May 4, 1937. A. KILSTROM 2,079,454

LIGHTER

Filed Feb. 19, 1932

Fig. 1.

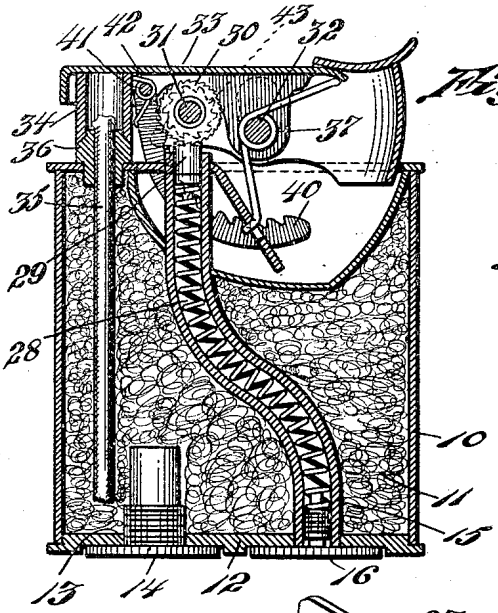


Fig. 2.

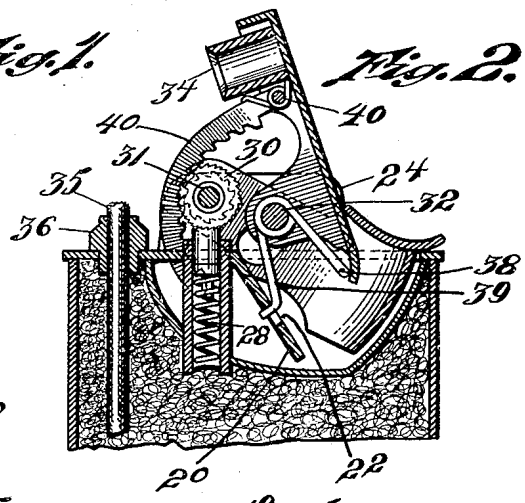


Fig. 3.

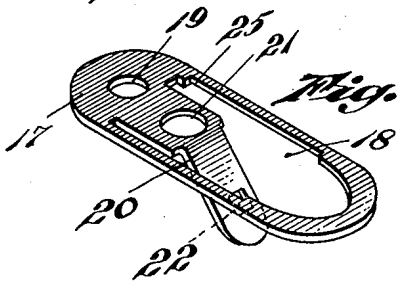


Fig. 4.

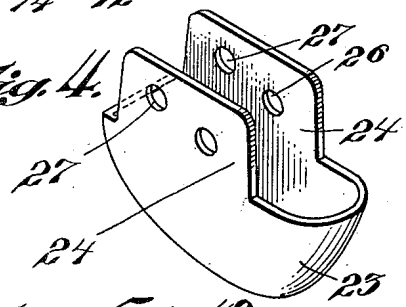


Fig. 5.

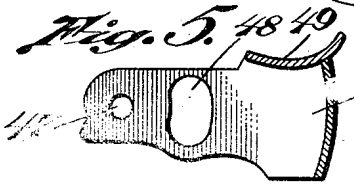


Fig. 6.

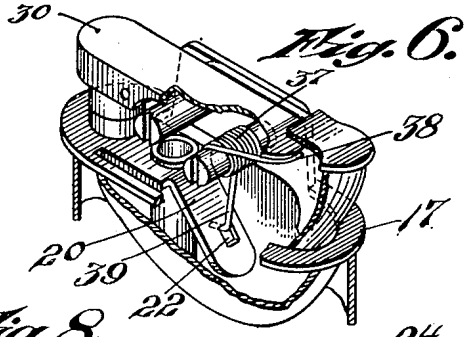


Fig. 7.

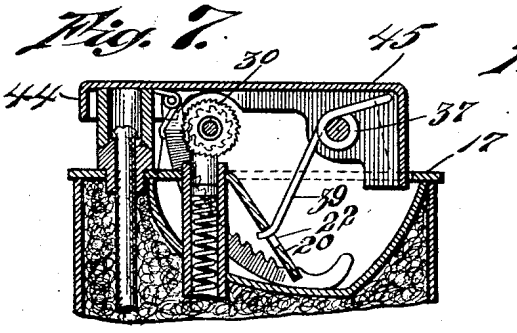
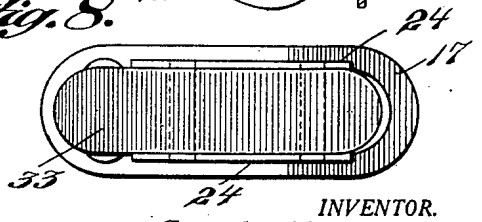


Fig. 8.



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2,079,454

UNITED STATES PATENT OFFICE

2,079,454

LIGHTER

Axel Kilstrom, Cranston, R. I., assignor to Henry Lederer & Bro., Inc., a corporation of Rhode Island

Application February 19, 1932, Serial No. 593,984

6 Claims. (Cl. 67—7.1)

This invention relates to a lighter, and has for one of its objects to provide a more simple construction for ignition of the wick of a lighter which will be operated by manual pressure upon a finger piece or the like and mechanically returned to initial position upon release of pressure on the finger piece.

Another object of this invention is the provision of a finger piece which is freely pivotally mounted and moved in one direction by movement of the snuffer as distinguished from the direct action of the spring on the finger piece itself, there being no connection between the snuffer and finger piece, but each being independently mounted except for the abutting relation of the said parts which occurs for movement in one direction only.

Another object of this invention is the provision of a spring mounted about the pivotal axis of the snuffer which will engage a portion of the top wall of the casing and the snuffer to directly act upon the snuffer and move the same to closed position thereby simplifying the construction and assembly of the parts.

A further object of this invention is the supporting of the pyrophoric tube at its end where it projects into the recess in the top wall to strengthen the construction, the same being accomplished by a simple projecting part from the top wall.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawing:

Fig. 1 is a sectional view through the lighter and its operating parts with the operating parts in closed position.

Fig. 2 is a fragmental sectional view showing the upper working part of the lighter with the parts moved to open position.

Fig. 3 is a perspective view of the top wall of the lighter.

Fig. 4 is a perspective view of the dished member which has supporting projections extending upwardly therefrom.

Fig. 5 is a sectional view of the finger piece.

Fig. 6 is a perspective view of a fragmental portion of the lighter broken away to show the mounting of the spring for operating this snuffer and also the relation of the finger piece to the snuffer.

Fig. 7 is a sectional view of a modified form of construction.

Fig. 8 is a top plan view of the structure shown in Fig. 7.

In lighter construction it is often considered desirable to provide a mechanical arrangement such that pressure upon the finger piece will cause rotation of a friction wheel to throw sparks from the pyrophoric material on to the wick to ignite the same, the action taking place upon the lifting of the snuffer from the wick covering position, and in order that a construction of this character may be simplified and yet one which will work with ease, I have provided a snuffer which is so mounted that a spring will act on the snuffer itself to move the same to closed position and which may be lifted from this closed position either by directly engaging the snuffer or by means of a finger piece which is mounted to engage the snuffer to lift the same, although the finger piece is entirely independently mounted of the snuffer itself; and the following is a detailed description of the present embodiment of this invention illustrating the preferred means by which these advantageous results may be accomplished.

With reference to the drawing, 10 designates the fuel casing having the packing of absorbent material 11 contained therein and provided with a bottom wall 12 having a filling opening 13 closed by a screw-threaded plug 14 and having a pyrophoric tube 15 extending upwardly through the casing closed by the screw-threaded plug 16.

The casing 10 is provided with a top wall 17 shown in perspective in Fig. 3 as being cut out at 18 inwardly from the periphery thereof in the shape best shown in Fig. 3, with an opening 19 also provided in this top wall and a finger 20 extending into this opening 18 and bent downwardly as illustrated in Fig. 3. Openings 21 and 22 are provided in the finger for the purposes more fully and hereinafter explained.

A dish shaped member 23 as shown in Fig. 4 is secured to the lower surface of the top wall 17 by means of solder or the like to suspend the same therefrom and from this wall there projects upwardly support flanges 24 extending through notches 25 in the top wall and provided with openings 26 and 27 to provide bearings for the pivot shafts for the operating parts of the device.

The pyrophoric tube 15 is bent in somewhat of an offset path to permit the better packing of the absorbent material 11 in the casing, and this tube projects through the dished member 23 into the recess formed in the top wall and through the opening 21 in the finger 20 to be supported thereby.

The spring 28 in the pyrophoric tube forces the pyrophoric material 29 upwardly into engagement with the friction wheel 30 which is pivotally mounted upon a shaft 31 having bearings in the openings 27 in the support flanges 24.

A shaft 32 is mounted in the openings 26 in this support flange 24 and upon this shaft there is pivotally mounted the snuffer member 33 which has the tubular cap portion 34 to close over the

wick 35 projecting upwardly through the casing 10 and supported by a boss 36. This snuffer member is moved to closed position by means of a coiled spring 37 embracing the pivotal shaft 32 and having one end 38 engaging the under surface of the snuffer and the other end 39 anchored in the opening 22 in the finger 20 which projects from the top wall and which spring tends to move this snuffer about its pivotal point to cover the wick.

In order that the friction wheel may be operated upon raising the snuffer, I have provided a rack 40 pivoted at 41 on the underside of the snuffer member with a spring 42 to swing this rack toward the axis of the friction wheel into engagement with a ratchet wheel 43 which is keyed to the friction wheel to move therewith, the operation being such that upon raising the snuffer the wheel is rotated to ignite the wick but upon release this snuffer returns to position with the rack swinging outwardly to slip over the teeth of the ratchet wheel, which is held in position by its frictional engagement with the pyrophoric material 29, the shape of the teeth of the ratchet wheel and the teeth on the rack being such to cause engagement of the same in one direction and release by movement in the other direction.

A construction as thus far described is complete within itself and is illustrated in Fig. 7 with the parts correspondingly numbered, although somewhat different in shape and detailed arrangement. It may be desired, however, that a finger operating member be provided to swing this snuffer to open position rather than by picking up the snuffer from its front end 44 or direct manual pressure upon the rear end 45, as shown in Fig. 7, and in order to accomplish this result I have provided in Figs. 1, 2, and 6 a pivoted finger piece indicated generally 46 which is pivotally mounted on the axis of the friction wheel by means of a bearing opening 47 in the flange thereof, there being a slot 48 to permit movement of this finger piece about the fixed shaft 32 upon which the snuffer is mounted.

This finger piece is provided with a top portion 49 which extends over the end of the snuffer so that upon pressure of the finger piece downwardly it will swing about the pivot 47 and force one end of the snuffer downwardly and the operating end upwardly into the position illustrated in Fig. 2, there being a sliding of the under surface of the finger piece along the top surface of the snuffer in this action.

The finger piece is entirely independent of the snuffer and may be lifted from its position in Fig. 2, while the snuffer is open, but in use the finger piece will return to its initial starting position upon release of pressure upon it by reason of the snuffer returning to its closed position under action of the spring 37 and carrying with the snuffer the finger piece by reason of engagement therewith.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible, the invention being defined and limited only by the terms of the appended claims.

I claim:

1. In combination a fuel casing having a top wall with a recess therein, a finger projecting from said top wall into said recess and having a portion extending down sharply below said top wall, a wick projecting from said casing, a friction wheel rotatably mounted adjacent said wick, a snuffer for said wick pivoted on said casing, and a spring engaging said snuffer and engaging the downwardly extending portion of said finger and urging the snuffer about its pivot to cover the wick.

2. In combination a fuel casing having a top wall with a recess therein, a finger projecting from said top wall into said recess and having a portion extending down sharply below said top wall, a wick projecting from said casing, a friction wheel rotatably mounted adjacent said wick, a snuffer for said wick pivoted on said casing at a point removed from said friction wheel, and a spring about the pivot for said snuffer and engaging said snuffer and anchored in the downwardly extending portion of said finger for urging the snuffer about its pivot to cover the wick.

3. In combination a fuel casing having a top wall with a recess therein, a finger projecting from said top wall into said recess and having a portion extending down sharply below said top wall, a wick projecting from said casing, a friction wheel rotatably mounted adjacent said wick, a snuffer for said wick pivoted on said casing, a spring engaging said snuffer and the downwardly extending portion of said finger and urging the snuffer about its pivot to cover the wick, and a finger piece pivoted about the axis of said friction wheel and movable by said snuffer when moved to closed position.

4. In a lighter, a fuel casing, a top wall for said casing, cut out within its marginal edges, a dished shaped member secured to and suspended from said top wall, and provided with upstanding supports between which the movable ignition means are mounted, said top wall having a finger extending into the dished portion of said member and provided with an opening and a pyrophoric tube extending through said casing into said member and through the opening in said finger.

5. In combination, a fuel casing having a top wall with a recess therein, a finger projecting from said top wall and having a portion extending sharply downwardly therefrom and provided with a plurality of openings, a pyrophoric tube extending through said casing into said recess and through one opening in said finger to be supported thereby, a snuffer pivoted above said top wall, and a spring engaging said snuffer and the lower portion of said finger and located in another opening therein.

6. In a lighter, a fuel casing, a top wall for said casing cut out within its marginal edges, a dish-shaped member secured to and suspended from said top wall and provided with upstanding supports between which the movable ignition means are mounted, said top wall having an apertured finger, one portion of which lies between the walls of said member at substantially the level of the top wall of the casing, and another portion of which extends into the portion of said dish-shaped member below the level of said top wall, a snuffer pivoted in said supports, a spring connected to said snuffer and to the lower portion of said finger, and a pyrophoric tube extending through said casing into said member and through an aperture in said finger.

AXEL KILSTROM.