

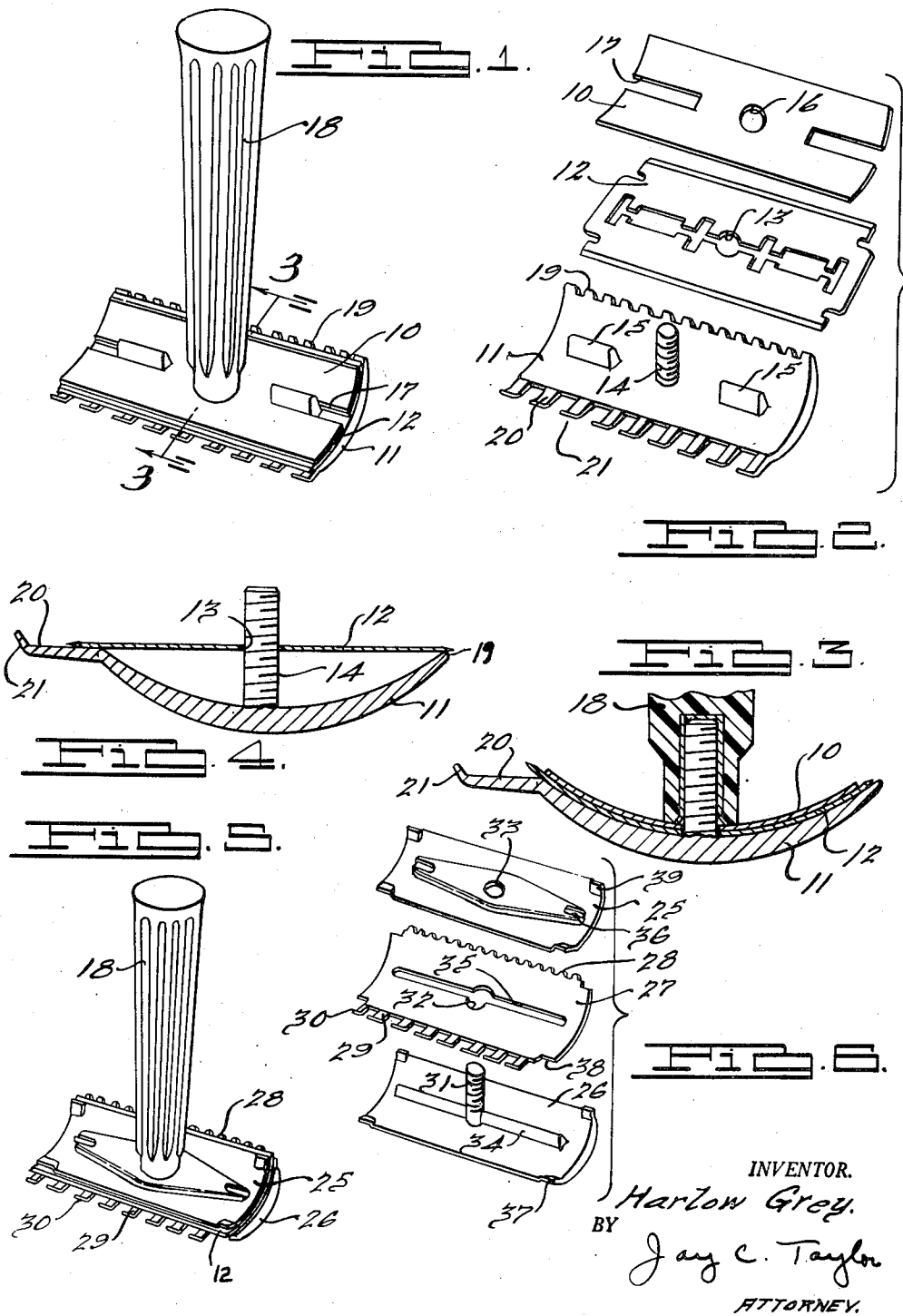
Feb. 26, 1957

H. GREY

2,782,499

DEVICE FOR CUTTING HAIR

Filed Aug. 28, 1953



1

2,782,499

DEVICE FOR CUTTING HAIR

Harlow Grey, Howell, Mich.

Application August 28, 1953, Serial No. 377,044

5 Claims. (Cl. 30—31)

This invention relates to a device for cutting and trimming hair and has for a principal object the provision of an improved simple and economically constructed device of the foregoing character which is particularly adapted to enable a person to cut his own hair without difficulty and with a minimum of skill or training.

Another object is to provide such a device which is readily adaptable for use with the Gillette type double edge safety razor blade and which in fact is feasibly fabricated in part at least from components of the conventional holder for such blades.

A number of hair cutters and trimmers employing the Gillette type safety razor blade are known to the art which are satisfactory for shaving and trimming, but for one reason or another have not been entirely satisfactory for cutting hair. I have now found that by supporting the blades in the customary manner between inner and outer clamping members adapted to bow the blade to a shape having an inner concave surface and an outer convex surface, and by providing a toothed guard portion integral with the outer clamping member having a row of teeth extending angularly outward from the blade at a location adjacent a cutting edge thereof, a superior efficient cutting action is achieved which readily enables the user to control the depth of the cut and to feather edge his hair toward the neck line simply by varying the angle at which the toothed guard is held as it glides along the contour of the head.

Another object is to provide such a device having a pair of toothed guards adjacent and outward of the opposite cutting edges of the bowed blade respectively. One guard comprises a comparatively fine serrate edge of the inner concave surface of the outer clamping member adapted to extend slightly beyond the adjacent cutting edge of the blade to facilitate close cutting. The other guard comprises a row of comparatively coarse teeth having their inner surfaces extending angularly outward from the blade near the other cutting edge and appreciably beyond the same to permit a coarse cut adjustable as aforesaid by suitably determining the angle at which the teeth of the latter guard meet the head, the inner surfaces of the coarse teeth or guard extending in a plane which passes immediately across the tips of the teeth of the fine serrate edge or guard.

Still another object is to provide a hair trimming and cutting device of the foregoing character having blade locating portions on the clamping members adapted to interfit within a median slot in the blade parallel to the latter's cutting edges, thereby to locate the blade positively with respect to said members when clamped therebetween. The centerline of the locating portions are offset toward the coarse guard so that the blade before being bowed is adapted to be supported on the tips of the fine serrate edge and on the inner surfaces of the teeth of the coarse guard in the plane thereof with the blade slot aligned directly over the locating portions on the outer clamping member.

Other objects of this invention will appear in the fol-

2

lowing description and appended claims, reference being had to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

5 Fig. 1 is a perspective assembled view from the underside of a hair trimming and cutting device embodying the present invention.

Fig. 2 is an exploded view showing the undersides of the blade and the inner and outer clamping members.

10 Fig. 3 is a transverse midsection taken in the direction of the arrows substantially along the line 3—3 of Fig. 1.

Fig. 4 is a view similar to Fig. 3, but showing only the outer clamping member and the unflexed blade supported thereon.

15 Fig. 5 is a perspective assembled view of a modified form of the present invention.

Fig. 6 is an exploded view showing the undersides of the inner and outer clamping members and intermediate guard member employed in the embodiment of Fig. 5.

20 It is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

25 Referring in more particularity to Figs. 1 through 4, a particular embodiment of the present invention is shown comprising inner and outer clamping members 10 and 11 respectively adapted to clamp therebetween a flexible double-edged safety razor blade 12, as for example of the Gillette type, having oppositely directed parallel cutting edges. The inner surface of the outer clamping member 11 is cylindrically concave and the outer surface of the inner member 10 is cylindrically convex so as to seat within the concavity of the outer member 11 and bow or flex the blade 12 to the cylindrical shape shown, Fig. 3.

30 The blade 12 is provided with the customary median slot 13 adapted to fit over an intermediate screw threaded stud 14 and a pair of laterally spaced locating studs or portions 15 integral with the outer member 11 and projecting inward from the concave surface thereof. Likewise the studs 14 and 15 extend through mating opening 16 and 17 respectively in the inner member 10, so that when the members 10, 11 and blade 12 are assembled and inter-fitted, these members are maintained in proper relative position with respect to each other. The assembled members are securely clamped together by means of an inward projecting handle shaft 18 detachably screwed on stud 14 tightly against member 10, Figs. 1 and 3.

35 In accordance with the present invention, the outer member 11 is provided with two parallel rows of teeth 19 and 20 respectively adjacent and parallel to the opposite cutting edges of the blade 12. The teeth 19 comprise a serrate edge of the concave inner surface of the member 11 and provide a fine guard projecting tangentially of the blade adjacent one cutting edge thereof and slightly beyond the latter for use in close trimming or cutting. The teeth 20 are longer and more widely spaced than the teeth 19 and comprise a coarse guard extending angularly outward from the outer convex surface of the bowed blade 12, Fig. 3. The inner surfaces of the teeth 20 lie in a plane perpendicular to the axis of the stud 14 and passing adjacent the tips of the teeth 19.

40 By virtue of the foregoing structure, the unflexed blade 12 can be located on the stud 14 with the cutting edges extending beyond the tips of the teeth 19 and the bases of the teeth 20. From this position, Fig. 4, the blade 12 can be bowed to the condition shown in Fig. 3 without danger of chipping or dulling its sharp cutting edges by engagement with the body of the member 11 during the

operation of clamping the member 10 within the concavity of the member 11. In the above regard, the studs 14 and 15 are offset toward the teeth 20 from the median line of the concave inner surface of the member 11 between the bases of the teeth 20 and tips of the teeth 19. Also by the construction shown, one cutting edge of the bowed blade 12 extends inward from the teeth 20 and is spaced therefrom to achieve a superior cutting action and to engage the hair substantially at right angles during the cutting operation.

In order to facilitate hair cutting, the tips of the teeth 20 curve inward at 21 to provide glider portions adapted to ride along the head of hair being cut. Thus in operation of the assembled device, the handle 18 is gripped in the manner of an ordinary safety razor with the member 11 uppermost. The device then is moved downward in a cutting action with the tips of the teeth 19 or 20 riding along the contour of the head. By suitably tilting the handle 18 with respect to the head, the angle at which the blade 12 meets the hair and correspondingly the depth of the cut are readily varied as desired.

The radii of curvatures of the inner surface of member 11 and the outer surface of member 10 can be varied appreciably, depending to a large extent upon the length of the chord subtending their parallel edges. The outer convex surface of one particularly desirable clamping member 10 subtends an arc of approximately 72° and has a radius of curvature of approximately $\frac{3}{8}$ ", the length measured lengthwise of the cutting edge of the blade 12 being approximately $1\frac{1}{4}$ ". The radius of curvature of the inner concave surface of the member 11 is substantially the same or slightly less than the radius of the outer convex surface of the member 10, so as to effect a positive clamping action on the blade 12 between the two curved surfaces.

In the present instance a clamping member 11 having approximately the length of the member 10 is provided with fourteen small teeth 19 terminating in a straight row along one edge of the concave inner surface. The teeth 19 are spaced slightly more than $\frac{1}{16}$ " and are approximately $\frac{3}{32}$ " long, their outer surfaces being rounded so as to glide smoothly along the surface of the hair being cut. Nine teeth 20 are shown spaced approximately $\frac{3}{4}$ " and terminating in a straight line parallel to the adjacent cutting edge of the blade 12, each tooth 20 being approximately $\frac{3}{16}$ " long.

When the blade 12 is bowed by assembly between the members 10 and 11, one cutting edge lies on a line approximately halfway between the tips and bases of the teeth 19 and beyond the adjacent parallel edge of the member 10. The other cutting edge of the blade 12 projects beyond the adjacent parallel edge of the member 10 and the bases of the teeth 20 approximately $\frac{1}{3}$ to $\frac{1}{2}$ the length of the latter teeth.

A modification of the present invention adapted for use with the conventional Gillette type safety razor with a minimum of alteration of the holder is illustrated in Figs. 5 and 6. Inner and outer clamping members 25 and 26 are provided with outer convex and inner concave cylindrical surfaces respectively comparable to the corresponding surfaces of the members 10 and 11, except that the member 26 is not toothed and has parallel edges along opposite ends of the arc of curvature, similar to the member 25. An adaptor or guard member 27 has an outer convex surface adapted to seat within the concavity of the member 26 and an inner concave surface adapted to receive the convex outer surface of the member 25 seated therein. The member 27 is provided with a row of fine teeth 28 and a parallel row of coarse teeth 29 comparable in all respects to the rows of teeth 19 and 20 respectively and extending circumferentially beyond the adjacent edges of the members 25 and 26 when these members are assembled as indicated in Fig. 5. The inner surfaces of the teeth 28 are part of the concave inner surface of the member 27, whereas the inner sur-

faces of the teeth 29 extend outward from the latter concave inner surface in a plane which passes adjacent the tips of the teeth 28. The tips of the teeth 29 curve inward at 30 in the manner of the tips 21.

The blade 12 is bowed into the concavity of the member 27 by the outer convex surface of the member 25 when these members are assembled and clamped together. Extending inward from the outer member 26 in the manner of the stud 14 is a threaded stud 31 which projects through an opening 32 in the member 27, the slot opening 13 in the blade 12, and an opening 33 in the member 25, whereby these members are positively clamped together by means of the handle 18 screwed onto the projecting inner end of the stud 31. Similarly to the locating projections 15, projections 34 extend inwardly from the member 26 through openings 35 and 36 in the members 27 and 25 respectively, as well as through the slot 13, so as to align these members with respect to each other when assembled. In Figs. 5 and 6, offset corner locators 37 extending inward from the member 26 register with corner recesses 38 in the member 27 and offset corner portions 39 in the member 25 to assure that the cutting edges of the blade 12 will remain in proper position adjacent and parallel to the corresponding rows of teeth 28 and 29.

I claim:

1. In a hair cutting device adapted to be used with a flexible double edged safety razor blade, separable inner and outer blade clamping members having interfitting convex and concave blade engaging surfaces respectively adapted to receive said blade therebetween, means for clamping said members together to flex and clamp said blade between said surfaces, the outer member having a row of teeth adjacent one cutting edge of said blade and projecting beyond the same when the blade is flexed and clamped between said members, the concave surface of the outer member adjacent said one cutting edge terminating short of said edge along a line parallel thereto and the teeth of said row adjacent said edge extending angularly outward from said concave surface at a location adjacent said line.
2. In a hair cutting device adapted to be used with a flexible safety razor blade, separable inner and outer blade clamping members having interfitting convex and concave blade engaging surfaces respectively adapted to receive said blade therebetween, means for clamping said members together to flex and clamp said blade between said surfaces, and a row of teeth extending outward from the outer member at an angle to the concave surface thereof, said concave surface terminating adjacent the bases of said row of teeth.
3. In a hair cutting device adapted to be used with a flexible double edged safety razor blade, separable inner and outer blade clamping members having interfitting convex and concave blade engaging surfaces respectively adapted to receive said blade therebetween, means for clamping said members together to flex and clamp said blade between said surfaces, the outer member terminating at one edge along one of a pair of parallel straight lines, and a row of teeth extending outward from said outer member at another edge thereof along the other of said lines and substantially in parallelism with the plane through said lines.
4. In a hair cutting device adapted to be used with a flexible double edged safety razor blade, separable inner and outer blade clamping members having interfitting convex and concave blade engaging surfaces respectively adapted to receive said blade therebetween, means for clamping said members together to flex and clamp said blade between said surfaces, interlocking portions on said members for positioning the same in predetermined relationship with respect to each other when clamped together, the outer member terminating at one edge along one of a pair of parallel straight lines, and a row of teeth extending outward from said outer member at another

5

edge thereof along the other of said lines and substantially in parallelism with the plane through said lines, said interlocking portions being located along a line parallel and intermediate said first named parallel lines and offset toward said row of teeth from the midplane between said first named parallel lines and perpendicular to said first named plane.

5. In a device for cutting and trimming hair, a flexible safety razor blade, separable inner and outer blade clamping members having interfitting convex and concave blade engaging surfaces respectively adapted to receive said blade therebetween, means for clamping said members together to flex and clamp said blade between said surfaces, the outer member terminating in a row of teeth extending outward from said concave surface at an angle thereto, said concave surface terminating adjacent the bases of said row of teeth, and a cutting edge of said blade

5

10

15

6

extending beyond said bases substantially parallel to the tangent to said concave surface at said bases.

References Cited in the file of this patent

UNITED STATES PATENTS

1,450,859	Kulhawy -----	Apr. 3, 1923
1,568,794	Baer -----	Jan. 5, 1926
1,683,980	Kwartin -----	Sept. 11, 1928
2,237,676	Lewis -----	Apr. 8, 1941

FOREIGN PATENTS

3,326	Australia -----	Aug. 3, 1932
29,888	Denmark -----	July 10, 1922
75,733	Sweden -----	Nov. 1, 1932
853,113	Germany -----	Oct. 23, 1952
903,014	France -----	Jan. 5, 1945