Chapter Eight | Completing the Circuit

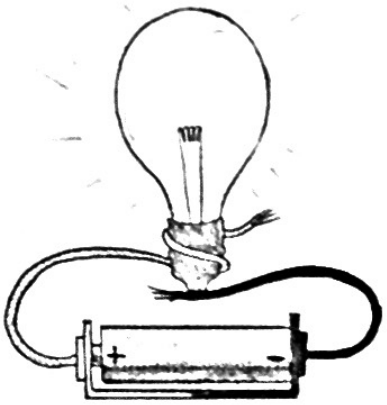
The next day, after I had a schematic diagram drawn up, Pete helped me put together a miniature model to test my circuit. After everything was wired, he gave me a thumbs-up sign, letting me know it was okay to flip the switch to test the alarm. *Beep! Beep! Beep!* The buzzer was working! But the light wasn't.

"Pete!" I said. "What's wrong?"

"It looks like we may need to fix this wiring," he said.

"What do you mean?" I asked. "I connected the wire to the light bulb. What else matters?"

"Well, electricity isn't something magical that will light up a bulb just because it's nearby," Pete explained. "To wire the circuit correctly, you need to make it so the electric current



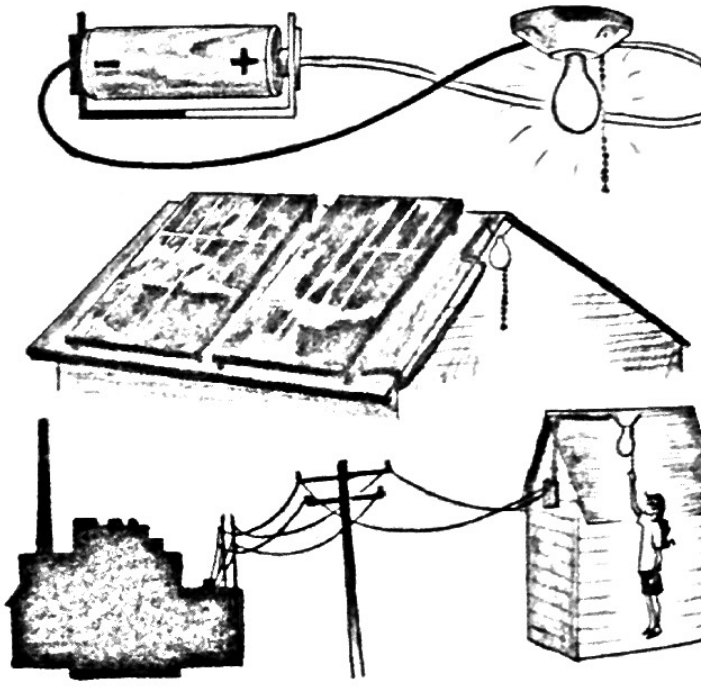
can flow into the bulb at one point, and out of the bulb at another point. There have to be two points of contact to complete the circuit. I'll show you."

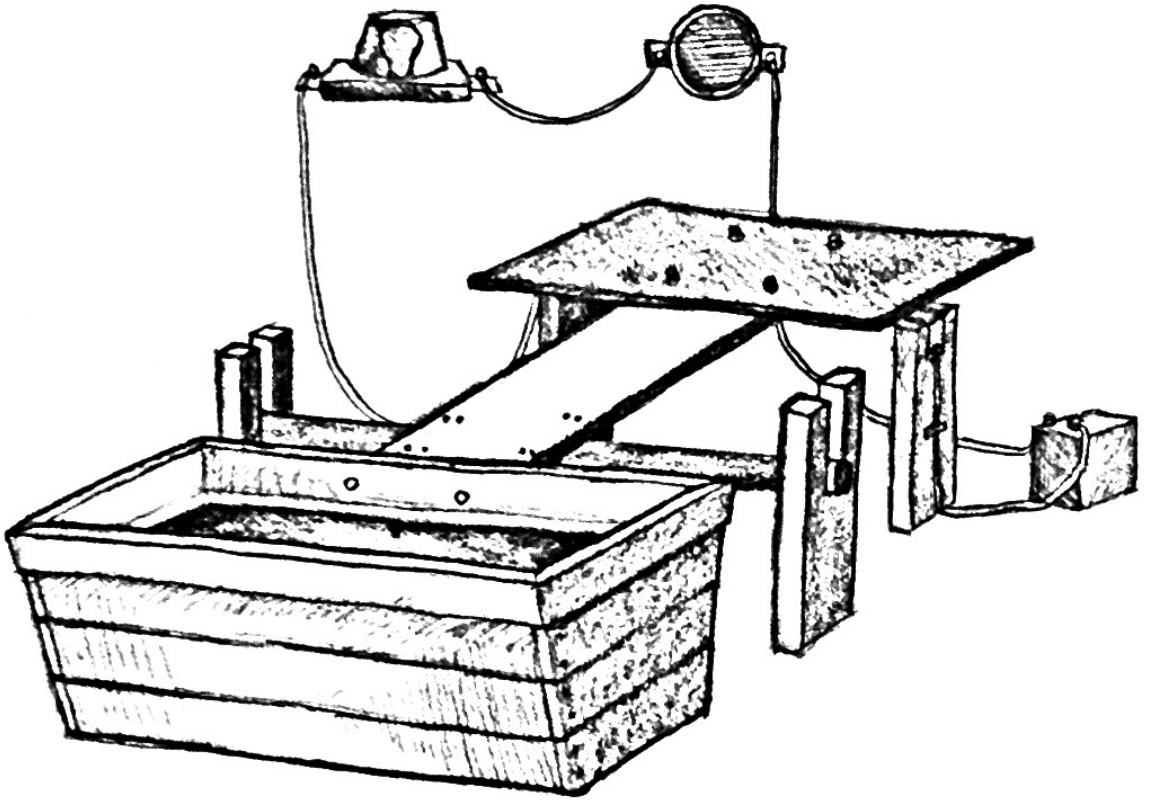
Pete took the one wire that I had wrapped around the light bulb and connected it to just one side of the bulb's base. Then he used another wire to connect the bottom of the bulb to the battery.

"Ta da!" he said. "Let there be light."

"I see how that works," I said. "So is that how all the lights in our house work, too?"

"Yes, it's very similar," he said. "Except in this setup, we're using some batteries to get our electricity. The electricity in your house is powered by the generator you have in your backyard and the solar panels on top of your house. People who live in cities get electricity from a power generation plant. It travels from the plant through wires right into their houses. No matter how different the sources might look, they all generate electrical energy."





"That's pretty cool," I said. "I didn't realize there were so many different ways to generate electricity."

Pete and I worked for the whole weekend to put my alarm system together. We even came up with a nifty switch made out of a big wooden lever. Since wood doesn't conduct electricity, the circuit was safe for me and for the sheep. One end of the lever held the trough, and we attached a piece of metal to the other end. When the trough was full, the weight of the water held the switch open. But when the water level was low, the lever would swing down to complete the circuit. Then the light would flash and the buzzer would buzz! I couldn't wait to show my alarm to everyone.