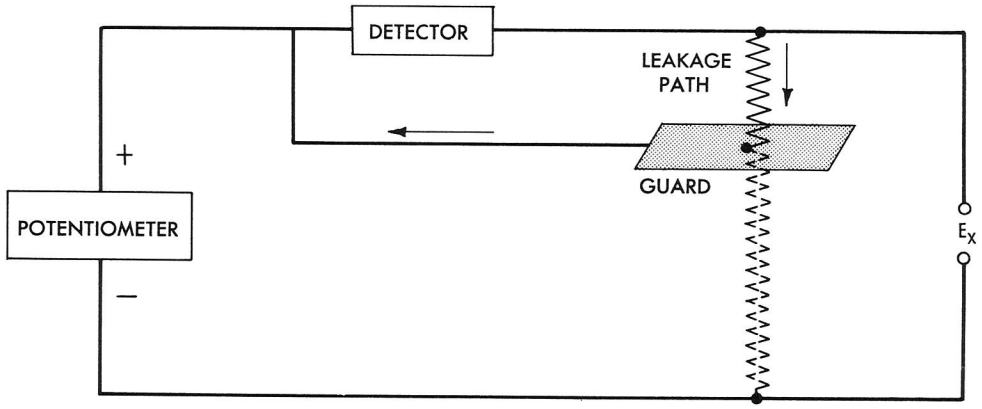
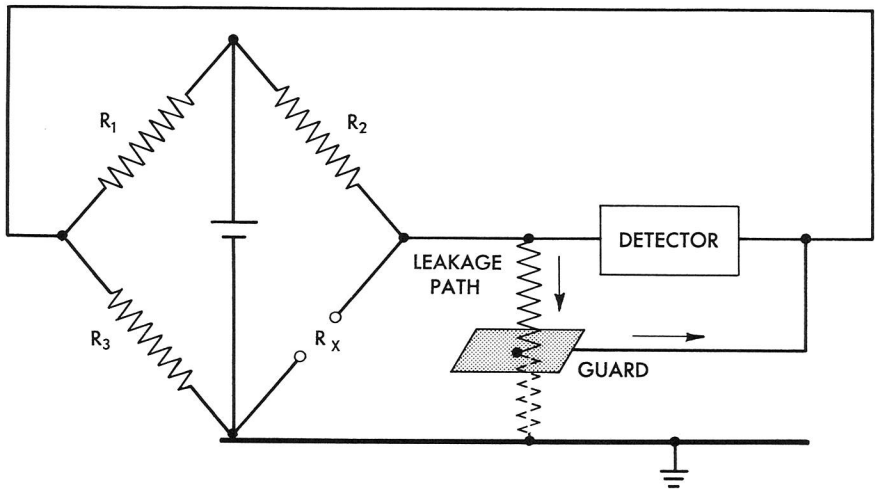


A—Guarded leakage paths in potentiometer applications.



B—Guarded leakage paths in Wheatstone bridge applications.

Fig. 4—Circuit sketches illustrating guarding.

the detector with a surface which is always at the potential of the opposite detector terminal. Because the two sides of the detector are at the same potential when the bridge is balanced, the surfaces between which leakage is most likely to exist are now at the same potential. By this means the leakage path, in effect, is eliminated.

When the bridge is not balanced, the leakage currents are diverted from their normal path to ground and flow to the guard surfaces and the opposite corner of the bridge. Thus, the only effective leakage paths to ground, even at unbalance, shunt only the detector and the R_3 bridge arm. However, the resistance of both the detector and the decade arm are low enough that the insulation resistance between circuit and guard and between guard and ground is too high to affect the sensitivity of the detector or the accuracy of the R_3 bridge arm.

7. ZERO OFFSET CORRECTION

A means of adjusting the zero is provided by resistor R_5 (in series with the secondary) and the zero rheostat R_7. The circuit is shown in