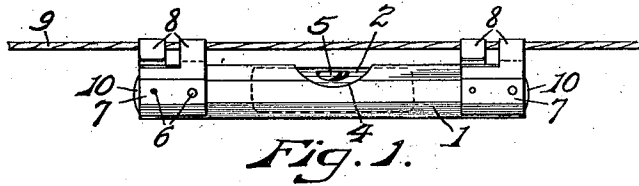
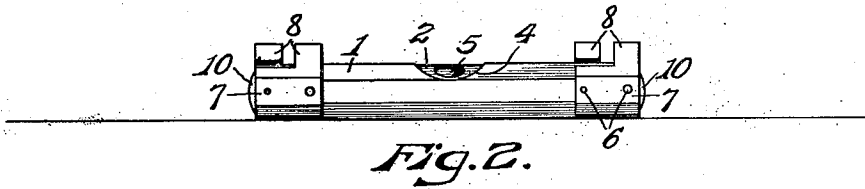
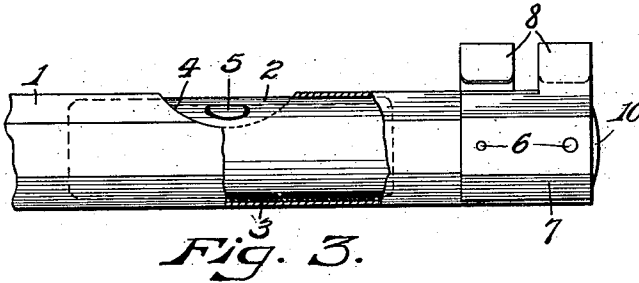
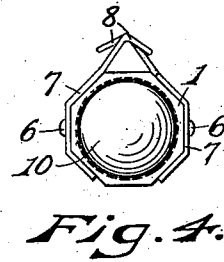
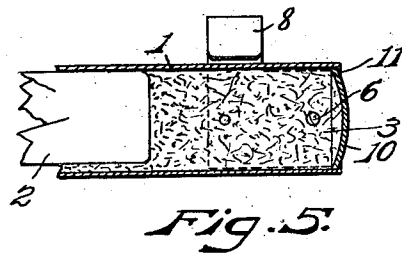


F. B. HALL.
 LINE AND SURFACE LEVEL.
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1,369,652.

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LINE AND SURFACE LEVEL.

1,369,652.

Specification of Letters Patent.

Patented Feb. 22, 1921.

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To all whom it may concern:

Be it known that I, FRANK B. HALL, a citizen of the United States of America, and resident of Geneva, county of Ashtabula, and State of Ohio, have invented certain new and useful Improvements in Line and Surface Levels, of which the following is a specification.

This invention relates broadly to spirit levels, and it has for its primary object to provide a structurally improved form of level which is equally adapted for use as a line level or a surface level.

A further object is to provide a level which has supporting lugs or hangers whereby it is suspended from a line, said lugs or hangers being so arranged that chance disengagement of the device from a stretched line is effectually prevented.

With these and other objects in view, the invention resides in the features of construction which will hereinafter be described, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of the invention employed as a line level;

Fig. 2 is a similar view, showing the invention employed as a surface level;

Fig. 3 is an enlarged detail view partly in sectional elevation;

Fig. 4 is an end elevation; and—

Fig. 5 is a partial longitudinal sectional elevation.

Referring to said drawings, in which like designating characters distinguish like parts throughout the several views—

1 indicates a metal casing or tube, preferably of aluminum, which is preferably of cylindrical form interiorly and which is exteriorly of octagonal or other suitable polygonal shape. Fixed in a bed 3 of a suitable cementitious material, as plaster of Paris, incased in the tube 1 is a spirit tube 2 of which the central top portion is exposed to view through an orifice 4 provided in the upper side of said tube for rendering visible the air bubble 5.

Attached, as by rivets 6, to opposite sides of the tube or casing 1 adjacent to each end thereof are the body portions 7, of a pair of oppositely disposed hangers which comprise said body portions, shaped to conformably embrace the casing, and upwardly and transversely directed hooks 8. The hooks at each end of the casing are reversely arranged and constitute a closely

associated pair upon which said end may be supported from a line, as 9 in Fig. 1.

The ends of the casing are closed by circular caps 10 of concavo-convex form which are forced within said ends and are held in place by having the metal at the inside edges of the casing ends spun inward over the edges of the caps, as shown at 11 in Fig. 5.

In practice, the device may be utilized in the manner of ordinary forms of surface levels, the same being adapted to have its flat under side rest upon surfaces to be leveled, as shown in Figs. 2 and 4; or it may be used as a line level with the two pairs of hooks 8 engaged with a line. To attach the level to a line, the latter must be entered between the companion hooks 8 at one end while occupying a position at approximate right angles to the axis of the level, after which it is swung around parallel to the tube to dispose said hooks in overlying relation thereto; and the same operation is required to engage the hooks at the opposite end with the line. So mounted, practically no amount of jiggling of the line and no amount of bumping or jarring to which the level may be subjected will result in the latter becoming detached.

It will be noted that the device is extremely simple and compact in its construction and light in weight, rendering it admirably adapted for carrying in the pocket when not in use.

What is claimed is—

1. A combination line and surface level comprising a casing having a flat under side and provided with an orifice in its upper side, a spirit tube mounted within said casing and visible through said orifice, and a pair of hangers attached to said casing adjacent to each end of the latter, each pair of hangers embodying closely associated companion hooks disposed in reverse relation.

2. A combination line and surface level comprising a casing having a flat under side and provided with an orifice in its upper side, a spirit tube mounted within said casing and visible through said orifice, and a pair of reversely disposed overhanging hooks carried by said casing adjacent to each end thereof, said hooks being separated by an intermediate entrance space of narrow width.

3. A combination line and surface level

comprising a casing having its exterior of polygonal form providing flat top and bottom surfaces, said casing having a sight orifice in the upper central part thereof, 5 a spirit tube mounted within said casing and visible through said orifice, and a pair of reversely disposed overhanging hooks carried by said casing adjacent to each end thereof, 10 said hooks being closely related with an intermediate narrow entrance space adapted to permit of the introduction of a line only when the latter is disposed approximately transverse to the axis of said casing.

4. A combination line and surface level 15 comprising a casing having its exterior of polygonal form providing flat top and bottom surfaces, said casing having a sight orifice in the upper central part thereof, a spirit tube mounted within said casing and

visible through said orifice, and a pair of 20 hangers attached to said casing adjacent to each end thereof, each hanger embodying a body portion conformably embracing a side of said casing and an upwardly and transversely directed hook, the hooks of 25 each pair being reversely disposed and arranged in contiguous relation with an intermediate narrow space adapted to admit of the introduction of a line only when the latter is disposed approximately transverse 30 to the axis of said casing.

In testimony whereof, I affix my signature in presence of two subscribing witnesses.

FRANK BARR HALL.

Witnesses:

G. H. COWDERY,
C. I. BRAKEMAN.