

Feb. 20, 1945.

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2,369,821

ELECTRIC SHAVER

Filed Nov. 1, 1943

2 Sheets-Sheet 1

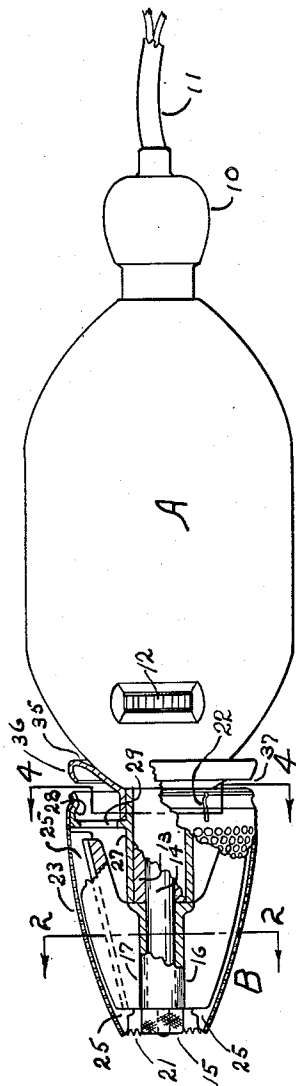


FIG. 1

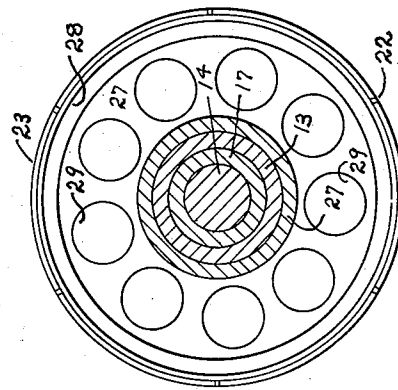


FIG. 4

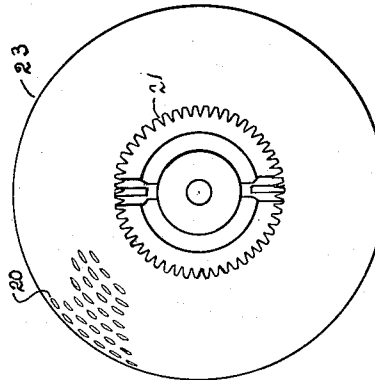


FIG. 3

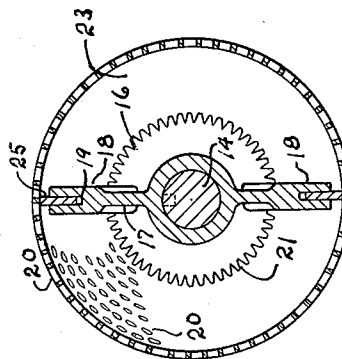


FIG. 2

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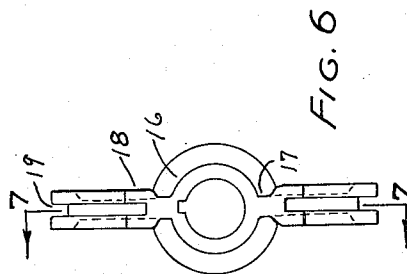
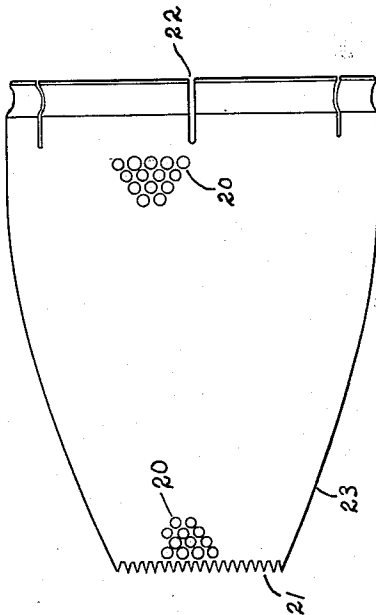
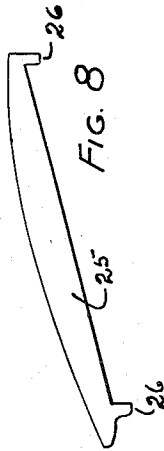
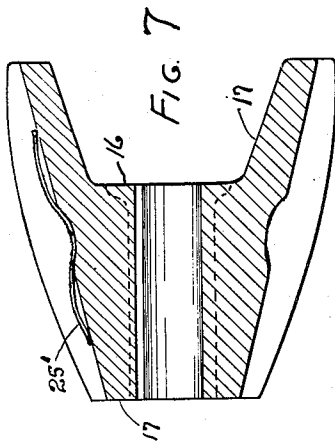
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ELECTRIC SHAVER

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2 Sheets-Sheet 2



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2,369,821

ELECTRIC SHAVER

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Application November 1, 1943, Serial No. 508,568

3 Claims. (Cl. 30-43)

The present invention relates to shavers driven by a miniature electric motor having preferably a plastic housing which answers as a hand piece as is the custom in devices of the class and having a rotor within a shield with two or more thin cutting blades, the outer edges of which are caused to contact the inner surface of the shield by means of suitable springs or by centrifugal force or by both conjointly.

An object of my invention is to provide preferably an ovate spheroid shaped shield with a multiplicity of closely spaced apertures therein and means whereby the shield can be moved over the face without turning or whereby the shield may be allowed to roll over the face by frictional contact.

Another object of the present invention is to provide teeth in the front end of the shield and position the blades so their ends contact the underside of the teeth to thereby form a device which may be operated on the clipper principle.

A further object of the present invention is to provide a cutter head which may be easily detached from the frame and shaft of the motor.

Another object of my invention is to provide preferably an ovate spheroid shaped shield which may be caused to roll over the face and impart a sliding motion of part or all of the surface in contact with the face so as to encourage the stubble to move into the openings in the shield.

A still further object of my invention is to provide a cutter head which causes air to move rearwardly through the head and then be discharged outwardly at the rear end of the shield and having a pocketed guideway at the rear of the shield which will act to catch the major part of the discharged stubbles by centrifugal force.

Other objects of my invention are to provide a device of the class where the operating parts have a purely rotating movement and wherein the device is simple, easily handled and can be manufactured at low cost, and is neat in appearance.

To these and other useful ends my invention consists of parts and combinations of parts or their equivalents and mode of operation as hereinafter set forth and claimed and shown in the accompanying drawings in which:

Fig. 1 is a broad side view of my device partially sectioned.

Fig. 2 is an enlarged section of the device taken on lines 2-2 of Fig. 1.

Fig. 3 is a front view of the head.

Fig. 4 is a sectional view taken on lines 4-4 of Fig. 1.

Fig. 5 is an enlarged side view of the shield as shown in Figs. 1, 2, 3, and 4.

Fig. 6 is an enlarged front end view of the rotor.

Fig. 7 is an enlarged longitudinal section of the rotor taken on lines 7-7 of Fig. 6.

Fig. 8 is an enlarged side view of a rotor blade. As thus illustrated the motor of my device including its housing, is in its entirety designated by reference character A. The cutter head in its entirety is designated by reference character B.

Member A comprises a shell made preferably from synthetic material and being adapted to enclose a motor (not shown). Member A is provided with a suitable plug-in socket 10 having a flexible cable 11. The shaft of the motor is supplied with a knurled wheel 12 which extends through a suitable opening in the side wall of the shell so the operator can start the motor manually as is the custom in devices of the class.

Shell A is preferably provided with a relatively long sleeve 13 which answers as a bearing for the motor shaft 14. I mount a cutter head 16 on shaft 14 which is keyed to the shaft and held into position by a knurled nut 15. Head 16 is provided with two or more outwardly projecting wings 17 which are somewhat thicker at their outer edges as at 18 having grooves 19. The outer edges of members 18 are shaped so as to turn without contact with the shield 23. Member 23 is preferably shaped as illustrated and having a multiplicity of closely spaced apertures 20 for almost its entire length. The forward end of shield 23 is provided with teeth as at 21.

I provide narrow blades 25 which fit freely into slots 19 having inwardly projecting members 26-26 which extend over the ends of member 18 so the longitudinal position of these blades is fixed relative to members 18. The forward ends of the blades terminate slightly in rear of the front ends of teeth 21. Member 23 is slitted at spaced intervals as at 22 and fits snugly over a carrying member 27 which is rotatably mounted on bearing sleeve 13. Member 27 is shaped as shown in Figure 1 and has an outer flange 28 having a grooved surface over which the rear end of shield 23 is tightly fitted. The disc part of member 27 is provided with a number of closely spaced apertures 29.

I provide a member 35 which is secured to member 27 and extends outwardly and rearwardly as illustrated having on its outer edge a curve shaped portion 36, the front edge of which is

spaced a short distance from the rear end of the shield as at 37.

It will be seen that because of the shape of the rotor and member 23 these members will act to draw air into the front end of member 23 and discharge it at 37; thus, to a large extent the stubble will be carried rearwardly and deposited into the pocket formed by curved member 36.

Thus it will be seen that member 23 may be caused to roll over the surface of the face or it can be held with the thumb and be caused to slide over the face, that it may be tilted upwardly so that teeth 21 will slide along the face and coact with blades 25 to operate like a hair clipper and that because of the shape of the shield 23 there will be some slippage of the ovate surface of the shield thus to encourage the stubble to extend into the apertures.

By scrutinizing Fig. 1 it will be seen that by removing knurled nut 15 the entire head may be detached from the holder and when necessary the shield may be detached from its member 27 thus providing convenient means for inspecting, cleaning or replacing parts.

It will be understood that shield 23 is very thin. Its shape, however, gives it great rigidity and strength and since blades 25 are free to move outwardly in slots 19, these blades will be held against the shield by centrifugal force. Furthermore I may provide suitably shaped springs 25' to firmly hold the blades against the inner surface of the shield.

Clearly many minor detail changes may be made without departing from the spirit and scope and my invention as recited in the appended claims.

Having thus shown and described my invention I claim:

1. A shaver of the class described, comprising a housing having a motor, the forward end of the

motor shaft protruding through an elongated bearing sleeve, a head secured to the protruding end of the shaft, a frustum of an ovate spheroid shaped shield rotatably mounted at its rear end on said elongated bearing sleeve by means of a carrying element, a multiplicity of closely spaced apertures in the major part of the shield, two or more wings on said head having mounted thereon cutter blades with means for causing the blades to snugly contact the inner surface of the shield under said apertures, teeth in the front end of said shield, said blades at their forward ends adapted to contact the under surface of said teeth to cooperate therewith and act as a clipper.

2. A device as recited in claim 1 including; openings in said carrying element, an air directing element in the rear of said openings its outer periphery having a forwardly and inwardly curved surface which is spaced from the rear end of said shield and carrying element, forming an air passageway and a pocket adapted to catch the cut stubble by centrifugal force.

3. A shaver of the character described, comprising a housing having a motor, the forward end of the motor shaft protruding, a rotor head mounted on said protruding shaft end, a thin walled shield having an open front and a relatively large rear end, the rear end being mounted on said housing, a multiplicity of closely spaced openings for the greater part of the length of the shield, a number of longitudinally positioned cutter blades on said rotor head having means adapted to cause the blades to snugly and yieldingly contact the inner surface of said shield under the apertures, closely spaced teeth on the forward end of said shield, said cutter blades adapted to contact the under surface of said teeth to cooperate therewith to act as a clipper.

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