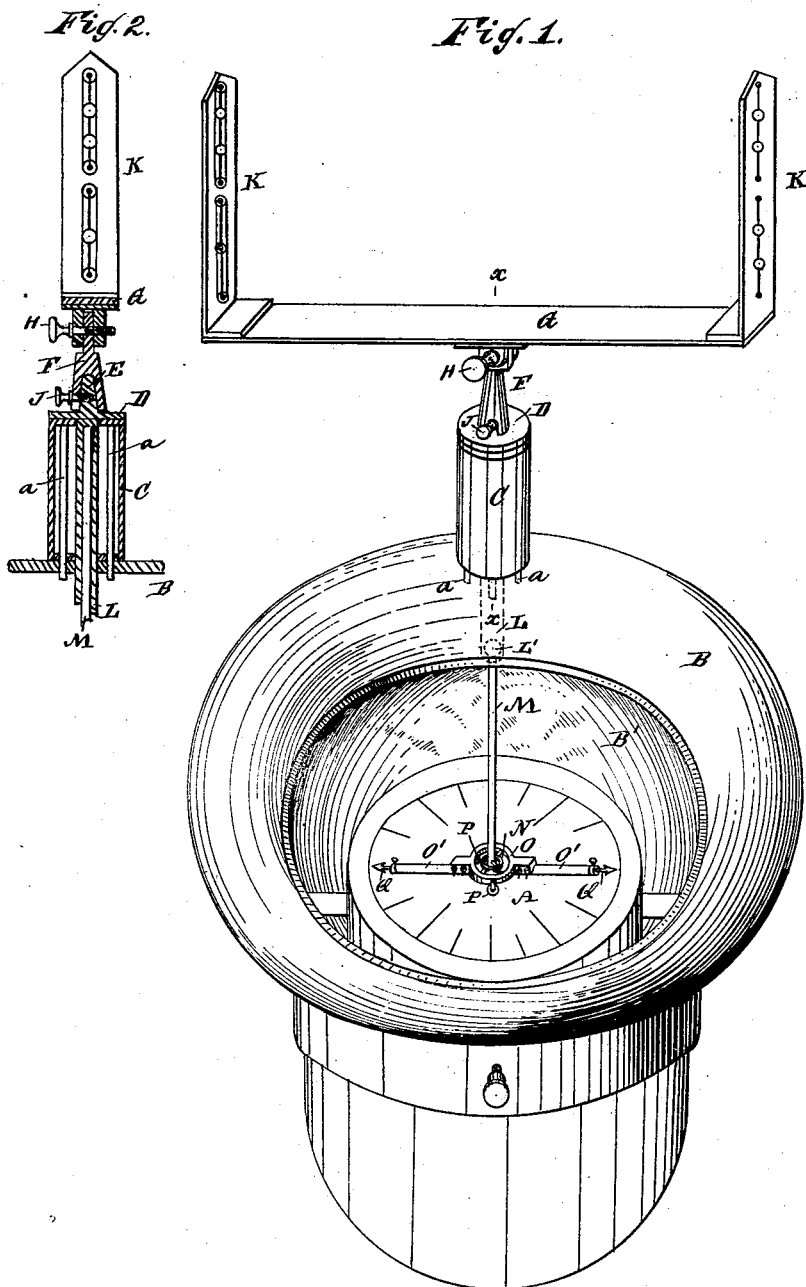


(No Model.)

F. J. DRAKE.
COMPASS ALIDADE.

No. 260,956.

Patented July 11, 1882.



WITNESSES:

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COMPASS-ALIDADE.

SPECIFICATION forming part of Letters Patent No. 260,956, dated July 11, 1882.

Application filed January 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN J. DRAKE, of Gasport, in the county of Niagara and State of New York, have invented a new and Improved Compass-Alidade, of which the following is a full, clear, and exact description.

The object of my invention is to facilitate obtaining the compass-bearings from on board of a vessel of all lights and headlands when the vessel is approaching the coast or in a port.

The invention consists in an alidade mounted to swing and turn on a standard on the top of the binnacle of a mariner's compass, which alidade is connected by a vertical rod with a pointer-frame on the compass, whereby the alidade and the pointers will always be in the same vertical plane and the pointers will show the compass-bearings of an object that can be viewed through the alidade.

The invention also consists in details of construction, as will be fully described hereinafter.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a perspective view of my improved compass-alidade. Fig. 2 is a cross-sectional elevation of the alidade and its supports on the line *xx*, Fig. 1.

The mariner's compass A, of the usual construction, is provided with a binnacle, B, having glass sides B', all of the ordinary construction. A tubular standard, C, is secured vertically on the top of the binnacle, and is provided at its upper end with a revolving plate, D, having an upwardly-projecting pivot, E, which is adapted to fit into a recess in the bottom of a short standard, F, resting on the plate D, the upper end of this short standard F passing in between jaws projecting from the under side of an alidade, G, which alidade is pivoted to the standard F by a screw or pintle, H, passing through the jaws on the under side of the alidade and through the upper end of the standard F, thus permitting a swinging or tilting movement of the alidade in the vertical plane. The standard F can be locked on the pivot E by means of a binding-screw, J. The sight-vanes K of the alidade G are provided with the usual sight slots and openings.

The tubular standard C is preferably secured on the top of the binnacle by a series of vertical rods, *a*, passing down through the interior of the standard, but can be secured in any other suitable manner. A tubular piece, L, passes through the standard C, and its upper end is attached to the revolving pivot-plate D, and its lower end, provided with a binding-screw, L', projects downward into the binnacle. A rod, M, fits into the tubular piece L and can be locked to the same by means of the screw L'. This rod M extends down to the face of the compass, and by means of a universal joint, N, carries a circular or other pointer-frame, O, provided with two opposite horizontal arms, O', and with small rollers P, resting on the face of the compass. The arms O' contain sliding pointers Q, which can be locked to project any desired distances from the arms O' by means of binding-screws at the ends of these arms.

As the rod M can slide or pass into the tubular piece L, and can be locked in any desired position, this rod can be adjusted higher or lower, according to the height of the binnacle and of the standard C, so that the pointer-frame O will rest on the face of the compass A.

The pointers Q can be projected a greater or less distance from the end of the arms O', according to the diameter of the compass-plate A. Any desired inclination, according to the roll of the vessel, can be given to the alidade, and the same can be locked in the desired position by means of the screw H. In case the alidade is not to be used, the same and the standard F are simply removed from the socket-plate D. They can be replaced very rapidly and easily. The screw J is so arranged that it will always hold the alidade parallel with the pointer-arms Q' in the vertical plane.

The operation is as follows: If the alidade is turned on the vertical axis of the standard F, the pivot-plate D and the telescopic rod L M will turn with it, as all these parts are united. The pointer-arms O' will also turn with the alidade, and these pointer-arms will be revolved over the face of the compass in the same vertical plane with the alidade—that is, they both will always have the same compass-bearings. The universal joint M permits a free and easy

movement of the pointer-frame O independently of the pitch and roll of the vessel. If the compass-bearing of a light, headland, or any other object is to be obtained, the alidade is so adjusted that this object will be visible through the slots or apertures of the sight-vanes—that is, the ray of light, passing from the object to the observer's eye, must pass through the apertures or slots of the sight-vanes. The pointers move in the same vertical plane as the alidade, and will thus point in the same direction as the alidade—that is, toward the object of which the compass-bearings are to be obtained. The pointers Q Q will show the compass-bearing of this object on the face of the compass. The position of the pointers on the compass A can be viewed through the glass sides B' of the binnacle, and the binnacle need not be removed. The bearings of the desired object can thus be taken very easily, rapidly, and accurately by a single person, whereas heretofore two or more persons were required, as the binnacle had to be removed. At night an assistant had to hold a light. The observations could not be made accurately, especially on a rainy night or during a storm, and had to be verified frequently. All these defects are avoided in my improved compass-alidade, and the results obtained are always absolutely accurate, as practical tests have proved.

Having thus described my invention, I claim

as new and desire to secure by Letters Patent—

1. The combination, with a mariner's compass, of an alidade and a pointer whose frame is not hung over but resting on the compass, which pointer is connected with the alidade, substantially as herein shown and described, and for the purpose set forth. 35

2. The combination, with the compass A and the binnacle B, of the alidade G and the pointer-frame O, connected with the alidade, and of the pointers Q, whose frame is not suspended over but resting on the compass, substantially as herein shown and described, and for the purpose set forth. 40 45

3. The combination, with the compass A and the binnacle B, of the standard C, the revolving pivot-plate D, the standard F, the alidade G, pivoted thereto, the telescoping-rod L M, the pointer-frame O, and the adjustable pointers Q, substantially as herein shown and described, and for the purpose set forth. 50

4. The combination, with the compass A and the binnacle B, of the standard C, the revolving pivot-plate D, the standard F, the alidade G, the screws H and J, the telescoping-rods L and M, and the pointer-frame O and the pointers Q, substantially as herein shown and described, and for the purpose set forth. 55

FRANKLIN J. DRAKE.

Witnesses:

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