

No. 824,109.

PATENTED JUNE 26, 1906.

A. T. GIBSON.
SPIRIT LEVEL.

APPLICATION FILED AUG. 12, 1905.

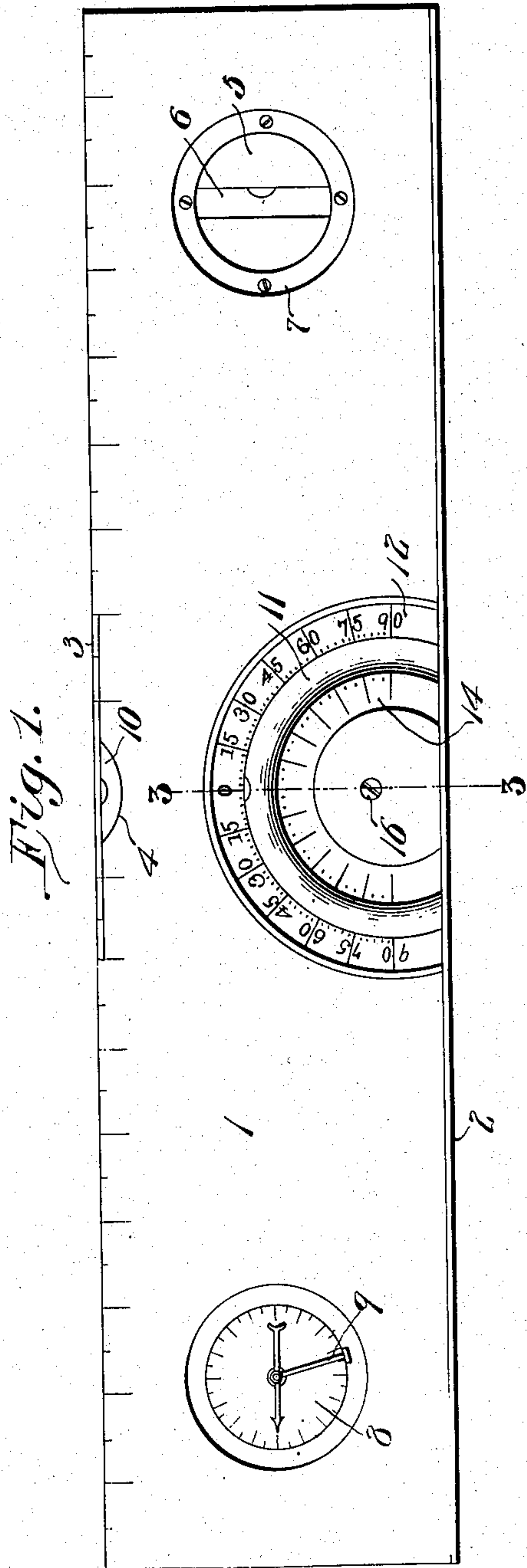


Fig. 3.

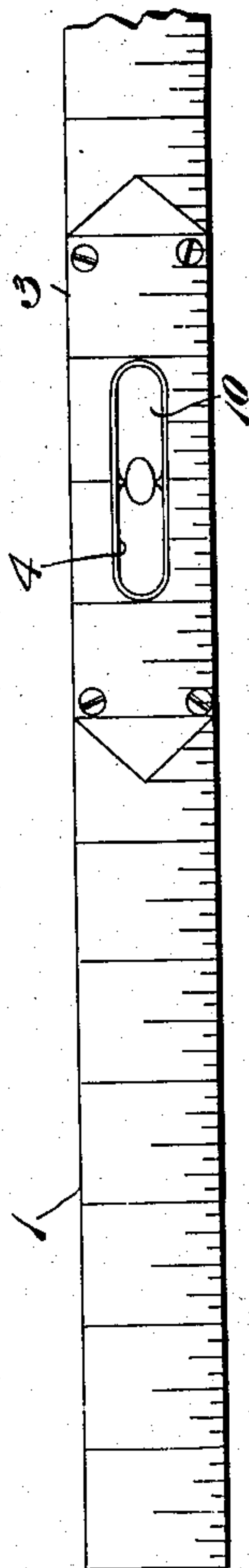
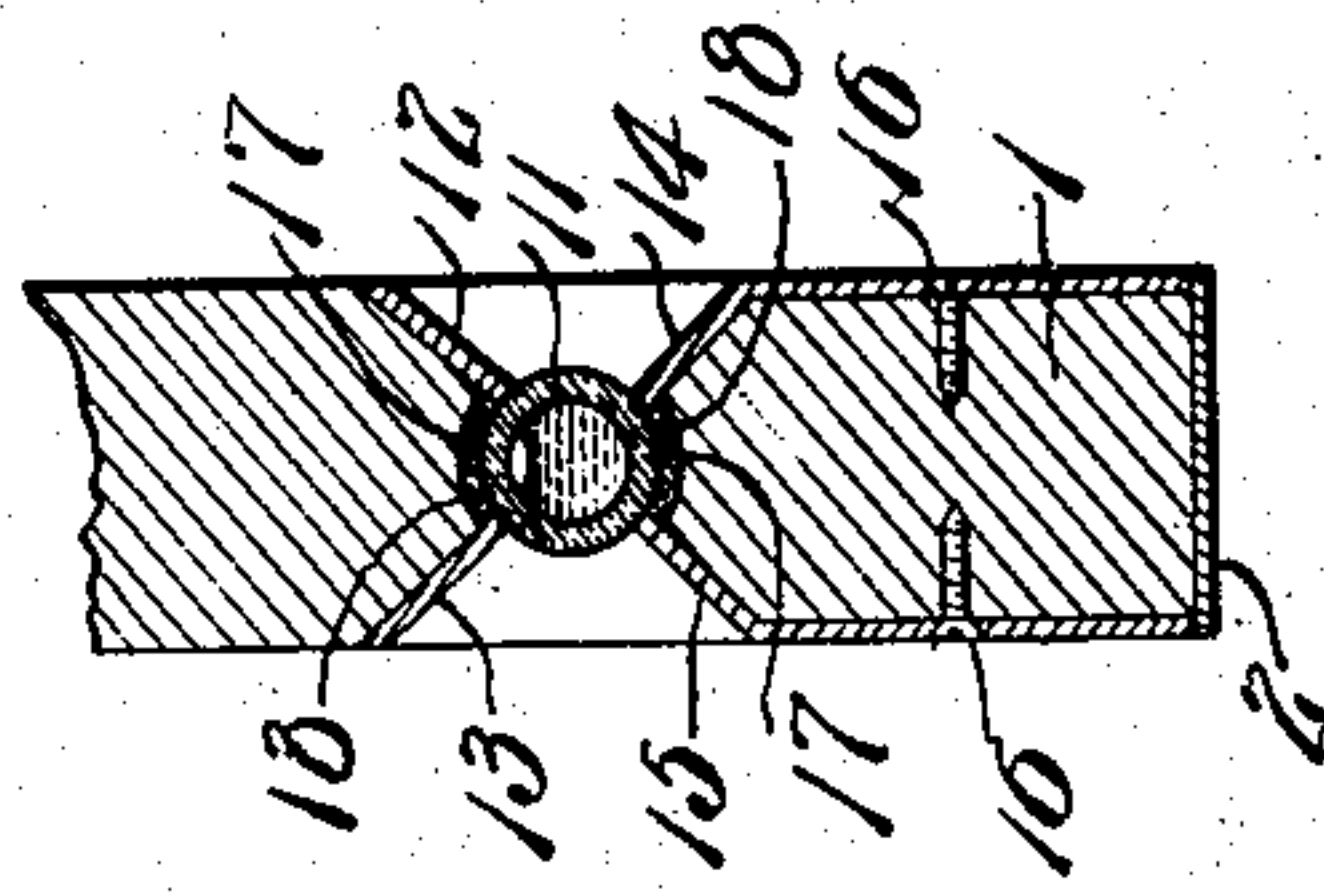


Fig. 2.

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UNITED STATES PATENT OFFICE.

ALLEN T. GIBSON, OF HODGES, TEXAS.

SPIRIT-LEVEL.

No. 824,109.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed August 12, 1905. Serial No. 273,958.

To all whom it may concern:

Be it known that I, ALLEN T. GIBSON, a citizen of the United States, residing at Hodges, in the county of Jones and State of Texas, have invented a new and useful Spirit-Level, of which the following is a specification.

This invention relates to spirit-levels.

The object of the invention is to provide a spirit-level wherein by the novel arrangement of its parts the instrument may be used not only for obtaining level and perpendicular lines, but also for determining any desired intermediate angle with accuracy and ease.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a spirit-level, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, Figure 1 is a view in side elevation of a spirit-level constructed in accordance with the present invention. Fig. 2 is a top plan view of a portion of the level. Fig. 3 is a view in transverse section, taken on the line 3 3, Fig. 1.

The stock 1 of the level may be made of any suitable material, preferably of hard wood, as usual, and is faced on one edge with a metal strip 2 and on its other edge intermediate of its ends is provided with an inset plate 3, having a sight-opening 4, through which the bubble in the tube may be inspected, as usual. The edge of the stock just described is graduated into inches and parts of inches, which, as shown in Fig. 1, extend down on the side, thereby to facilitate measuring by holding the implement in different positions.

Near one end of the stock is an orifice 5, which extends entirely through the same and within which is arranged a spirit-tube 6, that constitutes a plumb, the same being disposed exactly at right angles to the length of the stock and held in place by plates 7, which lie flush with the sides of the stock, this arrangement being adopted in order to permit the tube 7 to be inspected from both sides of the level. Near the other end of the stock is arranged a compass 8 of the usual or any preferred construction and which is employed for running lines for the foundations of buildings. The compass has combined with it a

needle-locking lever 9, which when the implement is not in use in running lines will hold the needle off the pivot, and thereby prevent damage thereto.

The spirit-tube 10 beneath the plate 3 is used for ordinary leveling purposes, and the spirit-tube 6, as above pointed out, for plumbing-work, and in order to provide means whereby different angles may accurately be determined there is a third spirit-tube 11 provided, which, as shown in Fig. 1, is somewhat greater than a semicircle in order that angles up to one hundred and eighty degrees may be computed. This tube is held in position within the stock 1 by means of four plates 12, 13, 14, and 15, and in order to shield the tube 11 from injury it is disposed intermediate of the width of the stock, as clearly shown in Fig. 3. The plates 12 and 13 are disposed at inward-diverging angles relatively to the tube and bear thereon, the outer faces of the plates being each divided into a sector, as shown in Fig. 1, for the purpose of determining degrees of inclination. The plates 14 and 15 are similarly inclined and have their outer faces formed into sectors for the same purpose, the divisions of the four plates coinciding, thereby to secure absolute accuracy in determining the angle at which the stock may be held by bringing the center of the bubble opposite the angle desired, as shown. The plates 14 and 15 extend to and bear against the facing-strip 2 and will thereby be protected from injury and are held combined with the stock by screws 16. By having the plates 12 15 inclined, as described, the scales thereon will be protected from liability to damage, will be brought closer to the spirit-tube 11, and thus insure more accurate measurement of angles, and, further, will afford a positive means of holding the tube combined with the stock. As will be observed by reference to Fig. 3, the opposed faces of the seats 17, in which the tube is disposed, are concaved to conform to the shape of the tube, and thus operates jointly with the plates to hold the latter against shifting.

By disposing the tube 11 in the manner shown and described it can be freely observed from both sides of the implement, so that the graduation-marks of the different sectors or plates 11 15 can always be brought accurately to the center of the bubble. As stated, the spirit-tube 11 is somewhat greater than a semicircle, and in order to per-

mit of its being positioned as shown in Fig. 1 it will be necessary that the seats 17 should be sufficiently larger than the internal and external periphery of the tube to permit of its
5 being laterally inserted to position, and when thus positioned it is held in place by a binder of cement interposed between it and the seats.

It will be seen from the foregoing description that although the improvements herein
10 defined are simple in character they combine in the production of an implement that will be thoroughly reliable and efficient in use and one that will not be liable to become de-
ranged when employed.

15 Having thus described the invention, what is claimed is—

A spirit-level comprising a stock having a segmental opening in the body thereof, the edges of the opening being beveled, an arcu-

ate bubble-tube fitting within the opening, 20 retaining-plates applied to the beveled edges of the opening and engaging the tube, a segmental block within the opening and engaging the inner periphery of the tube, the arcuate edges of the block being beveled, retain- 25 ing-plates applied to the beveled edges of the block and engaging the tube, and an edge strip secured to the stock and extending across the opening to hold the tube and the block therein.

In testimony that I claim the foregoing as
30 my own I have hereto affixed my signature in the presence of two witnesses.

ALLEN T. GIBSON.

Witnesses:

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