Nov. 30, 1954 J. H. ASHWILL 2,695,949

ILLUMINATED SPIRIT LEVEL

Filed Jan. 17, 1952

Fig.1

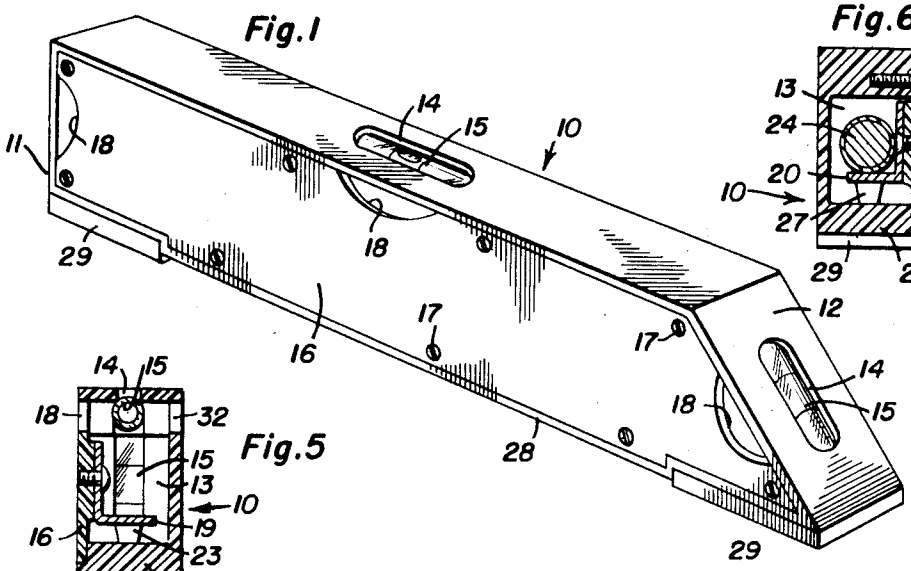


Fig.6

Fig.5

Fig.2

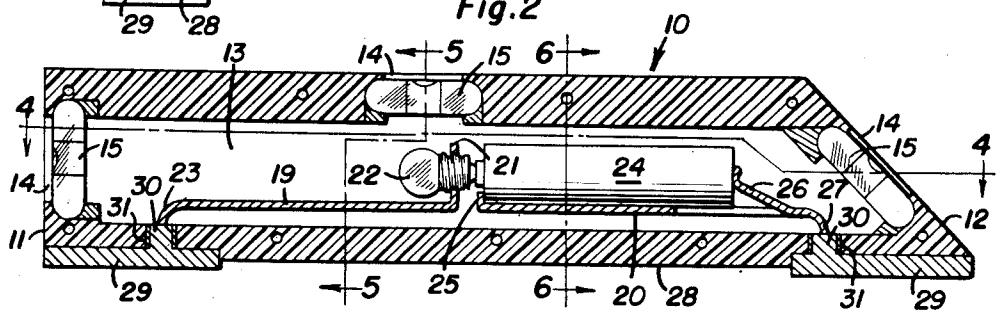


Fig.3

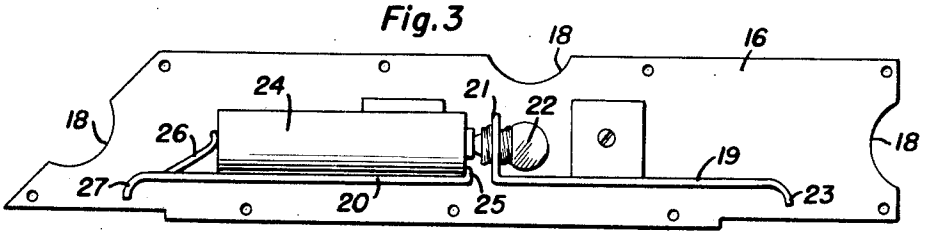
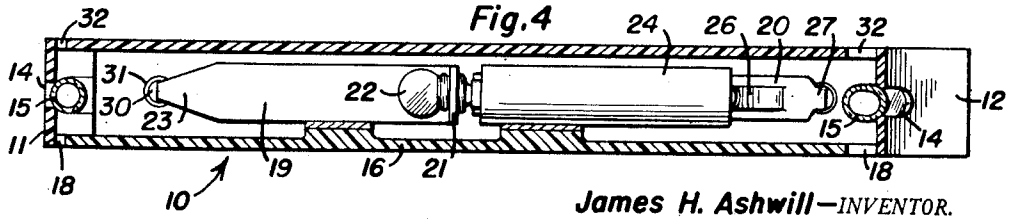


Fig.4



James H. Ashwill—INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson Attorneys

United States Patent Office 2,695,949
Patented Nov. 30, 1954

2,695,949

ILLUMINATED SPIRIT LEVEL

James H. Ashwill, Compton, Calif., assignor of fifty per cent to James L. Cunningham, Norwalk, Calif.

Application January 17, 1952, Serial No. 266,847

1 Claim. (Cl. 240—6.44)

The present invention relates to new and useful improvements in spirit levels and has for its primary object to provide, in a manner as hereinafter set forth, an instrument of this character comprising means for magnetically securing the device in position on a metallic support when in use.

Another very important object of the invention is to provide a spirit level of the aforementioned character which embodies means for automatically illuminating the bubble tubes when the instrument is applied to a metallic support.

Other objects of the invention are to provide a magnetic, illuminated level of the character described which will be comparatively simple in construction, strong, durable, highly efficient and reliable in use, compact, light in weight and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawing wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a perspective view of a spirit level constructed in accordance with the present invention;

Figure 2 is a view in vertical longitudinal section through the instrument;

Figure 3 is an elevational view, looking at the inner side of the removable access plate with the illuminating means thereon;

Figure 4 is a horizontal sectional view, taken substantially on the line **4—4** of Figure 2;

Figure 5 is a view in transverse section, taken substantially on the line **5—5** of Figure 2;

Figure 6 is a view in transverse section taken substantially on the line **6—6** of Figure 2.

Referring now to the drawing in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a bar or beam **10** of suitable plastic, which bar or beam may be of any desired dimensions. The beam **10** includes a vertical end **11** and an inclined end **12**. Extending longitudinally in the beam **10** is a chamber **13**. Openings **14** in the upper and end portions of the beam **10** communicate with the chamber **13**. Bubble tubes **15** are mounted in the openings **14**.

The beam **10** further includes a removable plate **16** which permits access to the chamber **13**. The access plate **16**, which is recessed into the beam **10**, is secured in position by countersunk screws **17**. Finger notches or recesses **18** are provided in the access plate **16**.

Metallic brackets **19** and **20** are mounted on the inner face of the access plate **16**. The bracket **19** includes an upturned inner end portion **21** which is apertured to threadedly receive an electric lamp **22**. At its outer end, the bracket **19** terminates in a tapered downwardly curved contact finger **23**.

A dry cell battery **24** is mounted on the bracket **20** with its positive pole in engagement with the positive contact

of the lamp **22**. The bracket **20** terminates in an upturned inner end portion **25** constituting a stop for the battery **24**. Struck upwardly from the outer portion of the bracket **20** is a resilient finger or contact **26** which is engaged with the negative pole of the battery **24** and which, in conjunction with the element **25**, secures said battery in position on said bracket. The bracket **20** terminates in a tapered, downwardly curved contact **27**.

Recessed into the end portions of the bottom or base **28** of the beam **10** is a pair of permanent magnets **29**. In the embodiment shown, the magnets **29** include upstanding lugs **30** which are engaged by the contacts **23** and **27** for electrically connecting the lamp **22** and the battery **24** to said magnets. Openings **31** in the base or bottom portion **28** of the beam **10** accommodate the lugs **30**.

It is thought that the manner in which the device is used will be readily apparent from a consideration of the foregoing. Briefly, when the instrument is applied to a metallic object or member it is firmly secured in any desired position thereon by the magnets **29**. When the instrument is thus applied to a metallic support an electric circuit is completed through the battery **24**, the lamp **22**, the elements **19** and **23**, said support, and the elements **27** and **26**, thus energizing said lamp for illuminating the bubble tubes **15**. As best seen in Figure 5 of the drawing, the permanent side wall of the beam **10** has formed therein finger recesses or windows **32**.

It is believed that the many advantages of a spirit level constructed in accordance with the present invention will be readily understood and although a preferred embodiment of the instrument is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

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

A spirit level comprising, in combination, a beam having a chamber therein and further having openings in its end portions communicating with the chamber, permanent magnets on the beam engageable with a metallic support for mounting said beam thereon, lugs on the magnets engaged in the openings, bubble tubes on the beam, an access plate for the chamber removably mounted on the beam, elongated brackets on the access plate, an electric lamp on one of the brackets electrically connected thereto, a battery on the other bracket electrically connected thereto and electrically connected with the lamp, a resilient finger struck from one end portion of said other bracket and engaged with the negative pole of the battery for electrically connecting same to said other bracket and for biasing the positive terminal of said battery into contact with one terminal of the lamp, a stop member on the other end of said other bracket engageable with the battery and cooperable with said finger for removably securing the battery in position on said other bracket, and resilient contacts on the brackets engaged with the lugs when the access plate is mounted in position on the beam.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,617,937	Boucher et al.	Feb. 15, 1927
2,109,976	Pierce	Mar. 1, 1938
2,198,945	Morris	Apr. 30, 1940
2,234,982	Ross	Mar. 18, 1941
2,481,736	Foerster	Sept. 13, 1949
2,526,206	Dolan	Oct. 17, 1950