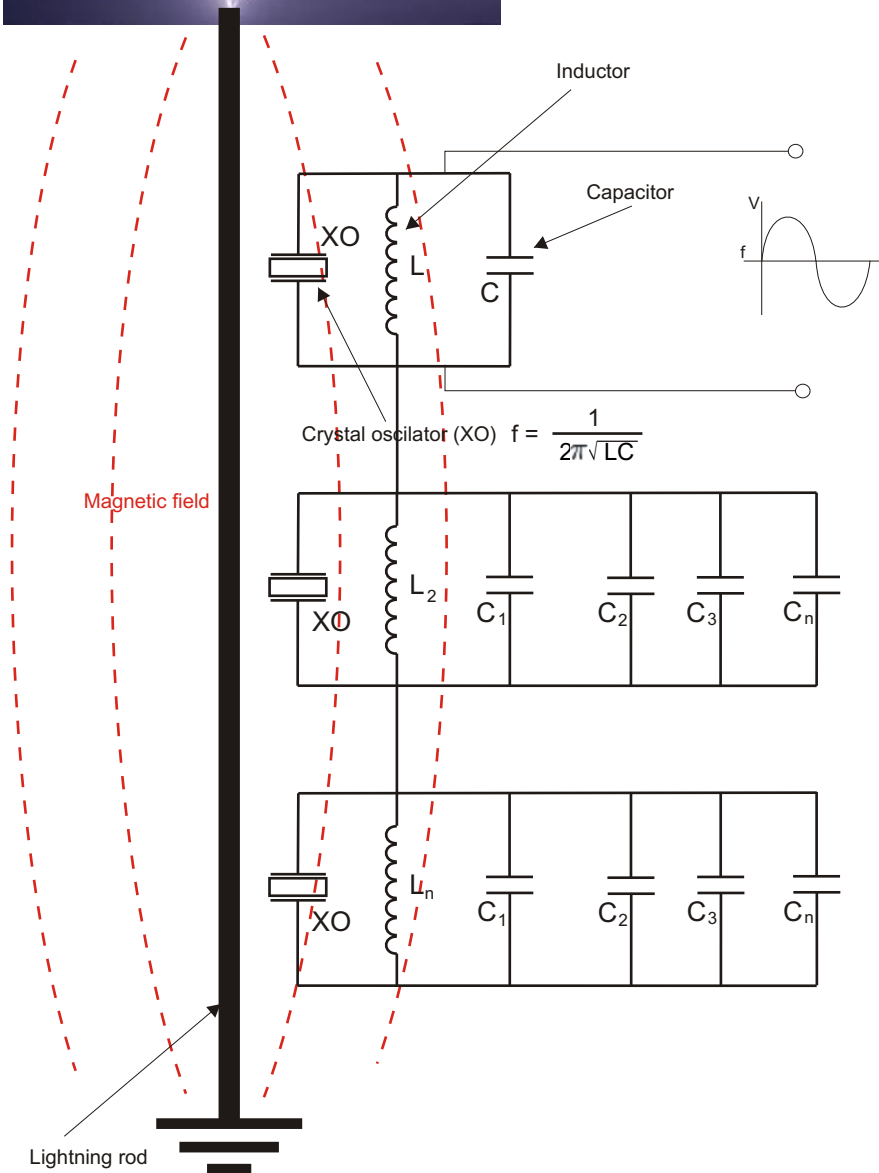




Description



Lightning rod must be Franklin like, since for this purpose magnetic field surrounding the lightning rod is wanted.

After lightning discharge, the magnetic field surrounding the lightning rod will induce electrical energy in the inductor. Inductor will charge the capacitor.

A capacitor stores energy in the electric field between its plates, depending on the voltage across it, and an inductor stores energy in its magnetic field, depending on the current through it. Since a charged capacitor is connected across an inductor, charge will start to flow through the inductor, building up a magnetic field around it, and reducing the voltage on the capacitor. Eventually all the charge on the capacitor will be gone. However, the current will continue, because inductors resist changes in current, and energy will be extracted from the magnetic field to keep it flowing. The current will begin to charge the capacitor with a voltage of opposite polarity to its original charge. When the magnetic field is completely dissipated the current will stop and the charge will again be stored in the capacitor (with the opposite polarity) and the cycle will begin again, with the current in the opposite direction. The charge flows back and forth between the plates of the capacitor, through the inductor. The energy oscillates back and forth between the capacitor and the inductor until internal resistance makes the oscillations die out. (http://en.wikipedia.org/wiki/LC_circuit)

To avoid drain out, restoring the losses is done by placing the crystal oscillator in the circuit.

The crystal oscillator circuit sustains oscillation by taking a voltage signal from the quartz resonator, amplifying it, and feeding it back to the resonator. The rate of expansion and contraction of the quartz is the resonant frequency, and is determined by the cut and size of the crystal. When the energy of the generated output frequencies matches the losses in the circuit, an oscillation can be sustained. (http://en.wikipedia.org/wiki/Crystal_oscillator)

Connecting inductors in series ($L+L_2+\dots L_n$) and capacitors in parallel ($C_1+C_2+C_3+\dots C_n$), this circuit can be increased in order to increase the amount of energy that can be accumulated, eventually meeting the lightning energy.