

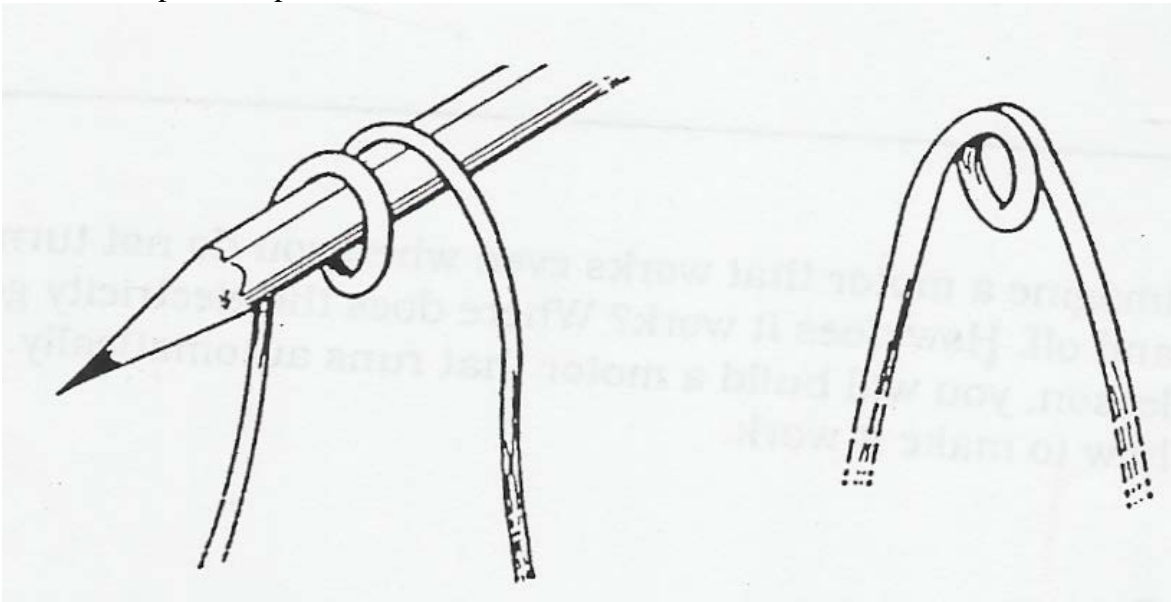
Building a Spinning Coil Motor

Materials:

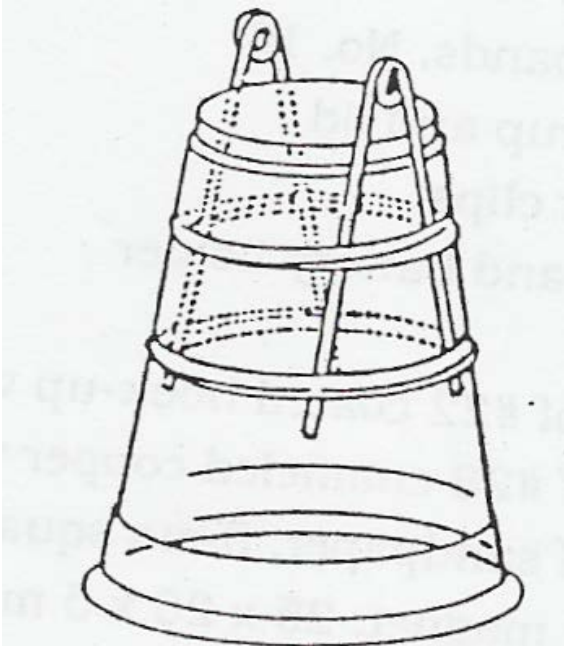
- 2 pieces of #20 bare copper wire, each 20 cm long
- 2 rubber bands
- 1 plastic cup
- 2 alligator clamps
- 1 battery
- 3 pieces of #22 coated wire, each 20 cm long
- 1 piece of #28 enameled copper wire, 65 cm long
- 1 piece of sandpaper
- 1 magnet with hole in center

Procedure:

1. Start by making a loop in the middle of each of the two bare copper wires. Wrap them around a pencil, then slide the loop off the pencil.



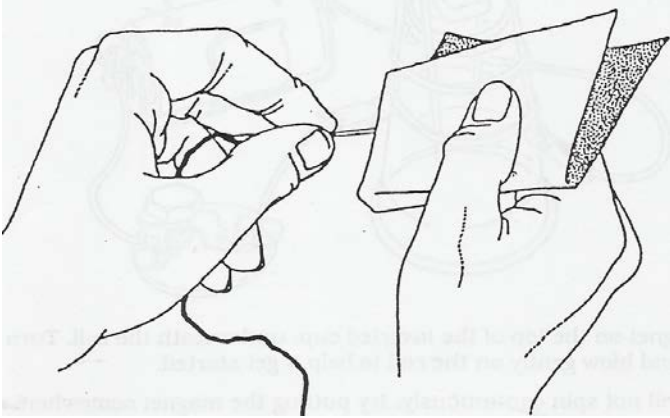
2. Use the two rubber bands to attach the bare copper wires to the plastic cup.



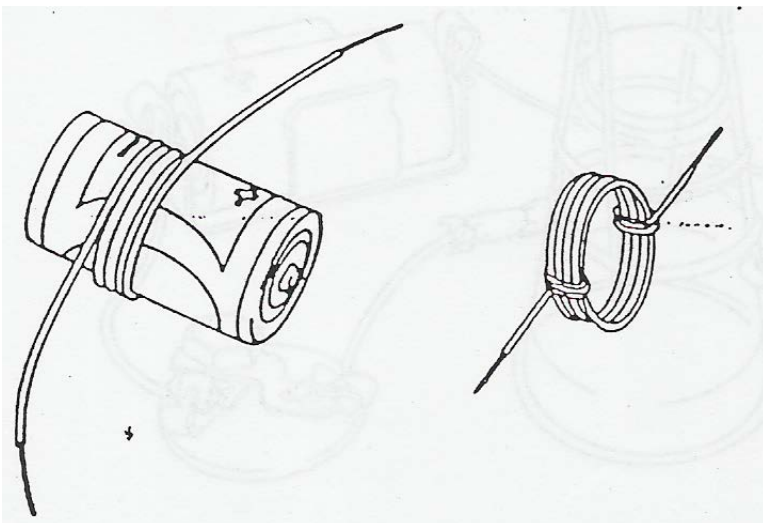
3. Clamp an alligator clip to one end of each of the bare copper wires.



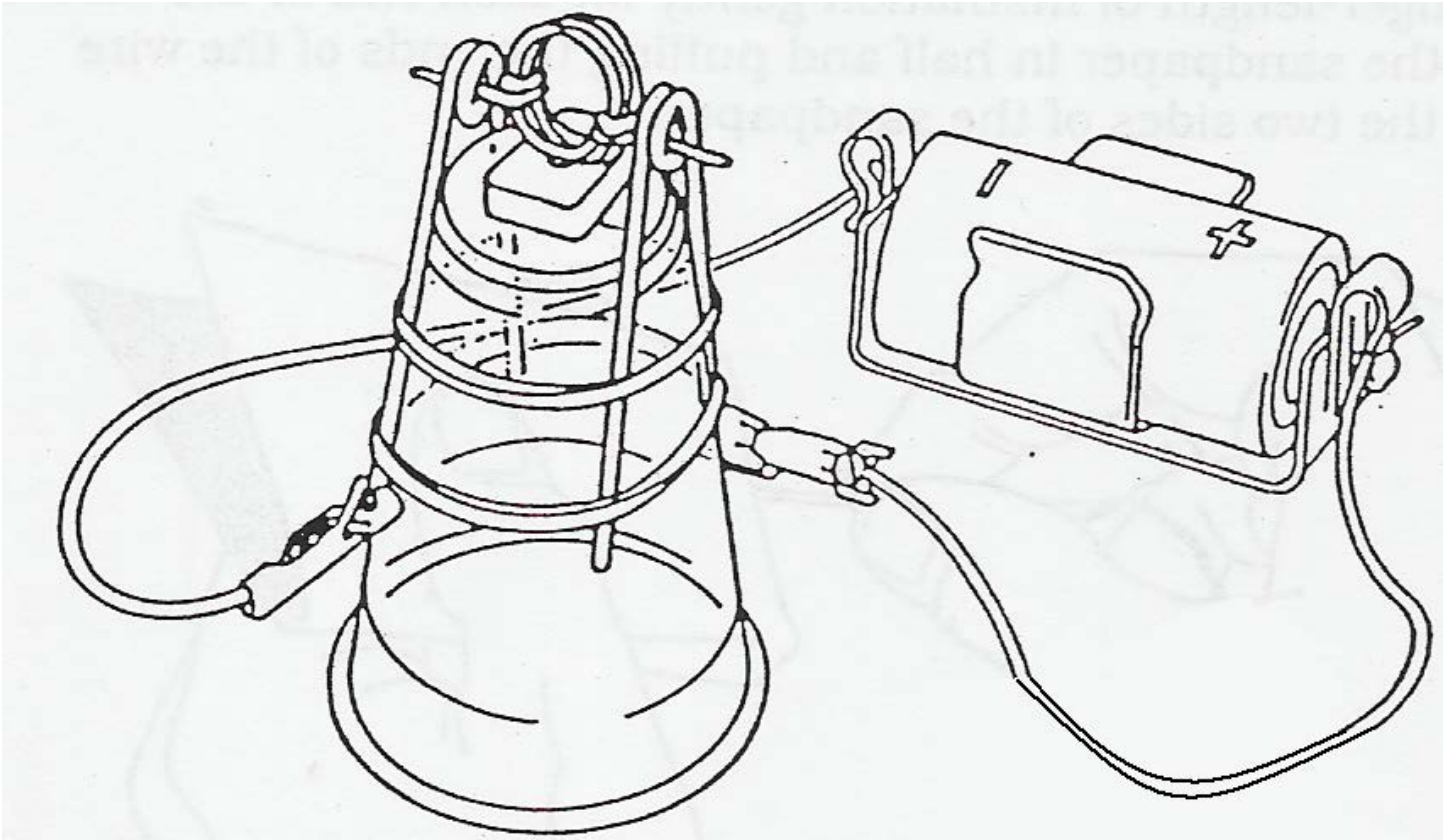
4. Next, take the longest wire with the enamel coating on it and sand off the ends so that bare wire shows through. This is so that electricity can flow from the bare copper wire through the thin wire to the other bare copper wire.



5. Now wrap this same wire around a battery or something round several times. Leave the bare ends sticking out of the coil. Slip the coiled wire off the battery or round object. Wrap the bare ends three or four times around the coil to hold it in a circular shape. Then bend the ends of the wire so that they stick straight out on opposite sides of the coil.



6. Next, place the ends of the coil through the loops of the bare copper wire already attached to the cup. Adjust the copper wire to fit the loop so that the loop can spin freely, without hitting anything.



7. Place a magnet on the top of the inverted cup, underneath the coil. Touch the ends of the alligator clamps to each side of a D battery. Give the coil a slight spin to get it moving.

Troubleshooting:

If the magnet doesn't spin, try holding one alligator clamp to the battery and lightly tapping the other side to the battery. This will cause short bursts of electricity to travel through the wire and will help it to move.

Make sure the coil is perfectly round so that it will spin easily.

Try using more than one battery.

Try using more than one magnet.