

FIG. 2.—PRINCIPLE OF THE TROMP.

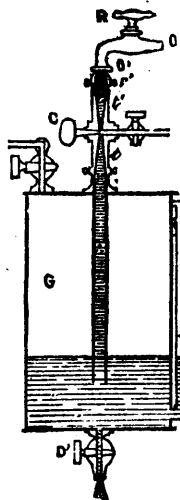


FIG. 3.—SECTION OF THE APPARATUS.

remains now to explain the mode of operation of the apparatus. The tromp is based upon the principle of the Giffard injector, and was devised in 1872 by Mr. Lane, a pupil of Deville's. Shortly after that period, the brothers Alvergriat put the first models of the apparatus into the market, and the use of them has now become general in laboratories.

The tromp, which is made of glass, consists of two conical nozzles, A and B, arranged as shown in the diagram in Fig. 2. The water enters through the faucet, R, passes from cone A into cone B, as in the injector, and, on making its exit, carries along with it the air that it has sucked in at T. The water that flows out at E is thus mixed with air. The suction of the tube, T, is very strong, and, upon putting the tube in communication with a bell glass, it is possible to obtain a maximum vacuum, which varies in winter and summer according to the tension of the aqueous vapor.

The apparatus may be made of metal. Mr. Alvergriat, in his new apparatus, has connected the two cones at G (2, Fig. 2), and left but one aperture, H, or two apertures, as shown in Fig. 3, which represents one of the metallic tromps at *t t'*. The tube through which the water flows is prolonged in a metallic cylinder, G. If the lower cock, D', be nearly closed, a certain quantity of water will accumulate in the cylinder and compress the air therein, and the latter will escape under pressure, through the cock at the top. It is possible to obtain a pressure of 0.10 m. of mercury. The discharge of compressed air is regulated through the cock, D'.

This exceedingly practical apparatus is destined to render valuable services to physiologists, botanists, and all laboratories of science.—*La Nature*.

CAPITALISTS AND INVENTORS.

Inventors often complain of the difficulty experienced in inducing capitalists to join them in their enterprises. No doubt there is often good ground for such complaint. Not infrequently, however, we think the blame rests as much with the inventor as with the man of money. It must be remembered that usually the inventor studies the field more closely than the capitalist, because he has more time, and his attention is more closely directed to the investigation. It can hardly be expected that the man who devotes one hour to a superficial investigation of the subject can explore it so deeply and satisfactorily as the one who has given to it months and perhaps years. The capitalist is often blamed for not seeing into the advantages of an enterprise, when the fact is it has never been presented to him in the right light. Some one makes an important discovery, which, if utilized, will seemingly yield large results. Capital is invoked, but no systematic method is employed to demonstrate that the returns for an investment in working this new field of discovery will yield profitable results. Inventors too often think that capitalists should take their simple assertion that the invention will yield large returns. This would be very well if inventors as a class were not over-sanguine, and their predictions in a business way did not so frequently prove futile.

Every investor has a right to have some reasonable assurance that his money will be spent in a profitable direction. Money is the great lever that moves the world. If judiciously employed, it is a source of great gain; if wrongly employed, it too often becomes powerless for good. Every man, therefore, who would seek the aid of capital in furthering his plans