

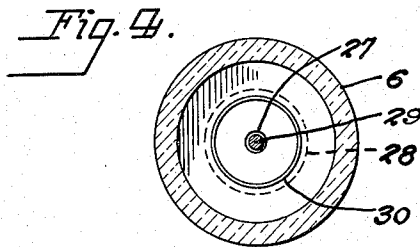
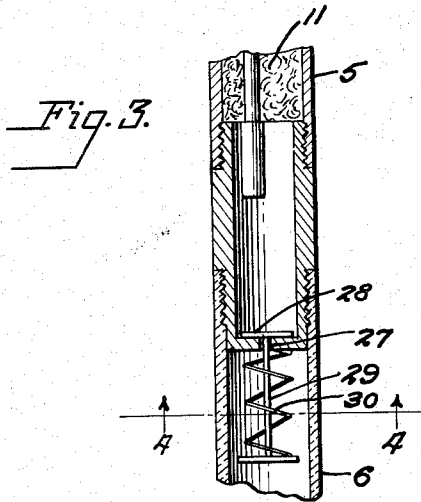
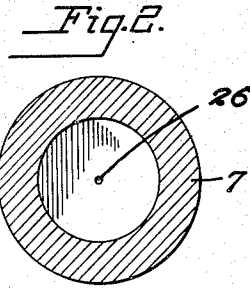
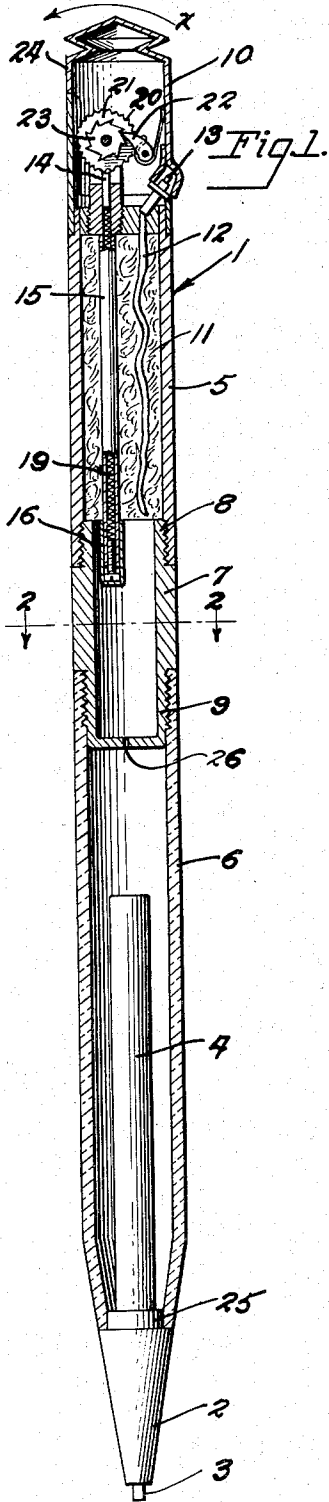
June 3, 1941.

E. S. MANSFIELD

2,244,563

CIGAR AND CIGARETTE LIGHTER

Filed Aug. 23, 1939



Inventor

E. S. Mansfield

By *Mason Fenwick + Lawrence*
Attorneys

UNITED STATES PATENT OFFICE

2,244,563

CIGAR AND CIGARETTE LIGHTER

Eston S. Mansfield, Atlanta, Ga.

Application August 23, 1939, Serial No. 291,591

3 Claims. (Cl. 67-7.1)

This invention relates to cigar and cigarette lighters, and has for its object the provision of a device of the class indicated, in which the customary wick chamber for fuel with its body of absorbent material is supplemented by an auxiliary reservoir for replenishing the wick chamber with liquid fuel, communicating therewith by a port so small that atmospheric pressure within the wick chamber ordinarily excludes the entrance of liquid into said wick chamber even when the auxiliary reservoir is higher than said wick chamber, the passing of fluid through said port for replenishment of the wick chamber being accomplished by jarring the lighter with the device positioned so that the auxiliary reservoir is at a higher level than the wick chamber, forcing liquid through said passage by inertia.

Another object of the invention is to employ an inertia operated valve to control the opening between the auxiliary reservoir and the wick chamber.

Still another object of the invention is the provision of an auxiliary reservoir composed at least in part of transparent substance so that the amount of liquid in said auxiliary reservoir may be observed.

Other objects of the invention will appear as the following description of a preferred and practical embodiment thereof proceeds.

In the drawing which accompanies and forms a part of the following specification, and throughout the several figures of which the same characters of reference have been employed to denote identical parts:

Figure 1 is a longitudinal section through a pencil of the propel-repel type, embodying the principles of the present invention;

Figure 2 is a cross-section through the pencil, taken along the line 2-2 of Figure 1;

Figure 3 is a longitudinal section through an intermediate portion of the pencil showing a slightly modified form of the invention; and

Figure 4 is a cross-section taken along the line 4-4 of Figure 1.

The chief fault with cigar and cigarette lighters is their lack of reliability, due to the exhaustion of fuel. Ordinarily, the state of the fuel supply cannot be visibly ascertained, and the lighter refuses to light, through lack of fuel. The present invention not only provides a reservoir for carrying an auxiliary supply of fuel, but it makes this auxiliary supply of fuel visible so that it can be renewed in good time, and it also provides a simple control, by means of which the wick chamber of the lighter can be replenished

from the auxiliary reservoir simply by inverting the lighter or otherwise bringing the liquid in the auxiliary reservoir above the wick chamber and then tapping the lighter so as to drive the fuel into the wick chamber through inertia.

The drawing shows the invention applied to a mechanical pencil, but it is obvious that the principles of the invention may be applied to many other forms of cigar and cigarette lighters.

Referring now in detail to the several figures, the numeral 1 represents in general a pencil having a tapered ferrule 2 at its lower end, through which the lead 3 may be protruded or withdrawn, by suitable mechanism enclosed with the fluid-tight tube 4, and which is operated by rotating the ferrule 2.

Such a construction is, of course, well-known in the art, and need not be described here in further detail.

The barrel of the pencil comprises an upper section 5 and a lower section 6 connected by a coupling member 7 having nipples 8 and 9 at its opposite ends to which the adjacent ends of the sections 5 and 6 are secured in any suitable manner, as by threading.

A lighting element 10 is secured to the upper end of the upper section 5.

The lighting element 10 is preferably made of metal, and the sections 5 and 6 of the barrel can be made of any suitable material, such as metal or any available plastic, but it is preferred that the section 6 shall be made of material which is at least in part transparent.

The upper section 5 constitutes the wick chamber containing absorbent material 11 saturated with fuel which is communicated to the lighter in a capillary manner by the wick 12, the upper end 13 of which is exposed in the lighter element adjacent the pyrophoric rod 14. The latter is for convenience housed in a tube 15 which, as shown, extends through the wick chamber and terminates in a bore 16 in the coupling member 7. A spring 19 constantly urges the pyrophoric rod 14 into contact with the serrated edge 20 of a hard metal wheel 21 which is rotated by means of a pawl 22 which engages a ratchet wheel 23 movable with said wheel 21.

The lighter element has a closure cap 24 pivoted along the axis of the wheel 21 and capable of being flipped backward in the direction of the arrow x. The pawl 22 is attached to the cap, and when the cap is so flipped the pawl pushes the ratchet wheel 23, partially rotating it and causing the serrated edge of the wheel 21 to grind against the pyrophoric rod 14, produc-

ing a spark which ignites the vapor surrounding the end of the wick 13 which is exposed when the cap is flipped backwards. Said cap is spring returned to the closed position shown in Figure 1.

The lighter elements within the cap 24 are conventional, and no claim is made to them, per se.

The section 6 of the pencil barrel makes a fluid-tight connection with the nipple 7 and with the shoulder 25 above the top of the ferrule 2. The chamber within this section and surrounding the tube 4 is the auxiliary reservoir for the reserve supply of fuel.

The coupling 7 is hollow, and has a small port or orifice 26 establishing communication between the auxiliary reservoir and the wick chamber.

As has been suggested, the wall of the section 6 is in part at least transparent, so that it can be readily observed whether or not there is any liquid fuel in the auxiliary reservoir, so that it can be replenished if nearly exhausted. Access to the interior of the auxiliary reservoir is had by unscrewing the section 6 from the nipple 9.

In using the cigar and cigarette lighter above described, it is not advisable to wait until there is a complete failure of fuel at the exposed end 13 of the wick 12 before transferring fuel from the auxiliary reservoir to the wick chamber. It is preferable, occasionally, to invert the pencil and jar the hand which holds it, against a firm support. With the pencil in this inverted position, inertia thus imparted to the liquid in the auxiliary reservoir above the port 26 will force the fuel through said port and through the coupling 7 into the wick chamber. Ordinarily, when the pencil is in writing position and the body of liquid in the auxiliary reservoir is above the port 26, the small size of said port causes an air lock in the auxiliary reservoir, which prevents liquid fuel from passing through the port 26 into the wick chamber.

In Figure 3 a slightly modified form of the

invention is shown in which an aperture 27 between the wick chamber and the auxiliary reservoir is normally closed by a valve 28 having a stem 29 extending through the aperture 27 and of such size as to provide an annular passage between said stem and the wall of said aperture. Said valve is held normally closed by a light spring 30, and upon inverting the pen and jarring it in the same manner as has been described in connection with that form of the invention shown in Figures 1 and 2, the valve 28 will be jarred open by inertia, and liquid permitted to enter from the auxiliary reservoir into the wick chamber.

It will be obvious to those skilled in the art that the basic principle of the invention may be embodied in many other forms of lighter.

What I claim as my invention is:

1. Cigar and cigarette lighter comprising a barrel having an intermediate coupling member and upper and lower hollow barrel sections secured thereto, said upper chamber being a wick chamber containing absorbent material and having a lighting element supported thereby including a wick extending into said wick chamber, said lower casing section comprising an auxiliary reservoir for replenishing fuel, said coupling having a partition with a port placing said wick chamber and said auxiliary reservoir into communication, being of such size as to prevent the passage of liquid except in response to an inertia urge produced by jarring said lighter when said auxiliary reservoir is higher than said wick chamber.
2. Cigar and cigarette lighter as claimed in claim 1, the barrel section which constitutes the auxiliary reservoir being transparent at least in part.
3. Cigar and cigarette lighter as claimed in claim 1, including a valve normally closing said port and opening responsive to an inertia impulse.

ESTON S. MANSFIELD.