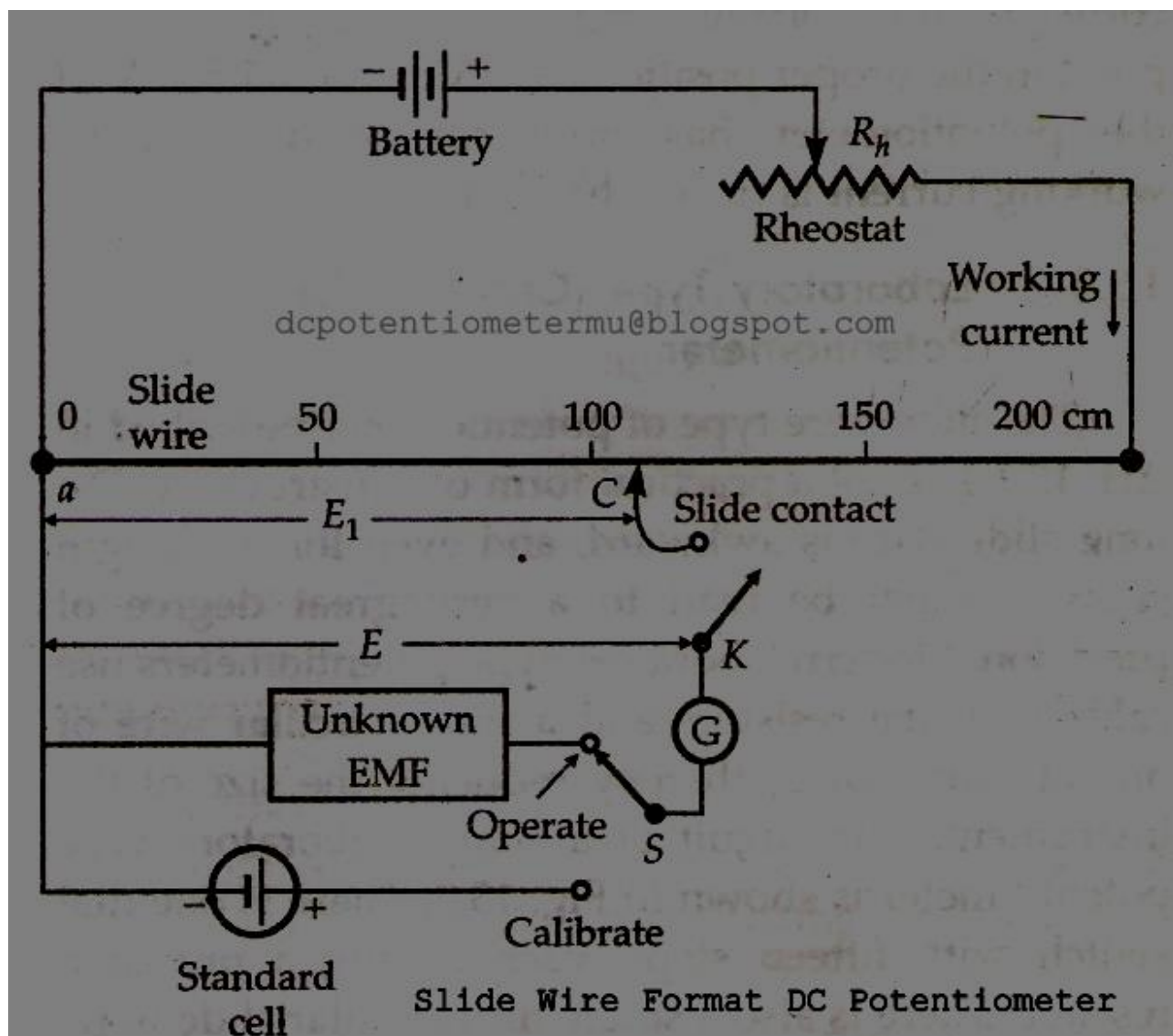


Answer on Question #46514, Physics,

The null condition in potentiometer experiment shows that

Answer: potential differences are balanced.



With switch 'S' in the "operate" position and the galvanometer key K open, the battery supplies the "working current" through the rheostat R and the slide wire. The working current through the slide wire may be varied by changing the rheostat setting. The method of measuring the unknown voltage, E, depends upon finding a position for the sliding contact such the galvanometer shows zero deflection, i.e., indicates null condition, when the galvanometer key, K, is closed. Zero galvanometer deflection or a null means that the unknown voltage, E, is equal to the voltage drop E_1 across portion ac of the slide wire.

You can read more about potentiometer here:

<http://dcpotentiometermu.blogspot.hk/>