

Electricity

Where does it go
After it Leaves the Toaster?

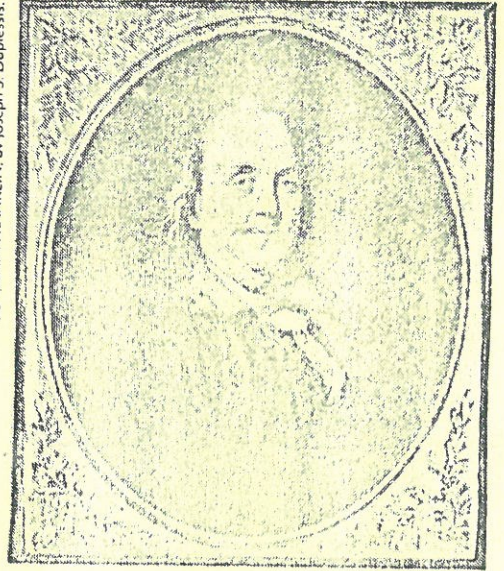
Here is a simple experiment that will teach you an important electrical lesson. On a cool, dry day, scuff your feet along a carpet, then reach your hand into a friend's mouth and touch one of his dental fillings. Did you notice your friend twitched violently and cried out in pain? This teaches us that electricity can be a very powerful force, but we must never use it to hurt others.

It also teaches us how an electrical circuit works. When you scuffed your feet, you picked up a batch of "electrons," which are very small objects that carpet manufacturers weave into carpet so they will attract dirt. The electrons travel through your bloodstream and collect in your finger, where they form a spark that leaps to your friend's filling, then travels down to his feet and back into the carpet, thus completing the circuit. Amazing electronic fact! If you scuffed your feet long enough without touching anything, you would build up so many electrons that your finger would explode. But this is nothing to worry about unless you have carpeting.

Although we modern persons tend to take our electric lights, radios, mixers, etc. for granted, hundreds of years ago people did not have any of these things, which is just as well because there was no place to plug them in. Then along came the first Electrical Pioneer, Benjamin Franklin, who flew a kite in a lightning storm and received a serious electrical shock. This proved that lightning was powered by the same forces as carpets, but it also damaged Franklin's brain so severely that he started speaking only in incomprehensible maxims, such as, "A penny saved is a penny earned." Eventually, he had to be given a job running the post office.

After Franklin, came a herd of Electrical Pioneers whose names have become part of our electrical terminology: Myron Volt, Mary Louise Amp, James Watt, Bob Transformer, etc. These pioneers conducted many important electrical experiments. For example, in 1780, Luigi Galvani discovered (this is the truth) that when he attached two different kinds of metal to the leg of a frog, an electrical current developed and the frog's leg kicked, even though it was no longer actually attached to the frog, which was dead anyway. Galvani's discovery led to enormous advances in the field of amphibian medicine. Today, skilled veterinary surgeons can take a frog that has been seriously injured or killed, implant pieces of metal in its muscles, and watch it hop

BENJAMIN FRANKLIN, by Joseph S. Duplessis.



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back into the pond just like a normal frog, except for the fact that it sinks like a stone.

But the greatest Electrical Pioneer of all was Thomas Edison, who was a brilliant inventor despite the fact that he had little formal education and lived in New Jersey. Edison's first major invention, in 1877, was the phonograph, which could soon be found in thousands of American homes, where it basically sat until 1923, when the record was invented. But Edison's greatest achievement came in 1879, when he invented the electric company. Edison's design was a brilliant adaptation of the simple electrical circuit: the electric company sends electricity through a wire to a customer, then immediately gets the electricity back through another wire, then (this is the brilliant part) sends it right back to the customer again.

This means that an electric company can sell a customer the same batch of electricity thousands of times a day and never get caught, since very few customers take the time to examine their electricity closely. In fact, the last year in which any new electricity was generated in the United States was 1937. The electric companies have been merely re-selling it ever since. Which is why they have so much free time to apply for rate increases.

Today, thanks to men like Edison and Franklin, and frogs like Galvani's, we receive almost unlimited benefits from electricity. For example, in the past decade, scientists have perfected the laser, an electronic appliance that emits a beam of light so powerful that it can vaporize a bulldozer 20,000 yards away, yet so precise that doctors can use it to perform delicate operations on the human eyeball. . . . provided they remember to change the power setting from *Vaporize Bulldozer* to *Delicate*.

