

A Description of the Modern Electric Razor

The electric razor is a device designed to replace the standard manual razor. It is used to trim off undesired facial and other body hair. It is battery operated, and uses a motor to spin the blades that cut the hair.

A desire for the razor came about as a result of World War 1 and the sudden change in men's fashion from beards to clean-shaven. A man named Jacob Schick revolutionized the shaving world in 1931 after realizing his dream of ten years by creating a dry shaving system. Until the 1970's, the design of electric razors changed little when Gillette introduced the twin blade system and Schick company rose to compete. The two companies kept adding more blades to the razor until Gillette came out with the Fusion (5 blades).

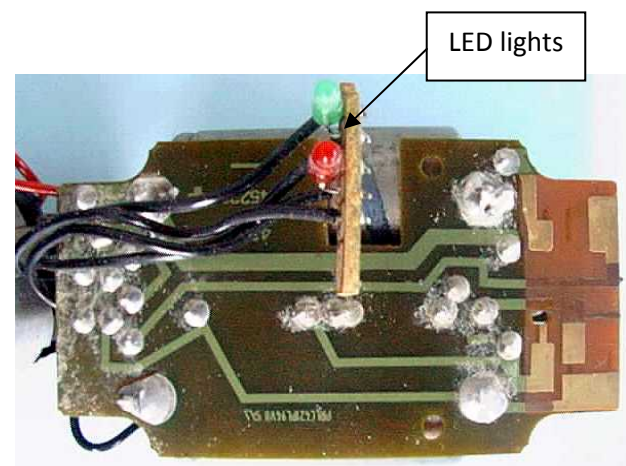
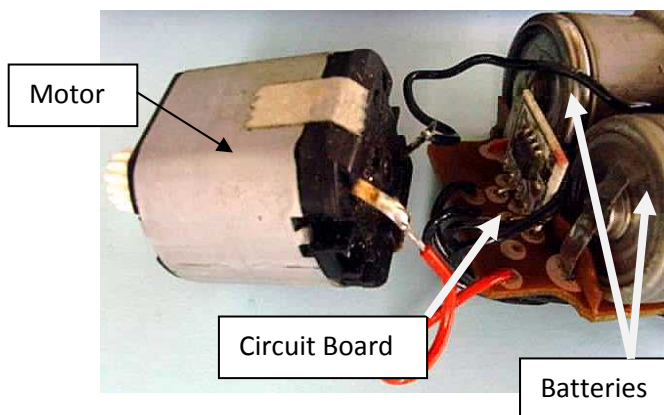
Electric Razors function quite similar to electric screwdrivers. There are five main parts: a rechargeable battery, a switch, an electric motor, a gear system, and of course the blades that cut the hair.

The printed circuit board is a thin piece of fiberglass with copper wires etched on its surface which pass the electric impulses from the batteries to the motor and blades.

Today, electric razors are powered by rechargeable although a few older ones ran on house current. The earliest mechanical shavers were hand operated.

The major design for the blades on electric razors include the foil variety which uses a structure of layered metal bands that partially pull out the hair before cutting off the extracted length and then allowing the remainder to retract below the skin.

A closer look of the circuit board reveals several interesting features of the electric razor.

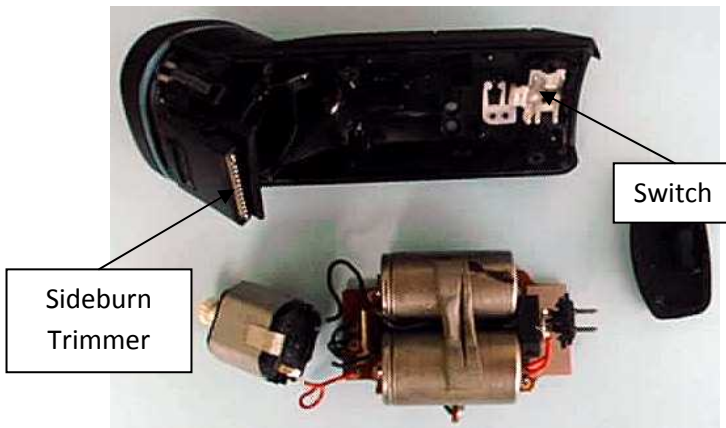


Circuit Board

A tiny auxiliary PCB holds two LEDs that indicate when the battery needs recharging. Not much is known or revealed by the

manufacturers about the nature of the rechargeable batteries, but because the instructions say to let them fully discharge and recharge overnight, it can be assumed that nickel cadmium batteries are used.

In the picture below we can get a better picture of how the batteries and motor fit inside the razor. Notice also the switch mechanism used to activate and deactivate the razor.

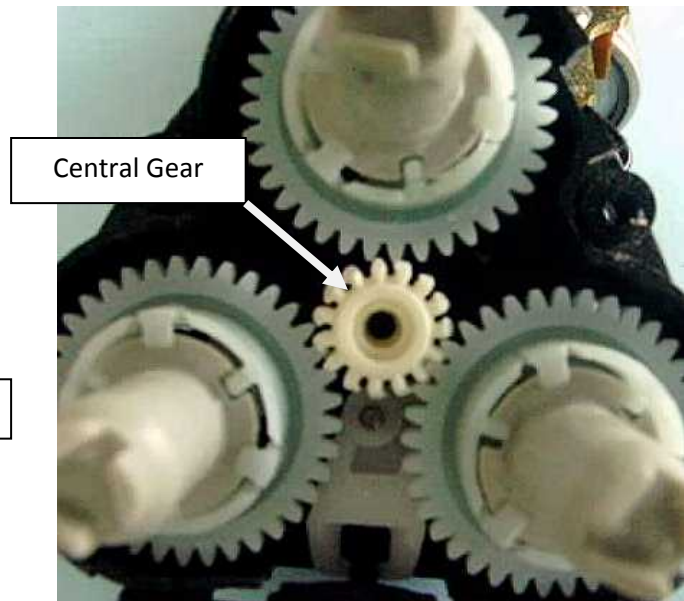


Some electric razors have a separate blade that is used to cut and shape the sideburns. This extra blade is often on the back side of the razor, and flips out when needed.

A secondary design for the blade system is that of three rotating blades, arranged in a triangular fashion. There is no advantage to either system; it is only a matter of personal preference.

In fact, many peoples' skin reacts adversely to the style of cutting that electric razors exhibit. To many people, it causes unnecessary irritation to the skin, and these people prefer standard razors to the newer electric razors.

A close up view of the blade system for an electric razor with three rotating blades reveals a central gear attached to the motor that operates each of the three blades in circular motion.



The global and environmental impact of electric razors versus standard razors is significant. While they use up electricity in their operation, there is little to no waste generated by battery powered razors: no cartridges or disposable blades are thrown away.

References

- Brian, Marshall. "Inside an Electric Razor."
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- Bellis, Mary. "History of Razors and Shaving."
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