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2,583,691

CIGARETTE LIGHTER

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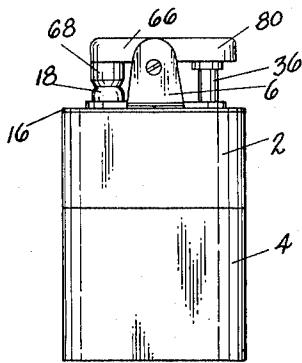


Fig. 1

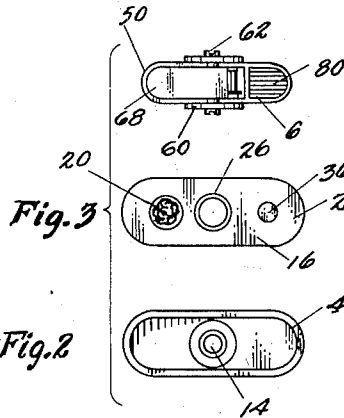
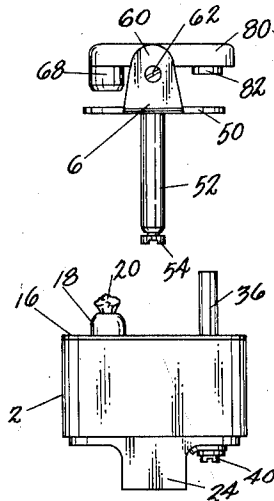


Fig. 3

Fig. 2

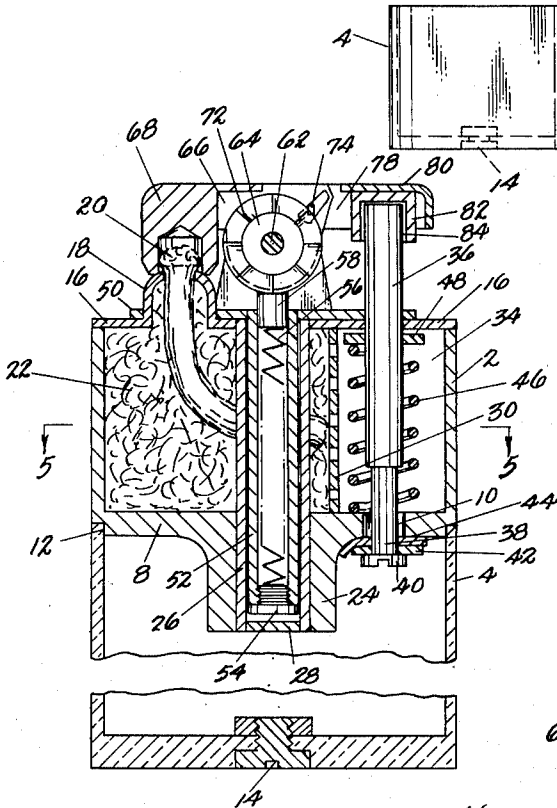


Fig. 4

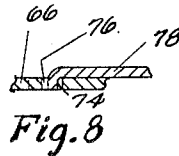


Fig. 8

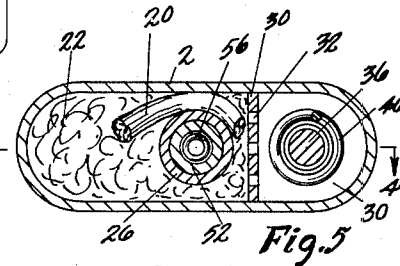


Fig. 5

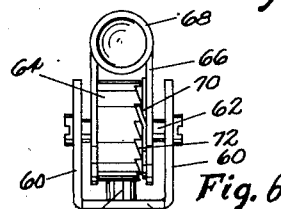


Fig. 6

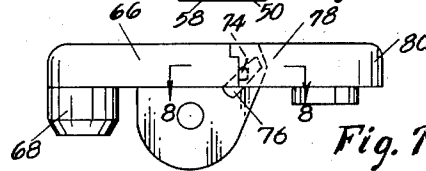


Fig. 7

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## UNITED STATES PATENT OFFICE

2,583,691

## CIGARETTE LIGHTER

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1 Claim. (Cl. 67-7.1)

1

2

My invention relates to cigarette lighters, and more particularly to lighters of the pyrophoric type.

The primary object of the invention is to provide a lighter which can be used for long periods of time without refilling.

Another object of the invention is to provide a lighter which is easy to use and effective in operation.

A further object of the invention is to provide a lighter which can hold large quantities of liquid fuel, such fuel being supplied to the wick in suitable quantities without danger of flooding the wick or the igniting mechanism.

Still another object of the invention is to provide a lighter having a main fuel chamber in which the wick receives its fuel and an auxiliary fuel chamber for holding liquid fuel, with means for opening communication between the chambers at each operation of the lighter.

Still a further object of the invention is to provide a novel mounting for a thumb piece of a lighter which is connected to a snuffer cap operating the igniting mechanism, this connection being flexible and self-adjusting so as to cause more efficient operation of the lighter.

An additional object of the invention is to provide a lighter which is simple and inexpensive in construction.

Further objects and advantages of the invention will appear more fully from the following description, especially when taken in conjunction with the accompanying drawings which form a part thereof.

In the drawings:

Fig. 1 shows in side elevation a lighter embodying my invention;

Fig. 2 is a similar view with the three parts of the lighter separated;

Fig. 3 is a top plan view of the three parts of Fig. 2;

Fig. 4 is a cross-section substantially on the line 4-4 of Fig. 5;

Fig. 5 is a cross-section substantially on the line 5-5 of Fig. 4;

Fig. 6 is a front view of the top part of the lighter in operating position;

Fig. 7 shows in side elevation the snuffer and thumb piece; and

Fig. 8 is a cross-section on the line 8-8 of Fig. 7.

The lighter is composed of a main body portion 2, a bottom reservoir or fuel holding chamber 4 preferably formed of a transparent plastic, and a top portion 6. The intermediate portion

2 is hollow and has a bottom wall 8 provided with an opening 10. The bottom portion 4 fits over a shoulder on bottom wall 8, as at 12, and is suitably secured thereto as by an adhesive. The bottom portion 4 is hollow, and its bottom wall is closed by a threaded plug 14.

The intermediate, or main fuel chamber, portion 2 has a top wall 16 from which extends upwardly a wick holding tube 18 adapted to hold a wick 20. This wick extends into a suitable filling 22 of absorbent material, such as cotton, within the member 2. The bottom wall 8 of member 2 has a downward extension 24, and a tube 26, which may be of metal, extends through an opening in the top wall 16 and downwardly through extension 24, passing through the center of the member 2. The lower end of this tube 26 is closed by a plug 28.

A vertical wall 30 having openings 32 is arranged within the main fuel chamber 2 to divide off the portion containing the cotton 22 from a separate portion 34. Opening 10 communicates with this space 34. A rod 36 extends with a sliding fit through the top wall 16, and has a reduced lower end 38 arranged within the opening 10 and of less diameter than that opening. An enlarged head 40 on the lower end of the rod engages a disc 42, above which is arranged a washer 44, this disc and washer being larger than opening 10 so that when the rod is moved upwardly the washer will seal the opening and prevent communication between containers 2 and 4. A coil spring 46 arranged within the space 34 and resting on lower wall 8 engages a disc 48 secured on rod 36, and thus urges the rod upwardly, or in other words into a position to close hole 10.

The top member 6 includes a plate 50 having openings adapted to fit over wick holding tube 18 and rod 36. Extending downwardly from this plate is a flint holding tube 52 which is slidable into tube 26, and is closed at its bottom end by a threaded plug 54. This threaded plug supports a spring 56 which presses upwardly a flint 58 mounted in the upper end of the tube 52.

Upstanding from the plate 50 are ears 60, between which on shaft 62 is mounted a flint wheel 64 engaging the flint 58. On opposite sides of the flint wheel the side walls 66 bearing snuffer cap 68 are likewise pivoted on shaft 62. One of these side walls has an inwardly bent tongue 70 engageable in ratchet notches 72 formed in the adjacent face of the flint wheel 64. The snuffer cap 68 is arranged to overlie the wick 20 and

3

engage the top of wick tube 18 when the device is in the closed position shown in Fig. 4.

Walls 66 are provided with angularly arranged slots 74 in which engage inwardly turned lugs 76 on the side edges of walls 78 of thumb piece 80. This thumb piece has secured on its lower face a cup 82 which fits over the upper end of rod 36. It will be noted, however, as clearly shown in Fig. 4, that there is a loose fit between the cup and the rod, as indicated by the space 84, or in other words that the inside dimensions of the cup are substantially greater than the outside dimensions of the rod.

The lighter hereinbefore described operates as follows:

When the thumb piece 80 is depressed, lugs 76 through slots 74 turn the snuffer 68 in a clockwise direction (Fig. 4) and lift the snuffer cap off the wick. At the same time, towards the end of this movement, tongue 70 turns the flint wheel and causes it to throw sparks onto the wick so as to ignite it. When this happens rod 76 is simultaneously depressed and washer 44 is moved away from opening 10, thus establishing communication between the lower fuel chamber 4 and the upper fuel chamber 2. In ordinary usage, a sufficient amount of vapor will pass up from the lower fuel chamber to the upper one at each operation of the lighter to keep the wick sufficiently saturated. If, however, this should not be sufficient, all that is necessary is to invert the lighter and push somewhat on the finger piece, but not sufficiently to operate the flint wheel. When this is done, the valve is opened and liquid fuel can flow into the main fuel chamber from the auxiliary chamber 4.

It will be noted that there is a loose or self-adjusting connection between the rod 36 and the thumb piece 80. This connection allows the thumb piece to adjust its position normally with respect to the snuffer cap, and thus aids in ensuring proper operation of the snuffer cap and the flint wheel when the thumb piece is depressed. In this aspect, such a construction is applicable and valuable even in a lighter in which depression of the thumb piece does not open a valve between two fuel chambers, but in which the rod 36 merely serves to restore the parts to closed position after operation.

4

While I have described herein one embodiment of my invention, I wish it to be understood that I do not intend to limit myself thereby except within the scope of the claim hereto or herein-after appended.

I claim:

In a cigarette lighter or the like, a body having a transverse interior wall dividing the space within the body into upper and lower fuel chambers, said wall having an opening therein, a wick communicating with the upper fuel chamber and emerging on the top wall of said body, a rod slidable through the top wall of the body and through said opening, closure means for said opening mounted on said rod below said interior wall, means urging said rod upwardly, a flint wheel rotatably mounted on said top wall between said rod and said wick, means to hold a flint against said flint wheel, a thumb piece having a downwardly open cup engaging the upper end of said rod, and means operatively connecting said thumb piece to said flint wheel, the inside dimensions of said cup being greater than the outside dimensions of said rod.

IRVING FLORMAN.

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