July 31, 1962 F. T. LETCHFIELD ETAL 3,046,654

PERSONAL HAIR CUTTER

Filed June 9, 1961 2 Sheets-Sheet 1

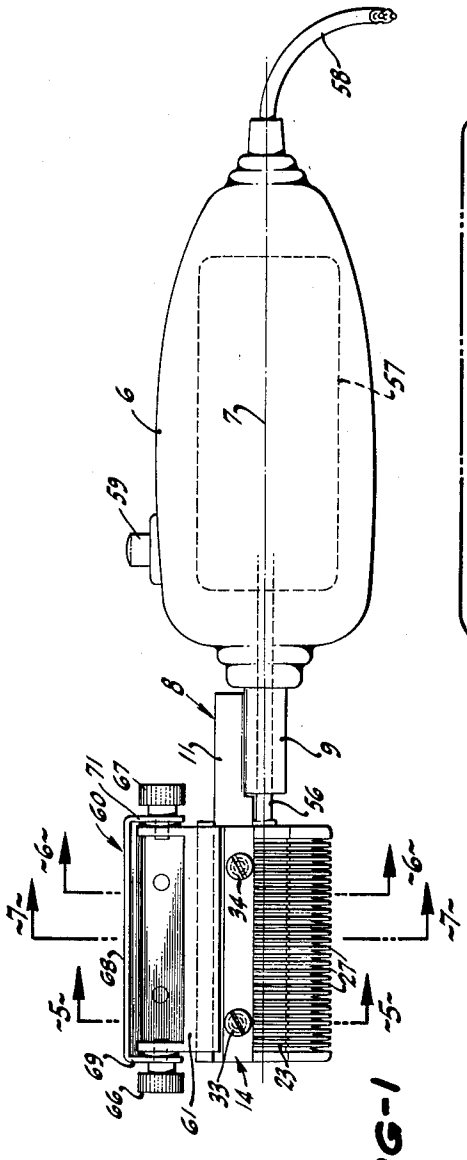


FIG-1

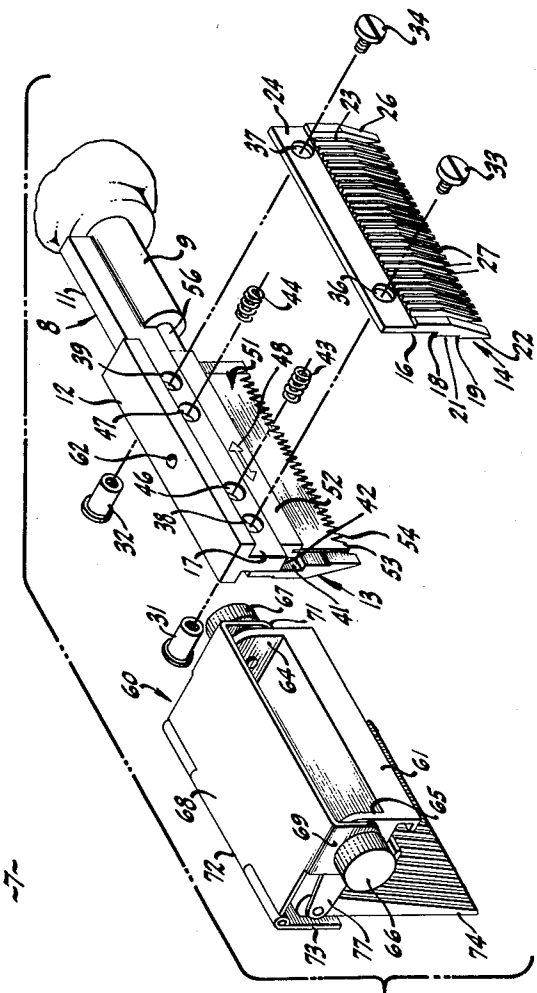


FIG-2

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Filed June 9, 1961 2 Sheets-Sheet 2

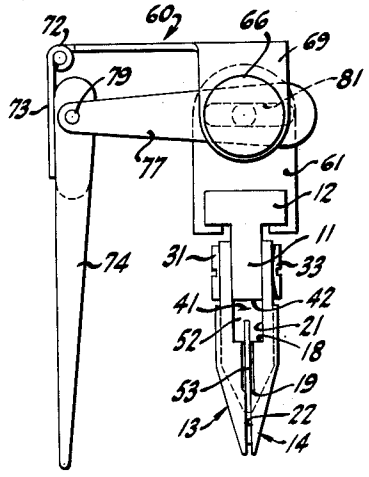


FIG-3

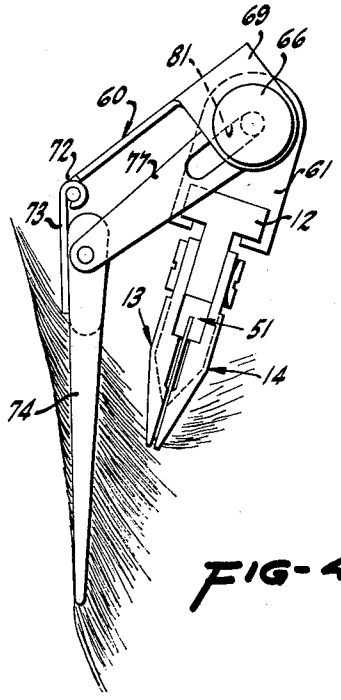


FIG-4

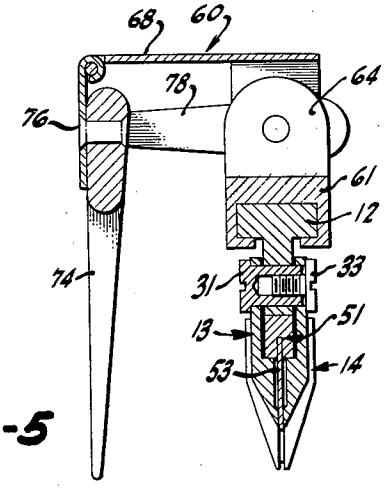


FIG-5

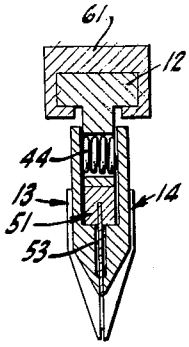
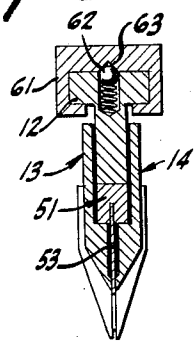


FIG-6

FIG-7



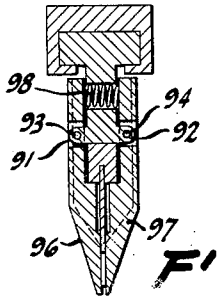


FIG-8

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3,046,654

PERSONAL HAIR CUTTER

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7 Claims. (Cl. 30—201)

Our invention relates to means for use by an individual for cutting his own hair in a neat and effective manner and is especially concerned with such a device which in the usual instance is electrically power driven and can be used either occasionally for minor trimming and evening or thinning of the user's hair or can be utilized to afford a complete haircut.

With increasing costs of hair cutting in barber shops and beauty shops and the like and with the increasing attention being given to personal grooming, it is an object of our invention to afford a power driven hair cutting device for use by an individual on himself in an expeditious and facile way.

Another object of the invention is to provide a personal hair cutter that is readily useable by either hand of the user and is effective for use upon himself to afford a satisfactory and professional looking result.

Another object of the invention is to provide a personal hair cutter which can readily be manipulated by the user, particularly on parts of his head that he cannot normally see, yet will afford the desired kind of result, despite the lack of visibility.

Another object of the invention is to provide a personal hair cutter which can be set or arranged to afford precisely the kind and length of haircut selected.

Another object of the invention is to provide a hair cutter for personal use that is light, easily handled and manipulated, is easy to manufacture and can be produced for a relatively low price and that requires but a minimum of attention and servicing for cleaning and maintenance.

Other objects together with the foregoing are attained in the embodiments of the invention described in the accompanying description and illustrated in the accompanying drawings in which:

FIGURE 1 is a side elevation of a personal hair cutter constructed pursuant to the invention and as it is arranged for normal use;

FIGURE 2 is an exploded view showing various parts of the hair cutter in partially disassembled relationship, some portions of the figure being broken away to reduce its extent;

FIGURE 3 is an end elevation of the cutting assembly only of the hair cutter with the parts in one adjusted position;

FIGURE 4 is a view in end elevation similar to FIGURE 3 but with the parts in different adjusted relationship and indicating the attitude of the device in an actual hair cutting operation;

FIGURE 5 is a cross section, the plane of which is indicated by the line 5—5 of FIGURE 1;

FIGURE 6 is a similar cross section, the plane of which is indicated by the line 6—6 of FIGURE 1;

FIGURE 7 is another cross section, the plane of which is indicated by the line 7—7 of FIGURE 1; and

FIGURE 8 is a view in cross section similar to FIGURE 6 but showing a modified form of spring force arrangement.

While the personal hair cutter of our invention can be practically embodied in a number of different forms and is not limited to personal use, it has successfully been manufactured in accordance with the showing in the accompanying drawings for use by an individual in cutting and trimming his own hair. In this embodiment there is provided a housing 6 generally symmetrical about a longitudinal axis 7 and conveniently contoured both in

size and in shape to be readily accommodated in either hand of a user. Conveniently, the housing 6 is made of a plastic material in the requisite number of pieces and is utilized as an enclosure for some of the mechanism and as a support or frame.

Extending from one end of the housing 6 along the axis 7 is a composite frame member 8 including a tubular extension 9 and also including a connected bar 11 located to one side of and parallel to the axis 7. The bar is generally rectangular in cross section for a portion of its length but in its outer region is provided with an integral top plate 12 so that that portion of the bar or frame member is T-shaped.

Secured to opposite sides of the frame member 8 and particularly to opposite sides of the bar 11 in a position spaced below the top plate 12 are serrated members 13 and 14. These are substantially identical so that the description of one applies equally to the other. Each of the members has an inner face 16 of planar extent designed to butt against the adjacent side face 17 of the frame member 8. On the inside of the member 14 there is an indented step 18 and an offset 19. These leave not only the planar face 16 but also demark planar portions 21 and 22. On the other side of and along the serrated member there are formed outstanding transverse ribs 23 in a series. The ribs are generally parallel to a planar outer surface 24 which is inset and continues in an inwardly angled portion 26. The intersection of the inwardly angled portion 26 having downward continuations of the ribs 23 thereon with the planar surface 22 affords a number of edge teeth 27.

The two serrated members 13 and 14 are assembled against the faces 17 of the frame member in mirror symmetry about the axis 7 and are fastened in place by sleeve nuts 31 and 32 engaged by machine screws 33 and 34. The sleeve nuts and machine screws pass appropriately through receiving apertures 36 and 37 in each of the serrated members and also through openings 38 and 39 through the frame bar 11. In this fashion there is afforded an assembly defining an appropriately contoured, symmetrical central channel generally designated 41. In cross section the channel 41 has an enlarged portion in part defined by the lower surface 42 of the frame bar 11 serving as a guide way and in part defined by the planar surfaces 21 and 22 of the opposing serrated members and also in part defined by the steps 18 and the offsets 19 in the facing serrated members.

The precise dimensions and width of the channel 41 are slightly variable by variable interengagement of the sleeve nuts 31 and 32 with the machine screws 33 and 34, the tightening of the screws being opposed by normally projecting coil springs 43 and 44 resting in passages 46 and 47 in the frame bar 11. The length of the springs 43 and 44 is slightly greater than the thickness of the frame bar 11 so that the spring tendency is to separate the serrated members. By appropriately tightening the screws 33 and 34 the precise width of the channel 41 can be firmly set.

Adapted to slide longitudinally within the channel 41 by motions in the direction of the axis 7, as indicated by the double headed arrow 48, is a cutter 51. This is a member having a bar head 52 designed to fit appropriately within the enlarged portion of the channel 41 and also having a thin depending planar portion 53 designed to operate well between the surfaces 22 in particular. The cutter is also formed with teeth 54 along its lower margin in positions to cooperate appropriately with the teeth 27 of the serrated members.

Means are provided for reciprocating the blade or cutter 51 within the mounting. One end of the bar head 52 is firmly secured to a shaft 56 passing through the tubular portion 9 of the frame member 8. The portion 9

serves as a mounting bearing for the shaft which extends into the housing **6** and is connected to a driving or power member **57**. This is not shown or described in detail since it is a standard electrically driven oscillator effective to reciprocate the shaft **56** to and fro in an amount approximately equal to the pitch or spacing between the successive teeth **27**. The driving member or motor **57** is supplied with power by an electrical cord **58** extending into the housing **6** through a manual control switch **59** arranged so that the user can turn the oscillating driver **57** off and on at his pleasure.

To cooperate with the cutting unit, as so far described, there is provided a comb unit **60**. This includes a base having a channel **61** formed therein slidably to engage the top plate **12** with an easy fit, the base being readily centered and temporarily held by a spring-pressed detent ball **62** in the upper portion of the plate **12** designed to engage a depression **63** (FIGURE 7) in the channel **61**.

Ears **64** and **65** extend upwardly in an integral fashion from the ends of the channel **61** and receive thumb screws **66** and **67**. These frictionally hold a mounting plate **68** having downturned lugs **69** and **71** gripped by the screws. The plate **68** terminates in a hinge edge **72** from which a pivoted attaching plate **73** extends. A comb **74** of usual construction is secured to the hinged attaching plate by rivets **76** or other convenient fastening and is positioned with respect to the channel **61** by a pair of parallel links **77** and **78** (FIGURE 1). These links at one end are connected to the comb **74** by pivots **79** and at the other end are provided with slots **81** so that the other ends of the parallel links encompass the shafts of the thumb screws **66** and **67**. With this arrangement, as illustrated in FIGURES 3 and 4 particularly, the thumb screws can be loosened and the comb **74** adjusted to have not only any desired angular relationship with the plane of the cutter **51** but also to have a wide range of adjustment of the distance between the end of the comb and the end of the cutter.

As a modification of the spring arrangement shown especially in FIGURE 6 and the mounting of the serrated plates on the frame bar **11**, there can be provided as shown in FIGURE 8 an arrangement in which the base frame at appropriate locations has extending lugs **91** and **92** receiving pivot pins **93** and **94** supporting the serrated members **96** and **97**. Springs **98** passing through the frame member bear at their opposite end against the portions of the serrated plates above the pivot pins **93** and **94**. Thus, the serrated plates at their lower portions are forced against the cutter blade with the right amount of pressure. The blade is not only maintained in proper cutting relationship with the serrated plates in the beginning, but the plates continue to press against the blade as wear occurs so that the device stays in appropriate adjustment.

In the use of either form of the device, particularly as indicated in FIGURE 4, the switch **59** is energized and the oscillator **57** moves the shaft **56** to and fro along the axis **7** at a rapid rate, oscillating the blade **51** in the direction of the axis and between the serrated plates. With the comb **74** in adjusted position as shown in FIGURE 4, the user, grasping the housing **6** in his hand, moves the comb over his head and in contact therewith so that the cutter is maintained in proper relationship or spacing thereto and the hair is cut to the desired length. With the mounting of the comb as shown, the comb frame can be removed and reversed so that either left-hand or right-hand relationships can be obtained and by varying the adjustment from time to time during the cutting of his hair the user can get the desired result.

Long continued use of the device can be appropriately effected without deleterious overheating of the cutter because the thermal path from the motor, the principal heat source, is relatively long and relatively small in cross section and has a substantial surface exposed to the air. Experience has indicated that even long continued use does not produce a cutter temperature too high for the user's comfort.

What is claimed is:

1. A personal hair cutter comprising a housing substantially symmetrical about an axis and adapted to be held in the hand, a frame member secured to said housing on one side of said axis and extending therefrom in the direction of said axis, means on said frame member defining a mounting block having a planar guide way thereon disposed on said side of and parallel to said axis and having parallel planar side faces disposed on either side of said axis, serrated members secured to said mounting block in contact with said side faces and extending therefrom in parallel spaced relationship from said side of said axis to the other side thereof, a cutter disposed between said serrated members in operative relationshp therewith, said cutter having a bar head in sliding engagement with said guide way and having a planar portion extending to said other side of said axis, a shaft extending from said housing along said axis and connected to one end of said bar head of said cutter, and driving means in said housing for reciprocating said shaft and said cutter in the direction of said axis.

2. A device as in claim 1 in which said serrated members are spring pressed in opposite directions toward engagement with opposite sides of said cutter.

3. A personal hair cutter comprising a housing substantially symmetrical about a first axis and contoured to be held in the hand, a frame member secured to said housing at one end thereof and projecting therefrom in the direction of said first axis, a pair of serrated members disposed symmetrically to and on opposite sides of said frame member, means for securing said serrated members to said frame member with a channel therebetween and parallel to said first axis, a cutter blade disposed in said channel, means in said housing and connected to said cutter blade for reciprocating said cutter blade in the direction of said first axis, a comb, a mounting plate, means for supporting said mounting plate on said frame member for pivotal movement about a second axis parallel to said first axis, means for supporting said comb on said mounting plate for pivotal movement about a third axis parallel to said first axis, and means for adjustably holding said mounting plate and said comb on said frame member in various positions relative to said second axis and said third axis.

4. A device as in claim 3 in which said holding means includes a friction device for holding the adjusted position of said comb as to angle with respect to the cutter and as to distance from the cutter.

5. A personal hair cutter comprising a housing substantially symmetrical about an axis and contoured to be held in the hand, a frame member secured to said housing and projecting therefrom in the direction of said axis, a cutter blade, means for mounting said cutter blade on said frame member for reciprocation in the direction of said axis, means on said frame member overlying and cooperating with said blade for providing a series of serrations in the direction of said axis, said serrations extending transversely of said axis, means in said housing and connected to said blade for reciprocating said blade in the direction of said axis, a comb having a series of teeth, said teeth extending transversely of said axis, a mounting plate pivotally supported on said frame member, and means for mounting said comb on said mounting plate for movement of said comb bodily toward and away from said frame member in a direction transversely of said axis.

6. A device as in claim 5, in which said mounting means for said comb includes a pair of parallel links pivotally connected to said comb.

7. A device as in claim 5 in which said mounting means for said comb includes a comb unit having a longitudinal channel engageable from either end with a top plate on said frame member, whereby said comb can be reversed

on said frame member to dispose said comb on either side of said cutter.

References Cited in the file of this patent

UNITED STATES PATENTS

233,695	Priest	Oct. 26, 1880
1,764,556	Friedman	June 17, 1930
2,275,180	Holsclaw	Mar. 3, 1942
2,596,078	Prohaska	May 6, 1952
2,614,323	Mueller	Oct. 21, 1952
2,702,940	Dickerson	Mar. 1, 1955
2,722,741	McAuliffe	Nov. 8, 1955
2,738,579	Gent	Mar. 20, 1956
2,827,695	Vitale	Mar. 25, 1958
2,883,747	Johnson	Apr. 28, 1959