May 6, 1947. M. J. COOPER 2,420,123

HEAT CIRCULATING DEVICE

Filed Aug. 21, 1943

Fig. 1.

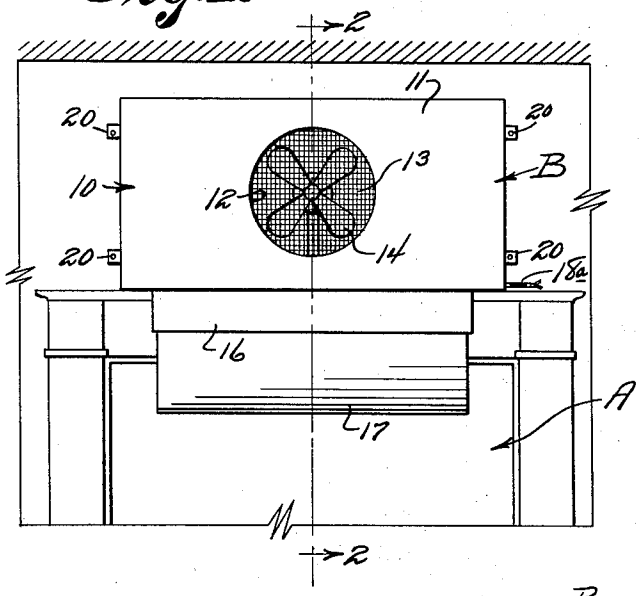


Fig. 2.

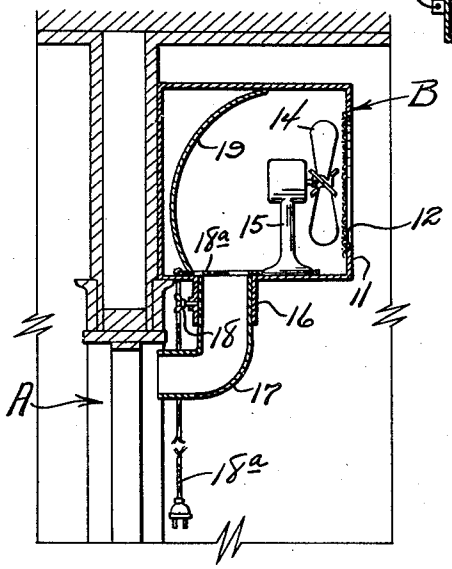


Fig. 3.

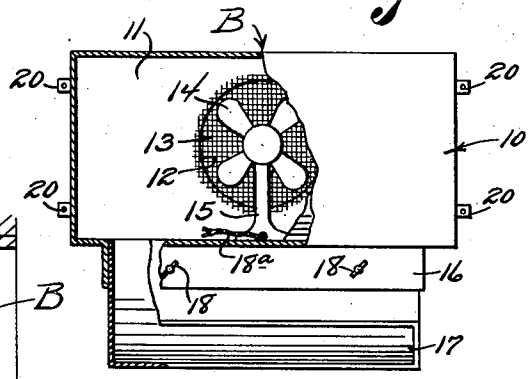
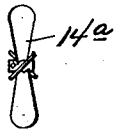


Fig. 4.



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HEAT CIRCULATING DEVICE

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1 Claim. (Cl. 98—39)

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The invention relates to a heat circulating device.

The primary object of the invention is the provision of a device of this character wherein the same will circulate warm air which has risen and ordinarily is trapped near the ceiling of an enclosure in a building, that is to say a room, hallway or the like, forcing it into an adjacent room or enclosure for the purpose of raising the temperature of the latter and by the use of such device a source of heat such as a furnace, stove, radiator or the like may be employed to heat an adjacent room or a battery of the devices may be used to circulate warm air from the upper part of a heated room through other distant rooms.

Another object of the invention is the provision of a device of this character wherein its construction is such that the same is readily portable, being easily detached, and attached at will, there being provided an electric cord and plug connection to permit it to be connected with the electric outlet within an enclosure and thereby eliminating permanent wiring connections for installation.

Another object of the invention is the provision of a device of this character which is simple in its construction, thoroughly reliable and efficient in operation, neat in appearance, it being inconspicuous in that it is adaptable for placement above the level of a doorway, not occupying space otherwise ordinarily used, and inexpensive to manufacture and install.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described in detail, illustrated in the accompanying drawings, which discloses the preferred embodiment of the invention and pointed out in the claims hereunto appended.

In the accompanying drawings:

Figure 1 is a fragmentary elevation of a doorway showing the device constructed in accordance with the invention applied.

Figure 2 is a sectional view along the line 2—2 of Figure 1, looking in the direction of the arrows.

Figure 3 is a rear elevation partly in section of the device.

Figure 4 is an edge elevation of the bladed fan wheel.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail, A designates fragmentarily and generally a doorway,

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while B denotes the heat circulating device constructed in accordance with the invention and hereinafter fully described.

The heat circulating device comprises a box like casing 10, preferably made from sheet metal although the same may be made from any suitable material, this being optional and having in its front or outer wall 11 a central opening 12 preferably covered by screening 13 and confronting this opening is the bladed fan wheel 14 of an electric fan 15, which is suitably mounted interiorly of the casing 10.

At the bottom of the casing is an open throat or neck, which may be termed a flue nipple 16 for the fitting therein of an elbow shaped flue 17, the latter being detachably fastened in place by set screws 18.

Next to the back of the casing 10 is a deflector or shield 19. When in operation, the fan wheel 14 draws air into the casing 10 through the opening 12, the air being directed by the shield 19 into the flue 17. The fan motor is supplied with current from a convenient outlet by an extension cord 18a.

The casing 10 has at opposite ends hanger ears 20, so that the device can be hung above the doorway A to have the flue 17 depend downwardly and inwardly of said doorway at the upper or top portion thereof.

The outlet end of the flue 17 is spaced far enough from the closed position of the door to avoid any interference with the closing of the door and also to avoid blockage of the outlet of the flue when the door is closed.

In the use of the device, it will be clearly apparent that warm air adjacent to the ceiling of one room can be drawn therefrom by the said device and circulated into an adjoining or distant room, or enclosure.

The flue 17 is adjustable vertically with relation to the throat or nipple 16 by the set screws 18 for the proper setting of the flue with relation to the doorway and the casing 10 of the device.

It is of course understood that by using a fan wheel, such as shown in Figure 4 and designated 14a, the blades of which have a pitch reverse to that of the blades of the fan wheel 14, the flow of the air through the device will be reversed, thus the apparatus is usable under rare circumstances where the door of a room or closure to be heated opens outwardly into the hallway or centrally located and heated rooms instead of opening into the separate room as is customary. This arrangement is necessary if the door in

opening swings toward the source of heat supply.

What is claimed is:

A heat circulating device for use between partitioned spaces, comprising a portable housing, a fan in the housing, said housing provided with a pair of openings, one located in front of the fan in the front wall of the housing, and one located in back of the fan in the bottom wall of the housing and at right angles to the first opening, a nipple on the housing about the latter opening, a screen over the first opening, and an elbow shaped conduit connected with the nipple to extend downwardly and backwardly from the housing and its free end directed in the same plane, but at a lower level than the first opening whereby said housing may be placed above and on one side of a partition over a door opening in the partition and the elbow will extend downwardly toward the door opening in, the partition to direct air through the door opening to a space on the other side thereof from the housing.

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