

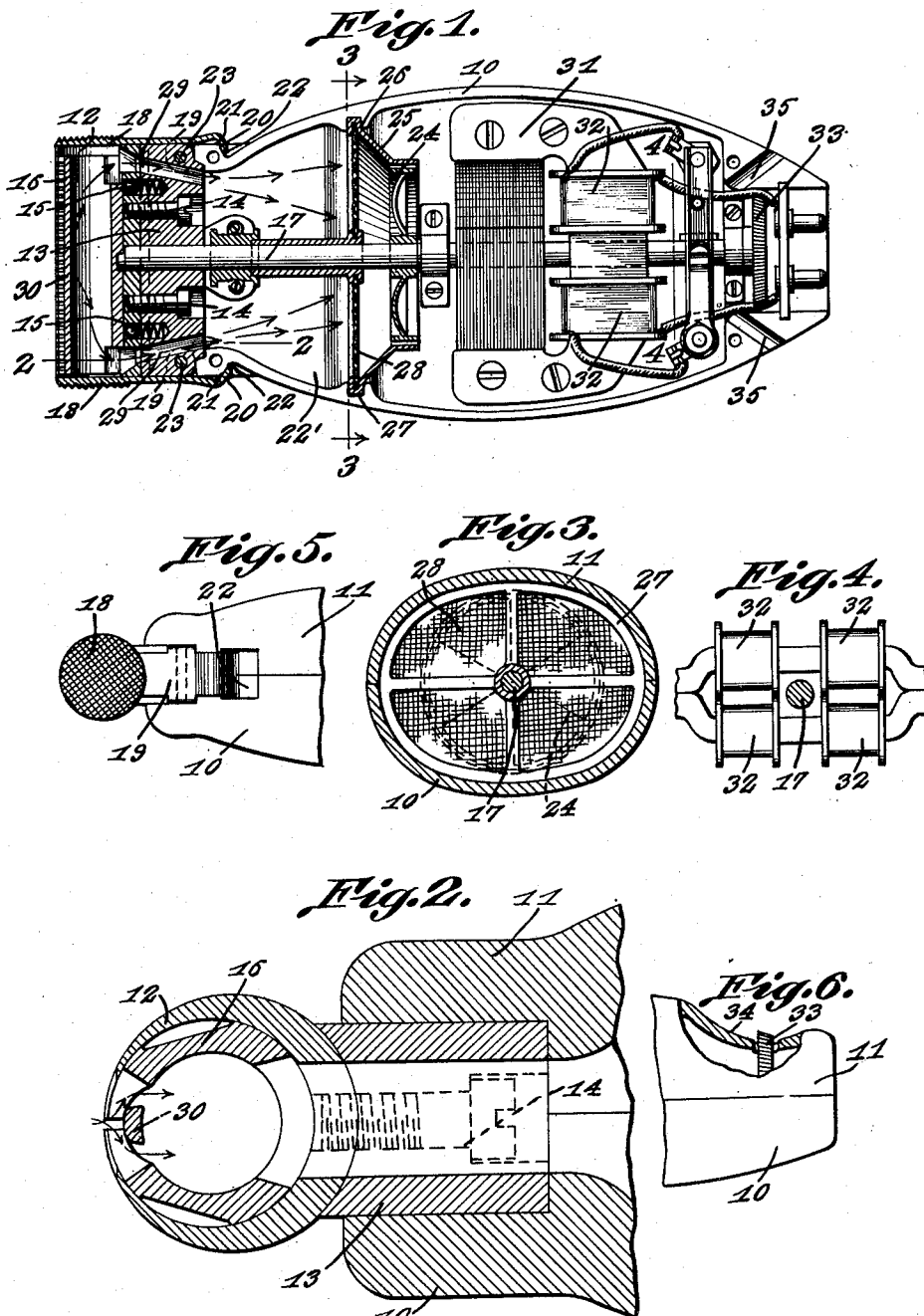
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H. H. BLACKWELL

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ELECTRIC VACUUM SHAVER

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Herbert H. Blackwell, INVENTOR

BY Victor J. Evans & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE

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ELECTRIC VACUUM SHAVER

Herbert H. Blackwell, Roanoke, Va.

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4 Claims. (Cl. 30-41)

This invention relates to an electric vacuum shaver and has for an object to provide a shaver having a hair collecting trap and a suction fan arranged within the hollow handle for withdrawing hair from the cutting head most effectively and at the same time drawing the skin into intimate contact with the cutting head so that a clean cool and close shave will be promoted.

A further object is to provide a device of this character in which spring closures on the end of the comb seal the ends and at the same time permit of the cutting head being detachably assembled with the hollow handle so that a quick pull on the cutting head will detach the cutting head and expose the entire front of the hair trap so that the collected hair may be conveniently ejected from the trap.

A further object is to provide said closures with hinges that pivotally secure the closures to the cutter base so that the closures may be readily rocked open to expose the interior of the cutting head to receive the cleaning brush.

A further object is to provide the cutter with a baffle that extends longitudinally of and is secured to the teeth near the ends thereof to the end that the suction fan may withdraw hair longitudinally through the teeth of the comb and through the teeth of the cutter to most effectively prevent clogging of said teeth with severed hair.

A further object is to provide a device of this character which will be formed of a few strong simple and durable parts, which will be inexpensive to manufacture, and which will not easily get out of order.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawing forming part of this specification,

Figure 1 is a plan view of an electric vacuum shaver constructed in accordance with the invention and showing the cover plate of the handle removed to expose the working parts.

Figure 2 is an enlarged longitudinal sectional view taken on the line 2-2 of Figure 1 and showing the comb, cutter, and baffle of the cutting head as well as the air ducts leading to the hair collecting trap in the hollow handle.

Figure 3 is a cross sectional view taken on the

line 3-3 of Figure 1 showing the filter of the hair trap secured in place by a spider.

Figure 4 is a cross sectional view taken on the line 4-4 of Figure 1 showing the field coils and the shaft of the impulse motor.

Figure 5 is a detail end elevation of the cutting head assembled with the handle and showing one of the hinged spring closures.

Figure 6 is a detail elevation of the end of the handle opposite the cutting head and showing the knurled starting wheel of the motor.

Referring now to the drawing in which like characters of reference designate similar parts in the various views, 10 and 11 designate companion shells forming the hollow handle of the shaver. All of the working parts are carried by one of the shells, as for example, the shell 10, as best shown in Figure 1.

The cutting head comprises a comb 12, best shown in Figure 2, having a base 13 which is removably secured to the comb by screws 14 and which is adapted to be inserted in the shells 10 and 11, there being the usual ball stops 15 mounted in the base to frictionally bear against the cutter 16, as is customary.

In the present embodiment of the invention the cutter is given a shearing motion by a motor shaft 17 which is connected to the cutter and extends longitudinally from end to end of the handle.

The ends of the cutter and comb, which are open in conventional shavers, are closed in the present embodiment of the invention by closures 18 which are provided with spring clips 19 that terminate in lips 20 which spring over shoulders 21 formed in recesses 22 in the shells which receive the clips, as best shown in Figures 1 and 5. These spring clips permit of the entire cutting head being removed by a quick outward straight line motion from the handle to expose the interior of the forward end of the handle which forms a hair trap 22' of substantially the entire cubical capacity of the front end of the handle.

The spring clips 19 are pivotally secured to the ends of the base 13 of the comb by pivot pins 23. Thus when the cutting head is removed the spring clips may be rocked on these pivot pins to move the closures 18 outwardly and expose the interior of the cutter and the comb for cleaning with the usual bristle brush.

A suction fan 24 is fixed to the motor shaft and is mounted within a casing 25 which is confined against a shoulder 26 on the shells by a spider 27 which also confines a filter plate 28 in place to permit air being drawn through the handle by

the fan and at the same time prevent the hair from being drawn into the fan.

Air ducts 29 extend through the base of the comb, through the comb and through the cutter, as best shown in Figures 1 and 2 and preferably these ducts are arranged near the ends of the parts, as best shown in Figure 1 so that air will be drawn through the coacting teeth of the comb and of the cutter, toward the ends of the parts and conducted into the hair trap 22'.

By referring to Figure 2 it will be seen that a baffle bar 30 extends longitudinally of the cutter and is connected to the ends of the cutter teeth inside of the cutter. Air will thus be drawn in between the teeth of the comb and of the cutter longitudinally of the teeth as indicated by the arrowheads and will effectively remove hair from the teeth to prevent clogging.

Any desired type of motor may be used but in the present embodiment of the invention a motor 31 of the impulse type is mounted within the shells of the handle remote from the cutting head and the motor shaft 17 extends through the motor, the field coils 32 of the motor being arranged on opposite sides of the shaft, as best shown diagrammatically in Figure 4. The purpose of extending the shaft through the motor, is to locate the knurled starting wheel 33 at the end of the handle remote from the cutting head, and as best shown in Figure 6, the handle is provided with a depression 34 through which the starting wheel projects.

In operation the shaver is connected to a suitable source of electricity in the usual manner and the knurled starting wheel is whirled to start the motor. The shaver is then applied to the face in the usual manner and the fan 24 will draw the skin of the face close up to the teeth of the comb to provide a close shave. At the same time air entering through the teeth of the comb and through the teeth of the cutter will remove severed hair from the teeth and lodge the same in the hair trap 22'. The air passes through the filter and through the impulse motor, finally being propelled through release ducts 35 formed in the shells adjacent to the starting wheel 33. This air during its travel through the handle will cool the motor so that the device may not become hot during the shaving operation.

From the above description it is thought that the construction and operation of the invention will be fully understood without further explanation.

What is claimed is:

1. An electric vacuum shaver comprising a hollow handle, a hair trap in the front of the handle, a motor in the rear of the handle, a shaft for the motor, a suction fan on the shaft for drawing hair into the trap, a cutting head on the handle in advance of the trap, there being air

ducts in the head communicating with the trap for conducting severed hair into the trap, the ends of the cutting head being open, and spring closures connected to the ends of the head for closing the open ends of the head, said closures being detachably engageable with the handle and permitting removal of the cutting head by straight line outward movement to unseal the trap for removal of collected hair.

2. An electric vacuum shaver comprising a hollow handle, a hair collecting trap in the handle, a motor driven suction fan in the handle for withdrawing hair into the trap, a cutting head on the handle comprising a comb and a cutter, both having transversely disposed teeth, said shaft being connected to the cutter to move the cutter to coact with the comb in cutting hair, there being air ducts formed in the cutting head and communicating with the trap to permit severed hair being withdrawn from the teeth into the trap, and a baffle bar extending longitudinally of the teeth of the cutter and secured to said teeth for directing the air sucked into the handle by the fan longitudinally of the teeth to effectively remove severed hair from the teeth and prevent clogging.

3. An electric vacuum shaver comprising a hollow handle, a hair collecting trap in the front end of the handle, a motor in the rear of the handle, a shaft for the motor extending longitudinally of the handle, a suction fan on the shaft in rear of the hair trap, shoulders on the front end of the handle, a cutting head on the front end of the handle, spring closures on the ends of the cutting head having bent tips engageable with said shoulders to detachably secure the cutting head to the handle, and hinges connecting the closures to the cutting head and adapted to permit the closures being rocked outwardly to expose the interior of the cutting head for cleansing.

4. An electric vacuum shaver comprising a hollow handle having a hair trap in the forward end, a motor in the rear end of the handle, a shaft for the motor extending longitudinally of the handle, a suction fan on the shaft, a filter extending diametrically across the handle and forming a rear wall of the trap disposed in front of the fan, the trap comprising the entire cubical space in the front end of the hollow handle, a cutting head on the handle forming a closure for the open front end of the trap, there being air ducts in the head communicating with the hair trap for facilitating transfer of severed hair from the head into the trap by the fan, and spring clips detachably connecting the head to the handle and permitting of the head being removed from the handle by straight line movement to unseal the trap.

HERBERT H. BLACKWELL.