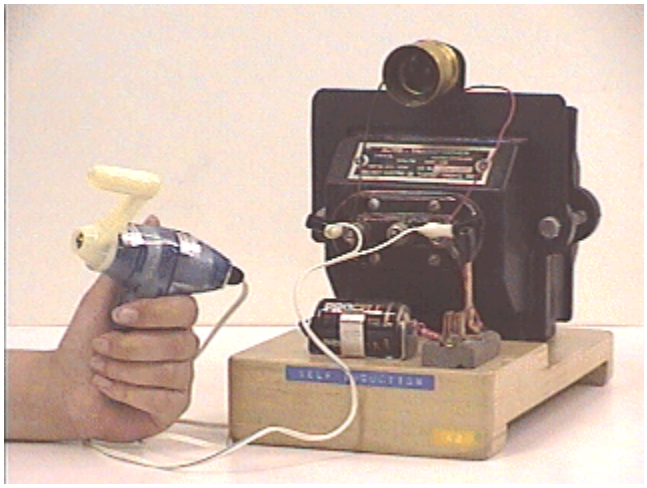
Answer #80

The answer is (b): the handle will reverse its motion, moving in the opposite direction, as seen in an mpeg video by clicking your mouse on the photograph below.



When the handle is rapidly cranked, it creates a potential difference across the inductor and therefore creates an electrical current through its windings. This creates a magnetic field in the core that stores electrical energy in the form of a magnetic field. When the magnetic field collapses, it creates an electric field in the same direction as the original electric field from the generator that caused the current through the windings. This makes the generator, now operating as a motor, move in the opposite direction.

As one might expect, the effect for the generator is opposite in direction to the effect from a capacitor.

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For questions and comments regarding the *Question of the Week* contact
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given on the Lecture-Demonstration Home Page.