

2. E should be of sufficient volume below G to prevent air from entering the syphon between A and E while filling the burette.

3. The side opening I prevents air bubbles from entering the syphon.

4. D should be of sufficient volume below H to prevent breaking the syphon between D and B. A four or six ounce salt-mouth bottle serves the purpose.

5. C must extend above H.

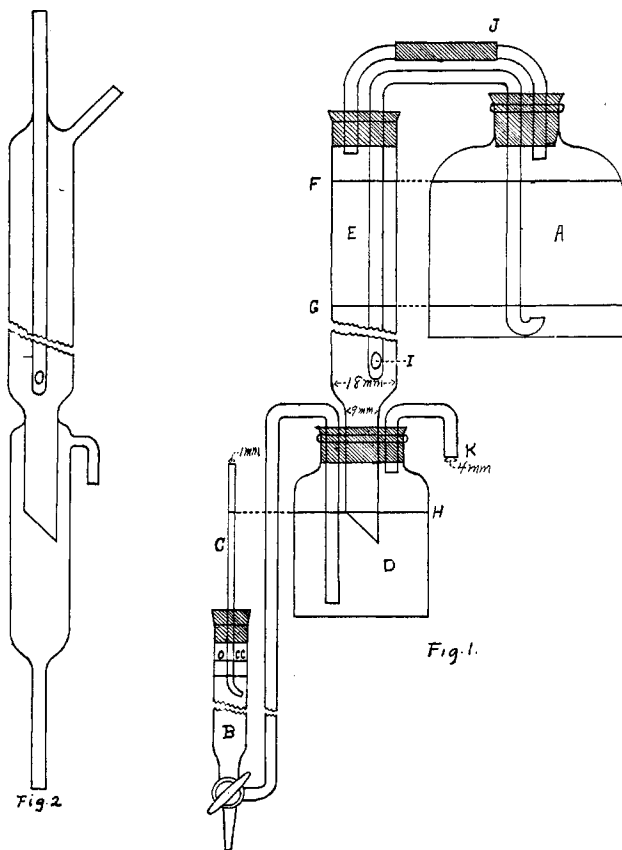


Fig. 1 represents an arrangement for use of liquids which must not be permitted to come in contact with rubber. A silver stopcock permits the use of lye. When this precaution is not necessary the container A may be stoppered with a one-hole stopper bearing a glass tube corresponding to the lower end of E, which in turn is inserted in D inverted. A and D are now inverted and placed on a support and B connected as in Fig. 1. This eliminates E and its connections.

In order to fill the syphon shown in Fig. 1, the air passage is disconnected at J and pinched. Apply suction to a rubber tube connected to K, and bearing a pinch-cock, till D is filled. Close the pinch-cock, connect J, fill B by suction applied to C, and remove the rubber tube from K.

By regulating the height of the lower end of C, the burette may be adjusted to deliver any desired volume.

Fig. 2 represents a form of apparatus which would eliminate two rubber stoppers and all inconvenience arising from the leaks which they develop upon

deterioration. This could be obtained from any glass-blower.

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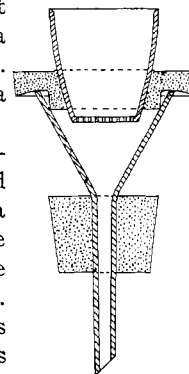
IMPROVED GOOCH CRUCIBLE HOLDER

By LORIN H. BAILEY

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There have been developed in the Bureau of Chemistry several forms of Gooch crucible holders. Each form, while differing somewhat in detail from the others, has for its foundation principle the substitution of a solid rubber holder for the rubber-covered glass Gooch holder which has been in almost universal use. The particular form shown in the accompanying illustration has been in use in the Plant Chemistry Laboratory for about a year and has given good satisfaction. It has also met the approval of a number of visiting chemists.

This holder is made to fit an ordinary 2-inch funnel which is inserted in a one-hole rubber stopper in a regular suction flask. The upper edge of the holder projects over the edge of the funnel and thus makes the seal. The lower edge of the holder rests on the side of the funnel and supports the holder when the suction is on the flask. The opening is made to conform to the size of the 25 cc. porcelain Gooch crucible, and the lower surface of the crucible projects beyond the holder so that the filtrate does not come in contact with it. These holders can be cut from No. 12 rubber stoppers, which was at first done, or they can be obtained already molded from some of the large chemical-apparatus supply houses.



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NOTE ON PRODUCER GAS ANALYSIS

By JAMES G. VAIL

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In the analysis of producer gas with the Williams modification of the Orsat apparatus or with Morehead apparatus the residual gas after the absorption of CO_2 , illuminants, O and CO in the usual manner is often too lean to be exploded without the addition of hydrogen. As there may be a certain amount of inconvenience and some uncertainty as to the purity of the hydrogen, I have found the following procedure more satisfactory for enriching the gas to a point where it may readily be made to explode. After the usual absorptions CO_2 , illuminants, O, CO, the residual gas is passed into the CO_2 absorption pipette or into the reservoir provided for the purpose in the Morehead apparatus and the measuring burette filled with water (acidified with sulfuric acid) which has previously been cooled to room temperature. A current of 6 or 8 volts passed between the electrodes used for the explosion will quickly produce enough of