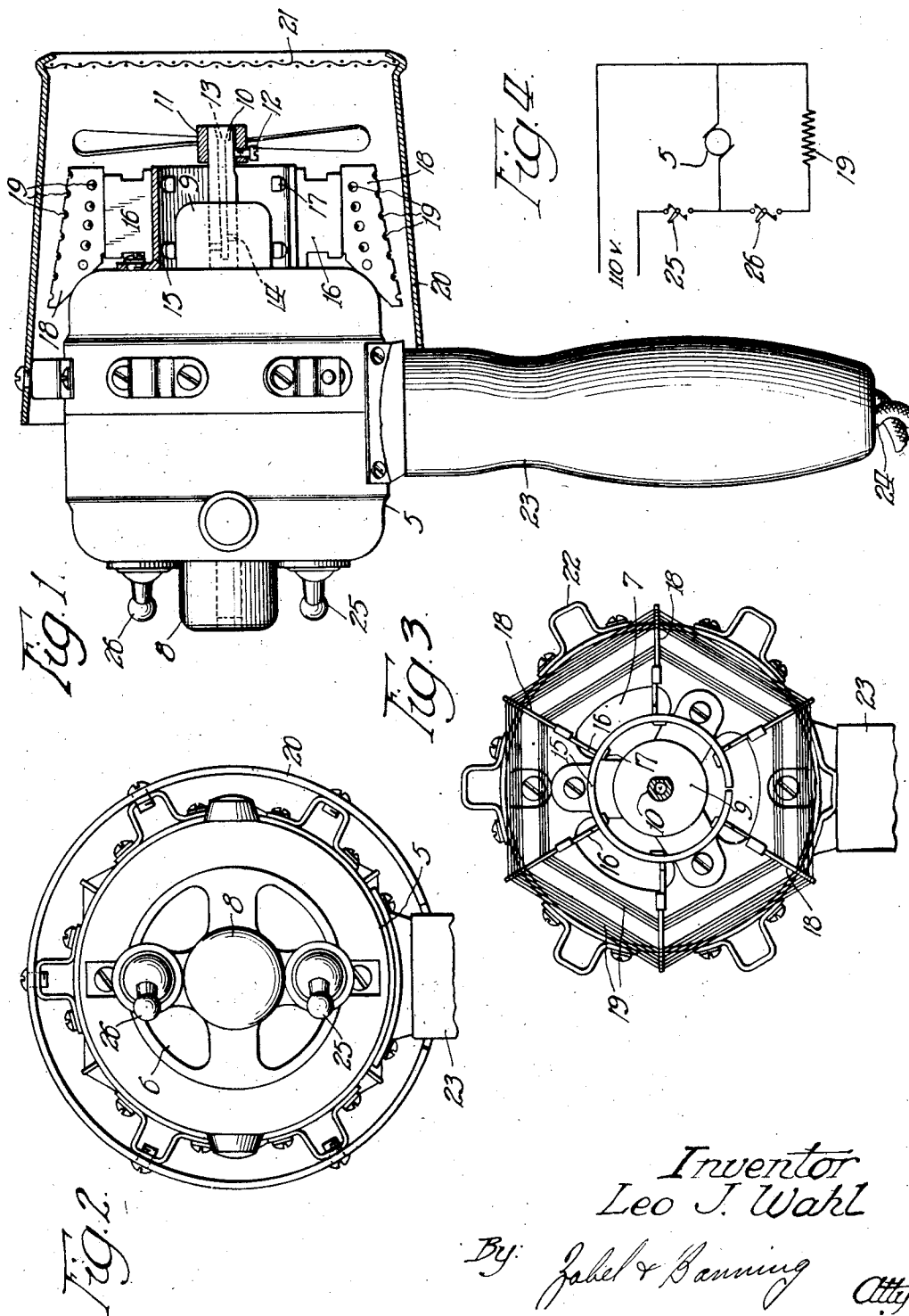


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L. J. WAHL
HAIR DRIER

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HAIR DRIER

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My invention relates to electric hair driers and has for its object certain improvements in such designs whereby to enable them to more properly perform their function.

5 My invention contemplates as one of the improvements mentioned a provision of a novel mounting of the heating element and fan of the drier relative to the motor whereby the fan itself is spaced from the motor casing with the heater element interposed between the fan and the motor casing.

My invention also contemplates a novel means whereby the heat from the heating element is prevented from overheating the bearings of the motor shaft which drives the fan.

15 My invention also contemplates the provision of a novel casing or guard for the heating element and fan which, in addition to its function of protecting the user from contact with the heating element and fan, serves an additional purpose of preventing overheating due to the heating element in case the outlet from the fan is closed.

My invention also contemplates a novel control means for the motor and heating element whereby the starting and stopping of the heater or motor, or both, is made simple and safe. I will describe one form which my invention may take by reference to the accompanying drawings where:

Figure 1 is a side view partly in section of the hair drier;

Figure 2 is a rear end view of the hair drier with the handle broken away;

35 Figure 3 is a front view of the hair drier with the protecting shield removed;

Figure 4 is a wiring diagram showing the control circuit for the motor and heater.

Referring now in detail to the drawings the hair drier consists of a motor 5, the casing of which is open at both ends as shown at 6 and 7 so that air may circulate through the motor.

45 A suitable bearing at 8 is provided for one end of the motor shaft which may be oiled in the conventional manner.

The bearing at the opposite end of the motor shaft as at 9 has the shaft 10 projecting completely therethrough and carrying at its outer end the fan 11 which is secured in posi-

tion in any suitable manner such as, for instance, by the set screw 12. The shaft 10 is preferably made with a bore 13 therein extending into the bearing 9 and provided with radial openings such as shown at 14 so that bearing 9 may be oiled from the end of the shaft 10. The purpose of this is to permit the provision of a shield 15 consisting, in this instance, of an annular ring surrounding the bearing 9 and spaced therefrom. This ring 15 is secured by screws to the face of the motor casing and carries radially projecting mounting members 16 which are secured thereon as shown by having lugs projecting through slots in the shield 15 and bent over as shown at 17 in Figures 1 and 3. These radially projecting members 16 carry suitable insulating sheets 18 which insulating sheets serve as a support for the heating element 19 which is wound round and round these members 18 and which may consist of any suitable heating coil material. Thus it will be clear, it is believed, that when the motor is started and the fan operated with the heater also energized, the shield 15 will protect the bearing 9 from the effects of the heat from the heater element 19. The fan will, of course, draw the air through the motor casing and between the bearing 9 and shield 15 while it is also drawing air in around the heater 19 and heating the same.

The heater and fan are protected by means of a suitable conical shield 20 which as shown clearly in Figure 1 decreases in size as it extends away from the motor and which is provided with a suitable reticulated enclosure 21 shown in the present instance as an ordinary screen.

The stirrups 22, which are spaced around the motor casing, at rather close intervals, serve to support the shield 20 and hold the same in proper spaced relation with respect to the other elements of the drier. These stirrups perform another function which is also highly useful in that with their relatively close spacing they serve to effectively prevent the current of air which is drawn in by the fan between the motor casing and the tubular member 20, from carrying any relatively large objects inside the shield;

that is, pieces of paper and things of this sort which might get on the heater and cause considerable damage are prevented from entering by the stirrups 22.

5 The tapering of the member 20 performs a highly useful function in case the outer end thereof becomes closed to prevent an escape of air from the fan. People in using this type of device sometimes set it down
10 or place it against an object in such fashion as to prevent the air from the same passing outwardly through the screen 21. This causes the heated air to back up within the shield 20 and except for the peculiar operation
15 of this device would result in overheating due to the heater and possibly considerable damage to the device itself would result. However, the tapering of this shield 20 makes it possible for the air drawn in by
20 the fan to escape backwardly out of the shield around the motor casing since the fan, when the outlet is closed, acts as a centrifugal fan and forces the air radially outwardly and the air naturally travels toward the
25 greater diameter of the shield and in this manner escapes.

A suitable handle 23 is provided for the hair drier and is mounted as is shown in Figure 1 with the cord from the current
30 supply passing through the handle as indicated at 24 to the motor.

I have provided a novel means for preventing the energization of the heater unless the motor is operating so as to withdraw the heated air therefrom and have so
35 arranged the control as to make it readily accessible to and easily operated by the user of this device.

The wiring diagram is shown in Figure 4
40 where the motor 5 and the heater 19 are shown as connected in parallelism across a source of current supply with one switch 25 inserted in one of the main leads of the current supply so that when it is opened both
45 the motor and heater are cut off and when it is closed the motor is energized and current connected to a second switch 26 for controlling the heater. Now by closing the switch 25 the motor may be operated independently
50 of the heater to drive the fan when the heater is not wanted. When the heater is also used it is only necessary to close the switch 26 and then the heater and motor will both be operated in the usual manner.

55 It is impossible, however, as is clear from Figure 4, to turn off the motor without also turning off the heater and this feature prevents the drier from being left with the heater on and the motor stopped for it might
60 cause considerable damage or start a fire.

From the drawings it will be seen that the main motor switch is placed nearest the handle so as to be easily operable by the thumb
65 of the operator while the handle is held in his hand. The heater switch being farther

away is usually left on except when it is desired to operate the fan without the heater.

From the above description it is thought that the construction and advantages of this device will be clear to those skilled in this
70 art.

It is also obvious, it is believed, that various modifications may be made without departing from the scope of the invention.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:
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A hair drier comprising a motor having a casing, a projecting shaft at one end of said casing, a fan mounted on said shaft and spaced from the motor casing, a heater element encircling said shaft between the fan and motor casing, and a tubular member mounted on said motor casing and having its free end projecting beyond said fan and closed by a reticulated member, a handle projecting laterally from said motor casing and control switches for said motor and heater mounted at the end of said motor casing opposite the fan, said motor switch being adjacent the handle so that it is operable by the thumb of the operator's hand when holding the handle.
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In witness whereof, I hereunto subscribe my name this 3rd day of Sept. A. D., 1929.
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LEO J. WAHL.

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