

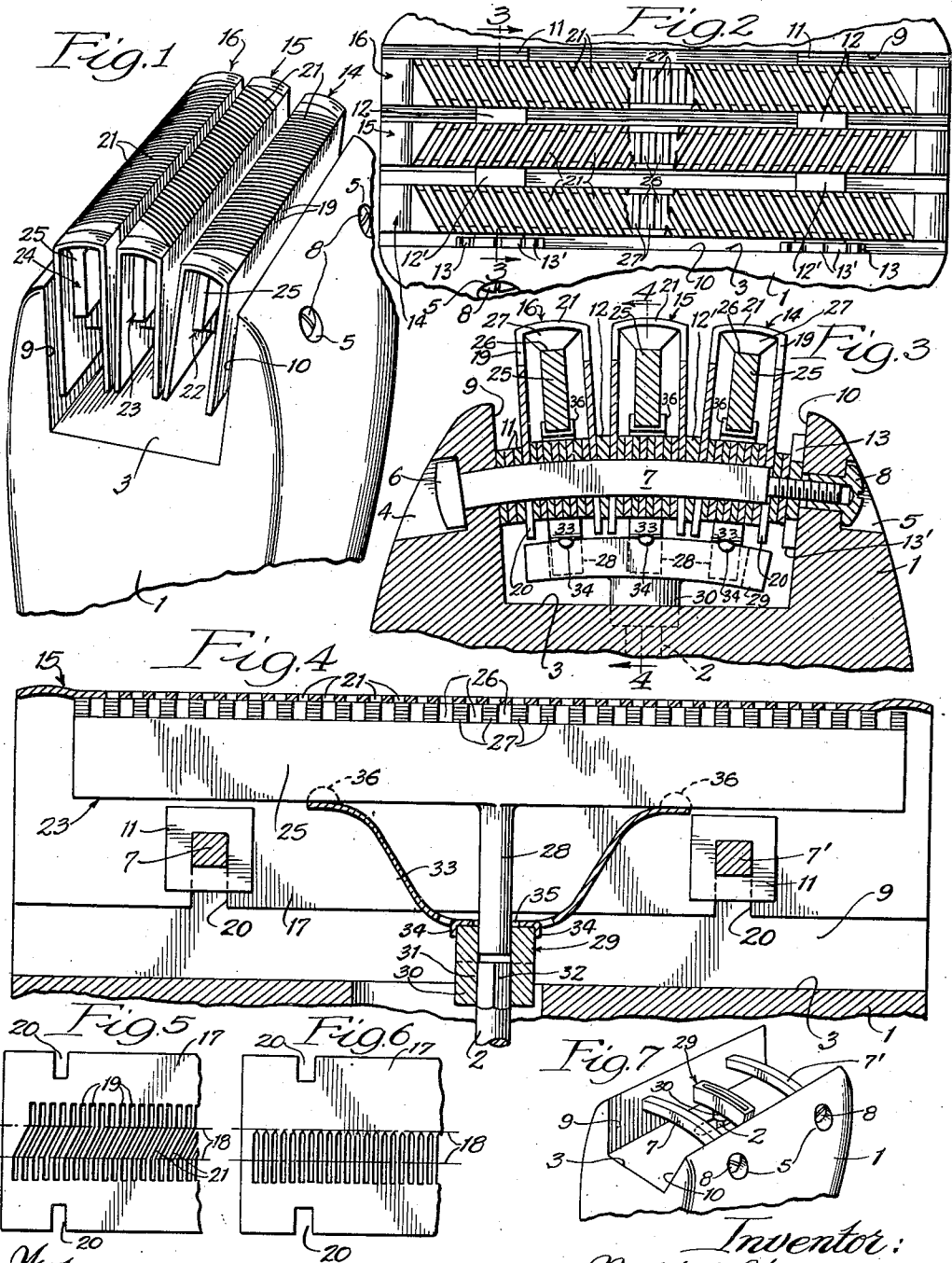
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RAZOR.

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RAZOR

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2 Claims. (Cl. 30-43)

This invention relates to improvements in shaving or clipping devices of the type used without water, soap or other shaving preparations and commonly known as electric shavers.

The main object of this invention is to improve the efficiency of dry shavers by increasing their effectiveness by providing means to positively clip the hair close to the skin. A further object of this invention is to provide in a shaver of this character a plurality of interchangeable and renewable shear heads operated from a common motive device.

Still further objects of this invention are to provide an electric portable shaver of this character having a plurality of spaced interchangeable and reversible shear heads each having an outer cutter and an inner cutter and a common drive means for all of the inner cutters; to provide a shear cutter of this character having a pair of spaced shafts containing shims or washers between which the individual heads are arranged to be disposed for anchoring the heads to the housing commonly employed in electric shavers; to provide a common drive means for said individual heads; to provide a plurality of spaced heads in a device of this character wherein one or more of said heads is provided with angularly disposed cutter bars; and to provide a device of this character which is very simple in construction and operation and economical to manufacture.

An illustrative embodiment of this invention is shown in the accompanying drawing, in which:

Figure 1 is a perspective view of an electric shaver made in accordance with this invention, the handle or casing thereof being partly broken away.

Fig. 2 is a top plan view thereof.

Fig. 3 is a cross sectional view taken on the line 3-3 of Fig. 2.

Fig. 4 is a cross sectional view taken on the line 4-4 of Fig. 3.

Figs. 5 and 6 are plan views of two alternative shear heads before folding.

Fig. 7 is a perspective view of the upper end of the housing with the shearing heads removed.

Referring in detail to the drawing, the housing 1 forms a handle for holding and manipulating the device and contains a motor vibrator or the like, not shown, having a reciprocating power transmitting shaft 2 extending through said housing at one end thereof. This end of the housing 1 is cut away as at 3 in the usual manner. This end of the housing is also drilled

and bored as at 4 and 5 for the reception respectively of the head 6 of the square shanked arcuate shaped bolt 7 and the internally threaded cap 8. Interspersed between the side walls 9 and 10 of the cut away portion 3 and loosely positioned on the shank of bolt 7 are a series of ordinary shims or washers 11 and a pair of wedge shaped shims or washers 12 and 12'. Two bolts 7 and 7' are employed in this embodiment; and inasmuch as they are identical in every respect reference to one is intended to include reference to both; and the purpose thereof will be hereinafter described.

The outer stationary cutters 14, 15 and 16 are formed by folding the blank 17 (see Figs. 5 and 6) along the dotted lines 18 after the perforatory slots 19 and 20 have been stamped or punched out. It is to be noted that the material remaining between the slots 19 forms cutter bars 21 in the medial portion of said blank which is in itself when folded, the face bearing part of the cutters 14, 15 or 16. The material remaining between the slots 19 in the side walls (after folding) forms guide bars to facilitate entry of the hair to be clipped into the slots 19 of the face bearing part. The slots 19 in the face bearing part and the cutter bars 21 are disposed at an angle to the longitudinal axis of the face bearing part.

After the blanks 17 shown in Figs. 5 and 6 are folded to make the cutters 14, 15 and 16, they are placed in the cutaway portion 3 especially in Figs. 1 and 3 so that the perforatory slots 20 extend over, and envelope on three sides, the shanks of bolts 7 and 7'. The washers or shims 11 space the cutters 14, 15 and 16 away from each other and the wedge shaped washers 12 and 12' position the cutters 14, 15 and 16 in such a manner that the face bearing portions thereof form an arc (see Fig. 3). Lock nuts 13 are threaded on the bolts 7 and 7' and are provided with the usual fins 13'. By tightening the caps 8 the cutters 14, 15 and 16 are held securely in position under the tensioning action of fins 13' of the lock nut 13.

The inner or movable cutters 22, 23, 24 are T-shaped in cross section and each comprises a shank 25 and an upper bearing part made up of a series of transversely positioned cutaway portions 26 and shear bars 27.

Each movable cutter (22, 23 and 24) is provided with downwardly a projecting shaft 28 integrally secured medially to the shank of the cutter. The free ends of the shafts 28 are arranged to seat in the transversely extending

trough 29. The trough 29 is provided with an integrally secured medially positioned downward hub 30 which on its lower end is provided with a square socket 31 to receive the square end 32 of the power shaft 2.

Springs 33 one for each inner cutter are secured to the edges of the trough 29 in any suitable manner such as by providing downwardly extending flanges 34 and perforated at 35 to fit around the corresponding shaft 28. The free ends of the springs 33 are provided with upwardly turned flanges 36 to form a seat for the shank 25 of the cutters (22, 23 and 24). The object of the springs is to maintain the bearing faces of the cutters 22, 23 and 24 against the under side of the face bearing parts of the stationary heads 14, 15 and 16 respectively.

It will now be readily seen that when power is transmitted to shaft 2 it in turn transmits it to the cutters 22, 23 and 24 through trough 29.

It should also be readily understood that the heads 14, 15 and 16 are interchangeable and reversible to effect different kinds of shearing effects on the surface operated upon. It is also to be understood that although the face bearing portions of the cutters shown in Figs. 1 and 2 illustrate diagonally positioned cutter bars 21 and slots 19, the slots and bars may be transverse to the longitudinal axis of the cutter head as illustrated in Fig. 6 or may be of any other shape and design.

It is to be understood that some of the details set forth may be altered or omitted without departing from the spirit of this invention as defined by the following claims.

I claim:

1. In a razor a series of flattish slide bars arranged in parallel each having transverse cutters on one edge thereof, each bar being distinct and each having a supporting stud set generally coplanar therewith and perpendicular on its edge opposite from its said cutters, a bridge whereon said bars are removably set transversely by means of the studs respectively, and means for operating through said bridge to reciprocate said bars.

2. In a multiple cutting unit razor head, comprising stationary and movably oblong cutters organized and disposed in parallel relation, a transversely disposed actuating bar to which the movable cutters are actually connected, and means to oscillate said bar sidewise, oblong springs to urge said movable cutters against said stationary cutters respectively, said bar having a slot disposed lengthwise thereof, and said movable cutters for purpose of motivation each having a part projecting crosswise therefrom and into said slot for operative engagement, each of said springs bearing medially on said bar and terminately on the opposite endward parts of one of said movable cutters.

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