

The wire rope consisted of six strands, each made up of seven wires (like piano wires about 1 mm. in diameter), or altogether forty-two wires, with a tarred hemp line in the middle. The breaking strain of the whole was about 4 tons. Its weight per fathom was 1.12 lbs.

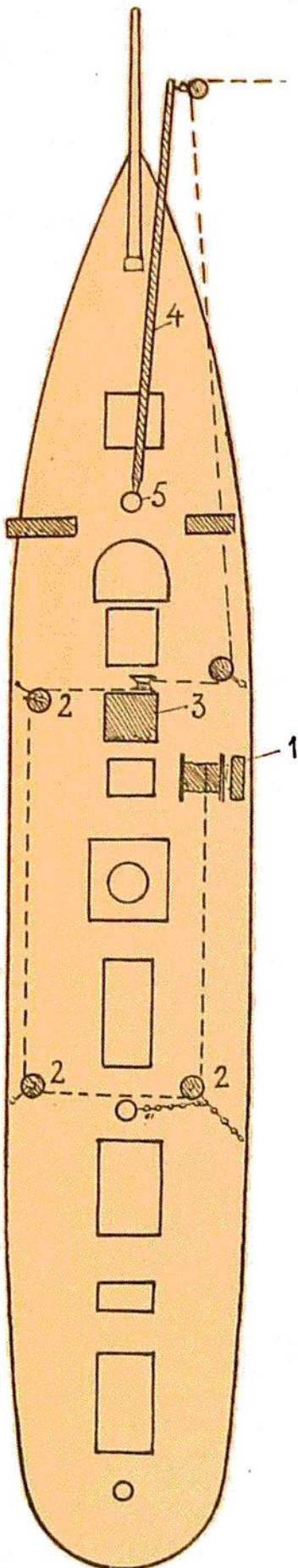


FIG. 9.—DECK ARRANGEMENT OF THE "BLAKE."
(From Sigsbee.)

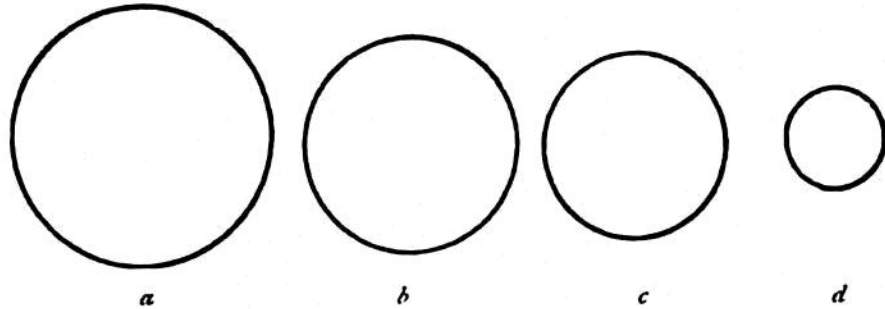


FIG. 8.

a, b, c, Circumference of hemp lines used for trawling on board the "Challenger," and *d,* of wire rope used for trawling on board the "Blake." (From Sigsbee.)

in the air, and 1 lb. in the water. We thus get a breaking strain of about 4000 kilos; weight in water of 5000 fathoms 2300 kilos; so that with 5000 fathoms out, there were about 1700 kilos over for resistance (friction) in the water, and for strains due to heavy seas or sticking fast on the bottom. The great strength of this line made it less necessary to use accumulators, and they were only employed occasionally during the "Blake" expedition.

Fig. 9 shows how Sigsbee worked the wire rope on board the "Blake." It was wound round a big drum (1), driven by a small steam-winch, and led from the drum over blocks of considerable diameter (2) to the large steam-winch (3), which had a large end-drum 55 centimetres (22.6 inches) in smallest diameter. From here the line went to a big boom (4) on the foremast (5).

Method of using wire rope.

When dredging or trawling the appliance was first lowered to near the bottom, while the ship was stationary, and afterwards the vessel went astern during the process of paying out and dredging. This manner of working was so successful, and conduced to