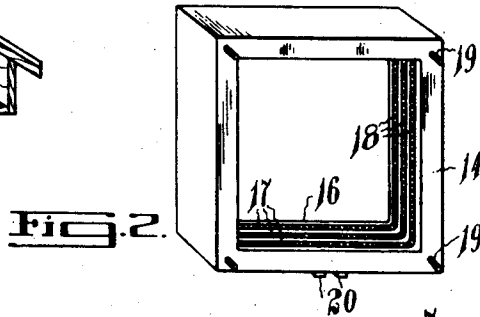


Fig. 2.

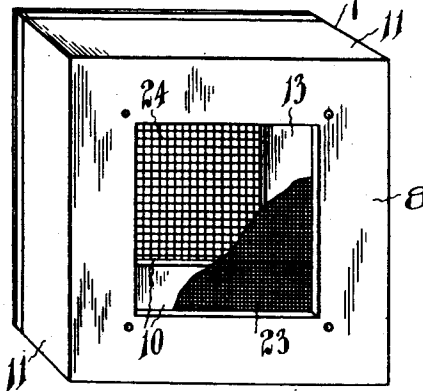


Fig. 3.

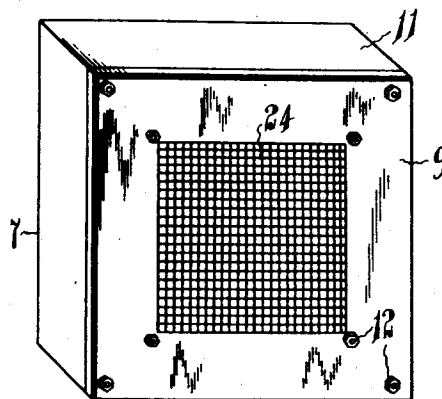


Fig. 4.

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UNITED STATES PATENT OFFICE

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AIR CONDITIONER

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Application January 7, 1938, Serial No. 183,822

1 Claim. (Cl. 219—38)

The invention relates to improvements in air conditioners for dwellings as described in the present specification and shown in the accompanying drawing that forms part of the same.

5 The paramount object of my invention is to produce an appliance of this nature incorporating a casing having a central air intake with an encompassing electric heating element for suitably heating admitted air. The device is
10 adapted to be installed in an outer wall of a room for ventilation purposes, whereby inflow of fresh air may be heated to the desired degree in cool weather. It is intended that the installation shall be effected by preparing an opening in a wall
15 receptive to the device which will be mounted therein in permanent manner.

A further object of the invention is to produce a compact and comparatively inexpensive device which will be serviceable and reliable for the purpose for which it is designed.

20 The invention consists in the novel construction and arrangement of parts as described in the ensuing detailed description, shown in the accompanying drawing and claimed in the appended claim.

Referring to the accompanying drawing,

Figure 1 is an elevation partially in section of a wall showing the air conditioner installed therein.

30 Figure 2 is a perspective view of the heating element.

Figure 3 is a perspective view of the casing in which part of an outer screen is shown broken away.

35 Figure 4 is a similar view of the casing but viewed from its inner side.

Like numerals of reference indicate corresponding parts in each figure of the drawing.

40 In the drawing, the reference numeral 5 denotes an outer wall of a dwelling forming a part of a room subject to air conditioning by the present invention. To provide for installation of the device, an aperture 6 is formed in the wall receptive to the casing 7 which is permanently applied in approved manner. The inner facing of
45 the casing is desirably disposed substantially flush with the inner face of the wall.

In the preferred construction, the casing is composed of a cement box of a greater width than depth, and is of a rectangular configuration. Both the outer wall 8 and the inner wall 9 are formed with substantial rectangular openings 10 centrally disposed in register with each other. The outer wall 8 may and will be constructed
55 integral with the side or peripheral walls 11,

while the inner wall 9 is detachably applied to the peripheral walls; which is effected by the studs and nuts 12.

The casing thus provides a central air passage together with an encompassing chamber 13. A
5 heating element 14, of the electric type, is mounted at the inner edges of the passage, which leaves a surrounding space that is packed with heat insulating material represented at 15. This precludes heat loss through conduction and con-
10 fines the heat to the passage through which unvitiated air is admitted.

The heating element is composed of a hollow rectangular mount 16 having flat side walls of which the inner faces are supplied with a plu-
15 rality of grooves 17 in which is disposed resistance wire 18 in conventional coil formation. The coils of wire are arranged in rows extending around the four inner faces of the mount which may be of porcelain or other electric insulating
20 material.

The mount is of a width to contiguously fit between the walls 8 and 9, and in order to secure it in place its side edges are supplied with projecting studs as at 19 inserted in holes and se-
25 cured by nuts. Such securing means may of course be modified in accordance with circumstances of manufacture. The resistance wires aforesaid may be connected to a source of current supply in a manner well understood in the
30 electric art, such as by terminal connections indicated at 20 and the wiring 21 leading to the switch 22.

To preclude entrance of dust, et cetera, in the air ingress passage, a fine screen 23 is employed
35 at the outer wall 8 and clamped between it and the adjoining edge face of the mount. At the inner side wall 9 is a grille 24 secured by the fastening elements passing therethrough.

It will be manifest from the preceding de-
40 scription that the invention produces a simple and practical air conditioner most suitable for average homes; that the device provides for an adequate supply of fresh air into a room and for the heating of air admitted through the passage-
45 way for circulation by convection or otherwise.

Furthermore, it will be understood that whilst the invention has been shown and described in its application for permanent installation in a
50 wall aperture, it is also susceptible of use in a window opening of a house, railway car, et cetera; additionally, it could be mounted in an opening cut in a windshield of a motor car, in which case it is suggested that the screen 23 be composed of
55

several layers of wire mesh material such as to offer considerable resistance to air inflow.

What I claim is:

An air conditioner adapted for installation in
5 an aperture of a wall or the like, comprising a box-like casing of rectangular configuration having a peripheral wall, an outer wall and an inner wall, the outer and inner walls having rectangular openings centrally disposed in register with each
10 other and one of these walls being detachably secured to the peripheral wall, the casing providing a central air passage with an encompassing chamber, an electric heating element disposed in the chamber composed of a hollow rectangular
15 mount of electric insulating material

consisting of flat side walls contiguously extending between the aforesaid outer and inner walls at the edges of the openings therein, the flat side walls having inner faces supplied with a plurality of grooves, resistance wires disposed in the
5 grooves in the form of coils, terminals therefor, fastening elements securing the said mount to the aforesaid outer and inner walls, a wire mesh screen clamped between the mount and the outer wall to cover the opening in the latter, a grill
10 attached to the inner wall to cover the opening therein, and heat insulating material lodged in the chamber of the casing surrounding the heating element.

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