'Hydra,' in recognition of its inventor and of the vessel in which it was first used.

The axis of the 'Hydra' (Fig. 42) is a strong brass tube, which unscrews into four chambers. The three lowest of these are closed above by conical valves opening upwards, but not fitting absolutely tightly, so as to allow a little water to pass; and the lowest chamber B is closed by a butterfly valve also opening upwards. The upper (fourth) chamber A contains a piston, and the piston-rod C is continued upwards into a rod which ends in the ring to which the sounding-line is attached. The upper chamber in which the piston works has a large hole on either side about the middle of its length, and a small hole passes through the piston itself. Projecting from the upper part of the rod there is a notched tooth D, and over the tooth passes an arched steel spring, with a slit which allows the tooth to pass through its centre, and its two ends fastened moveably to the rod. When the spring is forcibly pushed back, it allows the tooth with its notch to protrude through the central slit. The weight consists of three or four cylinders of iron F, toothed and notched so as to fit into one another and make one mass. The weight used in the 'Porcupine' was from two to three hundredweight, according to the depth. The weight is suspended by an iron wire sling which passes over the notched tooth, the spring having been pressed back. The weight is amply sufficient to retain the spring in that position.

The figure represents the instrument prepared to let go, the whole weight suspended from the ring at the top of the piston-rod, which is thus fully drawn out