Sept. 13, 1966 E. E. SUTTON 3,272,966

DEVICE FOR DRYING HAIR AND FINGERNAILS

Filed June 20, 1963 2 Sheets-Sheet 1

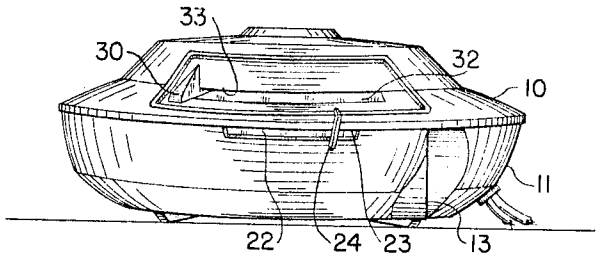


FIG. 1

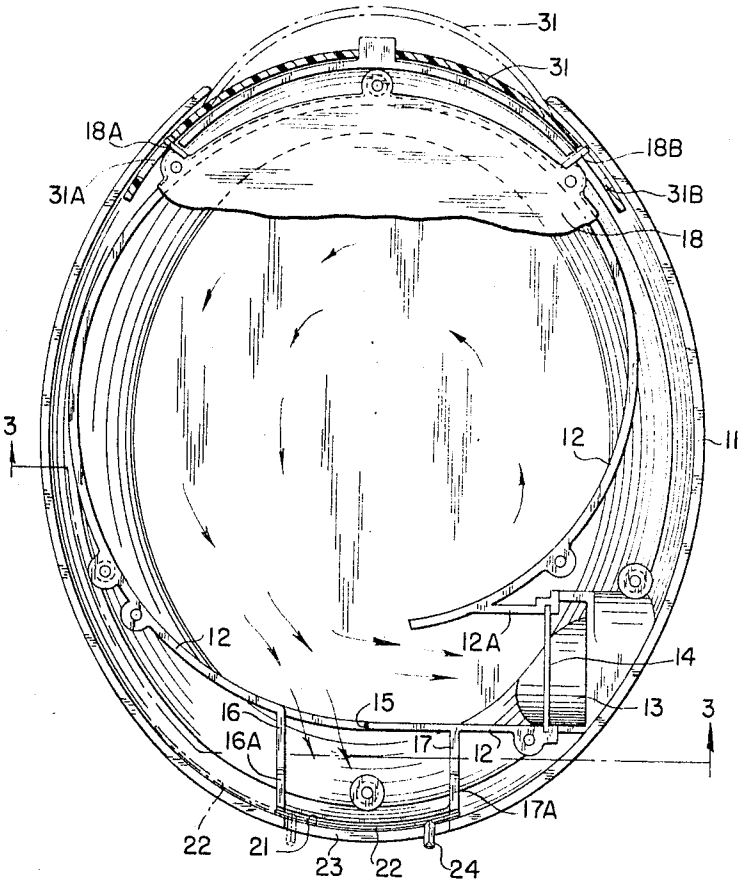


FIG. 2

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DEVICE FOR DRYING HAIR AND FINGERNAILS

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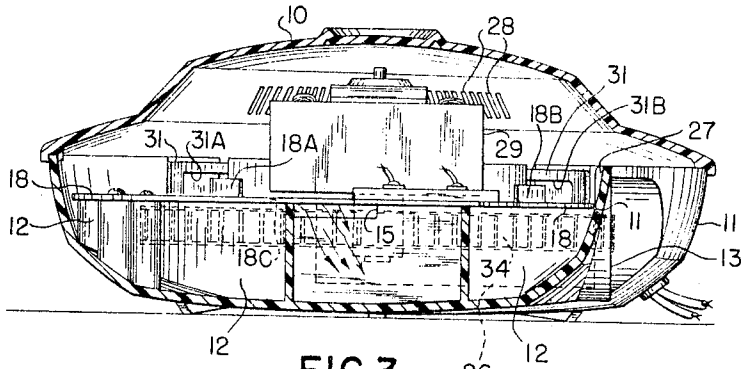


FIG. 3

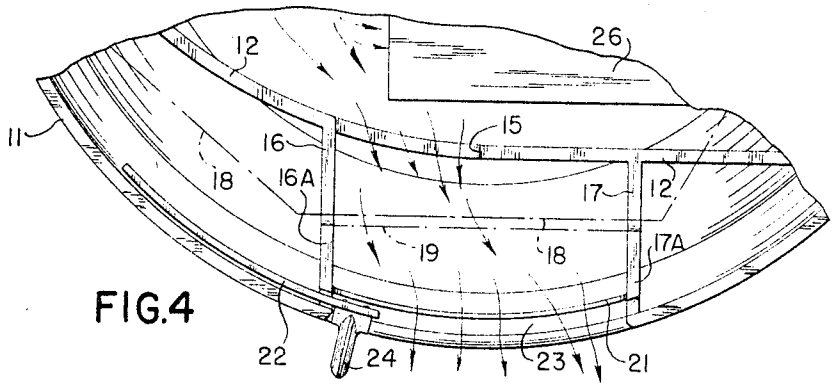


FIG. 4

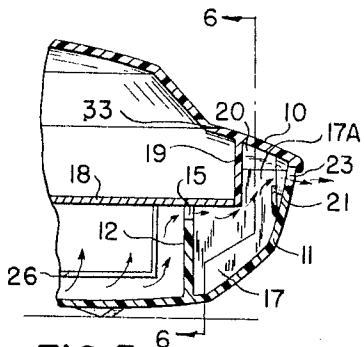


FIG. 5

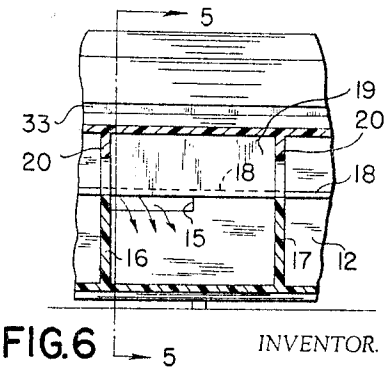


FIG. 6

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3,272,966

DEVICE FOR DRYING HAIR AND FINGERNAILS

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Filed June 20, 1963, Ser. No. 289,363
3 Claims. (Cl. 219—370)

My invention relates to electric hair dryers.

An object of my invention is to provide an improved structure in an electric hair dryer.

Another object is the provision for incorporating an arrangement for drying the polish on fingernails in hair-drying apparatus.

Another object is the provision of a construction in the housing of a hair dryer which facilitates the by-passing or leakage of air from the dryer for drying polish on fingernails.

Another object is the provision of a device of the general character which is compact, sturdy and economical to fabricate.

Another object is the provision of a unique means for controlling the exit of air from a vent adapted for drying polish on fingernails.

Another object is the provision of a unique arrangement of a handle for the carrying of an electric hair dryer.

Another object is the provision of a novel anchoring arrangement for securing a handle strap to a hair dryer.

Other objects and a fuller understanding of the invention may be had by referring to the following description and claims, taken in conjunction with the accompanying drawings, in which:

FIGURE 1 is an elevational view of the outside of the preferred form of my improved hair dryer looking at one end thereof;

FIGURE 2 is an enlarged plan view looking down on the dryer with the upper shell removed from the housing and with the motor and fan removed so as to show the arrangement of the structure of the lower shell;

FIGURE 3 is a cross-sectional view taken through the line 3—3 of FIGURE 2;

FIGURE 4 is an enlarged sectional view of the end of the lower shell adjacent the exit or vent for air to be used in fingernail drying;

FIGURE 5 is an upright sectional view through the end of the housing where the vent is located for fingernail drying, and is taken along the line 5—5 of FIGURE 6; and

FIGURE 6 is a cross-sectional view of the same end of the housing and is taken through the line 6—6 of FIGURE 5.

My improved dryer has a housing having mating upper shell **10** and lower shell **11** which when assembled enclose an inner chamber. The shells **10** and **11** are preferably made of molded plastic or other appropriate material. The shells are assembled by screws extending through oppositely disposed studs in the shells.

As seen in FIGURE 2, there is integrally formed in the shell **11** a convolute or curved wall **12** disposed as illustrated. The outer end of the wall **12** in combination with a wall portion **12A** form a passageway from the interior of the shell to an outlet **13**. A screen **14** or other open mesh structture may be positioned at the outlet **13**. The wall of the outlet **13** is formed so as to be adapted to be connected with a conduit, such as a flexible hose, extending to a hood or other device to distribute blown heated air to the head of the user.

Mounted upon the lower shell **11** is a metal supporting plate **18** disposed in a generally horizontal plane. Screws attached to studs formed in the lower shell **11** secure the plate **18** in position. The plate **18** in general divides the

interior chamber in the housing into an upper section and a lower section. Carried upon the plate **18** and positioned in the upper section is an electric motor **29** adapted to be connected to a source of electrical energy throurgh appropriate leads. Carried by the plate **18** and positioned in the lower section is a rotary fan **34** mounted on a shaft extending from the motor **29**, so that upon energization of the motor **29** the fan **34** is rotated. The fan **34** in cooperation with the convolute wall **12** in the lower section produces a stream of blown air to the outlet **13**. Vents **28** in the upper shell **10** provide ingress for air to enter the housing from atmosphere. The plate **18** has a central opening **18C** extending therethrough for permitting air in the upper section of the housing to flow downwardly through the plate **18** so as to come under the influence of the rotary fan **34** and thus to be blown in a stream around the lower section and out through the outlet **13**.

A control handle **30** extends through an arcuate slot **33** in the upper shell **10** so as to permit a thermostatic control (not shown) within the housing to be operated by swinging the control handle **30** to different positions in its arcuate path permitted by the slot **33**. An arcuate indicia plate **32** is mounted on the housing adjacent the arcuate slot **33** so as to indicate various locations to guide movement of the handle **30**, such as to positions "Off," "Cool," "Warm," "Medium," and "Hot."

At one end of the housing there is a compartment formed by cooperative walls or partitions formed on the upper and lower shells. The compartment is composed of walls **16** and **17** and a portion of wall **12** extending upwardly from the lower shell **11**. The wall **16** has a relatively high portion **16A** and the wall **17** has a relatively high portion **17A** which are stepped up from the remainder of the respective walls **16** and **17**.

These walls **16** and **17** extend outwardly from the wall **12** toward the outer wall of the shell **11**. A slot **15** is formed in the wall **12**, as seen in FIGURES 2, 5 and 6, so as to permit some of the blown air from within the housing to be by-passed or leaked off from the main passageway leading to the outlet **13**. This slot **15** is in the upper edge portion of the wall **12** and is bridged by the plate **18** extending over the top of the wall **12**.

The upper shell **10** has a depending wall or partition **19** extending downwardly so as to meet the plate **18**, as illustrated in FIGURES 5 and 6. Joining the wall **19** and extending over to the outer wall of the shell **10** are end walls **20**, as illustrated in FIGURES 5 and 6. It is thus seen that at one end of the housing, there is formed a compartment by a portion of wall **12**, a portion of plate **18**, walls **16** and **17**, wall **19**, and end walls **20**. Air by-passed or leaked from the main stream of blown air created in the housing enters the compartment through the small slot **15**.

An exit or vent **23** is provided in the outer wall of the lower shell **11** at the junction with the upper shell **10** so as to permit blown air in the compartment to leave or be blown from the compartment. This vent **23** is a relatively long narrow slit and is arcuate to correspond with the shape of the lower shell **11** at this location. An arcuate shaped slideway **21** is formed adjacent the vent **23**, this slideway **21** corresponding in shape with the contour of the shell **11** at the vent **23**. An arcuate panel **22** of relatively long narrow dimensions is positioned within the housing adjacent the vent **23** and in a position to be guided by the slideway **21**. The panel **22** is semi-rigid so as to maintain its shape and yet conform to the contour of the inner surface of the wall of shell **11**. A handle **24** mounted to the panel **22** and extending outwardly therefrom is provided so that the user may slide the panel to the desired degree across the vent **23** and thus completely close the vent or partially close the vent to the selected

amount. When the user desires to dry her fingernails, the handle 24 is manipulated to move the panel 22 the desired amount and air leaving the compartment through the vent 23 is blown out so as to dry fingernails held adjacent thereto in those situations where enamel, polish or other material has been applied to fingernails and drying is required.

Carried by the plate 18 and in the passageway transversed by the stream of blown air is an electric resistance heating element 26. The bulk of the blown air moving toward the outlet 13 may be heated by the element 26 upon energization thereof. A portion of the air by-passed through the slot 15 into the compartment and hence out of the vent 23 comes in contact with a small portion of the heater 26 so as to be somewhat warmed by the heater 26 but not to the same high degree as the main stream of air being blown out through the outlet 13 and from there to the head of the user. The arrows in the figures of the drawings generally indicate the flow of air in the housing, through the outlet, through the compartment, and through the fingernail drying vent 23.

To provide ready and convenient means for carrying the dryer, there is provided at the opposite end of the housing a handle strap 31. This handle strap 31 is preferably made of a semi-rigid material having sufficient resiliency to be able to move from the position shown in full lines in FIGURE 2 to the position shown in broken lines in FIGURE 2. When in the extended position shown in broken lines in FIGURE 2, the strap 31 may be seized as a handle for the carrying of the dryer. When desired, the strap 31 may be retracted into the position shown in full lines in FIGURE 2.

The strap 31 has a rectangular slit 31A formed therein at one end and a rectangular slit 31B formed therein at its opposite end. The plate 18 adjacent the strap 31 has formed therein an ear 18A and an ear 18B, which are formed by bending up terminal pieces integral with the plate 18. Ear 18A fits within the slit 31A in the strap 31 and ear 18B fits within the slot 31B of the strap 31. The size of the slits is larger than the cross-sectional area of the ears so that the strap may be moved to position the ears at one extreme end of the slits, such as when the strap is in the position shown in broken lines in FIGURE 2, and so that the ears are positioned at the opposite extreme ends of the slits, such as when the strap is in the position shown in full lines in FIGURE 2. Thus the ears 18A and 18B in the respective slits provide anchors for securing the strap to the housing and at the same time permit the strap to be moved between its retracted position and its extended position.

The top shell 10 has a depending wall 27 extending downwardly therefrom to meet the plate 18 near the outlet 13 so as to close off the upper section of the housing from the outside of the housing immediately above the outlet 13. Thus there is a recess or cove formed in the end of the housing where a conduit or hose may be extended to be connected to the outlet 13.

By the arrangement described and illustrated, a compact, efficient and economical dryer is provided which may be utilized both for hair drying and for fingernail drying, as desired.

The present disclosure includes that contained in the appended claims, as well as that of the foregoing description.

Although this invention has been described in its preferred form with a certain degree of particularity, it is understood that the present disclosure of the preferred form has been made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as hereinafter claimed.

What is claimed is:

1. A drying device for hair and fingernails comprising the combination of a lower shell, an upper shell joined to the lower shell to form a hollow enclosure, a supporting plate carried by the lower shell and positioned to divide the enclosure into upper and lower sections, an electric motor carried by the plate and extending into the upper section, a rotary fan carried by the plate and extending into the lower section, said lower shell having an outlet adapted to engage an air hose for conduction of air therefrom for the drying of hair, said upper shell having inlet means for the ingress of air into the enclosure, said plate having a central opening to permit air from said inlet means to be drawn by the rotary fan through said central opening into the lower section of the enclosure, said lower shell having a convolute confining wall cooperating with said rotary fan for the driving of air drawn into said lower section to said outlet, an electric resistance heating element carried by said plate and extending into the lower section adjacent said outlet for heating air driven by the rotary fan prior to its egress from said outlet, a compartment in the enclosure formed by cooperating portions of said shells and plate at a location adjacent the periphery of the joined shells, said compartment having an opening into the lower section for the leaking of driven air in the lower section into said compartment before reaching said outlet, said compartment having an exit for the egress of said driven air exteriorly of said joined shells for the drying of fingernails, said joined shells at said exit having portions forming a slideway, and a closure slidable in said slideway for closing and opening said exit as desired.

2. A dryer having a housing formed of joined upper and lower shells, a supporting plate carried by the lower shell, an electric motor, fan, and electric heater carried by the plate for supplying blown heated air to an outlet, said housing having arcuate walls on opposite sides thereof, the housing at one of said opposite sides having an arcuate opening, diverting means in the housing for diverting blown air to said arcuate opening from the housing before reaching said outlet, an arcuate panel slidable to close to selected degree the said arcuate opening, arcuate guide means carried by the housing adjacent the arcuate opening for guiding the sliding movement of said panel relative to said arcuate opening, the housing at the other of said opposite sides having an arcuate wall offset inwardly from the adjacent wall of the housing, said housing at the opposite ends of said arcuate wall having slits, respectively, opening to within said housing, a flexible handle strap having opposite end portions extending through said slits, said opposite end portions of the strap having elongated openings therein, respectively, said plate in said housing having a pair of tongues extending through a said elongated opening in the strap and into a respective slit in the housing to anchor each end of the strap to the housing, said elongated opening being larger than the respective tongues to permit limited movement of the strap relative to the housing before engagement of the strap with said tongues, said strap being positionable at a distance therefrom to serve as a handle for the housing upon the tongues in said elongated openings engaging and anchoring said strap against further movement away from the housing.

3. A dryer comprising the combination of, a housing composed of a lower shell and upper shell joined to enclose a chamber, a plate carried by the lower shell and dividing the chamber in two sections, an electric motor carried by the plate in the upper section, a rotary fan powered by the motor carried by the plate in the lower section for blowing air, air inlet means extending through the upper shell for admitting air into the upper section, air outlet means extending through the lower shell for exhausting blown air therefrom, said plate having an opening to permit air to flow from the upper section to the lower section, electric resistance heating means carried by said plate in the lower section for heating blown air before exhaustion through the outlet means, a compartment in said housing formed by portions of said shells and plate, vent means for venting some of said blown air

from said lower section before reaching said outlet means into said compartment, exit means through the housing for permitting blown air in said compartment to escape therefrom, and movable closure means for closing said exit means to selected degree.

References Cited by the Examiner

UNITED STATES PATENTS

981,641	1/1911	Halliwell	219—366
1,149,634	8/1915	Crigler	16—115 X
1,736,640	11/1929	Waterer.	
2,014,507	9/1935	Price.	
2,093,306	9/1937	Carson.	
2,277,870	3/1942	Meyerhuefer	165—126 X
3,095,496	6/1963	Omohundro	219—366

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