July 1, 1969 R. S. WALLACE 3,452,365

HEAT-SHIELDING EAR PROTECTOR

Filed Sept. 11, 1967

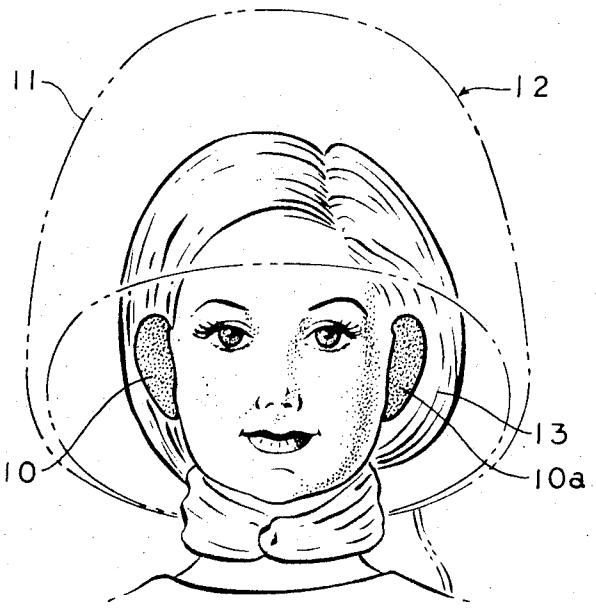


FIG-1

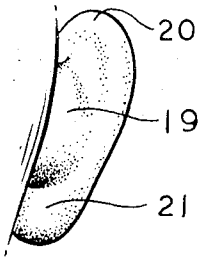


FIG-6

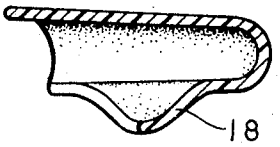


FIG-5

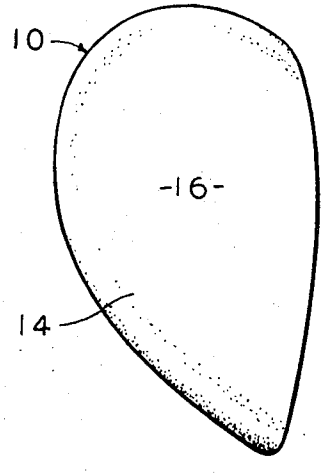


FIG-2

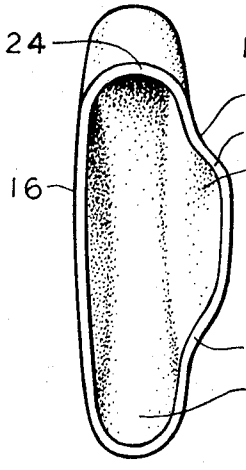


FIG-4

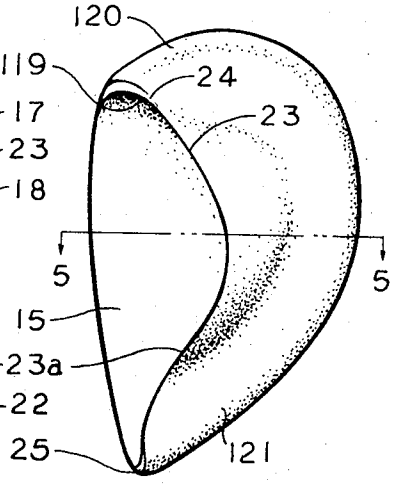


FIG-3

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HEAT-SHIELDING EAR PROTECTOR

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U.S. Cl. 2—209 3 Claims

ABSTRACT OF THE DISCLOSURE

The disclosed ear protectors are formed as upright envelopes opening forwardly for application to the human ear from the rear, and are bulged to accommodate the membrane connection of the ear to the head. The protectors are of one-piece, light-weight plastic construction, adapted for use under hair dryers.

Background of the invention

This invention relates generally to ear protection, and more specifically concerns protection of human ears from heat induced discomfort during hair drying treatment.

While there have been certain prior proposals for shielding ears from injury during drying of hair in commercial and home units, none of such devices have to my knowledge afforded the combinations of advantages provided by the present protectors. Among these advantages are simple, one-piece construction, ease of production or molding, low-cost enabling throw-away after usage for sanitation purposes, comfort to the wearer, and complete protection against discomfort to the ears.

Summary of the invention

Accordingly, it is a major object of the invention to provide ear protectors embodying all of the above advantages, as well as others as will appear. Basically, the protector is embodied in a heat insulative, hollow, vertically elongated envelope or shield that opens generally forwardly for application to and over the ear from the rear, the envelope having an outer wall adapted to extend adjacent the outer side of the ear and an inner wall locally bulged relatively away from the outer wall to conform to the membrane connection of the ear to the head. The envelope or receptacle may typically consist of molded plastic material, as for example Styrofoam. Further, the envelope will be seen in its preferred embodiment to conform closely in outline to the edge outline of the upper, lower and rear portions of the human ear.

These and other objects and advantages of the invention, as well as the details of an illustrative embodiment, will be more fully understood from the following detailed description of the drawings, in which:

Brief description of the drawings

FIG. 1 is a front elevation showing the ear protector being worn by a woman whose head is received under a hair dryer unit;

FIGS. 2 and 3 are outer and inner side elevational views, respectively, of the FIG. 1 protector;

FIG. 4 is a front elevational view of the protector;

FIG. 5 is a sectional view taken on line 5—5 of FIG. 3; and

FIG. 6 illustrates a human ear profile in rear elevation.

Description of the preferred embodiment

Referring first to FIG. 1, right and left ear protectors **10** and **10***a* are shown in position on the ears of a wearer whose head is received upwardly into the hood **11** of a hair dryer unit **12**. The latter is commonly electrically energized to develop heat which is communicated to the hair **13** for drying purposes. Hair drying time can be

substantially reduced with corresponding greater heat application; however, one limitation has been the discomfort to the ears upon heating to high temperatures. As will appear, the protectors **10** and **10***a* of the invention eliminate this problem so as to enable much faster hair drying, there being the additional advantage of substantial savings in time for hair drying enabling more efficient use of dryers, especially in beauty shops.

Extending the description to FIGS. 2–5, the right ear protector illustrated comprises a heat insulative, hollow, vertically elongated envelope or shell **14** that opens generally forwardly at **15** enabling its application to and over the ear from the rear thereof. The envelope has an outer wall **16** adapted to extend closely adjacent the outer side of the ear. It also has an inner wall **17** that extends at the inner side of the ear. In order to accommodate reception of the bulk of the ear into the protector, and to afford effective heat shielding of the inner side of the ear facing the head, the inner wall **17** is locally bulged at **18** relatively away from the outer wall **16** to conform generally to the membrane connection of the ear to the head. That membrane connection is illustrated at **19** in FIG. 6 which is a view looking toward the rear of the ear and also showing the top **20** of the ear and the bottom lobe **21**. It will be understood that the ear portions **19–21** are effectively protected inasmuch as the bulge **18** shields the membrane connection **19**, and the portions **20** and **21** of the ear are received at least for the most part into the protector envelope applied to the ear from the rear.

In this regard, it will be further understood that the illustrated envelope conforms closely in outline to the edge outline of the upper, lower and rear portions of the human ear. Note, for example, the upwardly recessed extent **119** of the upper portion **120** of the protector, the latter being forwardly and downwardly rounded. Similarly, the lower portion **121** of the protector extends downwardly and forwardly to define the lower interior portion **22** of the protector which receives the lobe **21**. Referring to FIG. 3, the forward edge of the inner wall **17** extends downwardly and rearwardly at **23** from its zone of mergence **24** from the outer wall **16**. That edge also extends inwardly, as better seen in FIG. 4, and at the bulge location. Extending downwardly from the bulge at **23***a*, the forward edge of the inner wall **17** returns forwardly and downwardly to merge with the outer wall **16** at the lowermost zone **25**.

The protector may typically consist of molded plastic material, as for example Styrofoam, which is inexpensive and lightweight. These characteristics permit throwaway usage of the protectors for sanitary purposes, as in beauty shops; also, the wearer after a short interval does not notice that the protectors are in position, due to their extremely lightweight construction.

The term "Styrofoam" as used above refers to molded, expanded styrene, as for example bead styrene impregnated with volatile material, and heated in a mold so that the beads expand and are fused. Solid or gaseous blowing agents may be used. An alternate material is extruded foamed sheet consisting of olefin polymers and co-polymers.

The above described protector may also be used for ear protection against extreme cold, as during skiing.

I claim:

1. For use in protecting the human ear against heat radiation from a hair dryer unit received over a human head, a heat insulative, hollow, vertically elongated envelope defining a generally forwardly directed opening for application to and over the ear from the rear thereof, the envelope having an outer wall adapted to extend adjacent the outer side of the ear and an inner wall having a bulge projecting relatively away from the outer wall to conform to the membrane connection of the ear to the

head, the envelope further characterized in that

(a) the envelope consists of a one-piece plastic molding that is relatively rigid,

(b) the envelope defines an outline extending rearwardly and upwardly from a point adjacent the top of said forward opening, then rearwardly and downwardly, and finally downwardly and forwardly to a point adjacent the bottom of said opening,

(c) said inner wall being generally parallel to said outer wall at locations between said bulge and said outline so that the bulge is spaced from said outline.

2. The envelope of claim 1 consisting of molded Styrofoam.

3. The envelope of claim 1 wherein the envelope conforms closely in outline to the edge outline of the upper,

lower and rear portions of the human ear, said outline having the general shape of half of a valentine heart.

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