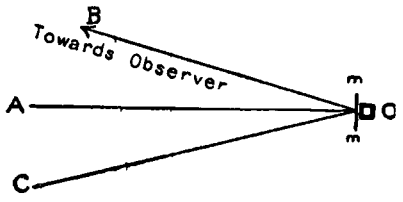

position *A* on the ground where one's own reflection can be seen in the upper mirror is found and marked with a peg. Using a plane-table or compass, the line *OB* towards the observer is then laid out. Now, in order to send light to the observer, using the mirror *mm*, clearly the source of light must be situated somewhere on the line *OC* where the angle *COA* = the angle *AOB*. This line *OC* can be easily marked on the ground and also a point found on it from which the horizon is visible. From this position, or very near it, the observer's station will be visible in *mm*. The procedure adopted was for the observer at the other station to shine a powerful helio in the direction of the mast, at a pre-arranged time. The man at the mast having already found or been shown the approximate position from which he should see the observer's station, soon picked up the observer's light (by the method just described). Having once seen it, there was no further difficulty. He adjusted his ground helio at the same place and kept the light of the sun focussed on the top mirror, as long as required.

HELIO BEACON

by COOKE, TROUGHTON & SIMMS LTD.,
ENGINEERS & SCIENTIFIC INSTRUMENT MAKERS,
Broadway Court, Westminster, London, S. W. 1.

The Helio Beacon consists of a dome, on which mirrors are mounted, arranged in a number of series.

The dome is rotated by four wind vanes and the rotation causes the dome to rock so that, with the sun at almost any angle, flashes will be sent periodically to all points about the dome, and thus enable an observer to sight upon it from considerable distances.

The size of the Beacon shown, which is 6" diameter, is intended for shots of 10 miles and over, for which distance the maximum possible error, due to rays being received from mirrors occupying positions to the side of the dome (as viewed from the point of observation) and not in line with the mark over which the beacon has been set up, will be within one second of arc, that is, that permitted in Topographical Survey.

The dome is mounted on ball bearings and is more or less frictionless, so that a very high speed of rotation is imparted to the Beacon with a fairly light wind and flashes are observed in a continuous stream, it being quite an easy matter to take bearings by means of a Theodolite.

A tripod is supplied with the Beacon, the latter being packed in a mahogany case.

The Beacon is made entirely of rustless materials.

The price of the instrument complete is £ 40. 0. 0.

DETERMINATION OF THE SHIP'S POSITION BY OBSERVATIONS OF TWO POINTS THE BEARINGS OF WHICH INTERSECT AT A SMALL ANGLE.

This problem relates to cases where, on making a land fall, two objects only are visible, the angular distance between them being small and therefore the lines of bearings