

are absolutely correct, the cooling of the solid parts of the apparatus accounts for the difference of two-hundredths of a degree, which is a very probable value. This is an instance chosen at random from a vast number of observations, and proves how accurately deep-sea temperatures can now be determined.

Ekman
reversing
water-bottle.

V. W. Ekman has constructed an apparatus to serve as a reversing mechanism and a water-bottle at the same time. The apparatus is made of brass, and consists of a frame carrying inside a cylinder pivoted on an axle at the middle of the frame (see Fig. 163). At either end of the cylinder there is a lid, to which are attached two pairs of levers fastened to the frame near the axle of the cylinder. The cylinder can be placed in such a position that both lids are open, and it is kept in this position by means of a small pin, seen at the top of the frame on the right. Thus adjusted the water-bottle is let down into the sea. A messenger is sent down after it and knocks out the pin; the cylinder is poised in such a way that it turns over in the frame. The levers gradually draw the lids closer, and when the cylinder is wholly reversed it is held fast by a catch and encloses the water-sample hermetically. To the side of the cylinder is attached a metal sheath for holding a reversing thermometer, which is consequently reversed along with the water-bottle. This apparatus may be fastened anywhere on the line, and a number of them may be used at the same time, in which case the messenger-release is arranged in the following manner: In the figure a messenger is seen hooked on to a small bar underneath the water-

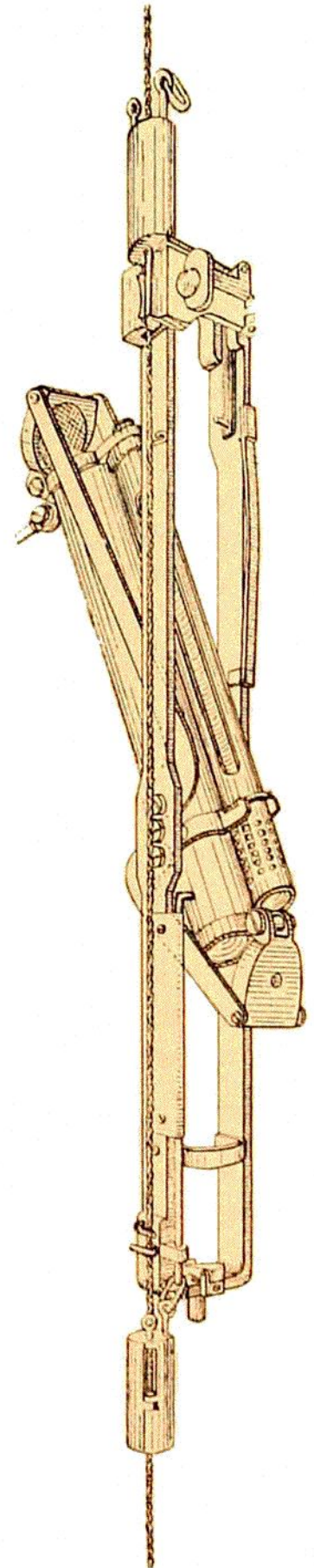


FIG. 163.—EKMAN'S REVERSING WATER-BOTTLE IN PROCESS OF BEING REVERSED, AND SHORTLY AFTER BEING RELEASED.