(No Model.)

J. A. TRAUT.

SPIRIT LEVEL.

No. 421,786 Patented Feb. 18, 1890.

Fig. 1.

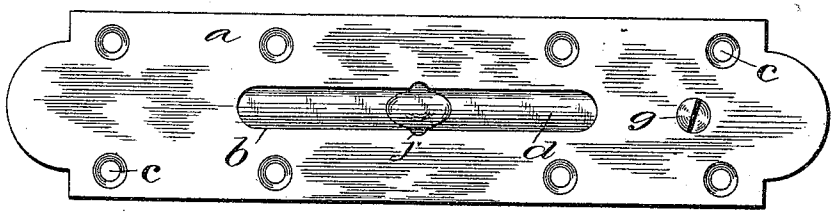


Fig. 2.

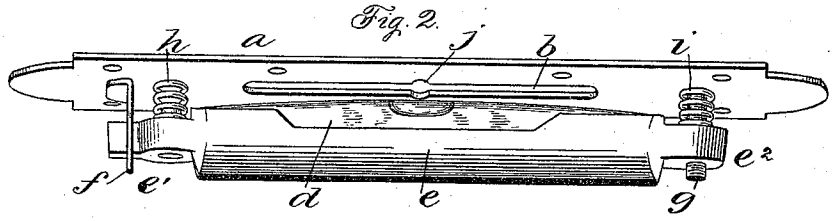
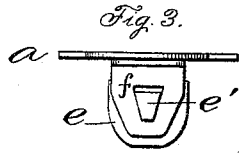


Fig. 3.



Witnesses.
John Edwards Jr.
Harry P. Williams

Inventor.
Justus A. Traut.
By James Shepard Atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JUSTUS A. TRAUT, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE STANLEY RULE AND LEVEL COMPANY, OF SAME PLACE.

SPIRIT-LEVEL.

SPECIFICATION forming part of Letters Patent No. 421,786, dated February 18, 1890.

Application filed December 12, 1889. Serial No. 333,453. (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 Spirit-Levels, of which the following is a specification.

The invention relates to improvements in spirit-levels of the class having adjustable spirit-tubes; and the object is to provide a simple, cheap, and desirable mounting for the spirit-tube, whereby it will remain in place, after it has been properly adjusted, without straining any of the parts; also, to provide more simple and convenient means for observing when the air-bubble is at the highest part of the tube.

Referring to the accompanying drawings, Figure 1 is a plan view of the face-plate and tube of a level. Fig. 2 is a perspective view or corner elevation of the parts; and Fig. 3 is an end view of the same.

In the views, the letter *a* indicates the face-plate, which is cut or stamped from sheet metal and provided with the usual observation-slot *b* and screw-holes *c*, whereby it may be secured to the stock over the recess in the customary manner. An ordinary spirit-tube *d* is embedded in the case or box *e*, the ends of which are provided with an extension or lug e' e^2. The lug e' is loosely supported by a bracket *f*, which is attached to the under side of the face-plate near one end, while the lug e^2 is tapped and threaded and supported by a screw *g*, which passes through the face-plate into the threaded socket in the lug. The lug e' is preferably formed triangular in cross-section and sets into a triangular socket, slightly larger, in the bracket *f*, so that under the influence of the spring *h*, interposed between the bottom of the face-plate and the upper surface of the lug e', the lug is firmly held in the socket central of the plate, in order that the tube shall be directly under the observation-slot *b*. A spring *i* is inserted between the face-plate and the lug e^2 at the opposite end of the tube-case. The surface-plate is secured to the stock with the tube in the recess, and the tube is adjusted to the proper position by the rotation of the screw *g*. The bracket *f* acts as the fulcrum and freely allows the tube-case a little oscillation when it is moved by the screw at the opposite end. As the lug e' is loosely held in the socket in the suporting-plate it is free to slide longitudinally and adjust itself, so that the face-plate will not bind or buckle, and the parts will not be subjected to any undue strain.

In order to provide a ready means for observing the position of the air-bubble in the tube, the edges of the observation-slot *b*, which extends longitudinally of the face-plate, are notched or indented transversely of the face-plate over the highest portion of the tube, so that the highest part is readily indicated whether the level is below the eye, above the eye, or turned at an angle, as shown in Fig. 2. The indentures also widen the slot, making the index the widest part of the slot in the face-plate, not only carrying the index farther toward the sides, but letting in the most light at the index-point, thereby making the observation much more convenient from various points than in a level with the ordinary index-mark on the glass tube or than a level with a projecting point on one side of the slot in the face-plate at the middle of its length.

I claim as my invention—

1. In combination with the face-plate of a level, a depending bracket having a perforation, a tube-case bearing a spirit-tube having a lug at one end extending loosely through the perforation in said bracket, and having a threaded lug at the opposite end, an adjusting-screw passing through the face-plate and into said threaded lug, and a spring between said lug and face-plate, substantially as described, and for the purpose specified.

2. In combination with the face-plate of a level, a tube-case bearing a spirit-tube, one end of the tube-case being triangular in cross-section and supported in a triangular slot in a bracket depending from the under side of the face-plate, the opposite end of the tube-case being provided with a threaded

socket and supported by a screw which passes through the face-plate into the threaded socket, substantially as specified.

3. The combination, with the tube-case of a spirit-level, of a face-plate provided with a longitudinal observation-slot, the opposite edges of which near the middle of its length are each provided with an indenture, substantially as specified.

JUSTUS A. TRAUT.

Witnesses:
GEORGE U. TRAUT,
CHAS. B. STANLEY.