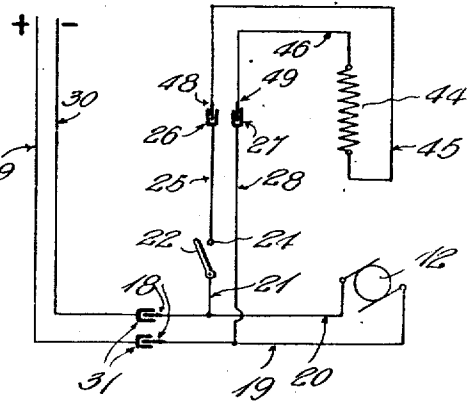
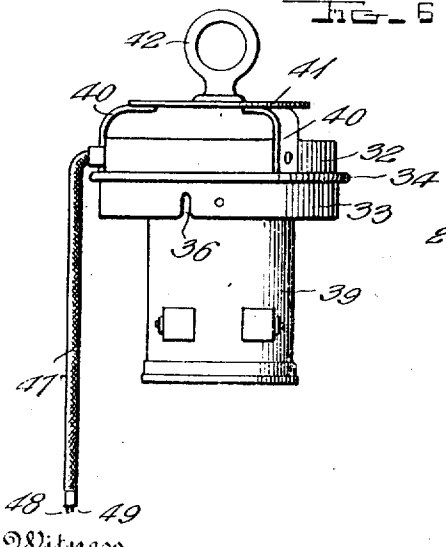
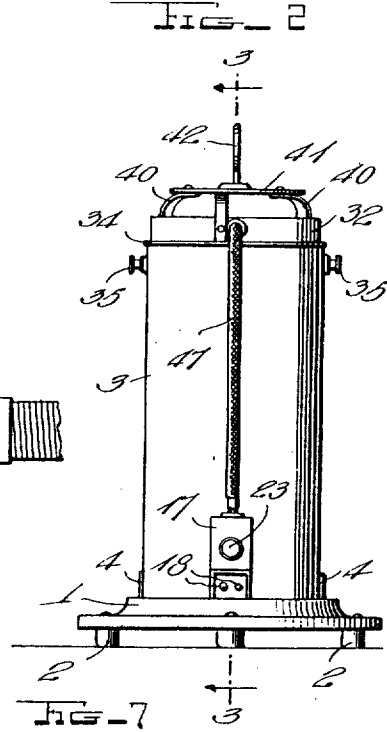
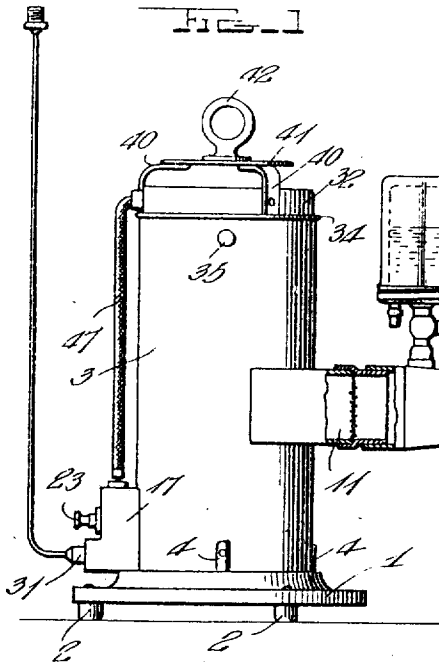


V. SLATER & L. D. WEST.
ELECTRIC HEATER.
APPLICATION FILED JUNE 9, 1916.

1,211,973.

Patented Jan. 9, 1917.
2 SHEETS—SHEET 1.



48-49
Witness

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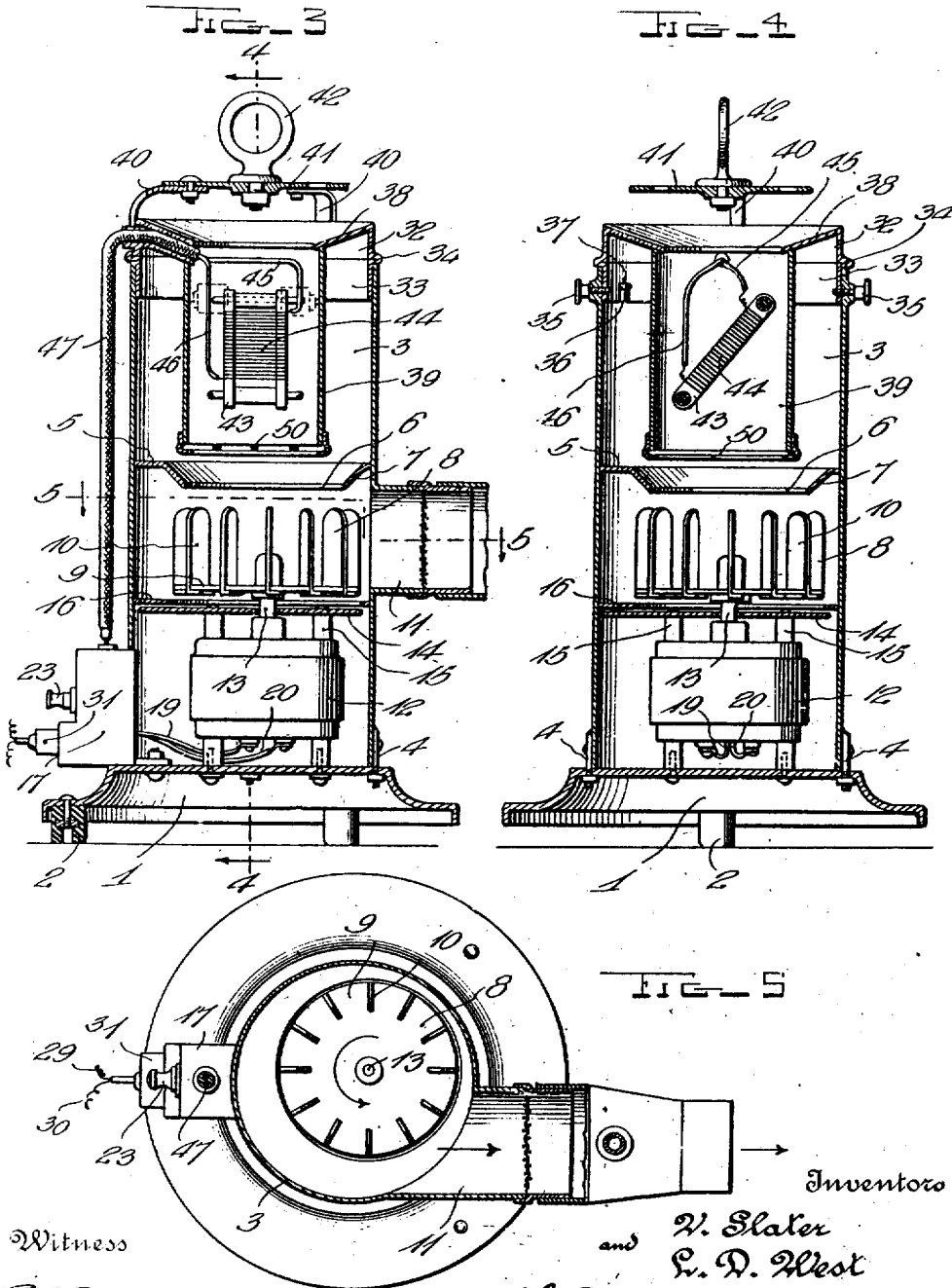
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UNITED STATES PATENT OFFICE.

VERN SLATER AND LEONIDAS D. WEST, OF DENVER, COLORADO; ASSIGNORS TO THE ELECTRO-FUME COMPANY, OF DENVER, COLORADO, A CORPORATION OF COLORADO.

ELECTRIC HEATER.

1,211,973.

Specification of Letters Patent.

Patented Jan. 9, 1917.

Application filed June 9, 1916. Serial No. 102,688.

To all whom it may concern:

Be it known that we, VERN SLATER and LEONIDAS D. WEST, citizens of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Electric Heaters; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in electric heaters and more particularly to those in which a current of air is induced through a casing having an electric heating element therein.

The main object of the invention is to provide a simply constructed, inexpensive and efficient heater which will be adaptable to a wide range of uses.

With this general object in view, the invention resides in certain novel features of construction and in unique combinations of parts to be hereinafter fully described and claimed, the descriptive matter being supplemented by the accompanying drawings which constitute a part of this application and in which:—

Figures 1 and 2 are side elevations at right angles to each other; Fig. 3 is a vertical section taken substantially on the plane of the line 3—3 of Fig. 2; Fig. 4 is an additional vertical section on the plane designated by the line 4—4 of Fig. 3; Fig. 5 is a horizontal section viewed on the plane of the line 5—5 of Fig. 3; Fig. 6 is a side elevation of the cap of the casing and heating device carried thereby; and Fig. 7 is a diagram showing the wiring for the motor driven fan and the electric heater.

In specifically describing the construction shown in the drawings above briefly described, similar characters will be employed to designate corresponding parts throughout the several views and reference will be herein made to the numerous elements by their respective indices. To this end, the numeral 1 designates a circular ornamental base preferably having rubber feet 2. A cylindrical casing 3 rests on the base 1 and is secured thereto by bolts 4 secured to said casing and passing through the base as shown clearly in Figs. 3 and 4.

Substantially midway between its ends, the casing 3 is provided with a horizontal

partition 5 having an eccentric opening 6, the inner edge of said partition being directed downwardly and inwardly to provide a frusto-conical-shaped flange 7 which is adapted to direct air into the eye of a motor driven fan 8 whose axis is alined with the axis of the opening 6, said fan being therefore disposed eccentrically within the casing 3.

The fan 8 preferably comprises a horizontal disk 9 from which a plurality of flat blades 10 rise, these blades being adapted to throw the air outwardly from the eye of the fan by centrifugal force and to discharge said air through an outlet nipple 11 with which the casing 3 is provided. By disposing the fan 8 in the manner described and shown, the same effect is obtained as when placing a fan centrally in a cylindrical casing and forming the latter with an external bulge terminating at its larger end in an outlet such as 11. Since such a bulge in the present device would be undesirable on account of the fact that it would detract from the appearance thereof, we deem the eccentric positioning of the fan 8 and the supply opening 6 rather important features of our invention.

An electric motor 12 is fixedly supported upon the base 1 within the lower end of casing 3, it being to the vertical shaft 13 of said motor that the disk 9 of fan 8 is secured. A partition 14 is supported by the motor 12, being preferably spaced therefrom by suitable spacers 15. The partition 14 is disposed beneath a horizontal annular flange 16 which projects inwardly from the casing 3. It is to be observed that the flange 16 and partition 14 are spaced apart a slight distance and that the latter terminates in spaced relation to the casing 3. This arrangement, although preventing the discharge of any great amount of air into the lower end of the casing, permits a sufficient draft therethrough to cool the motor 12.

A terminal block 17 is secured to the base 1 and is located for the most part on the exterior of the casing, said block having a pair of contact plugs 18 from which wires 19 and 20 lead to the two terminals of the motor 12 (see more particularly Figs. 3 and 7). A branch 21 is disposed in block 17 and connected with one terminal of a suitable switch 22 having an operating knob 23 dis-

posed on the exterior of block 17, said switch cooperating with a contact 24 carried by said block. From this contact, a connector 25 extends and is electrically connected with a socket 26 exposed at the upper end of block 17. A second socket 27 is located in close proximity to socket 26 and is electrically connected by a wire 28 with the wire 19. Main positive and negative lead wires 29 and 30 may extend from any suitable source of current supply, said wires having sockets 31 receiving the plugs 18 therein and being adapted to be electrically connected by any suitable plug with an ordinary electric lamp socket. By this wiring, it will be obvious that current from the wires 29 and 30 will actuate the motor 12 and will shunt to the sockets 26 and 27 when the switch 22 is closed. This shunt circuit serves to operate an electric heater which is disposed in the upper end of the casing 3.

A cap 32 partly closes the upper end of the casing, said cap including a flat ring 33 whose lower portion is received snugly in said casing, said ring preferably having a bead 34 for limiting its insertion. A pair of set screws 35 are threaded through the upper end of casing 3 at opposite points for reception in suitable openings formed in the ring 33, and for properly aligning said openings with the screws when applying the cap 32, the lower edge of the ring is preferably formed with a notch 36 to receive a pin 37 which extends inwardly from the casing. The upper edge of ring 33 is directed downwardly and inwardly to provide a frusto-conical-shaped flange 38 for delivering air into a cylindrical heater casing 39 which is secured at its upper end to said flange 38 and is thus supported thereby. The casing 39 depends into casing 3 and has its lower end disposed immediately above the opening 6 so that the air heated within said casing 39 will pass directly into the fan compartment to be expelled therefrom by fan 8.

Inverted L-shaped brackets 40 are secured to and rise from the cap 32, said brackets supporting thereon a perforated disk 41 which will preferably be provided with an eye 42 by means of which the entire apparatus may be suspended should occasion demand. Mounted within the casing 39 is a rectangular inclined frame 43 of any preferred insulating material, a resistance coil 44 being wound around said frame, as shown in Figs. 3 and 4. Current conducting wires 45 and 46 lead from the terminals of the coil 44 and are housed within a flexible metal tube or conduit 47, the latter extending through the opening in the ring 33 and downwardly along the exterior of casing 3. At their lower ends, the wires 45 and 46 are provided respectively with plugs 48 and 49 which are received in the sockets 26 and 27 of the terminal block 17. It will thus be ob-

served that when the switch 22 is closed by proper operation of the knob 23, not only will the motor 12 be driven, but the resistance coil 44 will be energized to heat all air passing through the casing 39, it being of course understood that the expulsion of air through the outlet 11 by fan 8 will cause other air to enter through cap 32 to fill the partial vacuum created.

Although the use thereof is not absolutely essential, the lower end of the casing 39 is preferably provided with a grating 50 which prevents tampering with the heating unit when the latter is removed with cap 32, said grating also preventing the entrance of anything which might injure the fan 8. When desired, the entire cap 32 may be removed, it being then of course necessary to disengage the plugs 48 and 49 from the sockets 26 and 27. Said cap and the parts carried thereby may be placed at any desired point and other air treating devices which constitute the subject matter of additional applications may be employed in lieu of the heater. When the latter is employed, however, the apparatus will discharge a continuous current of hot air which may be used to great advantage as a hair drier or for any other purpose for which the user may see fit to employ the apparatus.

From the foregoing description, taken in connection with the accompanying drawings, the construction, manner of operation and advantages of the invention will be readily understood, but we wish it understood that although we have shown and described certain specific details of construction for illustrative purposes, numerous changes may be made within the invention as claimed without sacrificing the main advantages thereof.

It will be observed from the above description of the construction and operation of this invention that the apparatus is capable of many uses but we might state that the principal ones are, first, that it is a portable electric heater that may be readily positioned wherever desired and can be made to quickly raise the temperature of the room; second, that by merely turning off the current from the electric heating coil or element the blast of air produced by the machine will not be heated and it may thus be used as an ordinary electric fan although by reason of the discharge of the air through the contracted outlet or nozzle the air will be concentrated on a certain point; third, that the apparatus may be very efficiently used as a hair drier by reason of the fact that the flexible tubing connected to the outlet may direct the blast of heated air or blast of heated and medicated or perfumed air wherever desired by the user; and fourth, that since the electric heating element may be readily turned on and off and the same

disseminator at the outlet may be readily turned on and off, the machine may be used as a deodorizer, perfumer, hair drier, fan, small heater, humidor, etc.

6 We claim:

1. An air heater and circulator comprising a main vertically elongated casing having in its top an air inlet, a fan in the lower portion of said casing, the latter having an
10 air outlet through which said fan is adapted to discharge air taken into the casing through said air inlet, an auxiliary open-ended casing secured to and depending from the top of the main casing, said auxiliary casing
15 having its lower end disposed adjacent the eye of the fan, and a heating element in said auxiliary casing.

2. An air heater and circulator comprising a vertically elongated casing, a removable cap applied to the upper end thereof
20 and having an air inlet, a fan in the lower portion of the casing, the latter having an outlet through which said fan is adapted to discharge air taken into the casing through
25 the aforesaid inlet, an electric motor below

said fan for driving the same, a terminal block adjacent the lower end of the casing, a pair of wires for supplying current to the motor, said wires passing through said block, a pair of sockets carried by said block and
30 electrically connected with said wires, the connection between one socket and one wire including a manually operable switch, an electric heater supported by the aforesaid cap for heating the air as it passes through
35 the casing, and a pair of wires for feeding said heater, said wires being passed outwardly through the cap and extended downwardly along the exterior of the casing, the lower ends of said wires having plugs for detachable engagement with the aforesaid
40 sockets.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

VERN SLATER,
LEONIDAS D. WEST.

Witnesses:

J. A. GRIESBAUER,
L. O. HILTON.