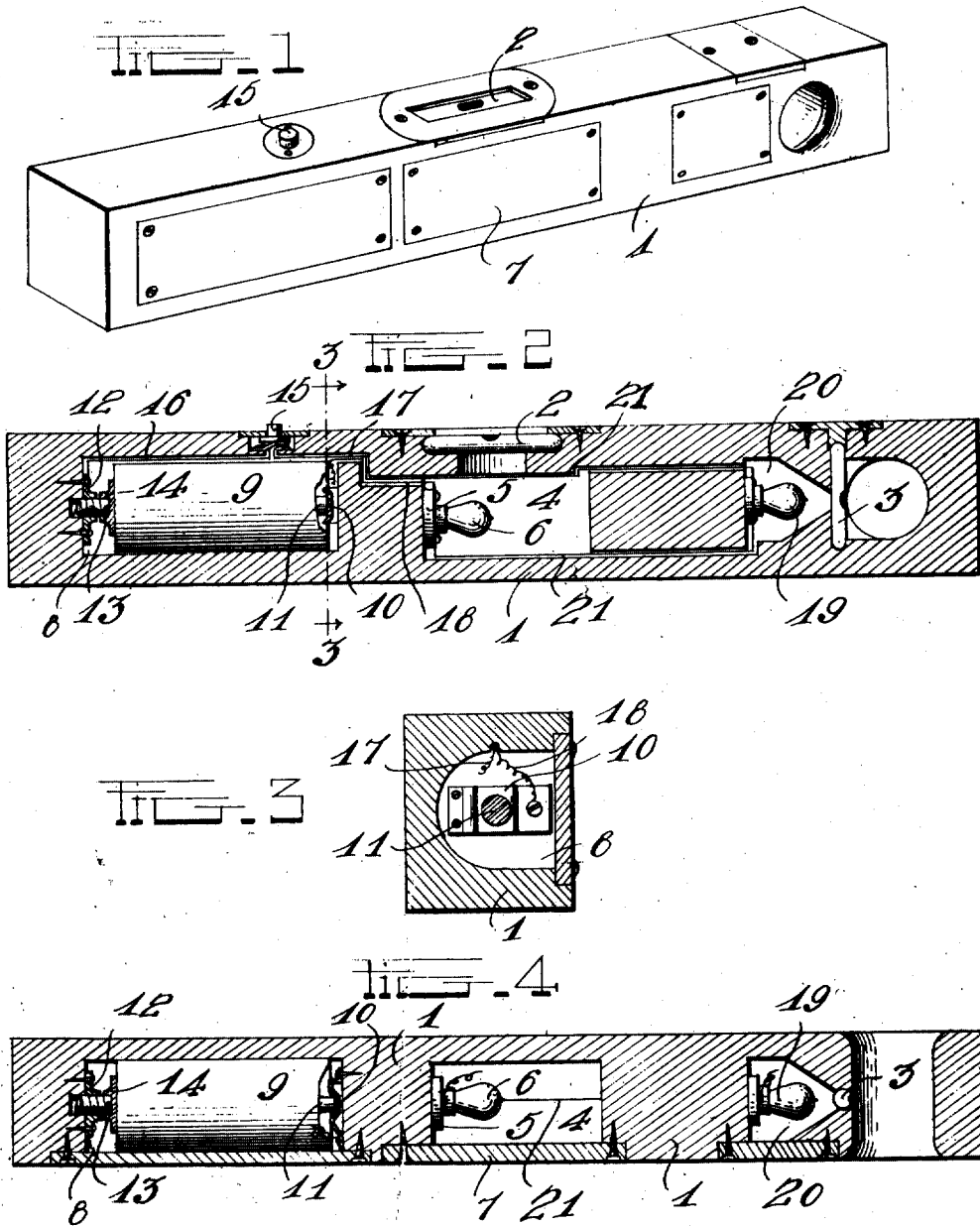


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ILLUMINATED SPIRIT LEVEL.
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1,001,206.

Patented Aug. 22, 1911.



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UNITED STATES PATENT OFFICE.

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ILLUMINATED SPIRIT-LEVEL.

1,001,206.

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To all whom it may concern:

Be it known that I, JAMES I. McCULLOUGH, a citizen of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Illuminated Spirit-Levels; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in illuminated spirit levels.

One object of the invention is to provide a spirit level of this character having an improved construction and arrangement of electric lighting mechanism placed therein whereby the bubble may be readily seen when used in dark places.

Another object is to provide an electric lighted spirit level which will be simple and inexpensive in construction, efficient and reliable in operation and in which the lighting mechanism is inclosed and protected from injury.

With these and other objects in view the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a perspective view of a spirit level constructed in accordance with the invention; Fig. 2 is a central vertical longitudinal section of the same; Fig. 3 is a cross sectional view on the line 3-3 of Fig. 2; Fig. 4 is a horizontal sectional view.

Referring more particularly to the drawings, 1 denotes my improved spirit level which is provided in one side with the usual leveling glass 2 and if desired may be provided adjacent to one end with the usual plumbing glass 3. Formed in one side of the level below the leveling glass 2 is a recess 4 in which is arranged a miniature electric lamp socket 5 with which is adapted to be engaged a miniature incandescent electric lamp 6. The recess 4 containing lamp 6 is adapted to be closed by a cover plate 7 formed of metal or other suitable material and which may be secured to the level over the recess by screws or any other suitable fastening means.

In the side of the level adjacent to the recess 4 is formed a recess 8 in which is

adapted to be arranged the battery 9 for operating the lamp. In one end of the recess 8 is arranged a contact spring 10 which is adapted to be engaged with the zinc contact 11 of the battery. The spring 10 is recessed as shown so that when the zinc contact on this end of the battery is forced into engagement therewith the battery will be held in position in the recess. In the opposite end of the recess from the end containing the spring 10 is arranged a threaded socket 12 with which is adapted to be engaged a combined contact and adjusting screw 13. With the free end of the screw 13 is adapted to be engaged the carbon contact terminal 14 of the battery, said terminal being in the form of a recessed block arranged on the adjacent end of the battery and adapted to receive the end of the screw when the battery is inserted in the recess 8. In applying the battery the end having the carbon contact 14 is first inserted in the recess and into engagement with the screw after which the opposite end of the battery having the zinc contact 11 is forced into engagement with the spring 10 thereby securely holding the battery in place, at the same time permitting the same to be removed when desired. By adjusting the screw 13 inwardly or outwardly before placing the battery in the recess the opposite end of the battery will be caused to engage the spring 10 with a greater or less pressure thus providing for securely holding the batteries which may differ slightly in length.

Arranged in the upper edge of the level is a suitable switch which is here shown and is preferably of the usual push button type as shown. With one terminal of the switch 15 is connected an electric conducting wire 16 the opposite end of which is connected with the socket of the contact screw 13 as shown. With the other terminal of the switch 15 is connected one end of an electric conducting wire 17 having its opposite end connected with one terminal of the lamp socket, the other terminal of which is connected by a conducting wire 18 to the contact switch 10. The wires 16, 17 and 18 are adapted to run through suitably arranged grooves and passages formed in the level to receive the same.

If desired the level may be provided with a second lamp 19 arranged in a recess below or in line with the plumbing glass 3 whereby this glass may also be illuminated.

The lamp 13 is in electrical connection with the battery 9 through extensions 21 of the conducting wires 17 and 18 whereby said lamp will be flashed when the button or switch 15 is operated.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as defined in the appended claims.

I claim—

1. In a device of the character described, a main body provided with a transverse recess extending entirely through it and with a longitudinal recess having a conical portion, the apex of which opens into the transverse recess, a bubble glass projecting through the meeting point of the two recesses, and an electric light in the longitudinal recess.

2. In a device of the character described, a main body provided with a longitudinal recess, a battery in the recess, there being an opening from the recess through the top of the body, a push button seated in the opening, a recess being also provided, having in the top of the body, a second longitudinal recess, an extension thereof communicating with the top recess, a bubble glass in the top recess, an electric light in the second longitudinal recess, the two longitudinal recesses being connected by channels, and wires connecting the battery, push button and electric light partly located in said channels.

3. In a device of the character described comprising a main body provided with a battery recess, the combination therewith of a contact spring transversely secured in one end of the battery recess and itself recessed, a contact socket secured in the opposite end of the battery recess, a battery in the recess provided with a socket at one end and a contact terminal projecting therefrom and adapted to engage in the socket in the re-

cess wall, and a contact terminal at the opposite end of the battery adapted to engage in the recess in the contact spring and be held in position thereby.

4. In a device of the character described comprising a main body provided with a battery recess, a battery therein, a contact socket and battery terminal in one end of the recess, and a spring in the opposite end of the recess adapted to engage the opposite contact terminal of the battery and serve the double purpose of a battery holding spring, and a contact spring.

5. In a device of the character described comprising a main body having a recess therein and provided with a glass and an electric battery for illuminating the glass, a battery in the recess, a spring in one end of the recess wired up to the lamp and adapted to serve as a retainer for the battery and as a contact spring, means for adjusting the battery against the spring, and a circuit closer.

6. In a device of the character described comprising a main body provided with a bubble glass and having formed therein below the glass, a lamp receiving recess, a battery receiving recess being also provided adjacent to said lamp recess, means to close said recesses, a combined contact and battery retaining spring arranged in one end of said battery recess, a fastening and adjusting screw arranged in the opposite end of the battery recess, a lamp arranged in said lamp recess, a battery arranged in said battery recess, said battery having its opposite terminals in electrical engagement with said adjusting screw, a contact spring, a push button switch arranged in one edge of the main body and current conducting wires adapted to connect said battery with said push button and with the lamp whereby the latter may be flashed when desired.

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

JAMES IRWIN McCULLOUGH.

Witnesses:

WALTER R. GRULD,
LYNN P. TOWNSEND.