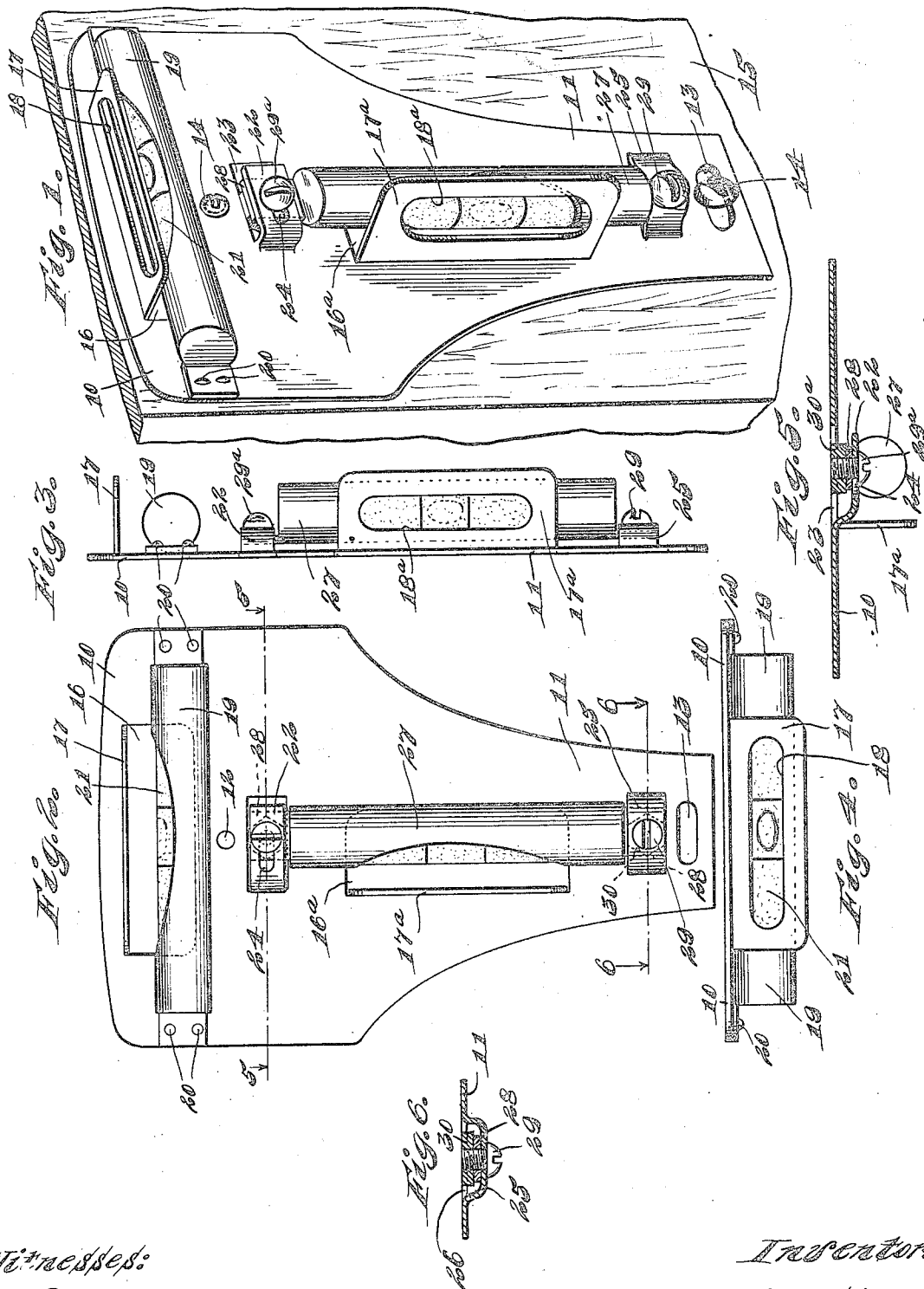


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LEVEL.  
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1,052,447.

Patented Feb. 11, 1913.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## LEVEL.

1,052,447.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed May 20, 1912. Serial No. 698,563.

*To all whom it may concern:*

Be it known that I, ANDREW D. ARMSTRONG, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Levels, of which the following is a specification.

This invention relates to new and useful improvements in plumb bob levels, and is designed to provide a double-acting level which will operate in either the horizontal or the vertical plane.

A further object of the present invention is the provision of a double-acting level which will be provided with a double adjustment.

With the above and other objects in view, this invention consists in the construction, combination and arrangement of parts, all as hereinafter more fully described, claimed and illustrated in the accompanying drawings, wherein:—

Figure 1 is a perspective view of a level constructed in accordance with the present invention, illustrating the same as applied to a board, Fig. 2 is a front elevation thereof, Fig. 3 is a side elevation, Fig. 4 is a top plan view, Fig. 5 is a transverse section taken along line 5—5 of Fig. 2, Fig. 6 is a similar view taken along line 6—6 of Fig. 2.

Reference being had more particularly to the drawings, 10 indicates a plate provided at its lower terminal with the reduced neck 11. The plate 10 is provided with the central orifice 12 adjacent to its upper terminal, and with the slot 13 adjacent to the lower end thereof, through which project the screws 14, whereby the plate and its reduced neck 11 is attached to the board or straight edge 15. The slot 13 is provided in order that the plate 10 may be adjusted about the screw 14 piercing the opening 12 as a pivot. The upper terminal of the plate 10 is pierced by a rectangular opening 16 which creates a lip 17 which is bent outwardly to form a shield, said lip resting at right angles to the body of the plate 10 at the upper terminal thereof and is orificed or slotted, as at 18. A spirit or bubble level 19 is attached to the plate 10 by the rivets 20 under the shield 17 and parallel thereto, the glass 21 thereof registering with the slot 18 of the shield 17, whereby the bubble of the level may readily be seen through said shield. This shield 17 is pro-

vided to protect the glass from becoming broken when the level is subjected to shocks, jars, blows, etc. An opening 16<sup>a</sup> is formed centrally in the reduced neck 11 of the plate 10, creating a lip 17<sup>a</sup> which constitutes a shield, said shield being orificed or slotted, as at 18<sup>a</sup>. Arranged between the upper terminal of the shield 17<sup>a</sup> and the opening 12 of the plate 10, and centrally with respect to the width of said plate, is formed a tongue 22 which creates an opening 23 within the plate 10 and is attached to one side of said opening, said plate being slotted, as at 24. Arranged centrally with respect to the width of the reduced portion 11 of the plate 10 and parallel to the slot 13, is provided a strap 25 formed integrally with the reduced portion 11, which creates an opening 26 in said reduced portion, said strap being secured to said reduced portion 11 at each terminal thereof. A spirit level or bubble tube 27 is interposed between the tongue 22 and the strap 25, said bubble level being provided at each terminal thereof with a projection 28 which projections are retained under the strap 25 and the tongue 22. A screw 29 pierces the strap 25 and the co-operating projection 28 and engages a nut 30 upon the under side of the reduced portion 11, said nut being retained in the opening 26. A screw 29<sup>a</sup> pierces the slot 24 of the tongue 22, the coöperating projection 28, and the nut 30<sup>a</sup> arranged in the opening 23, the openings 23 and 26 preventing the nuts 30<sup>a</sup> and 30, respectively, from rotating. It will clearly be understood that, by the provision of the slot 24, an adjustment of the tube 27 may readily be had.

From the foregoing it will readily be seen that the construction heretofore described provides two level tubes arranged at right angles to each other, said tubes being provided with glass protecting shields. Furthermore, a double adjustment of said tubes is also provided for, as is an independent adjustment of one of said tubes.

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

A level comprising a base plate; a perforated shield struck up from said base plate in perpendicular relation thereto; a slotted tongue struck up from said base plate; a perforated tongue struck up from said base plate; a spirit level having one end inserted under said perforated tongue and

pivoted thereto, and its other end inserted under said slotted tongue and adjustably secured thereto, the indicating portion of said spirit level being in registration with the perforation of said shield, substantially as described.

In testimony whereof I have signed my

name to this specification in the presence of two subscribing witnesses.

ANDREW D. ARMSTRONG.

Witnesses:

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