Aug. 7, 1945. A. GIORGI 2,381,046

COMB ATTACHMENT FOR HAIR CLIPPERS

Filed Aug. 30, 1944

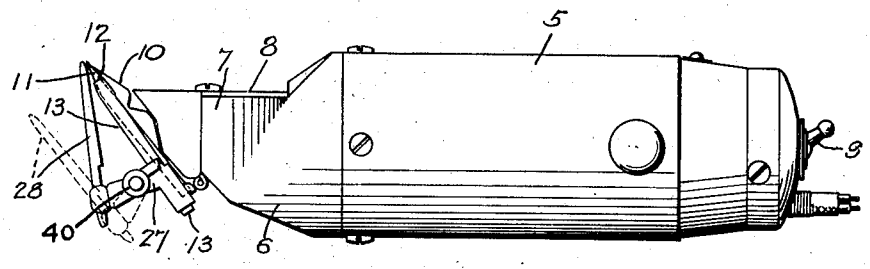


Fig. 1

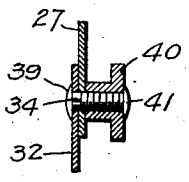


Fig. 5

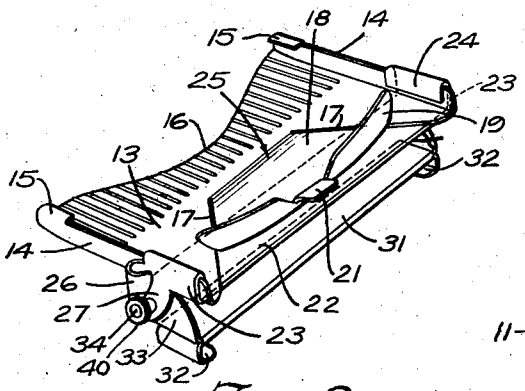


Fig. 2

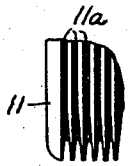


Fig. 6

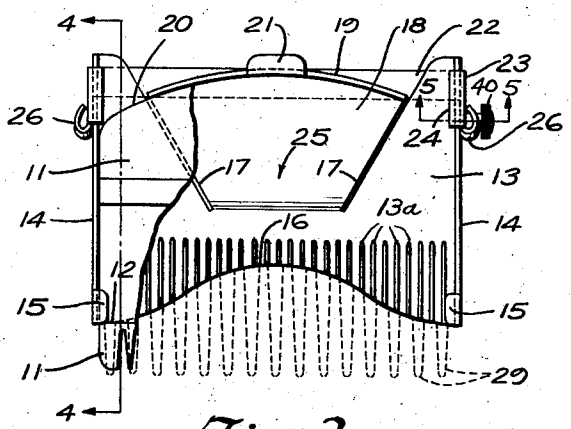


Fig. 3

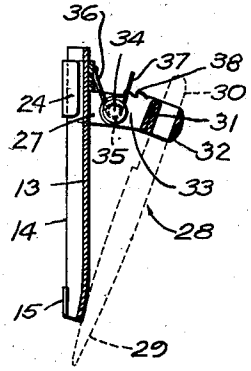


Fig. 4

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COMB ATTACHMENT FOR HAIR CLIPPERS

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18 Claims. (Cl. 30—201)

The present invention relates to hair clippers and it has special reference to a device for attaching a comb to a hair clipper unit.

It is one of the principal objects of the improvements to simplify the construction of a hair clipper such as contemplated herein, and to improve the efficiency, operation and dependability of such hair clipper.

It is also a principal object hereof to provide an attachment for mounting a comb on a hair clipper in a manner so that the comb may be moved flat upon the scalp, and the clipper may be bodily tilted with respect to the comb for determining the length of hair that is cut by the clipper.

Another principal object of the improvement is to provide a comb mounting device that may be readily attached to a hair clipper without altering the structure of the clipper. In this connection, the device is constructed and arranged so that the comb may be removed for replacement whenever desired without detaching the device from the clipper.

A further principal object hereof is to provide a comb attachment for a hair clipper that effects a hinging connection between the comb and the clipper, such arrangement permitting the operating head of the clipper to be tilted at any time or moved away from the scalp while being guided by the comb that is held in the attachment. By reason of this arrangement, the person operating the hair clipper may gradually tilt the clipper head while cutting the hair in a given direction to progressively increase or diminish the length of hair that is severed, as for example, when using the clipper upward or downward on the neck.

Another object is to provide a comb attachment for a hair clipper wherein provision is made to prevent accumulation of hair in the attachment by providing ample clearance space between the comb and cutter head for shedding the cut hair from the attachment at all times.

Still another object of the present improvements is to provide a comb attachment for a hair clipper that is constructed in a simple and novel manner so that it may be quickly assembled with or removed from a hair clipper; that is effective for producing the desired length of cut performed by the clipper; that allows the comb to be projected different distances beyond the operating portion of the clipper head; and which may be readily manufactured from metal stampings so that it may be sold at a reasonable retail price.

Additional objects, aims and advantages of the improvements contemplated herein will be apparent to persons skilled in the art after the construction and operation of the comb attachment is understood from the within description.

It is preferred to accomplish the numerous objects of this invention and to practice the same in substantially the manner hereinafter fully described and as more particularly pointed out in the appended claims. Reference is now made to the accompanying drawing that forms a part of this specification.

In the drawing:

Figure 1 is a view in side elevation showing a hair clipper with the present invention mounted thereon and illustrating a manner of using the structure by tilting the clipper body on the comb.

Figure 2 is a view in perspective showing the comb attachment removed from the cutter head of the clipper.

Figure 3 is a plan of the attachment showing a fragmentary portion of the cutter head of the hair clipper.

Figure 4 is a section on the plane of line 4—4 on Figure 3.

Figure 5 is a section on line 5—5 of Figure 3.

Figure 6 is a view of a portion of the outer face or back of clipper comb.

The drawing is to be understood as being more or less of a schematic character for the purpose of disclosing a typical or preferred form of the improvements contemplated herein, and in the drawing the same reference characters identify the same parts in the different views.

The hair clipper shown in Figure 1 comprises a cylindrical body 5 the forward portion 6 of which is of reduced dimensions. This forward portion terminates in an extension 7 having a relatively flat top 8 with an oblique end upon which the usual cutter head is removably mounted. The body 5 houses an electric motor the circuit of which is controlled by a snap-switch 9 at an end of the body, said motor being adapted to vibrate a cutter plate 10 across a fixed comb plate 11. There is a shallow depression in the face of the comb plate that is bridged by the cutter plate, such depression providing a shoulder 12 back of the roots of the comb teeth as shown at the left in Figure 3. The present improvement utilizes this shoulder as an abutment or stop for mounting the comb attachment on the cutter head as will presently be explained herein.

The comb attachment as shown in detail in Figures 2, 3 and 4, preferably comprises a sup-

porting plate 13 the side margins of which are provided with parallel upstanding flanges 14 that constitute guide means for the comb carrier member. The outer ends of the flanges 14 have inwardly bent lugs 15 that project towards each other and have their outer edges engaged with the adjacent marginal portions of the shoulder 12 above mentioned. The flanges 14 are spaced far enough apart to accommodate the sides of the comb plate 11 between them, and, as seen in Figure 3, the supporting plate 13 has its forward edge curved inward as at 16 between its side edges or flanges.

The rear portion of supporting plate 13 has spaced slits 17, preferably diverging outwardly to provide a fan-shaped spring leaf 18 therebetween with an arcuate outer margin that is bent upwardly in the form of a retainer lip 19. The portion of the comb plate 11 farthest from its teeth has a curved edge 20 against which the retainer lip 19 is engaged when the attachment is mounted on the cutter head of the hair clipper, and in order to facilitate the ready mounting and demounting of the attachment there is a lateral finger piece 21 formed on the central or midportion of the retainer lip 19.

A suitable slide is movably mounted on the supporting plate 13 for movement towards and away from the forward or work portion of the cutter head and beneath the supporting plate. This slide comprises a cross-bar 22 the ends of which are bent upwardly as at 23 alongside the flanges 14 of the supporting plate, and they are then turned down over the edges of the flanges as at 24, thus maintaining the slide in movable relation to the plate 13. In order to accommodate the flexing movement of the spring leaf 18 the latter is deflected or slightly crowned as at 25 so that it is out of the plane of the adjacent portion of the supporting plate 13. Suitable finger pieces 26 are formed at the ends of the cross-bar 22 by tubing or rolling a portion of the metal from which the cross-bar is fabricated. Also the ends of the cross-bar are provided with pendent ears 27 that project downwardly away from the bar as shown in Figures 2 and 4.

The slide member above described is adapted to hingedly support a holder or carrier for a hair comb 28 of the usual construction with a plurality of teeth 29 and a back 30 connecting the roots of the teeth. This carrier preferably embodies a metal strip 31 having its ends bent into a U-shape form to provide yieldable facing clips 32 into which the end edges of the comb back 30 are inserted and frictionally held in position. The carrier has ears 33 at its ends projecting away from the clips 32 and arranged in overlapping relation to the ears 27 of the slide, to which the carrier is hingedly connected by pivots or trunnion members 34. By reason of this arrangement, the carrier is disposed a substantial distance beneath the clipper head so that ample space is provided to prevent accumulation of hair when the clipper is being used. A wire spring has its intermediate portion 35 coiled about one of the pivots 34 with one of its ends 36 pressed against the slide or other portion of the attachment, and the other end 37 of the spring is selectively seated in one of a series of notches 38 in the adjacent ear 33 to increase or diminish the tension of the spring. As seen in Figure 4, the reflex action of the spring is utilized to normally urge the teeth 29 of the hair comb 28 towards the teeth of the clipper comb teeth, but at the same time will permit of relative swinging movement between the hair comb 28 and the clipper.

When in use for cutting hair the comb 28 is adapted to be moved in a path while flat against the scalp when the clipper is operating and the clipper is adapted to be tilted during the clipping operation to any angle desired with respect to the comb 28. This will predetermine the length of hair that is removed, and it is especially effective when clipping the hair adjacent the neck and back of the head for the reason that the clipper may be moved in an upward path and gradually tilted to progressively remove less and less hair while the clipper is traveling along such path. It will also be seen that the back 30 of the hair comb 28 is spaced a considerable distance from the clipper head so that there is little or no accumulation of hair during use of the attachment.

In any position of the hair comb 28 the teeth thereof will divide the hair into strands and will direct or guide these strands to the teeth of the cutter head where they will be severed by the action of the toothed vibratory cutter plate 10. By moving the slide outwardly the tips of the comb teeth 29 may be projected different distances beyond the points of the teeth on the clipper head comb plate 11. This will determine the fineness of the cut made by the clipper and avoids the necessity of having to provide interchangeable clipper heads for different cuts while cutting a person's hair. The present improvements thus will effectively perform the various functions of a series of interchangeable clipper heads such as at present are required.

It frequently may be desired to maintain the hair comb 28 in fixed relation to the cutter head, and in order to accomplish this provision is made to lock the comb 28 so that there is no relative movement between it and the cutter head. The pivot or trunnion 34 has an inner head 39 (Figure 5) that is anchored by welding or otherwise to the inner surface of the ear 32 and its shank is threaded to receive a knurled thumb nut 40 that is screwed thereon to draw the ears 27 and 32 into firm frictional contact thereby locking the normally movable parts against relative movement. In order to prevent accidental removal of the thumb nut 40 the outer end of the trunnion is upset as at 41 to act as a retainer for the thumb nut.

As shown in Figure 6, the back or outer face of the cutter head comb plate 11 is provided with longitudinal parallel channels 11*a* that extend rearwardly away from the roots of the teeth, and since the supporting plate 13 of the comb attachment is disposed across these channels provision is herein made to prevent clipped hairs or other extraneous particles accumulating in these channels. To this end the leading marginal region of the plate 13 is provided with corrugations 13*a* that are spaced in the same arrangement as the channels 11*a* so that these regions of the cutter head comb plate 11 and the opposing surface of the attachment plate 13 will be snugly fitted to each other. This arrangement also assists in maintaining the members in such intimate relation to each other that vibration chatter of the parts is prevented.

While the present invention has been described in detail in its present preferred form or embodiment, it will be apparent to persons skilled in the art, after understanding the improvements contemplated herein, that various changes and

modifications may be made therein without departing from the spirit or scope thereof. It is intended in the appended claims to cover all such changes and modifications.

What I claim as new is:

1. In combination with a hair clipper having a clipper head including a fixed comb plate, and a vibratory clipper plate thereon; a comb attachment comprising a supporting member; and means for pivotally mounting a comb on said supporting member for sliding movement flat against the scalp for guiding the clipper thereon, whereby said clipper is adapted to be tilted with respect to said comb for predetermining the length of hair removed by said clipper head.

2. In combination with a hair clipper having a clipper head including a fixed comb plate, and a vibratory clipper plate thereon; a comb attachment comprising a supporting member; a carrier pivotally mounted on said supporting member; and a comb mounted on said carrier adapted to lie flat against the scalp for guiding the clipper thereon, said clipper being thereby adapted for tilting movement with respect to said comb for predetermining the length of hair removed by said clipper head.

3. In combination with a hair clipper having a clipper head including a fixed comb plate, and a vibratory clipper plate thereon; a comb attachment comprising a supporting member; a slide movably mounted on said supporting member for movement towards and from said comb plate; a carrier pivotally mounted on said slide; and a comb mounted on said carrier for adjustment with respect to said comb plate; said comb adapted to lie flat against the scalp for guiding the clipper thereon, whereby said clipper may be tilted with respect to said comb for predetermining the length of hair removed by said clipper head.

4. In combination with an automatic hair clipper having a clipper head that embodies a fixed comb plate, and a vibratory clipper plate thereon; a comb attachment comprising a supporting member detachably mounted on said head; guiding means at opposite margins of said member; a slide movably mounted on said guiding means for movement towards and from the teeth of said comb plate; a carrier pivotally mounted for swinging movement on said slide; and a comb detachably mounted on said carrier with its teeth in coactive relation with the teeth of said comb plate, said comb constructed and arranged to lie flat against the scalp for movement thereon, whereby said clipper head may be tilted on said comb to predetermine the length of hair removed by said clipper head.

5. In combination with an automatic hair clipper having a clipper head that embodies a fixed comb plate, and a vibratory clipper plate thereon; a comb attachment comprising a supporting member detachably mounted on said head; guiding means at opposite margins of said member; a slide movably mounted on said guiding means for movement towards and from the teeth of said comb plate; ears on said supporting member depending beneath the rear portion of said comb plate; a carrier pivotally mounted on said ears for swinging movement; and a comb detachably mounted on said carrier with its teeth in coactive relation with the teeth of said comb plate, said comb constructed and arranged to lie flat against the scalp for movement thereon, whereby said clipper head may be tilted on said comb to predetermine the length of hair removed by said clipper head.

6. In combination with an automatic hair clipper having a clipper head that embodies a fixed comb plate, and a vibratory clipper plate thereon; a comb attachment comprising a supporting member detachably mounted on said head; guiding means at opposite margins of said member; a slide movably mounted on said guiding means for movement towards and from the teeth of said comb plate; ears on said supporting member depending beneath the rear portion of said comb plate; a cross piece; ears on said cross piece coacting with the respective ears on said supporting member; pivot means swingingly connecting adjacent ears; spring seats at the ends of said cross piece; and a comb detachably mounted on said spring seats with the tips of its teeth in coactive relation with the teeth of said comb plate, said comb arranged to lie flat against the scalp for movement thereon, whereby said clipper head may be tilted on said comb to predetermine the length of hair removed by said clipper head.

7. In combination with an automatic hair clipper having a head that embodies a fixed comb plate with shoulders at its margins, and a vibratory clipper plate thereon; a comb attachment comprising a supporting member detachably mounted on said fixed comb plate with portions engaged with said shoulders, said frame having guiding means at opposite margins; a slide movably mounted on the guiding means on said supporting member for movement towards and away from the teeth of said comb plate; ears on said supporting member depending beneath the rear portion of said comb plate; a carrier pivotally mounted on said ears; and a comb mounted on said carrier and disposed with the tips of its teeth in coactive relation with the teeth of said comb plate, said comb adapted to lie flat against the scalp for movement thereon, and said clipper head being adapted to be tilted with respect to said comb to determine the length of hair removed by said clipper head.

8. In combination with an automatic hair clipper having a head that embodies a fixed comb plate with shoulders at its margins, and a vibratory clipper plate thereon; a comb attachment comprising a supporting member detachably mounted on said fixed comb plate with portions engaged with said shoulders, said frame having guiding means at opposite margins; a slide movably mounted on the guiding means on said supporting member for movement towards and away from the teeth of said comb plate; ears on said supporting member depending beneath the rear portion of said comb plate; a carrier pivotally mounted on said ears; oppositely arranged spring clamps on the underneath portion of said carrier; and a comb removably mounted in said clamps and disposed with the tips of its teeth in coactive relation with the teeth of said comb plate.

9. An attachment for mounting a comb on the cutter head of a hair clipper in tilting relationship to the cutter head, comprising a supporting plate; confronting laterally disposed lugs on the forward portion of said plate arranged for abutting engagement with shouldered portions of the cutter head; a spring tongue at the rear portion of said plate having an upstanding flange for engagement with a lateral portion of the cutter head; a cross-member positioned beneath the rear portion of said plate and having pivotal connection therewith; and means on said cross-member for receiving a comb, the arrangement

permitting the clipper head to tilt with respect to the comb carried by said means.

10. An attachment for mounting a comb on the cutter head of a hair clipper, comprising a supporting plate constructed and arranged for ready attachment and detachment with respect to the cutter head of the hair clipper; guide means on said supporting plate; a sliding member mounted on said guide means; comb holding means pivotally connected to said sliding member; and a comb mounted in said holding means and positioned with its teeth adjacent the leading edge of the cutter head, whereby relative movement is effected between the cutter head and said comb during operation of the hair clipper.

11. In combination with a hair clipper having a cutter head with a channeled outer surface, the improvements of a hair comb attachment comprising a supporting plate having a corrugated surface overlying and interengaged with the channeled surface of the cutter head; a hair comb pivotally supported by said plate for tilting movement relative to the cutter head; and means for detachably connecting said supporting plate to said cutter head.

12. A structure as defined in claim 11 wherein means are provided for locking the hair comb against tilting movement.

13. A structure as defined in claim 11 wherein the tiltable hair comb is pivotally connected to a carrier slidable on the supporting plate towards and away from the work edge of the cutter head.

14. In combination with a hair clipper having a cutter head with a channeled outer surface, the improvements of a hair comb attachment comprising a supporting plate having a corrugated surface overlying and interengaged with the channeled surface of the cutter head, said plate having means coacting with lateral portions of the cutter head for detachably mounting said plate on the cutter head; and a hair comb mounted on said plate, said hair comb constructed and arranged for sliding and tilting movement with respect to said plate.

15. A structure as defined in claim 14 wherein means are provided for releasably maintaining the hair comb against tilting movement.

16. The arrangement defined in claim 1, including means for locking the hair comb against tilting movement.

17. The arrangement defined in claim 1, including spring means for urging the hair comb in a direction to normally engage the teeth thereof with the clipper comb plate.

18. The arrangement defined in claim 1, including spring means for urging the hair comb in a direction to normally engage the teeth thereof with the clipper comb plate; and means for locking the hair comb against tilting movement.

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