Sept. 27, 1949. L. M. STROTHER 2,482,807

CIGARETTE LIGHTER

Filed Nov. 2, 1945

Fig. 1.

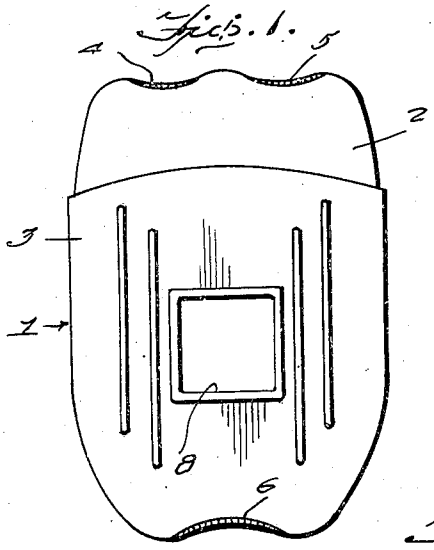


Fig. 2.

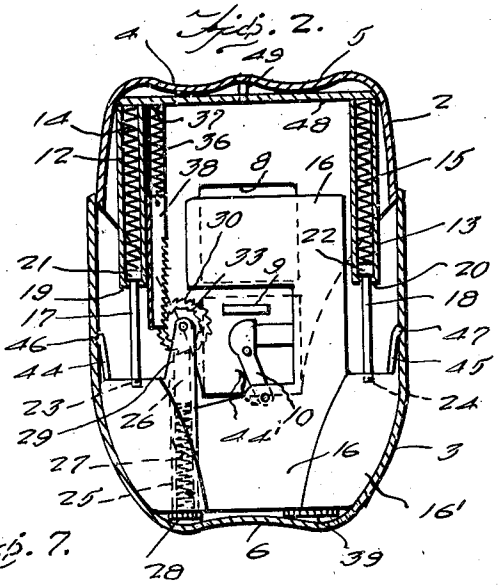


Fig. 7.

Fig. 5.

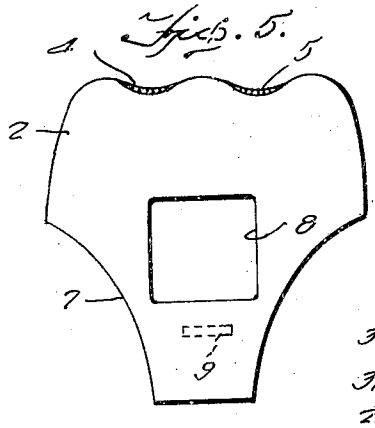


Fig. 6.

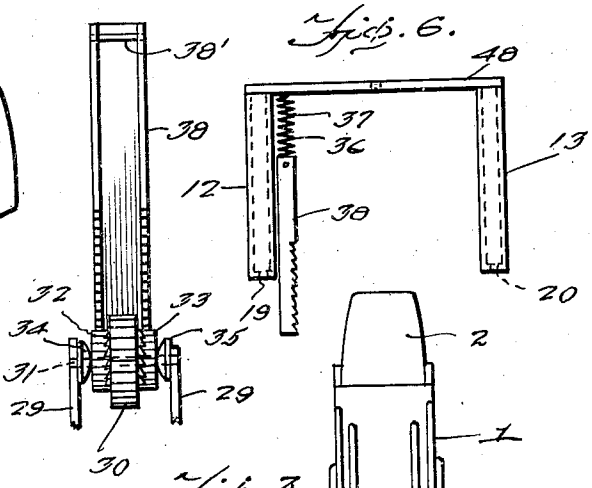


Fig. 4.

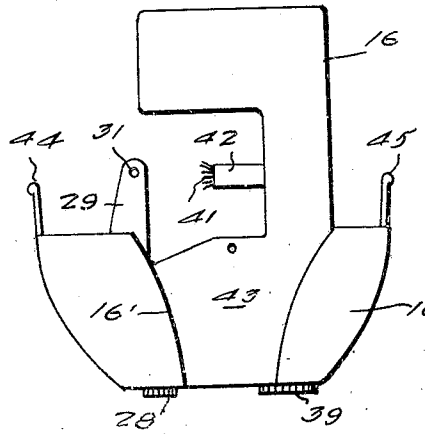


Fig. 3.

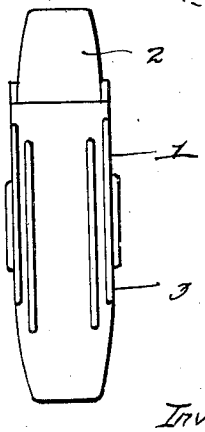
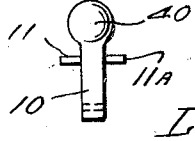


Fig. 8.



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CIGARETTE LIGHTER

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3 Claims. (Cl. 67—7.1)

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This invention relates primarily to cigarette lighters. Of course, it is self-evident that it may have an extensive range of use for ignition purposes.

It is an object of this invention to provide a pocket and personal use lighter that is unique in contour and lends itself to the aesthetic appeal.

It is a further object of this invention to provide a case having telescopically related sections to house a fuel container including a wick support and novel mechanism to produce the ignition of the fuel vapor in and about the wick.

It is also an object of this invention to provide flame openings on each side of the telescopic sections so arranged that they may be brought into alignment with each other to expose the flame on either side of the case remote from the ends and edges of the case thereby presenting a desirable safety feature.

It is also an object of this invention to provide a lost motion means constituting a delaying action for the ignition or abrading wheel and finally an accelerated action for the wheel to insure a quick ignition in the proper sequence of successive positions and when the flame openings are substantially fully open.

It is a still further object of this invention to provide a novel snuffer for the lighted wick. Said snuffer being of such construction as to receive the end of the wick and the wick support in a closely embracing manner and thereby retard the unnecessary vaporization of the fuel in the ignition end of the wick.

It is also an object of this invention to suspend the fuel tank from one section and to provide snap fasteners on the tank to engage a removable outer shell or cover of the other section whereby the shell may be removed and the tank replenished with fuel.

Other objects and advantages will be revealed in connection with the detailed description of the accompanying drawings which form a part of this specification.

In the drawings:

Figure 1 is a side elevational view of my new lighter.

Figure 2 is a longitudinal section substantially through a central major plane thereof.

Figure 3 is an edge elevational view of my novel lighter.

Figure 4 is a side elevational view on a larger scale of the fuel tank and some of its appurtenances, removed from the lighter case.

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Figure 5 is a side elevational view of one section of the case removed from my lighter.

Figure 6 is a side elevational view of a suspension yoke detached from one section of my lighter.

Figure 7 is an edge elevational view on a larger scale of the abrading wheel and some of its supporting and actuating mechanism, and

Figure 8 is an elevational view on a larger scale of the snuffer detached from its support.

The drawings are merely illustrative of my invention and are not to be considered as definitive thereof except as pointed out in the subject matter claimed herein.

The reference characters identify the parts and details disclosed on the drawings and described herein.

In my new lighter 1 the telescopic sections 2 and 3 are provided with finger recesses 4, 5 and 6 as clearly shown.

The inner and upper section 2 is provided with reduced side portions 7 and windows or openings 8, one of which is shown in Figure 5. Below each window 8 is a laterally extending transverse bar 9 for operating the pivoted snuffer 10 in which one of the bars or projections 9 engages one of the transversely arranged projections 11 or 11a in the path of travel of said projections or bars 9. The inner section 2 is provided internally adjacent its inner edges with two depending tubes 12, 13 housing helical compression springs 14, 15. The fuel tank 16 is suspended from the tubes 12 and 13 and is slidably connected thereto by rods or bolts 17, 18. The tubes are provided with inturned flanges 19 and 20 constituting stops for the cylindrical bolt heads 21 and 22. The bolts have screw threaded connections 23 and 24 with portions of the tank 16.

The tank 16 is provided with a tubular housing 25 adapted to receive a body of flint 26, a helical compression spring 27 and a screw plug closure 28. The tank wall is provided with apertured spaced supports 29 flanking the tubular housing 25 and forming trunnion supports for the abrading or ignition wheel of unit 30. The unit includes a wheel having trunnions journaled in the apertures 31 of the supports 29. Each side of the wheel is formed with a ratchet concentric with the trunnions. Combined ratchets and pinions 32 and 33 are journaled on the trunnions with the ratchets of the pinions in engagement with

the ratchets of the wheel. Compression springs 34 and 35, preferably light weight spiral springs are located on the trunnions between the supports 29 and the ratchet-pinions 32 and 33.

In the upper section 2 against the tube 12 is secured a guideway 36 constituting a housing for a light weight helical spring 37 located above and in alignment with a channel-shaped rack member 38 guided in said guideway 36. The member 38 is provided with racks in operative engagement with the ratchet-pinions 32 and 33. The spring 37 performs a dual function and is connected at one of its ends to the bar 48 and at its other end to the rack member 38 by any suitable means such as a cross pin 38'. Initially the spring serves as a compression spring to provide for delayed action of the wheel and finally a retraction spring for the rack member to draw it back to its initial position.

It will be appreciated that the operation of the ignition mechanism is synchronized and controlled to produce a flame just as the flame openings approach a wide open position.

The fuel tank 16 is provided with a filing opening in its bottom closed by a screw plug 39.

The snuffer 10 is provided with a hollow head or cap 40 adapted to normally embrace the wick 41 and a portion of the wick tube or support 42 to thereby retard the vaporization of the fuel on the free end of the wick. The lower end of the snuffer is pivotally mounted between upstanding ears 43 on the tank. The ears are preferably perforated and a pivot bolt or rivet is passed through the ears and the apertured lower end of the snuffer and said bolt or rivet is provided with means to prevent endwise displacement thereof.

A suitable spring 44' is provided to urge the snuffer to snuffing position.

The tank 16 is also provided with upright spring detents 44 and 45 adapted to snap into recesses 46 and 47 of the removable outer shell of section 3.

The outer shell of the upper section 2 is secured to the yoke 48 by a lag bolt 49.

When the sections are forced together against the tension of the compression springs 14 and 15 the windows or side openings 8 are brought into alignment with each other and the flame is exposed on the high side of the device.

Because of the drag on the ignition wheel 30, due mostly to its frictional contact with the flint 26, the action of the wheel is delayed until the tension of the spring 37 is sufficient to overcome the frictional contact whereupon the speed of rotation of the wheel 30 is accelerated to insure ignition and a flame when the windows 8 are substantially wide open. The movement of the snuffer 10 is also delayed because of the normally spaced condition of the bars or projections 9 on the inner section and the projections 11 and 12 on the snuffer. The retraction of the snuffer begins when the windows are partly open and continues to completion when the windows are substantially wide open. The spring 37 is so tensioned and arranged that it acts in a dual capacity. The spring 37 is connected at its upper end to the bar 48 and at its lower end it is connected to the rack member 38 whereby the member 38 is retracted to normal position by the spring 37 when the sections are in their retracted or extended positions relative to each other.

The ignition wheel operates in one rotary direction only. This is accomplished by the spring actuated ratchet-pinion assembly clearly disclosed in Figure 7.

The fuel tank 16 is provided with recesses 16' adapted to receive the reduced portions 7 of the inner section 2.

Having fully shown and described my invention and the operation thereof, what I claim is:

1. An ignition device, comprising a fuel tank, a snuffer, an igniter, inner and outer shells slidably connected together through a plurality of mediums, one of which is the fuel tank, said inner and outer shells having flame openings in the sides thereof, said fuel tank having a wick support projecting laterally therefrom, said tank having projecting side walls thereon defining supports for the snuffer and the igniter, said snuffer and igniter being operatively located in front of the wick support, said inner shell having a reciprocable rack in engagement with said igniter, a housing in said inner shell slidably receiving a portion of said rack and guiding the same throughout its reciprocating movements, and a helical spring located in said housing between said rack and the remote end of said housing, said spring being connected at one of its ends to the rack and at its other end to the housing, the bias of said spring being such that it functions as a retracting spring for the rack to restore the rack to its initial position and also functions after retarded motion of the rack to accelerate the motion of both the rack and the igniter.

2. A cigarette lighter, comprising slidably connected telescopic inner and outer sections, each section, including a detachable shell, said shells defining the case of the lighter, one section having a fuel tank slidably connected therewith, said shells having alignable flame openings in each side thereof, said fuel tank having a wick support located between two of said openings, said tank having an ignition unit mounted thereon in front of said wick support, rack and pinion operating means for said ignition unit, said rack being mounted for actuation by the inner section, means in said inner section providing for initially delayed action of said rack and finally accelerated action thereof, whereby ignition is assured when the openings are approaching alignment to expose the flame, a snuffer pivoted on said tank and located in front of said wick support, said snuffer having an arm and a head, said arm having lateral projections extending outwardly to a position adjacent to the walls of the inner section and offset from the pivoted mounting of said snuffer, and a transversely arranged inwardly extending bar on the inner section in the path of the projections of said snuffer and adapted to operate the snuffer.

3. A cigarette lighter, comprising inner and outer sections slidably and telescopically connected for operation by finger pressure on the ends thereof, each section having a pair of flame openings therein, a fuel tank movably connected with the inner section and having a portion located in and housed by the outer section, said tank having a wick support projecting laterally therefrom opposite a pair of said openings, a spring actuated snuffer urged toward and in front of said wick support, said snuffer having an arm pivotally connected to said tank, said snuffer having a hollow head adapted to embrace the wick and the free end of the wick support, said snuffer arm having projections extending laterally therefrom beyond its head to a position adjacent the walls of said inner section, said projections being spaced from the pivoted end of said arm and offset laterally therefrom, a plurality of transversely arranged bars on the inner walls of

the inner section, said bars extending inwardly toward each other and in the path of said snuffer projections for operating the same, and a synchronized ignition mechanism mounted in said lighter to produce a flame when said pairs of flame openings approach alignment with each other.

LOY M. STROTHER.

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