

R. A. SPARKS.  
 PLUMB BOB AND LEVEL.  
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1,096,517.

Patented May 12, 1914.

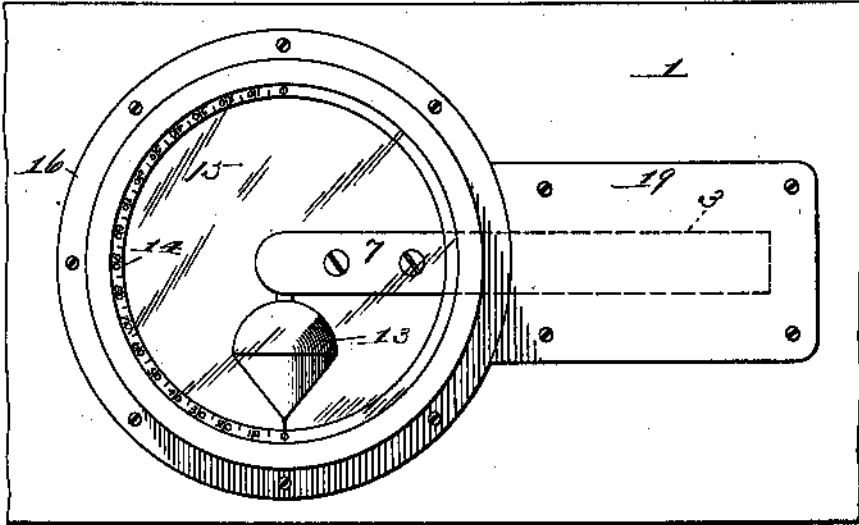


Fig. 1.

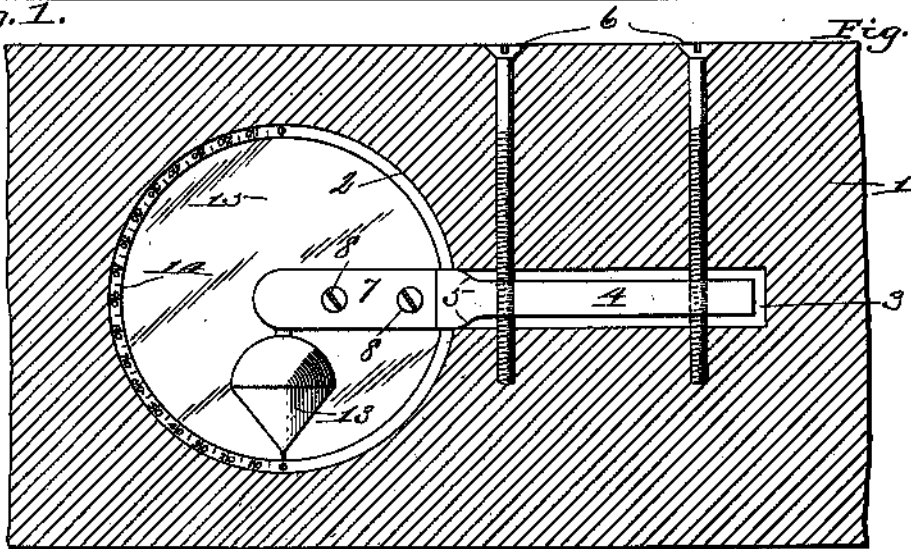


Fig. 2.

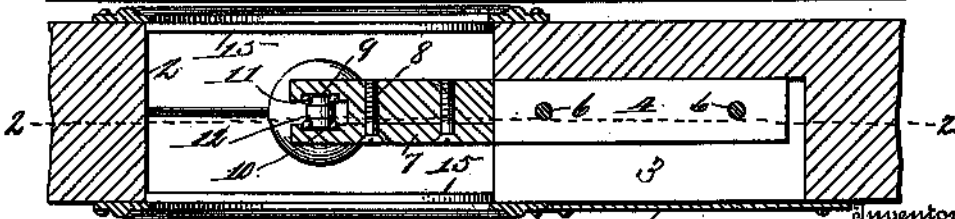


Fig. 3.

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Witnesses

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# UNITED STATES PATENT OFFICE.

ROBERT A. SPARKS, OF VINCENNES, INDIANA.

## PLUMB BOB AND LEVEL.

1,096,517.

Specification of Letters Patent.

Patented May 12, 1914.

Application filed January 3, 1913. Serial No. 739,929.

*To all whom it may concern:*

Be it known that I, ROBERT A. SPARKS, a citizen of the United States, residing at Vincennes, in the county of Knox and State of Indiana, have invented a new and useful Improvement in Plumb Bobs and Levels, of which the following is a specification.

This invention relates to an improved ball bearing plumb bob and level combined, and the object of the invention is a device of this kind, which will be accurate, easily read, and simple and durable in construction, and which can be manufactured and assembled at a comparatively low cost.

The invention consists of the novel features of construction hereinafter described, pointed out in the claims and shown in the accompanying drawings, in which,

Figure 1 is a side elevation. Fig. 2 is a section on the line 2—2 of Fig. 3 parts being shown in side elevation. Fig. 3 is a section on the line 3—3 of Fig. 2.

In the drawings 1 represents a stock, which is provided with a cylindrical opening 2 and with a horizontally arranged transverse slot 3, one end of said slot opening into the recess 2. Arranged in said slot is a bar 4, of less vertical thickness than the vertical width of the slot, and projecting radially across the recess 2. This projecting portion is slightly wider than that portion resting in the slot 3, and at the point of exit of said bar from the slot into the recess, upper and lower curved shoulders 5 are formed thereby permitting a slight vertical rocking movement of the bar 4. The bar 4 is adjusted in position at the time the parts are assembled and as the slot is of greater width than the bar, and the latter may be rocked slightly upon its shoulders, the said bar can be readily brought into position so as to exactly center the parts from which the bob hangs and which are described in detail hereafter, and when such parts are so centered they are held in position by suitable screws 6 which are inserted in the top of the stock 1 and which pass through the body portion of the stock, through suitable threaded apertures in the reduced portion of the bar 4. This projecting end of the bar is cut longitudinally thereby forming it of two sections, one of which as indicated at 7 is in the form of a face plate, and secured to the main body portion of the bar by means of screws 8. The end of the bar proper is cut away and a suitable ball cup 9 is formed

upon the inner side of the cut away portion and a corresponding ball cup 10 is formed upon the inner face of the plate 7. Suitable balls 11 are arranged in the cups 9 and 10 and mounted in the bearings thus formed is a shaft 12 from which depends a bob 13. A suitable graduated indicator ring 14 is arranged in the recess 2, and said ring may be formed U-shaped in cross section if desired, the point of the bob traveling therein, or separate rings having the indicating scale upon their outer faces may be provided, the rings being slightly spaced apart and the point of the bob traveling between them.

The recess is closed upon each side by suitable glass plates 15 held in place by retaining rings 16, and the slot 3 which opens through one side of the stock 1 is covered by a plate 19 which may be used as a name plate and can have any desired printed matter stamped thereon.

For accurate reading of the scales it is essential that the shaft 12 be centered with respect to the ring 14, and if the bar 4 fitted tightly in the slot 3 it would be necessary to exercise great care in the cutting of the said slot as the slightest variation in forming the slot would throw the shaft 12 off center and the error could not be corrected without recutting the slot, which would make it too large for the bar 4, whereas by my construction the parts can be adjusted at the time they are assembled without exercising any special skill in cutting the slot 3 and said adjustment when once made is permanent.

What I claim is:—

1. A device of the kind described comprising a stock having a recess, and also provided with a longitudinal slot opening into said recess at one end, a bar having shoulders upon opposite faces and intermediate its ends, said bar being adapted to rock upon said shoulders, a portion of the bar extending into said slot and adapted for transverse movement within the slot and the other portion extending into said opening in the stock, screws passing through said bar and a portion of the stock and across said slot, and a bob suspended from the outer end of the bar.

2. In a device of the kind described, a stock having a cylindrical recess and a slot opening radially into said recess, a bar mounted in said slot adapted to have one end centered within the recess, said end being formed in two sections, means for se-

curing the sections together, one of said sections being cut out adjacent the end, ball cups formed in the opposing faces of said sections, balls therein, a shaft mounted between said sections adapted to turn upon the bearings formed by said balls and a bob suspended from said shaft.

3. In a device of the kind described, a stock having a cylindrical recess and a longitudinal slot opening into said recess, a bar having a reduced portion extending into said slot, said bar having a limited play

transversely within the slot, means for holding said bar in adjusted position in the slot, the remaining portion of the bar projecting into the recess being slotted longitudinally to form two sections, means for detachably securing said sections together, and a bob hung between said sections, as and for the purpose set forth.

ROBERT A. SPARKS.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."