

July 28, 1953

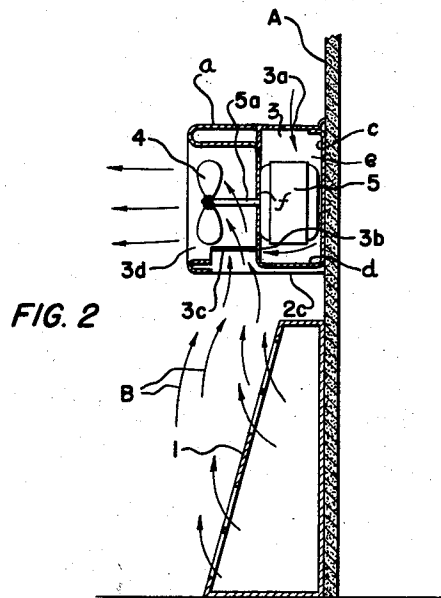
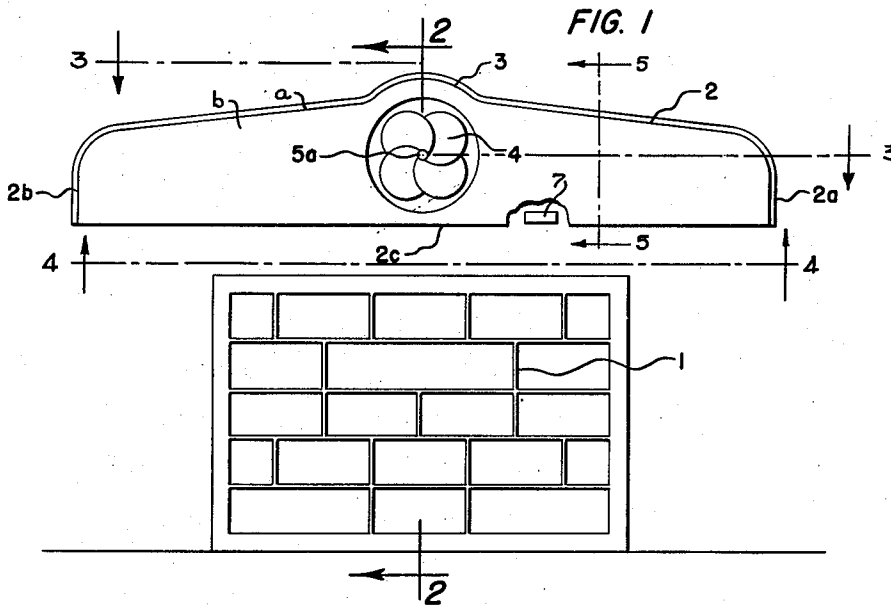
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2,646,744

COMBINATION HEATER OUTLET AND AIR CIRCULATOR

Filed April 23, 1949

2 Sheets-Sheet 1



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FIG. 3.

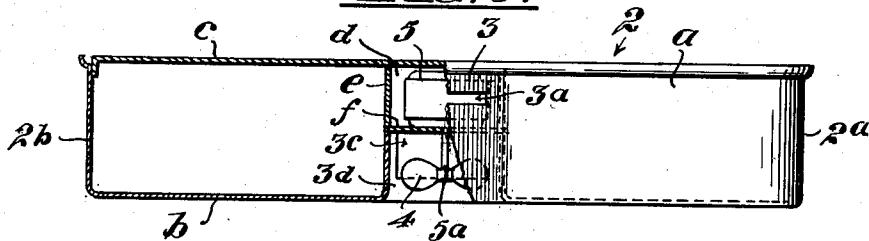


FIG. 4.

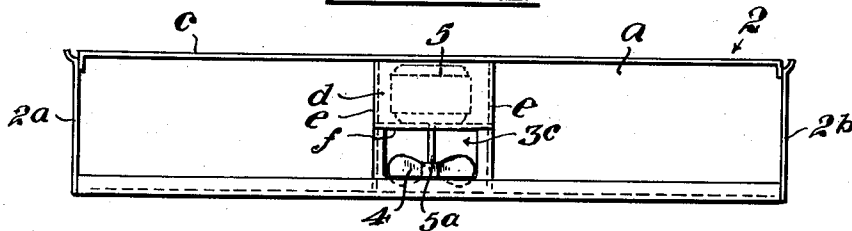


FIG. 5.

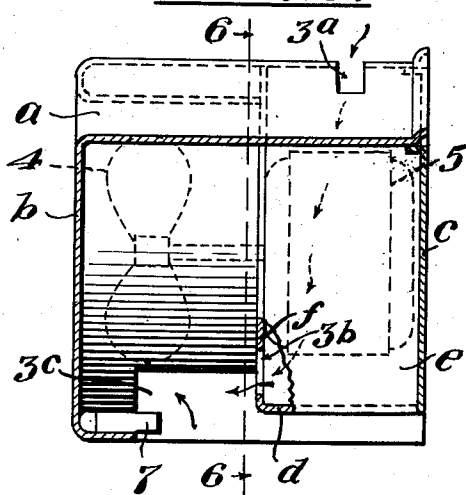
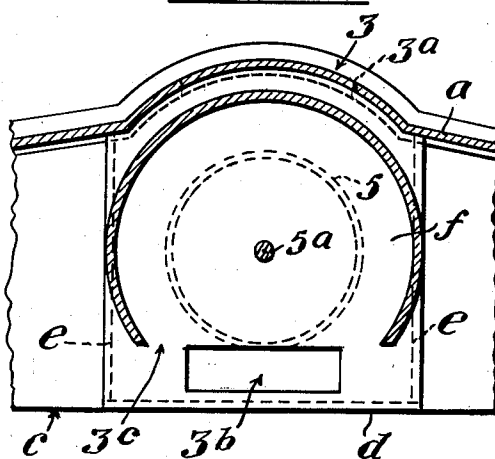


FIG. 6.



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COMBINATION HEATER OUTLET AND AIR CIRCULATOR

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Application April 23, 1949, Serial No. 89,222

2 Claims. (Cl. 98-108)

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My invention relates to a combination heater outlet and air circulator, and the objects of my invention are:

First, to provide a heater outlet and a hood above said outlet having air propelling means therein which changes the direction of the rising heat from vertical plane to a horizontal plane, whereby heat delivered by a conventional wall heater or the like may be completely circulated throughout a room, which more quickly and uniformly heats the room;

Second, to provide a combination heater outlet and air circulator which prevents heat delivered from a heater from becoming concentrated in one small area in a room;

Third, to provide a combination heater outlet and air circulator which prevents the heated air from going up the wall from the grille or a wall heater and depositing particles of dust on the wall, and discoloring the ceiling thereabove;

Fourth, to provide a combination heater outlet and air circulator of this class which may be readily controlled by means of a conventional thermostatic switch or the like;

Fifth, to provide a combination heater outlet and air circulator of this class which may be used in summer and winter for the purpose of circulating air in a room;

Sixth, to provide a combination heater outlet and air circulator of this class which forces warm air horizontally into contact with various objects in the room which more evenly and more quickly heats the room, as compared to a direct thermal rise of the heat from one location to the ceiling and subsequent spreading of the heat over the area of the ceiling of a room; and

Seventh, to provide a combination heater outlet and air circulator of this class which is very simple and economical of construction, efficient in operation, and which will not readily deteriorate or get out of order.

With these and other objects in view, as will appear hereinafter, my invention consists of certain novel features of construction, combination and arrangement of parts and portions, as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawings and to the characters of reference thereon, forming a part of this application, in which:

Fig. 1 is a front elevational view of my combination heater outlet and air circulator, showing a portion thereof fragmentarily; Fig. 2 is a fragmentary vertical sectional view, taken from the line 2-2 of Fig. 1, showing by arrows the

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circulation of air through my combination heater outlet and air circulator; Fig. 3 is a partial plan view and horizontal section as seen on the line 3-3 of Fig. 1; Fig. 4 is an inverted plan view taken on the line 4-4 of Fig. 1; Fig. 5 is a view in cross section and elevation with portions broken away as seen on the line 5-5 of Fig. 1 in the direction indicated by the arrows; and Fig. 6 is a detail in section and elevation as seen on the line 6-6 of Fig. 5 in the direction indicated by the arrows.

Similar characters of reference refer to similar parts and portions throughout the several views of the drawings.

The heater outlet grille 1, hood 2, motor casing 3, fan 4, and motor 5, constitute the principal parts and portions of my combination heater outlet and air circulator.

The heater outlet grille 1 may be the grille of a conventional wall heater, radiator or other heat delivering device, which is normally placed adjacent a wall A, as shown in Fig. 2 of the drawing. Positioned directly above the grille 1 is the hood 2, which is elongated and extends horizontally in overhanging relationship with the grille 1 and therebeyond at opposite ends 2a and 2b of said hood 2. The hood comprises a top wall a extending between the ends 2a and 2b, a front wall b, and a back wall c; the intermediate portions of the top wall a and back wall c constituting portions of the motor casing 3 which further includes a bottom wall d projecting forwardly of the lower edge of the back wall c to a point intermediate the back wall c and front wall b and terminating at its ends in spaced relation to the hood ends 2a and 2b. Upstanding walls e project from the end margins of the bottom wall d to form the ends of the motor casing. The frontal portion of the motor casing comprises a vertical wall f extending upwardly from the forward margin of the bottom wall d to the hood top wall a and which wall f constitutes the inner end of a cylindrical horizontal fan housing 3d which opens to the front of the hood; the wall f forming a partition between the motor and the fan housing. The motor casing 3 and the fan housing 3d are thus arranged substantially in the center of the hood with the motor casing in the rear portion thereof formed by the walls a, c, d, e and f which substantially encase the motor except as to the openings 3a and 3b. Enclosed in the hood 2 by means of the motor casing 3 is the motor 5, having an extending shaft 5a on which the fan 4 is fixed. The motor casing 3 is provided with

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air circulation openings 3a and 3b formed in the walls a and e respectively, adapted to provide air circulation sufficient to cool the motor 5 when in operation; the opening 3a being disposed in the wall a immediately above the motor 5 and the opening 3b being disposed in the wall f immediately above the bottom wall d and leading to the interior of the fan housing 3d. The lower side 2c of the hood 2 is open substantially throughout toward the grille 1, and is adapted to receive air thermally rising upwardly as indicated by the arrows B in Fig. 2 of the drawings. The lower portion of the fan housing 3d is provided with an opening 3c, communicating with the interior of the hood 2 at its lower side 2c, all as shown best in Figs. 5 and 6 of the drawings.

The hood 2 and the walls of the motor casing 3 and the fan housing 3d, may be made of sheet metal, if desired, or any other suitable material, and may be fixed on the wall A at any desired distance above the grille 1 for the purpose of uniformly circulating warm air throughout the room in which the hood 2 is positioned.

The operation of my combination heater outlet and warm air circulator is substantially as follows:

When the warm air, as indicated by arrows B, rises from the source of heat or through the heater outlet grille 1, operation of the fan 4 creates a vacuum at the opening 3c in the motor casing 3, tending to force all of the warm air passing upwardly from the grille 1, which is forced from the fan 4 in a horizontal direction with considerable velocity, which causes the warm air to impinge upon and pass through various articles, such as tables and furniture, or the like, which directly heats the various portions of the room and articles therein by conduction, and maintains heat at a normally lower level sooner than would be expected if the warm air were permitted to rise to the ceiling directly from the grille 1. A conventional thermostat 7 may be provided for controlling the operation of the air circulator, including the motor 5 and the fan 4, and it is obvious that the fan 4, in a position at the inner surface of the wall A, may be used as an air circulating device in warm weather for driving cool air when the source of heat inwardly of the heater outlet grille is inoperative.

It will be noted that arrows indicating the passage of air through the openings 3a and 3b disclose the air cooling circuit for the motor 5, through the motor casing 3 and into the air stream delivered from the fan 4 at the front side of the hood 2.

Though I have shown and described a particular construction, combination and arrangement of parts and portions, I do not wish to be limited to this particular construction, combination and arrangement, but desire to include in the scope of my invention the construction, combination and arrangement substantially as set forth in the appended claims.

Having thus described my invention, what I

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claim as new and desire to secure by Letters Patent is:

1. In a combination heater outlet and air circulator, a wall, heat outlet means at the normally inner side of said wall, an elongated hood adjacent said wall above said heat outlet means and overhanging the same, said hood having an open lower side, a motor casing arranged substantially in the center and at the rear portion of said hood, said hood having a substantially hollow cylindrical horizontal fan housing opening to the front of the hood and provided with an opening in the lower side thereof communicating with the interior of said hood, said hollow cylindrical fan housing substantially enclosed at the other end adjacent said motor casing, a motor in said motor casing having a shaft projecting through the closed end of said hollow fan housing portion of said motor casing, and a fan on the extended end of said shaft, the closed end of said fan housing constituting a partition between said fan and motor.

2. In a combination heater outlet and air circulator, a wall, heat outlet means at the normally inner side of said wall, an elongated hood adjacent said wall above said heat outlet means and overhanging the same, said hood having an open lower side, a motor casing arranged substantially in the center and at the rear portion of said hood, said hood having a substantially hollow cylindrical horizontal fan housing provided with an opening in the under side thereof communicating with the interior of said hood, said hollow cylindrical fan housing being open at one end substantially enclosed at the other end adjacent said motor casing, a motor in said motor casing having a shaft projecting through the closed end of said fan housing, and a fan on the extended end of said shaft, the closed end of said fan housing constituting a partition between said fan and motor, and said motor casing having an opening in the upper side communicating with the motor and an opening in the closed end of said fan housing for creating air circulation around said motor.

JOHN S. ANDREWS.

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