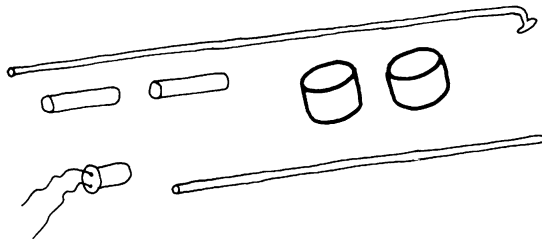
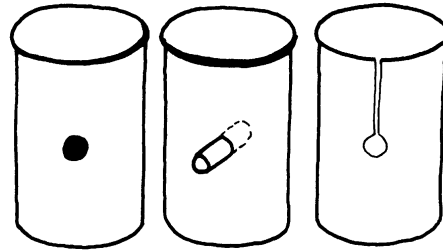


FILM BOX GENERATOR

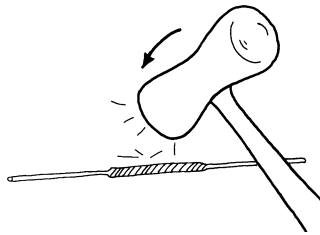
If you can find Neodymium - strong rare earth magnets then this is an electric generator worth making.



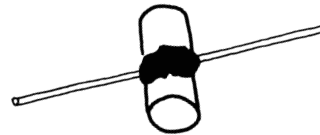
1. You will need two Neodymium magnets (10-mm x 10-mm) cylindrical magnets, bicycle spoke, film reel box, insulated copper wire 35 gauge (used for motor rewinding), old gel pen refill, one LED and ordinary hand tools.



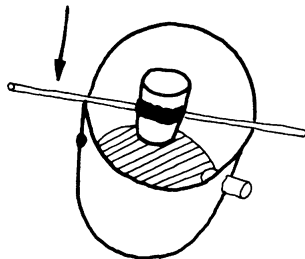
2. First make a through hole in the centre of the film box. The hole should be just big enough to press fit 1.5-cm long pieces of refill on both ends. Make vertical slits in the film bottle to insert the spoke-magnet assembly.



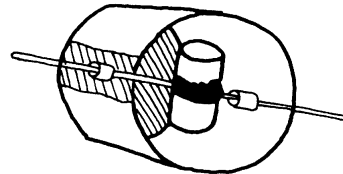
3. Take a 10-cm long of bicycle spoke and flatten it by hammering in the centre.



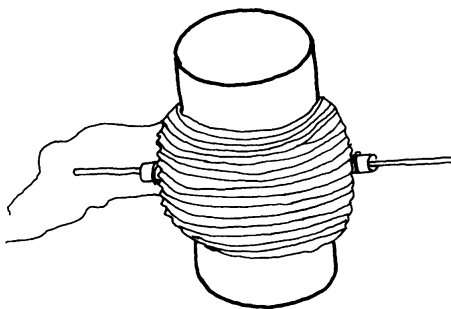
4. Fix two Neodymium Magnets back-to-back on the flat part of the bicycle spoke. Opposite poles of the magnets must face each other. Apply adhesive to hold the magnets in place.



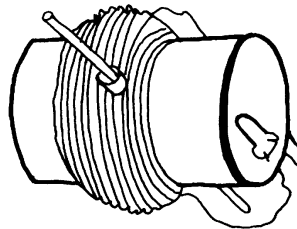
5. Now insert the spoke-magnet assembly through the vertical slits in the film bottle.



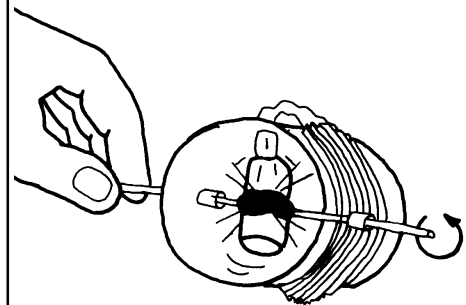
6. Fix 1.5-cm long thick straw pieces as bush bearings for the bicycle spoke to rotate freely.



7. Now wind 500 turns of 35-gauge insulated copper wire on the film box. Scrape the insulation from the ends of the wire to expose the copper.



8. Solder a LED to both the ends of this coil. Fix the LED securely in the film box.



9. Now grip the spoke and twirl it fast. The spoke-assembly will rotate inside the film box. This rotating magnetic field will produce an small current in the coil which will light up the LED. For better grip tie some rough thread to the spoke.