

of foil are placed, as indicated, just in the openings of two tubes filled with water containing about one-tenth of its weight of sulphuric acid and inverted in a dish containing more of the same solution. On turning on the current, bubbles of gas will collect on the electrodes (foil) and break away from them, rising into the tubes. It will be noticed that half as much gas collects in one tube as in the other; and, by applying proper tests (such as introducing a glowing wood splinter), the gas in smaller volume is found to be oxygen. The other gas is hydrogen.

The most convenient method of preparing hydrogen for laboratory purposes is by acting on an acid, such as sulphuric or hydrochloric, with a metal such as zinc or iron.



Hydrogen mixed with air explodes on ignition; therefore, do not bring a flame near any apparatus generating hydrogen, unless special precautions have been taken.

EXPERIMENT.—Fit up an apparatus, such as is illustrated in the figure, being very careful that the joints are air-tight. Place in the flask a small handful of granulated zinc and pour down the thistle-funnel enough dilute sulphuric acid to cover it, taking care that the end of the thistle-funnel is covered also. Allow the gas to come off until the air has been displaced from the apparatus, and then collect a test-tube full over the pneumatic trough, light it, and observe whether there is a slight explosion or not. If there is none, collect two bottles full. The ZnSO_4 (zinc sulphate) formed remains dissolved in the water.

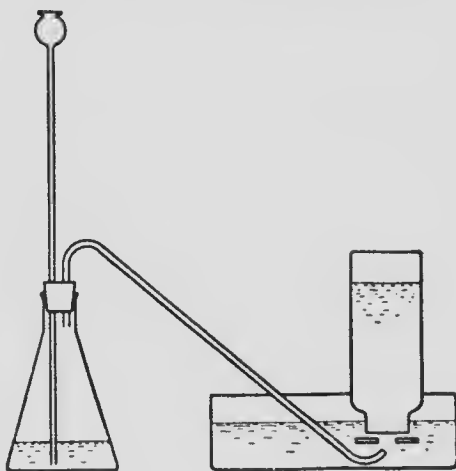


FIG. 7.