

the mercurial barometer, less the tension of aqueous vapor. That is to say, when the barometer is at 30 inches, the vacuum produced by the aspirator will be about 29½ inches. Such a vacuum can be produced by water under a pressure of five and one-half pounds.

In Fig. 4 is shown the aspirator applied to a Geissler tube. It quickly exhausts an 8-inch tube, so that the discharge of an induction coil will readily pass through. By placing a tee in the connecting pipe, the Geissler tube can be filled with different gases. Each will exhibit its peculiar color as the spark passes. The vacuum is not high enough for a perfected Geissler tube, but it is sufficient for the greater part of vacuum experiments. The aspirator can be arranged to produce a continuous blast sufficient for the operation of a blow-pipe, and for other uses requiring a moderate amount of air or gas under pressure.

The method of accomplishing this is illustrated in Fig. 5. The instrument is arranged to discharge into a bottle or other vessel having an overflow, and the air for the blast is taken out through the angled tube inserted in the stopper of the bottle. The amount of air pressure is regulated by the water pressure and the height of the overflow pipe.

For many vacuum experiments a plate provided with a central aperture, and having a tube extending from the aperture to the edge of the plate, will be found useful. The tube is provided with a suitable valve, which closes communication with the aspirator, and which also serves to admit air, when required, to the receiver fitted to the plate. This plate and accessories are like the plate and accessories of a piston air pump. Communication is established between the tube of the plate and the aspirator by means of a pure rubber tube which is practically air tight.—*Scientific American*.

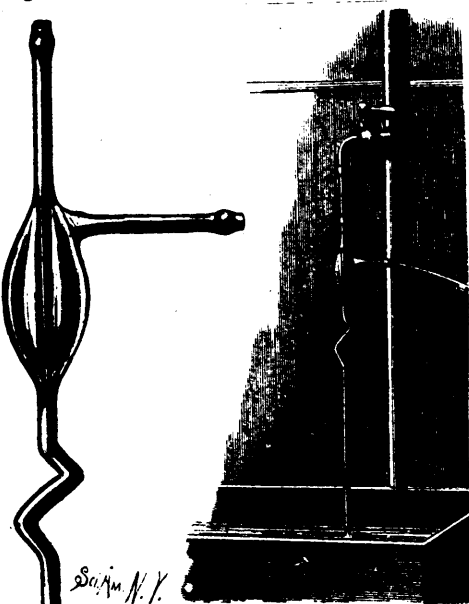


Fig. 1.—BUNSEN FILTER PUMP.—Fig. 2.

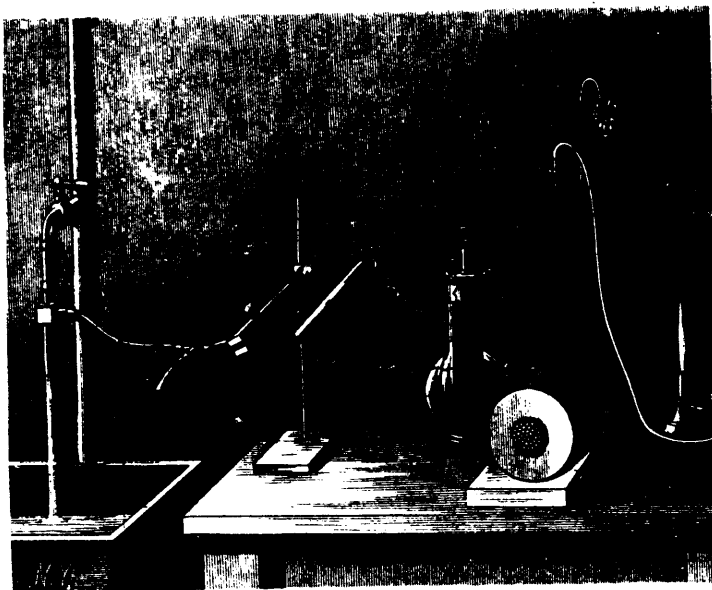


Fig. 4.—EXHAUSTING GEISSLER TUBE.

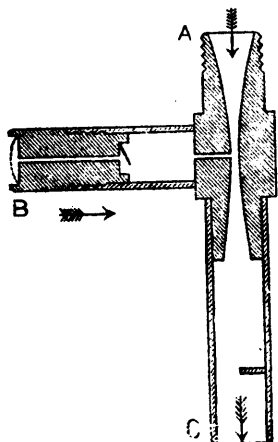


Fig. 3.—METAL ASPIRATOR.

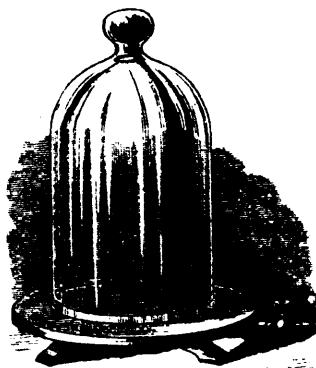


Fig. 6.—PLATE AND RECEIVER FOR ASPIRATOR.

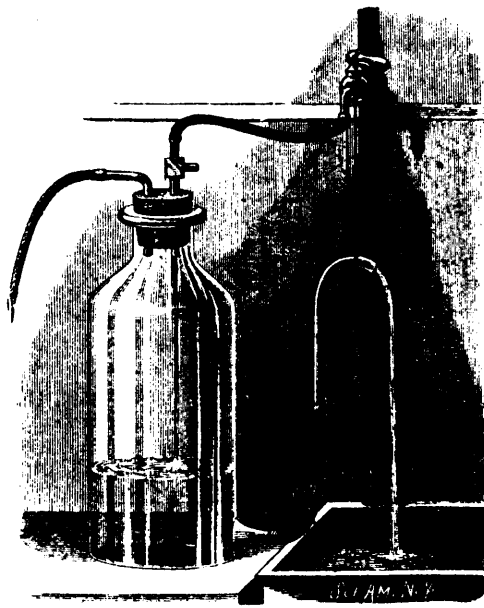


Fig. 5.—BLAST PRODUCED BY THE ASPIRATOR.