March 23, 1926. 1,577,754

F. RAUCH

SWITCH CONTROLLED ILLUMINATED FOUNTAIN PEN

Original Filed Nov. 25, 1919

Fig. 1.

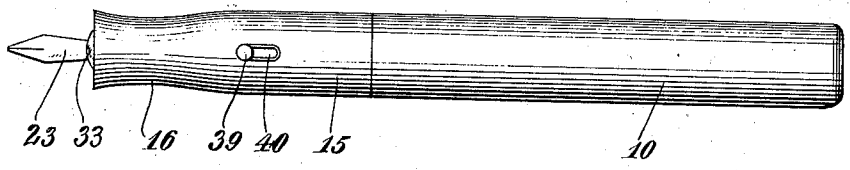


Fig. 2.

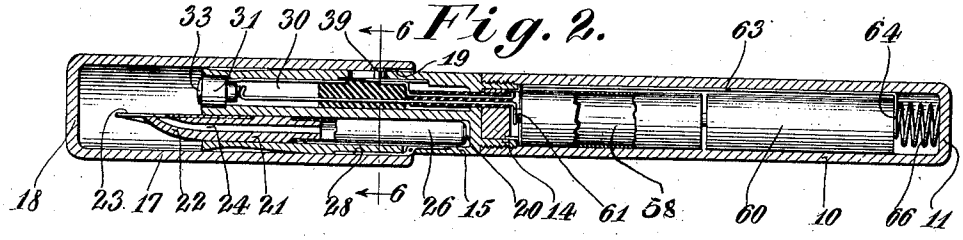


Fig. 3.

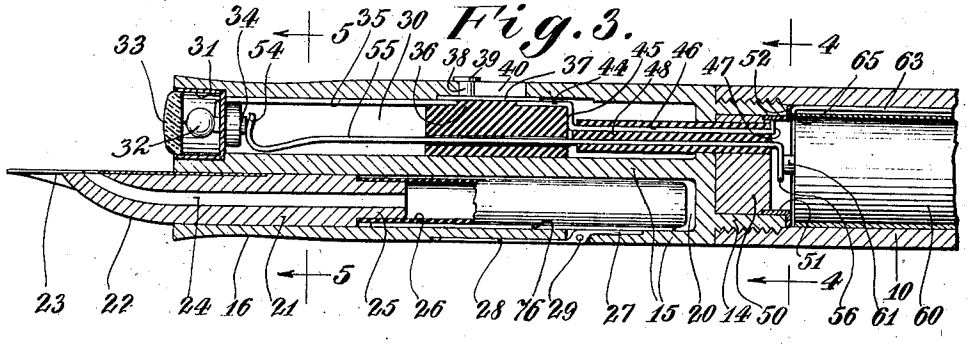


Fig. 4.

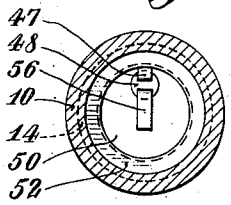


Fig. 6.

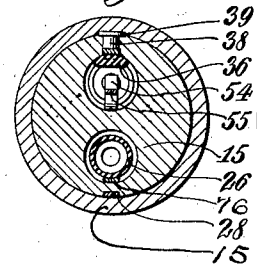


Fig. 5.

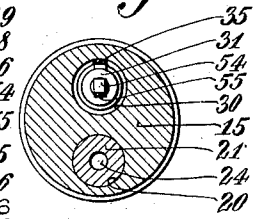


Fig. 7.



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By Charles L. Wright.

his Attorney

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UNITED STATES PATENT OFFICE.

FRANK RAUCH, OF BROOKLYN, NEW YORK.

SWITCH-CONTROLLED ILLUMINATED FOUNTAIN PEN.

Substitute for application Serial No. 340,503, filed November 25, 1919. This application filed June 29, 1925. Serial No. 40,444.

To all whom it may concern:

Be it known that I, FRANK RAUCH, a citizen of Yugoslovakia, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Switch-Controlled Illuminated Fountain Pens, of which the following is a specification.

This application is a substitute for abandoned application filed November 25, 1919, Serial No. 340,503.

This invention relates to writing implements, particularly to fountain pens and has as its principal object the provision of means carried wholly within the body or shank of the pen, whereby a light is caused to glow in such manner as to illuminate the path of the pen point from a point adjacently above the same.

A further object is to provide means for preventing an inadvertent movement of the switch controlling the lamp when the light is not required.

These and other like objects, which will become manifest as the description progresses, are attained by the novel construction and combination of parts hereinafter described and shown in the accompanying drawings, forming a material part of this disclosure, and in which:—

Figure 1 is a side elevational view of a pen made in accordance with the invention, the cap being removed.

Figure 2 is a central longitudinal sectional view of the same.

Figure 3 is a similar but enlarged fragmentary view.

Figure 4 is a transverse sectional view taken on line 4—4 of Figure 3.

Figure 5 is another similar sectional view taken on line 5—5 of Figure 3.

Figure 6 is a transverse sectional view taken on line 6—6 of Figure 2, and

Figure 7 is a perspective view of the battery connecting element.

In using a fountain pen, or other scribing implement, the shank or body is held in the hand at an angle varying from twenty to ninety degrees from horizontal, about fifty degrees being a fair average.

The shank is also turned laterally outward, according to whether the operator be right or left handed, to an angle of from ten to forty degrees, due to habit, and also to prevent interception of vision.

It is also noted that the heavier strokes of a pen are always downward, producing a shading effect, and preventing the pen point from catching and damaging the surface written upon, due to the angularity at which the pen point is held in maneuvering it.

It is therefore logical and correct to arrange the light above the pen and not below, where its rays are necessarily obscured by the pen and its support.

It will be apparent that the shank of the pen must be of such size as to be conveniently manipulated, but not unwieldy, therefore the available space for a battery is restricted and also the size of the lamp used, necessitating its position as closely as possible to the pen point, and, because of its fragile structure, it should be guarded against breaking.

These several points are emphasized in the following detail description and by reference to the drawings, in which the numeral 10 designates the tubular body of a pen, the same being preferably of hard rubber as usual, and formed with solid outer end 11, either integral or separable as preferred, the opposite end being open and provided with internal screw threads.

Fitted to these screw threads is a hollow plug 14 formed on the front section or head 15 of the pen body, the same presenting a contracted profile 16 to be engaged by the fingers of an operator, and to receive upon it a hollow elongated cap 17 having a closed outer end 18.

A cylindrical recess 20 extends into the head 15, from its outer end to a point near the plug 14, at one side, and tightly fit to it is a pen holding element 21, its outer extending end 22 being curved towards a pen point or nib 23, of conventional type, and engaged between the inner wall of the recess 20 and a reduced portion of the element 21 as shown.

A channel or duct 24 communicates with the lower or inner side of the pen point and extends centrally longitudinally of the element 21 and through its reduced plug portion 25, upon the outer surface of which is secured the inner end of a flexible collapsible sac or ink reservoir 26, the same being compressible by contact with a flexible plate 76 against which rests the inner end 27 of a lever 28, passing through the head 15 and

pivoted on a pin 29 set therein, the lever extending towards the pen point in a recess formed in the head 15, the lever being operable in the usual manner of self-filling pen devices, and covered, when not in use, by the cap 17.

A similar recess 30 extends parallel and coincident with the recess 20, in the upper side of the head 15, the same having a tight-fitted plain cylindrical socket 31 slipped therein and carrying a miniature electric lamp 32 having beyond its outer end a lens 33 fixed in the end of the socket which acts as a guard for the lamp, the same being disposed closely adjacent the pen nib 23.

The lamp socket 31 has a central terminal contact 34 and an elongated bar contact 35 formed on the socket and extending into the recess adjacent to its outer wall, it being held in position by engagement with an insulating plug 36 secured interiorly of the recess 30.

Slidably engaged between the plug 36 and wall of the recess, is a switch plate 37 in which is secured a rigid stem 38, provided with a knob 39, its stem extending through an elongated slot 40, formed in the wall of the recess, the knob projecting slightly outward beyond the surface of the head 15 convenient of access.

The knob 39 is also adapted to be received in a counterbored recess 19 formed in the end of the cap 17, so that when the cap is in position on the head 15, the knob is forced to the rear and the switch contact plate moved away from the terminal bar 35.

The switch plate 37 is always maintained in contact with a connection bar 44, having an offset 45, its main portion 46 being enclosed in an insulator 48, which passes through an eccentric opening in the upper end of the head 15 and thence through a bushing 50 fixed in the hollow threaded plug 14.

This bushing serves to secure an annular flanged ring 51 within the plug, against the inner surface of which the outturned end 47 of the connection bar 46 makes electrical contact.

Engaging the socket 34 is a spring contact 54 formed on a bar connection 55, extending through the recess 30, it being held and guided by passing through another opening formed in the insulator 4ɔ and terminates in an angular portion 56, registering with the center of the plug 14, and central of the ring 51, the flanged portion 52 of which covers the end of the plug 14.

A pair of batteries 58, enveloped in cylindrical casings 60, preferably of celluloid or like insulating material, are arranged in tandem within the hollow body 10, the terminal 61 making contact with the element 56, the batteries being held in close relation by a connecting bar 63 having a circular, angularly bent flat end 64 contacting with the end of the inner battery and a similarly bent end 65 adapted to make electrical contact with the annular flange 52, under the action of a coiled push spring 66 interposed between the closed end 11 of the body and the element 64 of the connection bar.

Thus when the switch knob 39 is in a forward or outer position, as shown in Figure 3, the batteries are in circuit with the lamp and when the switch is open, as shown in Figure 2, which position is assured when the cap is in place, no current can pass from the batteries to the lamp, and no loss of current can occur, while obviously the lamp and pen point are protected from damage.

I am aware that it is not broadly new to supply a pen with a self-contained light or to control the light by ordinary means and therefore do not claim the same as my invention, but what I do claim and seek to secure by Letters Patent, is:—

1. A fountain pen comprising a casing, a source of electrical energy in said casing, a switch controlling the current therefrom, a cap engageable with said casing, a lamp embedded in said casing except at its face, said lamp being disposed over the pen, and means within said cap adapted to receive, move and maintain said switch in open position when disposed on said casing.

2. An illuminated fountain pen comprising a body casing, a pen carrying head removably engaged therewith, a pair of batteries arranged in tandem in said body, insulating envelopes for each of said batteries, a bar extending over said envelopes to couple said batteries, said bar being in contact with one pole thereof, a lamp in said head over the pen, a lens beyond said lamp, resilient electrical connections between said bar and said lamp, and a longitudinally slidable switch in the last named connections.

3. An illuminated fountain pen comprising a body casing, a pen carrying head removably engaged therewith, a cap engageable on said head, a pair of batteries in said casing body, an insulating casing for each battery, an electrical lamp partially enclosed in said head over the pen, insulated connections between said batteries and said lamp, a sliding switch in said connections, said switch extending above the surface of said head, a lens in said head exterior of the lamp, and means formed in said cap to receive and maintain said switch in an open position.

In testimony whereof I have signed my name to this specification.

FRANK RAUCH.