Feb. 21, 1961 T. J. GORE 2,972,187

DEVICE FOR THINNING HAIR

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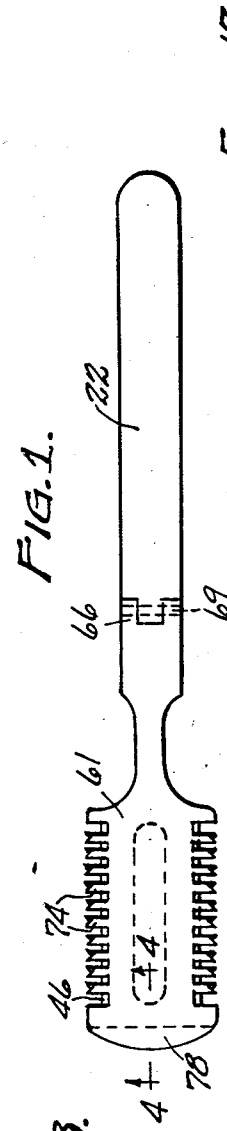


FIG. 1.

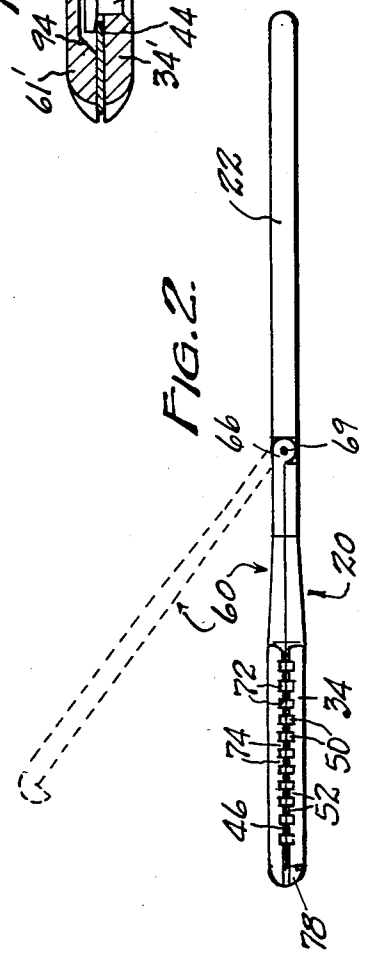


FIG. 2.



FIG. 3.

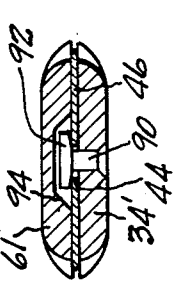


FIG. 13.

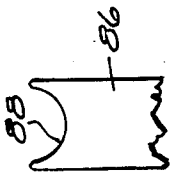


FIG. 12.

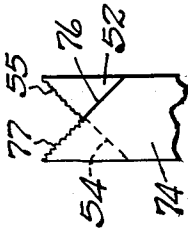


FIG. 11.

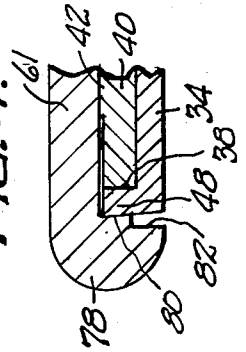


FIG. 4.

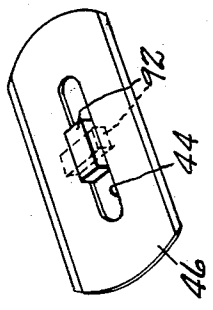


FIG. 14.

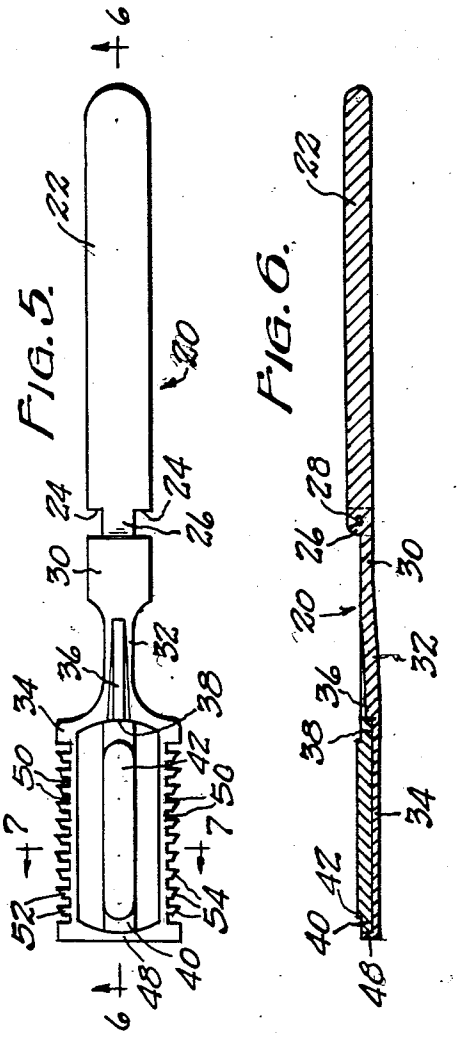
THOMAS J. GORE
INVENTOR.

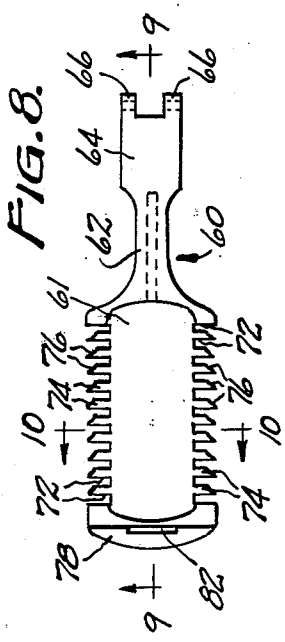
BY Eugene C. Kuhlbeck
ATTORNEY.

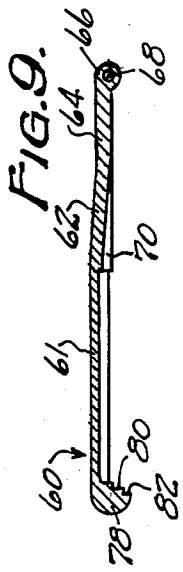
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DEVICE FOR THINNING HAIR

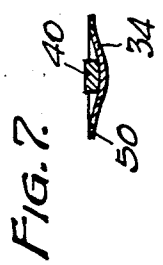
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THOMAS J. GORE.
INVENTOR.

BY Eugene C. Knoblock
ATTORNEY.

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DEVICE FOR THINNING HAIR

Thomas J. Gore, 405 Lincoln Way W., South Bend, Ind.

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3 Claims. (Cl. 30—30)

This invention relates to improvements in devices for thinning hair. More particularly, it relates to a device by means of which hair in a strand may be severed at selected or spaced points along its length so as to facilitate curling or waving thereof and to facilitate shaping of the hair to produce a desired coiffure.

The primary object of this invention is to provide a device of this character utilizing a conventional razor blade as the cutting element thereof and provided with a guard having a toothed edge projecting beyond the blade edge and constructed to confine and retain portions or groups of hair filaments of a hair strand at spaced intervals while permitting the filaments of the strand intervening between the retained strands to engage the cutting edge of the blade to be severed thereby.

A further object is to provide a device of this character comprising a blade carrier having a toothed edge wherein the tips of the teeth are notched or recessed to receive and retain hair filaments therein and to prevent the same from coming in contact with the portions of the cutting edge of a blade exposed between said teeth.

A further object is to provide a device of this character which is simple in construction, easy to use, which can be cleaned and sterilized readily, which is safe when handled by unskilled persons, and which can be manufactured economically.

Other objects will be apparent from the following specification.

In the drawings:

Fig. 1 is a view of the device in face or side elevation;

Fig. 2 is a view of the device in assembled position, as viewed from one edge thereof, and illustrating in dotted lines the released position of a part thereof;

Fig. 3 is an end view of the device;

Fig. 4 is an enlarged fragmentary sectional detail view taken on line 4—4 of Fig. 1;

Fig. 5 is a face view of one part of the device;

Fig. 6 is a longitudinal sectional view taken on line 6—6 of Fig. 5;

Fig. 7 is a transverse sectional view taken on line 7—7 of Fig. 5;

Fig. 8 is a face view of another part of the device;

Fig. 9 is a longitudinal sectional view taken on line 9—9 of Fig. 8;

Fig. 10 is a transverse sectional view taken on line 10—10 of Fig. 8;

Fig. 11 is an enlarged detail view of one form of tooth;

Fig. 12 is an enlarged face view of another form of tooth used in the device;

Fig. 13 is a transverse sectional view illustrating a modified embodiment of the invention, and taken substantially on line 10—10 of Fig. 8; and

Fig. 14 is a perspective view illustrating the relation of a retainer of the device to a blade used therein.

Referring to the drawing and particularly to Figs. 1 to 10 thereof which illustrate one embodiment of the invention, the numeral 20 designates one part of the tool which has a handle 22 which is notched at its opposite

sides at 24 to provide a reduced width knuckle portion 26 having a transverse aperture 28 therethrough. The portion of the tool forwardly of the knuckle 26 is of reduced thickness at 30 and merges with a narrow neck portion 32 which preferably extends slightly angularly to the handle 22. A head or plate portion 34 projects longitudinally from the neck 32 and preferably is of transverse curved form, as best seen in Fig. 7. A longitudinal rib 36 preferably projects from the neck 32 at one side thereof. The rib 36 preferably extends a short distance into the head portion 34 and terminates at one end of a longitudinal socket 38 extending centrally of said head portion 34. An insert member 40 is mounted in the socket 38 and has a longitudinal projecting rib 42 of a size and shape to accommodate and fit within a longitudinal opening 44 formed in a conventional safety razor blade 46, as illustrated in Fig. 14. A lip 48 formed at the outer end of the head defines the outer end of the socket 38.

The head portion 34 is provided with a plurality of transverse grooves 50 at its opposite sides and spaced teeth 52 are formed between the grooves 50. In the form shown in Fig. 5 the teeth 52 have end edges 54 extending substantially diagonally thereof for purposes to be mentioned. The spacing between the inner ends or bottoms of grooves 50 at opposite sides of the head portion is less than the overall width of the safety razor blade 46, and the space between the tips of the teeth at opposite sides of the head portion is substantially greater than the width of a safety razor blade 46. The transverse configuration of the head portion 34 will preferably be such that the faces of said teeth 52 merging with the concave surface of the head portion will lie in one plane and the longitudinal blade-locating member 42 projects beyond that plane, as illustrated in Fig. 7. Thus the blade 46 will bear flat against the surfaces of the teeth 52 at opposite margins thereof for effective clamping or gripping thereof throughout its length when member 42 seats in the opening 44 of the blade.

A complementary part 60 of the device is illustrated in Fig. 8 and comprises a head or plate portion 61, a neck portion 62, and a shank portion 64 having transversely spaced knuckle or hinge portions 66 provided with aligned apertures 68. The knuckle portions 66 are adapted to be received in the recesses 24 of the handle 22 and to be pivoted to the knuckle portion 26 by means of a pivot pin 69. The neck portion 62 preferably extends at an angle to the head portion 61 and the shank 64, and has a longitudinal reinforcing rib 70. The head 61 is preferably of transversely curved configuration as illustrated in Fig. 10, with the opposite marginal portions thereof lying in a common plane and being provided with grooves 72 defining teeth 74 whose ends 76 preferably extend at an angle thereto. The teeth 74 are adapted to register with the teeth 52 of the opposite part 20 and the tooth ends 76 extend at an angle to the tooth ends 54 so as to define V-shaped notches at the ends of the registering teeth, as illustrated in Figs. 1 and 11.

The free end portion 78 of the head 61 projects laterally in the direction of the concave face of the head 61 to provide a shoulder at 80 which is slightly beveled or undercut, as best seen in Fig. 4, to fit around the end edge 43 of the plate 34 with a snap locking fit. The edge 80 is interrupted by an offset portion 82 which cooperates to define a slot between the same and the end 48 of the plate 34 to accommodate a coin or like means for prying apart the members 20 and 60 of the device when it is desired to open the same to the dotted line position shown in Fig. 2 for the purpose of inserting a new blade or withdrawing an old blade. The angularly extending parts 32 and 62 are flexed toward each other when the shoulder 80 engages edge 42, so that said parts 32 and 62 tend

to hold the shoulder 80 in firm engagement with edge 42.

When the device is assembled for use with the blade 46 clamped between the plate parts 34 and 61 and oriented thereto by the centering member 42, the parts assume the position shown in Fig. 1 wherein the sharp edges of the blade 46 are exposed between the registering teeth so that hair filaments which enter the grooves between the teeth may be severed by the blade edge. The tips of the registering teeth of the two heads 34 and 61 are oppositely beveled or angled to cooperate to define V-shaped sockets which serve to retain and confine the hair laments of a strand which contact therewith. In other words, when a strand of hair is held substantially taut by the user of the device who then applies one edge of the device to the hair strand transversely thereof and presses thereagainst, some of the hair filaments of the strand will be severed by the blade and other filaments of the hair strand will be retained in a protected position. Thus it is possible to control carefully and accurately with a minimum expenditure of time the amount of hair which is thinned from a hair strand by simply regulating the pressure with which the edge of the blade is applied against the hair strand. In other words, a heavy pressure will sever all hair filaments located between the teeth of the device while a lesser pressure will sever only a portion of the hair filaments located between the teeth.

The spacing between the teeth at opposite sides or margins of the device may differ, or the width of the teeth at opposite sides of the device may differ, and either or both of these two factors may serve as means to regulate the extent to which the hair is thinned. Thus, if one edge of the tool has a plurality of comparatively narrow teeth spaced a given distance apart, and the other edge of the tool has wider teeth spaced the same distance apart, more hair will be cut when the first named edge of the tool is applied to the hair strand than can be cut by using the opposite side of the device. Similarly, if the teeth on the two sides are of substantially the same width but are spaced apart differently at the two sides, more hair will be cut when the side having the widest spacing between the teeth is applied to the hair strand.

Figure 11 illustrates an arrangement wherein the edges 54 and 76 at the tips of the teeth 52 and 74 are serrated or roughened at 55 and 77, respectively, at the parts thereof which define the V-groove at the tip of the tooth assembly. This is of value because it reduces the possibility that hair filaments will slide out of the V-groove during use of the tool.

Another modification of the device is illustrated in Fig. 12, wherein a tooth 86 has a substantially V-shaped or U-shaped recessed top edge 88. When teeth of this character are provided, the teeth of the opposite plate parts 34 and 60 may be similar and register with one another.

In all constructions of the device the relation of the parts will be such that the blade 46 is clamped effectively between the heads 34, 61 when the snap interlock shown in Fig. 4 is effected. Thus I prefer to construct the device to close tolerance so that the space between the margins of the inner faces of said heads 34, 61 will not vary substantially more than one one-thousandth of an inch from the thickness of the blade, that is, the tolerance will be substantially less than the thickness of the thinnest filament of human hair. This will prevent clogging of the device by preventing wedging of hair filaments between the carrier head portion and the blade. It also will assist in positioning the blade accurately in the device, will rigidify the blade to facilitate accomplishment of its cutting function, and will hold the blade to prevent chatter thereof in use.

If desired, the device may be provided with means for positively locking the blade to the device. Thus, instead of using the insert 40, 42, as illustrated in Fig. 1, in a construction in which the plates 34 and 61 are of arched transverse configuration, the plates 34' and 61' may be substantially solid, as illustrated in Fig. 13, having substantially plain or flat inner or confronting faces engageable with the razor blade 46. One of the heads, here shown as the head 34', has an aperture therein rotatably receiving a stud 90, said stud projecting from the inner face of the plate 34' a distance equal to the thickness of the blade 46 and having a cross-head 92 at its end. The cross-head 92 is preferably of a width slightly less than the width of the elongated opening 44 of the blade and of a length greater than the width of said opening. Thus the cross-head accommodates passage of the slot 44 thereover and then locks the blade to head 34' when turned at right angles to said slot. Alternatively the stud 90 may be fixed and the cross-head 92 may extend transversely relative to the longitudinal dimension of the head 34', in which case the blade is applied in a position transverse of the head 34' and then is rotated into longitudinal alignment with said head to facilitate interlocking thereof by the cross-head 92. The plate portion 61' will be suitably recessed at 94 to accommodate the cross-head 92 with clearance when the head portions 34', 61' of the carrier are locked together.

The parts of the device are preferably formed of metal for strength. Thus the blade carriers may be formed of non-ferrous metal or of stainless steel. This is desirable from the standpoint that the device will not be subject to rusting and will permit sterilization thereof without injury thereto. In this connection, a device of this character is preferably used on wet hair inasmuch as wet hair is in the best condition for severing thereof, that is, it is weakest and softest when it is wet. Consequently, the device will be subject to moisture substantially continuously during use so that it must be resistant to corrosion. It is possible, however, to form the parts of the device from non-metallic materials, such as hard rubber, or a rigid synthetic rubber.

It will be apparent that the use of standard safety razor blades is an advantage in the device, and that the device can be constructed to accommodate such blades to take advantage of their inexpensive character and ready availability. The blade edges are so positioned in the device that they lie completely within the overall outline or contour of the head portions of the device. Consequently, no danger of injury to the user who might carelessly grip or contact the head portion of the device will be experienced, at least from the standpoint of cutting of the user's hands by contacting the sharp cutting edge of the razor blade. The device is easily cleaned, and hair cut thereby is readily released therefrom, as by holding the device within a stream of water. Complete cleaning is readily accomplished by the simple expedient of pivoting the member 60 to the dotted line position shown in Fig. 2 by release of the latch illustrated in Fig. 4.

While the preferred embodiments of the invention have been illustrated and described, it will be understood that the construction may be modified within the scope of the appended claims without departing from the spirit of the invention.

I claim:

1. A hair thinning device comprising an elongated member having a reduced width knuckle portion intermediate its ends, one end portion of said member being of reduced thickness from said knuckle to one end thereof and extending at a slight angle to the other end of said member at a portion thereof adjacent said knuckle, and an elongated head member having a bifurcated end pivoted to said knuckle, said head member having a portion thereof adjacent said knuckle extending at a small angle to a portion thereof confronting the reduced thickness end portion of said elongated member and cooperating therewith to clamp between marginal portions of said head member and the reduced thickness portion of said elongated member a razor blade having a longitudinal slot, one of said clamping members having an inner face recessed between said marginal clamping por-

tion thereof and a longitudinal rib projecting from its recessed inner face fitting in said blade slot, and the other of said clamping members having its inner surface recessed between said marginal clamping parts thereof, said head projecting longitudinally beyond the end of the reduced thickness part of said first member and including a laterally projecting portion having a beveled undercut shoulder engaging the end edge of the reduced thickness part of said first member with a snap locking fit, the angularly extending parts of said members being flexed toward each other during continuance of said snap locking fit.

2. A hair thinning device as defined in claim 1, wherein said clamping members include registering laterally projecting teeth, the edges of said blade being spaced inwardly from the ends of said teeth and exposed between said teeth.

3. A hair thinning device as defined in claim 1, and spaced registering teeth projecting laterally from said clamping members at one side thereof.

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