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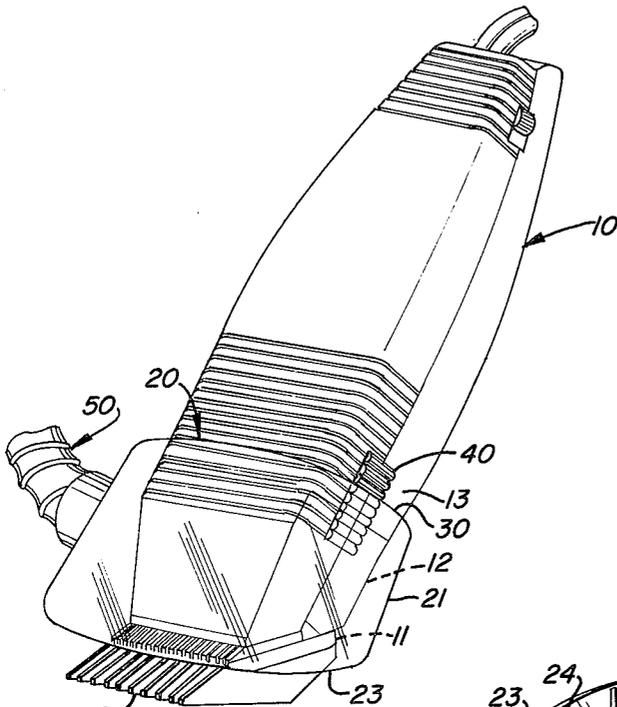
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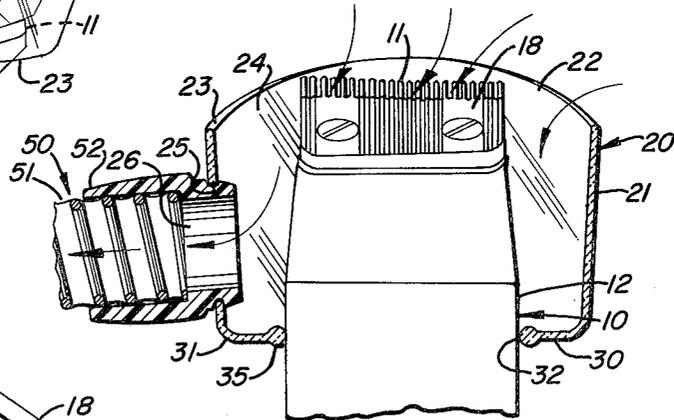
CLIPPER ASPIRATOR

Filed Oct. 1, 1963

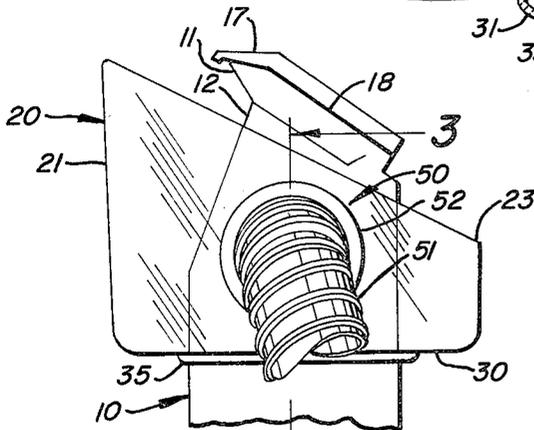
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**FIG. 1**



**FIG. 3**



**FIG. 2**

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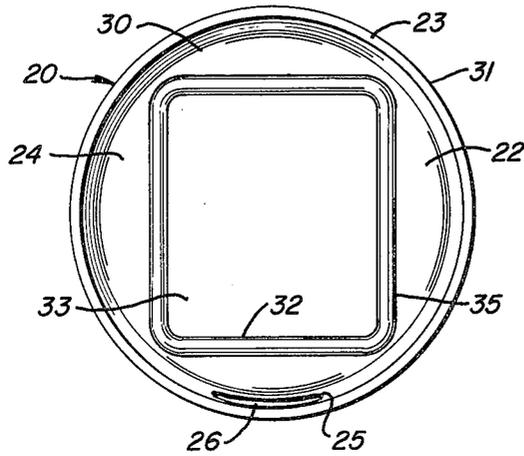
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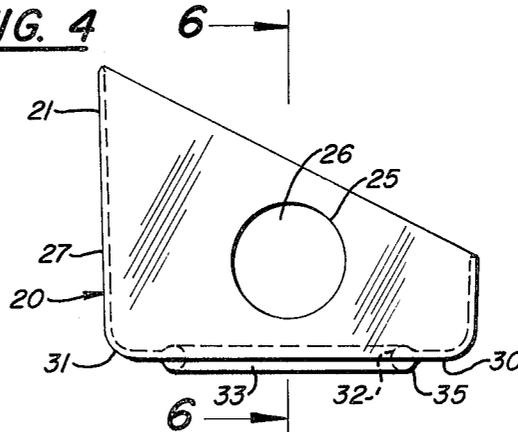
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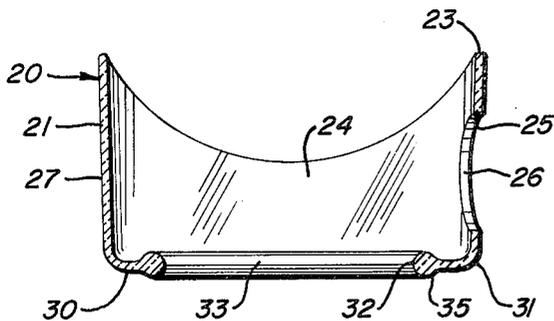
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**FIG. 4**



**FIG. 5**



**FIG. 6**

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**CLIPPER ASPIRATOR**

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Filed Oct. 1, 1963, Ser. No. 312,918  
3 Claims. (Cl. 30—133)

The invention, which is disclosed herein and illustrated in the appended drawings, relates generally to devices for removing cut ends of hair from clippers which are used for trimming either human or animal hair. More specifically, this invention relates to a device for evacuating cut ends of hair from the vicinity of the cutting elements of hair-trimming clippers.

A variety of devices have been developed for evacuating severed ends of hair from the cutting blades of hair clippers, and removing them by pneumatic means to a suitable confined space. Devices of this type which are now known are designed either to be incorporated in the structure of a clipper, or to be more or less permanently attached to a trimming tool.

Such devices typically employ an evacuating nozzle defining an intake orifice which is proportioned substantially similar in size and configuration to the exposed portion of the cutting elements employed in the clipper with which the device is used. When this type of structure is used it is necessary that the nozzle opening be located immediately adjacent one surface, usually the upper surface, of the clipper cutting elements.

The result achieved by such a structure is imperfect, since the restricted cross-sectional area of the column of air which is drawn across the upper surface of the cutting elements is often insufficient to capture all the cut ends of hair which are severed by the clipper. This is true because the mechanical shearing action of the clipper blades often imparts an initial impetus to hair clippings which propels them, through the restricted area of accelerated airflow and into the aspirator nozzle, at velocities which are not overcome by the force of the air stream flowing into the nozzle.

A further objection to known devices lies in the observable fact that, in actual operation, all cut ends of hair are not discharged from the upper surfaces of clipper blades. For example, oil and static electrical charges tend to retain certain of the cut ends upon the upper surfaces of the clipper blades, despite the limited airflow over such surfaces which is afforded by the known devices. Vibration of the cutting head frequently moves such previously severed ends toward the cutting elements where they are again severed in such a manner as to broadcast severed ends from the lower surfaces of the cutting elements, in a direction away from the air stream provided by conventional aspirating devices.

A third deficiency found in known clipper aspirating devices arises out of their use in conjunction with guide comb attachments, which are coming into common use as an aid to non-professional use of barbers' clippers in home hair-cutting. Such comb attachments are removably attached to the cutting head of hair-cutting clippers, in a position forward of and below the cutting elements.

In such use, the comb attachments tend to attract, and ultimately to become clogged with, hair clippings. Conventional aspirators, positioned above the clipper cutting head, prove ineffective in removing hair clippings from the comb attachment because of their remote location from the attachment.

It is further observed that such comb attachments are available in various sizes and shapes, designed to guide the cutting elements of a clipper in different positions, spaced variously from the scalp. Thus it is seen that an aspirator, suitable for use with comb attachments, must be

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readily re-positionable along the longitudinal axis of the clipper to effectively evacuate cut ends of hair from comb attachments which differ in forward area and thickness.

*Objects*

One object of this invention is to provide a device for directing a column of moving air over the entire cutting head of a hair clipping device and associated attachments.

A second object of the present invention is to provide a device for aspirating a hair clipper, which is readily attached to and detached from a hair clipper, without the adjustment of screws, and regardless of the magnetic properties of the clipper.

Another object of the present invention is to provide a device for trimming hair, wherein an aspirator is readily re-positionable along the longitudinal axis of the device, at a variety of predetermined positions, in order to locate the aspirator in effective proximity with a variety of comb attachments, carried under differing circumstances by the cutting head of the device.

Still further objects and features of this invention will be apparent from the subjoined specification and claims, when they are considered together with the associated drawings.

*Drawings*

FIG. 1 is a view in perspective showing a hair-cutting clipper, incorporating the device of this invention, in association with a long tapering comb attachment; with a vacuum connecting hose and clipper power supply cord shown in fragmentary representation.

FIG. 2 is a fragmentary side view of the aspirator of the present invention installed upon a hair clipper, in association with a short tapering comb attachment, showing the rear portion of the clipper broken away.

FIG. 3 is a view taken along the line 3—3 of FIG. 2, showing a sectional view of the aspirator cup member in operating association with the cutting head of a hair clipper.

FIG. 4 is a plan view of the cup member only, looking through the intake opening toward the inner perimeter of the end wall.

FIG. 5 is a side view of the cup member, showing the outlet bore.

FIG. 6 is a view in section of the cup member, taken along the line 6—6 of FIG. 5, showing the relative positions of the annular lip, perimetrical edge and outlet bore.

*Description*

Briefly summarized, the device of the present invention is seen in FIGS. 1 and 2 to be an aspirator for use with a hair clipper, comprising: means, comprising hollow body 20, for containing forward portion 12 of hair clipper 10; means, comprising perimeter 32 for removably securing clipper 10 within central cavity 24 of hollow body 20; and means, comprising lateral bore 25 for connecting a source of vacuum 50 in fluid communication with central cavity 24 of hollow body 20.

Referring specifically to the drawings for a more detailed description of the device of this invention, it will be seen in FIG. 1 that hair-clipping means 10 comprises a hair clipping device of well-known structure; such as, for example, clippers which are commonly employed by non-professionals in administering haircuts in the home. Other hair-clipping devices of similar overall configuration are commonly used for shearing hair or fur from animals and hides. Clipper 10 may be formed in the conventional manner with a forward portion 12 which terminates in a cutting head 11, comprising a plurality of mutually reciprocating, comb-shaped blades.

Such hair-clipping devices are sometimes provided with a plurality of interchangeable hair-trimming guide combs,

which assist an operator in executing a smoothly trimmed haircut. Two of such comb attachments are shown in the drawings, removably attached to cutting head 11 of clipper 10. They are: a long comb attachment 16 (FIG. 1), for butch or crew haircuts; and a short tapering comb attachment 17 (FIG. 2), which is used as a guide for general taper trimming.

Means for aspirating cut ends of hair from all surfaces of cutting head 11 and comb attachments 16 and 17 comprises a hollow, cup-shaped body 20 which is preferably formed with the general configuration shown in FIGS. 4, 5 and 6. Referring specifically to FIG. 6, it is seen that hollow body 20 comprises a perimetrical wall 21 and an end wall 30. Perimetrical wall 21 may be formed with the general configuration of a hollow cylinder, having one of its opposite ends truncated along the line of intersection of a plane, which is inclined obliquely, with reference to the axis of cylindrical wall 21, at an angle approximating that which occurs between the longitudinal axis of clipper 10 and the lower face 18 of cutting head 11 (FIG. 2).

Reference to a variety of hair clippers now in general use reveals that an angle of 25° between the plane of the outer peripheral edge 23 of perimetrical wall 21 approximates the corresponding angle of hair clippers now in use. It will be understood, however, that the pitch of the plane of edge 23 may be varied substantially from this value to coincide, either with the angle of the cutting head of a particular clipping device or that of a clipper guide attachment.

Peripheral edge 23 of wall 21 defines an air intake opening 22 (FIG. 3), in fluid communication with a central cavity 24, which is defined by perimetrical wall 21 and end wall 30. A lateral bore 25 is formed in wall 21 and defines an exhaust opening 26, in fluid communication with cavity 24.

End wall 30 is formed with an outer perimeter 31, having a configuration which conforms to the shape of outer surface 27 of perimetrical wall 21. When wall 21 is formed with the preferred cross-sectional configuration of a cylinder, the outer limit 31 of end wall 30 will have the circular configuration seen in FIG. 4. It will be apparent to those skilled in the art that wall 21 may be formed with any suitable cross-sectional configuration, which may be elliptical, egg-shaped or polygonal, for example. If perimetrical wall 21 is formed with another cross-sectional configuration, end wall 30 must be formed with an outer shape which conforms to that of wall 21.

End wall 31 is formed with an inner perimeter 32, defining an axial opening 33. Inner perimeter 32 is formed with a size and configuration which is suitable for embracing, in fluid-tight frictional engagement, the outer surface 13 (FIG. 1) of forward portion 12 of clipper 10.

It will be further apparent to persons skilled in the art that end wall 30 may be constructed integrally with perimetrical wall 21, if desired, to form a hollow body 20, having the overall cup-like configuration seen in FIGS. 1 and 3.

In the preferred embodiment of this invention, end wall 31 and perimetrical wall 21 are formed from a plastic material which is rigid under normal circumstances of use, but which is nevertheless reasonably elastic and deformable in response to moderate manual force. By employing a material having the properties thus described, the inner perimeter 32 of end wall 30 may be stretched and distorted to accommodate a variety of clippers 10, having different cross-sectional configurations of outer surface 13, within the limits usually encountered in commercial models of clipping devices.

If it is desired to employ a more rigid, less deformable material in the construction of either hollow body 20 or end wall 30, then a resilient bead 35 (FIG. 6), formed with any desired thickness, may be provided on wall 30, adjacent inner perimeter 32. Bead 35 may be formed from any of several suitable materials having properties

of elasticity and resilience different from those of end wall 30. For example, materials having suitable properties which are commercially available are known as foam rubber or thermoplastic foam products.

Experimental use of the device of this invention suggests that hollow body 20 is preferably formed from a suitable material, having properties of transparency which afford a minimal obstruction to the operator's vision. While the device may be used quite satisfactorily if formed from a semi-transparent material, it has been found that its use is facilitated by affording the operator an unobstructed and undistorted view of cutting head 11 of clipper 10 (FIG. 1).

A suitable index means 40 (FIG. 1) is provided on the outer surface 13 of clipper 10 for indicating the optimum position, of the outer surface 34 of end wall 30, along the longitudinal axis of clipper 10 for alternative use of the aspirator, without guide attachments on cutting head 11 (FIG. 3), with a long guide comb 16 (FIG. 1), or with a tapering comb 17 (FIG. 2).

Any suitable means may be employed for evacuating air and hair clippings from central cavity 24 of aspirator cup 20; and from those elements of clipper 10 which are either located adjacent, or contained within, perimetrical wall 21. For example, in experimental operation of the device, commercial models of well-known vacuum cleaners (not shown) have been thus utilized with satisfactory results.

Means 50 for connecting hollow body 20 to a suitable source of vacuum, preferably comprises a flexible, wire-reinforced hose conduit 51 (FIG. 3). Hose 51 is provided at each end with suitable means 52 for achieving a fluid-tight connection with the appropriate appliance. Connector 52 is a well-known connector fitting of the compressible plug type, adapted for maintaining a removable fluid seal connection with outlet bore 25 of aspirator cup 21. A similar connector fitting (not shown) is provided at the opposite end of hose 51 and is adapted for similarly connecting hose 51 to a suitable source of vacuum, such as a household vacuum cleaner.

#### Operation

In the operation of the device of the present invention the forward portion 12 of a clipper 10 (FIG. 1) is inserted into opening 33, defined by rear wall 34 of aspirator cup 20. Clipper 10 is contained within aspirator cup 20, in fluid-tight, frictional inter-engagement between inner perimeter 32 of rear wall 30 (FIG. 3) and outer surface 13 of clipper 10.

Cup 20 is then positioned longitudinally of clipper 10 with peripheral edge 23 disposed circumjacent cutting element 11 of the clipper. This mutual alignment of cup 20 and clipper 10 is readily achieved in use by locating upper surface 13 of end wall 30 in register with one of several predetermined marks provided on index 40 of clipper 10.

Connector fitting 52 of flexible hose 51 (FIG. 3) is secured in fluid-tight engagement within outlet bore 25 of cup 20. Conduit 53 of hose 51 is thus in fluid communication with central cavity 24 and intake opening 22 of cup 20. The end of hose 51 opposite that which carries connector fitting 52 is connected by suitable means to a suitable source of vacuum such as a household vacuum cleaner.

When the vacuum source is placed in operation, the static air pressure within conduit 53 of hose 51 is reduced thereby to a value less than that of the outside atmosphere. As a result, air under atmospheric pressure is drawn into intake opening 22 and into central cavity 24 (FIG. 3) of cup 20. This operation serves to move into cavity 24 a column of air having a cross-sectional area approximating that of the plane of peripheral edge 23.

The column of air which is thus moved into intake opening 22 serves effectively to capture each hair clipping discharged by cutting head 11 and to draw each cut end

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of hair into the confines of cavity 24, through outlet opening 26 and conduit 53, and ultimately into a suitable depository container which is normally provided at the vacuum cleaner. The moving column of air thus described further serves to wash, in a continuous bath of air, each exposed surface of cutting head 11 (FIG. 1), together with any comb guide attachment 16 which may be associated therewith, ultimately disposing of retained hair clippings through outlet opening 26 in the manner previously described.

It is to be understood that the above embodiment of this invention is shown and described herein for purposes of illustration only. Various changes may be made therein without departing from the spirit and scope of this invention.

I claim:

1. An aspiration adapter device for use in cooperation with vacuum means; for removable circumferential attachment to a longitudinally-extending hair clipper body provided with a guide comb element; for defining an air space near the cutting elements of said hair clipper and rearward of said comb element; and for, together with said vacuum means, effecting the removal of hair clippings from said comb element, said cutting elements and said space; said device comprising:

(1) a cup shaped body;

(2) a peripheral wall in said cup shaped body adapted to be substantially axially parallel to said longitudinally-extending hair clipper body, said wall defining said air space, and said air space being of substantially greater cross-sectional area than the cross-sectional area of said guide comb and cutting elements;

(3) a forward edge of said wall defining an air intake opening into said space, the plane of said edge adapted to pass near but rearward of said guide comb element, and said intake opening having a substantially greater cross-sectional area than the cross-sectional area of said guide comb and cutting elements;

(4) a rearward edge of said wall defining a second opening disposed oppositely to said intake opening, said second edge adapted to removably engage said

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hair clipper body in circumferential fluid tight frictional engagement, and said rearward edge being distortable to accommodate a variety of cross-sectional cutter body configurations; and

(5) an exhaust port in said peripheral wall through which to remove hair clippings; said port being adapted for cooperation with said vacuum means to provide air flow out of said space;

and wherein, when said device is in operable position on said hair clipper and said clipper is in use; aspirated air flows freely into said space via said intake opening, sweeps substantially longitudinally across said guide comb and cutting elements and through a substantial cross-sectional area of space surrounding said guide comb and cutting elements, and exits from said space via said exhaust port.

2. The device according to claim 1 in which said rearward edge of said wall is removably and adjustably attachable longitudinally along said hair clipper body to selectively fix the position of said plane of said forward edge relative to said guide comb element.

3. The device according to claim 1 in which said plane of said forward end is adapted to form an angle of about 25 degrees with the axis of said hair clipper body, and said rearward edge of said wall comprises a resilient bead for removable and longitudinal adjustment of said rearward edge relative to said hair clipper body to selectively fix the position of said plane of said forward edge relative to said guide comb elements.

References Cited by the Examiner

UNITED STATES PATENTS

1,735,766	11/1929	Kautz	30—133
1,942,766	1/1934	O'Banion	30—289 X
2,390,309	12/1945	Keys	30—164.7 X
3,015,336	1/1962	Caples.	

FOREIGN PATENTS

279,399 3/1952 Switzerland.

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