

machine (Fig. 3) was the one in general use on board the "Challenger."

Time required for sounding in deep water.

From the Narrative of the Cruise we get the following particulars regarding the time required for sounding in deep water:—

Station 81. Began sounding 5 P.M.; found bottom at 2675 fathoms; finished hauling in at 6.20 P.M.

Station 225. Began sounding 12.30 P.M.; found bottom at 4475 fathoms; finished sounding at 3 P.M.

We see, therefore, that sounding in about 3000 fathoms took nearly an hour and a half, whereas for about 4500 fathoms two and a half hours were required, which must be considered very quick work. On the same line and with the same arrangement as for sounding, series of temperatures were taken and deep-water samples obtained.

Method of dredging and trawling.

Heavy lines and strong accumulators were, however, necessary for the dredge and trawl, which were each fastened to a stout 2-inch line, paid out through a block attached to the big accumulator (see Fig. 2). From 300 to 500 fathoms first ran out, then a weight of about 80 kilos was allowed to slide down the line till it was stopped just a little in front of the appliance. The weight consequently reached the bottom before the appliance, with the result that this latter merely skimmed the ocean floor.

All this time the ship lay with her head to the wind to enable the appliance to reach the bottom, for which operation about three hours were required. When all was in readiness the ship was allowed to drift with the wind abeam, and thus towed the dredge or trawl along.

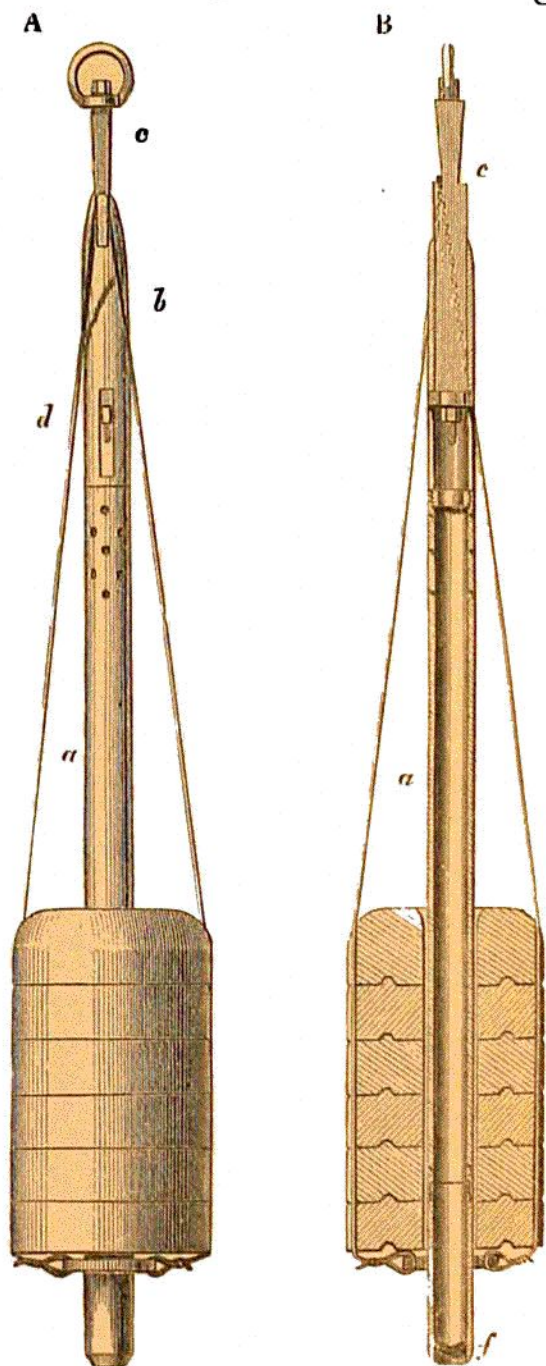


FIG. 3.—BAILLIE SOUNDING MACHINE. The tube (*f*) was generally made to project 18 inches below the weights (*e*).