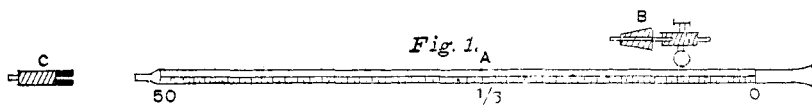


XXXI.—ON A MODIFICATION OF MOHR'S BURETTE ADAPTING IT  
FOR USE IN MEASURING CORROSIVE SOLUTIONS, ETC.

BY NELSON H. DARTON.

All who have frequent occasion to use the burette well know that the form contrived by F. Mohr is pre-eminently the most convenient, and that solutions may be delivered from it with less care, and, as I have found in a somewhat extended experience, greater accuracy than any other form. But as the solution of that much used reagent, permanganate of potassa, and some others, speedily destroys and is contaminated by the caoutchouc tubing attached, an instrument is required which will readily deliver the solution without having to come in contact with any organic bodies (this also applies to the delivery pipette). To accomplish this end, the Gay Lussac, Geisler, and Beck's burettes have been suggested, and extensively employed, but to me, at least, they have never given entire satisfaction. As I have had to use the burette so extensively myself, all the technical processes of my laboratory being executed by volumetric analysis, and I am now writing a work on that subject, that I perhaps have felt the need of a proper instrument more than the majority of dentists. So to obviate the difficulties in the above burettes, I have contrived a form which I have termed a modification, and after using it for some time with the most satisfactory results, I have come to the conclusion that it is perfect in all its applications. The following is a cut and description of this useful instrument:



The body, graduated as in the other forms, is drawn out and ground underneath to a perfectly plane surface, having the fine orifice in the centre; the stem should be about 15 m.m. long. While filling from above, holding a solution more than a half hour, etc., a small stopper *c* is used. It consists of a small piece of caoutchouc tubing, sufficiently large to fit over the stem tightly, and bearing a piece of glass bar half-way up its length, the upper end of which is ground to correspond with the under surface of the stem; this, when adjusted, forms an air-tight connection. The other end of the instrument is flared to receive a stopper, through which passes a glass

tube bearing a rubber tube, and pinch-cock, which is used to control the access of air through a small glass jet attached, thus allowing the solution to run out as required. The pipette is similarly constructed. The rubber tube connection shown in the cut as 5 c.m. long, is in practice as long as the burette, and the cock is thus placed at the hand of the operator as he is seated. In filling the burette, the jet is attached to the tube from the aspirator, the cork above the jet is opened, and a beaker full, or the required amount of solution in a beaker, placed under the stem; the aspirator cock is opened for a sufficient length of time, and the burette thus filled. In a very fine orifice burette, we may use two pinch-cocks, 5 c.m. or so apart, to control the access of air.

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### XXXII.—NEW FILTERING APPARATUS.

By P. CASAMAJOR.

In the year 1875,\* I published descriptions of two funnels for filtering under pressure, one of which was to be applied to the method of filtration proposed by Dr. H. Carmichael, and described in the "Select Method of Chemical Analysis," of Mr. William Crooper (p. 429). In this method, the liquid is separated from the precipitate by the agency of a small disk of filtering paper, held against the perforated surface of a vessel, the interior of which communicates with an aspirator. This vessel, having the paper disk held against it, is placed directly in a platinum or porcelain dish, in which the precipitate is to be afterwards heated.

Dr. Carmichael made his vessel, communicating with the aspirator, of glass, but his method for making perforations on the flat side of this vessel was, to say the least, so very difficult, that very few chemists had succeeded in applying his method of filtration. The funnel which I used for the purpose, was of glass, the shape being that of a Platner's blow-pipe mouth-piece. The mouth of the funnel was closed by a small disk of filter paper, resting on a perforated platinum plate. This plate was also circular and slightly smaller than the disk of filtering paper. Both the perforated plate and disk of filter paper were held tightly against the funnel by the suction of an aspirator.

In the same paper there is a description of another funnel, to be used with the same filter, but, in using this funnel, whose shape is

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\* *American Chemist*, 5, 440, and *Chemical News*, 32, 46.