

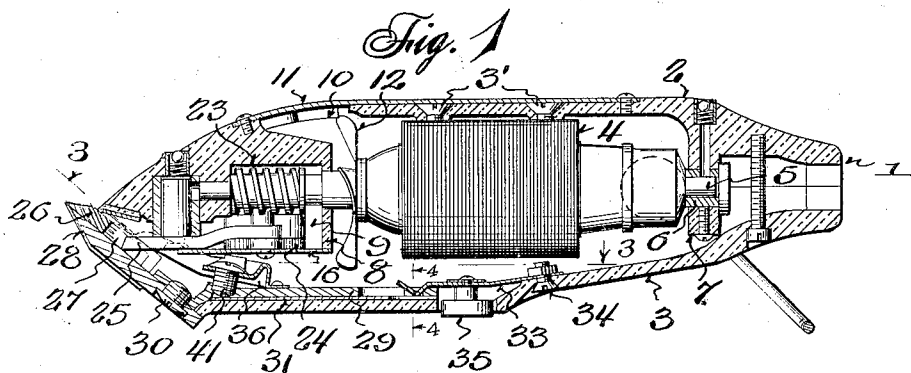
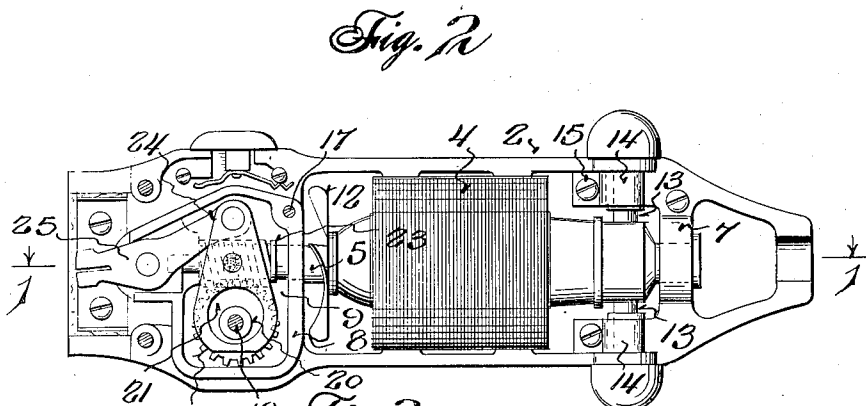
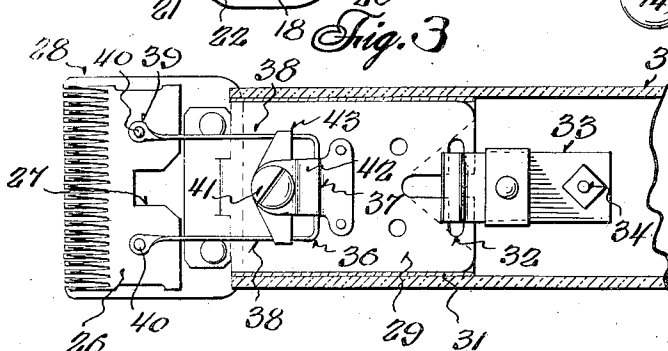
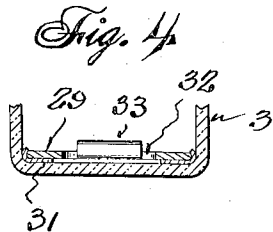
May 17, 1932.

A. J. DREMEL

1,858,887

ELECTRIC HAIR CLIPPER

Filed Aug. 14, 1931



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UNITED STATES PATENT OFFICE

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ELECTRIC HAIR CLIPPER

Application filed August 14, 1931. Serial No. 557,049.

This invention pertains to electric hair clippers, and more particularly to a motor-driven clipper for use in connection with either alternating or direct current.

5 The invention has primarily for its object the provision of an exceedingly simple, compact and efficient high-speed clipper in which the stationary and movable blades are assembled in a unitary structure securely and detachably connected within the lower section 10 of the handle or motor casing, to allow the same to be readily assembled without tools or the necessity of removing other parts of the clipper; and in which all of the actuating mechanism is carried entirely by the upper 15 half of the casing, thus rendering the same completely accessible upon removing the lower portion of the casing and materially facilitating the assembly of the working elements.

20 A further object resides in casting or forming the casing or handle of insulating material, such as "bakelite," the casing being constructed in two sections, the upper of which carries the motor and is provided with a 25 separate compartment adjacent its forward end for housing the actuating mechanism.

A more specific object resides in the provision of a structure of the foregoing character in which the actuating mechanism, carried by the top section of the casing, is spaced 30 from the lower section to permit the blade unit to be inserted into the casing from the front thereof for detachable connection with the lower section of the casing and operable 35 connection with the actuating mechanism.

A still further object is to provide means for ventilating the interior of the casing and at the same time eliminate the entrance of 40 hair or other matter into the casing.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the novel construction, combination and arrangement of 45 parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the herein disclosed invention may be made as 50 come within the scope of the claims.

In the accompanying drawings is illustrated one complete example of the physical embodiment of the present invention constructed according to the best mode so far devised for the practical application of the principles thereof. 55

In the drawings, Figure 1 is a longitudinal section taken on the line 1—1 of Figure 2;

Figure 2 is a plan view of the actuating mechanism with the lower part of the casing 60 removed;

Figure 3 is a fragmentary section taken on the line 3—3 of Figure 1; and

Figure 4 is a detailed section taken on the line 4—4 of Figure 1. 65

Referring now more particularly to the accompanying drawings, the numeral 1 designates an elongated split casing comprising upper and lower sections 2 and 3, respectively, the casing being preferably cast from 70 composition material having insulating characteristics, thus avoiding short circuiting of the electric wiring with the casing, and resultant injury to the operator. Also, a casing thus formed is comparatively light and 75 inexpensive, and enables suitable bushings and bearings to be cast into the material, thus eliminating machine work, and materially reducing the cost of manufacture.

As best shown in Figure 1, the upper section 2 has secured thereto by means of screws 80 3', an electric motor 4 having one end of its armature shaft 5 journaled in a bushing 6 cast or otherwise secured within a depending boss 7. The opposite end of the armature shaft is journaled within the wall 8, 85 forming a separate compartment 9 which houses the actuating mechanism to be hereinafter described.

Directly above the compartment 9, the casing 90 section 2 is provided with an opening 10 extending through its side walls, and provided with a closure plate 11 secured to the casing to form a cover for the top of the opening, leaving exposed openings in the side exposed to allow air to be circulated through the 95 casing by means of the fan 12 mounted on the armature shaft, and rotatable therewith.

Conventional brushes 13 engaging the armature are held in position on the split face 100

of the upper section 2 by means of clips 14 to which the motor wires (not shown) are secured by the screws 15. The actuating mechanism, designed to reciprocate the movable clipper blade to be hereinafter described, is mounted entirely within the compartment or recess 9, which is covered by a closure plate 16 fastened by a screw 17 threaded into the wall 8, and a second screw 18 threaded into a stud 20 on which an eccentric 21 is mounted. The eccentric 21 carries a worm pinion 22 either formed integral therewith or connected to the eccentric in any suitable manner, which pinion is engaged by a worm 23 carried on the armature shaft 5. A link 24, mounted on the eccentric 21 and connected with the pivoted lever 25, serves to oscillate the lever 25 and impart reciprocating movement to a movable cutter blade 26, the free end of the lever 25 projecting into a recess 27 formed in the movable cutter blade. It will also be noted that the free end of the lever 25 is bifurcated to provide for such adjustment as may be necessary to take up wear or play between the end of the lever and the recess 26; this being accomplished by either spreading the end of the lever 25 with a screw-driver or other suitable tool, or contacting the same.

Considering now the removable blade unit, it will be noted that the usual stationary comb or blade 28 is provided, the same being secured to an elongated anchor plate 29 by the screws 30 or other suitable means.

As best shown in Figures 3 and 4, the anchor plate 29 is projected into the front end of the casing 1, which is open, as shown in Figure 1, and is held within a channelled guide 31 secured in any suitable manner to the bottom section of the casing. Here it will be noted that the channel guide is formed from resilient material and has its marginal edges bent over to resiliently engage the longitudinal edges of the anchor plate 29. The rear end of the anchor plate is provided with a transverse recess 32 for reception of the spring latch 33 secured to the bottom section of the casing by a bolt 34. A button 35, secured to the latch 33 and projecting through an opening in the casing, provides for manipulation of the latch to release the anchor plate when it is desired to withdraw the same.

While various ways may be employed for guiding the movable clipper blade 26 on the stationary blade, and creating the desired tension between the two, one simple structure has been illustrated comprising a U-shaped member 36, formed from a blank of resilient material, such as spring steel, and comprising a central portion 37, the rear end of which is riveted or otherwise secured to the plate 29, while its forward end is spaced from its support.

Projecting from the central portion 37 are

a pair of spaced arms 38 disposed at right angles to the central portion, and terminating in ends 39 formed at right angles to the major portion of their length. The ends 39 are provided with lugs 40 which project into suitable recesses formed in the movable cutter blade 26. Extending forwardly from the central portion 37 is a tongue 42 which receives an adjusting screw 41 having threaded engagement with the plate 29 to provide for regulating the tension exerted on the arms 38.

Further cooperating with the tongue 42 is a yoke 43 also carried by the screw 41 and straddling the arms 38. Obviously, as the screw 43 is turned down, forcing the tongue 42 downwardly, tension will be created on the arms 38 both through the tongue and the yoke, to resiliently hold and guide the movable blade on the stationary blade.

From the foregoing explanation, taken in connection with the accompanying drawings, it is believed that the operation of the clipper will be quite apparent, in that the motor driven worm actuates the eccentric 21, causing the link 24 to oscillate the actuating lever 25, which through its connection with the movable blade 26, will cause the same to be rapidly reciprocated on the stationary blade.

In the event that it is desired to remove the blade unit for cleaning or repair, it is merely necessary to release the spring latch 33 and withdraw the entire unit from the channel guide, the same being in no way secured to the actuating mechanism. It will also be appreciated that by removing the few screws holding the upper and lower sections of the casing together, the entire actuating mechanism, which is carried by the upper section, is readily accessible.

Obviously an exceedingly compact and highly convenient structure has been provided, which enables the actuating mechanism to be entirely housed in a separate compartment spaced from the lower section, leaving a free opening for insertion and ready attachment of the blade unit, without disturbing any of the mechanism, and also enabling confined and proper lubrication of the actuating mechanism within the separate compartment.

A further advantage resides in the novel provision for ventilating the casing to prevent overheating, a serious objection encountered in practically all conventional clippers on the market today. The circulating fan being mounted directly on the arcuate shaft, ahead of the motor and closely adjacent the vents 10, provides an exceedingly simple method for effectively drawing air into the casing and forcing the same past the motor out through the opening at the rear end of the casing which receives the wiring.

I claim:—

1. An electric hair clipper including a casing comprising upper and lower longitudinal

nally separable sections, the upper section being provided with a separate compartment adjacent its forward end and terminating above the lower section, a motor carried by the upper section, actuating mechanism mounted within said separate compartment, and a removable blade unit detachably secured within the lower section beneath said separate compartment and operatively connected with said actuating mechanism.

2. An electric hair clipper including a casing comprising upper and lower longitudinally separable sections, the upper section being provided with a separate compartment adjacent its forward end and terminating above the lower section, a motor carried by the upper section, actuating mechanism mounted within said separate compartment, a removable blade unit detachably secured within the lower section beneath said separate compartment and operatively connected with said actuating mechanism, and means for ventilating said casing.

3. An electric hair clipper including a casing comprising upper and lower longitudinally separable sections formed of insulating material, the upper section being provided with a separate compartment adjacent its forward end, a motor carried by the upper section and having its armature shaft projecting into said separate compartment, actuating mechanism mounted within said compartment and operatively connected with said armature shaft, a blade unit including an anchor plate for insertion within said lower section, and means carried by the lower section for detachably securing said anchor plate thereto.

4. An electric hair clipper including a casing comprising upper and lower longitudinally separable sections formed of insulating material, the upper section being provided with a separate compartment adjacent its forward end, a motor carried by the upper section and having its armature shaft projecting into said separate compartment, actuating mechanism mounted within said compartment and operatively connected with said armature shaft, a blade unit including an anchor plate for insertion within said lower section, means carried by the lower section for detachably securing said anchor plate thereto, and means for ventilating said casing.

In testimony that I claim the foregoing I have hereunto set my hand at Racine, in the county of Racine and State of Wisconsin.

ALBERT J. DREMEL.