

A Modified Kipp Generator.—The diagram, Fig. 1, shows a gas generator which can be used to take the place of a Kipp. Especially adapted to individual student use in qualitative analysis, it ensures a ready supply of hydrogen sulfide gas at any moment.

Three gas bottles (ordinary gas collecting bottles will do just as well) are connected as shown. The reservoir bottle, *a*, which is free to move, contains a three hole stopper. A thistle-tube is inserted in one hole, a bent glass tube extending almost to the top of the bottle in the other hole, while through the third hole is inserted a short piece of glass tubing, *d*. A rubber tube (about 6 mm. bore) has one end attached at *d* and the other to the glass tube at *e* of the bottle *b*. Tube *f* extends almost to the bottom of the bottle *b*, and to the top of the stopper of bottle *c*. The other hole of the generating bottle *c* contains a piece of bent glass tubing closed by a pinch-cock, as shown.

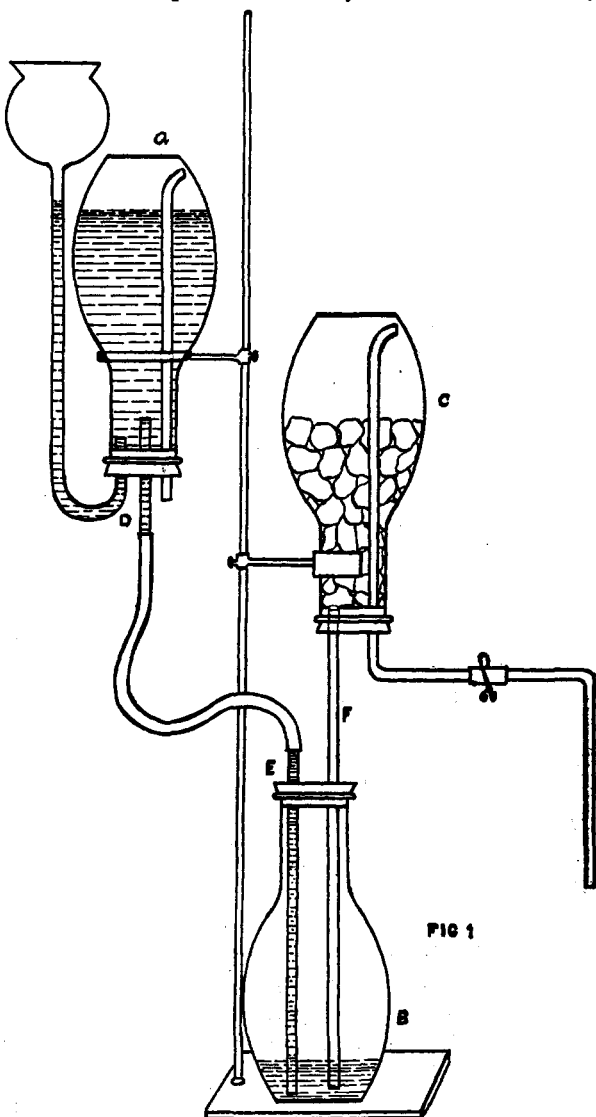
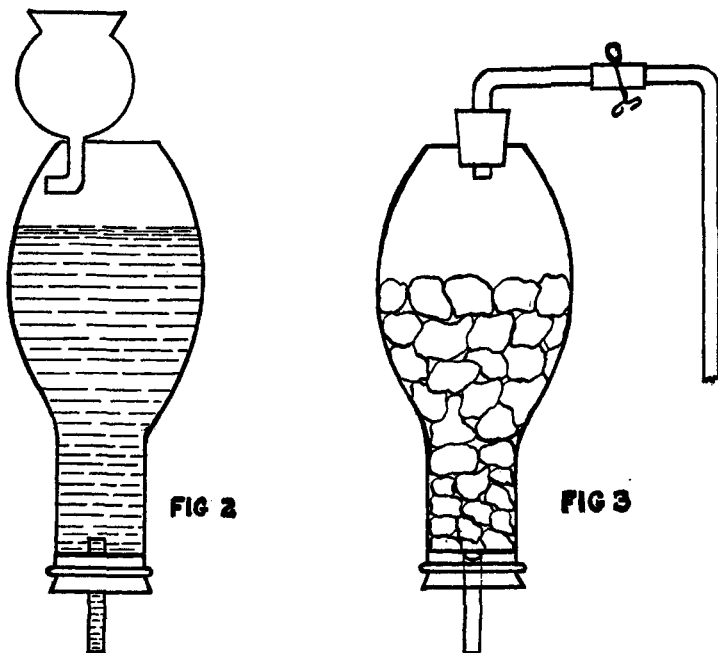


FIG 1

The stopper of bottle *c* is removed, carrying with it the stopper of bottle *b*. Bottle *c* is then filled with the necessary material and the stopper inserted. The other stopper is then inserted in bottle *b*. The clamp is then attached as shown.

The reservoir bottle is filled with the proper strength of acid by means of the thistle-tube. Opening the pinchcock forces acid up into the generating bottle, while closing the pinchcock drives acid automatically back into reservoir bottle. Since the upper end of tube *f* is level with the



stopper, no acid remains in bottle *c*. To empty the generator of spent acid, detach bottle *b*, pour out the contents, replace the bottle and fill again.

Fig. 2 shows another type of reservoir bottle while Fig. 3 shows still another form. The use of gas bottles with openings in them can be substituted.

The unique advantages of this generator are:

1. Slight possibility of large pieces of material getting into the reservoir bottle and rapidly diluting the strength of the acid.
2. Rapid change as a generator for one gas to that of another by adding proper materials.
3. A regulating pressure device by sliding the reservoir bottle up and down the iron rod.
4. And finally, it is quickly constructed, portable, cheap and its capacity can be readily increased.

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