

J. T. LIHON.
 COMPASS ATTACHMENT.
 APPLICATION FILED MAY 18, 1908.

908,110.

Patented Dec. 29, 1908.

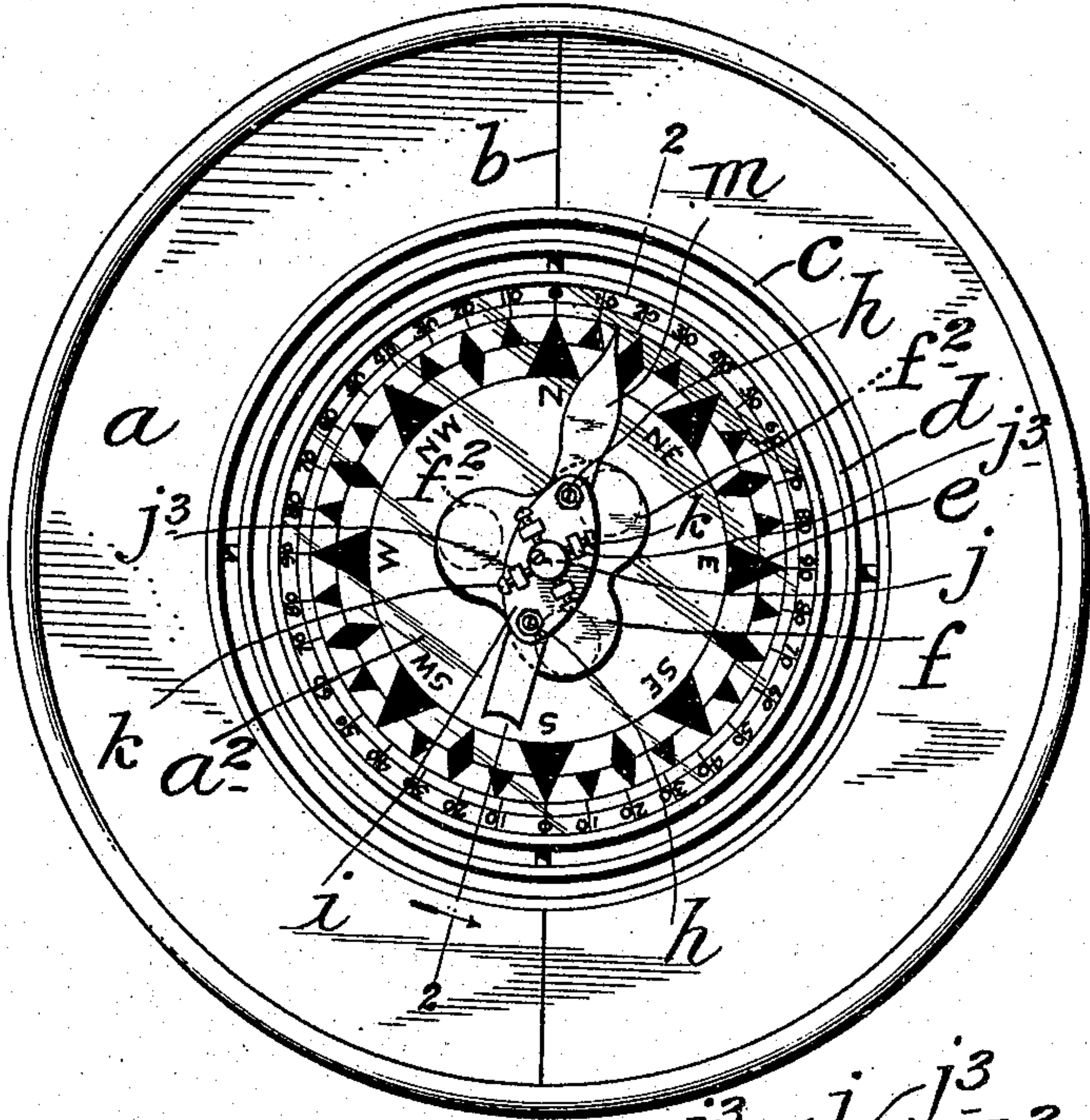


Fig. 1.

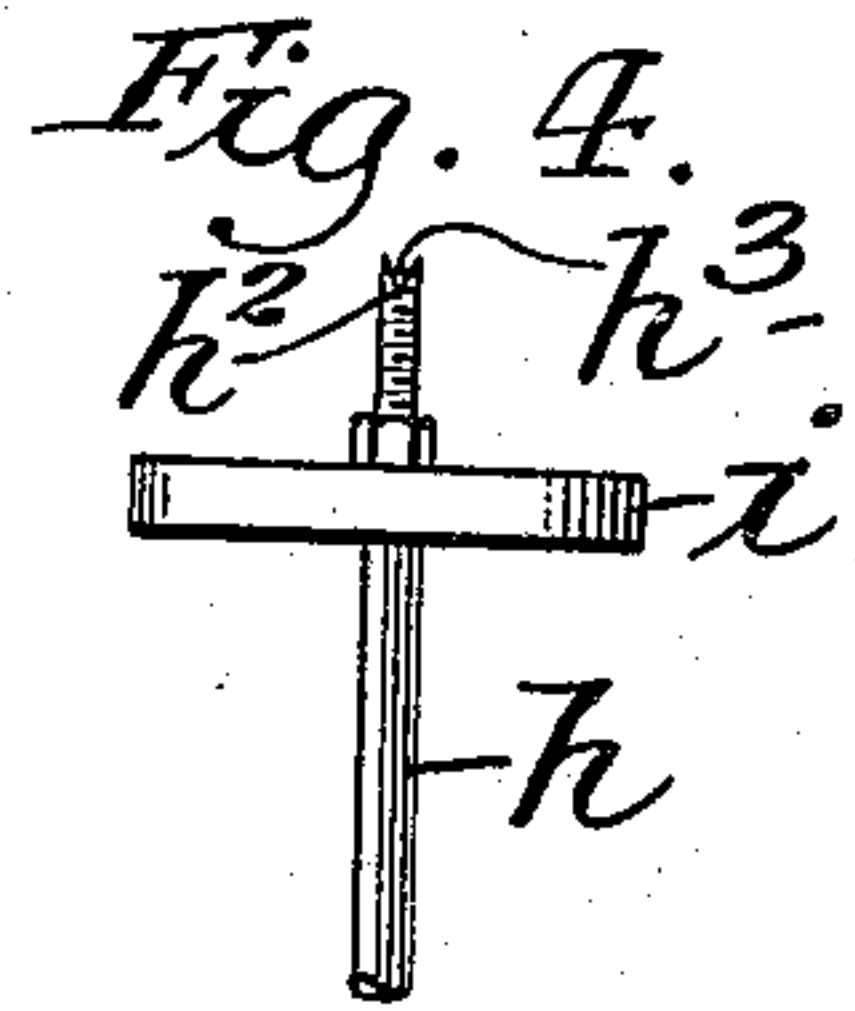
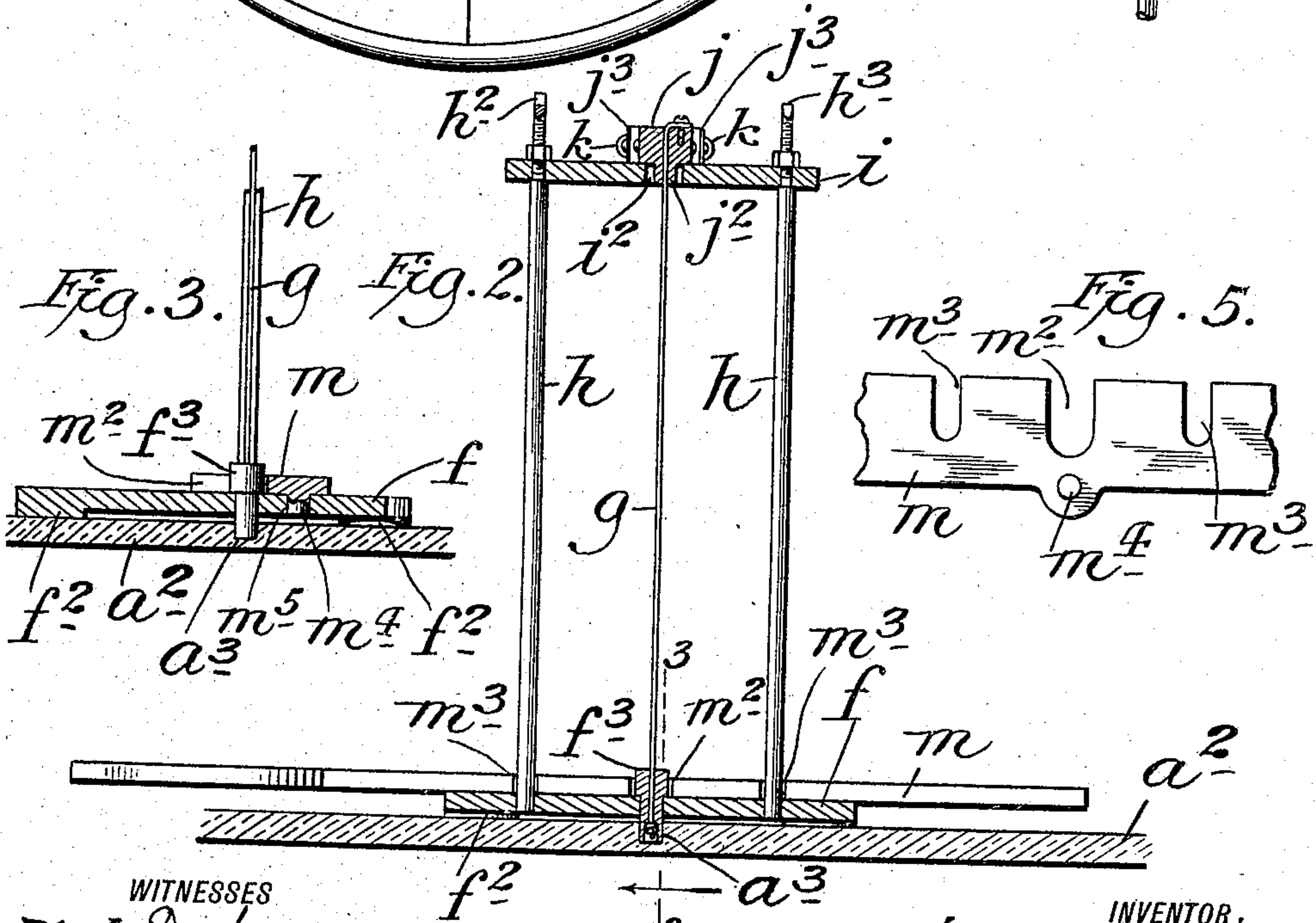


Fig. 4.



WITNESSES
 M. E. Doody
 C. E. Endreany

INVENTOR.
 James T. Lihon,
 BY *Edgar Tate & Co.*
 ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES T. LIHON, OF SEYMOUR, CONNECTICUT.

COMPASS ATTACHMENT.

No. 908,110.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed May 18, 1908. Serial No. 433,440.

To all whom it may concern:

Be it known that I, JAMES T. LIHON, a citizen of the United States, and residing at Seymour, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Compass Attachments, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to compasses, and the object thereof is to provide an attachment for devices of this class designed for use in locating a ship with reference to some fixed object, such as a light-house; for finding the compass error by the azimuth of the sun; for finding the compass error by amplitudes; also to find the deviation of a ship by terrestrial bearing and for taking compass bearings of objects for the various purposes of navigation.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which;—

Figure 1 is a plan view of a compass provided with my improved attachment, Fig. 2 a transverse vertical sectional view on the line 2—2 of Fig. 1, Fig. 3 a transverse vertical section on the line 3—3 of Fig. 2, Fig. 4 an end view of the top part of the construction shown in Fig. 2 and with part of the construction omitted, and;—Fig. 5 a bottom plan view of a part of the attachment.

In the drawing forming part of this specification, I have shown at *a* an ordinary compass provided with the usual transparent top plate *a*² and having the usual "lubbers" line *b*, compass box *c*, gimbal *d* and compass card *e*, and in the practice of my invention I form centrally of the transparent top plate *a* a socket or recess *a*³.

The attachment proper consists of a base plate *f* which is substantially triangular in form and provided with three feet *f*² adapted to bear on the plate *a*², and fixed centrally in the base plate *f* is a pivot pin *f*³ in which is secured a shadow pin or wire *g*. The base plate *a* is also provided with two vertically

arranged parallel rods *h* at equal distances from the pivot pin *f*³, and the shadow pin or wire *g*, and these rods are connected at their upper ends by a transverse plate *i* having a central aperture *i*², and mounted on the plate *i* is a centering block *j* through which the shadow pin or wire *g* is passed, and in which said pin or wire is secured, and the block *j* is provided at the bottom thereof with a boss *i*² which fits in and is movable in the aperture *i*² in the plate *i*.

The plate *i* is provided on the top thereof and arranged in a circle around the block *j* with a plurality of posts *j*³ which are preferably four in number, and in each of these posts is a set screw *k* and by means of these set screws the position of the block *j* may be regulated at all times, the object of this construction being to place the said block or adjust it exactly centrally so that the shadow pin or wire *g* will be held at an angle of 90 degrees to the top plate *a*² of the compass.

The rods *h* are extended above the plate *i*, and one of said rods is provided at the top thereof with a V-shaped recess *h*² and the other with a pin or sharp edge *h*³, the object of this construction being to form a sight with which to accurately locate an object as hereinafter described. I also provide a pointer device or blade *m* which is adapted to be used in connection with the base plate *f*, and which is provided centrally of one edge thereof with a recess *m*² at the opposite sides of which are other recesses *m*³, and the recesses *m*² and *m*³ correspond with the pivot pin *f*³ and with the rods *h*, and said pivot pin and rods are adapted to enter said recesses when the pointer device or blade *m* is placed in position. The said pointer device or blade *m* is also provided on the bottom thereof with a pin *m*⁴ adapted to enter a corresponding recess *m*⁵ in the plate *f*, and when the pointer device or blade *m* is placed in position as shown in Figs. 1 and 2, the rods *h* and the pin *f*³ pass into said recesses and securely hold the pointer device or blade *m* in position and prevent its lateral or other movement.

The use of this device will be readily understood by any one familiar with the art to

which it relates when taken in connection with the following statement. If at any time it be desired to take the bearing of a ship by means of a fixed point on shore such as a light-house or other object, the attachment is rotated on the compass until the rods *h* are in the same plane with said object, this being accomplished by means of the sights at the top of said rod. The pointer *m* will then indicate a certain point on the compass and the usual calculations in order to determine the location of the ship may then be made, and the same operation may be performed by use of the sun either at sunrise or sunset. The use of the shadow pin *g* is the same as the use of other devices of this class but with my construction the shadow pin *g* is a fine wire or rod and is supported both at its top and bottom and is always in proper condition and position for use and cannot be injured by bending the top thereof or by dislocating the same as frequently happens with other devices of this class, and by making the top of said shadow pin, wire or rod adjustable, I provide means whereby it may be held in proper position at all times. It will be understood that the shadow pin or wire *g* is used independently of the rods *h* and the pointer *m*, the latter being intended principally for use when the weather is dull.

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

1. An attachment for compasses comprising a base plate provided centrally with a pivot adapted to enter a recess in the top plate of the compass, said base plate being provided with a central aperture and two vertically arranged rods connected at their tops by a transverse blade, an adjustable block mounted on said transverse blade and over the central aperture formed therein, a shadow pin connected with the central portion of the base plate and with said adjustable block, said rods being projected above said plate and provided with sights.

2. A compass attachment adapted to be rotatably mounted centrally on the top plate of the compass, said attachment being provided with a vertically arranged shadow pin or wire, the top of which is adjustable radially, and a pointer adapted to be connected horizontally with the bottom portion of the attachment.

3. An attachment for compasses adapted to be rotatably mounted on the top plate of a compass centrally thereof, said attachment being provided with two vertically arranged rods between which is a vertically arranged shadow pin or wire, said rods and wires being in the same vertical plane, and said rods being provided at their tops with sights, and a pointer adapted to be connected horizon-

tally with the bottom portion of the attachment and the point of which is in the same plane with said rods and shadow pin or wire.

4. A compass attachment adapted to be rotatably mounted centrally on the top plate of a compass, said attachment being provided with two vertically arranged rods, and a pointer adapted to be connected horizontally with the bottom portion of the attachment, and in the same plane with said rods.

5. A compass attachment adapted to be rotatably mounted centrally on the top plate of a compass, said attachment being provided with two vertically arranged rods, and a pointer adapted to be connected horizontally with the bottom portion of the attachment and in the same plane with said rods, said attachment being also provided centrally with a vertically arranged shadow pin, and means for supporting said shadow pin both at the top and bottom thereof.

6. A compass attachment adapted to be rotatably mounted centrally on the top plate of a compass, said attachment being provided with two vertically arranged rods, and a pointer adapted to be connected horizontally with the bottom portion of the attachment and in the same plane with the said rods, said attachment being also provided centrally with a vertically arranged shadow pin, supported both at the top and bottom thereof, and the top of which is radially adjustable.

7. A compass attachment adapted to be rotatably mounted on the top plate of a compass, said attachment being provided with a centrally arranged shadow pin, and at the opposite sides thereof with two vertically arranged rods which extend above the top of the shadow pin and are provided at their tops with sights.

8. A compass attachment adapted to be rotatably mounted on the top plate of a compass, said attachment being provided with a centrally arranged shadow pin, and at the opposite sides thereof with two vertically arranged rods which extend above the top of the shadow pin and are provided at their tops with sights, and a pointer adapted to be detachably connected horizontally with the bottom portion of said attachment and in the same plane as said rods and shadow pin.

9. An attachment for a compass adapted to be rotatably mounted on the top plate of a compass and provided with a vertically arranged shadow pin, and means for supporting said pin both at the top and bottom thereof, the top supporting means being radially adjustable.

10. An attachment for a compass adapted to be rotatably and centrally mounted on the top plate of a compass, said attachment being provided with two vertically arranged

rods, between which is a vertically arranged shadow pin means for supporting said shadow pin both at the top and bottom thereof, said rods and pin being in the same vertical plane, and the bottom of the attachment being provided with a horizontal pointer in the same plane as said rods and pin.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 16th day of May, 1908.

JAMES T. LIHON.

Witnesses:

M. E. DOODY,
C. E. MULREANY.

It is hereby certified that the name of the patentee in Letters Patent No. 908,110, granted December 29, 1908, for an improvement in "Compass Attachments," was erroneously written and printed "James T. Lihon," whereas said name should have been written and printed *James T. Lihou*; and that the proper correction has been made in the files and records of the Patent Office, and is hereby made in said Letters Patent.

Signed and sealed this 9th day of February, A. D., 1909.

[SEAL.]

C. C. BILLINGS,
Acting Commissioner of Patents.