

PATENT SPECIFICATION



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COMPLETE SPECIFICATION

A Lighter for Cigarettes and Cigars

I, IRVING FLORMAN, of 2, West 46th Street, New York City, State of New York, United States of America, a citizen of the United States of America, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention relates to an improved construction of a pyrophoric pocket lighter for cigars and cigarettes of the kind wherein the lighter is provided with means offering resistance to the movement of the actuating means and released only when a given pressure is applied to the actuating means, so that the actuating means will be moved suddenly and sharply to impart a quick and sudden movement to the igniting mechanism and is also provided with means for wiping flint chips from the wick or wick tube at each operation, so as to prevent the accumulation of such chips on the wick and the consequent difficulty igniting the same.

The invention consists in a construction having the combination of parts set out in the claims.

In the accompanying drawing:

Fig. 1 is a side elevation of a lighter embodying the invention in operated position;

Fig. 2 is a cross section through the lighter of Fig. 1 in inoperative position;

Fig. 3 is a cross section on the line 3—3 of Fig. 2;

Fig. 4 is a perspective view of the spring and pawl members; and

Fig. 5 is a detail view of the upper rear corner of the lighter in the position shown in Fig. 1.

The lighter comprises a body having side walls 2, and end walls 4, a bottom wall 6, and a top wall 8. The body so formed constitutes the fuel chamber and is filled with absorbent cotton 10, or other suitable material, for holding a liquid fuel. It may be filled through a threaded plug 12 in the bottom wall 6.

Extending through the body and fuel chamber is a flint tube 14 closed at the bottom by a threaded plug 16 and con-

taining a coil spring 18 which engages the bottom of a flint 20, pushing the flint upwardly. The flint engages the periphery of a flint wheel 22 which is mounted on a shaft 24 carried in ears 26 upstanding from the top wall 8. By rotation of the wheel 22, sparks are produced from the flint 20.

The wick 28 extends upwardly through a wick tube 30, likewise mounted in the top wall 8. The wick, of course, extends downwardly into the absorbent cotton and draws fluid therefrom.

Mounted on the outside of the ears 26 is a snuffer member having side walls 32 which are pivoted on screws 34 threaded into the ends of shaft 24. The snuffer also has a top wall 36. On the rear side of the pivot 24 the top wall 36 is extended upwardly and outwardly to form a finger piece 38. At the other end, there is provided a front wall 40 closing the space between the side walls 32 and the top wall 36.

On the wick tube 30 there is mounted an annular projection 42. This is securely mounted on the outside of the wick tube above the top wall 8 of the fuel chamber. Connected to the snuffer in a manner to be described is a flint chip wiper and catch member in the form of a piece of sheet metal. This piece is of U-shape, having legs 44 extending downwardly from the transverse portion 46. The lower ends of these legs are bent inwardly towards each other as indicated at 48. The space between the lower ends of the legs 44 is less than the greatest diameter of the annular member 42 and preferably about equal to the outside diameter of wick tube 30.

A snuffer cap 54 is arranged within the snuffer and above the wick tube. This snuffer cap is connected to the top wall 36 by a screw or other securing member 56. Screw 56 passes through the bight 46 of the U-shaped member, and portion 46 is thus held close to the top wall 36 by the screw 56 (see Fig. 2). The snuffer cap screw thus forms the sole connection between the U-shaped member and the snuffer.

Motion is imparted to the flint wheel

22 by a pawl 60 having a downwardly projecting end 62 forming a tooth which is engageable with the teeth of a ratchet wheel 64 rigidly secured to the flint wheel 22. The pawl 60 is integral with portion 46 of the U-shaped spring clip member.

The operation of this mechanism is as follows:

When the mechanism is in the position shown in Fig. 2, in order to operate the lighter the finger or thumb is applied to the finger piece 38 and a downward pressure is exerted thereon in the direction indicated by the arrow. Since the spring portions 48 are beneath the greatest diameter of the annular member 42, they will resist any upward movement of the snuffer until their resilience is overcome. When sufficient pressure is applied, however, the spring members 48 will suddenly release the snuffer and it will rise with a quick motion. As the snuffer rises, the spring portions 48 move past the outside of wick tube 30 and then over the wick (broken lines, Fig. 3), thus removing flint chips therefrom. At the same time, the pawl 62 turns wheel 64 and thereby causes flint wheel 22 to throw sparks onto the clean wick 28. Because of this sudden motion produced by a considerable pressure, this movement of the flint wheel will be in the nature of a snap motion and will be certain to produce a sufficient spark to ignite the wick.

When the snuffer reaches its raised position, shown in Fig. 1, there is, of course, no force holding it in such position. The snuffer can then be turned back without any resistance whatsoever through the angular extent of one of the teeth of wheel 64, which in itself may be as much as 15°; and may turn even further than this if the pawl 62 slides over some of the teeth, which, of course, it can do without any substantial force in many circumstances. Under these conditions the snuffer might be likely to fall back to a position in which it would overhang the wick. This might extinguish the flame or interfere with the use of the same. In addition the snuffer and particularly the spring parts therein would be subjected to the heat of the flame, and might lose their temper so as to render them useless. In order to avoid this, the snuffer is made so that when raised it is overbalanced to a fully open position. As will be noted the axis of the shaft 24 is located at substantially half the height of the snuffer body, so that the body itself is balanced about this axis when in vertical position, or its center of gravity is vertically aligned with the pivot axis of the snuffer. On the other hand, the extension 38 is to the rear of the pivot,

and, therefore, gives an excess of weight on the rear side of the pivot. This finger piece 38 may be made of sufficient thickness and mass to insure the necessary overbalance for holding the snuffer in raised positions.

When the snuffer is raised, it is, of course, necessary to provide a stop therefor. In the present invention the movement of the snuffer is stopped without using any other than a simple form of rectangular body, by engagement of the finger piece with the back wall of the body. As will be seen from Fig. 5, the finger piece engages with the upper edge of the back wall as at 66, and thus stops the upward movement of the snuffer.

After the lighter has been operated, the snuffer may be returned by pressure of the finger to its normal or closed position. As it moves downwardly the spring portions 48 will again remove flint chips from the wick and wick tube and then snap over the ring 42 to hold the snuffer member against accidental opening in the pocket.

While I have described herein one embodiment of my invention, I wish it to be understood that I do not intend to limit myself thereby, except within the scope of the appended claims.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In a cigarette lighter, a fuel chamber, a wick communicating with said fuel chamber, a wick tube holding said wick, a snuffer movable to cover and uncover said wick, means operated by movement of said snuffer to uncover the wick to project a spark upon said wick, means to move said snuffer, said snuffer having a top wall, and cooperating resilient means connected to the top wall of said snuffer only, and on said wick tube for preventing movement of said snuffer until a predetermined pressure has been applied to said moving means, said cooperating means comprising an enlargement on said wick tube, and a U-shaped member arranged within said snuffer, a snuffer cap arranged within said snuffer to overlie said wick tube, said snuffer cap engaging within said U-shaped member, and means extending through said U-shaped member connecting said snuffer cap to the top wall of the snuffer, the legs of said U-shaped member having their lower ends spaced apart by a distance less than the dimension of said enlargement so as to snap beneath said enlargement and hold said snuffer resiliently in lowered position, whereby the lower ends

of said U-shaped member wipe flint chips from the wick and wick tube and said means for projecting a spark upon said wick comprising a flint, a rotatably mounted flint wheel and an integral extension of said U-shaped member having a downwardly turned end forming a pawl engaging said ratchet wheel.

2. In a cigarette lighter, a fuel chamber, a wick communicating with said fuel chamber, a wick tube holding said wick, a pivoted snuffer movable to cover and uncover said wick, means operated by movement of said snuffer to uncover the wick to project a spark upon said wick, means to move said snuffer, said snuffer having a top wall, and cooperating resilient means connected to the top wall of said snuffer only and on said wick tube for preventing movement of said snuffer until a predetermined pressure has been applied to said moving means, said cooperating means comprising an enlargement on said wick tube, and a U-shaped member arranged within said snuffer, the legs of said U-shaped member having their lower ends spaced by a distance less than the dimension of

said enlargement so as to snap beneath said enlargement and hold said snuffer resiliently in lowered position, whereby the lower ends of said U-shaped member wipe flint chips from the wick and wick tube and said means for projecting a spark upon said wick comprising a flint, a flint wheel mounted to turn about the same axis as said snuffer engaging said flint, a ratchet wheel operatively connected to said flint wheel and an integral extension of said U-shaped member having a downwardly turned end forming a pawl engaging said ratchet wheel.

3. A cigarette lighter as claimed in Claim 1, characterized by the fact that the snuffer is sealed against the enlargement on the wick tube by means of the gripping action of the U-shaped member consequently enclosing the wick in an airtight manner to prevent evaporation of the fuel drawn by capillary action to the outer extremity of the said wick.

Dated this 13th day of March, 1941.

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[This Drawing is a reproduction of the Original on a reduced scale.]

