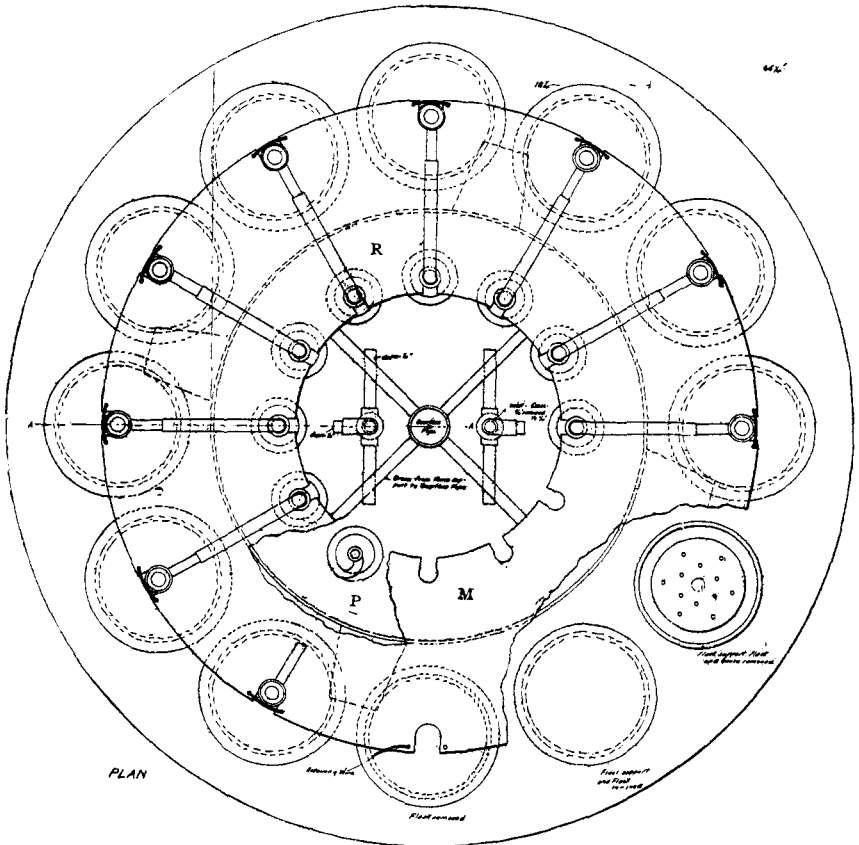


AN IMPROVED FORM OF AMMONIA STILLS.

BY GEORGE EDWARD THOMAS AND CLAUDE M. DUGAN, JR.

Received December 27, 1904.

THE apparatus represented in the accompanying drawings has been devised to meet the demand for a design more compact than those now used.



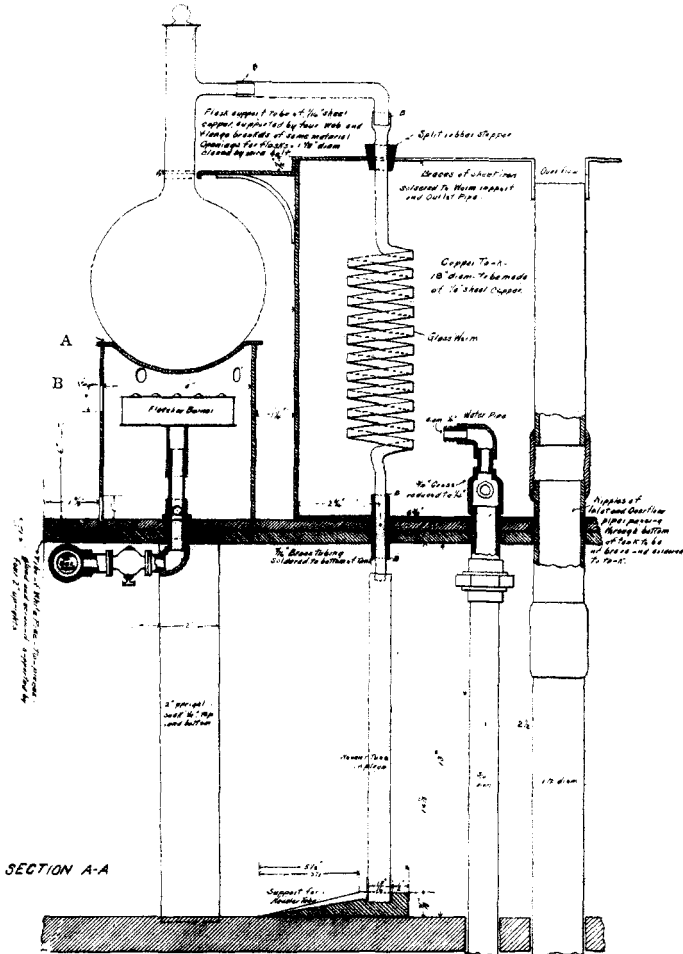
R—Glass connections. Flask to worm.
 M—In this section of three, flask connections and worms are removed, showing openings in support for the rubber stoppers through which upper end of worms pass.
 P—Support removed, showing glass condenser worm.

Fig. 1.

Figure 1 shows the plan of a battery of twelve stills. The flasks rest on wire gauze, supported on round cans of $\frac{1}{8}$ -inch sheet-iron with locked seams. These are perforated to aid combustion, as well as to facilitate the lighting of the burners, which are of

the Fletcher pattern, as shown in Figure 2. The gas supply is governed by individual cocks beneath each burner, and a valve connected with the main pipe.

The flasks are joined to the worms by the side necks, which enter the tube C, and in turn are connected with the worms.



A—Flask supported by copper gauze.
 B—Flask base to be of best quality sheet iron 1/8" thick—locked seam—simply a round can without top or bottom—four 1/2" round holes 3/4" from top edge and one 1" opening to allow tightening of burner and semi-circular opening at bottom for air inlet as shown.

Fig. 2.

and so arranged that the rubber tubing B and B does not come into direct contact with the steam.

The worms of glass, or block-tin, are secured to the condenser

tank by slit rubber stoppers, which fit in sockets in the sheet-copper, partially covering the condenser, and at the bottom are bound by rubber tubing, beneath and above, to the brass tubes soldered to the floor of the condenser. The provision for independent worms relieves the necessity for putting the whole system out of service for repairs. The condenser is of $\frac{1}{8}$ -inch copper, 24 ounces per square foot, partially covered by the sheet-copper, as mentioned, which is stiffened by braces soldered to the overflow pipe, also extending beyond its walls, acting as a support for the flasks, which are held in position by the bolts *d*.

The water is supplied by pipes *a* and *a*, and removed by the overflow pipe *e*, insuring satisfactory circulation.

The apparatus is supported on a circular shelf 36 inches in diameter (Fig. 3), which rests upon an octagonal table 52 inches wide, having two funnels on either side connected with the overflow pipe for convenience when washing the Nessler tubes. These are held in position by sockets beneath each worm, and, when not in service, are stored on shelves beneath the table.

CITY HALL, PHILADELPHIA.

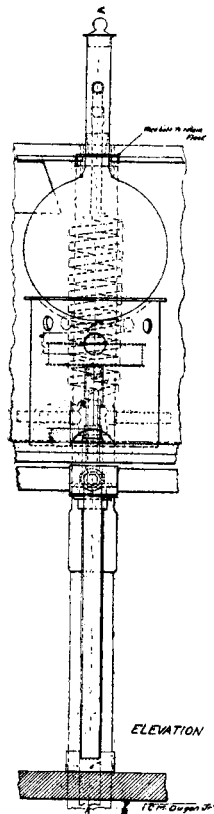


Fig. 3.

NOTES ON THE DETERMINATION OF NITROGEN AS NITRITES, IN WATERS.¹

BY ROBERT SPURR WESTON.

Received January 12, 1905.

THE determination of small amounts of nitrogen as nitrite is usually made by one of three methods, namely, the iodometric method,² the metaphenylene-diamine-method,³ or the naphthylamine method.⁴

¹ Read at the Philadelphia Meeting of the American Chemical Society.

² *Pharm. Trans.*, 1881, 286.

³ Sutton's "Volumetric Analysis," 8th Ed., p. 435.

⁴ Warrington: *J. Chem. Soc.*, 1881, 231.