

To get luminous points, it is sufficient to open the shutters *B* far enough and to push the plate *A* across until the desired hole comes in line with the centre of the lantern.

Given the constructional details of this lantern, it can easily be seen that whatever position it is in, whenever the observer sights on the light he will also be sighting on the centre of the station mark. Consequently there is no need for a very skilled man to mount the lantern.

It can be perfected by fitting two sighting marks on it.

By way of illustration I would add that in the fifteen determinations of azimuth, using a 2" BAMBERG Universal, with a line of sight not exceeding 1,200 metres (1,312 yds.) I obtained definitive azimuths with a mean error not exceeding  $\pm 0''\cdot9$ .

### A HINT WHEN MEASURING THE DIP OF THE SEA HORIZON.

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By measurements of the dip of the sea horizon which I had to carry out in the spring of 1933 by order of the *Marine-Leitung*, the unpleasant fact was experienced that, owing to the unequal illumination of the two observed portions of the horizon, the ray of light from the brighter horizon was absorbed continuously by the prism-system of the apparatus for measuring the dip of the sea horizon (PULFRICH type) employed. An accurate contact of the two horizon images was therefore no longer practicable. Nevertheless, in order to obtain in such cases usable measurements, I have applied the following method:

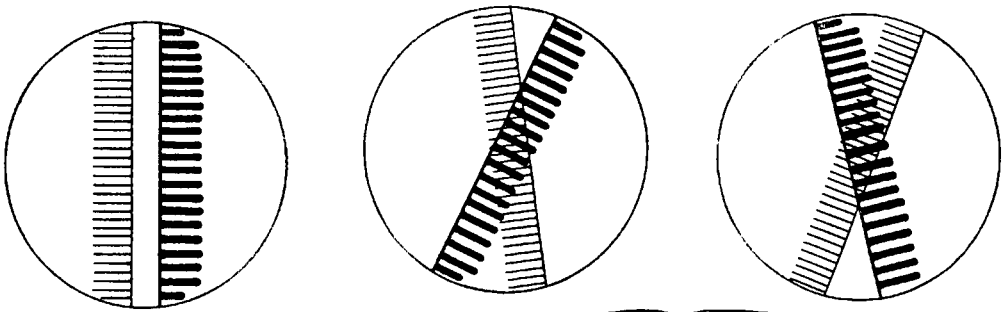


Fig. 1

Fig. 2

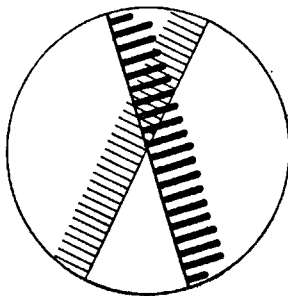


Fig. 3

Both sea horizons are brought closely parallel to each other in the centre of the image field of the telescope of the instrument, so that the only feebly visible horizon is just recognizable by the side of the other one (Fig. 1). The instrument is then lowered and raised; the angles of intersection, despite the previously hardly perceptible horizon, are mostly fairly well recognizable (Fig. 2). Whilst slowly raising and lowering, the setting screw is then turned until the apices of the two angles of intersection coincide (Fig. 3). In this position, with the instrument horizontal, the accurate contact of the two sea horizon images is secured. With a little practice, good results may be obtained by this method, even with some swell on the sea.