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FUEL CARRYING MEANS FOR LIGHTERS

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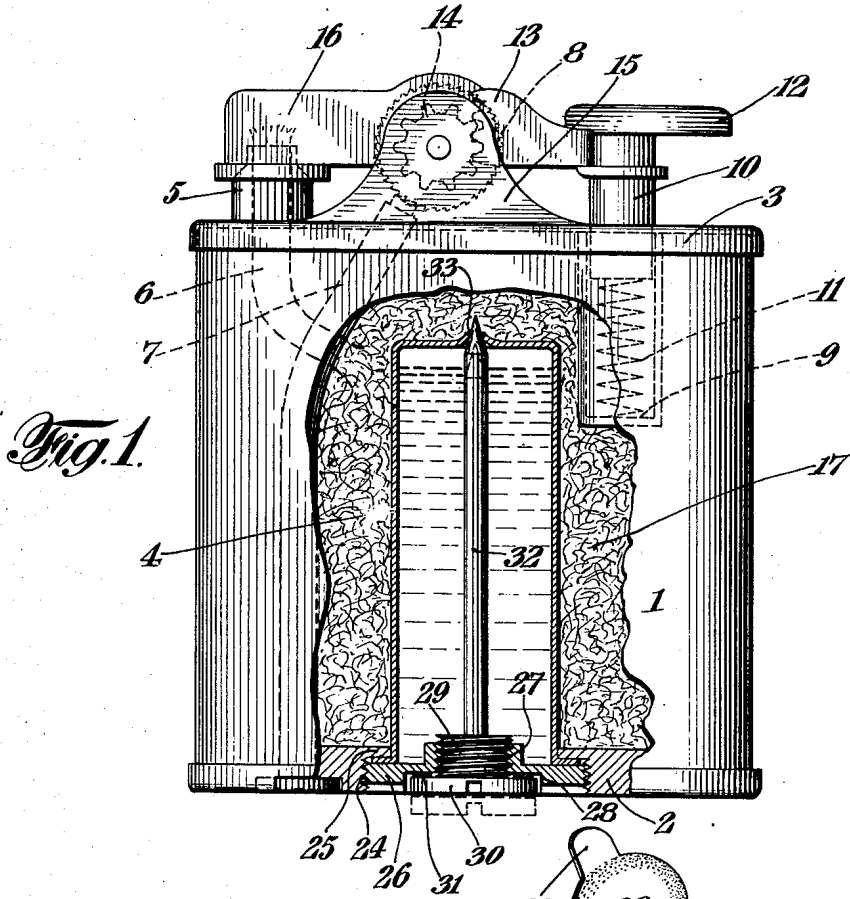


Fig. 1.

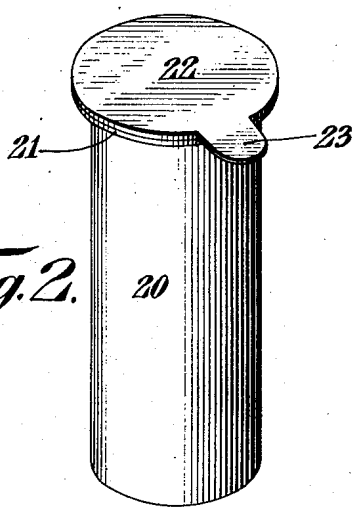


Fig. 2.

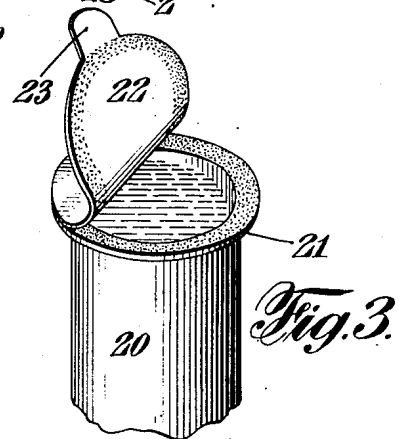


Fig. 3.

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FUEL-CARRYING MEANS FOR LIGHTERS

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The invention relates in general to pocket lighters, such as commonly used for lighting cigarettes and the like, and more particularly to a fuel charging arrangement for such lighters.

The objects of the invention include the provision of a relatively simple, dependable, highly efficient and convenient device of the type above indicated.

Various further and more specific objects, features and advantages will clearly appear from the detailed description given below taken in connection with the accompanying drawings which form a part of this specification and illustrate merely by way of example one embodiment of the device of the invention.

The invention consists in such novel features, arrangements and combinations of parts as may be shown and described in connection with the apparatus herein disclosed by way of example only and as illustrative of a preferred embodiment.

In the drawings, Fig. 1 is an elevation, with parts broken away, of a lighter according to the invention;

Fig. 2 is a perspective of a fuel cartridge as it might be placed on the market; and

Fig. 3 is a perspective of the cartridge shown in Fig. 2, with the cover partially pulled off, prior to insertion in the lighter casing.

In the following description and in the claims, parts will be identified by specific names for convenience, but such names are intended to be as generic in their application to similar parts as the art will permit. Like reference characters denote like parts in the several figures of the drawing.

Referring now to the drawing, the lighter comprises in general a casing having side walls 1, a bottom wall 2 and a top wall 3 defining a fuel reservoir 4. Disposed within the reservoir is absorbent material 17 which is saturated with a suitable liquid fuel.

Mounted on the top wall 3 is a wick holder 5 through which a wick 6 passes, this wick extending into the reservoir 4. A holder 7 passes through the top wall and has suitable

sparkling material mounted therein in operative relation to a sparking wheel 8.

Depending from the top wall 3 is a sleeve seat 9 having a plunger 10 telescoping therein. A coil spring 11 is disposed between the bottom of the sleeve and the plunger to normally hold the plunger in upper position. The plunger 10 has a thumb piece 12 secured thereto and also a rack member 13 having teeth engageable with a gear 14 rotatable with the sparking wheel 8.

A suitable support 15 is provided for rotatably supporting the sparking wheel 8, gear 14, and a snuffer member 16. The snuffer member 16 is adapted to close, to the position shown, over the wick holder 5 to snuff out the flame. It will be seen that downward pressure on the thumb piece 12 causes the sparking wheel to rotate and the snuffer member to rise, causing a shower of sparks to impinge on the wick igniting it.

In order to conveniently charge the reservoir 4 with fuel a cartridge shown in Fig. 2 is provided. This cartridge may comprise a cylindrical container 20 of thin, soft metal such as lead or tin, provided with a flange 21 at its upper end. A flat cap 22 having a finger piece 23 is secured to the flange by cement or solder of low tensile strength. It will be understood that the cartridges as shown in Fig. 2 will be sold in the open market and the users of the lighters may buy such cartridges to refill their lighters with fuel when necessary.

The bottom wall 2 of the reservoir has a threaded opening 24 provided with a shoulder 25. A flat plate 26 is threaded into this opening, this plate having a threaded flange 27 and a shallow recess 28. A plug 29 having an enlarged head 30 is threaded into the flange 27 and a gasket 31 seats between the head 30 and the plate 26 to provide a tight joint, as indicated in Fig. 1. Attached to the plug 29 is a long spike 32 having a sharp pointed end. It will be understood that the plate 26, the plug 29 and spike 32, and washer 31 form a permanent but detachable part of the lighter shown in Fig. 1 as sold.

When the fuel in the reservoir 4 is consumed and it is desired to refill the reservoir, 100

the empty container 20 is removed from the reservoir after first removing the plug 29 and the plate 26. The new cartridge indicated in Fig. 2 filled with liquid fuel is opened by grasping the finger piece 23 and forcibly pulling the cover 22 off. The lighter is then inverted and the cartridge seated within the reservoir with its flange 21 against the shoulder 25 of the bottom wall 2. The plate 26 is then screwed to tightly clamp the flange 21 between it and the shoulder 25, and the plug 29 is threaded into the flange 27 to the position shown in Fig. 1, the sharp point of the spike 32 puncturing the fuel cartridge forming hole 33.

When it is desired to let some of the liquid fuel out of the cartridge to saturate the packing 17, the combined plug 29 and spike 32 is unscrewed to the position shown in the dotted lines in Fig. 1, thus opening the punctured hole and allowing the fuel to leak out into the surrounding reservoir. After sufficient fuel has leaked out of the cartridge, the plug 29 is screwed down tightly so that the pointed spike blocks the flow of liquid through the punctured opening. The lighter is carried about the person and used in the usual way until additional fuel is needed. The plug 29 is then unscrewed and additional fuel allowed to flow out through the punctured opening 33 as above explained.

Thus a construction is provided which does away, to a great extent, with the troublesome operation of filling the usual lighter with fuel. Furthermore, a reserve of fuel is always carried about in the cartridge so that, any time the lighter runs out of fuel, additional fuel can be allowed to leak through the punctured opening. When the fuel in the cartridge is consumed, it is a simple matter to refill with a new cartridge as above explained.

While the invention has been described with respect to a certain particular preferred example which gives satisfactory results, it will be understood by those skilled in the art after understanding the invention, that various changes and modifications may be made without departing from the spirit and scope of the invention and it is intended therefore in the appended claims to cover all such changes and modifications.

What is claimed is:

1. In a lighter of the class described, a chamber for holding fuel, ignition devices, a wick extending into said chamber, a fuel cartridge having an open end, said chamber having an opening in the wall for the insertion of said cartridge, means connecting the open end of said cartridge around said opening, a removable cover for said opening, and a member passing through said cover for controlling passage of fuel from said cartridge into the surrounding chamber space.

2. In a pocket lighter, a chamber for hold-

ing fuel, a wick projecting through a wall of said chamber, igniting devices for lighting said wick, a wall of said chamber having a threaded opening and flange forming a shoulder, a container holding liquid fuel and having an outwardly projecting flange at its open top, said container being disposed within said chamber with its flange against said shoulder, a plate threaded into said opening to hold said flange against said shoulder, said plate having a threaded opening, a plug threaded into said plate opening, said plug having a head, a gasket between said head and plate, a spike attached to said plug and having a sharp point puncturing the bottom of said container and seating in the puncture when said head compresses said gasket.

3. In a pocket lighter, a chamber for holding fuel, a wick projecting through a top wall of said chamber, igniter devices for lighting said wick and located on said top wall, the bottom wall of said chamber having a threaded opening and flange forming a shoulder, a cylindrical container holding liquid fuel and having an outwardly projecting flange at its open top, said container being disposed within said chamber with its flange against said shoulder, a plate threaded into said opening to hold said flange against said shoulder, said plate having a threaded flange projecting into said chamber and a recess, a plug threaded into said flange and having a head in said recess, a gasket between said head and plate, a spike attached to said plug having a sharp point puncturing the bottom of said container and seating in the puncture when said head compresses said gasket.

4. The combination with pyrophoric lighting mechanism comprising a fuel-containing casing, spark producing mechanism carried exteriorly on the top of said casing, a wick extending from the interior of said casing to the vicinity of said spark producing mechanism, a wall of said casing having an opening, and a plug threaded into said opening, of means for supplying fuel to the wick section in said casing, said means comprising a supplementary fuel-containing casing having an opening, and means for detachably associating said casings whereby the opening of said supplementary casing is in alinement with said first named opening when said plug is removed therefrom.

5. The combination with pyrophoric lighting mechanism comprising a fuel-containing casing, spark-producing mechanism carried on the top wall of said casing, a wick extending from the interior of said casing to the vicinity of said spark-producing mechanism, the bottom wall of said casing having a threaded opening, and a plug threaded into said opening, of means for supplying fuel to the wick section in said casing, said means comprising a supplementary elongated fuel-

5 containing casing of deformable sheet material and having an opening, and means
adapting said casings for detachable association so that the opening of said supplementary
casing is in alinement with said first named opening when said plug is removed
therefrom, a portion at least of said supplementary casing closely fitting within said
10 first named opening, said supplementary casing being discarded after the fuel contained
thereby has been transferred to said first named casing.

In testimony whereof I have signed my name to this specification.

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