

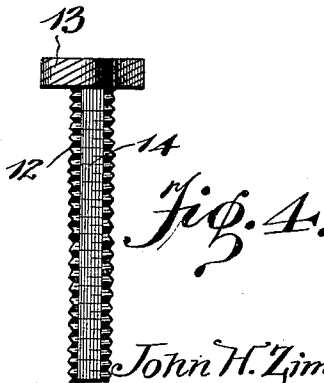
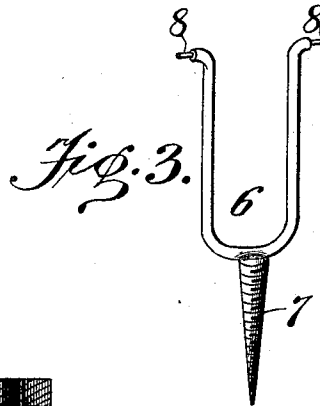
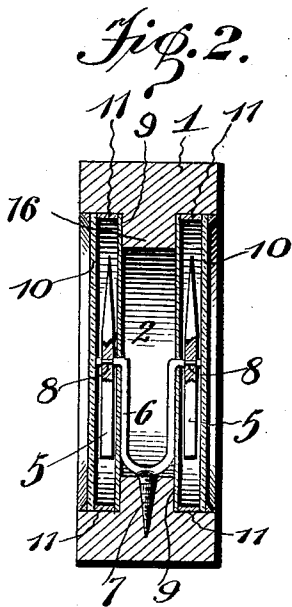
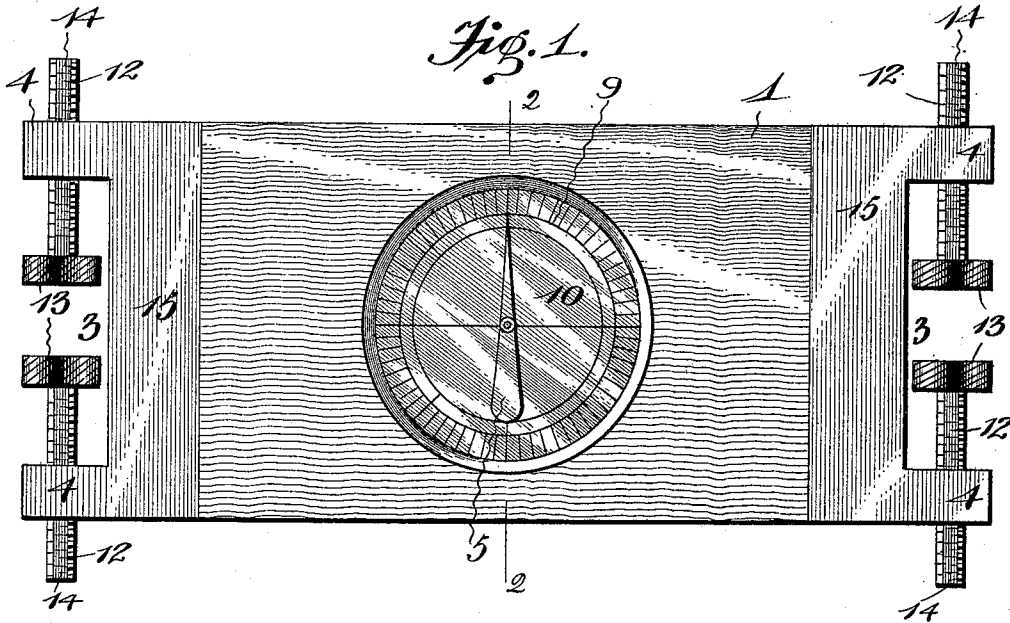
No. 635,837.

Patented Oct. 31, 1899.

J. H. ZIMMERMAN.
LEVEL.

(Application filed July 19, 1898.)

(No Model.)



Witnesses

A. Roy Appleman

A. S. Shepard

By *his* Attorneys.

John H. Zimmerman, Inventor.

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

JOHN H. ZIMMERMAN, OF HARDPAN, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JOHN W. PHILLIPS, OF SAME PLACE.

LEVEL.

SPECIFICATION forming part of Letters Patent No. 635,837, dated October 31, 1899.

Application filed July 19, 1898. Serial No. 686,368. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. ZIMMERMAN, a citizen of the United States, residing at Hardpan, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Level, of which the following is a specification.

This invention relates to levels; and the object thereof is to provide adjusting-screws in a convenient position for adjusting the instrument to an exact level and also to indicate upon said screws the perpendicular elevation of the device.

A further object is to provide an improved manner of mounting the index-fingers.

Other objects and advantages of the invention will be hereinafter more fully described, shown in the drawings, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the device. Fig. 2 is a transverse sectional view on the line *z z*, Fig. 1. Fig. 3 is a detail view of the support for the index-fingers. Fig. 4 is a detail view of one of the adjusting-screws.

Corresponding parts in the several figures are denoted by like characters of reference.

Referring to the drawings, 1 designates the stock of the level, preferably of hard wood, having a central transverse opening 2, which is provided with an annular shoulder 16 intermediate the opposite faces of the stock and notched or cut away in its ends, as at 3, forming lugs or extensions 4 at the top and bottom edges of the instrument. The ends of the stock are preferably covered and protected from wear by brass or other metallic caps 15.

Arranged within the central opening 2 are the index-fingers 5, which are carried by an approximately U-shaped support 6. This support is provided with a screw 7 at its base, which is fitted to the annular shoulder 16 of the level midway between the faces thereof and is provided with oppositely-extending transversely-alined pins 8 at the extremities of its arms, forming pivots upon which the index-fingers 5 are journaled, so as to expose the same at either side of the leveling instrument. The fingers work over graduated dial-faces 9, respectively, which are fitted flush against the opposite faces of the annular

shoulder 16, and a glass cover 10 at each side protects the fingers from injury or displacement. These glasses are spaced apart from the dials by suitable rings 11, respectively.

It will be noted that the pivots 8 extend centrally through the opposite dial-faces, respectively, into the spaces provided between the latter and the lenses, whereby the support 6 is braced at its upper end, and the index-fingers are mounted between the dial-faces and the lenses, which confines the fingers and prevents wobbling of the same upon the pivot-pins 8.

To adjust the instrument more accurately than can be done by hand, I provide screws 12, arranged to extend through the extensions 4, with their heads 13 disposed within the notches 3. These screws are flattened upon opposite sides, as at 14, and the flattened sides are graduated for the purpose of indicating the precise elevation of the end of the level. The heads of the screws are preferably milled upon their edges, so as to facilitate the turning thereof, and by their disposition within the socket are protected from being accidentally moved or broken. When the level is used as a plumb, it can be stood upon either end, as the adjusting-screws are situated entirely within the notches 3 and therefore will not interfere with the use of the device as a plumb-level.

My invention presents an exceedingly simple and useful device in the mounting of the index-fingers and by providing the adjusting-screws and situating the same in a convenient position for operating, and at the same time being protected from displacement and not interfering with the general use of the instrument.

It will be understood that the level may be bound by brass from one end to the other; also, that it can be made of any length desired, and other changes in the form, proportion, and minor details may be made without departing from the spirit and scope or sacrificing any of the advantages of my invention; and therefore I do not wish to be understood as limiting myself to the precise construction and arrangement as herein set forth.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. A leveling instrument, comprising a stock having lugs or extensions at the upper and lower edges of the stock, and adjusting-screws carried by said lugs and arranged with their
5 heads disposed within the respective notches, substantially as and for the purpose set forth.

2. In a leveling instrument, the combination of a stock having index-fingers, dial-faces for the index-fingers, and a support for the
10 latter comprising an approximately U-shaped body having an integral screw at its lower end, and oppositely-extending transversely-aligned pins provided upon each of its upper extremities, said pins forming the pivots upon
15 which the index-fingers are mounted outside the support, substantially as shown and described.

3. In a leveling instrument, the combination with a stock having an opening formed
20 therethrough, which opening is provided with

an annular shoulder intermediate of the opposite faces of the stock, of opposite dial-faces fitted in the opening and against the respective opposite faces of the annular shoulder, index-fingers for the respective dial-faces, 25 and a support for the index-fingers, said support being secured to the annular shoulder and located between the dial-faces and having oppositely-disposed fixed pivots engaging the respective dial-faces, whereby the support is braced, and the index-fingers are
30 mounted to turn upon the respective fixed pivots, substantially as shown and described.

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

JOHN H. ZIMMERMAN.

Witnesses:

MAYME PHILLIPS,
A. D. PHILLIPS.