described hereafter; to the other a small tackle was hooked, to haul the rope close to the ship's side when required. The dredge or trawl being ready to go over, the ship was put before the wind, and the jib hoisted, the wind being kept a little on the quarter of that side of the ship it was intended to work from, in order to drift the dredge clear of the propeller. The dredge was now triced up to the block below the accumulators, and the burton on the mainyard hauled out until the dredge plumbed the sea; it was then lowered down a fathom or two below the surface, and the rope checked, so that from the platform the tangles might be seen to trail clear of the dredge-bag. This having been satisfactorily ascertained, the rope was let go and allowed to run out freely, the ship forging slowly through the water, leaving the dredge to sink astern, and thus preventing all chance of fouling. The rope was checked occasionally to ensure its being taut from the dredge.

When from 300 to 500 fathoms had been paid out, a toggle was lashed to the rope, which was then let run until a sufficient quantity had been paid out to allow the toggle to reach the bottom were the line perpendicular. The dredge and rope then occupied the position A B, shown in fig. 6, and the ship was brought to the wind and kept stationary, or, if there were much wind, steamed slowly towards the dredge, taking care not to overrun it. A weight of 1½ cwt. was now attached to the thimble through which the rope was rove before it was secured to the dredge chain, as mentioned above, and the weight and thimble being let go they travelled down the curve of the rope until they were brought up at the toggle. The dredge and rope by means of this additional weight now successively assumed the positions A C, A D, and A E, until finally the dredge reached the bottom at F, the weights being in the position of G′, G″, and G‴, &c. It is evident that, provided there were no surface or under-current, the dredge *must* reach the bottom with the tangles trailing fairly after it, if sufficient time had been allowed for it to sink. The surface current could always be ascertained and allowed for; when the dredge, therefore, came up foul, as it occasionally did, we could only ascribe its doing so to the influence of some under-current, which need not necessarily have been at the bottom,—or to the rope when new twisting the dredge round and round.

We found by experience that about three hours were required to sink the dredge in this manner when the depth was about 2500 fathoms. When it had reached the bottom the ship was allowed to drift broadside to the wind for a certain time, until the accumulators pointed out, by their extension and contraction, that the dredge was being dragged slowly over the ground. When the dredge fouled, the strain of the ship immediately stretched the accumulators to their utmost, the line was at once let go to prevent its carrying away, and the ship was brought head to wind and kept stationary, the rope being hove in slowly; if it continued foul, the ship was steamed ahead of and all round the supposed position of the dredge to endeavour to clear it (as a boat's anchor is cleared when jammed on a coral reef or amongst rocks); finally the dredge either got clear