

As already explained, if a reflecting galvanometer be placed between a cell and a condenser, an instantaneous current will be obtained on depressing the key, and the deflection was shown in § 192 to be proportional to the capacity. Hence if K_x and K' are the capacities of the unknown and known condensers, and D , D' the corresponding *corrected* swings,

$$K_x = \frac{D}{D'} \cdot K'$$

If there be a large difference between the numerical values of D and D' , a shunt should be applied to the galvanometer, in which case evidently

$$K_x = \frac{g}{g+s} \cdot \frac{D}{D'} \cdot K'$$

The connections are precisely the same as those given in § 231.

MISCELLANEOUS TESTS.

TESTING THE POWER OF A FIRING BATTERY OR OF A QUANTITY DYNAMO.

244. The most direct way of ascertaining whether a firing battery is powerful enough for the purpose required, is to find the resistance through which it can just fuze one or more fine iridio-platinum wires placed side by side. The number of the wires should be equal to the number of divided circuits to be employed, the diameter of the wire the same as that of the fuzes and the length of each wire the same as that of the bridge of the fuzes.*

The necessary number of wires are placed in the clips of the thermo-galvanometer attached to the Firing coils, and the battery under examination is connected so that the current can pass through the box of coils, and through the wires, on depressing the key. Successive trials are then made, gradually increasing the resistance in circuit, until that resistance is unplugged, through which the wires are *just* fused. This operation must be carried out with all the precautions mentioned in § 214. The resistance thus found should be less than the resistance in the circuit connecting the charges.

When testing a quantity dynamo, very short contacts must be made (about $\frac{1}{2}$ second), because the current increases if the wire be not fused immediately, and it is only the strength of the current on first making contact that can be relied on when firing charges.

*Namely 0.25" for the Service fuzes.