D. BAKER.

Mariners' Compass

No. 163,836. Patented June 1, 1875.

Fig. 1.

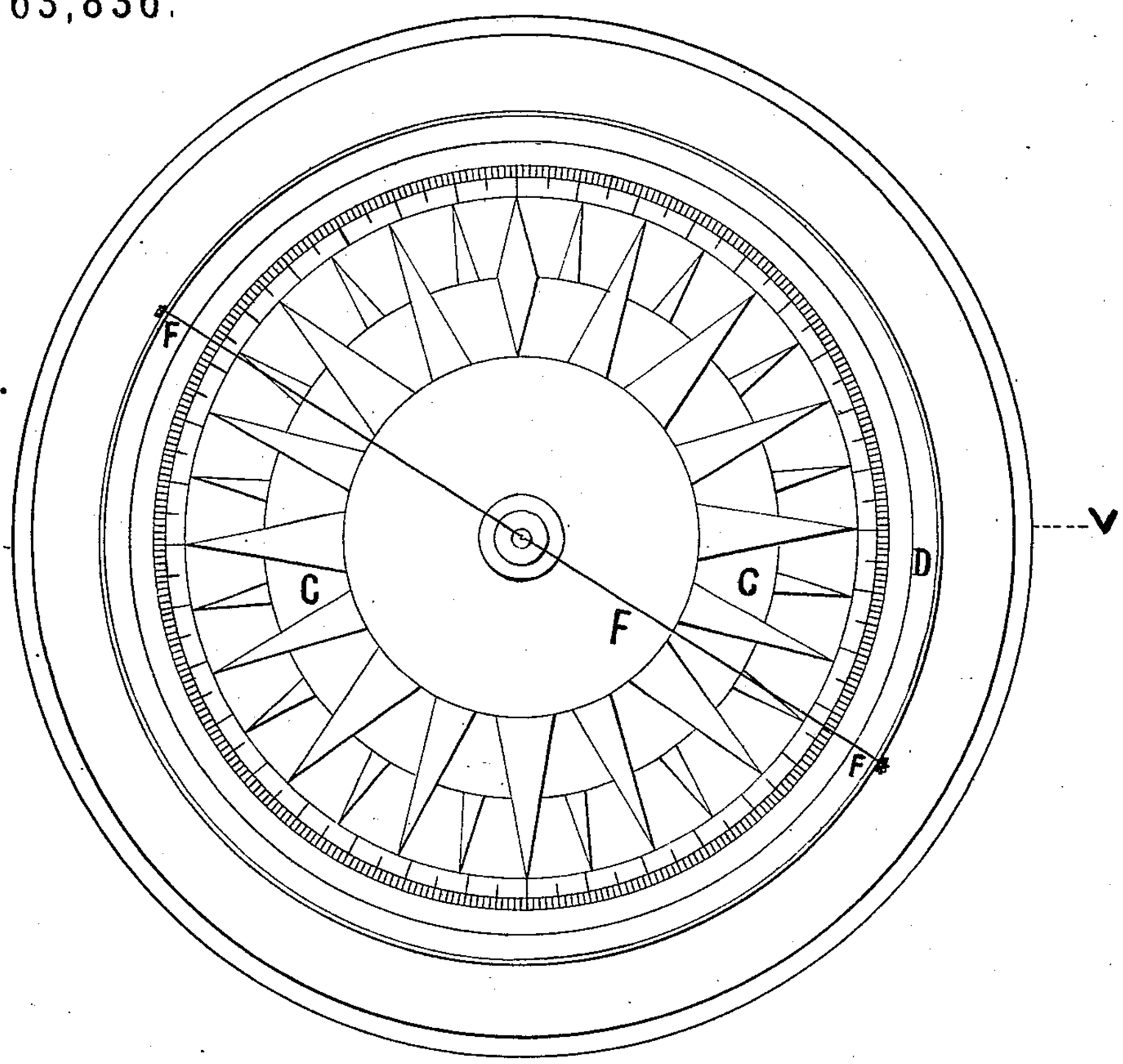


Fig. 2.

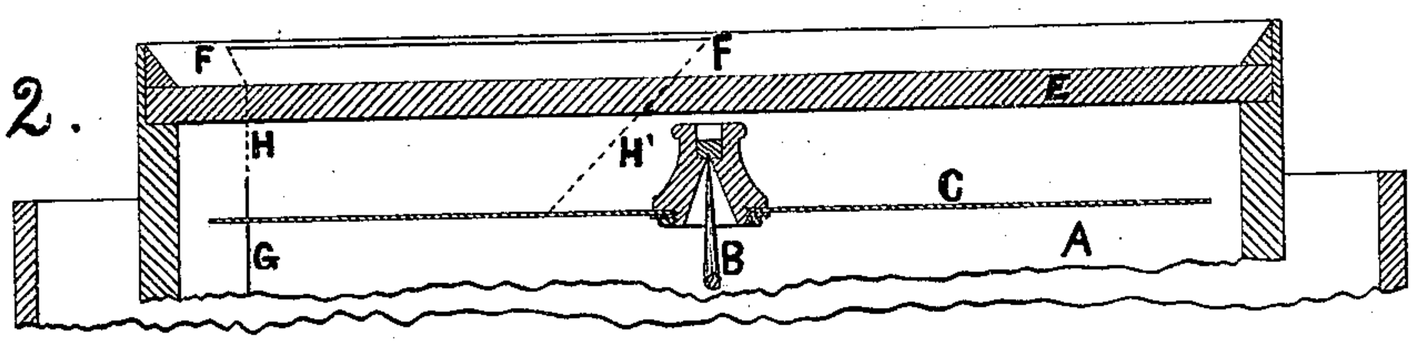
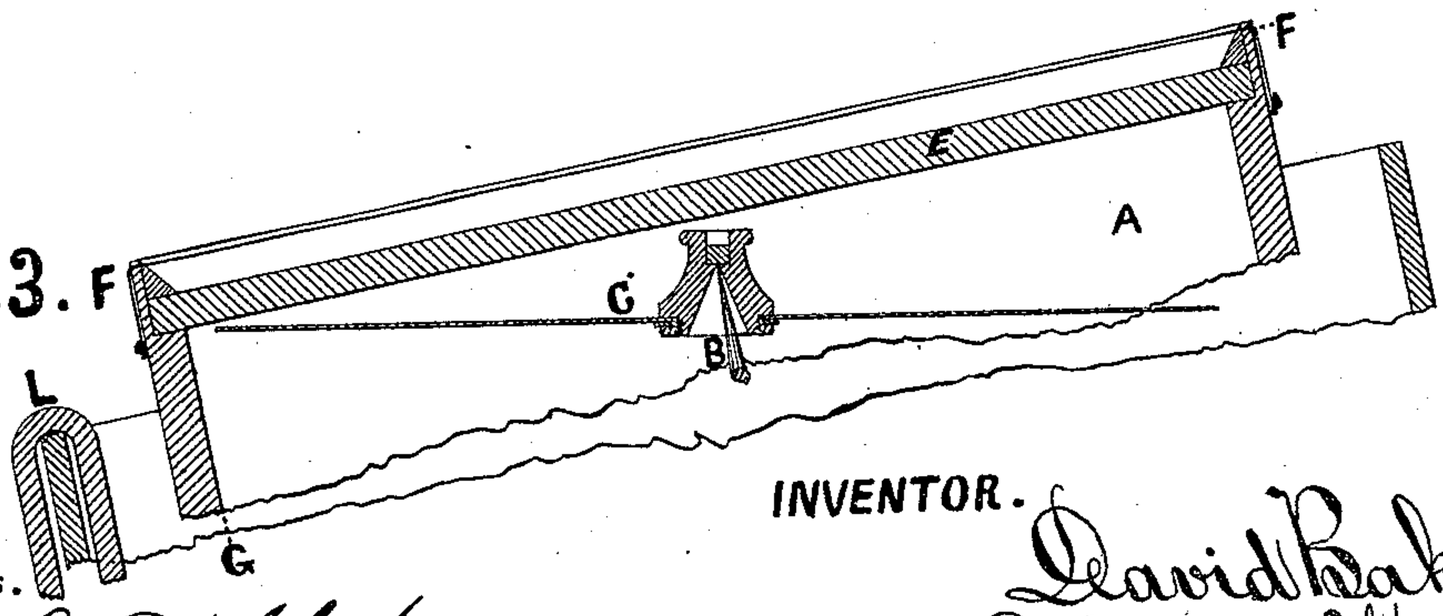


Fig. 3.



Witnesses.

H. S. Talbot

Edward Edmunds

INVENTOR.

David Baker

Per Sylvenus Walker

Atty

UNITED STATES PATENT OFFICE.

DAVID BAKER, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLARD I. HUMPHREY, OF SAME PLACE.

IMPROVEMENT IN MARINERS' COMPASSES.

Specification forming part of Letters Patent No. **163,836,** dated June 1, 1875; application filed October 27, 1874.

To all whom it may concern:

Be it known that I, DAVID BAKER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Azimuth-Compasses, which I term a "Variometer," of which the following is a specification:

The nature of my invention consists in casting a shadow directly upon the compass-card, and down a short distance upon the inside of the compass-bowl, by means of a line placed across the same horizontally, or at any angle above the compass-card, and with a short vertical line or mark made upon the inside of the compass-bowl, directly beneath the horizontal line, and extending upward a short distance above the card, and terminating below the top of the bowl.

To ascertain the azimuth or magnetic bearing, turn the compass until the sun casts a shadow from the horizontal line vertically down the inside of the compass-bowl, to coincide with the mark thereon, when the true magnetic bearing or azimuth is shown by the degree-marks on the outer edge of the card at the point where the same coincides with the shadow cast thereon.

It is not essential that the line be extended wholly across the compass-bowl, as a short line or mark made upon the glass plate above the card, and extending only partially across or to the center of the bowl, would show the same result.

Figure 1 is a top-plan view of a compass with my invention attached. Fig. 2 is a vertical section through Fig. 1 at the point represented by dotted lines X V. Fig. 3 is a vertical section at line F F, as showing the compass tipped by the weight L.

A represents a compass-bowl, of usual construction, with a pivot, B, upon which the card C, turns. D is the top of the compass, and E is the glass plate. F represents a line or mark extending across the center of the compass-bowl, and may be made of wire, horse-hair, or thread, or any suitable material, and fastened to pins upon the outside of the compass-bowl. Fig. 2 shows a portion of this line F as passing from one side of the compass-bowl to the center, and casting its shadow down upon the card C and inside of the compass-bowl A, as shown by the dotted lines H H′, the former one as intersecting the vertical mark G upon the inside of the compass-bowl A.

This variometer or azimuth-compass may be used as a common compass or for marine purposes without removing the horizontal line F from across the top of the same; or, if desirable, it may be instantly removed by simply disconnecting it from the pins.

I prefer to place this fine wire F above the glass plate, it resting upon the top edge of the compass-bowl or cap-ring. The bearing of any object may be readily observed by bringing the eye to the same, and sighting across; but if a small mark or line be made upon the glass plate, instead of affixing the line F, it would serve to cast the shadow, and would not interfere with the compass for any use for which the common compass is employed.

Thus, by means of my invention I am enabled to apply it to any compass now in use at little expense, as well as greatly facilitate the finding of the magnetic bearing of a heavenly body. When desirable to take the azimuth from the sun in the horizon at morning or evening I place a small weight, L, upon the gimbal-ring, as shown in Fig. 3, or upon one side of the compass-bowl, so as to incline or tip it sufficiently to allow the sun's rays to rest upon the line F, when the observation may be taken as readily as at midday.

Having thus described my invention, what I claim is—

1. In a mariner's compass, a line, F, in connection with a vertical mark, G, upon the inside of a compass-bowl, for the purpose of observing the magnetic bearing or azimuth of a heavenly body by a shadow cast from said line or mark F directly upon the compass-card, and down upon the inside of the compass-bowl, to coincide with the said vertical mark G, substantially as and for the purposes set forth.

2. The combination of the weight L with the line F and vertical mark G, substantially in the manner described, as and for the purposes set forth.

DAVID BAKER.

Witnesses:

SYLVENUS WALKER,

GEO. A. BAKER.