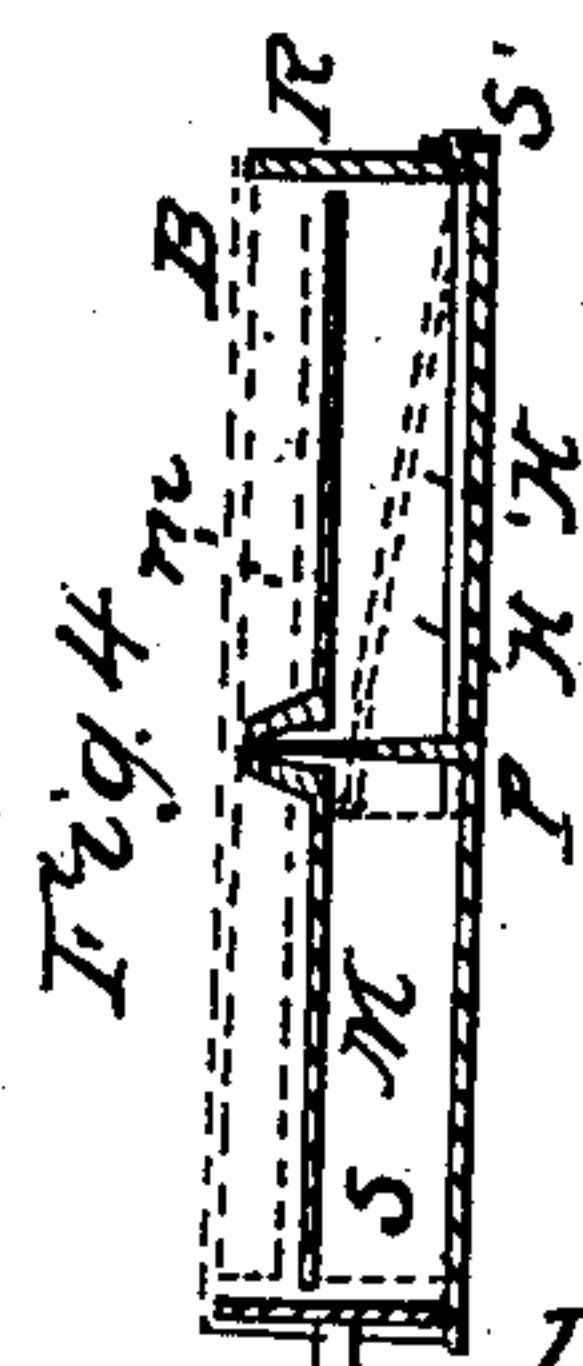
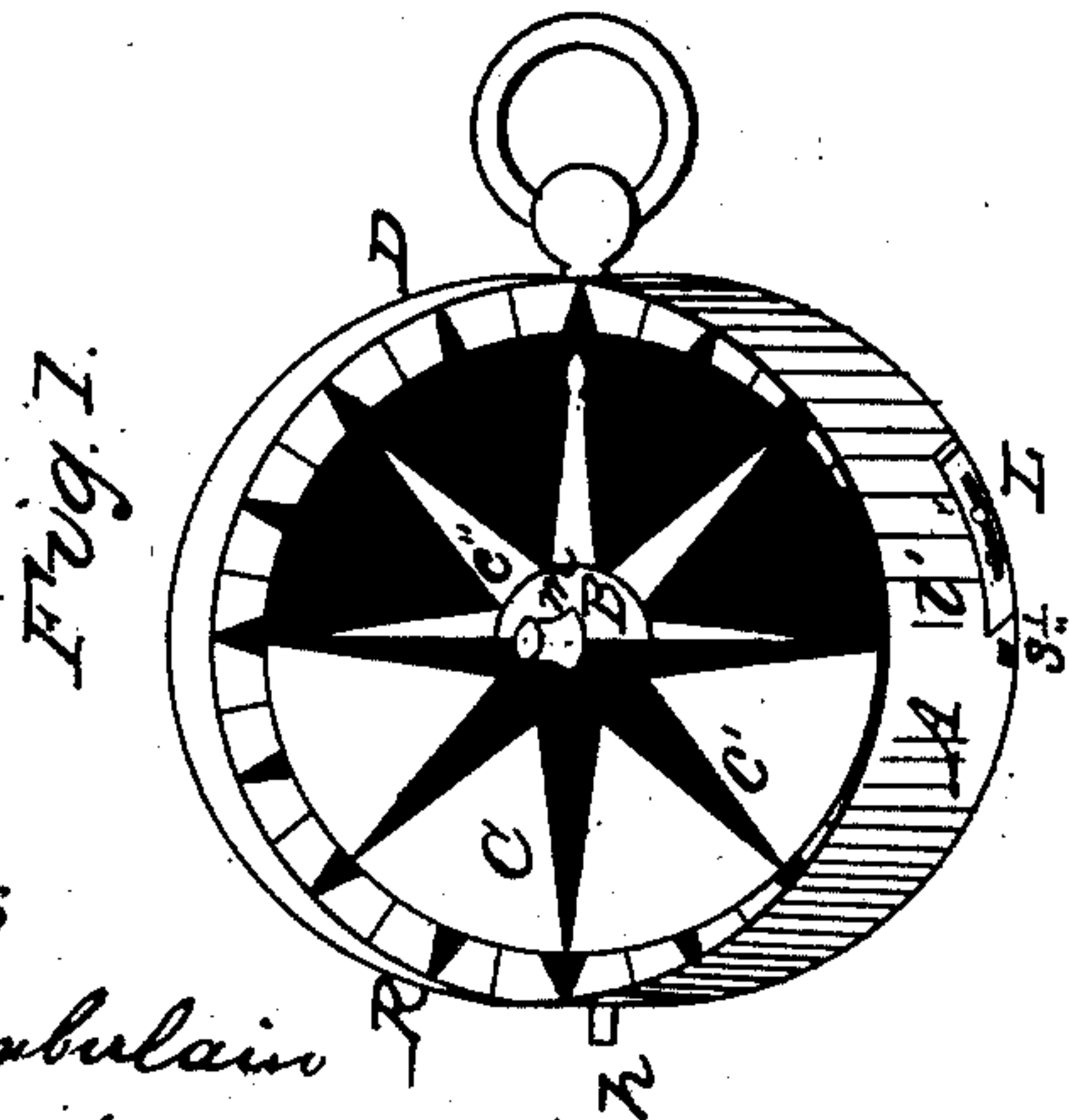
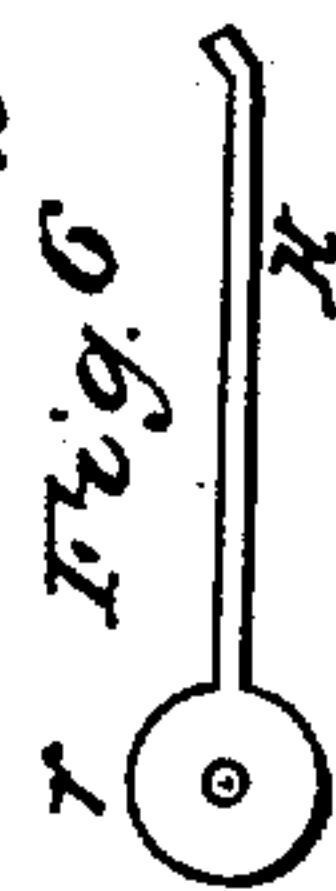
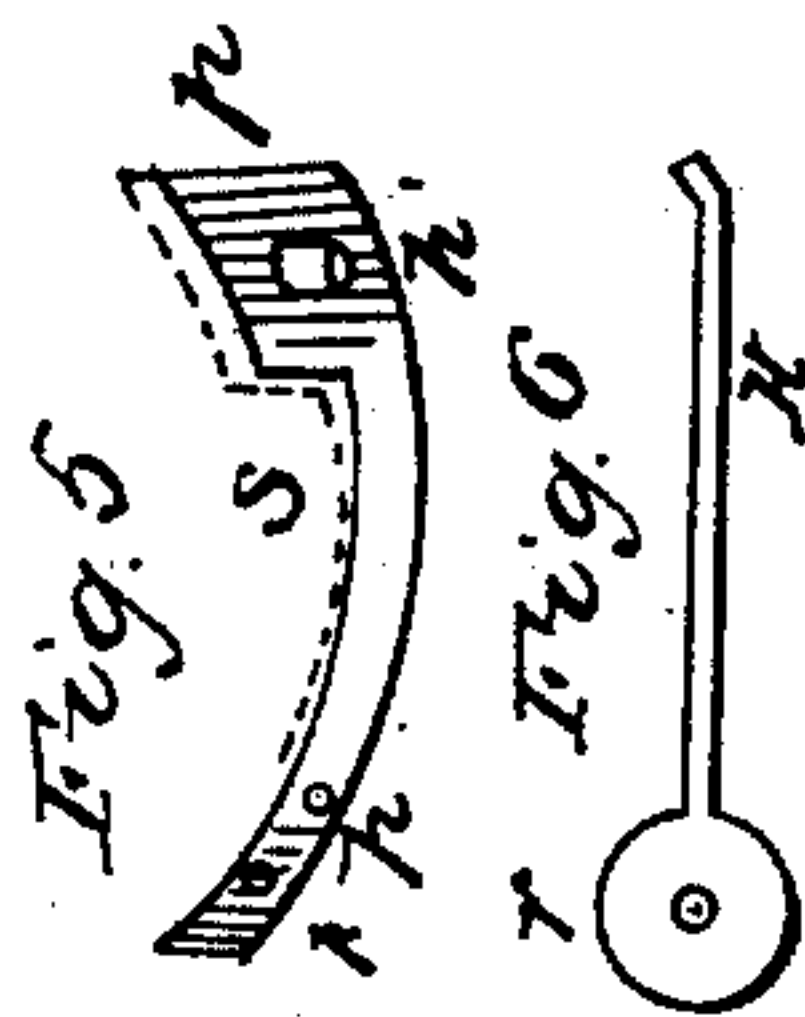
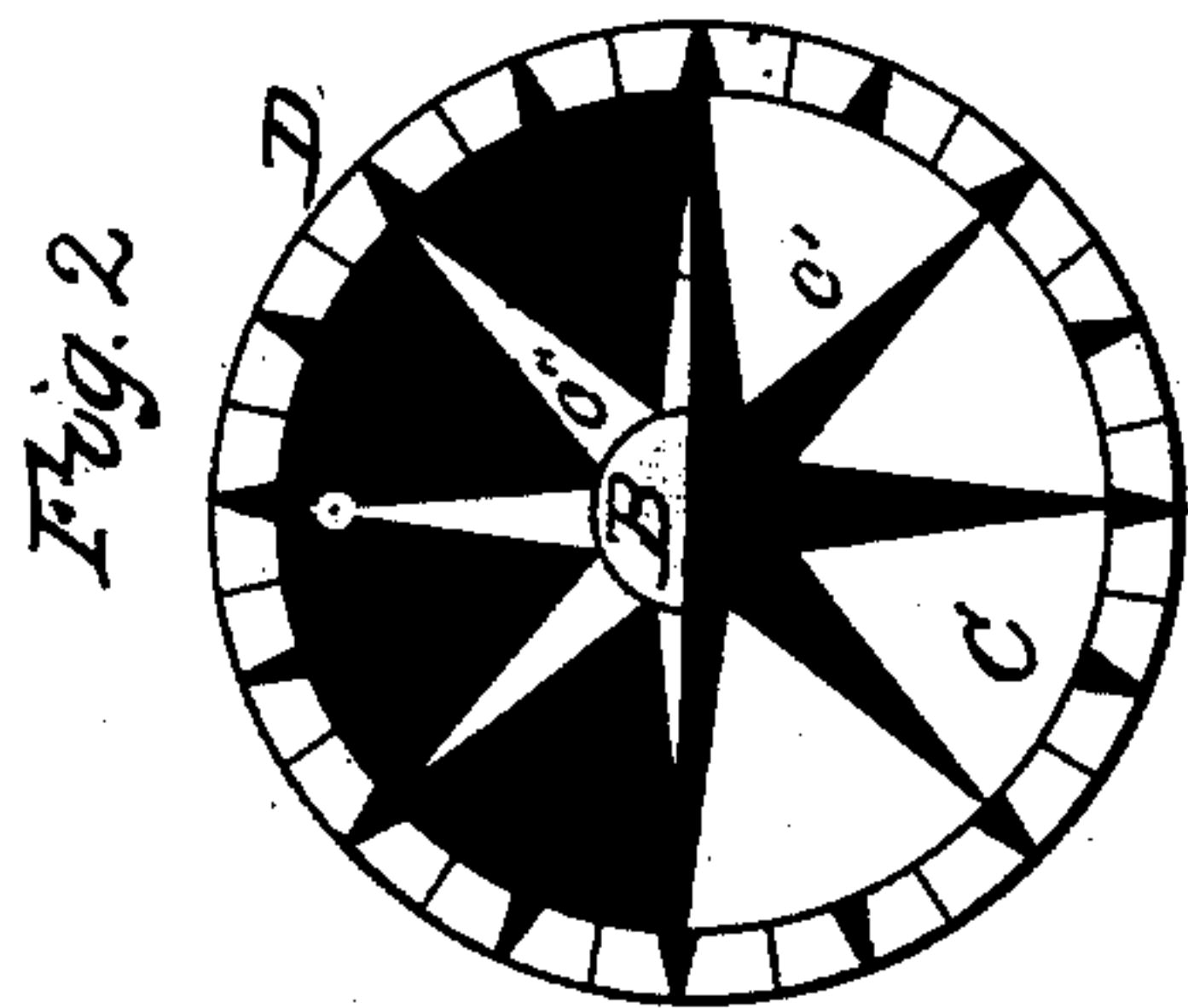
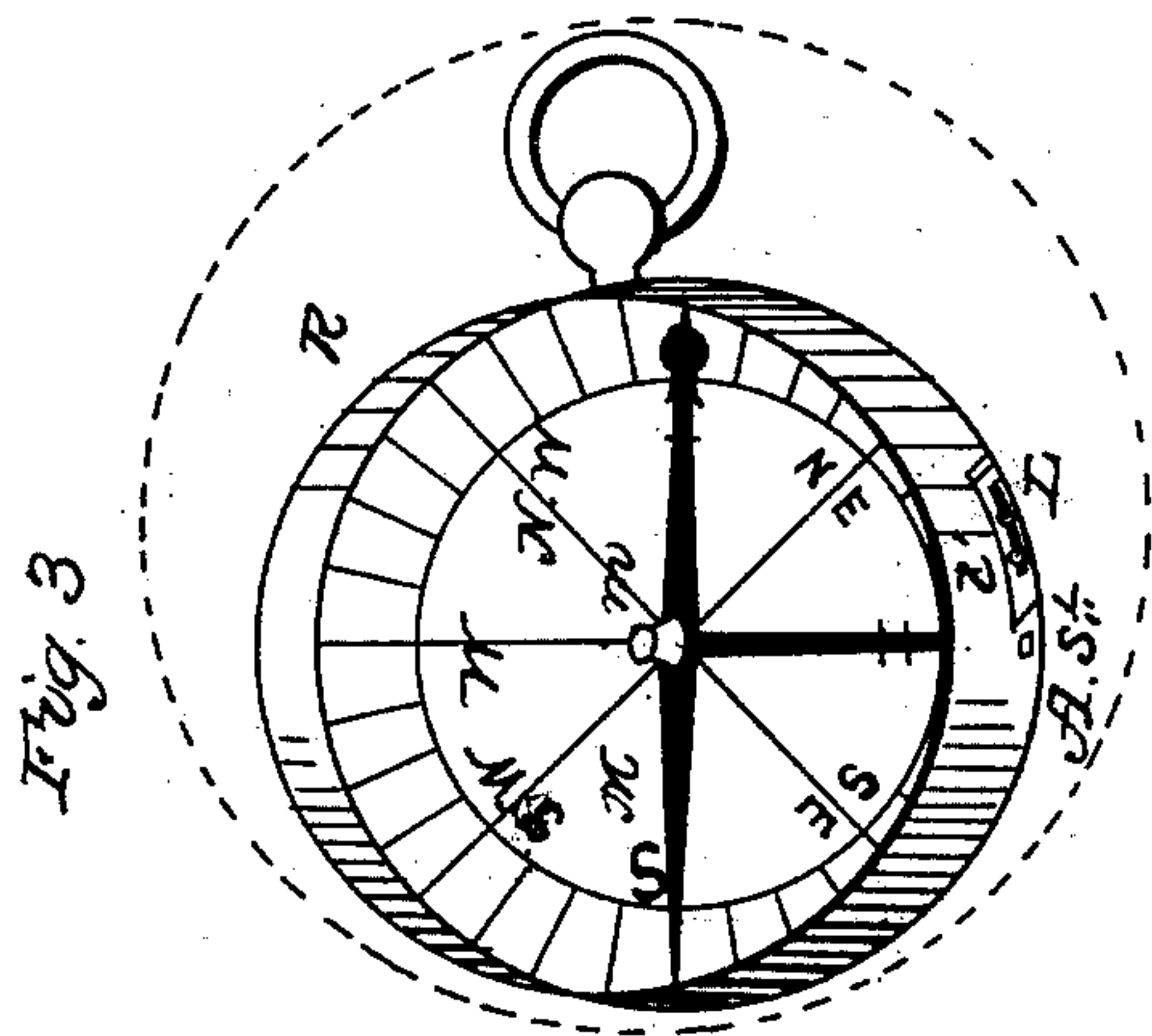


H. W. HUNTER.  
Magnetic Compass.

No. 35,156.

Patented May 6, 1862.



Witnesses  
James & Chamblain  
Matthew Hunter

Inventor  
H. W. Hunter

# UNITED STATES PATENT OFFICE.

H. W. HUNTER, OF NEW YORK, N. Y.

## IMPROVEMENT IN MAGNETIC COMPASSES.

Specification forming part of Letters Patent No. 35,156, dated May 6, 1862.

*To all whom it may concern:*

Be it known that I, H. W. HUNTER, of the city, county, and State of New York, have invented a new and useful Improvement on Magnetic or Needle Compasses; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, forming a part of the same, in which—

Figure 1 is a partial perspective view of the compass and floating card. Fig. 2 is a plan view of the floating card. Fig. 3 is a view of the compass without the floating card. Fig. 4 is a vertical section of the compass. Fig. 5 is a view of the catch-spring to hold the card in position, and Fig. 6 is a view of the spring-hand which throws the card and needle off the pivot when not required for use.

Similar letters refer to like parts on all the figures.

To enable others skilled in the art to make and use my invention, I will describe it as clearly as possible.

The nature of my invention consists, first, in providing an adjustable floating card so made that the points of the compass may be read off at night by scouting parties or seamen without the use of artificial light. One-half of it is white and the other half is stained black, with the exception of the points, which are black on the white section and white on the black section of the card.

The compass represented is one designed for carrying in the pocket for the use principally of travelers or scouting parties or troops on march during night. No compasses used by travelers or for military or surveying purposes, so far as I know, are made with floating cards.

A is a brass box similar to that of the common pocket-compass.

P is a vertical pivot, secured in the center of the box, as shown in Fig. 4.

M is the magnetic needle, placed by a bushing, *m*, on the top of the pivot, as shown in Figs. 3 and 4.

The common travelers' pocket-compass is represented by Fig. 3 with the points on the inside of the bottom. My improvement upon this compass will be more easily explained by comparing it with the other figures.

B is the floating card. The magnetic needle M is connected to it, and it therefore floats or vibrates with the needle on its pivot. Ships'

compasses are made with floating cards, and I do not specifically claim such, but the construction of such cards with very conspicuous contrasting portions of the surface.

C represents one half of the surface, which is white, and D the other half of the surface of the card, which is black, (with the exception of the rim or border.) The surface of the card may be of paper, with the dark portion D stained and the white left with the dark points stained. I prefer, however, and do make the white portions of the card of very thin plates of mother-of-pearl, because it possesses great powers of reflection. On the white half of the card I place dark-star or pointing lines *c'*, and on the dark half D, I secure white-star lines *c''*. As the card is secured to the magnetic needle M and vibrates with it on the pivot, the north pole is more easily distinguished by the white and black contrasting portions of the card-surface. So easily are the contrasting portions distinguished that the position of the needle may be easily ascertained in quite a dark night in the open atmosphere.

S is a flat piece of thin sheet brass or other metal. It is fastened on the rim R of the box, inside, with two pins, *p p*, at one end. The other end, *p'*, is enlarged and has a nib, *h*, projecting from it. A hole is made in the side of the box in the rim, through which the nib *h* passes, as shown in Fig. 4.

In using this compass to make an observation at night, so as to obtain a knowledge of the position and direction of those who use it, after the needle is allowed to vibrate on its pivot until it has become steady, the thumb is pressed upon the nib *h*, when the enlarged end of the thin catch-plate S is pressed against the floating card B and holds it fast and steady. The box or entire compass may now be raised near the eyes, and may be held angling, so as to obtain the observation of the needle in the best and most convenient manner.

H is a spring-hand. Its form is shown in Fig. 6. Its inner end, *r*, is formed with an opening like the hand of a watch. It is placed over the pivot P, as shown by Fig. 4, dotted lines, and the shank extends outwardly at an angle, and the inclined end piece, *i*, passes through a slit, *s'*, at the bottom of the rim, as shown in Figs. 1, 3, and 4. When this arm H is left free and the card B is also free the magnetic needle vibrates freely on its pivot P.



When not in use the arm H is employed to raise up and hold the needle and its card free from the pivot. L is a slide, made of a thin piece of flat brass. It has a longitudinal slit made in it, and is secured to the rim of the box by two pins in the slit, the pins being fastened to the rim. One end, *l*, of this slide is formed with an incline, as represented in Figs. 1 and 3. The hand H is free.

Although floating cards are employed on ships' compasses, they are not made with such striking contrasting surfaces as my floating card, and afford no assistance in themselves to assist the steersman in darkness. An artificial light is therefore always necessary in the binnacle. During storms this is frequently extinguished.

A floating card formed according to my invention, placed on a ship's compass, enables the steersman to steer by the points during hours

of night when it is totally impossible to steer by the common card without a lamp. It is for field purposes, however, that my floating card is most valuable, because the traveler and the soldier may use such a compass as a guide in darkness (absolute darkness being unknown) when no light can be obtained or used of an artificial nature.

Having thus described my invention, I claim—

A floating compass-card, B, formed with its upper surface divided into one half white and the other black, with the exception of the star-point lines *c' c''*, which are black on the white and white on the black section, as described, and for the purposes set forth.

H. W. HUNTER.

Witnesses:

JAMES F. CHAMBERLAIN,  
MATTHEW HUNTER.