O. H. LUND.

LEVEL ATTACHMENT FOR STRAIGHT EDGES.

APPLICATION FILED MAY 22, 1909.

948,232.

Patented Feb. 1, 1910.

Fig. 1.

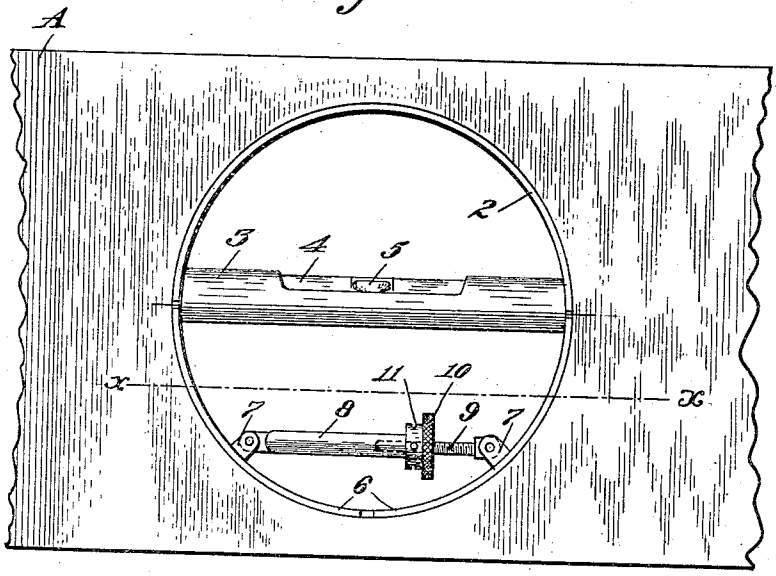


Fig. 2.

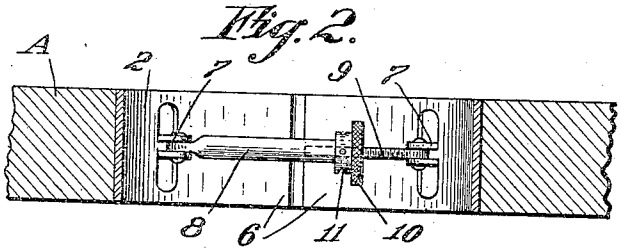
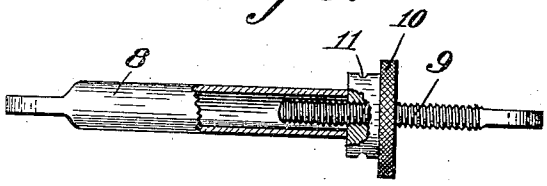


Fig. 3.



WITNESSES;

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LEVEL ATTACHMENT FOR STRAIGHT-EDGES.

948,232. Specification of Letters Patent. Patented Feb. 1, 1910.

Application filed May 22, 1909. Serial No. 497,770.

To all whom it may concern:

Be it known that I, OLAF H. LUND, citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Level Attachments for Straight-Edges, of which the following is a specification.

This invention relates to spirit levels. Its object is to provide a simple, cheap, practical level attachment for straight edges, which attachment can be applied to standard or to temporary levels, which is easy of application, which can be put in or taken out at a moment's notice, and which is easily adjusted in case the straight edge becomes warped or injured; the device being particularly applicable for the use of carpenters, builders, brick and stone masons, and cement workers.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a side elevation of the invention, showing its application. Fig. 2 is a section on X—X of Fig. 1. Fig. 3 is a detail in partial section of the expansion clamp.

The drawings are practically full size.

A represents a straight edge of any suitable description applicable for use as a level. This straight edge is provided with a hole which is adapted to receive my attachment.

The attachment comprises a band 2 bent into a ring, but with its ends unconnected so as to allow for expansion and contraction, to permit the device to be inserted into the hole and thereafter clamp expansively against the walls thereof. This band 2 carries a transversely extending spirit tube 3 having the usual glass 4 to contain the liquid, and with the tube cut away so as to display the usual air bubble 5. The spirit tube 3 is of less length than the diameter of the hole in the straight edge A, so as to allow for the ready insertion and removal of the device. Suitable means acting on the free ends 6 of the clamp ring 2 are employed to expand or contract the ring and cause it to grip the walls of the hole. As here shown, a couple of tangs 7 are struck up from each of the portions 6 to provide bearings for the clamping means; one set of these bearings pivotally carrying the tube 8, and the other set pivotally carrying the screw 9, which latter telescopes with the sleeve 8. A thumb-nut 10 fits the screw 9 and bears against the end of the tube 8 to expand the ring.

In operation, any suitable material appropriate for a straight edge has a hole bored in it to receive the clamping ring 2; the clamping means 8—9—10 being loosened, so as to permit the ring to be inserted into the hole. Having centered and adjusted the spirit level 3, the nut 10 is operated to expand the ring and clamp it firmly in the hole in the board or straight edge A.

If desired, the hub of the nut 10 may have perforations 11 to permit a nail or punch to be inserted so as to turn the nut in case the latter is so placed as to be difficult to get at with the fingers.

This device is very simple and handy, and can be used on straight edges of any length; and at the same time the workman can remove the attachment every night and take it home or store it away.

The expansion clamp and its adjustment is practically a one-piece mechanism, and the locking of it in place is effected in one operation.

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

1. The combination with a straight edge having an aperture, of a split clamp ring in said aperture and a level tube carried by the clamp ring, and means for expanding the clamp ring to hold it in place on the straight edge.

2. The combination with a straight edge having a hole formed therein, of a level attachment comprising an expansible ring fitting the hole, a level carried by the ring, and means for expanding the ring.

3. The combination with a straight edge having a hole, of a level attachment therefor comprising a flexible band bent into a ring shape to fit the hole, a level tube carried by the ring, and clamping means on the free ends of the band to expand the ring within the hole.

4. The combination with a straight edge having a hole, of a level attachment therefor comprising a flexible band bent into a ring shape to fit the hole, a level tube carried by the ring, and clamping means on the

free ends of the band to expand the ring within the hole, said clamping means including a sleeve member on one end of the band, a screw carried by the other end of the band and telescoping with the sleeve, and a nut on the screw coacting with the sleeve.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

OLAF H. LUND.

Witnesses:
CHARLES FRANCEE,
LEROY H. JOHNSTONE.