June 11, 1929. F. X. A. DUHAMEL 1,716,580

HAIR DRIER

Filed June 12, 1928 2 Sheets-Sheet 1

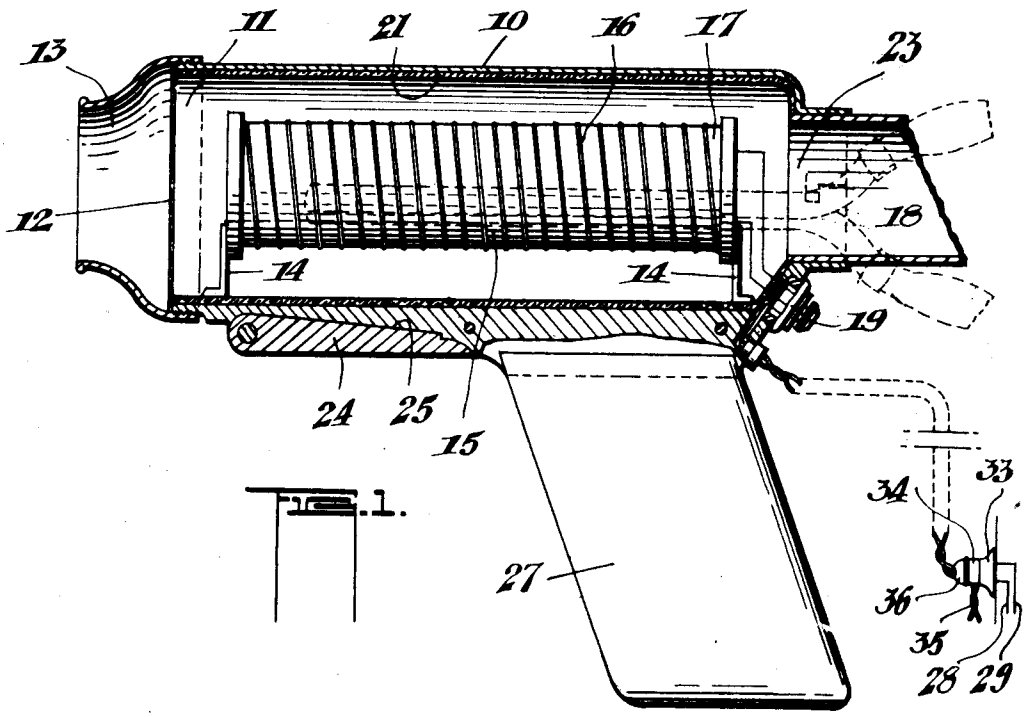


Fig. 1.

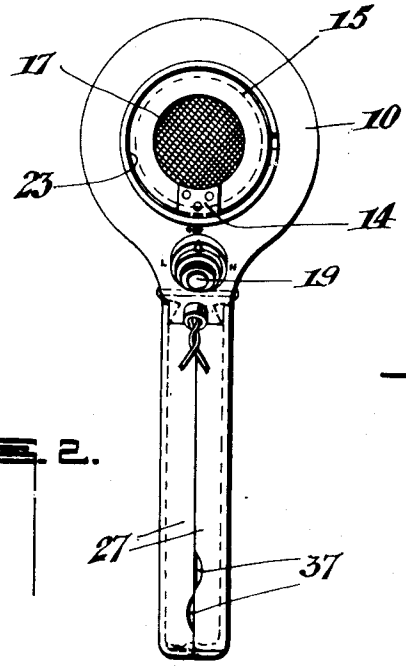


Fig. 2.

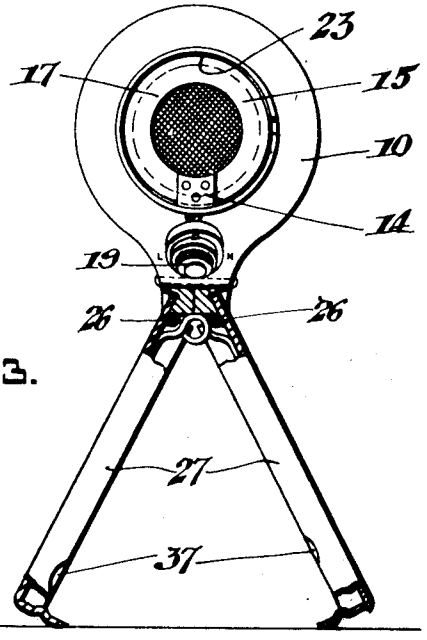


Fig. 3.

INVENTOR
FRANCOIS X. A. DUHAMEL.

BY Fitzgerald & Laughlin
ATTYS.

June 11, 1929.

F. X. A. DUHAMEL

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2 Sheets-Sheet 2

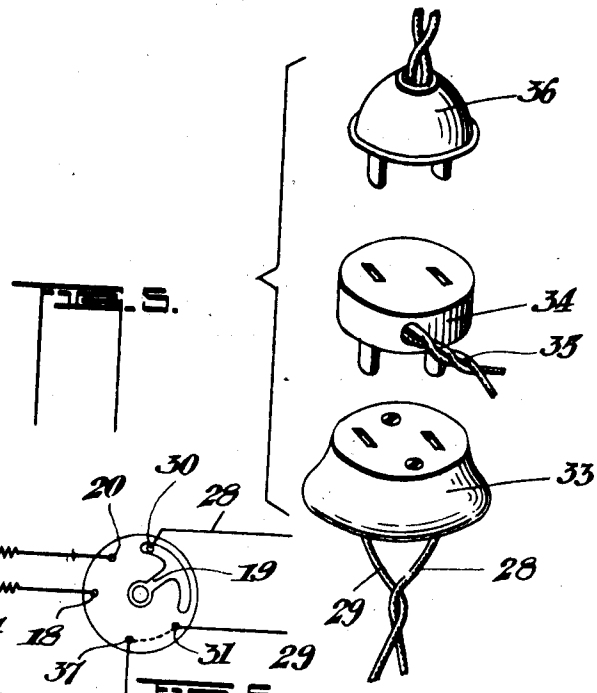


FIG. 5.

FIG. 6.

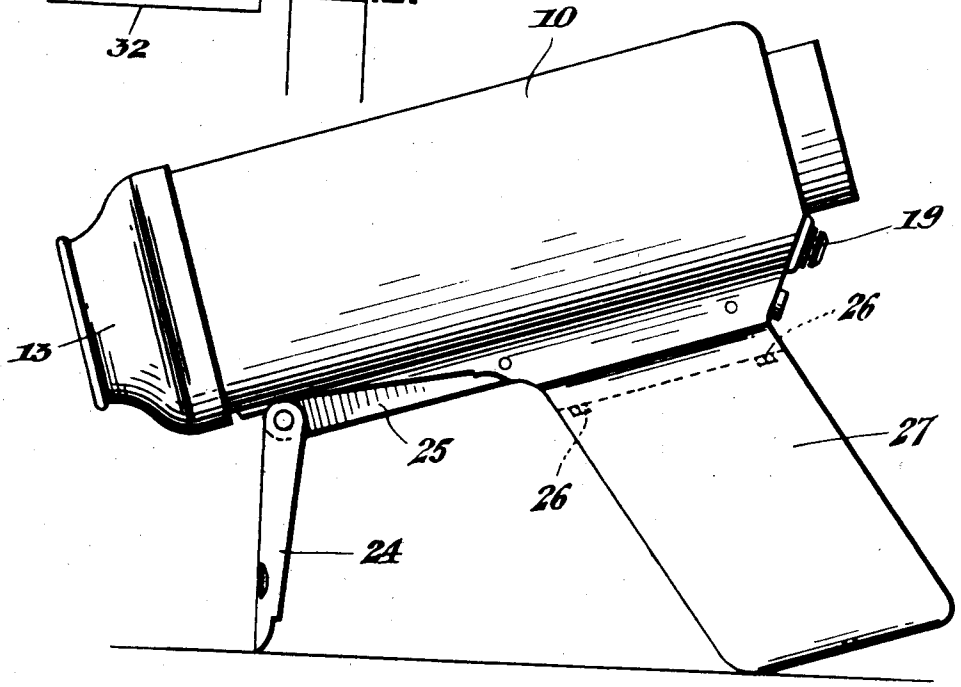


FIG. 4.

INVENTOR
FRANCOIS X. A. DUHAMEL.

BY Fitzgerald Langford & Cie.

ATTYS.

Patented June 11, 1929. 1,716,580

UNITED STATES PATENT OFFICE.

FRANCOIS XAVIER ADRIEN DUHAMEL, OF OTTAWA, ONTARIO, CANADA, ASSIGNOR OF ONE-THIRD TO THOMAS JONES, OF OTTAWA, ONTARIO, CANADA.

HAIR DRIER.

Application filed June 12, 1928. Serial No. 284,783.

This invention relates to improvements in electric hair driers and more particularly to that class of electric hair driers adapted to be attached to electric vacuum cleaners whereby they can be effectively utilized to take the place of a hair drier for drying wet hair after a shampoo.

In carrying out the invention the vacuum fan in an electric vacuum cleaner which on its discharge side is a blower, is made use of in combination with an electric conductor to furnish electric current to heat the requisite air currents.

Furthermore my invention provides for a wide range and variation in air volume and heat separately controlled so that waste of current is considerably reduced.

The novel features of the invention consists in the combination with an electric vacuum cleaner of an attachment in the form of an insulated casing provided with foldable supports and a foldable handle in which a resistance wire or similar element furnishes the heat when an electric current is passed through it and which is so constructed as to carry and heat a curling tongs.

I am aware that the generic principles involved are not new but the present attachment includes novel features of construction not heretofore known or disclosed and by means of which novel and economical results are obtained. The form of casing with the collapsible supports and handling means and the means for electrically connecting up the element within the casing as well as the construction of the latter constitute the invention.

Referring now to the drawings in which an example of the invention is disclosed and in which like characters of reference indicate corresponding parts in each figure,

Figure 1 is a longitudinal section partly in elevation through the casing showing the heating element and the means for connecting up the casing,

Figure 2 is an end view showing the supporting means in collapsed position,

Figure 3 is an end view showing the supporting means in an expanded position,

Figure 4 is a side elevation of the device with the combined supporting and handling means open, when used as a heater for curling tongs, etc.,

Figure 5 are details of the plug connecting up the casing to the source of power,

Figure 6 is a diagrammatic view of the wiring.

Referring now more particularly to the drawings, 10 designates a casing of appropriate construction open at one end as at 11 over which is a suitable screen 12 and threaded onto which is an air tube or cap 13. Suitably mounted on supports 14 in any well known manner within the casing is the heating unit 15 comprising a resistance wire 16 wound on a tubular member 17 of a suitable refractory insulating material such as porcelain.

One end of the resistance wire or coil 16 is connected to the terminal 18 (see Figure 6) on a switch 19 and the other end is connected to the terminal 20 on said switch. The casing 10 is insulated as at 21 with a lining of any suitable material the end opposite the end 11 being open as at 23. This end 23 is adapted to be connected to a vacuum cleaner on the discharge side of the fan whereby, on the vacuum cleaner being operated, the air is forced through the casing around the heating unit 15 and out through the air tube 13, being heated to any required temperature in its travel through the casing.

The tubular core 17 for the heating element is of sufficient diameter to permit, as shown in dotted lines in Figure 1, a curling tongs to be inserted therein to be heated while the device is in operation.

A feature of the invention is the collapsible self-supporting and handling means associated therewith comprising pivotally mounted leg 24 (see Figure 4) adapted in collapsed or folded position to fit into a recessed portion 25 formed in the casing while connected to, and adjacent the rear of the casing, by hinged lugs 26 are a pair of supports 27 adapted, as illustrated in Figure 2, in closed position to form a handle for the device and when opened out to provide supporting legs, as shown in Figure 3.

The wires 28 and 29 from the source of power connect with the switch 19 at 30 and 31 while a return lead 32 connects the heating element 16 to the terminals 18 and 20 in the switch. For connecting up the device to the source of power I provide a special form of plug (see Figure 5) including a base 33 connected to a wall or the like into which is inserted a plug 34 connected to the electric vacuum cleaner by the wires 35

while into the plug 34 fits a plug 36 connecting therethrough the wires 28 and 29 with the switch 19.

It will thus be seen that on power being turned on the electric vacuum cleaner (not shown) and my heating attachment will be simultaneously operated, the latter to receive the air blown from the vacuum cleaner and heat it. It will also be noted that by operating the switch 19 power to the heater can be turned off and the vacuum cleaner operated alone also that by turning the switch 19 to the terminal 20 therein the power supplied to the heating element will be at "low" and that by further operating the switch 19 to engage with the terminals 20 and 18 the heat supplied to the heating element will be at "high".

In the diagrammatic view of the wiring as shown in Figure 6 power is supplied by leads 28 and 29 to switch 19 while the ends of the wires of the heating elements are connected to the switch as at 18 and 20 and the return wire 32 associated with these is connected to the switch as at 37 so that on the switch 19, previously mentioned, being operated to contact with the terminals 20 and 30 the current travels through the wire 28, heating element 16, return wire 32, back to switch 19 thereby completing the low heating circuit, and on the switch being operated to contact with the terminals 30, 20 and 18 the current will travel through the wires 28, heating elements 16 and 16' and return by wire 32, to switch 19, thus completing the high heating circuit.

It will further be noted that while the device can be readily handled and readily supported, the means for handling it being collapsible permit the device to be packed for transportation or otherwise within a very small space but always ready without practically any effort for operation when unpacked. The entire device is of neat and compact appearance and when required can be readily attached to the source of power and operated. If desired, and when not being used to supply a current of heated air for drying, it can be advantageously employed as a tongs' heater.

With regard to the supports 27 they are adapted, as illustrated in Figures 2 and 3, to overlap in closed position and are provided with any suitable form of securing means for retaining them while for convenience in opening them the arcuate slots 38 are provided in each member.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention, within the scope of the claim, constructed without departing from the spirit or scope thereof, it is intended that all matter contained in the accompanying specification and drawings shall be interpreted as illustrative and not in a limiting sense.

What I claim as my invention is:—

A heating attachment for vacuum cleaners comprising a cylindrical casing formed with a longitudinal flange, a heating element within the casing and in spaced relationship thereto, a lining of insulating material for the casing, a pair of combined handling and supporting members hingedly connected to the casing, pivotally mounted legs for the casing, recess means integral with the casing for housing the legs in collapsed position, and controlled means for heating the element.

In witness whereof I have hereunto set my hand.

FRANCOIS XAVIER ADRIEN DUHAMEL