

down over them. Joints made in this way worked quite satisfactorily and besides being airtight they also afforded a means of readily taking the tube apart in order that plates of different thicknesses might be used for the end of the cylinder.

As before, the electrode *C* was insulated by melting sealing wax on the glass at *a* and *a'*, and the cylinder was kept connected to earth through the socket *H*.

Experiments were first made by exhausting the upper chamber, while the lower one was kept at atmospheric pressure. The disc *d* was taken from aluminium .04 mm. in thickness, and the coil was kept running during the exhaustion.

Various selections of the terminals *A*, *B* and *H* were made, but in no case, even with the lowest pressure obtainable, did the electrometer attached to the electrode *C* give the slightest evidence of any electric action.

The two compartments of the tube were then united, as shown in Fig. III, and provided with the

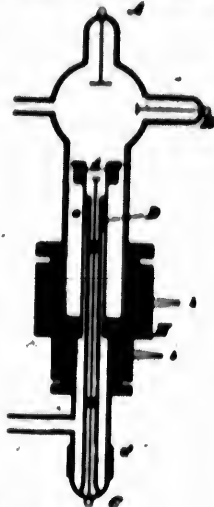


FIG. II.

taps *B* and *F*.

On then re-exhausting the upper chamber and keeping the tap *F* closed, no action was observed until a pressure somewhat lower than a millimetre of mercury was reached. At this point the electrometer began to gain a negative charge, and the action became more intense as the exhaustion proceeded. It was very strongly marked when *A* and *H* were the terminals, and was measurable, though feeble, when *A* and *B* were the discharging electrodes.

The effect appeared to be slightly greater when *H* was the cathode and *A* the anode, than when the opposite arrangement was made.

As the air in the lower chamber was at atmospheric pressure dur-

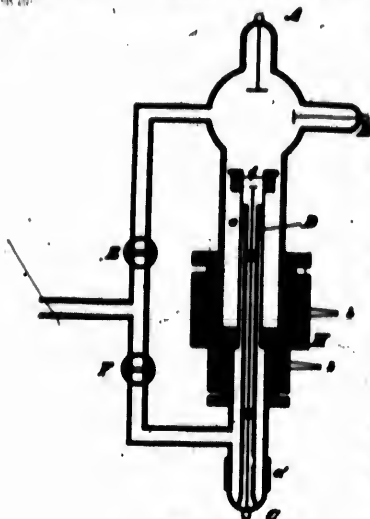


FIG. III.