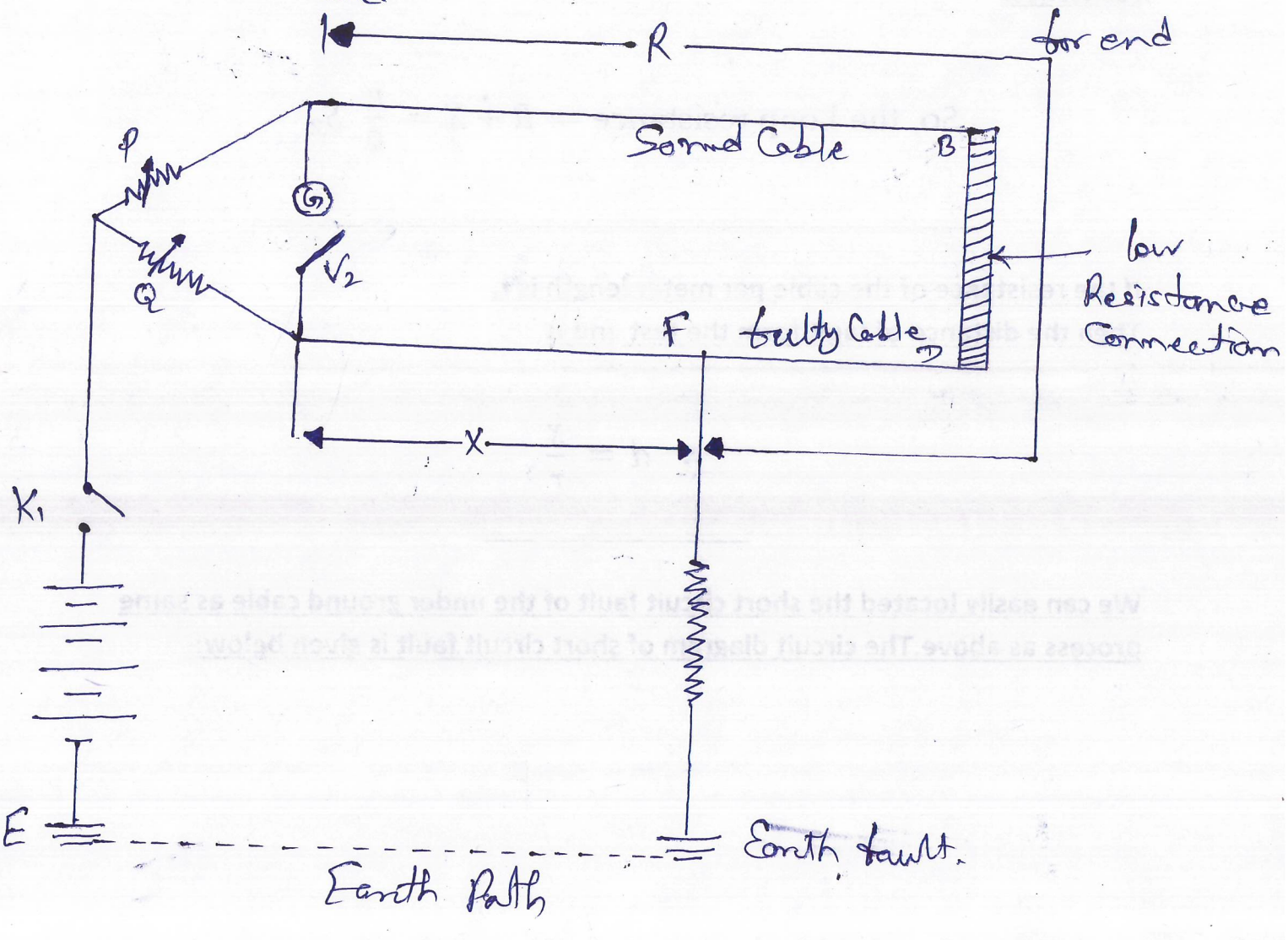
Murry loop test for locating underground Cable fault.

With the help of Murry loop test, we can easily locate fault and short circuit fault in the Under ground Cable.

At first, We describe how does locate earth in underground Cable:

The procedure of Earth fault test:-

In this test, th Sound Cable is used to Connec in between test end for end of the faulty Conductor:-



$$\frac{P+Q}{Q} = \frac{2r}{x}$$

$$\text{or,} \quad x = \frac{Q}{P+Q} \times 2r$$

Let, total length of the Cable is 1 Meter, So the resistance per meter will be: r/r, Therfore, We Can easily measure the fault point from the faulty point is

$$d = \frac{x}{rL} = \frac{Q}{P+Q} \times 2r \times \frac{1}{r} = \frac{Q}{P+Q} \times 2l$$

$$d = \frac{Q}{P+Q} \times 2 \quad (\text{Cable length})$$

Note that the fault resistance Rf is not in the bridge circuit, so, the fault has leaving of the bridge.

$$\frac{P}{Q} = \frac{R}{x+S_1}$$

$$\frac{P+Q}{Q} = \frac{R+x+S_1}{x+S_1}$$

Can easily Set the value of loop resistance.

So, the loop resistance $= R + x = \frac{P}{Q}$

if the resistance of the Cable per Meter length is r,

So, the loop resistance $= R + x = \frac{P}{Q} S_2$

Where P_1 and P_2 are Contacts and is the good of x - Section of the Conductor

(ii) Annual Cost of energy wasted, this is on accound of energy lost maintain the Conductor due to I^2R

Annual Cost of energy wasted

$= P_3 / a$