

Application to the Laplace's Law: the Loudspeaker

The principle is the same as for the direct current engine (see this experiment's description): Make approximately 10 turns with the varnished copper wire and glue it at the bottom of a light plastic beaker. Connect the ends of the wire to the "loudspeaker-outputs" on a working radio (Make sure to choose a frequency on which a radio broadcast can be heard).

When a magnet is put close to the bottom of the beaker, the radio broadcast can be heard.

Note: it is recommended to use a magnet from an old loudspeaker; it is made of a cylindrical central core surrounded by a magnetic ring, and it is attached to a plate. This assembly creates a radial magnetic field between the core and the ring. Place the cylindrical core at the centre bottom of the cup. The turns would then be located in the magnetic field.

The sound is converted into a variable electric signal with a variable frequency. The turns, which are crossed by this current, would then vibrate at the same frequency, causing the cup to vibrate, thus producing a sound.



