opening K_2, or we may obtain the final potential of the system when it settles down after K_2 is opened.

Using $E_1 = \frac{q_1}{C_1}$ and $E_2 = \frac{q_2}{C_2}$

we have the potential of the condenser system at any instant

$$E = \frac{q_1+q_2}{C_1+C_2} = \frac{C_1 E_1}{C_1 + C_2} \left\{ \cdot 2715, \text{ etc.} \right. \qquad (16)$$

This equation plotted follows the general character of the experimental curve, but the amplitude is considerably greater. This is to be accounted for, probably in the emf of the concentration cell caused by the transport of ions in the acid solution due to the passage of electricity through it.

For making or breaking the circuit in this and other determinations of charge and discharge curves a Webster chronograph[1] was used. The potentiometer connections were led to a non-inductive resistance through one key of the chronograph. The self-inductance (·81 henries), and the electrometer and condenser in parallel, were connected to the terminals of the non-inductive resistances through the second key of the chronograph. The falling weight opens the two

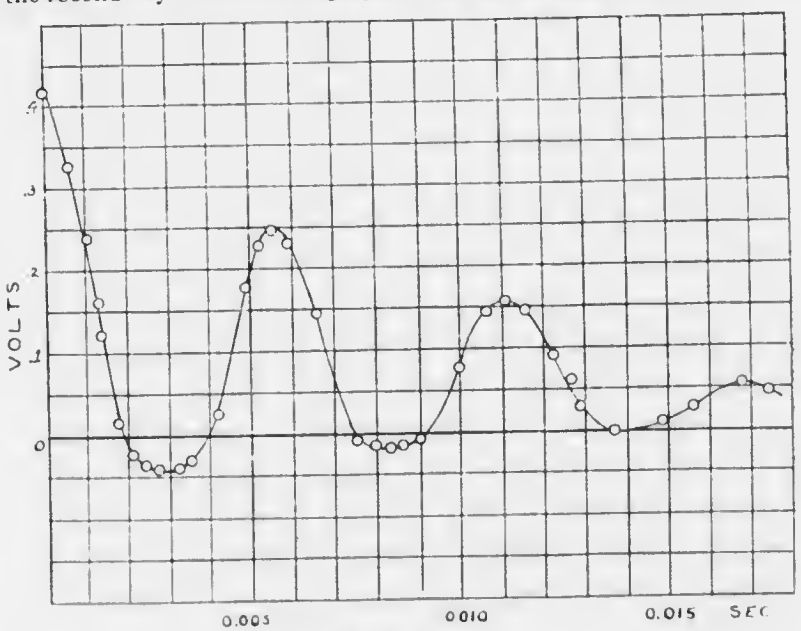

FIG 3

[1] Webster. Physical Review (I), VI, 297, 1898.