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HAIR PICK-UP FOR ELECTRIC SHAVERS

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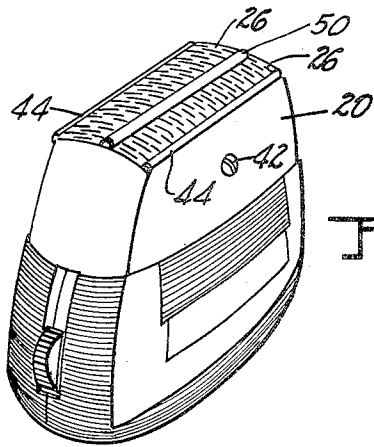


FIG. 1

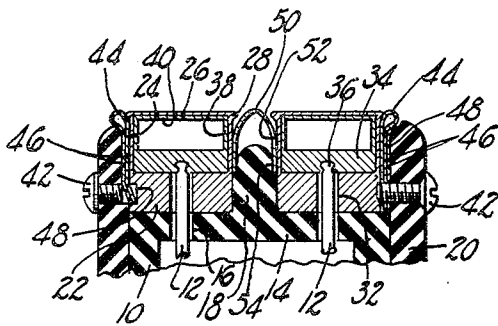


FIG. 3

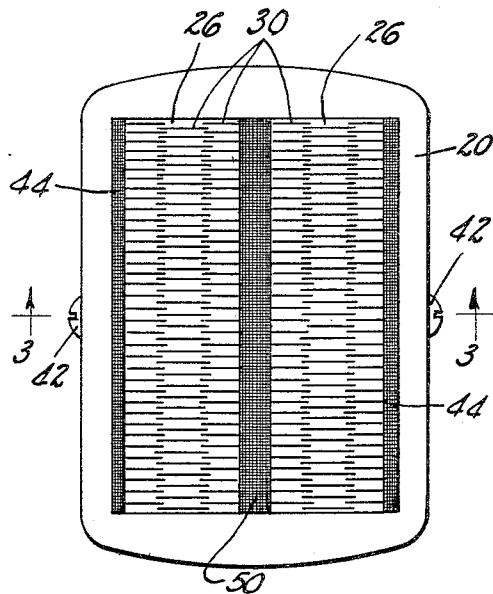


FIG. 2

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HAIR PICK-UP FOR ELECTRIC SHAVERS

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4 Claims. (Cl. 30—34)

This invention relates to hair pick-ups for electric shavers.

Many men have difficulty in using electric shavers because of the fact that the shaver will not pick up the hair of their beards and position it in a manner to permit it to be cut by the cutting head of the shaver. Men having curly hair, and particularly those whose beards are made up of curly hair, find that much of the hair of their beards will curl back toward the skin and thus lie flat against the skin so that the cutter of an electric shaver cannot reach it. Other men experience difficulty in the use of electric shavers because the hair of their beards grows at an acute angle to the surface of the skin rather than substantially perpendicular to the surface of the skin and thus lies close to the skin, and for this reason cannot be picked up, particularly when the shaver is passed over the skin in paths disposed in the same direction at which the hair extends from the skin.

Some of the manufacturers of electric shavers recognize these conditions and provide the cutting heads of their electric shavers with various contours and means intended to assist in positioning the hair of the beard in a manner to permit it to be cut by the cutting element of the shaver. One common means employed for this purpose, which is particularly applicable in connection with cutters of the type in which a transversely slotted cutting head reciprocates lengthwise within an outer slotted stationary cutter, is to provide a rib or ridge projecting laterally from the stationary cutter head and substantially flush with the skin contacting surface or outermost face of the slotted cutter head. This ridge is commonly provided with shallow notches or grooves, and the thought or principle involved is that the notched ridge construction will serve somewhat the same as a comb to cause the air of the beard to stand on end in a position where it may be cut effectively. Such a comb-shaped ridge may be effective in some instances, but many men find it is not sufficient to position the hair of their beards for an effective, rapid and easy shaving operation.

It is the primary object of this invention to overcome these difficulties by providing alongside the cutter head a reticulated member of fine mesh so oriented with reference to the cutter head as to engage the skin adjacent to the cutter head and in advance of the cutter head with its reticulations serving to deflect the hairs of the beard into a position projecting from the skin in such a relation that they are readily cut by the cutter head.

Other objects will be apparent from the following specification.

In the drawing:

Fig. 1 is a perspective view of an electric shaver having two connecting heads with which my improved hair pick-up mechanism is employed.

Fig. 2 is an end view of the shaver with my hair pick-up means applied.

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Fig. 3 is a fragmentary sectional view taken on line 3—3 of Fig. 2.

Referring to the drawing which illustrates one embodiment of the invention, I have chosen to illustrate the use of the invention with a shaver having a double cutter head. It will be understood, however, that the invention is applicable to shavers having only a single cutter head or having more than two cutter heads. The numeral 10 designates a housing which mounts a suitable electric motor or vibrator (not shown) and which is adapted to drive one or more pins or shafts 12, depending upon the number of cutter heads provided in the device. The housing will include an outer end wall 14 which is apertured at 16 to receive the pins or shafts 12 with clearance and accommodate movement thereof within the housing. The housing will provide grooves or sockets adjacent its outer end wall to receive the cutter units. In the form illustrated where two cutters are provided, a central rib 18 projects outwardly and lengthwise of the outer wall 14 at its center with its sides forming walls for abutting the inner sides of the cutter units. A detachable rigid band member 20 fits around a reduced end portion of the housing 10 and projects beyond the end wall 14 so as to cooperate with the central partition 18 in defining elongated grooves or sockets to receive the cutter units.

The cutter units usually comprise interfitting members. As here illustrated, an outer cutter member has a base portion 22 from which project thin side walls 24 which are interconnected by an outer wall 26. The outer wall 26 may be flat, as shown, or may be crowned or curved if desired. The side walls 24 may be parallel, as shown, or may converge outwardly. A rib or flange 28 projects laterally from the outer portion of each cutter, with its outer surface substantially flush with the outer surface of the wall 26, and this rib or flange may be provided with shallow notches at spaced points along its ends. The outer wall of the cutter member is provided with a series of transverse slots extending therethrough, as best illustrated in Fig. 2. These slots may extend through the ribs 28 and along the outermost portions of the side walls 24, if desired. The base 22 has an aperture 32 to receive a pin 12 therewith clearance.

An inner cutter member has a base portion 34 provided with a socket adapted to receive the head portion 36 of a pin 12, which head portion preferably will be spherical as shown, although this is not required. Thin side walls 38 are carried by the base 34 and a transversely slotted outer wall 40 interconnects the outer ends of the side walls 38. The parts 34, 38, 40 are of such size as to fit snugly but slidably within the outer cutter element. The outer wall 40 and, if desired, the outer end portions of the side walls 38 of the inner cutter may be transversely slotted.

The parts are preferably held in assembled relation by set screws 42 which are passed through the housing, as through ring portion 20, and bear against the base 22 of the outer cutter to press it against the rib 18 and thereby lock the outer member in place. The inner member is free to reciprocate within the outer member as moved by the pin 12. The construction above described is only one of various types of construction which are now standard and conventional on the market, and has been described because it is one of the types of shavers which I have found my invention most readily adapted to fit.

In shavers having single cutting heads, or in shavers having multiple cutting heads, I provide alongside the sides of the cutter, at one or both sides in the case of a single unit, and at the outer margin of one or both of the outermost cutters in the multiple cutter head, a reticulated member located as illustrated. This reticulated

member may be of any suitable construction but I prefer to use a woven wire member having a fine mesh, such as a mesh in the range from 40 to 72 wires per inch. I find that a mesh of 60 wires, that is, a screen of substantially the fineness commonly used in a tea strainer, is preferred. A substantially rectangular piece of reticulated material of a length substantially equal to the length of the cutter head is bent at its center to provide a curved or looped portion 44. The two end portions 46 preferably lie flat and are preferably in engagement with each other. These members 46 are preferably positioned in engagement with at least a portion of the outer surface of each of the outer walls 24 of the cutter and are of such a length that, when the loop portion 44 is positioned with its outermost part substantially flush with the outermost part 26 of the cutter, the inner portion will extend to and preferably beyond the set screw 42.

Two different types of constructions for mounting the member are illustrated in Fig. 3. That at the right-hand side contemplates the formation of screw-receiving apertures in the parts 46 through which the set screw 42 may pass. It is also contemplated in this form that a plate or binder 48 may be employed to hold the parts of the screen together when not assembled in a shaver, and this plate may likewise be apertured if desired. The arrangement will be such that the reticulated member is held with its loop portion 44 closely adjacent and alongside the cutter with its crown or crest parallel to the cutter and substantially flush with the outermost surface of the cutter. The reticulated member is held effectively in this position by the same set screw or means which serves to hold the cutter means in position.

A second form of construction is illustrated at the left in Fig. 3, wherein the loop portion 44 and the end portions 46 of the reticulated member are formed as previously described but the portions 46 are not apertured, and, instead, are of such a length that their innermost portion will terminate opposite a groove or socket 48 formed in the head, so that the screen will be pressed into said groove or socket by the set screw 12 and thus held in the same effective position mentioned.

The loop or outer bent portions 44 of the reticulated member are so positioned that they will contact the skin adjacent to the cutter and in advance of the cutter. The screen is of sufficient fineness so that hairs which are contacted are combed or displaced from their normal position and tend to assume a position more nearly perpendicular to the skin so that they are effectively positioned to be cut by the cutter head as the stroke of the shaver moves the cutter behind the screen. It is possible to provide an effective shaver in which only one of the screens is employed. It is recognized, however, that electric shavers cut effectively in either of two directions substantially parallel to the slots 30 so that a reciprocating movement across the skin will commonly be employed and the use of two screens at opposite sides of the cutter will be preferred for this reason.

Where two or more cutters are provided, they are commonly spaced apart as by the ridge 18, as illustrated in Fig. 2. I have found that a reticulated member of substantially U-shape, inserted to have a curved outer crown portion 50 and leg portions 52 may be employed. This member is positioned between the two cutters as accommodated by the formation of grooves 54 at opposite sides of the rib 18 and defined partly by the cutters. These grooves will preferably be of such width as to grip the

end portions of the reticulated member when the cutter heads are clamped in position. This reticulated member serves the same function as that previously described, but, being positioned between the two cutter heads, serves as a means to engage and displace hair at the part of the skin between that engaged by the two cutter heads as the shaver is used. Thus there will be the same combing action as above described in advance of each of the cutters of a multiple head unit.

While the preferred embodiment of the invention has been illustrated and described, it will be understood that changes in the construction may be made within the scope of the appended claims without departing from the spirit of the invention.

I claim:

1. In an electric shaver, in combination, a housing, a transversely slotted non-circular tubular stationary cutter member carried by said housing, and a fine mesh screen positioned alongside said cutter member, said screen having two end portions and a curved intermediate portion positioned outermost and substantially flush with the slotted portion of said cutter member, and means for anchoring said screen end portions to said housing in predetermined position.

2. In an electric shaver, in combination, a housing, a tubular cutter member fixedly carried by said housing, said cutter having an outer skin-contacting transversely slotted wall and a substantially flat side wall portion, and a fine mesh screen having a curved intermediate portion and juxtaposed end portions, and means for securing the screen end portions to said housing positioned adjacent said side wall with said curved intermediate portion outermost and projecting substantially flush with said outer wall.

3. In combination, an electric shaver having a cutter with a substantially flat outer transversely slotted wall, a fine mesh screen having a central curved portion and juxtaposed end portions, said screen being positioned alongside said cutter with its central portion outermost and so located that the plane of said wall is substantially tangent thereto.

4. In combination, an electric shaver having a housing, a cutter element with a transversely slotted substantially flat outer wall and side walls, a rigid band detachably mounted on said housing and encircling said cutter element and a reticulated member of fine mesh mounted in fixed position within the outline of said band having a portion juxtaposed to a side wall of said cutter and an outer elongated transversely curved portion located alongside said cutter to present a convex surface substantially flush with said cutter element for contact with the skin of a user adjacent to and in advance of said outer wall when said shaver is held in shaving position with said outer cutter wall bearing flat against the user's skin.

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