Sept. 15, 1953 A. H. HALL 2,652,481

ILLUMINATED LEVEL

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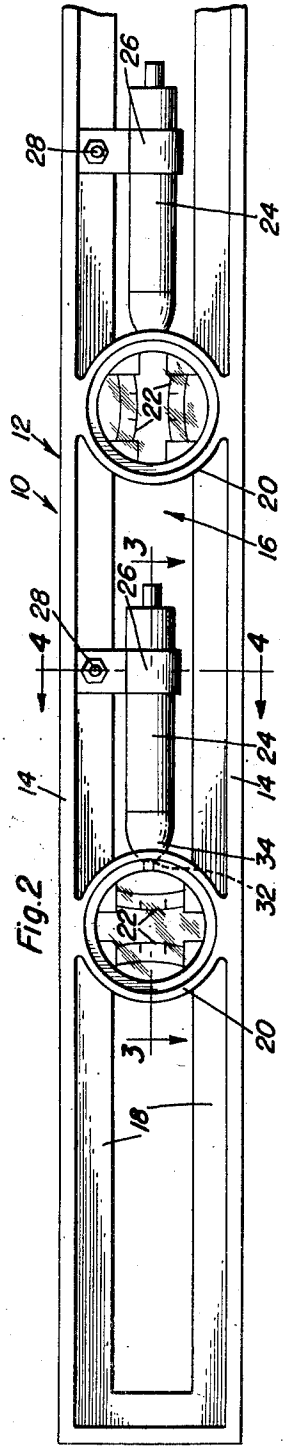


Fig. 2

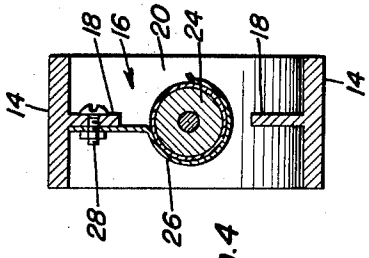


Fig. 4

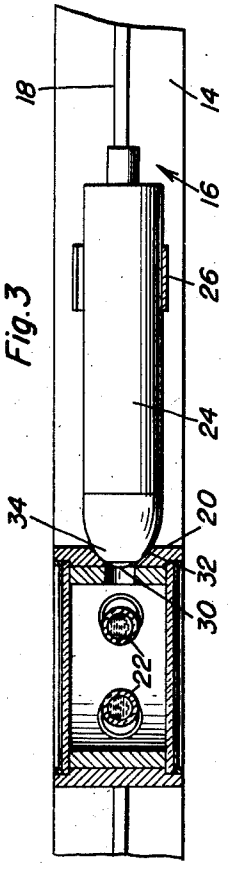


Fig. 3

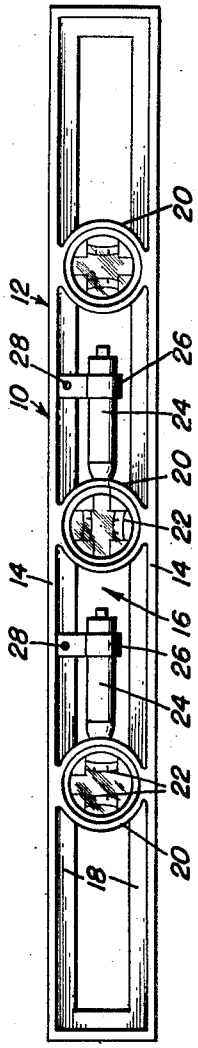


Fig. 1

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ILLUMINATED LEVEL

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1 Claim. (Cl. 240—6.44)

1

This invention relates to new and useful improvements and structural refinements in levels, more particularly, spirit levels such as are used by carpenters, or the like, and the principal object of the invention is to provide a level with one or more flashlights for illuminating the vials thereof, so that the vials may be conveniently and accurately observed when the level is used in dark locations.

An important feature of the invention resides in the provision of means for mounting the flashlights in the level in an appropriate position to illuminate the vials, while some of the advantages of the invention lie in its simplicity of construction, in its efficient and accurate operation, and in its adaptability for use with levels of different sizes and types.

With the above more important objects and features in view, and such other objects and features as may become apparent as this specification proceeds, the invention consists essentially of the arrangement and construction of parts as illustrated in the accompanying drawings, in which:

Figure 1 is a side elevational view of the invention;

Figure 2 is a fragmentary side elevational view thereof on an enlarged scale;

Figure 3 is a fragmentary sectional detail, taken substantially in the plane of the line 3—3 of Figure 2; and,

Figure 4 is a fragmentary sectional detail, taken substantially in the plane of the line 4—4 of Figure 2.

Like characters of reference are employed to designate like parts in the specification and throughout the several views.

Referring now to the accompanying drawings in detail, the general reference character 10 designates a conventional level comprising an elongated housing 12 which is of metallic construction and includes a pair of spaced parallel longitudinal members 14 defining therebetween an elongated recess 16, the members 14 having relatively thin, longitudinally extending webs 18 which project inwardly into the recess 16, as shown.

The housing 12 is usually cast integrally with annular vial enclosures 20 which are disposed between the members 14 in the recess 16 and accommodate pairs of spirit vials 22.

Usually, several pairs of vials are provided in the level, as shown in Figure 1, and since the illuminating means for the several pairs of vials are similar in construction, it is believed that a

2

description of the illuminating means for the vials in one annulus 20 will suffice for all.

These illuminating means comprise a conventional flashlight 24 which is mounted in the recess 16 exteriorly of the annular enclosure 20 and is removably positioned in a resilient clip 26 attached to the web 18 of one of the members 14 by a suitable screw 28.

The clip 26 has an open side as is best shown in Figure 4, whereby the entire flashlight may be readily removed from the level for the purpose of replacing its batteries or its bulb, the latter being indicated at 30.

The enclosure 20 is provided with a countersunk aperture or opening 32 (see Figure 3) which is disposed coaxially with the longitudinal axis of the housing 12 and is adapted to receive the conoidal bulb end portion 34 of the flashlight 24, so that the light rays emanating from the bulb 30 may illuminate the vials 22 in the enclosure 20.

It is to be noted that by employing the flashlight 24, the invention is entirely self-contained and needless to say, a separate flashlight may be used for the vials in each of the several enclosures 20 with which the level is provided.

If desired, suitable plugs (not shown) may be installed in the openings 32 when the flashlights are removed from the level, in order to prevent entry of dust into the enclosures 20.

It is believed that the advantages and use of the invention will be clearly apparent from the foregoing disclosure and accordingly, further description thereof at this point is deemed unnecessary.

While in the foregoing there has been shown and described the preferred embodiment of this invention it is to be understood that minor changes in the details of construction, combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

Having described the invention, what is claimed as new is:

In a level, the combination of an elongated housing including a pair of spaced parallel longitudinal members affording an elongated recess and having relatively thin longitudinal webs projecting inwardly into said recess, said housing also including an annular vial enclosure disposed between said members in said recess and provided with an aperture coaxial with the longitudinal axis of the housing, and a flashlight mounted in the recess of said housing exteriorly of said enclosure and including a bulb disposed in said

aperture whereby to illuminate vials in the enclosure, and means for removably mounting said flashlight in said recess, said means comprising a resilient clip secured to the web of one of said longitudinal members and frictionally engaging the flashlight, said clip including a flat arm section secured solely at one end thereof directly to one of said webs and projecting transversely into said recess, the free end of said arm forming a hook having a narrow entrance portion and a wide body portion for clamping the body of the flashlight therein, the side wall edges defining said aperture being tapered and conforming to the shape of the head of said flashlight.

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