

W. J. Tate.

Adjustable Spirit-Level.

N^o 73670

Patented Jan. 21, 1868.

Fig. 1.

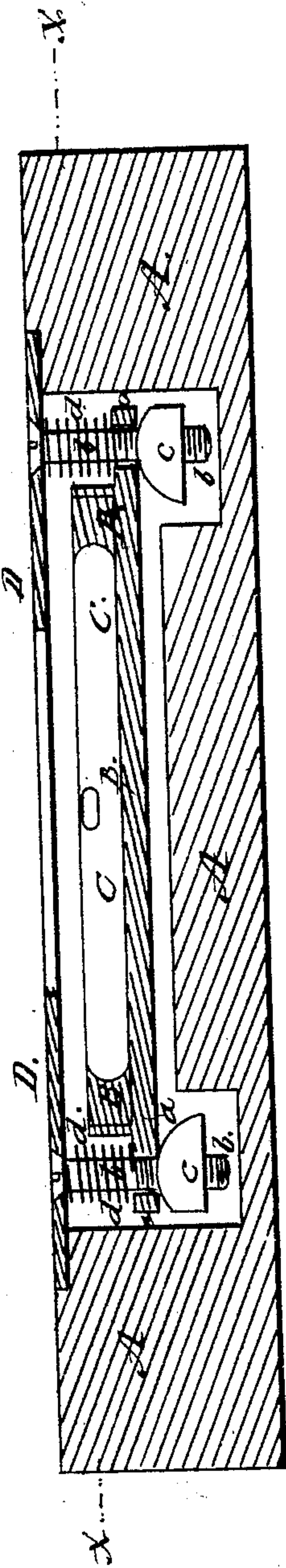
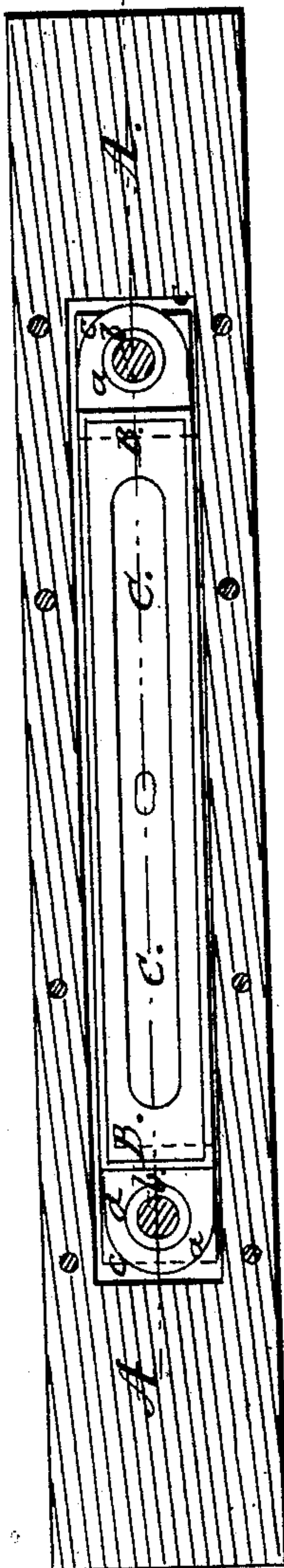


Fig. 2.



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WILLIAM J. TATE, OF NEW HAVEN, CONNECTICUT.

Letters Patent No. 73,670, dated January 21, 1868.

IMPROVEMENT IN ADJUSTABLE SPIRIT-LEVELS,

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM J. TATE, of New Haven, in the county of New Haven, and State of Connecticut, have invented a new and improved Adjustable Spirit-Level; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 represents a vertical longitudinal section of my improved spirit-level.

Figure 2 is a horizontal sectional view of the same, the plane of section being indicated by the line *xx*, fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to a new spirit-level, which is so arranged that it can be reset with great ease when not quite correct. The ordinary levels now in use are not very correct, and cannot remain correct, even when made so. The least expansion or contraction of the metal, the least shrinking of the wood, a shock occasioned by a fall or otherwise, will make the instrument incorrect, and, therefore, totally useless, until reset. The levels now in use cannot very conveniently be reset, when once deranged, and can certainly not be reset instantaneously by every mechanic. By the use of my invention, the level can be instantaneously set accurately in its case by any person, no ingenuity being required for the purpose.

A represents the case of a level, made of wood, or other suitable material. It is recessed, to receive a metal box B, in which the ordinary glass bulb C is held. The box B has at its ends perforated projecting plates *a a*, through which screws *b b* are fitted, the said screws being suspended from the covering-plate D of the case. The lower ends of the screws *b* are secured in nuts, *c c*, in such a manner that the projections *a* of the box B, and with them the box B, rest upon the said nuts. The nuts are square or polygonal, and fit in the recess of the case, so that they cannot turn therein, but can slide up and down. Spiral or other springs, *d d*, are or may be arranged between the plate D and the projections *a*, or other parts of the box B. The springs force the box B, and with it the bulb C, upon the nuts.

When the level is to be set true, the screws *b b* are turned until the box B is brought into the right position, so that the air-bubble in the bulb will be in line with the centre mark of the plate.

This invention may also be applied with advantage for laying out sloping grades, as the level could be adjusted to the required angle by means of a suitable instrument, and then the bubble will be in line with the mark on the plate D, whenever the level is set at the required angle.

I claim as new, and desire to secure by Letters Patent—

1. The adjustable spirit-level, consisting of the box B, provided with the perforated projections *a*, through which the screw-bolts *b*, surrounded by the springs *d*, pass, and the adjusting-nuts *c*, working in the recesses of the case A, as herein described, for the purpose specified.

2. The combination of the adjusting-nuts *c* and springs *d* with the perforated flanges *a* of the box B, and the screw-bolts *b*, as herein described, for the purpose specified.

WILLIAM J. TATE.

Witnesses:

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