

[54] **STIMULATOR**

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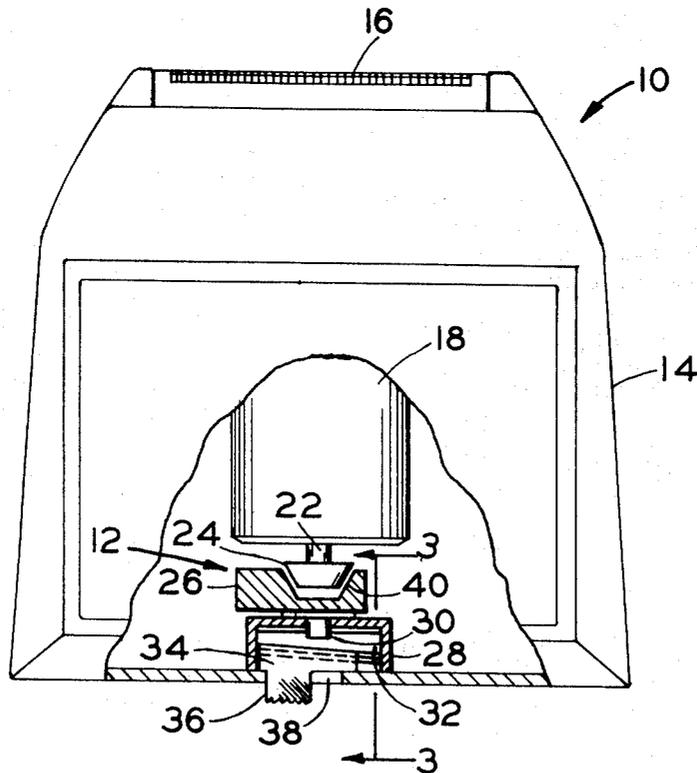
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[57] **ABSTRACT**

An improvement which converts an electric shaver into a stimulator for producing vibrations to stimulate the skin of the user. An oscillating member is provided in a portion of the shaver housing together with means for coupling the oscillating member to the motor of the shaver for driving the oscillating member to produce vibrations of an external shaver surface for stimulating the skin. In one embodiment the oscillating member is a vibrating bar having a surface available on the outside of the shaver, and in another embodiment the oscillating member is an eccentric weight inside the shaver which vibrates the shaver housing so that the housing itself can be applied to the skin to stimulate it. The vibrations may also stimulate muscle and flesh.

4 Claims, 7 Drawing Figures



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STIMULATOR

BACKGROUND OF THE INVENTION

This invention relates to electric shavers, and in particular to an improvement for converting an electric shaver into a stimulator for stimulating the skin of the user.

Although specially designed skin stimulators have been proposed, the invention differs from these in that it provides a means of converting a conventional electric shaver into a skin stimulator.

SUMMARY OF THE INVENTION

In accordance with the invention, an electric shaver is provided with an oscillating member in a portion of the shaver housing, and means for coupling the oscillating member to the motor of the shaver for driving the oscillating member to produce vibrations of an external shaver surface for stimulating the skin of the user. The oscillating member may be a bar which replaces the shaving head of the shaver, the bar being vibrated by a reciprocating finger which is driven by an eccentric rotated by the motor. When the shaving head is removed, the bar simply clips onto the reciprocating finger, there being a recess in the bar fitting with a projecting portion of the finger. Alternatively, the shaver may be provided with an internal eccentrically mounted rotary weight together with a clutch member engageable with the weight and rotated by the motor to drive the weight. There is an actuator for engaging and disengaging the weight and the clutch member, the actuator having a button on the exterior of the housing for manual actuation. The actuator may include wedges movable to shift the weight axially to engage the clutch member. Other features will be apparent from the description which follows.

Accordingly, it is an object of the present invention to provide an improvement for an electric shaver which converts the shaver into a skin stimulator for massage and stimulation of the skin of the user.

Another object of the invention is to provide an attachment for an electric shaver to replace the shaving head with an oscillating stimulating member, thus allowing the shaver to be used alternatively for shaving or for stimulation.

A further object of the invention as an alternative to the last object is to incorporate an oscillating member within an electric shaver capable of producing vibrations of the shaver housing so that the shaver can be converted to a stimulator without removing the shaving head.

Still another object of the invention is to convert an electric shaver to a stimulator without unduly increasing the cost of the shaver as a commercial product.

Other objects of this invention will appear from the following description and appended claims, reference being had to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an elevational view of an electric shaver provided with a stimulating mechanism incorporated in the shaver to produce vibrations of the shaver housing so that the surface of the shaver can be applied to the skin of the user for stimulation;

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FIG. 2 is a side elevational view of the electric shaver of FIG. 1;

FIG. 3 is a fragmentary view, partly in section, showing the stimulating mechanism of the shaver of FIG. 1;

FIG. 4 is a fragmentary sectional view of a shaver provided with an oscillating attachment which replaces the shaving head of the shaver in accordance with another embodiment of the invention;

FIG. 5 is a plan view of the oscillating attachment;

FIG. 6 is an elevational view of the oscillating attachment; and

FIG. 7 is an end view of the oscillating attachment.

Before explaining the present invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also, it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

DETAILED DESCRIPTION

Referring first to FIGS. 1 through 3, the electric shaver 10 includes a stimulating mechanism 12 incorporated inside the housing 14 of the shaver. The shaver has a conventional shaving head 16 which is operated by means of an electrical motor 18. The electrical motor is turned on and off by means of a switch 20.

The electrical motor 18 rotates a shaft 22 which has a beveled clutch member 24 affixed to its lower end. Beneath the clutch member, a rotary weight 26 is eccentrically mounted on a frame 28 which is attached to the housing 14 of the shaver. The frame 28 is a box-like structure having a hollow interior, and a stub shaft 30 at the lower side of eccentric weight 26 is journaled for rotation in the frame 28. The weight is also axially shiftable relative to the frame as will be explained.

Inside the frame 28, there is an actuator consisting of two wedges 32 and 34. The upper wedge 32 has a recess receiving the end of the stub shaft 30 so that the stub shaft 30 can rotate and vertical movement of the wedge 32 will axially shift the weight 26. The lower wedge 34 is somewhat shorter than the upper wedge 28, and the lower wedge 34 can move laterally back and forth inside the frame 28, whereas the upper wedge 32 can move only vertically within the frame 28. The frame 28 confines the wedges closely, but the lower wedge 34 is somewhat shorter than the length of the frame so that it can be shifted laterally back and forth.

The lower wedge 34 has a projecting portion 36 in the form of a button which projects through an opening 38 in the housing. The button 36 is available on the outside of the housing for manual actuation. Referring to FIG. 1, it may be seen that the button 36 may be shifted to the right. The wedges 32 and 34 have slanting mutually engaging surfaces, so as the button 36 is shifted to the right, the upper wedge 32 moves upward to engage the weight 26 with the clutch member 24. The weight 26 has a recess at 40 for receiving the clutch member 24 with a frictional engagement between the clutch member and the weight 26. The motor 18 can now drive the weight 26, and since the weight 26 is eccentrically mounted, rotation of the weight will produce vibrations of the shaver housing. Thus, the housing of the shaver can be pressed against the skin of the user, and the vibrations of the surface of the housing will stimu-

late the skin of the user. The stimulation action can be used for massage, or merely for creating a pleasant sensation of stimulation.

Referring to FIG. 3, it may be seen that the mutually engaging surfaces of the wedge members 32 and 34 have dovetailed portions at 42. These dovetailed portions couple the wedges together so that when the button 36 is pushed to the left as viewed in FIG. 1, the upper wedge member 32 will be retracted downwardly to disengage the weight 26 and the clutch member 24. The weight 26 may either be spring biased downwardly, or a collar (not shown) may be provided at the upper surface of the wedge 32 to engage the stub shaft 30 for retaining the weight 26 relative to the wedge 32 so that the weight will be pulled down when the wedge is moved downward.

Thus, the embodiment of FIGS. 1 through 3 provides a stimulating mechanism inside an electric shaver for converting the electric shaver to a stimulator without requiring replacement of the shaving head of the shaver.

In the embodiment of FIGS. 4 through 7, an oscillating attachment is provided for an electric shaver which does replace the shaving head of the shaver. The electric shaver itself will be designated 10 since it is basically the same shaver as that shown in FIG. 1 without the stimulating mechanism. The shaver has the same electric motor 18 with means for turning it on and off such as the switch 20. A shaft 44 projects upwardly from the motor 18 and is rotated by the motor. This shaft 44 has an eccentric on its end within a lower portion 46 of a reciprocating finger 52 which is mounted within the upper end of the housing 18 in a compartment 50. The eccentric on the end of shaft 44 and the portion 46 are so designed that rotation of the shaft 44 produces reciprocating oscillations of the finger 52. This is a conventional construction for operating the shaving head of certain electric shavers. Finger 52 is rectangular and fits slidingly in a rectangular slot in the housing.

The oscillating member 54 fits on the finger 52. The oscillating member 54 is a bar having projections 56 on its ends which slidingly fit under lips 58 of the upper housing. The lips 58 may be retractable to facilitate insertion of the oscillating bar 54 into the compartment 50. A resilient pad 48 may be provided under the bar 54.

The oscillating bar 54 has a upwardly extending recess or notch 60 which receives the finger 52 for interconnecting the oscillating bar 54 and the reciprocating finger 52. Thus, when the motor 18 is operating, the finger 52 reciprocates rapidly to oscillate or vibrate the

bar 54. The bar 54 projects upwardly slightly from the top of the housing so that the bar may be pressed against the skin of the user and the vibrations of the bar will stimulate the skin of the user.

In order to convert the shaver to a stimulator, it is only necessary to remove the shaving head from the housing and insert the oscillating bar 54. Similarly, to re-convert the stimulator back to an electric shaver, the bar 54 is removed and the shaving head is reinserted. Thus, the shaver can be converted from one use to the other in an extremely simple manner.

The invention provides an improvement for electric shavers in which an oscillating member produces vibrations for stimulating the skin of the user. The oscillating member may replace the shaving head of the shaver, or the oscillating member may be built into the shaver as an addition to the shaving head if desired. The structure for adding this stimulating feature to an electric shaver is relatively simple so that it can be applied to a shaver without unduly increasing its cost.

Having thus described my invention, I claim:

1. In an electric shaver having an electrical motor within a shaver housing, the improvement comprising an oscillating member in a portion of said housing, and means for coupling said oscillating member to said motor for driving said oscillating member to produce vibrations of an external shaver surface for stimulating the skin of the user, said oscillating member comprising an eccentrically mounted rotary weight inside the housing, and said coupling means comprising a clutch member engageable with said weight and rotated by said motor to drive said weight, and an actuator for engaging and disengaging said weight and said clutch member, said actuator including a button movably mounted on the exterior of said housing for manual actuation, a first wedge engaging said weight, and a second wedge movable laterally by said button to move said first wedge and said weight axially for engaging said weight and said clutch member, said first and second wedge members having mutually engaging slanting surfaces for coaxing to shift said weight axially.

2. The electric shaver improvement as claimed in claim 1 in which said wedges have dovetailed portions whereby reverse actuation of said button disengages said clutch member and said weight.

3. The electric shaver improvement as claimed in claim 2 in which said wedges are confined by a frame to guide the movement of said wedges.

4. The electric shaver improvement as claimed in claim 3 in which said button is a portion of said second wedge which projects through said housing.

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