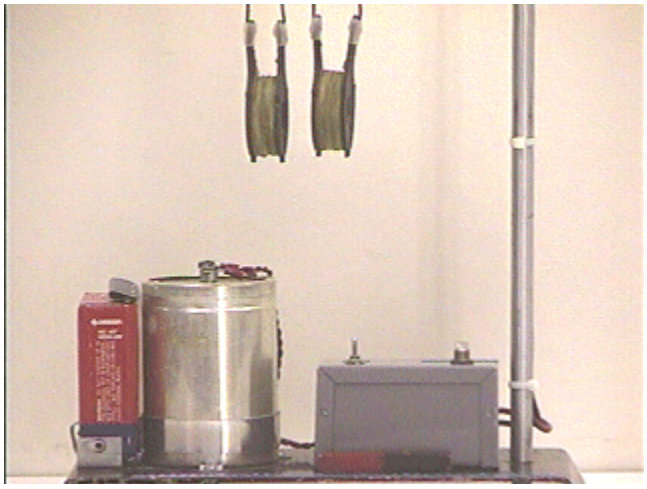
Answer #63

The answer is (b): the two coils will move together, as seen in an mpeg video by clicking your mouse on the photograph below.



When an electric current flows in the wire of a coil, a magnetic field is created. The coil becomes like a bar magnet, with a north and a south pole. The direction of the field can be determined as follows: Wrap the fingers of your right hand around the coil in the direction that the current is flowing. Your thumb will then be pointed in the direction the north pole is pointed. This is known as the right hand rule.

Using the right hand rule, you can see that the magnetic fields created by the two coils must be lined up in the same direction, so the north pole from one of the coils will be adjacent to the south pole of the other coil. Because like poles attract, the two coils will move together.

Suppose that you hold the north pole of a small bar magnet up to the coil along the axis of the coil. If the current in the coil flows such that the two magnetic fields are pointed in the same direction, what will happen when you activate the coil by pressing the switch? Will the magnet and the coil move together, move apart, or remain motionless? Determine your answer and click here to get the result.

Archive 4

Question of the Week

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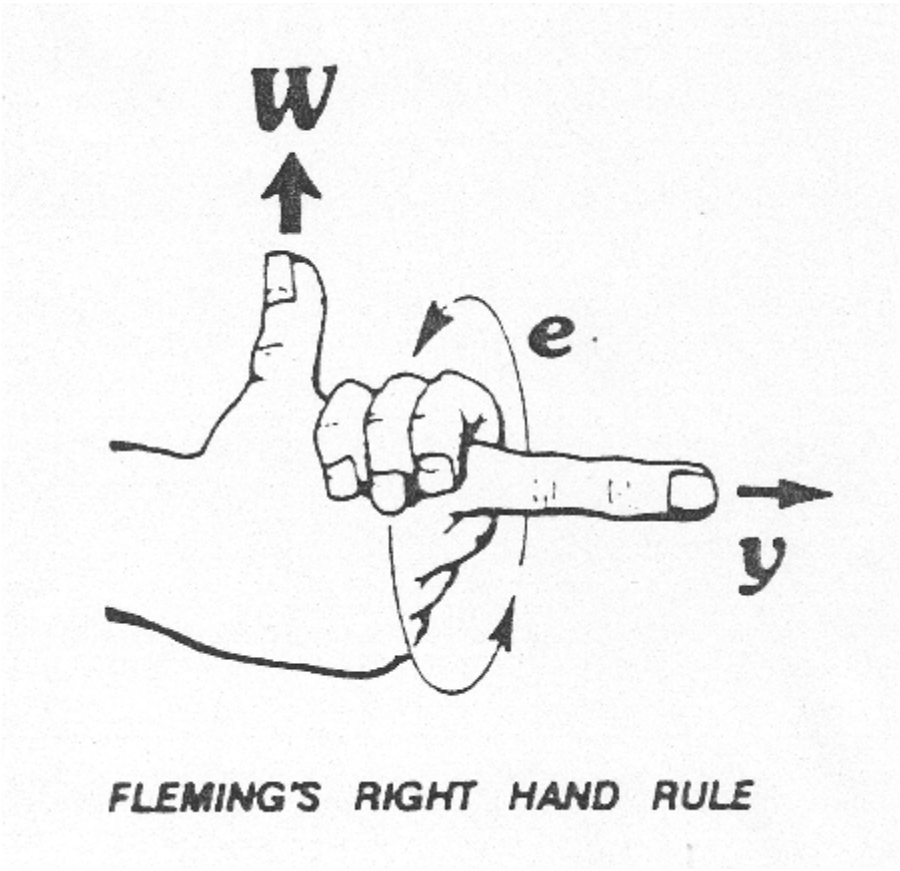
For questions and comments regarding the *Question of the Week* contact

Dr. Richard E. Berg by e-mail or using phone number or regular mail address given on the Lecture-Demonstration Home Page.



FLEMING'S RIGHT HAND RULE