

UNITED STATES PATENT OFFICE

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LIGHTER

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2 Claims. (Cl. 67-7.1)

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This invention relates to pyrotechnic lighters and more particularly to an enclosed lighter mechanism that is actuated by a slide member on the periphery of the lighter body.

In the past, lighters have been constructed in various forms, round, square, etc. and the circular form has usually been similar to a watch case with the stem as a means for opening the case to make the spark and wick mechanism available. It is also known to make the lighter in a circular form with a knob on the periphery to release or raise the spark and wick mechanism out of the case. However, in all such known mechanisms it is essential to position the sparking mechanism so that it may be manually manipulated.

It is an object of this invention to provide a lighter in which the case is not opened to operate the sparking mechanism, but in which a sliding motion of a portion of the case is the means of actuating the sparking mechanism and at the same time uncovering the wick unit to provide a flame.

Another object of this invention is to provide a lighter of very simple construction with a minimum of parts.

A further object of this invention is to provide a lighter that is neat in appearance and that will efficiently perform the function of sparking and uncovering the wick while held in the hand of an operator.

A further object of this invention is to provide a lighter that has the appearance of a compact and in which the lighter mechanism remains concealed.

Other objects will be apparent by reference to the accompanying drawings and the detailed description in which

Fig. 1 is an enlarged cross sectional view illustrating the mechanism in the lighter,

Fig. 2 is a cross sectional view taken on line 2-2 of Fig. 1, and

Fig. 3 is an enlarged elevational view in perspective of the lighter.

Referring to Figs. 1 and 2 there is indicated a housing or case 10 in which the central portion 11 has been hollowed out to form a reservoir. The housing has a port 12 on one side in which an internal thread is cut, and a plug 13 is threadably secured in this port. The port 12 is used to fill the lighter reservoir and when the plug 13 is inserted it is tightly fitted to be leak proof. A bore 14 is cut radially through the body 10 and a small portion 15 of the periphery of the housing body 10 is cut-out at one end of the bore 14 so that it

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opens into the cut-out portion. The cut-out portion 15 is partially enclosed by two walls 16, 17 which support the spark wheel 18 mounted on shaft 19, the shaft being rotatably supported in the walls 16, 17. The shaft 19 is positioned directly above the bore 14 so that the spark wheel 18 will have its serrated surface slightly above the surface of the cut-out portion 15, and the serrated surface of the spark wheel will also rise very slightly above the outer periphery of the housing 10. A tube 20 is secured in the bore 14, said tube extending from the outer periphery of the body 10 to the surface of the cut-out portion 15. The tube 20 has a flint 21 protruding from its upper end and held in contact with the spark wheel by means of a spring 22, the spring is in turn compressed by a threadably secured plug 23. Thus it is apparent that when the flint 21 is positioned it will be pressed against the serrated surface of the spark wheel 18 with sufficient force to produce sparks when the wheel 18 is rotated. A bore 25 is cut between the cut-out portion 15 and the reservoir 11, this bore is positioned at the open portion of cut-out 15 and is preferably tapered to receive a plug 26 into which a wick 27 has been mounted. The wick 27 extends into a quantity of cotton wadding 28 in the reservoir 11. Two circular tracks or grooves 30 of equal radius are cut one on each side of the body 10, the grooves 30 are necessarily cut with a larger radius than the periphery of the plug 13. An arcuate slide 35 conforming to the contour of the external surface of the body 11 is formed with its two members 36, 37 having two turned over lips 38, 39 positioned into the tracks or grooves 30 and conforming to the radius of the grooves 30. Thus the slide 35 will be retained on the periphery of the body 10. A pair of stops 40 and 41 limit the sliding movement of the slide 35. The slide 35 is provided with an open portion 42 which allows the flame from the wick 27 to extend outside the lighter and also provides the necessary oxygen to the combustion of the aromatic fuel that may be carried by the wick 27. The slide 35 is also provided with a projecting portion 44 which may or may not be serrated to give a positive grip for the finger of an operator.

It is apparent in operation that a flint may be easily and quickly installed by removing the plug 23 and spring 22 and inserting the flint 21 then, re-assembling the spring and plug and adjusting the plug to induce the proper pressure on the flint 21. The plug 23 may also be formed with a hollow chamber to retain one or more extra flints. It is also apparent that a wick may

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be quickly and easily inserted by threading through the plug 26 and inserting the extra portion of the wick through the bore 25 into the cotton wadding 28. The plug 26 is easily pressed into position as indicated, and is ready for operation. The lighter is easily and quickly filled with the lighter fluid by removing plug 13 and pouring same on the cotton wadding 28, the plug 13 is then secured and sealed in place.

It is quite simple to operate the lighter in actual use, the lighter is held in the palm of the hand under the closed fingers, while the thumb is positioned on the portion 44, the thumb must then force the slide slightly against the lighter body while moving it toward the stop 41, the best results are obtained by moving the slide rapidly toward the stop position. The movement of the slide which bears against the periphery of the serrated surface of wheel 18 will cause sparks to be projected by the flint in the direction of the wick 27. Since the wick is saturated with an aromatic fuel the vapor will quickly combust and the slide is in an open position at this time thus the flame from the wick will be projected up and above the periphery of the lighter. The flame may be snuffed out by returning the slide to rest against the stop 40 thus covering the aperture and cutting off the supply of oxygen.

It is apparent from the detailed description and the accompanying drawings that the invention disclosed herein is not intended to be limited by this disclosure, but extends to all changes, modifications and equivalents within the scope of the appended claims.

What is claimed is:

1. A lighter of circular formation, including a body portion having a hollow center, a cut-out portion in the periphery of said body, a sparking mechanism including a spark wheel mounted in said cut-out portion, a wick mounted in said hollow center of said body and protruding into the cut-out portion in juxtaposition to said sparking mechanism, a slide cover conforming to the periphery of the said body and slidably mounted in two equal radii tracks one on each side of

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said body, and said slide being limited in its movement by two stops, said slide cover bearing on the periphery of the spark wheel, means to move said slide cover while in contact with said spark wheel to operate said spark mechanism and provide a spark to ignite said wick, means to uncover said wick when actuating said spark mechanism, and means to cover said cut-out portion to snuff out said wick.

2. A lighter of circular formation, including a body portion having a hollow center, a cut-out portion in the periphery of said body, a sparking mechanism including a spark wheel mounted in said cut-out portion, a wick mounted in said hollow center of said body and protruding into the cut-out portion in juxtaposition to said sparking mechanism, a slide cover conforming to the periphery of the said body and slidably mounted in two equal radii tracks one on each side of said body, and said slide being limited in its movement to an open or closed position by stop members, said slide cover bearing on the periphery of the spark wheel, means to apply pressure to said slide to move said slide cover while in contact with said spark wheel and operate said spark mechanism and provide a spark to said wick, means to uncover said wick when actuating said spark mechanism, and means to cover said cut-out portion to snuff out said wick.

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