Nov. 10, 1936. F. WEST, JR 2,060,766

COMPASS

Filed Feb. 11, 1936

Fig.1.

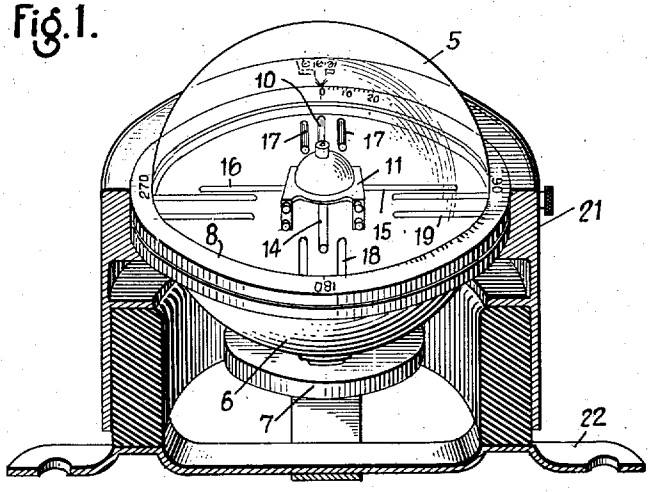


Fig.2.

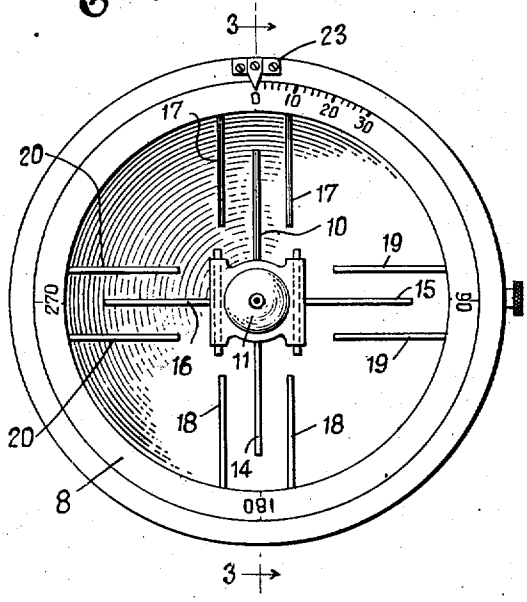
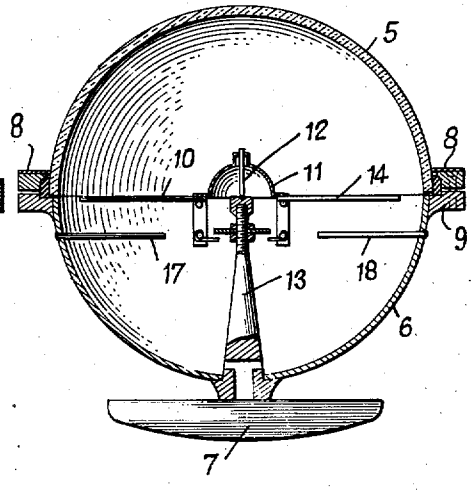


Fig.3.



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COMPASS

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Application February 11, 1936, Serial No. 63,292

5 Claims. (Cl. 33—222)

This invention relates to compasses and more particularly to so-called parallel reading compasses in which the conventional compass card is eliminated and use is made of markers so arranged as to indicate that the correct course is being steered when the magnetic element or needle is parallel therewith. Heretofore, compasses of this type have been limited to those having flat top bowls, such as bowls of cylindrical shape, with the parallel markers formed by grid wires positioned over the flat tops of the bowls. Such an arrangement can not be employed for spherical bowl compasses because the curvature of the bowl top destroys the parallelism of the markers or lines except when viewed from directly overhead.

An object of this invention is to provide a parallel reading mechanism constructed and arranged for use with spherical bowl compasses as well as with other types.

This and other objects which will be apparent to those skilled in this particular art are accomplished by means of the present invention, one embodiment of which is illustrated in the accompanying drawing in which,

Fig. 1 is a perspective view of a spherical bowl compass provided with parallel reading mechanism constructed in accordance with one embodiment of this invention.

Fig. 2 is a top plan view of the compass shown in Fig. 1, and

Fig. 3 is a transverse sectional view of the compass on the line 3—3 of Fig. 2, the supporting frame being omitted.

As illustrated, the invention is shown in connection with a spherical bowl compass of well known construction. The spherical bowl is formed with an upper glass hemisphere 5 and a lower metallic hemisphere 6 with which is connected the expansion chamber 7 to permit expansion and contraction of the fluid with which the bowl is filled. The two hemispheres are sealed permanently together, and in the present invention an azimuth ring 8, having the usual 360° markings thereon, is secured to the bowl as a part thereof over a supporting flange 9 which is joined to the edge of the lower hemisphere 6.

The magnetic element includes a North indicating element in the form of a rod or needle 10 extending outwardly from a supporting frame 11 supported by a pivot 12 upon a suitable standard 13 for swinging movement thereon under the influence of the earth's magnetic field. A South indicating rod or needle 14 extends outwardly from the supporting frame 11 in the opposite direction from the North indicating needle 10, and East and West indicating needles 15 and 16, respectively, extend outwardly at right angles thereto.

Suitable members or markers are mounted within the bowl so as to be in parallel with the North indicating needle when the desired course is being steered, and be out of parallel therewith if the wrong course is being steered. As a result, a brief glance at the compass to determine if the needle is in parallel with the cooperating markers is sufficient to determine whether or not the proper course is being followed. As hereinafter described, the position of the markers is set in accordance with the course to be steered.

As illustrated, these members are formed by a pair of small rods 17 which are secured to the lower metallic hemisphere 6 and extend inwardly toward the center of the compass bowl, preferably at a plane below the plane of the North seeking element. The rods are parallel and preferably are so spaced as to lie on opposite sides of a vertical plane passing through the needle 10. In the illustrated embodiment, similar pairs of small rods 18 are arranged to cooperate with the South indicating needle 14 while rods 19 cooperate with the East indicating needle 15, and rods 20 with the West indicating needle 16.

The compass bowl is mounted in a frame 21 supported upon a cushion base 22, and the assembly may be mounted in any conventional compass support, not shown. The frame 21 has an index 23 cooperating with the degrees marked on the azimuth ring 8. It will, of course, be apparent that the azimuth ring can be provided with conventional compass markings if desired in place of the scale of degrees.

In operation, the compass bowl with its azimuth ring are rotatably adjusted in the frame 21 in accordance with the direction which is to be steered, and the correct course is followed by so steering as to maintain the needles of the magnetic element in parallel with the associated parallel rods. It will be apparent from Figs. 1 and 2 that a glance only will suffice to tell a navigator if the correct course is being steered. To simplify reading the compass, when the magnetic element is provided with more than the single North indicating needle 10 such, for example, as the additional needles 14, 15 and 16, illustrated, the North indicating needle 10 and associated rods 17 are given a distinctive color such, for example, as red, which differs from the color of the remaining pointers and rods which may, for example, be white, or, if desired, the

North indicating needle may be given some distinctive shape.

When a change in course is to be made, the compass bowl and associated azimuth ring are rotatably adjusted in its frame until the degree indicating the desired course is positioned opposite the index 23. The course is then followed by so steering as to maintain the proper parallelism between the needles of the magnetic element and the parallel rods.

The invention can be variously modified and adapted within the scope of the appended claims.

I claim:

1. A compass having a bowl, a North indicating needle supported in said bowl, an elongated member located within said bowl and extending alongside said needle in position to cooperate therewith to indicate a predetermined course when said needle is in parallel with said member, and means for adjustably supporting said bowl whereby the position of said member can be set in accordance with a predetermined course.

2. A compass having a spherical bowl, a magnetic element supported in said bowl including a North indicating needle, a member supported on the wall of said bowl and extending inwardly thereof in position to cooperate with said needle to indicate a predetermined course when said needle is in parallel with said member, and means for rotatably supporting said bowl whereby the position of said member can be set in accordance with a predetermined course.

3. A compass having a spherical bowl, an azimuth ring secured to said bowl, a North indicating element supported in said bowl, a rod mounted in said bowl and extending inwardly adjacent said element in position to cooperate therewith to indicate a predetermined course when said element is in parallel with said rod, and a frame for rotatably supporting said bowl and azimuth ring whereby the position of said rod can be set in accordance with the course to be steered.

4. A compass having a bowl, a direction indicating needle mounted within said bowl, parallel rods located within said bowl on opposite sides of said needle to cooperate therewith for indicating a predetermined course when said needle is in parallel with said rods, and means for setting the position of said rods in accordance with the course to be steered.

5. A compass having a bowl, a direction indicating needle located within said bowl, parallel rods supported in said bowl and located on opposite sides of said needle to cooperate therewith for indicating a predetermined course when said needle is in parallel with said rods, an azimuth ring associated with said bowl, and means for adjustably supporting said bowl so that the positions of said rods can be set in accordance with the course to be steered.

FRANCIS WEST, JR.

DISCLAIMER

2,060,766.—*Francis West, Jr.*, Chilmarks, Mass. COMPASS. Patent dated November 10, 1936. Disclaimer filed June 6, 1939, by the patentee.

Hereby enters this disclaimer of claims 1, 4, and 5 of said Letters Patent.

[*Official Gazette June 27, 1939.*]

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