

W. MAXTED.
SHIP'S COURSE RECORDER.
APPLICATION FILED NOV. 25, 1902.

NO MODEL.

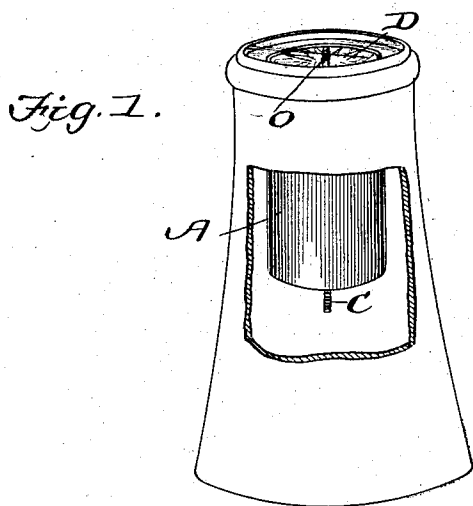


Fig. 2.

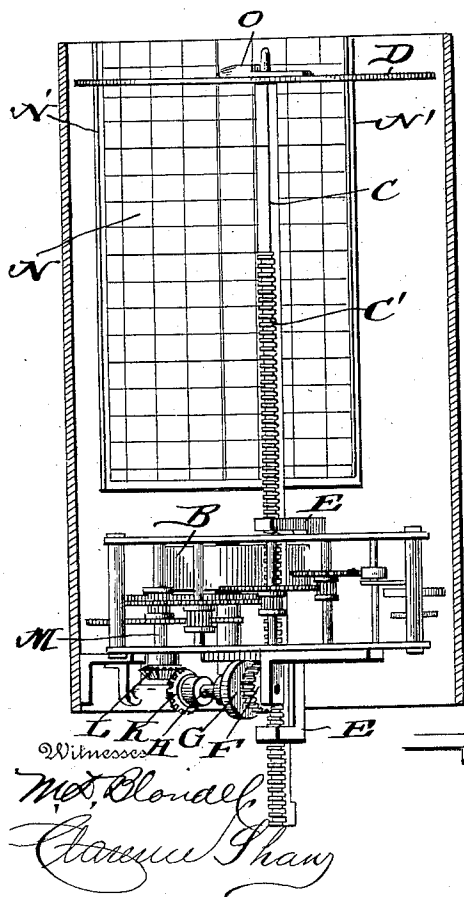


Fig. 3.

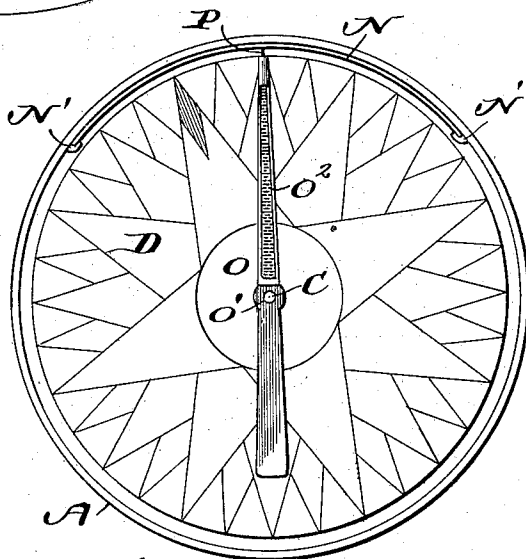


Fig. 4.

Fig. 5.

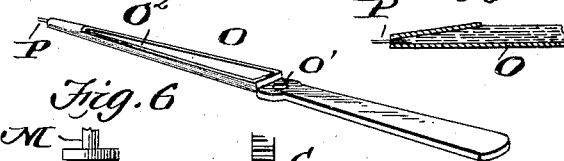
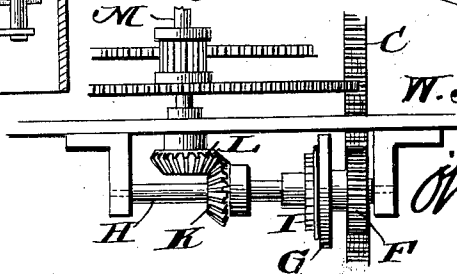


Fig. 6.



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UNITED STATES PATENT OFFICE.

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SHIP'S-COURSE RECORDER.

SPECIFICATION forming part of Letters Patent No. 738,221, dated September 8, 1903.

Application filed November 25, 1902. Serial No. 132,771. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MAXTED, a subject of the King of Great Britain, residing at Wernersville, in the county of Berks and State of Pennsylvania, have invented a new and useful Ship's-Course Recorder, of which the following is a specification.

This invention is a device adapted to be used in connection with a compass for the purpose of indicating the course traveled by a ship during a definite period of time.

The object of the invention is to provide a simple and efficient device which can be used in connection with compasses as now constructed and which when once set will not require any attention for a predetermined time and which will produce a permanent record of the ship's course during that period.

With these objects in view the invention consists, essentially, in arranging a card within the compass-box and providing a marking device upon the compass-card, said compass-card being moved vertically for a definite length of time, so that any deviation of the ship's course will be indicated upon the card arranged within the compass-box by means of a marking device carried by the compass-card.

The invention consists also in providing certain means for moving the compass-card vertically without interfering with the magnetic movements of the said compass-card; and the invention consists also in certain details of construction, combination, and arrangement, all of which will be fully described hereinafter, and pointed out in the claims.

In the drawings forming a part of this specification, Figure 1 represents a ship's binnacle, one side thereof being broken away to disclose the compass-box arranged therein. Fig. 2 is a vertical sectional view taken through the compass-box, the compass-card, the record-card, and operating mechanism being shown in elevation. Fig. 3 is top plan view of a compass-card provided with a marking device adapted to produce a mark upon the recorder-card, the top of said recorder-card being shown. Fig. 4 is a detail perspective view of the marking-point. Fig. 5 is a detail sectional view of a portion of the same, and Fig. 6 is a detail view illustrating a portion of the clockwork employed to lower the rod-carrying compass-card.

In carrying out my invention I employ a compass-box A, which is the same as compass-boxes now in general use except that the said compass-box is made slightly longer and is preferably open at the bottom or lower end.

A suitable construction of spring-actuated clockwork B is arranged in the lower end of the compass-box A, and passing vertically through the said clockwork is a rod C, upon the upper end of which is pivoted the compass-card D, said compass-card being of the same construction as those now in common use. This rod C is provided with rack-teeth C' for a greater portion of its length, and the toothed portion of said rod passes through guide-arms E, connected to the upper and lower portions of the frame of the clockwork. A pinion F is adapted to mesh with the rack of the rod C, said pinion being carried by a disk G, arranged upon shaft H and operatively connected with the said shaft H through the medium of pawl-and-ratchet device I, so that when the shaft rotates the pinion will be driven in one direction; but any reverse movement of the pinion will not affect the shaft H. This shaft H has a bevel-gear K mounted thereon, which meshes with a bevel-gear L, mounted upon the lower end of the shaft M, said shaft M being the main driven shaft of the clockwork. This clockwork is constructed in such a manner that it will run for a period of four hours and during that time will cause the rod C to be moved vertically downwardly through the clockwork by means of the pinion F, meshing with the rack portion of the rod C.

A record-card N is arranged upon the inner side of the compass-box and held in place by means of a suitable frame N', the said card being subdivided vertically to indicate points of direction and subdivided horizontally to indicate points of time. A marking device is arranged upon the upper end of the rod C and carried by the compass-card, so that as the clockwork lowers the said card in the compass-box the marking device will indicate any deviation of the ship's course to either the right or left, and, furthermore, will indicate the exact time at which said deviation occurred. This marking device I prefer to construct substantially in the form of a pointer, as indicated in Figs. 3 and 4 and designated by the letter O, said pointer

being arranged upon the top of the compass-card and having a central perforation O', through which the upper end of the rod C passes. One end of the pointer is channeled, as shown at O², to receive and hold a suitable quantity of marking fluid, which is fed to a brush P, carried at the extreme end of the pointer and which touches the record-card N. The record-card N has a lubber's point marked thereon, and when the card is placed in the rack in the compass-box the lubber's point of said card will correspond exactly with the lubber's mark on the compass-box. To set the device ready for operation, the compass-card is lifted off the pivoted pin and a record-card fitted to the inside of the compass-box. The clockwork is then wound and the rod C elevated to its highest position. The compass-card is then replaced upon the upper end of the said rod, and the indicator or pointer is turned to the point to be steered. The device then requires no further attention, for as the clockwork runs down the compass-card will be gradually lowered in the compass-box, and if the ship is kept straight on her course the indicator or pointer will make this mark straight upon the lubber's point; but if the course deviates in the slightest degree such deviation will be shown upon the record-card, as any movement of the compass-card will carry with it the pointer and marking device, and a line will be traced upon the card to one side or the other of the line indicating the lubber's point, and the vertical subdivisions on the record-card will show the exact amount of deviation, and the horizontal subdivisions on the same will show the exact time at which such deviation occurred.

As the clockwork is regulated to move the rod for four hours, it is obvious that by the insertion of a new card every four hours a complete record of the ship's course can be kept.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A ship's - course recorder comprising a

compass-box, a stationary card arranged within the compass-box and a vertically-movable compass-card carrying a marking device adapted to record the course of the ship upon the card, as specified.

2. A ship's - course recorder comprising a compass - box, a record-card arranged in the compass - box, the compass - card carrying a marking device and means for gradually and continuously lowering the said compass-card in the box for a definite period of time.

3. A ship's - course recorder comprising a compass-box, a record-card arranged within the compass-box, a compass-card carrying a pointer adapted to contain a liquid, a brush at the end of the pointer adapted to contact with the record-card, and means for continuously imparting a steady vertical movement to the compass-card for a predetermined length of time.

4. A ship's - course recorder comprising a compass-box, a record-card arranged within a compass - box, a compass - card carrying a marking device, a vertically - movable rod upon which the compass-card is pivoted and a clockwork arranged within the compass-box and adapted to continuously lower the rod carrying the compass-card and marking device for a predetermined length of time, as specified.

5. A ship's - course recorder comprising a compass-box having a record-card detachably arranged upon the interior thereof said record-card being subdivided vertically and horizontally, a compass-card, and rod upon which the compass-card is mounted, a marking device arranged upon the compass-card, a pivot upon the upper end of rod carrying said record-card and a clockwork through which the vertical rod passes, said clockwork operating upon the said rod to lower the same, as specified.

WILLIAM MAXTED.

Witnesses:

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