May 17, 1949. H. A. MASON 2,470,710

CIGARETTE LIGHTER

Filed July 27, 1946

Fig. 1

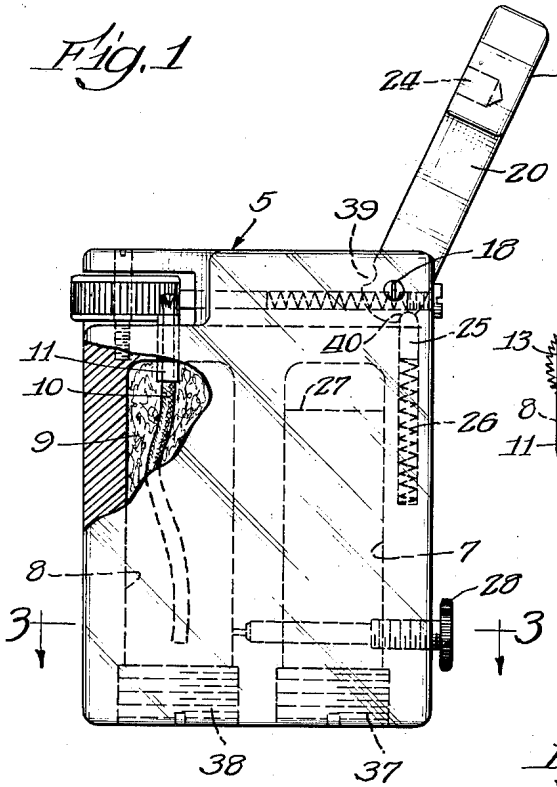



Fig. 2

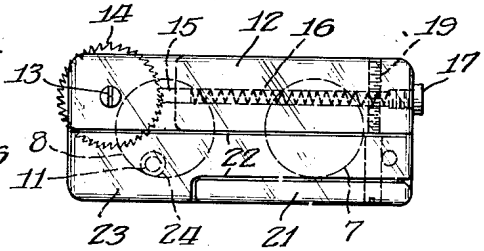



Fig. 4

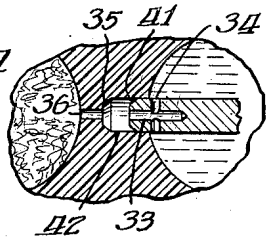
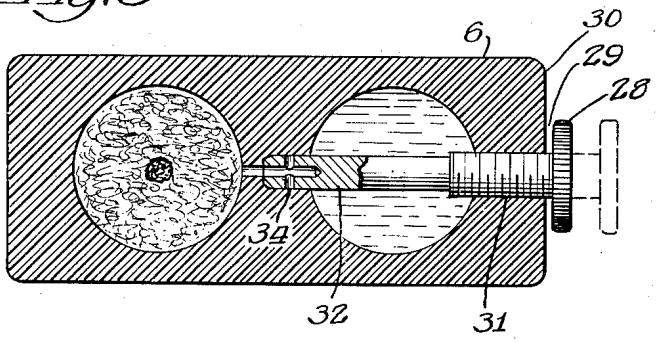



Fig. 3

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# UNITED STATES PATENT OFFICE

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## CIGARETTE LIGHTER

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Application July 27, 1946, Serial No. 686,629

4 Claims. (Cl. 67—7.1)

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My invention appertains to cigar and cigarette lighters.

An important object of my invention is to provide a cigarette lighter made of transparent material, such as plastic, Lucite, or glass, if so desired; however, Lucite is preferable as material, so as to show clearly the complete mechanism therein, and thus act as a great aid to the average layman unfamiliar with mechanical structure, who would be apt to use such a device, so as to indicate very clearly means for adjusting the device, or filling, or dismantling, or assembling the same when adjustments or repairs are needed.

Another object of my invention is to provide a lighter of the afore-mentioned character, which has an auxiliary well for retaining therein an extra spare supply of volatile lighter fluid, the said well being provided with valve means communicating with the well of the lighter, so as to permit filling the main well of the lighter from time to time when it becomes dry, and when it becomes necessary to add lighter fuel for the actual functions, and uses of the lighter itself.

A further object of my invention is to provide a lighter of the afore-mentioned character, having a cap for housing the open end of the wick acting as a seal thereover, preventing the evaporation of the lighter fluid, which is highly volatile in character.

A further object of my invention is to provide a cap cooperating with spring detent means for retaining the said cap in open, and closed positions under resilient pressure, forming a hermetical seal when in closed position over the exposed portion of the lighter wick.

A further object of my invention is to provide an article of the afore-mentioned character, which is practical in construction, efficient for the purposes and uses for which it is to be applied, and of such simple elemental design as to warrant economical manufacture thereof in quantity production.

Other features, and objects inherent in my invention, will become apparent from an examination of the accompanying drawings, having numerological reference to the ensuing description, wherein like numerals are used to designate like parts, and in which;

Fig. 1 is a front view of my lighter invention depicting the cap in open position ready for use.

Fig. 2 is a top view of Fig. 1 with the cap in closed position.

Fig. 3 is a cross-sectional view taken, substantially, on the line 3—3 of Fig. 1 showing, the valve, a novel feature of my invention, in closed position.

Fig. 4 is a fragmentary view, similar to Fig. 3, showing the said valve structure in open position.

Referring to the various views, my invention is generally designated 5, and consists of a body

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element 6, made of transparent material, and a cap element 20 also made of transparent material, the said cap having an enlarged cap portion 23 and a reduced body portion, which is slidably and frictionally confined between the slotted confines 22 formed between the ledges 12 and 21 of the body 6. The cap is pivotably secured by virtue of the pivot axle 18, which is a screw having a threaded portion 19 firmly secured into the ledge 12. The ledge 12 also has a bore therein, in which is confined a spring element 15, urging the flint 15 against the scraper or spark wheel 14, which in turn is pivoted by means of the axle screw 13.

The spring element 16 is confined in its compressed state within the bore by virtue of the knurled head screw 17, secured to the ledge 12 at the terminus of the bore therein. To replace flint, the screw 17, and the spring 16, are removed and a new piece of flint 15 is inserted, the spring and screw being replaced to hold the flint under resilient pressure against the teeth of the spark wheel 14.

Adjacent the spark wheel, and adapted to capture the sparks created thereby, when the same is rotated against the flint 15, is the wick bushing 11, which holds a wick 10, its terminus being in the cotton batting, or packing material 9, within the fuel or lighter fluid chamber 8, the same being tightly sealed by means of the screw plug 38, which is removed, when new packing or wicking is to be inserted into the tubular holder 11.

A spare fuel reservoir 7 is provided in my lighter which is filled, with volatile lighter fluid 27 and held in sealed closure by means of the screw plug 37. A feature of my invention is the valve element having a head 28, a threaded portion 31 engaging a mating female threaded portion in the body 6, and having a reduced extension 32. The said valve extension 32 is provided with a chamfered portion 41 adapted to be lodged in sealing relationship with the valve seat 35, which is of counter-sunk formation with reference to the bore 36. It is to be noted, that the end of the valve extension 32 is axially drilled as indicated at 33 and cross-drilled as at 34, so that when the valve 28 is in closed position (see Fig. 3) the intersecting or cross bores 34 are outside of the province of the bore 7, whereas the chamfered portion 41 is seated and lodged against the counter-sunk portion; thus the liquid within the reservoir 7 has no outlet or flowing connection to the reservoir 8, whereas when the valve head 28 is loosened one or more turns as may be necessary, the cross bore passages 34 are brought into the confines of the reservoir 7, thus establishing communication and passage for the liquid within the reservoir 7 to pass through the cross bores 34 into the bore 33, and further into the counter-bore 42, thence through the bore 36 into

the reservoir 8; thus small quantities of the spare fuel may be passed from the storage chamber 7, or reservoir 7, to the chamber 8, which maintains the wick moist, through capillary action and proper conditions, so that the sparks will ignite the liquid at the free portion thereof, whenever the spark wheel 14 is rotated, or actuated.

It is to be noted that there is a space 29 (see Fig. 3) between the bottom portion of the knurled head 28 and the side, or face 30, of the lighter 6, so as to make certain that the chamfered portion 41 will be firmly, and hermetically seated against the counter-sunk portion, or seat 35, assuring no communication between reservoirs 7 and 8 when the valve is closed, or in inoperative position.

The cap portion 23 is provided with a bored out housing portion 24, which fits over the exposed portion of the wick 10, when the lighter is closed, and is retained in sealed relationship therewith by virtue of the spring 26 confined in the longitudinal bore in the body 6, and having a hemispherically tipped pin 25 fitted thereinto, in order to engage either one of the indentations 39 or 40, depending on whether the lighter is open or closed. When in open position, the notch 40 is engaged by the top of the pin 25, as shown in Fig. 1, and when closed, the notch 39 is engaged by the tip of the pin 25.

It will be obvious that various changes in the lighter hereinabove described, and in the structural details of the several parts thereof, may be made without departing from the spirit and scope of the invention, as defined and limited in the subjoined claims.

Having thus described and revealed my invention, what I claim as novel and desire to secure by Letters Patent is:

1. A cigarette lighter comprising, a body made of transparent material equipped with conventional spark creating means and wick means, a fuel chamber in the said body having the said wick connected thereto to feed minute quantities of fuel through capillary action to the top portion of the said wick, an auxiliary fuel chamber in the said body, valve means interconnecting the said fuel chamber and the said auxiliary fuel chamber, cap means made of transparent material articulately secured to the said body adapted to cover the exposed portion of the said wick, the said cap means being provided with dual indentations adjacent its point of articulation, and resiliently urged detent means secured to the said body and adapted to engage alternately and releasably one of the said dual indentations to maintain the said cap means open and to sealably confine the exposed portion of the said wick when the said cap means is closed.

2. A cigarette lighter comprising, a body made of transparent material equipped with conventional spark creating means and wick means, a fuel chamber in the said body having the said wick connected thereto to feed minute quantities of fuel through capillary action to the top portion of the said wick, an auxiliary fuel chamber in the said body, and valve means interconnecting the said fuel chamber and the said auxiliary fuel chamber, the said valve means provided with manipulative means accessible outside of the confines of said body, the said valve means comprising, bored and counterbored passage means interconnecting the said fuel chamber to the said auxiliary fuel chamber and defining a valve seat therebetween, and a valve threadably secured to the said body and provided with a reduced extension terminating in a chamfered end portion adapted to seal when in contact with the said valve seat, a drilled portion at the said chamfered end portion co-axially in alignment with the bore portion of the said bored and counter-bored passage, and a cross bore on the said reduced extension intersecting the said drilled portion.



3. A cigarette lighter comprising, a body made of transparent material equipped with conventional spark creating means and wick means, a fuel chamber in the said body having the said wick connected thereto to feed minute quantities of fuel through capillary action to the top portion of the said wick, an auxiliary fuel chamber in the said body, valve means interconnecting the said fuel chamber and the said auxiliary fuel chamber, cap means made of transparent material articulately secured to the said body adapted to cover the exposed portion of the said wick, the said cap means being provided with dual indentations adjacent its point of articulation, and resiliently urged detent means secured to the said body and adapted to engage alternately and releasably one of said dual indentations to maintain the said cap means open and to sealably confine the exposed portion of the said wick when the said cap means is closed, the said valve means provided with manipulative means accessible outside of the confines of said body.

4. A cigarette lighter comprising, a body made of transparent material equipped with conventional spark creating means and wick means, a fuel chamber in the said body having the said wick connected thereto to feed minute quantities of fuel through capillary action to the top portion of the said wick, an auxiliary fuel chamber in the said body, valve means interconnecting the said fuel chamber and the said auxiliary fuel chamber, cap means made of transparent material articulately secured to the said body adapted to cover the exposed portion of the said wick, the said cap means being provided with dual indentations adjacent its point of articulation, resiliently urged detent means secured to the said body and adapted to engage alternately and releasably one of said dual indentations to maintain the said cap means open and to sealably confine the exposed portion of the said wick when the said cap means is closed, and screw plug means acting as closures for independent accessibility to the openings of the said fuel chamber and the said auxiliary fuel chamber for filling the same with fuel when needed.

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