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HAIR CLIPPER ATTACHMENT

Filed June 29, 1960

FIG. 1

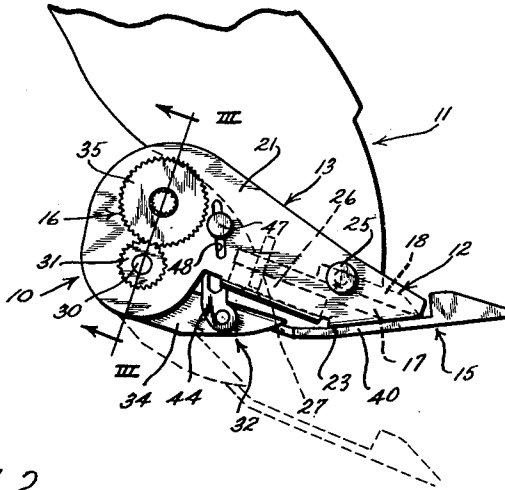


FIG. 2

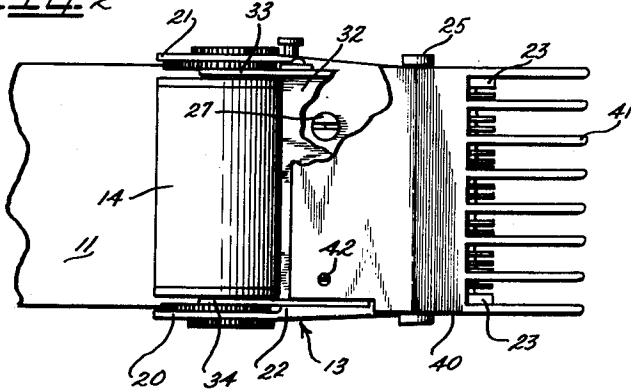


FIG. 3

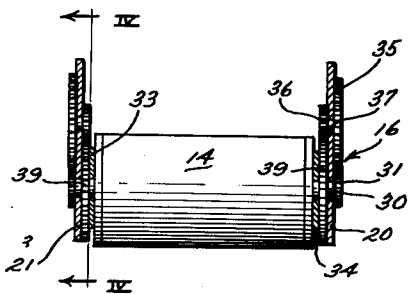
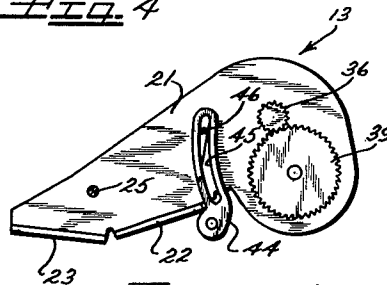


FIG. 4



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**HAIR CLIPPER ATTACHMENT**

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2 Claims. (Cl. 30-202)

This invention is directed to an attachment or accessory for a hair clipper and is more particularly directed to an attachment for a motor driven hair clipper which is effective to provide a tapering cut of hair as the clipper assembly is moved along the back of the neck.

Many prior types of devices in the general class described have been proposed in the past. However, each of the prior types of mechanisms within this class have had one or more particularly disadvantageous characteristics which it is the object of this invention to obviate.

In general, my invention is directed to an attachment or accessory to a hair clipper and is so arranged that the clipper attachment can readily be attached to and removed from standard motor powered hair clippers. This feature, of itself, constitutes a substantial improvement over many prior types of devices for effecting a tapered cut of hair inasmuch as the motor powered hair clipper may be used with or without the mechanism for effecting the tapered cut of hair to thereby greatly increase its utility.

Briefly described, my invention consists in the provision of a housing or tool mount having means for readily affixing the cutting head of a motor driven hair clipper thereto. A comb is pivotally mounted on the tool mount which is adapted to ride along the scalp of the person whose hair is to be cut. As the comb is moved pivotally with respect to the tool mount, the cutting head of the hair clipper which is mounted on the tool mount is consequently moved away from the scalp.

In order to provide a means for effecting a proper tapered cut of hair along the back of the neck, I have rotatably mounted a roller on the tool mount and have provided a gear train between the roller and the comb so that the comb will be pivoted upon rotation of the roller. The diameter of the roller and the several gears in the gear train is, of course, determinative of the amount to which the cutting head is moved away from the scalp for a given length of travel of the roller along the scalp.

In many prior devices in the class described, means have been provided for normally biasing the roller or its equivalent in one rotational direction so that upon removal of the roller from engagement with the scalp, the roller would be returned to an initial position and the comb or its equivalent, operatively connected therewith, would be returned to a point in juxtaposition with the cutting head.

On the contrary, I have provided a gear train to interconnect the roller with the comb which has a high reduction ratio so that pivotal movement of the comb can only be effected by rotation of the roller. Thus, no ordinary amount of force applied to the comb and urging the same toward the cutting head is effective to vary the distance between the cutting head and the comb. As a result, I find that by rotating the roller a given amount the comb can be disposed in a desired pivoted position and may be used in that position for as long as is desired. The fact that the roller is moved out of engagement with the scalp does not, of course, vary this fixed relationship between the cutting head and the comb.

Since I employ a gear train to interconnect the roller with the comb rather than some form of cam or cam and lever linkage means, the attachment operates smoothly and easily even though the roller contacts the scalp only very lightly.

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It is therefore a principal object of the present invention to provide an attachment for a motor driven hair clipper which will be effective to provide a tapered cut of hair.

Another important object of the invention resides in the provision of an attachment for hair clippers of the class described in which a gear train drivingly interconnects the roller with the pivoted comb.

A still further object of the invention is to provide an attachment of the class above described in which the comb can be pivoted with respect to the cutting head only by rotation of the roller.

These and other objects of the invention will become apparent from time to time as the following specification proceeds and with reference to the accompanying drawings, wherein:

FIGURE 1 is a side elevational view of my hair clipper attachment which illustrates in broken lines a pivoted position of the comb;

FIGURE 2 is a bottom view of my hair clipper attachment showing a portion of the comb broken away to reveal one means for securing the attachment to the clipper cutting head;

FIGURE 3 is a sectional view taken along lines III—III of FIGURE 1; and

FIGURE 4 is a vertical sectional view taken along lines IV—IV of FIGURE 3.

As illustrated in the drawings, an attachment 10 for effecting a tapered cut of hair is operatively associated with a motor driven hair clipper 11 having a two-part cutting head 12. The attachment 10 comprises generally a tool mount 13 having a roller 14 and a comb 15 rotatably and pivotally mounted thereon and drivingly interconnected with one another by means of a gear train 16. As illustrated in FIGURE 1, the gear train 16 is operative to effect pivotal movement of the comb 15 from the full line to the broken line position upon clockwise rotatable movement of the roller 14. Thus, if the clipper attachment is placed against the back of one's head and then moved upwardly so that the roller 14 rolls along the scalp, the comb 15 will move pivotally away from the cutting head 12 and thereby lengthen the cut of hair made by the cutting head 12.

Describing the illustrated embodiment of the invention now in more detail, the cutting head 12 includes a stationary comb 17 and a reciprocable transversely movable cutting comb 18. These two parts together constitute the cutting head and are a part of the usual motor driven hair clipper such as is fragmentarily illustrated at 11. Upon energization of the motor the cutting comb 18 moves transversely back and forth very quickly and cuts hair which extends through the stationary comb 17.

The tool part 13 comprises generally a pair of spaced side plates 20 and 21 and a transverse cutting head seat 22 which are formed integrally with one another. The distance between the side plates 20 and 21 at the forward end of the tool part 13 approximates the width of the cutting head comb 17 so that the cutting head 12 may be disposed between the side plates with the rearwardly extending portion of the comb 17 seated on the cutting head seat 22. The opposite sides of the forward end of the cutting head comb 17 are adapted to be seated on inwardly extending flanges 23 which are formed integrally with the side plates 20 and 21. Screw means 25, screw-threaded into the side plates 20 and 21, may then be screwed inwardly so that their shafts extend slightly over the cutting head comb 17 to positively secure the attachment 10 to the hair cutter 11. The screw means 25 are, of course, screwed inwardly only a slight distance so that they do not interfere with the reciprocating movement of the cutting comb 18. The attachment 10 may in this manner readily be connected to or disassociated

from the hair cutter 11 as desired. If it is desired to make a rather permanent connection between the attachment 10 and the hair clipper 11 the screws which normally serve to retain the cutting head comb 17 affixed to the body of the hair clipper 11 can be removed and these screws may then be replaced by inserting them through apertures which are provided in the cutting head seat 22 to positively and rigidly secure the attachment 10 to the clipper 11. If necessary, spacers 26 may be provided to be disposed in between the cutting head comb 17 and the cutting head seat 22. The necessity of such spacers at all, of course, or the thickness thereof is dependent upon the particular hair clipper with which the attachment 10 is to be used. In the illustrated embodiment of the invention screws 27 extend through the cutting head seat 22, spacers 26, cutting head comb 17, and into the body of the hair clipper 11.

The roller 14 is affixed to a pin 30 for corotatable movement therewith and that pin is, in turn, journaled within the side plates 20 and 21 and has spur gears 31 affixed to the outer ends thereof which lie on the outer faces of the plates 20 and 21.

As illustrated in FIGURE 3 the roller 14 depends slightly below the tool mount 13 so that it will engage the scalp of the person whose hair is to be cut and will thereby move rotatably as the attachment 10 is moved along the scalp.

A comb mount 32 includes a pair of spaced vertically extending legs 33 and 34 which are apertured to rotatably receive the shaft 30. The comb mount 32 is therefore arranged to have pivotal movement with respect to the shaft 30 about the axis thereof. Lying on the outside of the plates 20 and 21 are diametrically enlarged spur gears 35 which have their teeth in mesh with the peripheral teeth of the gears 31. Small diameter gears 36 lie inside the plates 20 and 21 and are connected to the gears 35 by means of shafts 37 for corotatable movement therewith. Also mounted on the shaft 30 are diametrically enlarged gears 39 which lie adjacent the inner faces of the plates 20, 21. The gears 39 are mounted on the shaft 30 so that they have rotatable movement relative to that shaft and have their peripheral gear teeth disposed in mesh with the peripheral gear teeth of the radially reduced gears 36.

The vertically extending legs 33 and 34 of the comb mount 32 are connected to the side faces of the diametrically enlarged gears 39 so that the comb mount 32 will pivot about the axis of the shaft 30 as the gears 39 rotate. The gears 31, 35, 36 and 39 therefore comprise in combination the gear train which serves to effect pivotal movement of the comb mount 32 as the roller 14 rotates.

The sizes and arrangement of the several gears provide a gear train having a high reduction ratio so that pivotal movement of the comb mount 32 can only be effected by rotating the roller 14. No ordinary amount of force urging the comb mount 32 and cutting head seat 22 toward or away from one another will be effective to change the relation between those members.

A comb piece 40 includes a plurality of comb teeth 41 and is affixed to the comb mount 32 by screws 42. When so connected with the comb mount 32 the entire structure pivoted about the shaft 30 may be considered the comb. It is however often desirable to use comb pieces having varying numbers of teeth or differently configured teeth and I have therefore provided an attachment for effecting a tapered cut of hair which has a removable comb piece so that different comb pieces may be interchanged for one another.

An arm 44 is pivotally mounted on one of the vertically extending legs 34 of the comb mount 32 and has a curvilinear slot 45 formed therein through which extends the shaft 46 of a headed adjustment screw (not shown). The headed end of the shaft 46 overlies the inner surface of the arm 44. An adjustment screw 47 is screw-threaded on the end of the shaft 46 which ex-

tends through a slot 48 and lies on the outer surface of the plate 21 so that by tightening down the adjustment screw 47 when it is disposed in a desired position in the slot 48, the limit of pivotal movement of the comb 15 can be fixed. Thus, when the adjustment screw 47 is raised to the uppermost portion of the slot 48 and then tightened down the comb 15 will be prevented from moving out of the full line position illustrated in FIGURE 1.

I have thus devised an attachment for a motor powered hair clipper which may readily be connected to or disconnected from the hair clipper and which has a high reduction ratio gear train interconnecting the comb 15 and the roller 14 so that pivotal movement of the comb can only be effected by movement of the roller. I have found that such a feature is quite advantageous inasmuch as the operator may desire to maintain the comb and cutting head in a fixed relation for a limited time and this can readily be effected merely by keeping the roller 14 out of contact with the scalp. Such a feature is, of course, not possible in those structures in which the comb 15 or roller 14 are biased into one position or another.

It is apparent that the attachment of this invention not only provides for the automatic and assured cutting to a taper but also permits of cutting the remainder of the hair to a predetermined substantially equal length or through suitable manipulation to achieve the "flat-top" or "crew cut" sometimes desired.

Still further I have devised a hair clipper attachment having a readily removable comb piece and having a means for limiting the degree of pivotal movement of the comb 15.

It will be understood that this embodiment of the invention has been used for illustrative purposes only and that various modifications and variations in the present invention may be effected without departing from the spirit and scope of the novel concepts thereof.

I claim as my invention:

1. An attachment for a hair clipper having a cutting head and used for cutting hair growing from a scalp comprising in combination: a tool mount; means for detachably mounting said cutting head on one end of said tool mount; a roller and a comb rotatably and pivotally mounted respectively on said tool mount about an axis at the opposite end thereof, whereby said comb is disposed in a position intermediate said cutting head and the scalp from which hair is to be cut; adjustable means for limiting the degree of pivotal movement of said comb away from said cutting head; and a high reduction ratio gear train interconnecting said roller and comb to pivot the comb upon rotation of said roller, whereby pivoting of said comb can only be effected by rotation of said roller.

2. An attachment for a hair clipper having a cutting head and used for cutting hair growing from a scalp comprising in combination: a tool mount; means for detachably mounting said cutting head on one end of said tool mount; a roller and a comb rotatably and pivotally mounted respectively on said tool mount about an axis at the opposite end thereof; a comb detachably secured to said comb mount, whereby said comb is disposed in a position intermediate said cutting head and the scalp from which hair is to be cut; adjustable means for limiting the degree of pivotal movement of said comb mount away from said cutting head; and a high reduction ratio gear train interconnecting said roller and comb to pivot the comb upon rotation of said roller, whereby pivoting of said comb can only be effected by rotation of said roller.

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