

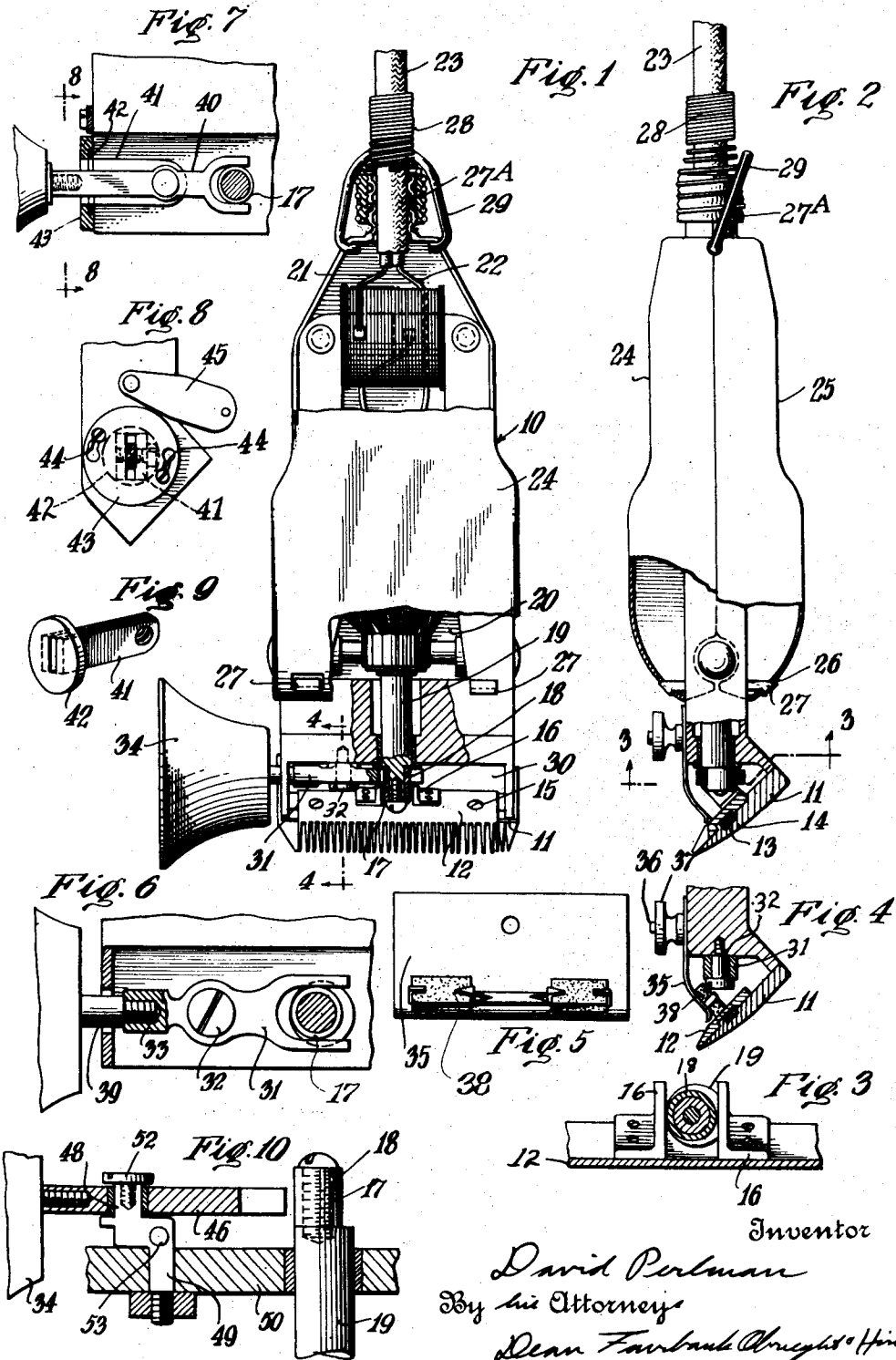
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COMBINED HAIR CLIPPER AND MESSAGE VIBRATOR

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COMBINED HAIR CLIPPER AND MASSAGE VIBRATOR

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This invention relates to motor driven tools of the light weight portable type and certain features of the invention relate particularly to the type in which the motor is disposed in the handle of the tool and the armature shaft serves to directly operate the working part of the tool.

One object of my invention is to provide a self-contained electrically driven device which the operator may use either as a hair clipper or as a massage vibrator.

As one important feature of my improved construction, I operate the clipper by an eccentric member on the operating or motor shaft and cooperating directly with suitable means on a movable blade of the clipper. This arrangement avoids any speed reducing or gearing down mechanism which increases the weight, adds to the expense, and renders the clipper bulky.

As another feature of my invention, I provide a single cam or eccentric directly on the armature shaft for operating both the clipper and the massage vibrator.

As a further feature, I form the vibrator with a counter-balance forked operating link or lever which serves the double purpose of counter-balancing the reciprocation of the movable toothed blade or cutting comb of the clipper and reciprocating the massage vibrator. By this arrangement of forked operating lever and eccentric the action of the massage vibrator is made very effective and positive as there is no chance for the vibrating power to become dissipated in any other way, and when the massage vibrator head is disconnected from the operating lever, the latter acts only to neutralize the vibrating tendency of the clipper.

A further object of my invention is to provide a hair clipping device which may be readily and quickly taken apart for cleaning purposes without requiring mechanical skill.

To this end I have provided a cover of spring material which also serves the purpose

of compression spring and may be removed by simply unscrewing a thumb nut. This arrangement enables the operator to handle my electric clipper for cleaning purposes in the same manner as the hand operated clipper heretofore in use.

As a further feature, I connect the casing parts by means which serve to positively clamp the conducting cord to the clipper. Thus no screw driver or other tool is required in assembling the parts or taking them apart. A supporting device for hanging up the clipper when not in use may be inserted and held by the parts of the casing when assembled.

A further object is to facilitate lubrication of the working parts without danger of the lubricant traveling or leaking to the outside of the casing.

Other objects and advantages will be pointed out hereinafter or will be apparent from consideration of the following description and the accompanying drawings. It is to be understood that the drawings are to be considered in an illustrative rather than in a limiting sense.

In the drawings:

Fig. 1 is a top plan view, parts being broken away and other parts omitted to show the underlying structure;

Fig. 2 is a side elevation with the casing partly broken away at the forward end and with the head shown in section.

Fig. 3 is a section along the line 3—3 of Fig. 2;

Fig. 4 is a section on the line 4—4 of Fig. 1; Fig. 5 is a view of the inside of the spring cover for the head with the lubricating felts attached thereto;

Fig. 6 is a view showing the operating lever for the massage vibrator and the connection thereof with the motor shaft;

Fig. 7 is a view similar to Fig. 6 showing a modified form in which the vibrator lever and the pivot therefor may be removed together from the instrument;

Fig. 8 is a view taken along line 8—8 of Fig. 7 illustrating the means for detachably holding the vibrator actuator in the tool and a shiftable cover to close the opening exposed by removal of the vibrator actuator;

Fig. 9 is a view illustrating the detachable holder for the pivot of the vibrator lever; and

Fig. 10 is a sectional view illustrating an arrangement for connecting the vibrator, with or disconnecting it from the eccentric on the armature shaft.

As shown in Fig. 1, the hair clipper has a stationary toothed blade 11 serving as a support for a reciprocating blade 12 also having a plurality of teeth. The movable blade 12 as shown more clearly in Fig. 2, is guided on the blade 11 by means of a phosphor bronze bar 13 secured to blade 12 and sliding in the groove 14 in the inner face of the fixed blade 11. This bar also serves as an antifriction support for the movable blade. On its rear face the movable blade 12 is provided with a pair of brackets 16 having opposed parallel bearing surfaces between which projects an eccentric or cam 17 on a drive shaft 19 extending longitudinally of the tool. The eccentric 17 may be a sleeve on an eccentric projection or pin 18 integral with the shaft, and held by a screw having a head of sufficient size. The shaft 19 preferably serves as the armature shaft of the motor. Current is supplied through wires 21 and 22 which are connected with a cable 23. The motor itself may be constructed substantially as shown in my prior Patent 1,525,826.

The motor parts, to the rear of the head, are enclosed by a casing composed of two parts 24 and 25 which have at their forward ends slots 26 to engage forwardly facing hooks 27 at the rear end of the head of the tool. These casing sections 24 and 25 are provided at their rear ends with semi-cylindrical threaded portions which fit together to provide a neck encircling the cable. The sleeve may have a continuous outer thread adapted to receive thereon an internally threaded sleeve 27A, which locks the casing members 24 and 25 together and to the head of the tool. The inner surface of the neck portion may be roughened so as to grip the cable between said casing members. The cable 23 may be supported against undue bending adjacent the sleeve 27A by means of a helical wire spring 28 which may be screwed onto the sleeve 27A. If desired the sleeve 27A may be omitted and the spring screwed directly onto the two piece neck. The casing may be provided at this point with a loop or bale 29 for use in hanging up the tool. The ends of the bale are placed in notches in the casing members during the assembly of the casing and are held in such notches

when the casing members are clamped together.

The head of the tool is provided with a chamber 30 of sufficient size to accommodate not only the blade 12 but also a vibrator lever 31 which is pivoted at a point intermediate its ends on a pivot which may be screwed into the motor frame part which forms the end wall of the chamber and which supports the armature shaft. The lever 31 has at one end a fork to engage the eccentric 17 and at the other end a socket 33 to receive and hold by screw thread the end or stem of a massage vibrator member 34. It should be noted that the eccentric 17 is embraced by both the bracket or yoke 16 of the movable blade and by the yoke at the inner end of the massage vibrator lever 31.

The reciprocable blade 12 is held against withdrawal from the fixed blade 11 by means of a combined cover and presser spring 35 which is provided with an opening to receive a threaded stud 36 in the main body of the head and is held in position by means of a thumb nut 37. The spring cover 35 is provided at its inner surface with felt pads 38 which engage the reciprocable blade 12 upon opposite sides of the brackets 16. The felt pieces arranged in this way serve to absorb the oil which may be thrown out by the eccentric in the course of operation, thereby keeping oil from passing to the outside of the tool. The oil thus absorbed is utilized to lubricate the blade 12 and the vibrator lever 31.

As shown in Fig. 6, the pivoted link or lever 31 remains connected with the cam 17 at all times, but the vibrator head 34 may be unscrewed from the lever 31 when its use is not desired.

The actuating means for the massage vibrator head may be so designed that it may be disconnected from the shaft. One construction of this is shown in Figs. 7, 8 and 9. As there shown the pivot of a lever 40 having a fork embracing the cam 17 is mounted in arms 41 projecting inwardly from a head 42 and forming therewith a frame adapted to fit into the head of the instrument from the side. The head 42 is shown as held in position by a cap 43 which is provided with keyhole slots adapted to cooperate with screws 44 for holding the head 42 and arms 41 in position. To provide for covering the opening when the frame comprising member 42 and the two arms 41 are removed, a cover 45 is pivoted adjacent the opening. This may be readily swung into or out of position. Thus when using the clipper no pieces of hair or other particles can get into the casing.

Such disconnecting of the lever from the cam may be effected without removing the vibrator lever from the clipper. As indicated in Fig. 10, the massage vibrator head 34 is attached to vibrator lever 46, forked at its inner end to embrace the eccentric 17. It is

shown as pivoted on a pin 48 projecting eccentrically from a stud 49 journaled in the end wall 50 of the motor frame. The lever 46 may be held on the pin 48 by any suitable means such as a screw 52. The stud 49 may be rotated on its own axis to bring the pin 48 toward or from the cam 17, and cause the engagement or disengagement of the fork at the inner end of the lever 46 with the cam. In this form the vibrator lever may be disconnected when desired and the vibrator head 34 may remain attached to the lever or detached therefrom. For oscillating the member 49 the latter may be provided with a stud or arm 53.

So far as concerns the construction of the head of the tool, that is, the construction of the parts operated by or associated with the operating end of the shaft, it will be noted that the shaft might be connected to a stationary motor by a flexible shaft section, but preferably the eccentric is directly on the armature shaft.

It will be noted that the blade 12 has reciprocation in one plane and the lever moves back and forth in a different plane. Thus one counteracts the effect of the other so far as concerns the transmission of vibration to the casing which forms the handle of the tool.

In certain broad aspects of my invention it will be noted that the member 17 need not be an eccentric or on a shaft so long as it is capable of imparting the desired motion to both the clipper blade and the massage vibrator. The operating member, thus when broadly considered, may be the armature of an electro-magnet, a solenoid or other part caused by moving back and forth by electro-magnetic action.

Having thus described my invention, what I claim is new and desire to secure by Letters Patent is:

1. A tool having a frame including a head, a motor having a shaft mounted in said head, hooks on said head, casing members engaging said hooks at their forward ends and having at their rear ends projecting parts combining to form an externally threaded projection, and a sleeve telescoping with said projection to hold the casing members together.

2. A tool having a motor, a conducting cable at the rear end thereof, a handle enclosing said motor and including casing members having at their rear ends parts combining to form a sleeve surrounding said cable, and a tubular member encircling said sleeve to hold the casing members together and grip said cable.

3. A tool having a motor, a casing enclosing said motor and including separable casing members, said motor and the forward ends of said casing members having portions adapted for interlocking engagement, and a device adapted to be applied longitudinally

over the rear ends of said casing members to hold them together.

4. In a combined hair clipper and massage vibrator, a longitudinal operating shaft with an eccentric, a reciprocable blade having at its rear surface a guide-way perpendicular to its path of movement and into which said eccentric extends, and a pivotal vibrator lever extending transversely of said shaft and having its inner end embracing said eccentric.

5. In a combined hair clipper and massage vibrator, a longitudinal operating shaft with an eccentric, a reciprocable blade having at its rear a guide-way perpendicular to its path of movement and into which said eccentric extends, and a device operable by said eccentric for counterbalancing said blade.

6. A combined hair clipper and massage vibrator having a chamber in its forward end and including a longitudinal operating shaft with an eccentric in said chamber, a reciprocable blade in said chamber and having means at its rear engaging said eccentric to operate said blade, and a pivotal vibrator lever extending transversely of said shaft and having its inner end embracing said eccentric within said chamber.

7. A hair clipper, having a reciprocable blade, a cam, means attached to said blade and engaging said cam for operating said blade, a cover for said cam and said means, and lubricant absorbing pads upon the inner surface of said cover on opposite sides of said cam for absorbing oil thrown out from the cam and engaging the upper surface of said blade to hold the latter in place.

8. In a combined hair clipper and massage vibrator, a longitudinally operating shaft having an eccentric, a reciprocable blade having at its rear means for engaging said eccentric, a vibrator lever extending transversely of said shaft and having its inner end embracing said eccentric, and a pivot for said lever mounted for movement to disconnect said lever from and to connect said lever to said eccentric.

9. In a combined hair clipper and massage vibrator, an operating shaft having an eccentric, a reciprocable blade having means for engaging said eccentric, a lever engaging said eccentric, a pivot for said lever, and means including a rotatable member on which said pivot is eccentrically mounted for disconnecting said lever from and connecting said lever to said eccentric.

10. A tool having a handle, hair clipping means carried by said handle, a rotary electric motor within said handle, means for transmitting power from the shaft of said motor to said hair clipping means, massage vibrating means, and an eccentric member on said shaft for operating said massage vibrating means.

11. A tool including a hair clipper, a mas-

sage vibrator, a power shaft, a member for transmitting motion from said shaft to said hair clipper, a member for transmitting motion from said shaft to said massage vibrator, a supporting pin for said second mentioned member, and an eccentric mounting for said pin whereby said member may be moved into or out of operative connection with said shaft.

10 Signed at New York, in the county of New York and State of New York, this 19th day of May, A. D. 1927.

DAVID PERLMAN.

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