Jan. 6, 1925. 1,522,100

E. BRIGHT

SPIRIT LEVEL ILLUMINATING DEVICE

Filed May 8, 1923

Fig. 2.

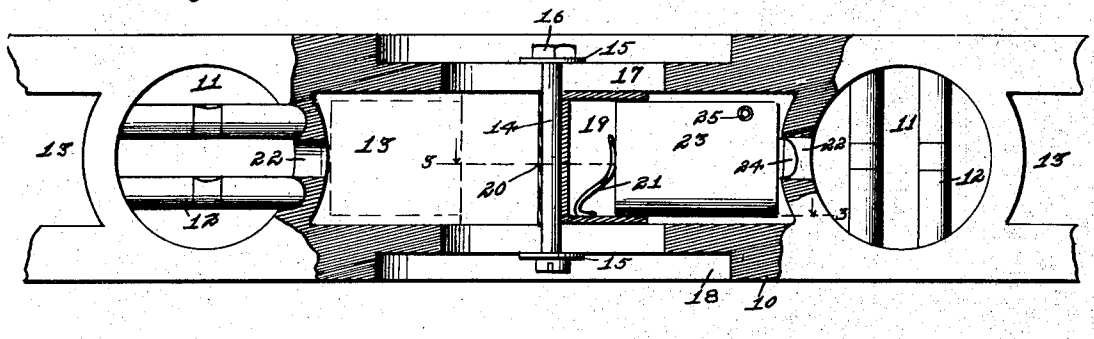


Fig. 3.

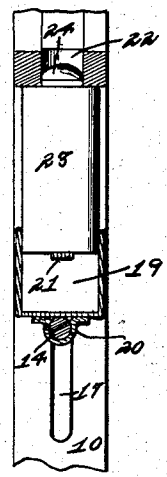
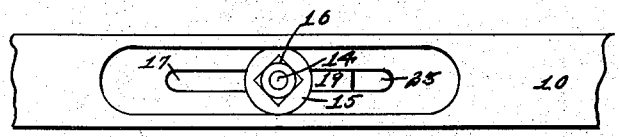


Fig. 4.



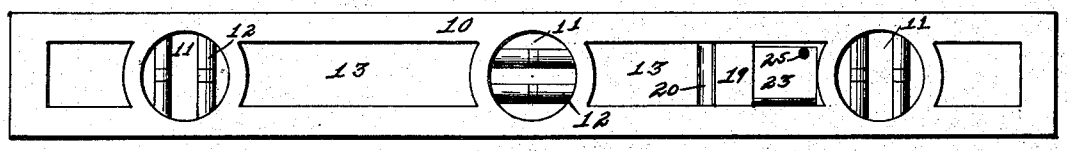


Fig. 1.

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UNITED STATES PATENT OFFICE.

ELMER BRIGHT, OF FORT DES MOINES, IOWA.

SPIRIT-LEVEL-ILLUMINATING DEVICE.

Application filed May 8, 1923. Serial No. 637,438.

To all whom it may concern:

Be it known that I, ELMER BRIGHT, a citizen of the United States, and a resident of Fort Des Moines, in the county of Polk, State of Iowa, have invented a certain new and useful Spirit-Level-Illuminating Device, of which the following is a specification.

The object of my invention is to provide a device of simple, durable and inexpensive construction capable of being readily, quickly and easily applied as an attachment to a spirit level, and so constructed and arranged that when thus applied, a pocket electric flash light of the kind now in common use may be inserted therein and held in such position as to brightly illuminate either the bubble tubes that are extended transversely with the longitudinal axis of the spirit level or the bubble tubes that are extended parallel with the longitudinal axis, and whereby when the spirit level is to be used in places that are relatively dark, the operator may, when desired to use the spirit level, push the spot light button and apply a brilliant illumination to the particular bubble glass he desires to see.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1 shows a top or plan view of a spirit level of ordinary construction having my illuminating device applied thereto.

Figure 2 shows an enlarged, detail face view with parts broken away illustrating a portion of a spirit level with my improvement applied thereto. The dotted lines in said figure show the flash light in its position for illuminating the bubble tubes that are parallel with the longitudinal axis of the spirit level.

Figure 3 shows a sectional view on the line 3—3 of Figure 2; and

Figure 4 shows a detail edge view of a spirit level to illustrate the adjusting means for the attachment.

Referring to the accompanying drawings I have used the reference numeral 10 to indictate generally the frame of a spirit level of the class which is now in common use, and is formed complete of a single piece of metal, and is usually provided with three circular openings 11 in which are mounted the bubble tubes 12. These tubes are frequently arranged as shown in the illustration with two parallel tubes in each of the circular openings, the bubble tubes near the ends of the spirit level being extended transversely, and the tubes at the central portion being extended longitudinally.

Between the circular openings 11 at the ends of the spirit level frame and the circular opening 11 at the central portion thereof there are usually formed rectangular openings 13, and I have arranged to apply my attachment to the spirit level in one of these openings 13.

My improved attachment comprises a bolt 14 with washers 15 and a nut 16. This bolt is extended through a longitudinal slot 17 formed in the sides of the frame 10, and adjacent to the slot is a depression 18 formed in the sides of the frame 10 in which the bolt head and nut may be contained without projecting beyond the edges of the spirit level frame.

Mounted upon this bolt is a sheet metal cup shaped member 19 having a loop 20 at one end pivotally mounted upon the bolt 14. Mounted within the cup shaped portion 19 is a spring 21. A circular opening 22 is formed in the frame 10 between each of the openings 11, and the adjacent opening 13.

The pocket flash lamp is indicated generally by the numeral 23, and is provided with a projecting rounded lamp and lens portion 24, and also with a button 25 for switching the light off and on. These pocket flash lamps are now in common use and can be easily secured in any locality at a slight cost. They vary to a certain extent in size and general shape, but my attachment is so constructed and arranged as to be capable of using these flash lamps in various sizes and shapes.

In practical use and assuming that the attachment is applied to a spirit level in the manner shown, then the operator places the flash light in the holder 19 against the spring 21, and this spring will force the projecting bulb of the lamp into the adjacent one of the openings 22. The spring pressure applied to the opposite end of the flash lamp will securely hold it in this position during ordinary use without any attention on the part of the operator, or with-

out in any way interfering with the normal use of the spirit level.

When it is desired to use the spirit level in a dark place the operator simply operates the spirit level switch button, and the light from the lamp is applied directly to the bubble tubes so that the bubbles therein may be clearly and brightly illuminated.

When it is desired to use the spirit level for leveling a horizontally arranged surface instead of a vertical surface, the operator simply grasps the flash lamp and presses it against the spring 21 until its bulb is out of the opening 22. He then swings the lamp and its socket bodily to the opposite limit of its movement and inserts the lamp bulb in the opening 22 adjacent to the longitudinally arranged bubble tubes, and the spring 21 operates to firmly hold the lamp in this adjusted position.

In the event that an excessively small or an excessively large lamp is used, then the bolt 14 may be adjusted longitudinally in the slot 17 so that such relatively short or long lamp may be used, but such adjustment is unnecessary if a lamp of proper size is used.

I claim as my invention:

1. The combination of a spirit level having a bubble tube therein extended parallel with its longitudinal axis and another bubble tube therein extended transversely thereof, said spirit level also being formed with a lamp opening between the two bubble tubes and also with passageways extending from the lamp opening to the bubble tubes, a lamp holder pivotally mounted in the lamp opening of the spirit level and an electric lamp mounted in the holder whereby the holder and lamp may be moved to position for projecting light from the lamp into either of said passageways, for the purposes stated.

2. The combination of a spirit level having a bubble tube therein extended parallel with its longitudinal axis and another bubble tube therein extended transversely thereof, said spirit level also being formed with a lamp opening between the two bubble tubes and also with passageways extending from the lamp opening to the bubble tubes, a lamp holder pivotally mounted in the lamp opening of the spirit level, and an electric lamp mounted in the holder, and having a projecting lamp bulb designed to enter either of said passageways, and a spring carried by the holder to yieldingly engage the lamp and to project its bulb into either of said passageways when moved to position adjacent thereto.

3. The combination of a spirit level having a bubble tube therein extended parallel with its longitudinal axis and another bubble tube therein extended transversely thereof, said spirit level also being formed with a lamp opening between the two bubble tubes and also with passageways extending from the lamp opening to the bubble tubes, a lamp holder pivotally mounted in the lamp opening of the spirit level and an electric lamp mounted in the holder and having a projecting lamp bulb designed to enter either of said passageways, and a spring carried by the holder to yieldingly engage the lamp and to project its bulb into either of said passageways when moved to position adjacent thereto, said lamp holder being movable longitudinally of the spirit level, and means for securing it in various positions of said movement.

Des Moines, Iowa, April 18, 1923.

ELMER BRIGHT.