

4. The results of these and earlier experiments on this reaction are summarized and interpreted.

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NOTE

Note on a Light Source for Continuous Spectrum.—Since the introduction of the photometric methods for the determination of the quantitative absorption of light by solutions, much difficulty has been experienced in finding a suitable light source. A Tesla spark under water fulfils most nearly the requirements but previous designs¹ of such lamps have not been satisfactory for general or continuous use.

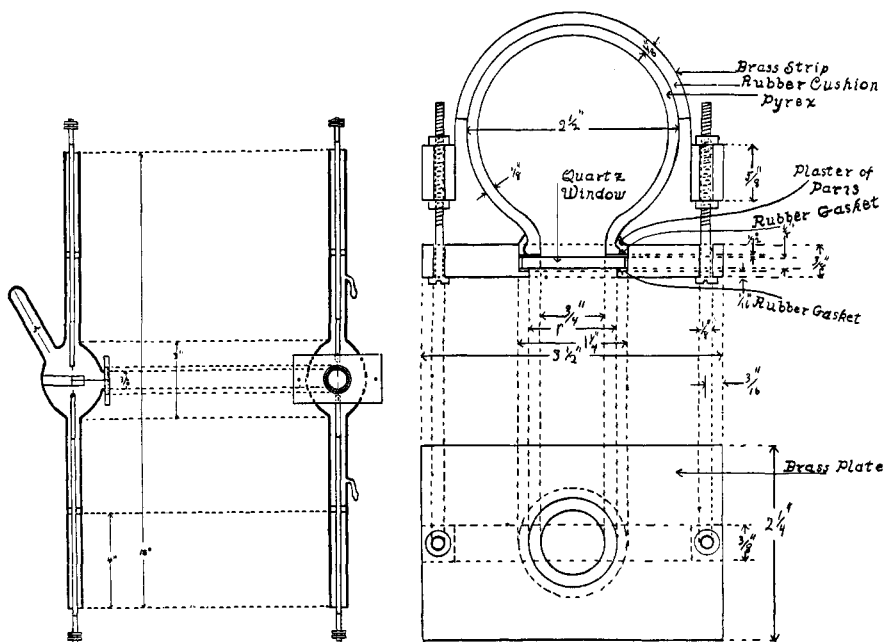


Fig. 1.—Continuous spectrum light source.

Fig. 2.—Continuous spectrum light source, detail of window clamp.

The accompanying cuts show the details of the completed lamp. Some points about its construction ought, however, to be mentioned. The glass sleeves carrying the brass rods are fire-polished until the inside diameter is slightly less than the diameter of the brass rod. The split end of the brass rod is then compressed and used to grind one end of the glass sleeve until the rod passes through to the other end where the grinding is continued. The two ground ends hold the brass rod rigidly in position.

¹ The most recent of these is described in the Bureau of Standards Scientific Papers, No. 440.

These prepared glass sleeves are placed on a 20-inch piece of the same brass rod and the whole is placed through the glass jacket of the lamp where the parts are held in position by a rubber stopper at each end. The plaster of Paris is then poured into the ends. After the plaster has set the long brass rod is replaced by the two split-end rods into which have been inserted the wires employed as electrodes. No. 16 drawn brass wire gave the best results.

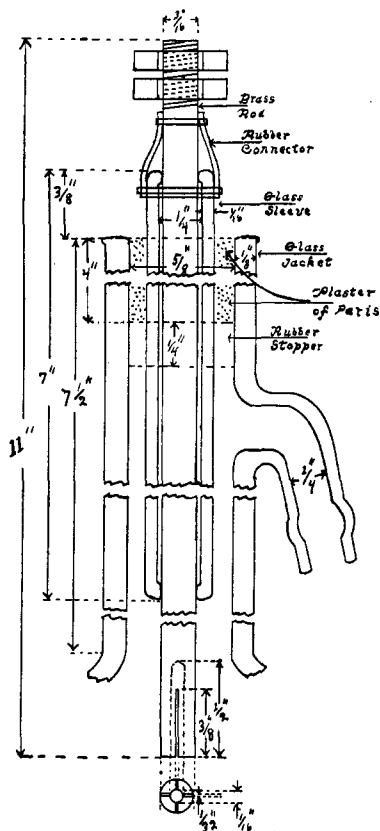


Fig. 3.—Continuous spectrum light source, detail of top end.

Earlier models of the lamp were made without a side tube, but without this cushion the bulb was frequently broken or the quartz window loosened. A lamp of this type has been in use in this Laboratory for three years.

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