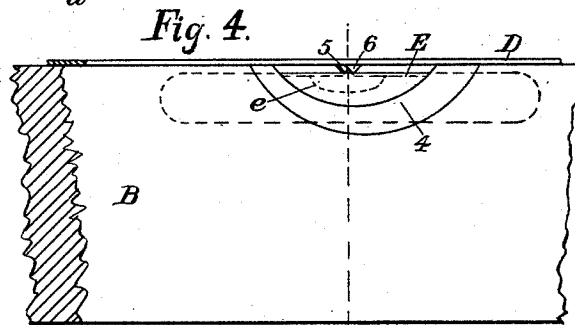
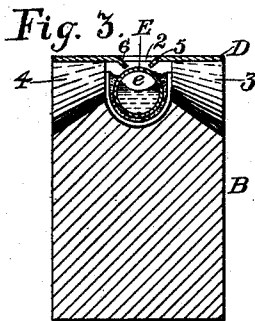
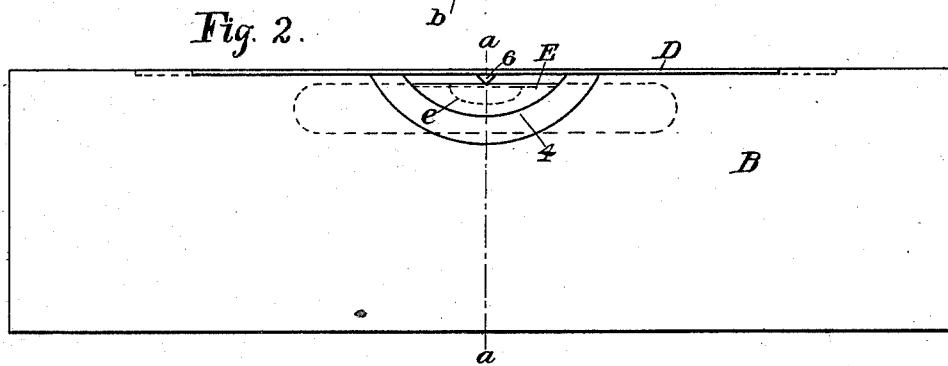
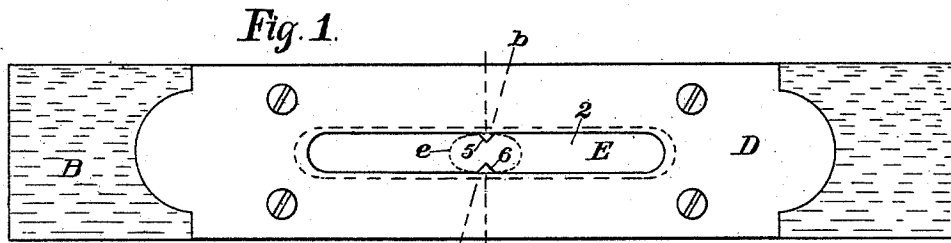


(No Model.)

J. A. TRAUT.
LEVEL.

No. 523,022.

Patented July 17, 1894.



Witnesses:
Robt. U. Ruddell.
Fred. J. Dole.

Inventor:
Justus A. Traut.
By his Attorney,
F. W. Richards

UNITED STATES PATENT OFFICE.

JUSTUS A. TRAUT, OF NEW BRITAIN, CONNECTICUT.

LEVEL.

SPECIFICATION forming part of Letters Patent No. 523,022, dated July 17, 1894.

Application filed February 3, 1894. Serial No. 498,990. (No model.)

To all whom it may concern:

Be it known that I, JUSTUS A. TRAUT, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Levels, of which the following is a specification.

This invention relates to that class of levels known as "spirit-levels."

10 The object of this invention is to provide, in connection with a level-stock and level-glass, a simple and efficient device for facilitating the true sighting of the bubble in the level-glass, either when viewed from above
15 in the usual manner, or when viewed through the side openings in the stock; and to so construct the sight-device that in sighting any deviation from a center line bisecting the bubble at right angles to its length will be instantly noticed, and may be quickly remedied,
20 thus insuring accuracy in sighting.

In the drawings accompanying and forming a part of this specification, Figure 1 is a plan view of a level embodying my invention. Fig. 25 2 is a side elevation of the same. Fig. 3 is a vertical cross-section taken in dotted line $a-a$, Fig. 2. Fig. 4 is a side view of a portion of the level as seen from a point in alignment with the dotted division line $b-b$ shown in
30 Fig. 1.

Similar characters designate like parts in all the figures.

The level comprises the usual level-stock B, recessed longitudinally at its upper side mid-
35 way of its length to receive a level-glass, E, which may be secured therein in any usual manner, said level-stock having the usual side-openings, 3 and 4, through which the level-glass may be viewed from either side of
40 the stock.

Secured to the upper face of the level-stock, preferably by means of screws, is a guard-plate, D, which is centrally and longitudinally slotted or recessed, as shown at 2, to form
45 sight-opening through which the bubble, e , in the level-glass may be viewed from above. This plate (which will be hereinafter termed the "sight-plate") has two oppositely-disposed inwardly and downwardly projecting points, 5
50 and 6, preferably V-shaped, and terminating in close proximity to the level-glass, and extending inwardly beyond the outer edges of

the bubble e when this is in its middle position in the glass. These sight-points 5 and 6 are shown formed at opposite sides of the
55 sight-opening 2, as shown most clearly in Figs. 1 and 3 of the drawings, and project inwardly and downwardly sufficiently so that they may be readily seen either from above or below the plate D, thereby enabling the user to observe, by comparison of said points, whether
60 the bubble is accurately located, with said points centrally of the length thereof, irrespective of the point of observation.

When looking at the bubble from the side
65 of the level, the points not only serve, in the manner before described, for locating the bubble, but also, in consequence of their relation one to the other, for accurately showing the correctness of the point of vision with relation
70 to a straight line drawn through the center of the bubble at right angles to its length, thereby avoiding error in the reading of the same. For instance, when reading the level, if the point of vision of the user is at one side
75 of a line drawn through the centers of the two points 5 and 6 (as when the sight is taken in alignment with the dotted line $b-b$, Fig. 1) both of said points will be visible, as illustrated in Fig. 4, and the user will be cognizant of the fact that his line of vision is not
80 correct; by moving his position so that the nearest point 6 entirely hides the point 5, said error in observation is corrected, and he is enabled to obtain a correct observation of
85 the exact location of the bubble.

The sight-plate will preferably be constructed of sheet metal, stamped to the form illustrated in Fig. 1, with a central opening
90 2 therein and with inwardly projecting points with their apexes in alignment transversely of the plate; which points will be subsequently bent downward, as shown in Fig. 3.

Having thus described my invention, I claim—

1. In a level, the combination with the level-stock and with the level-glass secured therein, of two oppositely-disposed inwardly projecting fixed points terminating remote from each other adjacent to the level-glass and in exact
100 alignment at right angles to the longitudinal axis of the level-glass, substantially as described and for the purpose set forth.

2. In a level, the combination with the lon-

5 longitudinal and transversely recessed level-stock, and with the level-glass secured therein, of two oppositely-disposed inwardly-projecting fixed points terminating adjacent to the level-glass at points below the upper surface of the level-stock and in exact alignment at right angles to the longitudinal axis of the level-glass, substantially as described and for the purpose set forth.

10 3. In a level, the combination with the level-stock and the level-glass secured therein, of a longitudinally-slotted plate secured to the level-stock and having oppositely-disposed inwardly-projecting fixed points terminating remote from each other, in a line at right angles to the longitudinal axis of the level-glass and extending below the lower face of said plate in close proximity to the level glass, substantially as described and for the purpose set forth.

20 4. The herein-described sight-device for levels, it consisting of a plate having a longitudinal sight-opening and having integral oppositely-disposed inwardly and downwardly-

projecting points or barbs terminating remote from each other, in a line at right angles to the longitudinal axis of said sight-opening, substantially as described and for the purpose set forth.

5. The herein-described level, it comprising a stock B recessed vertically and longitudinally to receive the level-glass and having the side-openings 3 and 4, and a longitudinally-slotted sight-plate secured to the level-stock adjacent to the upper face of the level-glass and having V-shaped inwardly and downwardly-projecting oppositely-disposed fixed sight-points terminating in transverse alignment at points each side of and at right angles to the longitudinal axis of the level-glass and below the lower face of the sight-plate, substantially as described and for the purpose set forth.

JUSTUS A. TRAUT.

Witnesses:

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