The Telephone

by
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As promised in the last issue of TAC, I have returned to explain how the telephone works.

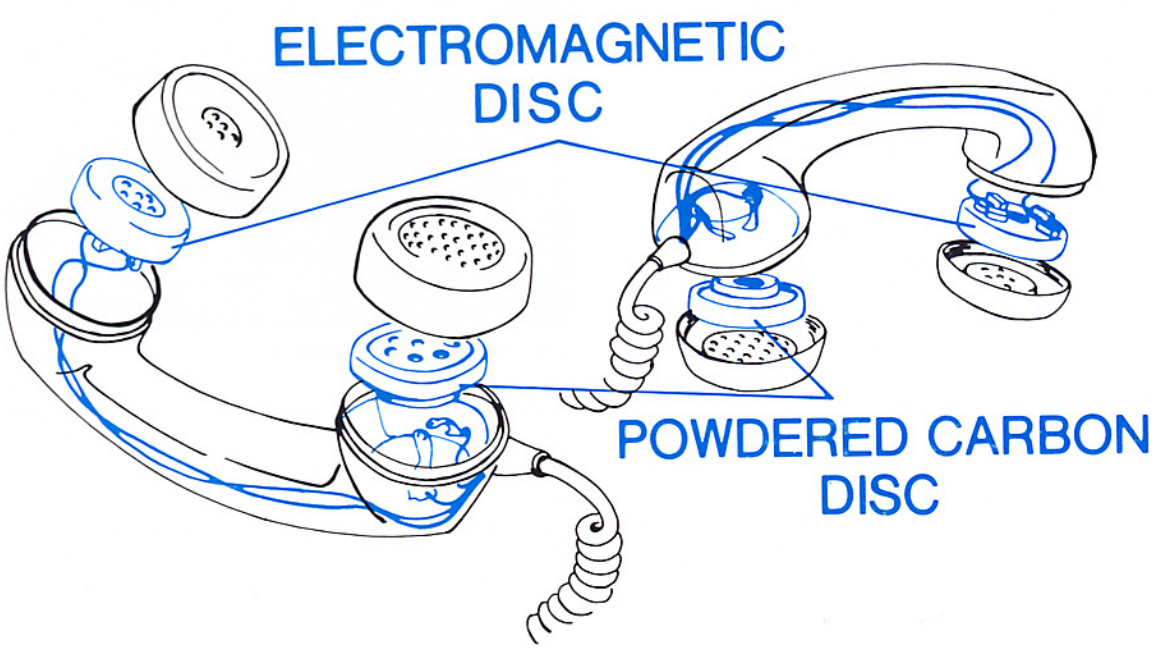
We all know that Alexander Graham Bell invented the telephone. However, did you know that the phone was invented in March 1876 and is exactly 100 years old this year? Bell unknowingly sent the first message, "Mr. Watson, come here! I want you!" after spilling acid on his trousers. Watson heard Bell cry out over the wire and ran to assist him. (Lucky for us the accident occurred and lucky for Bell that he didn't have to dial for help!) Anyway, there are over 100 million commercial phones used in the United States alone.

The telephone has been improved through the years at an amazing rate. Research is constantly opening new doors. However, the principle discovered by Bell is still the basic concept used: the conversion of sound to electricity and reconversion of electricity back to sound.

If you take a close look at the phone drawing, you'll see a powdered carbon disc at the talking end and an electromagnetic disc at the listening end. Connected to both discs are wires which permit the flow of electricity.

Talking into a phone causes the carbon particles to expand and contract. Since this disc is linked to an electrical source, a fluctuating current occurs in response to the sound variations of your voice. This is the conversion of sound to electricity.

The electrical current is then carried to another phone (through direct wire, switchboard, radio, etc.). The electromagnetic disc at the second phone's listening end receives the current. This "listening disc" contains a metal diaphragm (instead of the carbon particles in the "talking disc"). The metal diaphragm also expands and contracts depending on the changing intensity of the electrical current. Sound waves result which you can hear. We now have the conversion of electricity to sound.

It all seems so simple...SOUND to ELECTRICITY to SOUND. But it works. Any way you slice it—100 million phones can't be wrong.

See you next issue when my topic will be...TELEVISION!