

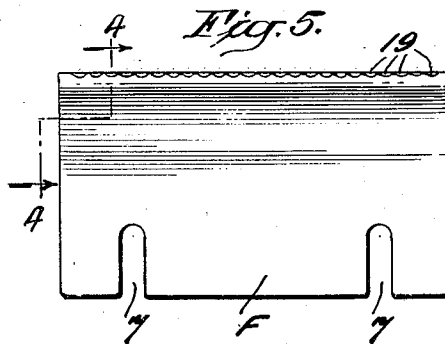
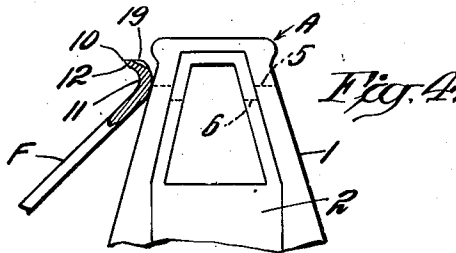
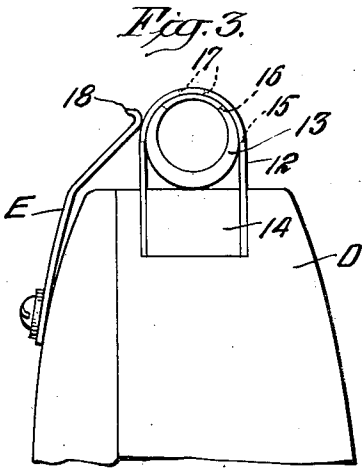
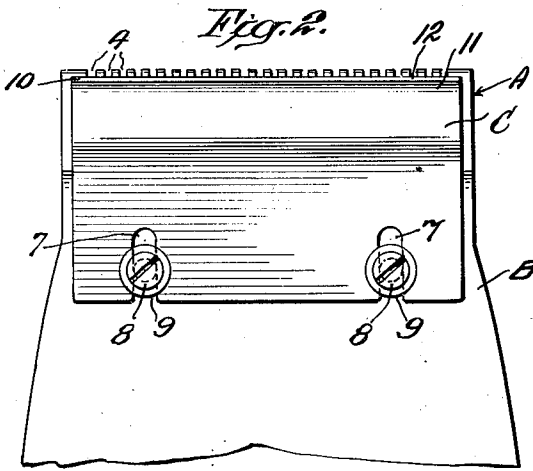
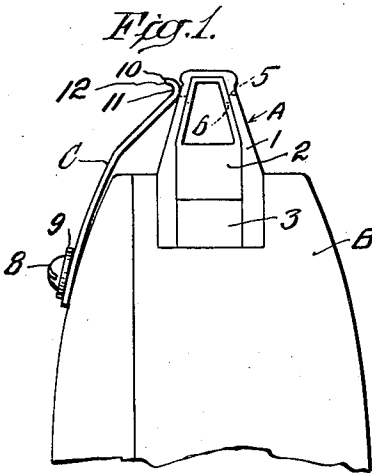
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ELECTRIC SHAVER

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ELECTRIC SHAVER

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4 Claims. (Cl. 30—34)

This invention relates to improvements in electric shavers.

It is an object of the invention to improve the shaving characteristics of the generally known type of shaver having an oscillable apertured cutter within a thin apertured comb or guard and it is a further object of the invention to make such improvement possible by means of an attachment adapted to be added to existing shavers.

With these and other objects which will be apparent in the following full description in mind, the invention consists in the combinations and arrangements of parts and details of construction which will now first be fully described in connection with the accompanying drawing and then pointed out more particularly in the appended claims.

In the drawing:

Figure 1 is a side view of the cutter head of a well known type of shaver, showing the application thereto of an attachment according to a preferred form of embodiment of the invention;

Figure 2 is a front view of the cutter head and attachment of Figure 1;

Figure 3 is a view similar to Figure 1 but illustrating the invention as applied to a shaver having a different type of cutter head;

Figure 4 is a fragmentary view showing a portion of the cutter head of Figure 1 and a modified form of attachment, partly in section on the line 4—4 of Figure 5; and

Figure 5 is a rear view of the attachment of Figure 4.

Referring to Figures 1 and 2, I have illustrated only so much of a conventional electric shaver (in this case, of the well-known Schick type), as is necessary to an understanding of the present invention. As there shown, the cutter head A comprises a guard or comb 1 within which is positioned an oscillable cutter 2, the cutter head assembly being completed by a stationary support member 3 and the entire assembly being carried in the body B in the usual way. As will be understood, the body B only a portion of which is shown, is of a size and shape convenient for holding in the hand, and contains the electric motor mechanism necessary for oscillating or reciprocating the cutter 2. As shown in Figure 2, the guard or comb 1 is formed with apertures 4 to permit entry of the hairs to be cut, and the cutter 2 is similarly slotted or apertured, the approximate depth of the slots in the parts being indicated by the dotted lines 5 and 6 in Figure 1.

In such an electric shaver which, as so far described, is of a well-known type and, for that matter, in all known electric shavers, it is found that a certain percentage of customers trying such shavers are unable to shave satisfactorily therewith. In still other cases, a protracted induction period, or period during which the customer accustoms his skin to the action of the razor and acquires the requisite manual skill in operating the same, is required. In still other cases, the customer, while able to shave with reasonable satisfaction, is not able to obtain a satisfactorily close shave or requires an excessively long time in shaving. The manual skill necessary in the operation of such a shaver is rather considerable, as will be apparent when it is considered that the flat upper face of the comb 1 must be held flat against the skin as the shaver is rubbed back and forth, an operation requiring considerable manual dexterity.

It is believed that many of the difficulties encountered with electric shavers are due partly to the need for accurate positioning of the same during shaving and very largely to the fact that no means, or at any rate, no sufficiently effective means, is provided for dealing with hairs growing at various angles. The shaver is ordinarily moved back and forth at right angles to the direction of reciprocation of the cutter and will simply ride over hairs growing at an angle to this direction. Difficulty may also arise in cutting hairs which grow straight at the base but curl or turn over and also in cutting hairs which are of unusual length due to not having been shaved for two or three days. The present invention provides a very effective and inexpensive means for eliminating these difficulties and may consist in the combination with a shaver of the type described of a scraper blade C, as shown in Figure 1. The blade C is conveniently slotted as at 7 to permit adjustment and attached to the body B of the shaver by means of screws 8 and washers 9. The operative portion of the scraper C is the forward edge 10 which is preferably positioned parallel to the direction of reciprocation of the cutter 2 and as indicated in Figure 1, at approximately the level of the outer surface of the cutter 2 and about one-sixteenth inch from the guard 1. The scraper C is conveniently formed of brass or similar material having sufficient spring to hold the convex bend 11 against the guard 1 for positioning of the edge 10 and yet being of such hardness characteristics as not readily to take a cutting edge. The blade is conveniently manufactured by stamping

into the shape shown and then honing or grinding the portion 12 to produce the edge 10. As will be understood, the result of this procedure is to produce an edge 10 defined by a substantially flat portion next the skin and a bevel making an acute angle therewith. The edge 10 should be substantially as sharp as it is possible to make it without danger of cutting the skin and to insure this result will normally be ground to a cutting edge and then dulled.

The presumable action of the edge 10 as just described is to lift up hairs growing at an angle and to press the same firmly against the skin and then, as it passes over them, to permit them to snap back toward and into the apertures of the comb 1. As will be apparent, the proper position of the edge 10 will depend upon the rate of growth of the individual beard, the softness or elasticity of the skin, the stiffness of the individual hairs and the rate at which the razor is moved over the skin in shaving. It has been found by trial and commercial experience that positioning of the edge 10 as previously described is satisfactory, as the user is apparently able to allow for any individual variations by slightly varying the pressure with which the shaver is held against the skin, its angle to the face or the rapidity of movement. The preferred position in shaving can best be described by saying that the edge C should be advanced against the grain of the beard and there should be a definite scraping sensation.

It is to be observed that due to the closeness of the edge 10 to the guard, the action is not so much one of stretching or bulging the skin, but is rather one of snapping back the individual hairs without causing any considerable bulge or distortion in the skin surface. It is also to be noted that, when a shaver such as shown in Figure 1 is used in the way described, the face of the comb 1 will not be flat against the skin but it is nevertheless found that the position described is the most satisfactory.

Subsidiary advantages of the attachment of the present invention consist in the removal of loose skin, perspiration and loose hair by the blade C, thus preventing their entry into the cutter head A.

An attachment according to the invention may readily be applied to shavers having cutter heads of other shapes. Fig. 3 illustrates the application of such an attachment to the well known Remington Rand type of shaver. The cutter head in this case comprises a rounded guard or comb 12, and cutter 13 similarly combined with a stationary support 14 and carried in the body D. The depth of the slots in the guard and cutter is indicated by the dotted lines 15 and 16, and a strengthening portion of the guard having round apertures instead of slots is indicated by the dotted lines 17. The attachment E is similar except for dimensions to the attachment C previously described and is similarly fastened to the body of the shaver. The operative edge 18 is again positioned at about one-sixteenth inch from the guard and at such a position lengthwise of the shaver as to lie substantially in a plane tangential to the apertured portion of cutter 12 which is in registry with the apertured portion of the guard 11.

In another form of the invention, the scraper

blade is provided with guiding grooves or channels, for the purpose of assisting in the alignment of the hairs. As shown on a much enlarged scale in Fig. 4, a scraper blade F' may be provided, otherwise similar to the blade C of Fig. 1 but fluted or provided with grooves or indentations 19 at right angles to the edge 10, so that the hairs pushed back by the edge will be guided into alinement with the direction of movement of the shaver. The grooves 19 are shown considerably exaggerated in Figs. 4 and 5, for convenience of illustration, but in actuality need be only a few thousandths of an inch in depth, and may conveniently be produced by milling the scraper blade prior to grinding the edge 10. As will be observed from Figs. 4 and 5, the edge 10 is maintained straight and uninterrupted.

As will be readily understood from the examples already discussed, an attachment according to the invention may readily be applied to any of various electric shavers having a slotted guard or comb within which a similar slotted cutter reciprocates. In particular the attachment may be applied to one or both sides of a single or double headed shaver, or to a shaver similar to that of Fig. 1 but having the upper surface of the guard 1 slightly concaved, or, again, to a shaver similar to that of Fig. 3 but employing a guard and cutter polygonal in cross section. The operative edge will, in all cases, preferably be positioned at about one-sixteenth inch from the guard and lying in a plane substantially coinciding with a slotted cutting portion of the cutter which is in registry with a slotted portion of the guard. In all cases, the scraper edge will be substantially coplanar with an operative portion of the cutter, regardless of whether the cutter portion is plane or curved. While the invention has been described and illustrated with reference to an attachment for existing razors it will be understood that the scraping edge may be formed on or inserted in the cutter head or guard itself.

What is claimed is:

1. In an electric shaver, and in combination, a reciprocable cutter having slots extending transversely of its direction of reciprocation, a guard for said cutter having similarly extending slots, and a scraper having an edge positioned adjacent said guard at a distance of about one-sixteenth inch therefrom, substantially parallel to said direction of reciprocation and substantially coplanar with an operative portion of said cutter.

2. An electric shaver according to claim 1, in which the said scraper edge is of a sharpness just less than that of a cutting edge.

3. An electric shaver according to claim 1, in which the said scraper comprises a blade detachably and adjustably mounted upon the shaver.

4. In an electric shaver, and in combination, a reciprocable cutter having slots extending transversely of its direction of reciprocation, a guard for said cutter having similarly extending slots, and a scraper having an edge positioned adjacent said guard and substantially parallel to said direction of reciprocation, the said scraper having a plurality of grooves formed in the material thereof adjacent said edge and extending toward said guard.

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