

their number, they were attached to two discs of wood by laniards spliced into the thimbles at each end. These laniards were passed through corresponding holes in the upper and lower wooden disc, and were then collected together and formed into an eye at top and bottom, so that a rope could be "bent on," or a block "hooked on," to these eyes. To keep the discs at right angles to the line of accumulators the eyes of the splices which fastened the laniards to the thimbles were made sufficiently long to come through the disc, so that a small toggle driven in through these eyes, on the upper part of the disc, wedged it in its place (see fig. 15 B). To prevent the accumulators being by any accident stretched to such a length as would render them liable to break, a short piece of 4-inch rope was rove through a large hole in the centre of the wooden discs and spliced into the eyes formed at each end by the accumulated laniards, and the length of this rope was regulated so as to allow the accumulators to stretch 15 feet, after which any additional strain, which would otherwise have been borne by them, was borne by this preventor rope.

It was found by experience that, owing to the compression of the india-rubber by the seizings used to secure the copper thimbles at each end, the accumulators occasionally broke just below the compressed part. In order to remedy this defect Captain Nares suggested to the maker that he should construct the accumulators in the form of a ring, and put a wooden thimble in each bight, securing it there with a small india-rubber band, as shown in fig. 15 C. Some accumulators made in this manner were forwarded for trial, and were found to answer exceedingly well; being doubled only half the number were required, and this reduced the number of laniards securing them together, which was a great advantage. It was also found that nothing damaged the accumulators so much as smoke from the funnel; during the first eighteen months of the commission, when Welsh coal was in use, they suffered little or no damage, but when Australian coal was burnt the smoke dried up and ruined them very quickly.

*The Gin-Blocks.*—The blocks used for sounding purposes were 9-inch gin-blocks with patent sheaves. The sheaves were made to fit close to the shell of the block, so as to prevent the sounding line getting between the sheave and block.

*Method of Sounding.*—When a sounding was required steam was got up and all sail shortened and furled except the spanker. This proceeding was indispensable, as no trustworthy soundings could be obtained from the ship under sail, even in the calmest weather, the heave of the sea, or the surface current, being sufficient to drift her in a very short time a considerable distance from the place where the lead was originally let go, and thus prevent the line from running out perpendicularly. Sail being shortened and steam up, the ship was brought head to wind and the sounding gear got ready, as shown in fig. 16. A block A was secured to the foreyard a little outside the boom-