with those with positive charging. The same must be true for C_2. Hence $\frac{dC_2}{dC_1}$ will be very large, as the slope of the tangent in the negative part of the curve changes very rapidly. So in case $\frac{C_2^2}{C_1^2}$ is not very large, we may have $\frac{dC_2}{dC_1} > \frac{C_2^2}{C_1^2}$ and then $dC > 0$ and the curve slopes upward in the positive portion.

In case $\frac{C_2}{C_1}$ is very large the curve will slope as in Figure 1.

Since in making these determinations of capacity, it is necessary to have the meniscus stop at the same point after the discharge into the standard condenser, the pressure requires adjustment to bring the meniscus to the proper final point. While it seemed unlikely that this small change of pressure would have any effect on the capacity, an electrometer was arranged to be placed inside a bell jar from which the air could be removed. This necessitated an arrangement for a wide change of pressure, which was accomplished without much difficulty. There is certainly no change in capacity due to change of pressure of an amount less than one atmosphere.

A striking example of the increase of capacity with negative charging of the electrometer was seen in the case of electrical oscillations of a system in which the electrometer was included. All attempts to build an electrometer with resistance low enough to obtain oscillations[1] with it in series with a self-inductance proved futile. But, by arranging a standard condenser in parallel with the electrometer and these in series with the self-inductance, oscillations are possible. Approximate theory shows that these are oscillations impressed on a logarithmic charge or discharge curve.

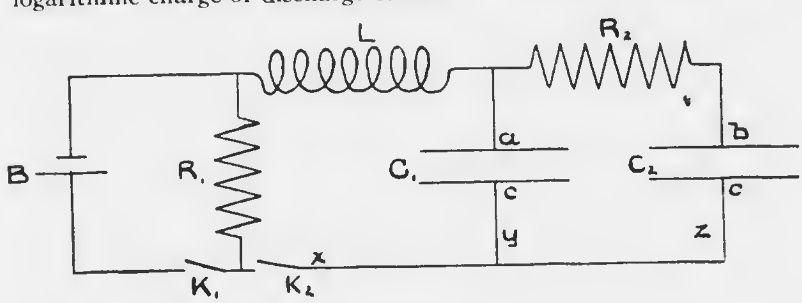

FIG. 2.

[1] In a later paper an oscillatory system will be described where the capacity is that of a pair of polarized electrodes.