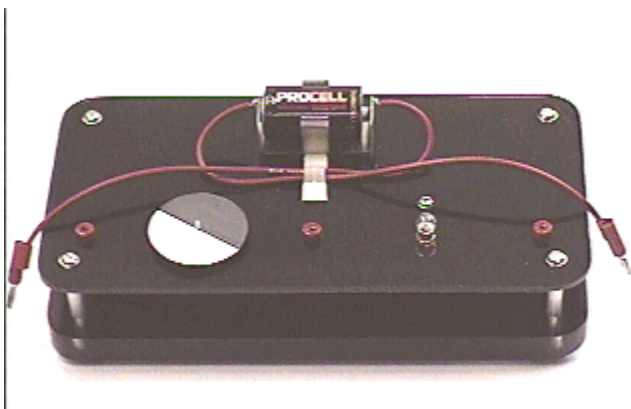


## Answer #37

The answer is (b): only the motor will operate, as seen in an mpeg video obtained by clicking your mouse on the photograph below.



When the voltage is applied to the series system, the motor immediately starts. Note that when the motor is operating at high speed with little or no load it draws very little current. While there *is* current flowing through the series circuit, it is sufficient to keep the motor running but not sufficient to light the bulb.

What would happen if you were to hold the motor so that it could not rotate? Would the light bulb go on? After you have thought about this and come to your conclusion, with the appropriate reasoning, click [here](#) to see an mpeg video of the action.

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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](#).