L. L. DAVIS.

Improvement in Adjustable Spirit-Levels & Plumbs.

No. 121,088. Patented Nov. 21, 1871.

Fig. 1

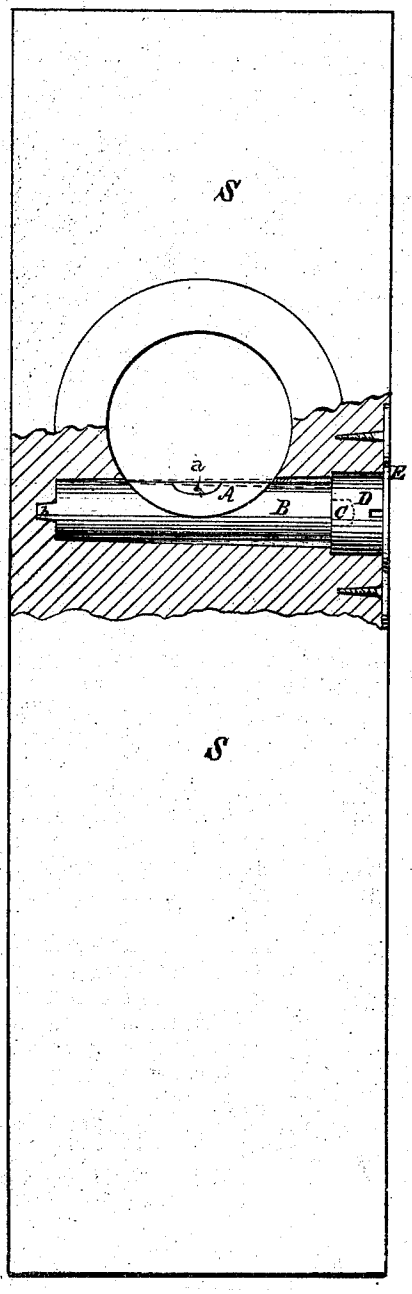

Fig. 2

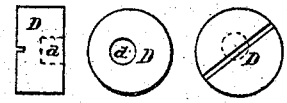

Fig. 3

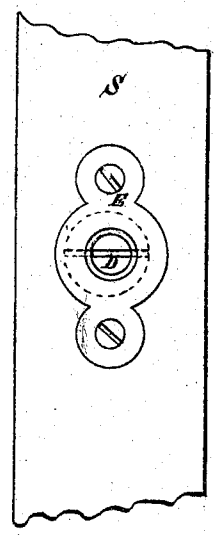

Fig. 4

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Witnesses. J. L. Buckland
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UNITED STATES PATENT OFFICE.

LEONARD LEROY DAVIS, OF SPRINGFIELD, MASSACHUSETTS.

IMPROVEMENT IN SPIRIT-LEVELS.

Specification forming part of Letters Patent No. 121,088, dated November 21, 1871.

To all whom it may concern:

Be it known that I, LEONARD LEROY DAVIS, of Springfield, in the county of Hampden and Commonwealth of Massachusetts, have invented a new and useful Improvement in Spirit-Levels and Plumbs; and I do hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings making a part of this specification and to the letters of reference marked thereon.

In said drawings, Figure 1 is a side elevation of level-stock, having the bubble-glass set therein by my improved method at a right angle to the length of the stock, such a form of level being generally called a plumb-level and used for the same purposes as the plummet or plumb-rule. A part of the wood stock is shown as broken away to show the bubble-case and other parts contained therein. Fig. 2 shows end views and a side view of a bearing for the end of the bubble-case, by revolving which bearing the end of the bubble-case is raised or lowered and the adjustment of the bubble-glass effected. Fig. 3 is an elevation of a portion of a level. Fig. 4 shows the bubble-glass inclosed in its case ready for insertion in its socket in the wooden stock.

The nature of my invention consists in a peculiar construction and arrangement of a level-stock and the bubble-case inclosed in it for allowing the bubble-glass to be readily adjusted without withdrawing the glass from its case or the case from the stock, and without requiring particular care or skill in introducing and setting the bubble-glass in its case. By my method of construction, as hereafter described, the bubble-glass can be set in the first instance, or replaced when broken in a very short time and by any unskillful person, and the bubble instantly brought into adjustment with a common screw-driver, and thereafter it can always be adjusted in the same speedy manner, if necessary.

An ordinary bubble-glass, A, is inclosed in the cylindrical bubble-case B, made of thin sheet-metal. The case B has an opening in one side, through which the glass is inserted, being held in place by calcined plaster or cement, as usual. Two small studs, *b b*, are formed at the open end of the case, and from the other end projects the journal C, axial to the cylindrical case. The bearing D, Fig. 2, is a plain metal cylinder, having a socket, *d*, formed in one end eccentric to the cylinder itself to receive the journal C of the bubble-case, and slotted on the opposite end like a common screw-head. The plate E, Fig. 3, is screwed to the stock, and holds the case B and bearing D in position, and has a round opening, which is smaller than the slotted head of D, and comes directly over it so as to admit a screw-driver. A slightly conical socket is bored in the wooden stock S to receive the bubble-case, and at the inner end of this socket are formed two small recesses to receive the studs *b b* on the open end of the bubble-case B. A socket of a little larger diameter than and concentric with the socket of the bubble-glass is made to receive the bearing D. The inner end of the bubble-case is stationary, while the outer end will be moved up or down when the bearing D is revolved in its socket, the vertical distance through which the outer end will move being twice the distance between the center of the end of D and the center of *d*. A very small range of motion is sufficient for purposes of accurate adjustment. The pressure of the plate E upon the head of D is sufficient to prevent the turning of the latter unless moved by the screw-driver.

The simplicity, convenience, cheapness, and accuracy of this method of constructing a plumb-level are readily apparent.

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

The arrangement, in the stock of a spirit-level or plumb, recessed as described, of the bubble-case B having the studs *b b* and axial bearing C, in combination with the holding-plate E and the bearing D having the eccentric socket *d* formed therein, the whole constructed and arranged substantially as described.

In witness whereof I have hereunto set my hand this 1st day of October, A. D. 1870.

LEONARD LEROY DAVIS.

Witnesses:
J. P. BUCKLAND,
B. B. BELCHER.

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