

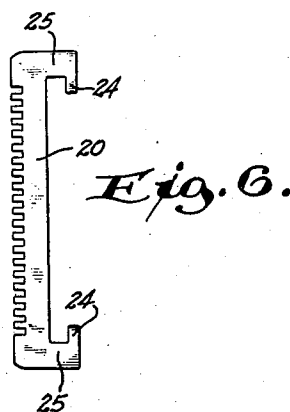
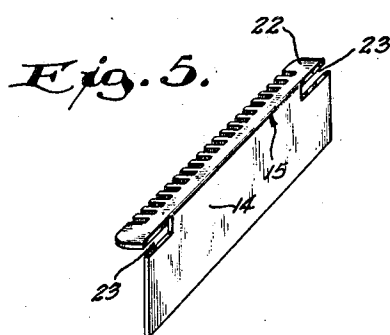
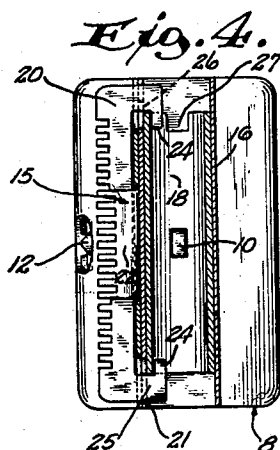
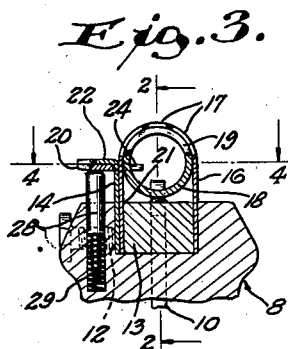
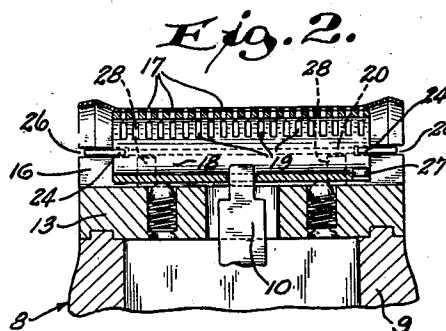
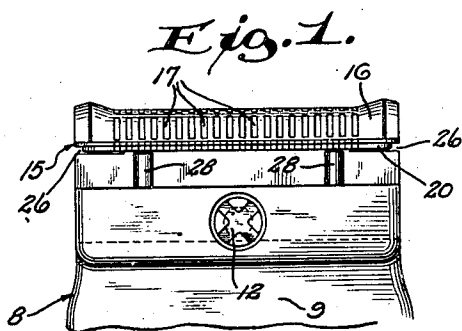
Dec. 25, 1945.

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2,391,695

DRY SHAVER CLIPPER ATTACHMENT

Filed April 28, 1944



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2,391,695

DRY SHAVER CLIPPER ATTACHMENT

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Application April 28, 1944; Serial No. 533,161

8 Claims. (Cl. 30—34)

This invention relates to improvements in dry shaver clipper attachments.

A certain type of dry shaver or electric razor is provided with a clipper attachment, the purpose of which is to shear or cut (not as closely as in shaving) hair which is too long to enter the relatively short interior slots of the regular shaving heads of the razor, or which would be missed by the latter, whereby the remaining stubble may thereafter be properly shaved when passed over by the conventional shaving head of the electric razor. The conventional clipper attachment referred to comprises a laterally projecting comb mounted exteriorly and longitudinally of the slotted barrel of a dry shaver head, and a co-operating reciprocal clipper. The latter is connected by an offset arm with the same rocking shaft used to drive the main cutter, to be reciprocated thereby relative to the stationary comb member and is engaged by a resilient member extending angularly from said arm. This arrangement was found to be objectionable in that when the razor with its clipper attachment was used a rocking motion was imparted to the reciprocal clipper which permitted the clipper or blade to tilt away from the comb, retarding effective operation thereof.

With the above in mind, it is a primary object of the present invention to provide a dry shaver clipper attachment wherein the clipper attachment is associated with the shaver head in an extremely simple and effective manner such as will insure proper operation of the clipper or blade relative to the stationary comb without danger of deflection of said blade away from the plane of the comb.

A further object of the invention is to provide a dry shaver clipper attachment wherein the movable clipper element is operatively mounted on and engaged with the reciprocal shaving cylinder and is resiliently supported laterally of the cylinder and in proximity to the clipper comb by adequate members exerting forces at right angles to the plane of the clipper and in a manner so that the movable clipper element will not be rocked or deflected away from the comb during use.

A further object of the invention is to provide a dry shaver clipper attachment having means for resiliently supporting the reciprocal element of the clipper attachment in a manner to prevent rocking or deflection into a position at an angle to said element, being so connected with the reciprocating cylinder of the electric razor that it is actuated by means all in the plane of

said cylinder and is thereby prevented from being rocked or deflected out of its plane.

A further object of the invention is to provide a clipper attachment applicable to standard forms of dry shavers with little modification of the latter; a dry shaver with the attachment being susceptible of easy and convenient assembly and disassembly and facilitating repairs and replacements.

A further object of the invention is to provide a clipper attachment for a dry shaver wherein the movable element of the clipper attachment is directly connected with and operated by the reciprocating cylinder of the shaving head of the razor in the plane of the axis of the cylinder.

A further object of the invention is to provide a dry shaver clipper attachment which is of very simple construction, is strong and durable and efficient in operation, is relatively inexpensive, and is well adapted for the purposes described.

With the above and other objects in view the invention consists of the improved dry shaver clipper attachment, and its parts and combinations, as set forth in the claims, and all equivalents thereof.

In the accompanying drawing in which the same reference characters indicate the same parts in all of the views:

Fig. 1 is a fragmentary front view of the head end of a dry shaver equipped with the improved clipper attachment;

Fig. 2 is a longitudinal vertical sectional view thereof taken on line 2—2 of Fig. 3;

Fig. 3 is a transverse sectional view of the showing in Fig. 1;

Fig. 4 is a horizontal sectional view taken on line 4—4 of Fig. 3 with a fragment of the clipper comb being shown in association with the other clipper element;

Fig. 5 is a perspective view of the clipper comb; and

Fig. 6 is a plan view of the reciprocating clipper element or blade.

By way of illustration the head end of a dry shaver or electric razor, with which the improved clipper attachment is associated, is shown in Figs. 1 to 4 inclusive of the drawing and is designated generally by the numeral 8. Said razor includes a hollow handle or body 9 in which is housed a small electric motor (not shown) and the latter reciprocates or vibrates an upwardly projecting arm 10.

Removably mounted on the recessed outer end of the handle or body 9 is the dry shaver head which is retained in the mounted position shown

by a set screw 12 which extends through the handle and impinges against a base portion 13 of the shaver head, the screw also being used in the present invention for clampingly engaging the angularly connected supporting wall 14 of a clipper attachment comb 15, as will hereinafter appear.

The head of the dry shaver or electric razor includes a hollow outer shell 16 whose projecting portion is substantially semi-circular in cross section and provided with depending walls which are secured to the base portion 13, as best shown in Fig. 3. The semi-circular curved portion of the shell 16 is provided with series of hair receiving openings 17 with bars thereadjacent. Adapted to cooperate with the curved projecting portion of the shell 16 is an inner cutting cylinder 18. The latter is arranged to fit snugly against the inner curved wall portions of the shell 16 and to be reciprocated axially thereof. For this purpose a lower wall portion of the cylinder member 18 is provided with an aperture which is entered by the reduced outer end of the projecting arm 10 which, through its connections with the electric motor, is vibrated or reciprocated and in turn imparts these motions to the cylindrical member 18. The upper wall of the cylindrical member 18 is provided with series of cutting bars 19 which, during the operation of the razor, reciprocate axially relative to the stationary shell 16 moving relative to the slots 17 and shaving hair which enters said slots by virtue of the shearing action as between the edges of the bars 19 and 17.

The improved clipper attachment is associated with the head of the electric razor and includes the angularly shaped comb 15 previously mentioned, and a reciprocal clipper element or blade 20, shown in detail in Fig. 6. The comb 15 is rigidly mounted in the position shown in Fig. 3 with its wall 14 abutting the outer face of an inwardly extending side of the shell 16 and having its extended portion received within a body slot 21 and clampingly and removably engaged by the set screw 12, previously mentioned. The comb 15 also has an integral, laterally projecting serrated comb ledge 22. The opposite ends of the outer portions of the comb wall 14 are provided with slots 23.

The reciprocal blade 20 is an elongated flat element having its outer longitudinal edge serrated and having intumed hooked extremities 24 spaced from the other edge. The blade 20 is adapted to underlie the comb ledge 22 and when the device is assembled and in operation the blade is reciprocated relative to the stationary comb ledge and the movement of the blade serrations relative to the ledge serrations is effective to coarsely shave hair entering the comb ledge and blade slots. The end slots 23 in the comb wall 14 receive the transverse ends 25 of the blade with sufficient play to permit longitudinal movement of the blade. It will also be observed that the end portions of the adjacent wall of the shell 16 are slotted as at 26, in registration with the comb wall slots 23 and accommodating the transverse ends 25 of the blade. Said transverse ends 25 of the blade also abut against the ends of the inner cylinder 18 of the shaver with the hooked extremities 24 of the blade extending into the cylinder. From the foregoing it will be obvious that the clipper blade is attached to the reciprocal cylinder 18 of the shaver and hence, reciprocations of the cylinder are imparted to the blade. The blade, as will be seen from Fig. 3 extends laterally of the shaver shell and its plane sub-

stantially includes the axis of the reciprocal cylinder.

The arrangement described permits of very easy assembly and disassembly of the clipper attachment and blade relative to the shaver head. The mounting of the clipper comb was previously described as was the relationship of the blade to the comb and elements of the shaver head. For assembly, for instance, if the cylinder 18 be disengaged from the motor arm 10 then the cylinder can be manually turned through an angle of ninety degrees to bring a cylinder end slot from the position shown to one wherein a hooked end 24 of the blade may be passed thereinto following which the other hooked end of the blade may be registered with the corresponding end of the cylinder. Thereupon the cylinder is manually turned back to its original position and the hooked ends of the blade are closely and securely engaged with the ends of the cylinder, and the cylinder may be reengaged with the arm 10.

For proper operation of the clipper blade relative to the clipper comb the former should be securely supported against deflection or angular movement. The direct driving engagement of the shaver cylinder with the blade is very effective and in addition the underside of the blade is resiliently engaged by the outer ends of supporting pins 28. These pins are spacedly mounted at right angles to the plane of the blade 20 and extend into recesses therefor in the shaver handle 9. The pins are outwardly urged against the blade by confined, coiled springs 29.

In shaving, long hairs do not always readily enter the interior slots of the shaving head of the electric razor. The purpose of a razor clipper attachment is to permit shaving or cutting of such missed hair to render the same stubble which will thereafter be effectively shaved by the regular shaving head of the electric razor, and for other conventional clipping operations. A clipper attachment loses its effectiveness, however, if the clipper blade can rock or move away from the comb during operation. In the present improvements this undesirable contingency is effectively guarded against through the direct connection of the clipper blade with the shaver cylinder and the additional supports for the blade. As a result the clipper blade can not be rocked or separated from its comb and the mounting, support and drive of the clipper and blade is effective and simple.

The dry shaver clipper attachment is easy and inexpensive to manufacture and install, is strong and durable, and enhances the utility of the razor.

What is claimed as the invention is:

1. In a dry shaver having a shaving head including a curved, face-engaging, slotted outer shell and a slotted cutter cylinder snugly fitted within the shell and reciprocatably relative thereto, a slotted clipper comb mounted on the head to project laterally of the shell, a slotted clipper blade reciprocatably mounted against the inner face of the comb and having end extensions directly embracing ends of the cutter cylinder whereby the blade is reciprocated by the cylinder, and a yielding support carried by the shaver and supportingly engaging the blade and maintaining it in the plane of and adjacent said comb.

2. In a dry shaver having a channeled base, a shaving head removably mounted within said channeled base, said shaving head including a slotted outer shell and a slotted inner member movable relative to the shell, an independent clipper attachment removably mounted on the

head laterally of and adjacent the shell and having a fixed and a movable blade with end portions of said movable blade extending to and directly engaging end portions of the inner member to be moved thereby, said clipper attachment having another portion extending into said channeled base, and common means for clamping the head and the last-mentioned portion of the clipper attachment within said channeled base.

3. In a dry shaver having a shaving head including a slotted outer shell and a slotted inner member movable relative to the shell, an independent clipper attachment mounted exteriorly of the shell and having a fixed and a movable blade with portions of the latter being directly connected to opposite end portions of said inner member of the shaving head and operated thereby.

4. The combination with the reciprocal cutter of the head of a dry shaver, of a clipper attachment mounted adjacent to and exteriorly of said cutter and having a fixed and a reciprocal blade, the plane of the reciprocal blade substantially including the axis of the cutter, said reciprocal blade being directly engaged by opposite ends of said cutter to be reciprocated thereby.

5. The combination with the reciprocal cutter of the head of a dry shaver, of a clipper attachment mounted adjacent to and exteriorly of said cutter and having a fixed and a movable blade, said movable blade having extensions directly engaging opposite end portions of said cutter whereby reciprocal movement of the cutter is transmitted to the blade, the plane of the engaging portions of the movable blade extensions with

the cutter being in the plane of the movable blade.

6. The combination with the reciprocal cutter of the head of a dry shaver, of a clipper attachment mounted adjacent to and exteriorly of said cutter and having a fixed and a movable blade, said movable blade having a serrated portion and extensions engaging opposite end portions of said cutter whereby reciprocal movement of the cutter is transmitted to the movable blade, the plane of the engaging portions of the movable blade extensions and the cutter being in the plane of the serrated portion of the movable blade, and resilient supports carried by the shaver and exerting forces at right angles to the plane of the movable blade and supportingly engaging it.

7. In a dry shaver having a shaving head including a curved, face-engaging slotted outer shell and a slotted cutter cylinder snugly fitted within the shell and reciprocable relative thereto, a clipper attachment mounted on the head laterally of and adjacent the shell and having a fixed and a movable blade with end portions of said movable blade being directly engaged by the cutter cylinder to be reciprocated thereby.

8. In a dry shaver having a shaving head including a slotted outer shell and a slotted inner member movable relative to the shell, a clipper attachment mounted on the head laterally of and adjacent the shell and having a fixed and a movable blade with portions of said movable blade directly engaging end portions of the slotted inner member to be moved thereby.

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