Dec. 26, 1939. J. J. DEVINE 2,184,585

WRITING INSTRUMENT

Original Filed Sept. 24, 1937 2 Sheets-Sheet 1

Fig. 1.

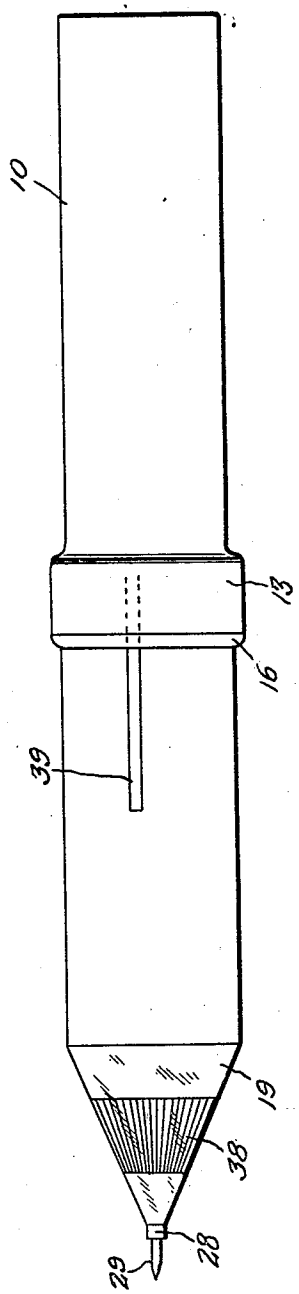


Fig. 4.

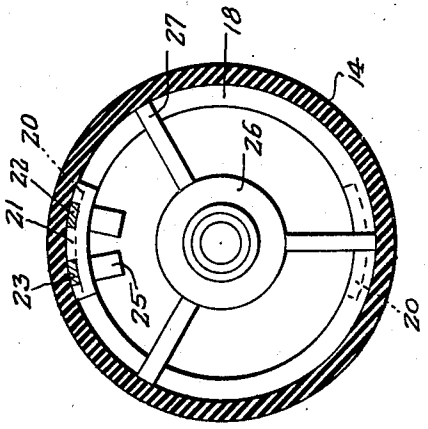


Fig. 7.

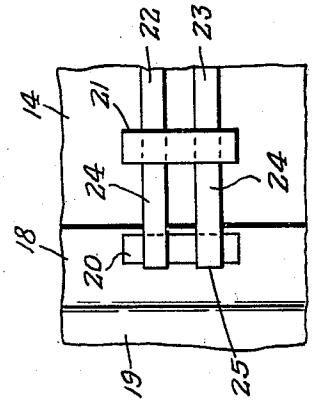
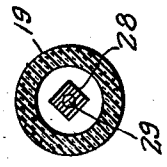


Fig. 5.



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WRITING INSTRUMENT

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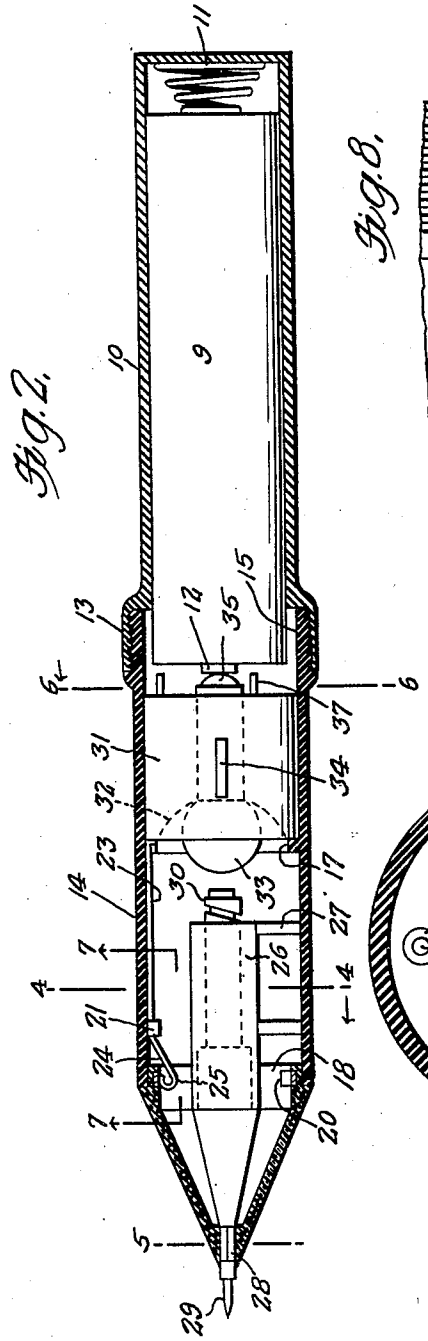


Fig. 2.

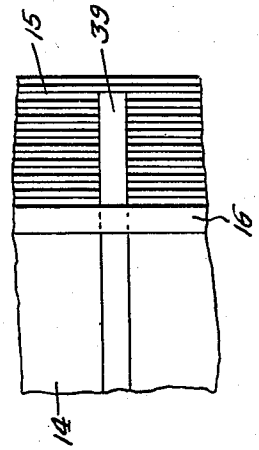


Fig. 8.

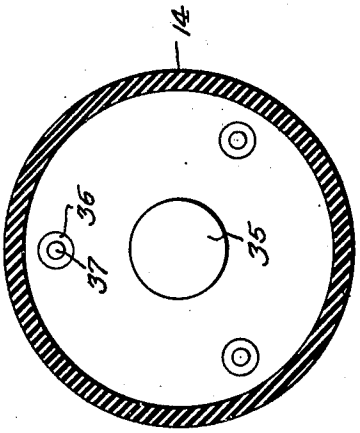


Fig. 6.

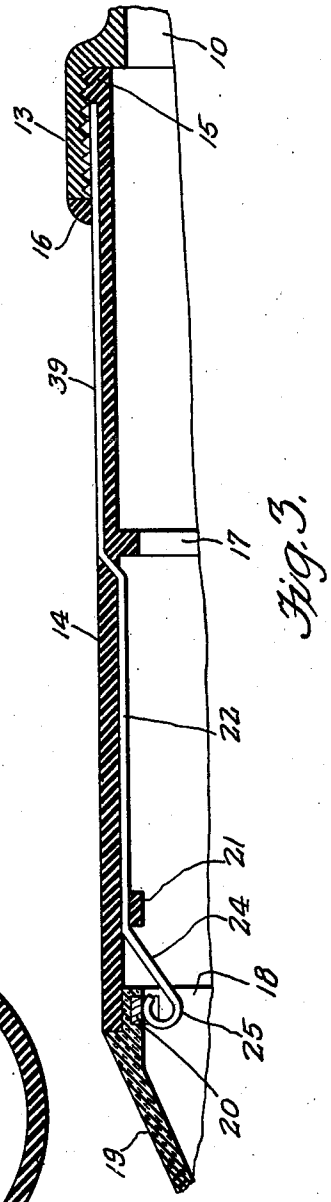


Fig. 3.

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UNITED STATES PATENT OFFICE

2,184,585

WRITING INSTRUMENT

John J. Devine, Middletown, Conn.

Application September 24, 1937, Serial No. 165,593
Renewed November 8, 1939

1 Claim. (Cl. 240—6.46)

This invention relates to illuminated writing instrument of the type embodying a pencil associated with a companion or self-contained flashlight, and the purpose of the invention is to provide a structural assemblage characterized by appreciable features of refinement and improvement regarded more aptly fitted for the purposes intended, whereby to provide a novel contribution to this particular line of endeavor.

As implied by the preceding introductory statement it is my primary aim to generally improve upon known patented and marketed flashlight-pencils by providing a structural arrangement possessed of features of newness readily discernible as well directed structural distinctions and commercial advantages.

Briefly stated, in reducing to practice the preferred embodiment of the invention I have perfected an assemblage of parts including a transparent rotatable conical cap so mounted and associated with the projectible and retractible lead pencil as to feed the lead out and switch on the lamp bulb at a single operation.

A further structural feature has to do with the adoption and use of a circuit make and break device wherein the spring contacts have the additional function of brake shoes to facilitate maintaining the rotary conical cap against accidental rotation when carried in the pocket and not in use.

Additional novelty is predicated upon the sectional shell forming the enclosure or casing for the several parts.

In addition to this a well directed improvement is calculated to reside in the adoption and use of the bulb adapter unit or mounting so made as to have the additional function of a supplementary lead-containing magazine.

Other features and advantages will become more readily apparent from the following description and drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the views—

Figure 1 is an elevational view of a writing pencil constructed in accordance with the principles of the present invention.

Figure 2 is a longitudinal view partly in section and primarily in elevation disclosing the internal arrangement and association of complemental features and parts.

Figure 3 is a longitudinal sectional view of a fragmentary type adopted to illustrate the construction of one of the stationary contact strips arranged for grounding the current.

Figures 4, 5 and 6 are transverse enlarged sections taken on the planes of the lines 4—4, 5—5 and 6—6, respectively of Figure 2.

Figure 7 is a detail view of a fragmentary elevational type which may be said to be taken somewhat on the plane of the indicated line 7—7 appearing in Figure 2.

Figure 8 is a fragmentary detail of the threaded end portion of the transparent barrel.

Referring now to the drawings by distinguishing reference numerals it will be observed that the cylindrical shell or casing for the dry cell battery 9 is denoted by the numeral 10. At the closed end thereof is the customary current conducting and projecting coiled spring 11. The spring projects the contact button 12 on the battery into the internally screw-threaded coupling or jointing member 13 formed at the open end of said shell.

The screw-threaded right-hand end of the transparent preferably glass cylinder 14, that is, the end 15 is threaded into the coupling 13. The threaded end portion is provided with an outstanding annular bead 16 forming a shoulder. On its interior and intermediate its ends the cylinder is provided with a circular abutment rib 17. The reduced jointing neck 18 on the conical glass or transparent cap 19 is fitted telescopically and rotatably into the left-hand end of said cylinder 14. On the inner surface of this neck 18 I provide circumferentially spaced inlaid metal circuit-making contact elements 20. These constitute the so-called relatively movable contacts. Calling attention now to Figure 7 it will be observed that a suitable guide 21 serves as a holder for the spring metal relatively stationary contact strips 22 and 23. The laterally directed spring-like end portions 24 terminate in curled terminals 25 which form brushes for wiping contact with the segmental movable contacts 20. The inherent resiliency of the ends 24 serve to press the terminal curls 25 tightly against the inner surface of the neck 18 utilizing this coordination of features as a sort of a friction brake to hold the conical cap 19 against accidental rotation. When the device is carried in the pocket and the switch is off it is desired that these brake shoes 25 guard against accidental turning and illumination.

The projectible and retractile lead pencil comprises a stationary casing 26 held in place by supporting spiders 27. The tapered end of the casing fits into the correspondingly tapered portion of the cap and the feeder 28 projects through and beyond the apex of the cap. This feeder 28

is of non-circular shape in cross section and passes through a similar-shaped hole in the end of the cap and is attached at its inner end to the screw 30 which is rotatably arranged in the casing 26. The feeder 28 carries a lead 29 which projects from the outer end of the feeder. By turning the cap and said feeder 28 and screw 30 as a unit in relation to the fixed casing 26 the lead 29 is projected or retracted as the case may be. At the same time the circuit is closed when the contacts 20 and 25 are brought into matching relationship.

At this time attention is invited to the adapter insert 31 shown to advantage in Figure 2. This comprises a metal cylinder formed at one end into a reflector 32 to accommodate the bulb 33. This end abuts the stop rib 17. Incidentally the numeral 34 merely designates an outwardly bowed retaining spring which fits against the inner surface of the barrel 14 to aid in avoiding accidental misplacement or endwise slippage of the part 31. This part 31 serves as a holder for the bulb and the contact end of the bulb indicated at 35 projects beyond it and is in engagement with the button 12. As shown in Figure 6 this part 31 is provided with sockets having rubber bushings 36 mounted therein which bushings serve as receptacles for extra sticks of lead as indicated at 37. Consequently, the part 31 serves as a holder or mounting for the bulb and also as a magazine for a supply of lead.

With the parts assembled as shown in Figure 2 it is obvious that by grasping the roughened external or knurled surface 38 of the conical cap and turning it, this simple single operation serves not only to close the circuit but also projects the pencil lead 29 into writing position. It follows, therefore, that the light beam from the bulb shines through the cap and illuminates the surface of the paper enabling the pencil to be used in darkness.

It may be added in conclusion that the elongated metal contact strip distinguished by the numeral 39 in Figure 3 has its free end portion extending through an aperture in the barrel and along the outer surface of the barrel where it goes through an aperture in the bead 16 permitting it to have grounding connection with the metal casing 10. This is the manner in which the electric circuit is completed.

It is thought that the description taken in connection with the drawings will enable a clear understanding of the invention to be had. Therefore, a more lengthy description is thought unnecessary.

What is claimed is:

A writing instrument of the class described comprising a casing, a transparent cap of substantially conical shape rotatably engaging one end of the casing, a writing point carried by the outer end of the cap, means for projecting and retracting said writing point by turning movement of the cap, an electric lamp in the casing, a battery in the casing, a pair of conductors in the casing one connected with the lamp and the other with the battery, the front ends of said conductors being spaced apart and being of spring material to frictionally engage a portion of the cap and a contact strip carried by the cap for bridging said spaced ends of the conductors when the cap is in one position and being moved out of engagement with said ends when the cap is in another position.

JOHN J. DEVINE.