

S. BENT.
MARINERS' COMPASS.

No. 178,098.

Patented May 30, 1876.

Fig. 1.



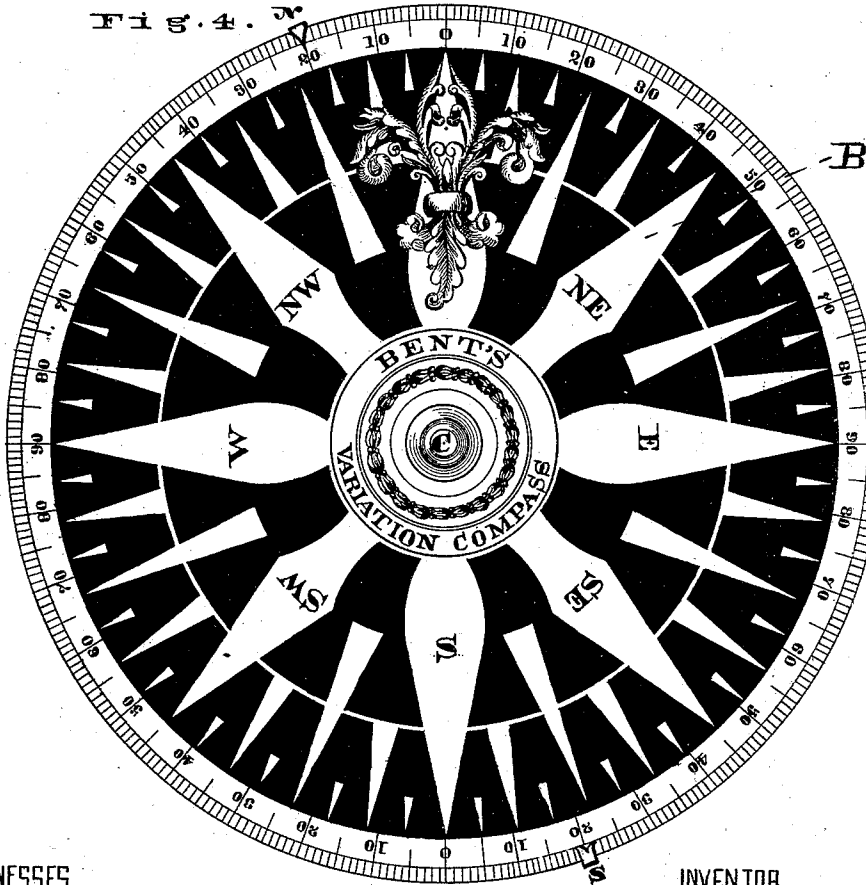
Fig. 2.



Fig. 3.



Fig. 4.



WITNESSES,

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SILAS BENT, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN MARINERS' COMPASSES.

Specification forming part of Letters Patent No. **178,098**, dated May 30, 1876; application filed March 31, 1875.

To all whom it may concern:

Be it known that I, SILAS BENT, late of the United States Navy, and now of the city and county of St. Louis and State of Missouri, have invented a new and useful Improvement in the Mariner's Compass, of which the following is a full, clear, and exact description, reference being had to the annexed drawing, making part of this specification, where—

Figure 1 represents, in a vertical central section, the screw used in attaching the card to the needle; Fig. 2, a top view of the needle; Fig. 3, a side elevation of the needle; and Fig. 4, a plan of the invention, showing the needle adjusted to a variation of twenty degrees west.

Like letters indicate like parts.

In using a compass, allowance must be made for the variation of its needle from the true north point. To the mariner especially is it important that this variation be properly allowed. If improperly allowed, an error of double the variation is made, and when approaching land or in intricate seas this is a fruitful source of disaster to vessels.

Hitherto it has been customary for the navigator to use a compass whose card is permanently attached to the needle, rendering it necessary to make the needed correction mentally, and as often as the variation is applied. This mental process is not only annoying, but it is so unreliable that no navigator, not even the most experienced, is free from the dangerous mistakes it involves.

To obviate these difficulties, and to furnish a compass which in its mechanical arrangement is such that by a simple manual process the variation of the magnetic needle may be applied directly to the compass by even the most uneducated seaman, so that (until a change occurs in the variation) the courses steered will be the true courses, the winds recorded will be the true winds, the bearings taken will be the true bearings, and no allowance or corrections for variation whatever will be required when working up the dead-reckoning, and, above all, that in shaping courses the true bearings given by the chart

are the courses to be sailed, is the object of my invention.

Referring to the accompanying drawing, A represents the preferable form of the magnetic needle used, and B the card. The latter is of the ordinary kind. The needle in length corresponds with the diameter of the card, and, at either end or pole, is provided with pointers, respectively lettered N. and S. The pointers are of suitable material, and, as shown in Figs. 2, 3, and 4, extend upwardly, and preferably inwardly, so as, when in position, to overlap the graduated edge of the card. To readily distinguish the pointers, that at the north pole, N., is sharpened, while the one at the south pole, S., is broadened. C, Figs. 1 and 4, represents the usual jeweled nut, constituting the support for the needle, and which is preferably used to attach the card to the needle at any desired adjustment.

In operation, the card and needle are relatively adjusted by bringing the north pole of the needle to the right or left of the north point of the card until the pointer N. is at the degree, or fraction thereof, that the variation is known to be east or west of the true meridian at that locality. The card and needle are then fixed in that relative position, thus adjusting them so that while the north and south points of the card will indicate the true meridian, the needle will lie in the direction of the magnetic meridian, or in that direction which is the resultant of the combined application of both the terrestrial and the local variations.

In Fig. 4 the adjustment is to a variation of twenty degrees west.

The compass is readjusted with every change in the variation.

The conspicuousness given to the indicating-points at the extremities of the needle enables any one to determine by a glance in the binnacle whether or not the variation has been properly applied.

Having described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. The combination of the magnetic needle A, provided with the pointer N., the card B,

and the nut C, substantially as and for the purpose set forth.

2. The combination of the magnetic needle A, provided with the north and south pointers N. and S., the card B, and the nut C, substantially as and for the purpose set forth.

3. The combination, in a mariner's compass, of a suitable securing device with a

card and needle, the card and needle being relatively adjustable, substantially as and for the purpose shown and specified.

SILAS BENT.

Witnesses:

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