June 13, 1950 A. CAMPOS 2,511,459

POCKET LIGHTER

Filed Sept. 14, 1945

Fig. 1.

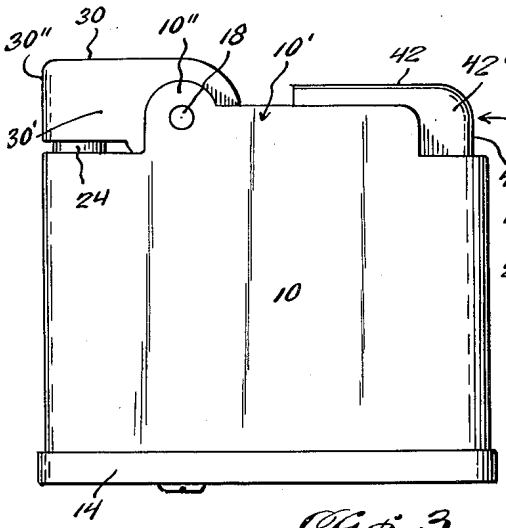


Fig. 4.

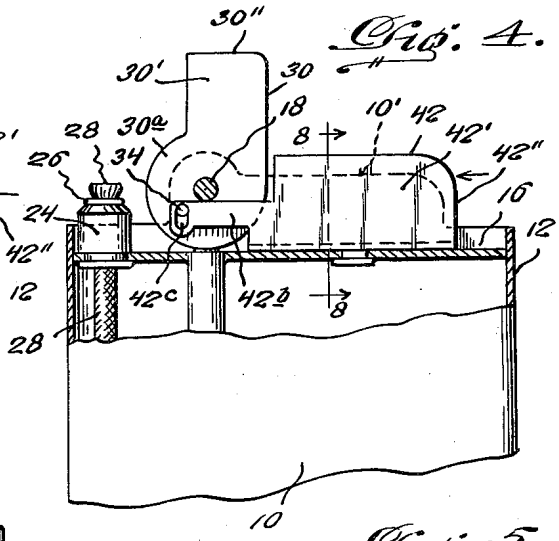


Fig. 5.

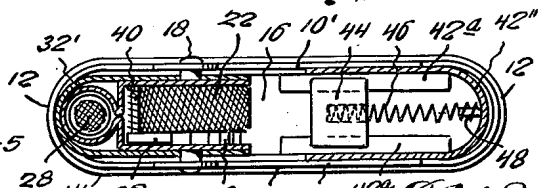


Fig. 3.

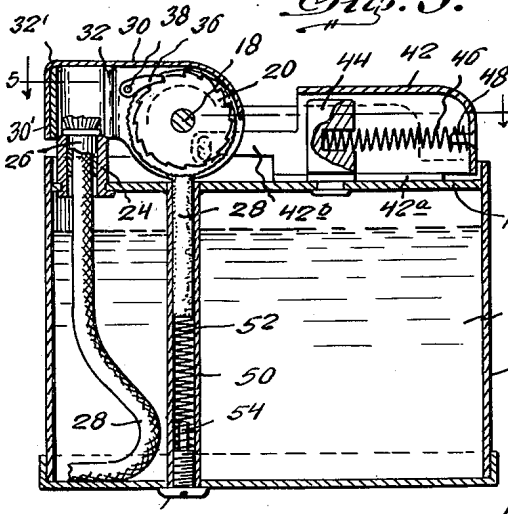


Fig. 8.

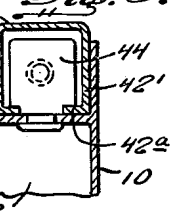


Fig. 6.

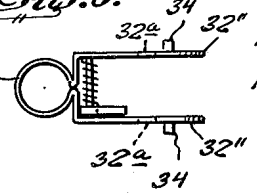
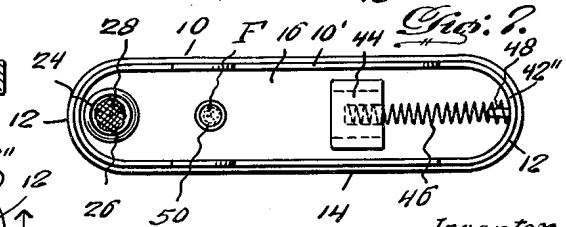


Fig. 7.



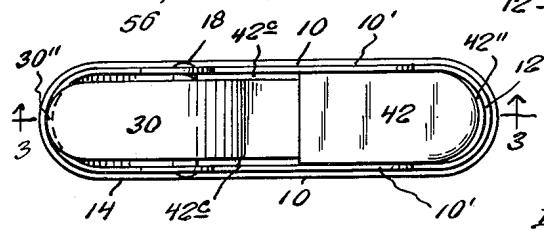


Fig. 2.

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POCKET LIGHTER

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Application September 14, 1945, Serial No. 616,201

1 Claim. (Cl. 67—7.1)

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This invention appertains to improvements in pocket lighters for cigarettes and the like, and has for an object to provide an efficient and practical snuffer arm operating mechanism for a lighter, embodying an igniter mechanism of extremely simplified construction, the lighter assembly being attractive in design and appearance, light in weight, and of a compactness making for convenience in handling and carrying on the person, with due regard to proof against leakage of the liquid fuel from the wick chamber or reservoir.

Another object of the invention has to do with the provision of an igniter mechanism for lighters of the kind specified embodying certain novel features of construction, one of which is resident in a pivoted snuffer arm, formed of pressed sheet metal and open at its inner end and at its lower side, in which a member is removably fitted and is formed of a length of sheet metal, bent medially of its ends to form a substantially cylindrical portion, constituting a snuffer cap and to have its opposite end portions extending in spaced parallel relation from opposite side of the cylindrical portion, the free ends of the end portions being apertured commonly with the like end portions of the snuffer arm for pivotal support on the axle of the spark-wheel unit of the igniter mechanism and having trunnions on the outer sides of the same projecting through other apertures, formed in the like ends of the snuffer arm, for the pivoting thereon of the adjacent end of an actuating member.

Another object of the invention lies in the provision of a substantially flat, hollow body, constituting the fuel reservoir of the lighter, with the top wall thereof inset from the top edges of its end and side walls and having the igniter mechanism, including a ratchet and spark-wheel unit and a flame snuffer, partially housed between the side walls above the top wall, the operating element of the mechanism being slidably supported on the top wall for straight-line motion to positively actuate the flame snuffer to expose the wick and simultaneously cause the rotation of the spark-wheel to abrade a flint to produce sparks to ignite the wick.

With these and other objects and advantages of equal importance in view, the invention resides in the certain new and useful combination, construction, and arrangement of parts, as will be hereinafter more fully described, set forth in the appended claim, and illustrated in the accompanying drawing, in which:

Figure 1 is a side elevation of a practical embodiment of the lighter, in accordance with my invention;

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Figure 2 is a top plan view;

Figure 3 is a vertical sectional view, taken through the line 3—3 on Figure 2, looking in the direction of the arrows;

Figure 4 is a fragmentary elevational view of the upper part of the lighter, with a portion of the side wall broken away to show the relative position of the operative parts of the igniter mechanism at the wick igniting positions thereof and the manner of mounting the wick holder and the mechanism on the top wall of the body or reservoir;

Figure 5 is a horizontal section, taken through the line 5—5 on Figure 3, looking in the direction of the arrows;

Figure 6 is a plan view of the structural element housed within the snuffer arm to couple the arm to the actuating member of the igniter mechanism and to function as a mounting for the pawl for operating the spark-wheel, the element also being shaped to form the snuffer cap for extinguishing the flame at the wick;

Figure 7 is a top plan view of the lighter body, with the igniter mechanism removed therefrom and showing the arrangement of the wick holder, the flint tube, and the guide for the actuating member; and,

Figure 8 is a fragmentary, vertical, transverse section, taken through the line 8—8 on Figure 4, looking in the direction of the arrows.

Referring to the drawing, wherein like characters of reference denote corresponding parts throughout the several views, the lighter, as it is exemplified therein, is comprised in a substantially flat, hollow, rectangular body, having its side walls 10 connected by rounded end walls 12, with a cap-like bottom wall 14 fitted over its lower end and secured thereto, and a top wall 16 inset with respect to the top edges of the side and end walls. The side walls 10 are formed to provide upwardly extending portions 10', intermediate the ends thereof, which are enlarged, as at 10'', at one end of their ends to substantially semi-circular form, after the manner as shown in Figure 1. These enlargements 10'' are centrally apertured to receive a stationary axle or cross-pin 18, upon which a ratchet wheel 20 and a spark-wheel 22 of an igniter mechanism, in unitary assembly, are rotatably mounted.

Secured in an opening in the top wall 16, adjacent one of its ends, is a tubular element 24, constituting a seat for a tubular wick holder 26, the latter having an out-turned flange at its upper

end to rest upon the top end of the seat in its support of the wick **28**.

Mounted on the axle or cross-pin **18**, is a snuffer arm **30**, of sheet metal die-stamped to substantially inverted U-form in cross-section, with its side walls **30'** connected at their outer ends by a rounded end wall **30''** to form a protective hood, the inner ends of the snuffer arm being formed to provide substantially semi-circular enlargements **30***a*, apertured at their centers and engaged on the axle or crosspin **18**, for pivotal motions of the snuffer arm thereon.

Fitted snugly within the snuffer arm **30**, is a structural element **32**, formed of a strip of sheet metal, bent medially of its ends to form a substantially cylindrical portion **32'**, constituting a snuffer cup, which is disposed immediately inward of the rounded end wall **30''**, of the snuffer arm. The end portions **32''**, of the element **32**, extend in spaced relation from opposite sides of the snuffer cup **32'**, parallel to each other and in contact with the inner sides of the like end portions of the snuffer arm **30**, and of a shape to conform thereto and similarly apertured for engagement on the axle or cross-pin **18**, substantially as shown. Projecting from the outer sides of the end portions **32''** are trunnions **34**, which extend outwardly through complementally formed apertures provided in the like end portions of the snuffer arm **30**, for purposes presently to be apparent.

Housed within the snuffer arm **30**, is a pawl **36**, which is pivoted on a cross-pin **38**, secured at its ends in the end portions **32''**, of the element **32**, and is held engaged with the toothed periphery of the ratchet-wheel **20**, by means of a coiled spring **40**, carried by the cross-pin.

Slidably supported on the top wall **16**, of the body or reservoir, is an actuator member **42**, formed of sheet metal die-stamped to substantially inverted U-form, with the outer ends of its side walls **42'** connected by a rounded end wall **42''** and having supporting flanges **42***a* inturned from the lower edges thereof, which flanges are engaged beneath the head of a stud **44**, fixedly mounted in the top wall **16**. A portion of the inner end of the top wall of the actuator member **42**, and upper portions of the side walls **42'**, are cut away to provide a clearance between the inner end of the actuator member and the adjacent end of the snuffer arm **30** and extended lower portions **42***b*, of the side walls **42'**, the portions **42***b* being each provided with a slot **42***c* for pivotal engagement with the projecting ends of the trunnions **34**. The head of the stud **44** is enlarged to have a substantial transverse area for the forming therein of a recess for receiving the inner end of a coiled spring **46**, which has its other end engaged over a pin or the like **48**, projecting from the center of the inner side of the end wall **42''**, of the actuator member **42**, to automatically return the latter to its normal position, following a working stroke thereof.

Opening through the bottom wall **14** and the top wall **16**, of the body or reservoir, is a feed tube **50**, for a flint F, the upper end of the tube opening through the top wall at a point immediately beneath the spark-wheel **22**. The flint F is seated in the upper end of the tube **50** and upon the upper end of a coiled spring **52**, the lower end of which is engaged over a pin **54**, rising from the inner end of a closure **56**, screw threaded into the lower end of the tube, the closure screw having its head provided with a cross kerf, to be engaged by the edge of a small coin, or other suitable instrumentality.

In operation, and with liquid fuel placed within the body or reservoir through the seat **24**, upon the removal of the wick holder **26** and the wick **28** therefrom and the replacement of the same therein, and a flint F positioned in the upper end of the feed tube **50**, in contact with the lower side of the spark-wheel **22**, the end of the wick, protruding from the holder **26**, is to be ignited by sparks produced by an abrading action on the flint by a rotary motion imparted to the spark-wheel, upon the manipulation of the actuator member **42**. To this end, the lighter is grasped in a hand of the user and the thumb pressed against the outer end of the actuator member **42**, which is forced by such pressure inward along the top wall **16** to rock or swing the snuffer arm **30** upward and inward to substantially vertical position on the axle or cross-pin **18**, thereby lifting the snuffer cup **32'** from the wick end and, at the same time, causing the pawl **36** to impart a rotary motion to the ratchet-wheel **20** and the spark-wheel **22**; sparks being produced by the abrading action of the latter wheel on the flint F to ignite the wick **28**. With the release of thumb pressure on the actuator member **42**, the coiled spring **46**, having been placed under compression during the operative movement of the actuating member, immediately expands and automatically returns the parts to normal positions. In the normal positions of the snuffer arm and the actuator member, the underlying associated parts of the igniter mechanism are substantially enclosed, it being here noted that the top wall of the snuffer arm **30** is extended over the upper portions of the peripheries of the ratchet wheel and the spark wheel and curved downwardly about the same to a point below the adjacent end edge of the top wall of the actuator member **42**.

While in the foregoing, I have described a preferred embodiment of my invention, it is to be understood that the words which I have used are words of description rather than of limitation, and that changes within the purview of the appended claim may be made without departing from the true scope and spirit of my invention in its broader aspects.

What I claim is:

In a lighter, a hollow body constituting a fuel reservoir, an igniter mechanism mounted on the top of said body adjacent an end thereof and including a rotatable spark wheel and wick, a snuffer arm for said igniter mechanism pivotally mounted between its ends on said body and having its outer end provided with a protective hood, an element having one end provided with a snuffer cup housed within said snuffer arm and operatively connected for pivotal movement with said snuffer arm, the snuffer cup of said element being arranged within the protective hood of said snuffer arm and bearing against the inner surface of the hood, an operative connection between said element and said spark wheel for rotating the latter in response to pivotal movement of said snuffer arm, an actuator member in the form of a substantially inverted U-form arranged in side-by-side relation with respect to said snuffer arm and mounted adjacent the other end of said body for slidable movement inwardly and outwardly relative to said snuffer arm, and connecting means between the adjacent ends of said actuator member and said snuffer arm to rock the latter upon slidable movement inwardly of

said actuator member, said connecting means embodying inwardly-extending portions on said actuator member each provided with a slot, and trunnions projecting exteriorly from the sides of said element and engaging the slots in said extended portions.

ADOLPH CAMPOS.

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