Feb. 11, 1930. C. L. VOLZ 1,746,567

ELECTRIC HAIR CLIPPER

Filed June 6, 1929

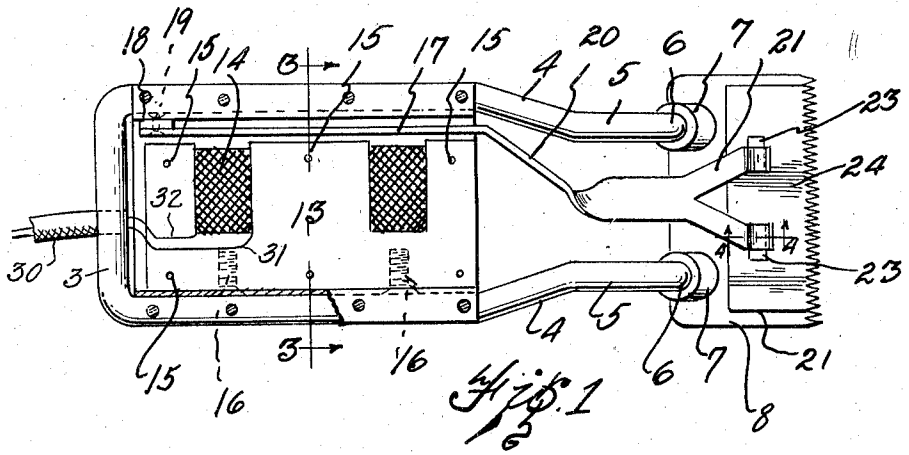


Fig. 1

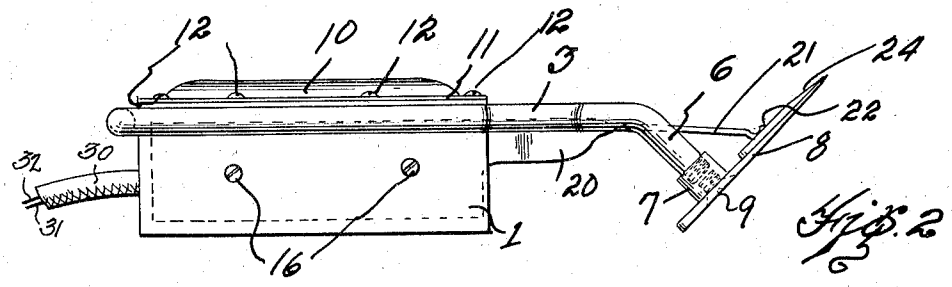


Fig. 2

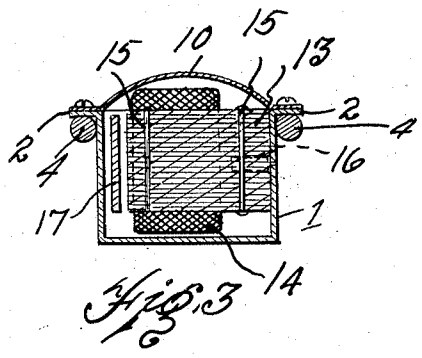


Fig. 3

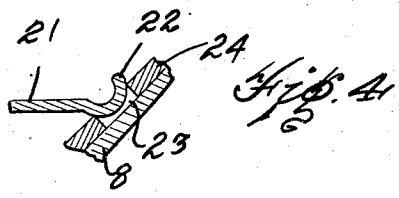


Fig. 4

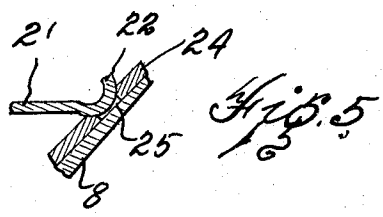


Fig. 5

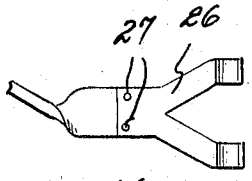


Fig. 6

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UNITED STATES PATENT OFFICE

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ELECTRIC HAIR CLIPPER

Application filed June 6, 1929. Serial No. 368,749.

This invention relates to electric hair clippers and the object of the invention is to provide a sanitary hair clipper in which the parts of the clipper may be easily disassembled with the fingers for cleaning.

Another object of the invention is to provide an electric hair clipper having the usual electro-magnet and armature mounted in the casing, a frame being provided secured to the casing and having extending ends carrying the stationary blade, the armature extending between the ends of the frame and operatively engaging the movable blade.

A further object of the invention is to provide an electric hair clipper having an armature provided with spring fingers at the ends, the spring fingers being each provided with a semi-cylindrical end engaging in apertures provided therefor in the movable blade to drive the movable blade.

Another object of the invention is to provide an armature having a pair of spring fingers at the end each having a semi-cylindrical end adapted to engage in apertures in the blade, the spring fingers tending to move the ends toward each other to yieldingly engage the inner ends of the apertures.

A further object of the invention is to provide a hair clipper in which the frame members, blades and ends of the armature may be immersed in an antiseptic solution without damage to the clipper.

These objects and the several novel features of the invention are hereinafter more fully described and claimed and the preferred form of construction by which these objects are attained is shown in the accompanying drawings in which—

Fig. 1 is a plan view of a hair clipper embodying my invention showing the cover removed and the electromagnet coil in section.

Fig. 2 is a side elevation thereof with the cover in place.

Fig. 3 is a section taken on line 3—3 of Fig. 1.

Fig. 4 is an enlarged section taken on line 4—4 of Fig. 1.

Fig. 5 is a similar section showing an alternative form of blade aperture.

Fig. 6 is a plan view showing an alternative form of the armature at the end.

The device comprises a sheet metal casing 1 which is U shaped in form and is provided with outturned flanges 2 at the upper edge. A U shaped frame member 3 is provided as shown in Figs. 1 and 2 which is formed from a round rod and engages beneath the flange 2 of the casing 1. The ends of this frame member extend from the casing as shown in Fig. 1 and are bent inwardly at 4 and then to parallel relationship at 5 and the terminal ends are bent downwardly at 6, as shown in Figs. 1 and 2.

An internally threaded sleeve 7 is threaded onto each of the ends 6 of the frame member and a stationary clipper blade 8 is secured to the frame member by means of screws 9 extending through the stationary clipper blade and threaded into the internally threaded sleeve 7 as shown in Fig. 2. A cover 10 is provided for the device and is provided with a flange 11 fitting over the flanges 2 of the casing 1 and screws 12 are threaded through these flanges and into the frame member 3 to secure the cover to the casing and the casing to the frame member. Within the casing 1, as will be understood from Figs. 1 and 3, is an electro-magnet comprising a laminated iron core 13 in which the laminations are substantially E shaped in form and the coil winding 14 is wound about the central portion of the core laminations. In order to secure the electromagnet in the casing the core laminations are secured together by the rivets 15 and the core is drilled and tapper to receive the screws 16 which secure the electromagnet to the casing. The armature 17 is provided with a spacing member 18 at one end, as shown in Fig. 1, and the armature is secured to the casing by the rivets 19. This armature is made of a resilient spring metal so that upon alternations of current through the winding 14 the armature will be vibrated. The end of this armature extending from the casing 1 is reduced in size at 20, shown in Figs. 1 and 2, and is given a half twist to bring the fingers 21 at the end of the armature to parallel relation with the blade 8.

A semi-cylindrical lug 22, shown in Figs. 4 and 5, is formed in the end of each finger 21 and these semi-cylindrical lugs engage in the apertures 23 in the movable blade 24. The spring fingers 21 are so made that they tend to yieldably move toward each other thus moving the semi-cylindrical lugs 22 up against the adjacent ends of the rectangular apertures 23. The end of the armature also has a tendency to spring downwardly and place a tension on the movable blade to hold it in contact with the stationary blade 8. As will be understood from Fig. 4, the semi-cylindrical lugs 22 ride on the edges of the apertures 23 in the movable blade 24 and by lifting the fingers 21 the movable blade may be easily slipped out from beneath the semi-cylindrical lugs 22.

Current is supplied to the coil winding 14 by the electric wires 31 and 32, enclosed in the flexible cable 30, through the end of the metal casing 1.

An alternative form of this construction is shown in Fig. 5 in which apertures 25 are provided in the movable blade 24 and the edges of these apertures longitudinally of the semi-cylindrical lugs 22 are either cut on a radius or are beveled to fit the surface of the semi-cylindrical lugs 22. In either construction shown in Figs. 4 and 5 the ends of the apertures 23 or 25 are straight transversely of the axis of the lugs 22 so that the lugs will operatively engage the movable blade for vibration. If desired a spring phosphor bronze end 26 may be secured to the armature by rivets 27, as shown in Fig. 6, in order to provide additional yieldability in the end of the armature.

With this device after a barber has clipped the customer's hair he may lift the fingers 21 with the lugs 22 and slip the movable blade out from beneath the lugs 22. At this time the blades may be readily washed and if desired the entire end of the clipper extending from the casing 1 may be dipped in an antiseptic solution. For this reason, the extending ends including the blades may be nickel or chromium plated to provide a readily cleanable surface which will not rust or tarnish. By forming the armature as shown the portion 20 of the armature readily allows vibration of the movable blade due to its yieldability in a horizontal plate and the terminal portion of the armature is yieldable vertically to maintain a pressure on the movable blade to hold it in contact with the stationary blade. Also by providing the fingers 21 which tend to move the semi-cylindrical lugs 22 toward the inner ends of the apertures 23 there is no possibility of relative movement between the armature and the blade so that each vibration of the armature is transmitted directly to the movable blade.

From the foregoing description it becomes evident that the device is very simple and efficient in operation, will not easily get out of order, may be readily taken apart and cleaned, may be dipped in an antiseptic solution without damaging the clipper and provides a device which accomplishes the objects described.

Having thus fully described my invention, its utility and mode of operation, what I claim and desire to secure by Letters Patent of the United States is—

1. In an electric hair clipper, a casing, a pair of rods extending from one end of the casing, a stationary clipper blade secured to the ends of the rods, a movable clipper blade positioned on the stationary blade and provided with a pair of spaced rectangular apertures, an electro-magnet in the casing, an armature for the electro-magnet mounted in the casing and extending outwardly between the said rods, a spring metal terminal end secured to the armature and having a pair of spaced fingers extending into contact with the movable blade, the ends of the spaced fingers being formed on a radius whose axis extends transversely of the armature, the said rounded ends of the fingers seating in the rectangular apertures of the movable blade, and the fingers being adapted to be sprung apart to engage in the said apertures.

2. In an electric hair clipper, a casing, a pair of frame members extending from one end of the casing, a stationary clipper blade secured to the ends of the frame members, a movable clipper blade positioned on the stationary blade and provided with a pair of spaced rectangular apertures, an electro-magnet in the casing, an armature for the electro-magnet mounted in the casing and extending outwardly between the frame members, the armature being divided at the end to provide two fingers spaced apart transversely of the armature, the terminal ends of said fingers being formed on a radius and being adapted to seat on the edges of the rectangular apertures of the movable blade, the distance between the ends of the said fingers being normally less than the distance between the apertures of the movable blade.

3. In an electric hair clipper, a casing, a pair of frame members extending from one end of the casing, a stationary clipper blade secured to the ends of the frame members, a movable blade positioned on the stationary blade and provided with a pair of rectangular apertures, an electro-magnet in the casing, an armature for the electro-magnet mounted in the casing and extending outwardly between the frame members, the armature being divided at the end, and the terminal ends being formed on a radius whose axis extends transversely of the armature, the said rounded terminal ends of the armature seating on the edges of the rectangular apertures in the movable blade.

4. In an electric hair clipper, a casing, a pair of frame members extending from one

end of the casing, a stationary clipper blade secured to the ends of the frame members, a movable clipper blade positioned on the stationary blade and provided with a pair of apertures, an electro-magnet in the casing, an armature for the electro-magnet mounted in the casing and extending from the end of the casing between the frame members, the armature being divided at the end and having rounded terminal ends, the axes of the rounded ends being in alignment and extending transversely of the armature, the said rounded ends being adapted to be spread apart and engaged in the apertures of the movable blade, the armature exerting a pressure on the movable blade, the armature exerting a pressure on the movable blade to hold it in contact with the stationary blade.

5. In an electric hair clipper, a casing, a frame comprising a rod bent about the casing and having two ends extending from one end of the casing, the rod being secured to the casing, a stationary clipper blade secured to the ends of the rod, a movable clipper blade, an electro-magnet in the casing, an armature for the electro-magnet extending from the end of the casing between the ends of the rod, the movable clipper blade being provided with a pair of apertures, and the armature being provided with a pair of rounded ends engaging in the apertures of the movable clipper blade.

6. In an electric hair clipper, a casing, a frame comprising a rod bent to U form and secured to the casing, the ends of the rod extending beyond the end of the casing, a stationary clipper blade secured to the ends of the rod, an electro-magnet mounted in the casing, an armature for the electro-magnet extending from the end of the casing between the ends of the rod, a movable clipper blade positioned on the stationary clipper blade and having a pair of apertures, the end of the armature being bifurcated, the bifurcated ends terminating in rounded portions extending transversely of the armature, the said rounded portions engaging in the apertures of the movable blade and maintaining a pressure on the movable blade to hold it in contact with the stationary blade.

7. In an electric hair clipper, a casing having flanges on opposite sides, a frame comprising a rod bent to U form and secured to the flanges of the casing, the ends of the U shaped frame extending beyond the end of the casing, a stationary clipper blade secured to the ends of the frame member, an electro-magnet mounted in the casing, an armature for the electro-magnet mounted in the casing and extending from the end of the casing between the ends of the U shaped frame member, a movable clipper blade positioned on the stationary clipper blade and having a pair of apertures, the armature being provided with a bifurcated end having rounded terminal ends engaging in the apertures of the movable clipper blade.

8. In an electric hair clipper, a casing having a flange, a U shaped frame member extending beneath the flanges of the casing and secured thereto, a stationary clipper blade secured to the ends of the frame member, an electro-magnet within the casing, an armature for the electro-magnet mounted in the casing, the armature extending between the ends of the U shaped frame and being provided with a bifurcated end, a pair of semi-cylindrical lugs formed in the bifurcated ends of the armature, and a movable blade mounted on the stationary blade and provided with apertures to receive said semi-cylindrical lugs.

In testimony whereof I sign this specification.

CHRIS L. VOLZ.