

It will be evident from this description that the whole secret of the successful disengaging of the weights at the bottom rests on the spring of the rod being nicely adjusted as to strength—that is, it must not be so strong as to push the wire off the stud directly a portion of the weight of the sinkers is removed by letting go the line, and it must be strong enough to spring sharply back into its place directly the whole weight is removed. The system adopted was to ease the sinkers down without jerks for about 400 or 500

fathoms, so that when the line was eventually let go the friction of the 500 fathoms of cordage passing through the water above the rod was sufficient to keep the requisite strain on the spring. By letting go the line suddenly when the sinkers were near the surface, they were found frequently to disengage at once.

The Baillie rod (which is an invention of Navigating Lieutenant Baillie, R.N.) is a much better apparatus than the Hydra rod, as the arrangement for disengaging the sinkers is entirely independent of springs. It consists of an iron cylinder with a butterfly valve at the bottom *f* and a brass tube *b* on the top, which screws on to the cylinder (see fig. 14). The brass tube is bevelled at its upper end, and in it is a cylindrical iron weight *c* which slides backwards and forwards, the length of movement being regulated by a slit *d* cut in the side of the brass tube *b*, through which a stud, fastened on to the weight, projects. Attached to the upper part of the weight is a flat bar of iron, which protrudes through another slit, cut in the pointed top of the brass tube, and this bar moves in or out as the weight is moved backwards or forwards. The upper part of the flat bar is narrowed abruptly so as to form two shoulders, and the distance of these shoulders from the weight is so regulated that when the stud fastened to it is at the upper end of the slit these

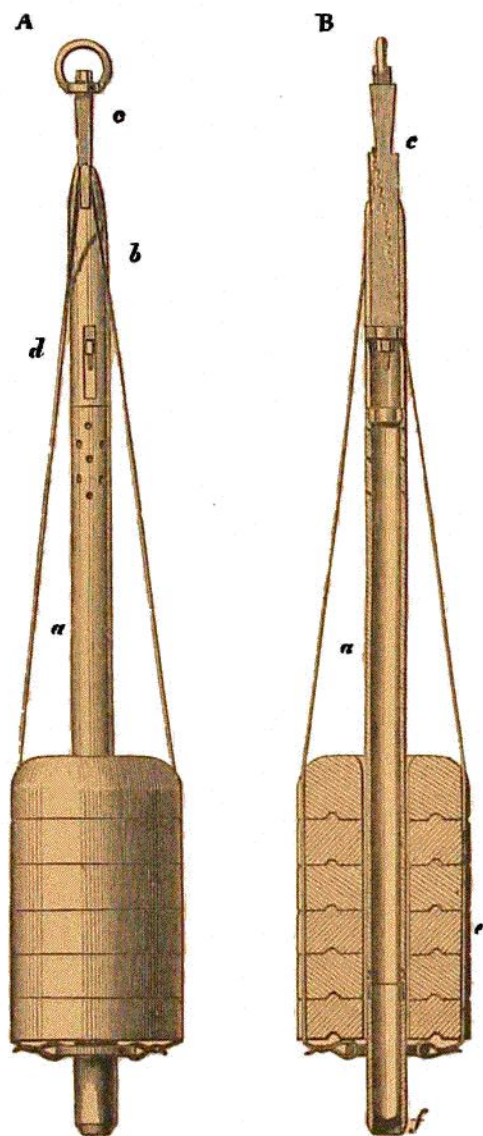


FIG. 14.—Baillie Sounding Machine.

shoulders are above the brass tubing, but when the weight falls down, and the stud rests on the lower end of the slit, they are concealed by the tubing, which thus forms a sort of sheath for the shoulders. The upper part of the bar is furnished with a ring to facilitate the attachment of the lead line. When the sounding rod is lifted by this ring the weight inside the brass tubing is pulled up until the stud fastened to it is at the upper end of the slit at the side of the tubing, and consequently the shoulders on the iron bar are above the head of their conical sheath, and so long as the rod is suspended