Lab 34-3: **Resistance of Wires**

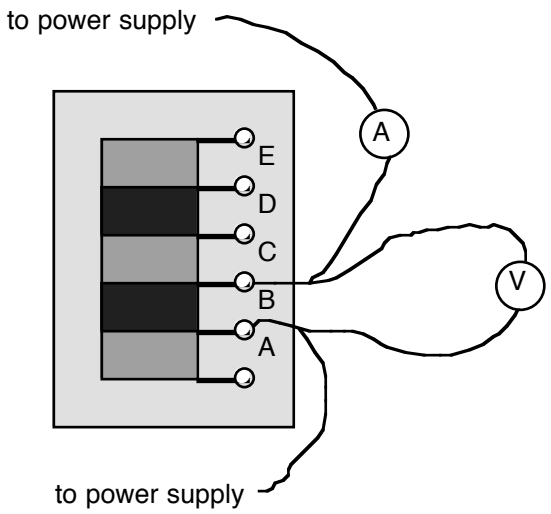
Purpose: 1. To determine the resistance in five different wires using Ohm's Law.
2. To determine the effect of length, diameter and material on the resistance of a wire.

Materials:

1 power supply	1 ammeter	1 voltmeter
5 connecting wires	2 alligator clips	1 spool board

Procedure:

1. Set up the power supply, meters and spools as shown.
2. For each spool, apply a voltage and record the resulting current. (The diagram shows the hookup for spool "B.")
3. On the back of the spool thing there is a description of each spool. Record each spool's description. (Note that the numbers for the diameter of the spool are the gauge number of the wire. Larger numbers mean thinner wire.)
4. Calculate the resistance of each spool of wire.



Data:

Spool	*Voltage (V)*	*Current (A)*	*Resistance (Ω)*	*Description of spool*		
				Length (m)	*Thickness (g)*	*Material*
A						
B						
C						
D						
E						

Questions:

1. Does the length of a wire affect its resistance? If so, how?

2. Does the thickness of a wire affect its resistance? If so, how?

3. If two wires have the same dimensions, but one is made of copper and the other of nickel-silver, which one will have more resistance?