

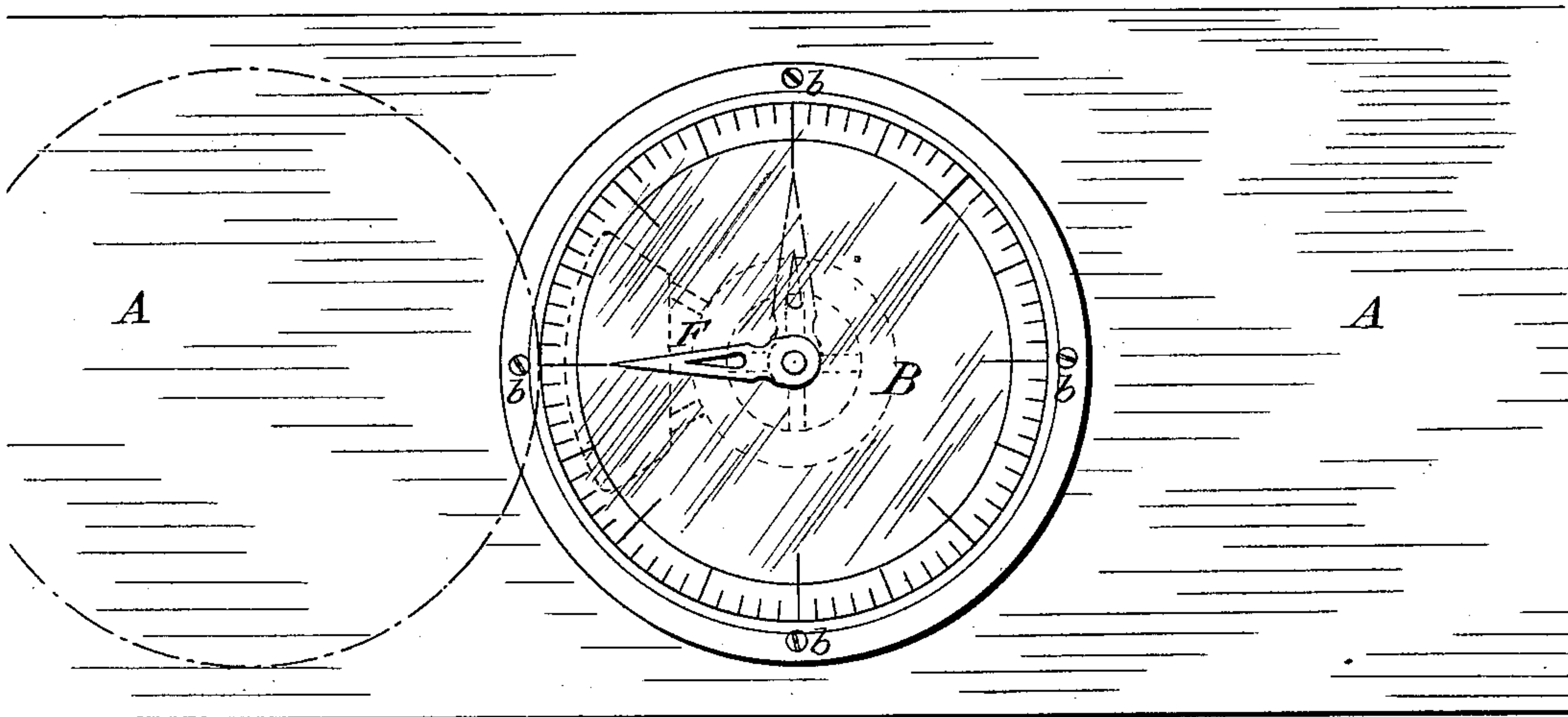
(No Model.)

J. T. RIDER.  
PLUMB LEVEL.

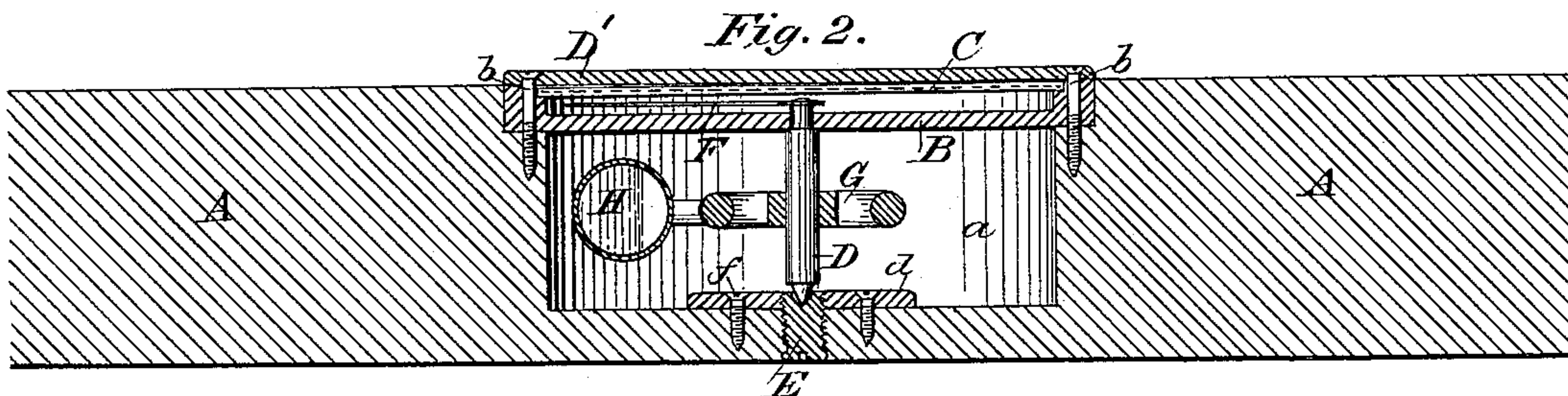
No. 482,026.

Patented Sept. 6, 1892.

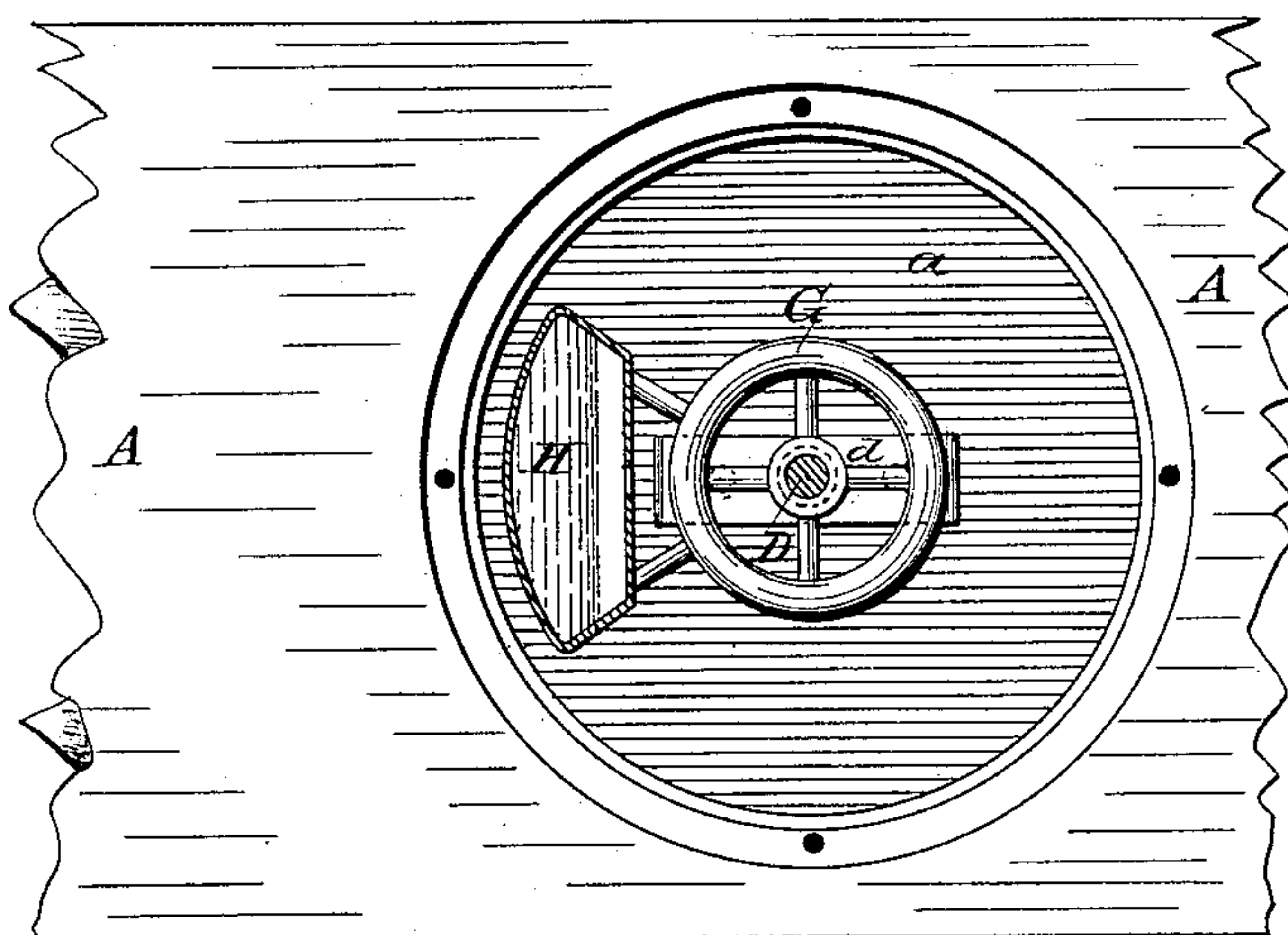
*Fig. 1.*



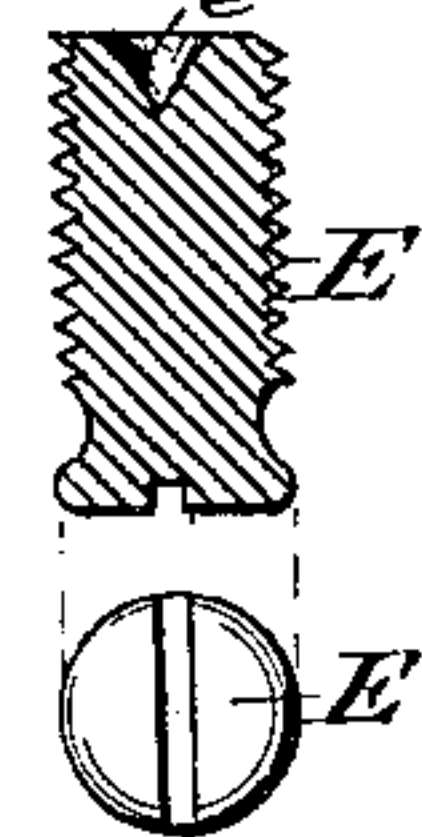
*Fig. 2.*



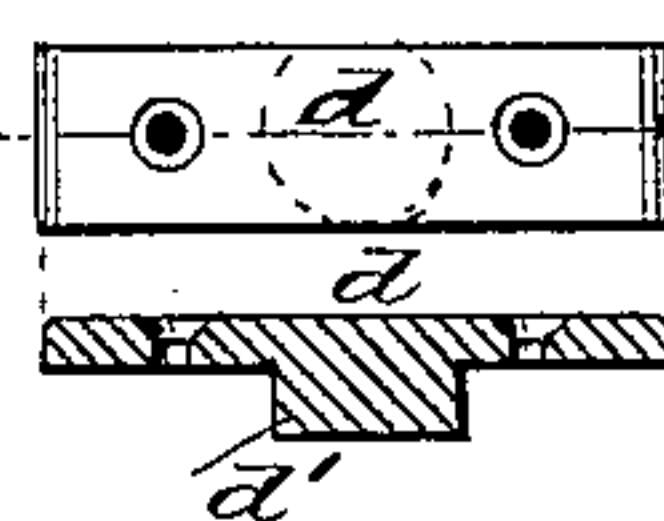
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



Witnesses:

*D. W. Guernsey*  
*C. G. Cooper.*

Inventor:

*John T. Rider,*  
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*Attorney.*



# UNITED STATES PATENT OFFICE.

JOHN T. RIDER, OF SOUTH OIL CITY, PENNSYLVANIA, ASSIGNOR OF ONE-FOURTH TO HARVEY FRITZ, OF SAME PLACE.

## PLUMB-LEVEL.

SPECIFICATION forming part of Letters Patent No. 482,026, dated September 6, 1892.

Application filed April 6, 1891. Serial No. 387,886. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN T. RIDER, a citizen of the United States, residing at South Oil City, in the county of Venango and State of Pennsylvania, have invented certain new and useful Improvements in a Combined Level and Plumb; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in levels and plumbs; and the object of the invention is to produce a level and plumb in which the use of the ordinary glass bottles or holders for containing the alcohol, &c., is entirely dispensed with, thus preventing breakage; also, to facilitate the ascertaining of any degree of a level or plumb line without the necessity of moving the instrument in the stalk or wood frame, as it is well known that the bottles in the ordinary levels have to be adjusted to the desired line, and finally to construct a fly or balance wheel having a vessel suspended below it and containing mercury to accomplish the vibrating motion that the alcohol produces in the bottles now in use.

With these objects in view my invention consists in the construction of certain details and arrangement of parts, as will be more fully described hereinafter, and specifically pointed out in the claim, reference being had to the accompanying drawings and the letters of reference marked thereon.

Like letters indicate similar parts in the different figures of the drawings, in which—

Figure 1 represents a front or face view of the improved instrument containing my invention. Fig. 2 is a longitudinal section on line *x x* of Fig. 1. Fig. 3 is a plan of the same with the dial-plate and cover removed. Fig. 4 represents enlarged detail views of the adjustable screw-step for the spindle. Fig. 5 is a detail view of the pivot-plate for the screw-step of the spindle.

In the drawings, A represents a part of the stalk or wood frame, of any suitable size and

material, to which the indicating parts are attached. They consist of a dial-plate B, upon which the degrees of the circle are placed. The dial-plate is secured in the face of the stalk by screws *b*, and under it an opening or hole *a* is made for the reception of the operating parts of the level. A glass plate C may be placed over the opening *a*, and to protect the operating parts a cover D is attached or pivoted at one side, so that it can be moved to one side when it is desired to use the instrument. The cover is shown in dotted lines moved to one side in Fig. 1, and it may be secured in any suitable manner.

A spindle D is centrally pivoted in a step or bearing E, formed of a screw having a depression *e* in its inner end. This screw-step is entered from the rear or back of the instrument, and is held in place by a screw-thread in the plate *d*, secured to the bottom of the hole *a* in the stalk by two or more screws *f*. The other end of the spindle D is supported in the dial-plate, and, passing through, it has the pointer or index F secured to it, by which the degrees are indicated on said plate.

To the central part of the spindle a fly or balance wheel G is secured in any suitable manner, and it has a vessel H attached to it. This vessel H contains mercury and is suspended by one or more arms from the fly-wheel and serves to move the spindle and its index by the slightest movement of the stalk from the level or plumb line. The vessel H may be made of any suitable material that cannot be easily broken. The spindle D is provided with a conical point *c*, which fits loosely into the depression *e* in the adjustable step E, so as to form a very small bearing for said spindle and prevent any friction. The plate *d* may be provided with a hub or boss *d'* to increase the length of thread for the screw-step, if desired.

I am aware of Patents No. 297,227 to Brown, No. 126,372 to Barnum, No. 279,443 to Sands, and No. 360,378 to Duffy, and disclaim the construction therein shown.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The herein-described plumb-level, consisting of the stock A, in which is adjusted the axis D, having bearings in the adjustable step E, screwed into the bottom of the recess a  
5 and in the graduated dial-plate B, covering the top of said recess and having rigidly secured thereto a pointer F, adapted to traverse the aforesaid dial-plate, and a ring G, supporting a closed vessel H, containing mercury, adapted to bring the aforesaid pointer speedily to a perpendicular.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN T. RIDER.

Witnesses:

D. W. GUERNSEY,  
C. G. COOPER.