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HAIR RETAINER FOR SHAVERS

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Fig. 1.

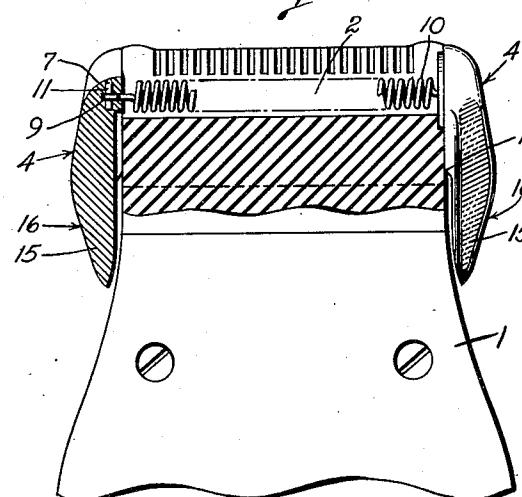


Fig. 2.

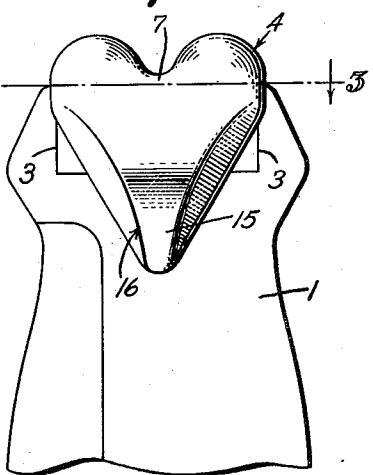


Fig. 5.

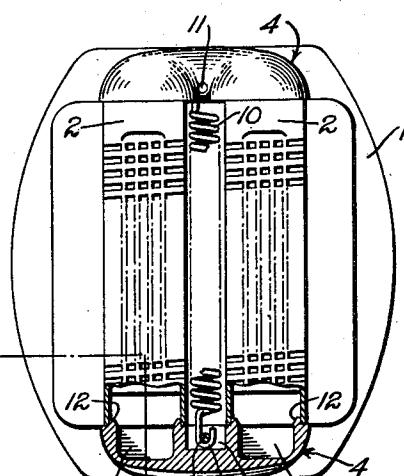
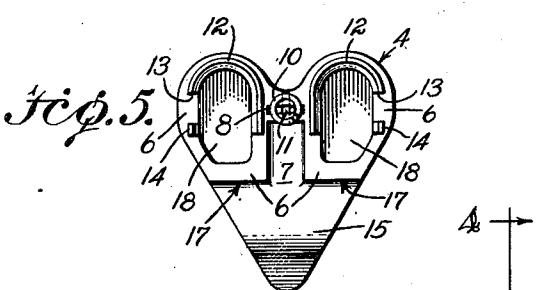


Fig. 4.

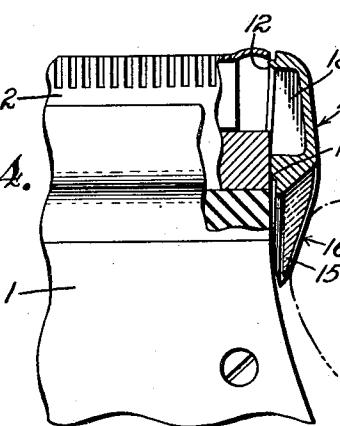


Fig. 3.

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HAIR RETAINER FOR SHAVERS

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13 Claims. (Cl. 30—41.5)

This invention relates to hair retainers for attachment to electric dry shavers and the like.

Many of the electric dry shavers, hair clippers and the like now being used commercially employ cutter structures having one or more shaver heads provided with an outer stationary cutter head structure and an inner movable cutter cooperating therewith in the shaving or hair cutting operation. These constructions have the ends of the cutter members open so that hair removed by the cutters in operation is discharged into the center of the cutters and then outwardly through the open ends.

The present invention is designed to provide a hair retainer to engage opposite ends of the cutter head structures of the conventional shavers now being used for the purpose of retaining the hair against discharge from the open ends of the shaver heads. The retainers are constructed for ready attachment and detachment from the shaver in order that cuttings may be readily removed after use of the shavers. The retainer is constructed in unit form independent of the shaver to be readily attachable and detachable therefrom and yet is constructed so that it is easily applied and readily retained in position on the shaver to catch and retain cuttings in the normal use of the shaver.

In providing for convenient attachment and removal of the hair retainer from a shaver, the retainer provided by the invention has a pair of end members resiliently connected together to form the retainer and has a lever arrangement provided for use in operating the retainer to readily disengage the positioning means of the retainer from its cooperative engagement with the shaver when the retainer is to be removed. The connecting means for the end members is designed to be operative to normally retain the end members in engaged relation on opposite ends of the head construction of a shaver through its own inherent operative construction independent of direct connection with the shaver by normally drawing the end members toward each other in maintaining engagement of the end members on opposite ends of a shaver head.

The retainer is constructed for ready removal by manual operation of suitable lever means that will disengage the positioning means for the end members from cooperative engagement with a shaver head and through the formation and construction of the end members the lever operation may be augmented by the structure of the end members to obtain a slip action or snap action

in the manual operation of the levers to project the retainer bodily away from the shaver.

In the drawing the invention is illustrated as applied to a multiple head shaver wherein:

5 Figure 1 shows one end portion of a shaver with the invention applied thereto, the scale being substantially enlarged and portions being broken away and shown in cross section for convenience in illustration.

10 Figure 2 is an end elevation of the shaver with the hair retainer mounted thereon as shown in Figure 1.

15 Figure 3 is a plan view of the shaver as shown in Figs. 1 and 2 with one end portion broken away and shown in cross section substantially on the line 3—3 of Fig. 2.

20 Figure 4 is a view similar to Fig. 1 showing one end portion of a shaver head in cross section and the retainer of the invention applied thereto and in a position partly removed from engagement with the shaver head illustrating the operation of the retainer in the detaching and projecting operation obtained in removing the retainer from the shaver, the illustration in cross section being taken substantially along the line 4—4 of Fig. 3.

25 Figure 5 is a side elevation of an end member of the hair retainer showing the inner shaver head engaging face thereof.

30 The present invention is illustrated for application to a multiple head type of shaver and particularly with reference to a structure employing two shaver heads. The shaver includes the handle 1 normally housing the power driving unit or other suitable means for actuating the hair

35 clipping or shaving mechanism. At one end the handle carries clipping devices or shaver heads 2, two being shown mounted in spaced relation and projecting in the same direction from the handle as clearly illustrated in Figs. 1 and 3.

40 The handle is provided with spaced channels 3 for receiving the base portions of the shaver head in a manner used in connection with conventional shavers. The sides of the handle terminate at the end carrying shaver head 2 so as to be substantially flush or coincident with the ends of head 2.

45 The hair retainer provided by this invention is constructed to show its structural features and operation when applied to a multiple head shaver using two heads. It is to be understood, however, that applicant's retainer may be constructed with the features of construction hereinafter described so as to be applicable to either a single head shaver or a multiple head shaver having more than two heads.

The retainer comprises a pair of end members 4 that are of duplicate structure but reversed in position with respect to one another so that one side of each end member is constructed to engage the end of a shaver head or heads, this side of one end member facing the corresponding side of the other. The end member has the shaver head engaging side or face constructed as illustrated rather clearly in Fig. 5 with a shaver head engaging section 6 for each shaver head. Two sections 6 are provided in the structure illustrated by the drawing, spaced apart the proper distance to fit the spacing of the two heads 2 illustrated in the drawing. The outer edges of sections 6 are formed to fit the outer contour of shaver heads 2 at the outer side edges and at the outer free ends of the shaver head provided with the shaving sections for engagement with the skin to be shaved. The sections 6 are joined by a central web 7 having a recess 8 adapted to receive the looped end 9 of a coil spring 10. A retaining pin 11 has a driving fit in a bore formed in web 7 in transversely extending relation to recess 8 and so positioned that pin 11 when driven into the bore in web 7 will extend through loop 9 of coil spring 10 as shown in Figs. 1 and 3 for attaching the end of coil spring 10 to end member 4. The opposite ends of coil spring 10 are attached to the two end members used for engaging with opposite ends of the shaver heads as illustrated, so that the two end members are directly connected together for a limited pivotal movement relative to coil spring 10 in connected relation. Coil spring 10 is so constructed that in its untensioned position it will support end members 4 at a spaced distance apart that is less than the distance between the opposite ends of the shaver heads to which the end members are to be applied.

Each end member 4 has each shaver head engaging section 6 thereof provided with a flange or projecting portion 12 extending perpendicular to the inner face of section 6 for slidably interfitting in the end of a shaver head 2 in a manner illustrated in Fig. 3. This projection of flange 12 cooperates with the face of each section 6 to form a seat for receiving the open end of the stationary cutter of a shaver head. When this flange 12 is engaged in a shaver head in the manner illustrated in Fig. 3, the end member is seated in cooperative relation with the shaver head so that it cannot be disengaged therefrom by sidewise movement but only by movement in a direction perpendicular to the end of the shaver head in a manner that will be hereinafter described.

Flange 12 may be made in continuous form to engage the inside edge of the open end of a shaver head or it may be made in sections having portions spaced apart somewhat in the manner as illustrated in Fig. 5. It will be noted in Fig. 5 that a substantial portion of the flange 12 for each section 6 is continuous, particularly the top and inside portions thereof while at the outside edges, each section of this flange is discontinued at 13 and another section thereof provided in the form of projection 14. It is to be understood that this flange may be made to engage either the inner or outer faces of the shaver head, it being understood that when the flanges are engaged with the inner faces of the stationary member it will not interfere with the operation of the movable cutter member. Construction may also be found desirable for use with some type of shavers wherein sections of the

flange may engage the outer edges of the stationary part of the shaver head construction and other portions may engage the inner edges, it being obvious that such variations in arrangement may be made to suit different types and designs of shaver head structures and still provide the positioning means to retain the end members against lateral movement when engaged with the shaver heads.

It is also desirable in constructing hair retainers to have them readily attachable and detachable from the shaver and shaver head construction thereof. For this purpose the present invention incorporates a projecting portion 15 on each end member to provide a lever operable when it is desired to remove the retainer from the shaver. This lever structure is arranged so that when the end members are retained in position on opposite ends of a shaver head by spring 10 as illustrated in Fig. 1, the lever will be spaced away from the adjacent end portions of the shaver. In cross section the levers 15 are constructed as shown in Figs. 1 and 4 so as to be rather thick at the juncture between the lever end and the end member where the lever joins section 6. From this juncture the outer face of the end member is tapered toward the free end of the lever as indicated at 16 to provide a cam surface while the lower end portion of each section 6 provides a fulcrum or pivot 17 for the lever 15 to secure the operation that will now be described.

With the hair retainer applied to a shaver in the manner illustrated in Fig. 1, the connecting means in the form of spring 10 is tensioned to draw end members 4 toward each other and retain them in clamped or engaged relation on opposite ends of shaver heads 2 with positioning means or flanges 12 cooperating to retain the end members against lateral sliding movement or disengagement from the shaver head.

In removing the retainer from a shaver, it may be obtained by manual operation by engaging the end of a finger in the manner illustrated in dot and dash lines of Fig. 4 with the inclined cam surface 16 of lever 15. If desired, the thumb and forefinger may be used to simultaneously engage the end of each finger with one of the inclined surfaces 16 of the end members at each end of the shaver head. By manually pressing the lever toward the shaver, either one or both levers of the end members, each end member will be caused to rock on fulcrum 17 with the end of the lever moving toward the shaver. As soon as this rocking movement assumes a position where flange 12 is moved out beyond the free end of shaver head 2, the inclination of the cam surface 16 is such that by having a smooth outer face on the end members, a slipping action may take place so that the end members will slip out from under the end of the fingers or finger being used, as the case may be. This slipping action will occur in pressing the fingers toward the shaver while the end members will slip sideways or along the face of the sides of the shaver and the ends of the shaver heads in a direction outwardly from the end of the shaver. This action will obtain in cooperation with the action of spring 10, an ejection or projection of the retainer away from the shaver so that it will in effect snap or jump off of the shaver. The action is one where the retainer will be projected into space free from the shaver when the device is manipulated in the proper manner.

The end members may also be manually actu-

ated so that this projecting action is not necessarily obtained but the rocking of the end members may be obtained as illustrated in Fig. 4, and the retainer removed by laterally sliding the retainers on the shaver into a disengaged relation from contact with the shaver by moving the fingers with the end members so that the fingers push the end members off of the shaver.

The end members may have each section 8 thereof constructed inside of the portion provided with flange or positioning means 12, formed to provide a pocket or socket 18 to receive cuttings removed by the shaver heads in their operation. In this connection it has been found with conventional shavers of the character illustrated in the drawing, that a reciprocating inner cutter will eject cuttings through the open ends thereof and outwardly beyond the open ends of the head or heads. As a result, pockets 18 will receive these cuttings and upon the removal of the end members from a shaver the cuttings may be conveniently removed from the retainer and dumped into a waste basket or disposed of in any suitable manner.

It will also be understood that the end members may be operated in removing them from the shaver by lifting up lever 15 so as to move it away from the shaver. This operation can be obtained by engaging a finger nail under the end of lever 15 and then lifting it up until the end of the finger may be engaged thereunder whereupon the lever may be grasped between the thumb and forefinger if desired and the entire end member removed from engagement with the shaver and the heads thereon through stretching of spring 10. By disengaging one end in this manner the other end may be readily disengaged by removing the end member held in the hand about the end of the shaver until the tension of the spring draws the members together to the limit of the spring tension obtained whereupon the other end member will drop away from the opposite side of the shaver.

The retainer may be applied to a shaver head from its detached position by first engaging one member in its seated position at one side of the shaver as shown in Fig. 1 and then by manually stretching spring 10 until the other end is engaged over the opposite side of the shaver when it may be released and slidably moved on the side of the shaver until positioning means 12 is seated in interengaged relation with the shaver head.

It is conceivable that other ways of applying and detaching the retainer constructed as illustrated in the drawing and described above upon a shaver head may be obtained due to the fact that spring 10 is sufficiently flexible to permit almost any manual manipulation of the end members to space them apart in various relations to one another and at a distance greater than the length of the shaver head in engaging and disengaging the end members in position on a shaver. The above methods are explained to illustrate various ways of conveniently attaching and detaching the retainer of the present invention on a shaver head.

It is to be understood that more than one resilient means or spring 10 may be used to connect the end members. For example, where more than two shaver heads are used, additional springs 10 or other suitable connecting means that can be elongated and shortened as desired, may be used in the manner illustrated in the drawing, so that the connecting means will lie in the space between two spaced shaver heads

when the retainer is engaged on the shaver. It should also be understood that where the retainer is constructed for use on only a single headed shaver that two springs 10 or the like of any suitable shape, may be used in connected relation to the end members so as to lie on opposite sides of the shaver head when applied to a single headed shaver. On a multiple headed shaver, however, it is not necessary to use the resilient connecting means on the outer sides of the heads since a co-action is obtained between the sections 8 for engaging each shaver head whereby both sections are effectively retained in engagement with the shaver heads in the manner illustrated in the drawing by the tension of the spring in the applied position of the retainer on a shaver.

The exterior shape of the end members is illustrated as being rounded which will obviously eliminate sharp corners at those portions that may be engaged with the surface of the skin or likely to become engaged therewith during the use of the shaver. The shape of the end members may be varied from that shown in the drawing to any desired extent in order to conveniently fit and cooperate with shaver constructions of various types and designs as they differ from that illustrated in the drawing. It will be understood that the invention is directed to a retainer unit having connected end members which by reason of the connection between the end members provides a structure that is readily attachable and detachable from a shaver for providing a hair retaining and catching unit wherein no special means is required to be operated to secure the attachment and detachment of the unit to the shaver.

It is to be further understood that end members 4 may be made of metal, plastic, wood or other suitable material now well-known in the art and that the connecting means 10 may be made from coil spring wire of the character illustrated in the drawing or may be made in any suitable shape, size or form and of any suitable material to secure the operation of the end members in the manner described, the drawing illustration only one form of application of the invention.

The invention claimed is:

1. A hair retainer for shavers, comprising end members for engagement with opposite open ends of a shaver head, and resilient means having opposite ends permanently attached to said members and tensioned for normally retaining said members in position on opposite ends of said shaver head and operable by elongation for bodily removal of the hair retainer as a unit by movement of said end members away from each other.

2. A hair retainer for shavers, comprising end members for engagement with opposite ends of a shaver head, positioning means on each end member cooperating with the ends of the shaver head for retaining said members against sidewise movement in engaged relation, and resilient means having opposite ends permanently attached to said end members and tensioned to normally retain said members in engaged relation with the ends of said shaver head and said positioning means in operative relation and said means being operable by extension for bodily removal of the hair retainer as a unit from the shaver head by the separation of the end members.

3. A hair retainer for shavers, comprising end members for engagement with opposite ends of

a shaver head, and lineally extensible and contractible means having opposite ends pivotally attached to said members operable to provide movement of said end members toward and from each other, said means being contractible to move and retain said members in engaged position on opposite ends of said shaver head and extensible for movement of said end members away from the ends of said shaver head for removal of said hair retainer as a unit.

4. A hair retainer for shavers, comprising end members for positioning in engaged relation on opposite ends of shaver heads, a projection on each end member interengaged with terminal portions of said shaver heads, and lineally extensible and contractible means having opposite ends permanently attached to said end members contractible to move and retain said members in engaged relation on the ends of shaver heads with said projections in interengaged relation and extensible in movement of said end members apart to disengage said projections for removal of said retainer from said shaver heads as a unit.

5. A hair retainer for shavers, comprising end members each formed to provide a seat to engage and receive the terminal portions at opposite ends of shaver heads, and an extensible and contractible connector secured to said end members at opposite ends and operable to provide for spacing of said end members to a greater distance apart than the length of a shaver head and subsequent movement of said end members together to engage said seats with the ends of a shaver head for mounting said hair retainer on a shaver.

6. A hair retainer for shavers, comprising a pair of end members, means connecting said members and normally operable to pull them toward each other for engagement with opposite ends of a shaver head for retention thereon, and a lever on each of said end members manually operable to disengage the end member from the shaver head in removing said retainer from the shaver.

7. A hair retainer for shavers, comprising a pair of end members, means connecting said members together in spaced relation normally operable to hold them in engaged supported relation on opposite ends of a shaver head, and a lever forming a projecting part of said end members having an inclined outer surface formed for manual engagement to operate said end members to disengage said shaver head by rocking said lever and obtaining a sliding movement with said inclined surface.

8. A hair retainer for shavers, comprising a pair of end members having one side formed to engage the end of a shaver head, flanges projecting from said side for interfitting engagement with the end of a shaver head to retain said end member against lateral sliding movement relative to the shaver head, resilient means connecting said pair of end members with said sides in facing relation for seating on opposite ends of a shaver head in interengaged relation with said resilient means tensioned, each end member having a lever forming part thereof manually operable to move said end members against the tension of said resilient means and relative to said shaver head to disengage said flanges from

said interfitting engagement for removal of said retainer from a shaver.

9. A hair retainer for shavers, comprising a pair of end members each formed with a plurality of shaver head engaging sections for registry and engagement with opposite ends of a plurality of shaver heads on a multiple head shaver, and resilient means having opposite ends permanently attached to said end members between said sections and tensioned for normally retaining said end members with said sections engaged with opposite ends of said shaver heads and operable by extension for bodily removal of said retainer as a unit from said shaver heads by separation of said end members.

10. A hair retainer for shavers, comprising a pair of end members each formed with a plurality of shaver head engaging sections for engagement of each section with an end of one of a plurality of shaver heads of a multiple head shaver, a tension member permanently attached at opposite ends to said end members and normally operable under tension to retain said end members engaged with opposite ends of said shaver heads, and positioning means on said end members cooperating with said shaver heads in engaged relation to retain said end members against lateral movement.

11. A hair retainer for shavers, comprising a pair of end members each formed with a plurality of shaver head end engaging sections for engaging corresponding ends of a plurality of shaver heads of a shaver, projections on said sections for cooperation with the ends of said shaver heads for retaining said members against lateral movement in engaged relation, a resilient member connecting said end members for normally retaining said end members engaged on said shaver under tension, and a lever forming part of each of said end members manually operable to disengage said end engaging sections from said heads in removal of said retainer from the shaver.

12. A hair retainer for shavers, comprising a pair of end members each formed with a plurality of shaver head end engaging sections for engaging corresponding ends of a plurality of shaver heads of a shaver, projections on said sections for cooperation with the ends of said shaver heads for retaining said end members in one relative position on said shaver, means connecting said end members operable to normally retain them in engaged relation on said shaver, a lever forming part of each of said end members manually operable to disengage said end engaging sections from said heads, and a fulcrum between said lever and said engaging sections for cooperation with said shaver in the operation of said lever in removing said retainer from said shaver.

13. A hair retainer for shavers, comprising a pair of end members detachably engageable with opposite ends of a shaver to cover the ends of a head thereon, means connecting said end members normally retaining them engaged on a shaver against detachment, and lever means operable on the shaver for disengaging said end members therefrom against the operation of said means.