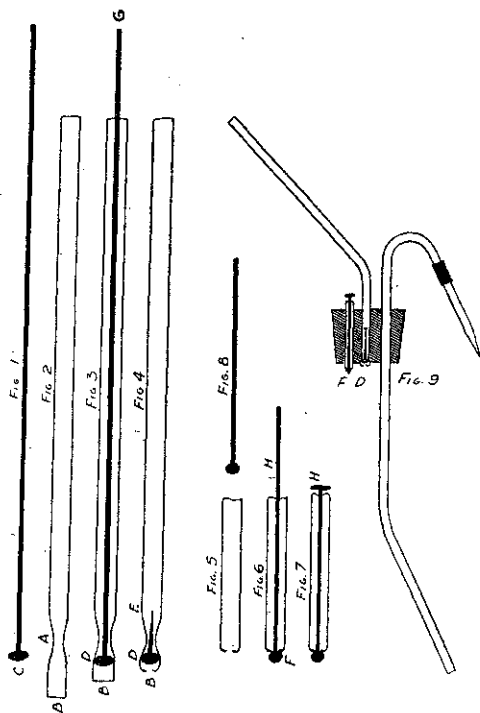


## WASH BOTTLE VALVES.

By E. W. GAITHER,  
Wooster, Ohio.

Use  $\frac{1}{8}$  inch medium wall soft glass tubing, heat on narrow flame, draw out stricture A (Fig. 2), cool and cut off  $\frac{3}{8}$  to  $\frac{1}{2}$  inch below stricture at B. Heat B and spread by inserting blunt ended piece of charcoal; heat again and make valve seat by rotating charcoal. This makes a wide angle seat and prevents the valve sticking.



Make an oval bead C on end of a glass rod (Fig. 1) cool, insert in tube as shown in (Fig. 3) add a little water and emery flour and grind seat D by rotating glass rod at G. When seat is thoroughly ground, wash out emery, draw out rod, cut off at E thereby dropping back into place, using a very small blast flame, heat tube at B and turn edges in so as to hold valve in place (Fig. 4). Cool and bend tube for mouthpiece. Cut a piece of glass tubing about 2 inches long (Fig. 5) and partly seal one end for valve seat. Make a round bead on end of of glass rod (Fig. 8), grind valve seat F, cut off  $\frac{1}{2}$  inch longer than tube at H, partly seal the other end of tube and make irregular by pressing it slightly while hot, cool, insert valve and flatten end at H by heating. Assemble as in (Fig. 9).

By blowing through mouthpiece, valve F is closed, back pressure closes D, and flow of water continues until pressure is relieved by pressing down on F with thumb.—*The Chemist-Analyst*.