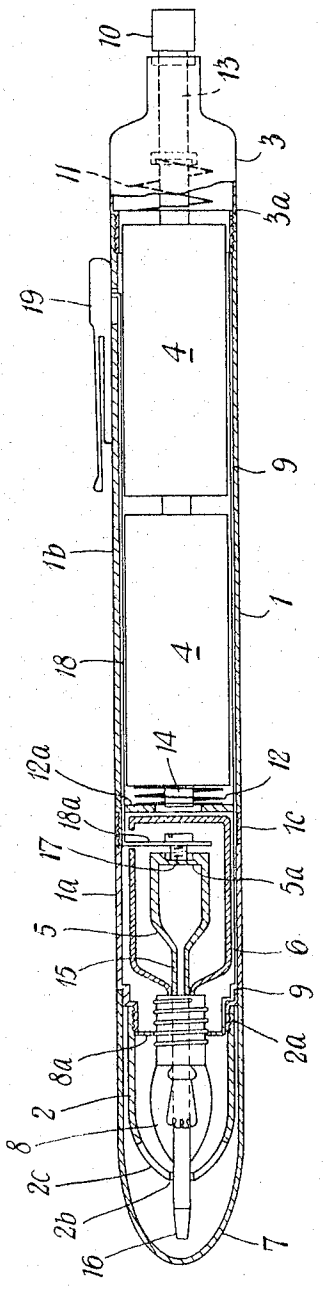
Feb. 7, 1967 KAN CHEUNG LO 3,303,337

ILLUMINATED WRITING INSTRUMENTS

Filed June 8, 1964



United States Patent Office

3,303,337

Patented Feb. 7, 1967

3,303,337

ILLUMINATED WRITING INSTRUMENTS

Kan Cheung Lo, 454 Portland St., 3rd Floor, Kowloon, Hong Kong

Filed June 8, 1964, Ser. No. 373,362
Claims priority, application Great Britain, July 2, 1963, 26,175/63
1 Claim. (Cl. 240—6.46)

This invention relates to a combination electric hand torch and writing instrument.

It is well-known for a pocket torch to be a self-contained unit and this usually is in outward appearance of similar design to the common pocket fountain pen. It is often necessary or desirable to write in a badly illuminated working area, and at present the only satisfactory way of having both a writing implement and a torch is by carrying them as individual articles. This implies that when one wishes to write either both hands are occupied, one with the pen and the other with the torch, or as is more usual, even though often unsatisfactory, the flash light is rested on some nearby surface.

An object of this invention is to provide apparatus suitable for writing and which has its own self-contained illuminating device, and yet is simple to use and easily assembled.

This invention provides the combination of a writing implement with an electric hand torch, and includes a hollow cylindrical body adapted to receive an electrical power source and an ink reservoir, one end of the body having a nose cone for the reception of a centre hole electric light bulb for connection to the power source, and an ink flow tube passing through the centre hole of the bulb to allow ink to flow from the reservoir to the writing tip of the tube.

The invention will now be described, by way of example only, and with reference to the accompanying illustrative drawing which is a longitudinal sectional view of a combination electric hand torch and writing implement constructed according to this invention.

A hollow cylindrical casing **1** is made having two parts, a forward cylinder **1***a* and a rearward cylinder **1***b* joined by conventional screw threads at **1***c*. The casing **1**, having a removable nose cone **2** and a removable end button cap **3**, contains in the rearward cylinder **1***b* a portable electrical power source **4** (which in this case is shown as two dry cell batteries electrically connected in series), and contains in the forward cylinder **1***a* an ink reservoir **5** and an electrically conducting case **6**. A nose cone **2**, which is removably attached by conventional screw or other suitable means at **2***a* to the cylinder **1***a* of the casing, has an outer protective nose cone **7** and contains within its interior a centre hole electric light bulb **8** which is screwed in the conventional manner into a metallic diaphragm **8***a*, which diaphragm is in itself an extension of an insulated electrical conduit **9**. The centre hole bulb **8** is thus electrically connected through the electrically conducting casing **6** and electrical conduits **8***a* and **9** to the power source **4** via an on/off press button switch **10**.

By depressing button **10** against a spring **11** a rod or stub **13** moves the batteries **4** in the direction of the nose cone **2** and against the action of a spring **12** (which spring is supported on an annular extension **12***a* of the casing part **1***b*), and thus an electrical contact is made between the casing **6** and the electrode **14** of the forward battery. A continuous electrical circuit is formed and the bulb lights. The bulb is turned off by depressing button **10** even further which releases a catch (not shown but is similar to that which is well-known in the design of retractable ball point pens and the like), the rod **13** retracts under the action of the spring **11** and the batteries **4** also retract under the action of the spring **12**, this breaking the electrical contact between **6** and **14** and the light from the bulb **8** is extinguished.

The ink reservoir **5**, which in this case is shown having a larger cross-sectional area than that which is normally employed in the conventional fountain pen (thus allowing for any decrease in length of the reservoir which may be required, depending upon the size of batteries and length of the casing **1**), has associated with it an ink flow tube **15** through which ink can flow to the writing tip **16**.

The bottom **5***a* of the reservoir **5** is adapted for receiving a screw **17** which passes through an extension plate **18***a* of a control arm **18**, and adjustably secures one to the other. The control arm **18** is attached to a sliding lever **19**, movement of which lever causes the arm **18** to move forwardly in the direction of the nose cone **2** and in doing so causes the ink reservoir, flow tube and writing tip to move forward. The ink flow tube **15** thus passes through the centre hole of the bulb **8** and emerges through the hole **2***b* of the nose cone **2**. Writing may commence once the protective cover **7** has been removed. Similarly the writing tip is retracted by moving the lever **19** in the reverse direction. The lever **19**, which also serves as a pocket clip, may be locked in either the operable or inoperable position in any of the conventional ways.

As is usual in pocket torches, a proportion of the body of the nose cone **2** is constructed in either opaque or translucent material, and the forward end is of transparent material and shaped to form a lens **2***c*.

When it is necessary to replace or recharge the electrical power source, in this case the batteries, the button cap **3** is unscrewed at **3***a* and the batteries **4** removed.

Similarly for recharging or replacing the ink reservoir **5** the parts **1***a* and **1***b* of the casing **1** are separated by unscrewing at **1***c*, and this causes the ink reservoir **5**, casing **6** and ink flow tube to emerge from the nose cone and centre hole bulb, since on unscrewing the parts **1***a* and **1***b* the reservoir is still indirectly attached to **1***b* by the control arm extension plate **18***a*. Once the ink reservoir has been exposed it is a simple matter to remove the electrically conducting casing **6** and replace the reservoir as in the case of ink cartridges, or recharge it in the case of "bottled ink."

The centre hole bulb may be replaced in the conventional manner by merely removing the nose cone **2** and unscrewing the bulb from the diaphragm **8***a*.

It should be realized that various modifications can be made to the construction of the apparatus as shown, for example, the screw **17** may, instead of making permanent contact, press against the bottom **5***a* of the ink reservoir **5**, in which case a coil spring (not shown) would be placed around the ink flow tube **15** and thus force the reservoir backwardly when the lever **19** is moved backwardly.

What I claim is:

A combination writing implement and electric hand torch which includes a hollow cylindrical body adapted to receive an electrical power source and an ink reservoir; a nose cone removably attached to one end of said body, said nose cone defining a projection hole at the apex thereof; a centre hole electric light bulb located in and enclosed by said nose cone, the center hole of said bulb being in axial alignment with said projection hole; means electrically connecting said bulb with said power source through a switch device; an ink flow tube located within and slidable through the center hole in said bulb and slidable through said projection hole, said tube communicating between at one end, said ink reservoir and the end remote therefrom, a writing tip whereby ink can flow

from said reservoir to said tip; control means operatively associated with said ink flow tube to slidably move said tube through said bulb to a position at which said tube projects through said projection hole and said tip is located externally of said nose cone, said tube being supported by said nose cone, and to slidably move said tube through said bulb from said projection position to a position in which said writing tip is located inside said nose cone at a position remote from said projection hole, said control means including an axially extending slidable lever located in said body, one end of said lever connecting said ink reservoir and the other end of said lever connecting through an axially extending elongated slot defined in a side of said body with a hand control knob, said hand control knob being slidably located on the exterior of said cylindrical body.

References Cited by the Examiner

UNITED STATES PATENTS

1,216,862	2/1917	Sickles	240—6.46
1,310,257	7/1919	Stiles	120—42.03
1,722,238	7/1929	Weber	240—6.46
2,323,960	7/1943	Zeno	240—6.46
2,484,154	10/1949	Deuine	240—6.46

FOREIGN PATENTS

1,040,172	5/1953	France.
805,573	12/1958	Great Britain.

NORTON ANSHER, *Primary Examiner.*

JOHN M. HORAN, *Examiner.*

C. C. LOGAN, *Assistant Examiner.*