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COMBINED FAN AND HEATER

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Fig. 2.

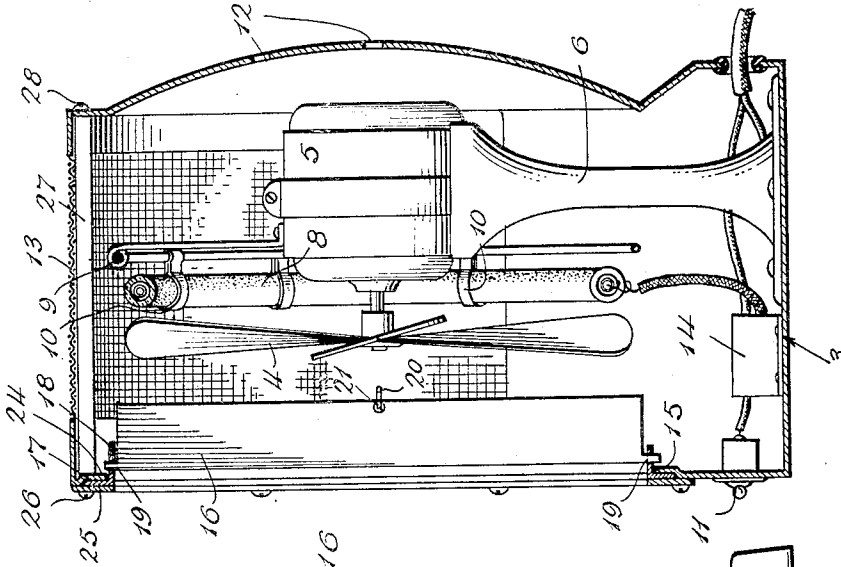
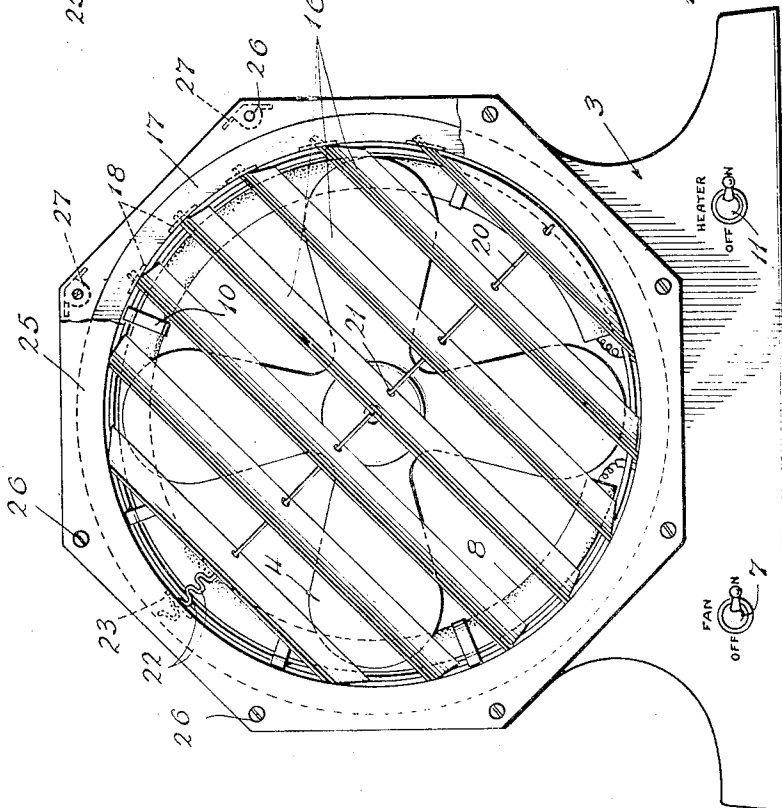


Fig. 1.



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COMBINED FAN AND HEATER

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3 Claims. (Cl. 219—39)

This invention relates to improvements in combined fans and heaters and has for one of its objects to provide a simple and practical device in which a heater and fan are assembled in a manner to create a current of heated air the volume and direction of flow of which may be controlled by a series of louvers mounted in the path of said current for adjustment to open and closed positions, and also for rotative movement in a plane which will enable the deflection of said current in any desired direction.

The above and other objects will appear more clearly from the following detailed description when taken in connection with the accompanying drawing which illustrates a preferred embodiment of the inventive idea.

In the drawing:

Figure 1 is a front elevation, partly broken away, of the combined fan and heater constructed in accordance with the invention, and

Figure 2 is a vertical longitudinal sectional view.

The device of the present invention has been designed especially for use in the generation of the heated air currents in show-windows and the like during cold weather, for the purpose of preventing the freezing of accumulated moisture which would otherwise obstruct clear vision through the windows; but it will be understood, of course, that the device may be employed for various other purposes without departing from the spirit or scope of the invention, as expressed in the appended claims.

As illustrated, the invention comprises a casing generally indicated by the numeral 3 which contains an electric fan including the fan blades 4, the motor 5 and its standard 6 which is secured to the base of the casing 3. A switch 7 mounted in the front of the casing 3 is utilized to control the current supply for the motor 5. A heating element 8 of arcuate form is supported by the motor 5 through the medium of a supporting ring 9 having strips 10 extending therefrom at intervals and embracing the heating element 8 so as to maintain it in position directly behind the fan blades 4 so that when said heating element is turned on by means of the switch 11 mounted on the front of the casing 3, the air circulating through said casing will be heated and projected through the front of the casing by the blades 4 of the fan. To provide for adequate circulation of air through the casing, the back thereof is provided with a series of openings 12 and the wall 13 may be made of foraminous material. In order to control the amount of current

supplied to the heating element 8, a thermostat, conventionally indicated at 14, may be introduced between the coil of said heating element and switch 11.

In the front of the casing 3 there is formed a large opening 15 through which the heated currents of air from the fan 4 pass and the volume and direction of flow of said currents passing through the opening is controlled by a series of louvers 16 mounted in juxtaposition to said opening for both tilting and rotative movements, the tilting adjustments controlling the volume of air passing through the opening and the rotative adjustments governing the directional flow of the currents. A support for the various louvers 16 is provided in the form of an annular plate 17 formed at intervals with opposed pairs of in-
struck lugs 18, each pair of which is adapted to provide a pivotal mounting for one of the louvers 16. To this end each louver, which comprises an elongated flat strip of metal or any other desirable material, has reduced extensions 19 at the ends thereof which project into apertures in the lugs 18 to permit of said louver being tilted about the extensions 19 as an axis. In order that said louvers may be simultaneously adjusted to various tilted positions so as to increase or decrease the volume of air flowing through the opening 15, an operating rod 20 is extended through the various louvers and preferably bent as indicated at 21 where it passes through each of the louvers so that a push or pull upon one end of the rod will transmit the desired tilting movement to the louvers. One end of the operating rod 20 is provided with a series of crimped portions 22 for engagement with a lug 23 carried by the casing 3 so as to retain the rod in any of its adjusted positions.

Provision is made for rotatively mounting the supporting plate 17 in the plane of the front of the casing so that the louvers carried by said plate may be adjusted to various angular positions in said plane, such as that illustrated in Figure 1, in order to control the directional flow of the currents of air passing between the louvers. To this end, the annular intumed flange 24 of the casing which defines the opening 15 has associated therewith a retaining ring 25 which is detachably secured to said flange 24 by means of screws or other fasteners 26 extending through the ring and flange at intervals about the casing and beyond the peripheral edge of the plate 17. The screws 26 are tightened sufficiently to frictionally hold the supporting plate 17 in any of its positions of adjustment but at the same time will

permit of said plate being turned so that the louvers may be rotated to desired angular position. Preferably, transverse braces 27 are arranged about the interior of the casing 3 adjacent the peripheral wall 13 thereof and the ends of these braces receive the screws 26 and also screws 28 which secure the back of the casing 3 in position.

What is claimed is:

10 1. In combination, a fan and driving means therefor, a heating element in cooperative relation to said fan for producing a heated current of air, a casing enclosing said fan and heating element and having a front with an opening
15 therein, a plurality of louvers pivotally disposed adjacent said front and in the path of said current of air, a connection between all of said louvers operable to simultaneously adjust the same about their pivots, a supporting plate for
20 said louvers rotatable with respect to and engaging the front of said casing and provided thereon at intervals with instruct lugs which project into said opening to form supports in which
25 said louvers are pivoted, a retaining ring extending about the front of said casing and engaging said supporting plate to frictionally retain the same in various rotative positions, and fasteners extending through said ring and into said front at points beyond the outer edge of said supporting plate
30 and acting to releasably clamp said ring in cooperative relation to said plate.

2. In combination, a fan and driving means therefor, a heating element in cooperative relation to said fan for producing a heated current
35 of air, a casing enclosing said fan and heating

element and having a front with an opening therein, and also having a foraminous wall at least partially encircling said driving means, fan and heating element, a plurality of louvers pivotally disposed adjacent said front and in the
5 path of said current of air, a connection between all of said louvers operable to simultaneously adjust the same about their pivots, a supporting plate for said louvers rotatable with respect to and
10 engaging the front of said casing and provided thereon at intervals with instruct lugs which project into said opening to form supports in which said louvers are pivoted, a retaining ring
15 extending about the front of said casing and engaging said supporting plate to frictionally retain the same in various rotative positions, and fasteners extending through said ring and into said front at points beyond the outer edge of said
20 supporting plate and acting to releasably clamp said ring in cooperative relation to said plate.

3. In combination, a fan and driving means therefor, a casing enclosing said fan and having a front with an opening therein, a plurality of
25 louvers disposed in said opening, a supporting plate for said louvers rotatable with respect to and engaging said front and provided with means to support said louvers so that they are rotatable with said plate, a ring engaging said supporting
30 plate to frictionally retain the same in various rotative positions, and fastening means extending through said ring and into said front at points beyond the outer edge of said supporting plate and acting to releasably clamp said ring in cooperative relation to said plate.

EMANUEL MEYROWITZ. 35