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CIGARETTE LIGHTER

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FIG. 1.

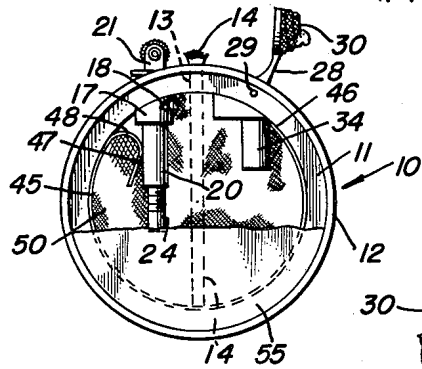


FIG. 3.

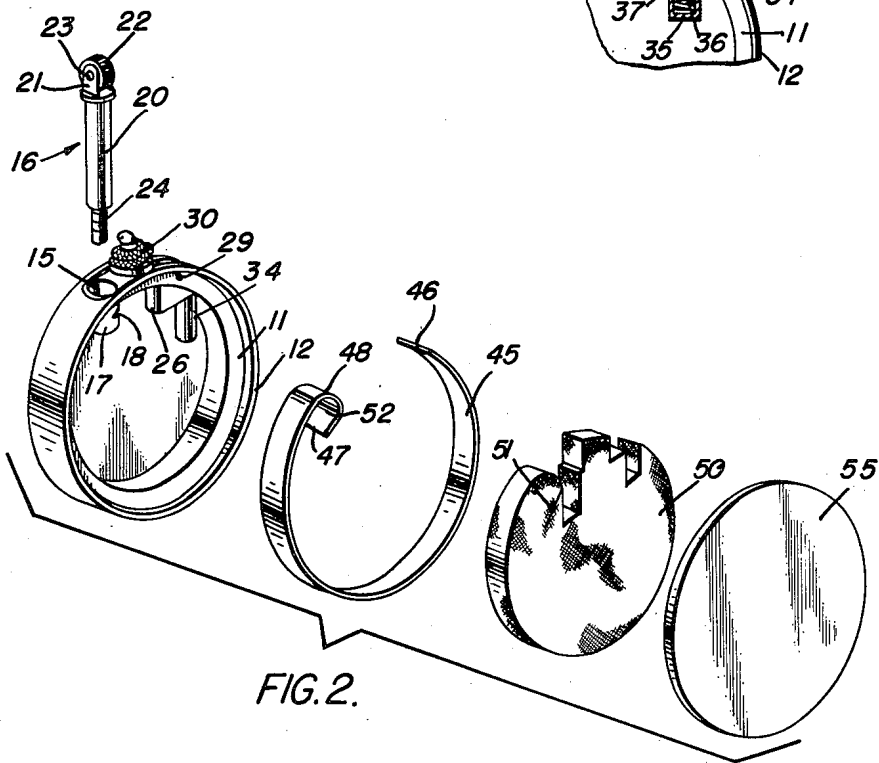
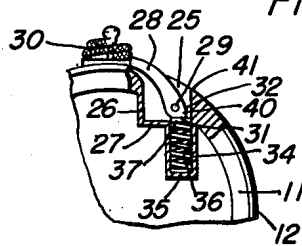


FIG. 2.

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4 Claims. (Cl. 67-7.1)

This invention relates generally to lighting devices and relates more particularly to cigarette lighters and the like.

While the invention has particular utility in connection with cigarette lighters, and is shown and described in connection therewith, it is to be understood that its utility is not confined thereto.

It is an object of the present invention to provide a cigarette lighter that is simple in construction and reliable in operation.

It is another object of the invention to provide a device of this character having a relatively large effective fuel supply.

It is still another object of the invention to provide a device of this character having improved means for easily and releasably securing the igniter.

The further object of the invention is to provide a device of this character having easily secured inserts forming the sides.

A still further object of the invention is to provide a device of this character which may be easily and quickly assembled.

Another object of the invention is to provide a device of this character that is relatively inexpensive to manufacture.

It is still another object of the invention to provide a device of this character that is attractive in appearance.

The characteristics and advantages of the invention are further sufficiently referred to in connection with the following detailed description of the accompanying drawing which represents one embodiment. After considering this example, skilled persons will understand that many variations may be made without departing from the principles disclosed, and any structures, arrangements or modes of operation that are properly within the scope of the appended claims are contemplated.

Referring to the drawings which are for illustrative purposes only:

Fig. 1 is a side view of a device embodying the present invention with a portion broken away to show the interior construction;

Fig. 2 is an exploded view of the device showing the respective parts in perspective; and

Fig. 3 is a fragmentary view, partially in section, showing the wick cap and the spring therefor.

Referring more particularly to the drawings there is shown a body, indicated generally at 10, which comprises a ring 11 having axially extending marginal flanges 12 at each side. A wick opening 13 is provided for reception of a wick 14.

At one side of the wick there is an opening 15 for an igniter device, indicated generally at 16. Opening 15 is continued inwardly by reason of a tubular member 17 which serves as a guide and which has a notch 18 to serve as a vent and to equalize the pressure within the device relative to atmosphere. The igniter device 16 includes a tubular body 20 having upstanding ears 21 between which is operably mounted a wheel 22 having the usual serrated periphery. The wheel 22 is rotatable

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on a pivot pin 23 having the ends secured in the ears 21. A piece of flint, not shown, is operably disposed in the tubular body 20 in the usual manner and is urged against the wheel 22 by a spring, also not shown, the tension of which is regulated by a screw 24 received in an internally threaded end portion of the body 20. A peripheral recess 25 is formed in the body 10 of the device and is defined in part by walls 26 and 27 which are formed integrally with the ring 11. Within the recess is a lever 28 having its inner end pivoted on a pin 29 which extends through said recess and has its ends secured in the side walls of the recess. The lever 28 extends outwardly of the recess and is provided adjacent the free end thereof with a cap 30 adapted to swing over the exposed outer end portion of the wick 14 to extinguish the flame thereon and also to provide a cover so as to minimize evaporation of the fluid from said exposed wick end. The inner end of the lever 28 is provided with a flat surface 31 and a flat surface 32. The bottom wall 27 of the recess 25 is provided with a tubular extension 34 having a bottom 35. Within the extension 34 is a spring 36 which reacts against the bottom 35 and a plate 37. The surface 31 of lever 28 is substantially normal to the axis of the spring 36. When the cap 30 is in the position shown in Fig. 3 where it covers the exposed portion of the wick 14, the plate 37 is urged against said surface 31 by said spring 36 to keep the lever and cap in said closed position. When the lever is raised to the position shown in Fig. 1, the plate 37 tends to seat on the surface 32 which is at substantially right angles to the surface 31. The plate 37 urges the corner portion 40 at the junction of the surfaces 31 and 32 so as to urge the lever in the clockwise direction and against the corner 41 at the outer end of the recess 25 remote from the wick. With this mechanism the cap may be moved between the open and closed positions due to the yielding of the spring 36 and will be held either at the open or closed position by said spring.

Means for releasably securing the igniter mechanism in position is provided and comprises a leaf spring 45 which fits within the ring 11 and conforms to the curvature thereof. One end, 46, is adapted to abut against the tubular extension 34 adjacent the junction thereof with ring 11, and the other end, 47, which is spaced from end 46, is curved inwardly at 48 and yieldingly engages the inner portion of the tubular body 20 of the igniter, said portion extending inwardly of the sleeve 17. Thus the igniter is frictionally held in operative position by the spring 45.

The device is provided with a filler for retaining fluid. It has been found a filler of non-absorbent material will hold approximately several times as much fluid as usual absorbent type of filler and one such non-absorbent filler is fiber glass. This non-absorbent filler also provides an effective feed of fluid to the wick.

Sheets of fiber glass may be used and are die cut to have an exterior configuration conforming to interior configuration of the ring 11 with the sleeve 17 and walls 26 and 27 and the tube 34. The die cut filler is shown in Fig. 2 at 50. It is to be noted that this filler also includes a cut 51 for reception of the inturned end portion 52 of the spring 45.

The sides of the device are formed of discs 55 which are adapted to fit within the flanges 12 and rest against the sides of the ring 11.

In assembling the device the igniter 16 is placed within the opening 15 so as to be positioned as shown in Fig. 1. Spring 45 is then inserted and the filler 50 placed in position. The discs 55 are secured in position by means of any suitable well known adhesive that is unaffected by hydrocarbon fluid such as the fuel used in cigarette lighters. Due to the fact that the structure of the filler com-

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prises a sheet formed of a plurality of thin sheets or layers, the wick may readily be pushed into the body of said filler between said layers so as to extend substantially diametrically across the interior of the device, as best shown in Fig. 1. It will be apparent, therefore, that the wick may not only be initially inserted in the device in the manner above described, but that it may be readily replaced by a new wick when needed in substantially the same manner.

Filling or refilling of the device is effected through the opening 15 and sleeve 17 when the igniter is removed therefrom. It will be readily apparent that the igniter may be easily removed and inserted in operative position due to the fact that the spring 45 provides a frictional hold on the body 20 so that the igniter may be readily removed and inserted and when in position will be held securely by the spring 45.

I claim:

1. In a device of the character described: an annular body including peripheral flanges extending axially in opposite directions, said body having an opening therethrough for an igniter device, an opening therethrough for a wick adjacent one side of the first mentioned opening and an opening adjacent the wick opening and at the side thereof opposite the first mentioned opening; a tubular extension on the interior of the body and aligned with the first mentioned opening, said extension having a notch therein; an igniter device having a tubular body received in the first mentioned opening and in said extension and having a portion projecting inwardly of said extension, said igniter device including a peripherally serrated wheel; a wick in the wick opening and having a short portion extending outwardly of said body; walls interiorly of the body defining a chamber in conjunction with the opening at said opposite side of the wick opening and a tubular spring retaining extension therefor; a lever pivotally mounted in said chamber and carrying a cap at the outer end thereof, said lever having a position whereat the cap covers the outer exposed end of the wick and another raised position whereat said lever abuts against one edge of the chamber wall; a coil spring in said spring retaining extension, said spring being adapted to coact with the inner end of the lever, said end being so formed that when the lever is in the first mentioned position, the spring yieldingly urges said lever toward said position and when said lever is in the other position, said spring yieldingly holds said lever in said position; a leaf spring curved to the contour of the interior of the body and having one end engageable with the spring retaining extension and the other end turned back for frictional engagement with the body of the igniter device when the latter is positioned in the first mentioned opening and the first mentioned extension; filler material within the body, said filler material comprising fiber glass in layer form cut to conform to the interior configuration of the body, the wick having the major portion thereof extending into the mass of filler material; and discs secured to the sides of the body and within the respective flanges thereof.

2. In a device of the character described: an annular body including peripheral flanges extending axially outwardly of said body and in opposite directions, said body having a first opening therethrough for an igniter device, a second opening for a wick adjacent one side of the first mentioned opening, and a third opening adjacent the side of the wick opening opposite the first opening; a tubular sleeve on the interior of the body and aligned with the first opening, said sleeve having a notch therein; an igniter device having a tubular body received in the first opening and in said sleeve and having a portion projecting inwardly of said sleeve; said igniter device including a peripherally serrated wheel; a wick in said second opening and having an exposed outer end; walls interiorly of the body defining a chamber in conjunction

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with the third opening and a tubular spring retainer; a lever pivotally mounted in said chamber and carrying a cap at the outer end thereof, said cap covering the exposed end of the wick when said lever is in one position, said lever having another position whereat the cap is off the exposed wick end; a spring in the spring retainer adapted to coact with the lever to yieldingly retain same in the respective positions; a leaf spring curved to the contour of the interior of the body and having one end abutting against said spring retainer and the other end turned back for frictional engagement with the body of the igniter device when the latter is positioned in the first mentioned opening; filler material within the body, said filler material comprising fiber glass in layer form cut to conform to the interior configuration of the body, the wick having a substantial portion disposed in the mass of filler; and discs sealingly secured to the sides of the body and within the respective flanges thereof.

3. In a device of the character described: an annular body including peripheral flanges extending axially in opposite directions, said body having an opening for an igniter device, an opening for a wick adjacent one side of the first mentioned opening and an opening adjacent the wick opening and at the side thereof opposite the first mentioned opening; a tubular sleeve on the interior of the body and aligned with the first mentioned opening; an igniter device having an elongated body received in the first mentioned opening and in said sleeve and having a portion projecting inwardly of said sleeve; a wick in the wick opening and having an exteriorly exposed outer end portion; walls defining a chamber in conjunction with the opening at said opposite side of the wick opening; a lever pivotally mounted in said chamber and carrying a cap at the outer end thereof, said lever having a position whereat the cap covers the outer exposed end of the wick and another, raised position; yielding means for said lever so arranged that when the lever is in the first mentioned position, the yielding means urges said lever toward said position and when said lever is in the other position, said yielding means holds said lever in said position; a spring curved to the contour of the interior of the body and having one end turned back for frictional engagement with the body of the igniter device when the latter is positioned in the first mentioned opening and said sleeve; a filler within the body, said filler comprising non-absorbent material formed to conform to the interior configuration of the body and interior parts of the device, the wick having the major portion thereof extending into the mass of said filler material; and sides secured to the body and within the respective flanges thereof.

4. In a device of the character described: an annular body including peripheral flanges extending axially in opposite directions, said body having an opening for an igniter device, an opening for a wick adjacent one side of the first mentioned opening and an opening adjacent the wick opening and at the side thereof opposite the first mentioned opening; a tubular sleeve on the interior of the body and aligned with the first mentioned opening; an igniter device having an elongated body received in the first mentioned opening and in said sleeve and having a portion projecting inwardly of said sleeve; a wick in the wick opening; walls defining a chamber in conjunction with the opening at said opposite side of the wick opening; a lever pivotally mounted in said chamber and carrying a cap at the outer end thereof, said lever having a position whereat the cap covers the outer exposed end of the wick and another, raised position; yielding means for said lever so arranged that when the lever is in the first mentioned position, the yielding means urges said lever toward said position and when said lever is in the other position, said yielding means holds said lever in said position; a spring curved to the contour of the interior of the body and having one end turned back for frictional engagement with the body of the igniter device when the latter is positioned in the first mentioned opening and said sleeve;

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a filler within the body, the wick having the major portion thereof extending into the mass of said filler material; and sides secured to the body and within the respective flanges thereof.

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