A portable cordless hairdryer comprising a heater unit to produce an exothermic reaction at a controlled rate and battery operated blower means to direct air heated by the heater unit onto hair to be dried.
PORTABLE CORDLESS HAIRDRYER

This invention relates to hairdryers and more particularly to portable cordless hairdryers.

A hairdryer normally comprises a motor driven fan and a heater. The arrangement is such that cold air drawn in by the fan is directed across the heater onto the hair of the user. Both the fan and heater are normally electrically operated.

Although a cordless hairdryer is highly desirable, its construction presents considerable difficulty. The main problem arises from the fact that the energy required to provide sufficient heat for hair drying purposes is high and much greater than can be provided by present day electrical storage or primary cells.

It has been suggested that the heat storage principal be used, whereby units of high thermal capacity are electrically heated and subsequently cooled during a hairdrying session. Such a hairdryer is plugged into a standard a.c. supply only for heating the units, thereafter the user is free of any connection to the a.c. supply since the fan can be powered by batteries. Thus the units warm the drying-air without the need to supply electrical energy during use in excess of the fan requirement. The disadvantages of this type hairdryer is that use of the dryer must be anticipated, so that the units can be heated in advance.

These difficulties are avoided by the hairdryer according to the present invention which comprises a motor driven fan energized by primary or storage cells and a heater which includes a material or materials capable of producing an exothermic reaction at a controlled rate contained in a heat conductive housing.

According to a feature of the invention the material is combustible in air and is totally enclosed apart from small perforations in the housing for the entry of combustion air. The material is preferably ignited electrically.

One preferred form of the invention will now be described with reference to the accompanying drawings in which:

FIG. 1 is a perspective and diagrammatic view of a hairdryer, the hairdryer housing only being shown in outline, and

FIG. 2 is an exploded perspective view of a heater assembly for use in the hairdryer of FIG. 1.

In FIG. 1 the general outline of the hairdryer casing is shown at 10 and the casing includes an air outlet 12, of rectangular shape with longitudinal slots 14 therein.

The hairdryer uses a conventional fan 16 of the tangential type driven by a low voltage d.c. motor 18 from four batteries 20 which may be of any suitable type, primary or rechargeable. The batteries 20 are suitably housed within casing 10.

Between the fan 16 and the outlet 12 an exothermic heater unit 22 is located in the air stream from the fan. As shown in FIG. 2, the heater unit 22 comprises a core 24 of a material combustible in air, such as charcoal, carrying a spiral of wire 26 therearound. The charcoal core 24 and wire 26 are surrounded by loosely packed fibreglas formed as a casing 28 and closed by a lid 30.

A prefated cylindrical metal sheath 32 provided with a plurality of perforations 34 in the cylindrical wall surrounds the fibreglas. A base member 36 is provided for the sheath 32 and the base member includes two contact pins 38, 40 extending therefrom to which the ends of the wire 26 are secured, one to each, in good electrical contact. A lid 42 fits on the open end 44 of the metal sheath 32 and completely seals the heater unit 22.

The heater unit 22 is inserted through an aperture 46 in casing 10 to the position shown in FIG. 1 and the contact pins 38 and 40 slide into engagement with a socket (not shown) positioned within casing 10. One pin is electrically connected by way of the socket directly to the batteries of the hairdryer while the other pin is connected to a terminal 48 of a switch 50. The other terminal 52 of the switch 50 is connected to the fan motor 18.

The switch 50 can be operated from outside casing 10 to make contact to complete the circuit to either the heater unit 22 or the fan motor 18. The switch is shown in the drawing in its “off” position.

In operation a new heater unit 22 is inserted in the hairdryer and the switch 50 moved to terminal 48 to connect the wire 26 in the heater unit 22 to the batteries 20. The flow of current causes the wire 26 of the heater assembly to become incandescent and ignites the charcoal rod 24.

Combustion of the charcoal rod is sustained by air which enters the heater through the perforations 34 in the sheath 32. After a predetermined time lapse of a few seconds, the switch 50 is moved to contact terminal 52 and the motor 18 is connected to the batteries. The fan 16 is driven by the motor 22 and air is directed past the heater unit 22 to the outlet 12. The forced draft of air from the fan assists in the continued sustained combustion of the charcoal rod 26. The air is heated by the rod 26.

Although the invention has been described as using charcoal as the fuel it is envisaged that other fuels could be used, based on powdered metals and oxidizer mixes or any other preparation in which combustion is inherently slow or which includes a suitable retarding agent. Alternatively a non-combustive exothermic reaction may be employed which could be initiated by means other than the incandescent wire herein described.

What is claimed is:

1. A portable cordless hairdryer comprising a casing having an air outlet aperture therein, blower means within said casing to force a flow of air through said casing and out said air outlet aperture, a portable power source within said casing adapted to be selectively connected to said blower means to activate said blower means, an exothermic heater unit disposed within said casing and comprising a closed housing located between said air outlet aperture and said blower means in the path of flow of the air forced to flow through said casing, said housing forming a closed space therewithin and said housing having perforations formed therethrough affording communication between the space within said housing and the exterior of said housing, a core of solid fuel material combustible in air and capable of sustained combustion located within the closed space in said housing, a wire element enclosed within the space in said closed housing and disposed in contact with said core of solid combustible fuel material, an electrical circuit arranged for selectively connecting said portable power source to said wire element so that when said wire element is connected to said power source said wire element incan-
3. A hairdryer, as set forth in claim 2, wherein said portable power source comprises at least one battery and said electrical circuit extends from said battery to said wire element and to said blower means, and said electrical circuit including switch means operable from the exterior of said casing for selectively connecting said battery to said wire element and said blower means through said electrical circuit.

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