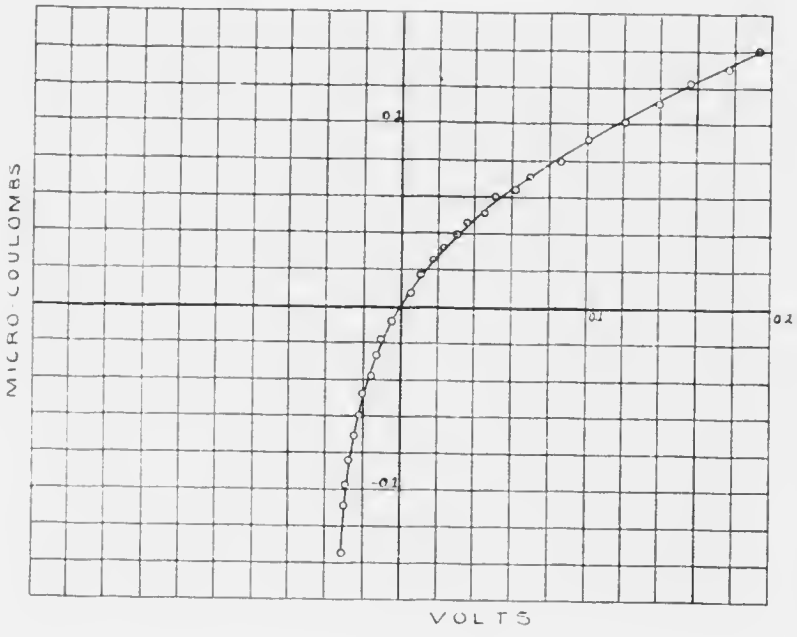

FIG 1

If C_2 is very large compared with C_1, this becomes $C = C_1$ and the apparent capacity is that of the smaller condenser. If C_1 is not sufficiently small, then C depends on C_2.

If we add a small charge, dq, to the electrometer, the capacity changes by the amount

$$d\,C = \frac{C_1^2 dC_2 + C_2^2 dC_1}{(C_1+C_2)^2}$$

So the change in observed capacity depends on $C_1^2 dC_2 + C_2^2 dC_1$.

In many of the observed cases dC_1 is negative, while dC_2 is always positive. If we assume that this is always true, then C may increase, decrease or remain stationary if $C_1^2 dC_2 - C_2^2 dC_1$ is greater than, less than, or equal to 0 respectively, or if $\frac{dC_2}{dC_1}$ is greater than, less than, or equal to $\frac{C_2^2}{C_1^2}$.

Examination of Figure 1 (which is for the case where C_2 is very large compared with C_1 and hence $C = C_1$) we see that the changes in capacity for negative charging are very large compared