United States Patent [19]

Dessoy

[11] **3,719,447**

[45] **March 6, 1973**

[54] GAS FUELED LIGHTERS

[75] Inventor: **Peter Martin Robert Dessoy**, Thornton Heath, England

[73] Assignee: **Ronson Corporation**, Woodbridge, N.J.

[22] Filed: **April 1, 1971**

[21] Appl. No.: **130,306**

[30] **Foreign Application Priority Data**

April 1, 1970 Great Britain.....15,537/70

[52] **U.S. Cl.**.....**431/254,** 431/277

[51] **Int. Cl.**.....**F23q 2/16**

[58] **Field of Search**.....431/254, 255, 277

[56] **References Cited**

UNITED STATES PATENTS

3,493,313	2/1970	Schlamp	431/255
3,403,963	10/1968	Dexter	431/254
3,594,108	7/1971	Cueva	431/277 X
3,533,718	10/1970	Shuto	431/254

Primary Examiner—Edward G. Favors

Attorney—Lewis H. Eslinger, Alvin Sinderbrand and Curtis, Morris & Safford

[57] **ABSTRACT**

A gas fueled cigarette lighter having a burner valve therein which is normally closed. The burner valve is opened to allow fuel vapors to pass therethrough by a removable plate pivotally attached to the burner valve in which the plate is actuated by a fingerpiece. The fingerpiece is fixed to the lighter casing and is pivotally mounted with respect to a ridge on the lighter which forms fulcrum. The plate has an enlarged opening therein which allows the plate to be positioned over the month of the burner valve and a narrow slot therein into which the neck of the burner valve is slid to prevent the removal of the plate from the burner valve.

6 Claims, 7 Drawing Figures

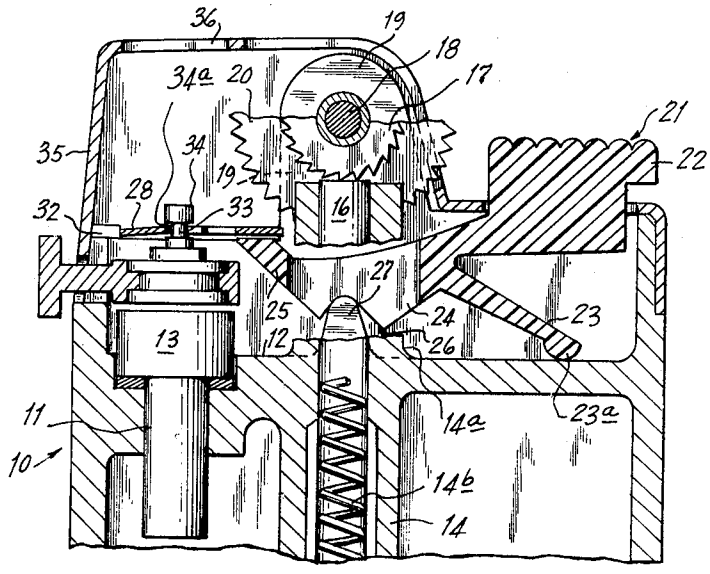


FIG. 1.

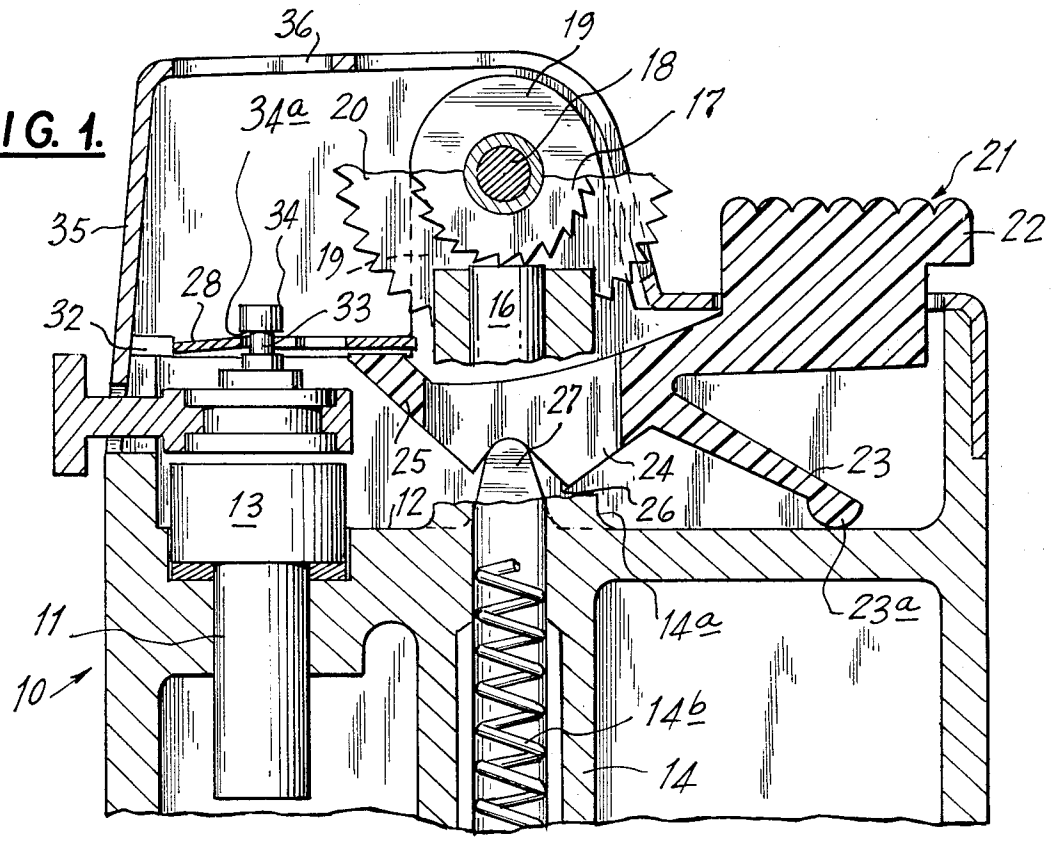
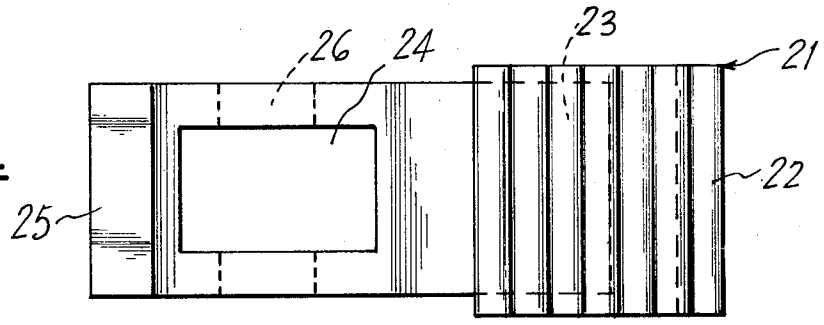


FIG. 2.



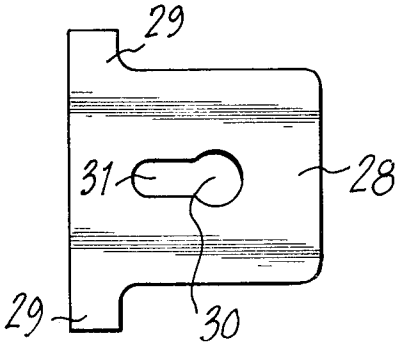
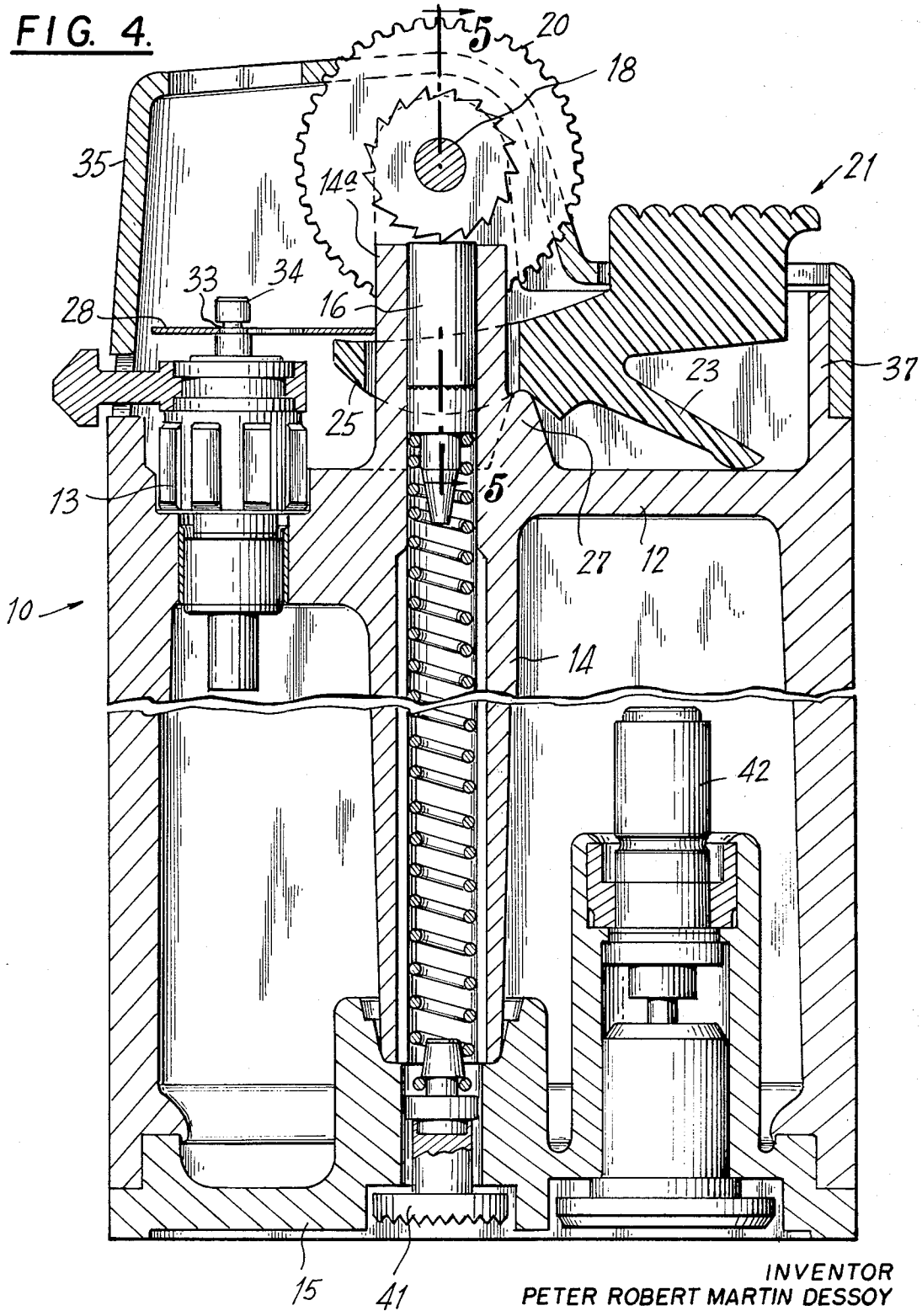


FIG. 3.

INVENTOR
PETER ROBERT MARTIN DESSOY
BY
Lewis H. Eslinger
ATTORNEY

FIG. 4.



INVENTOR
PETER ROBERT MARTIN DESSOY
BY Lewis H. Eslinger
ATTORNEY

FIG. 5.

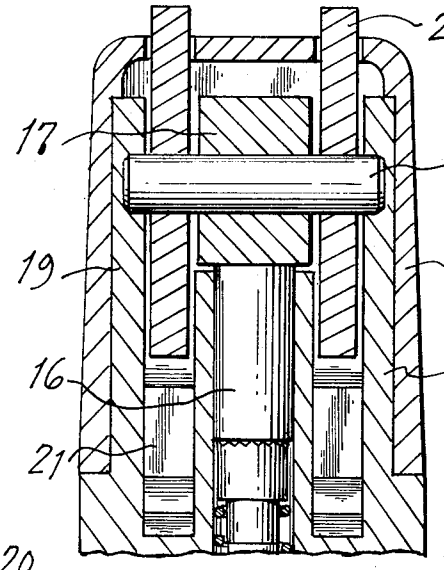


FIG. 6.

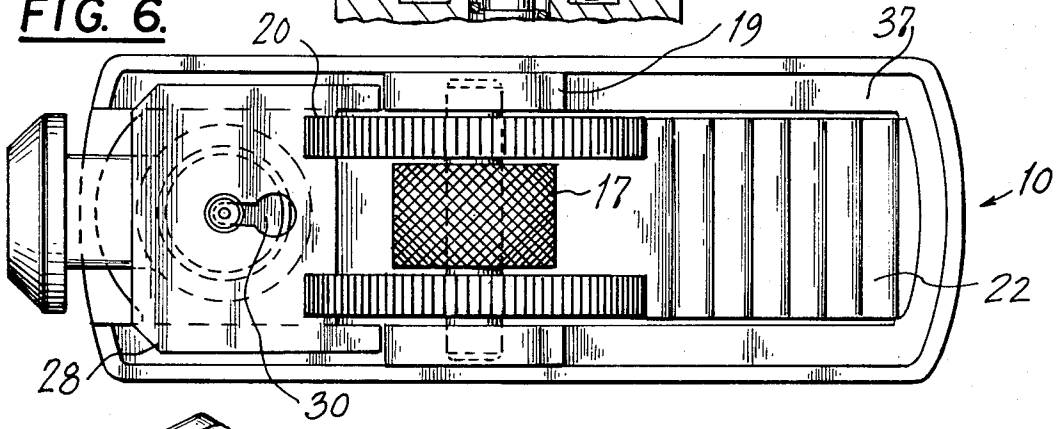
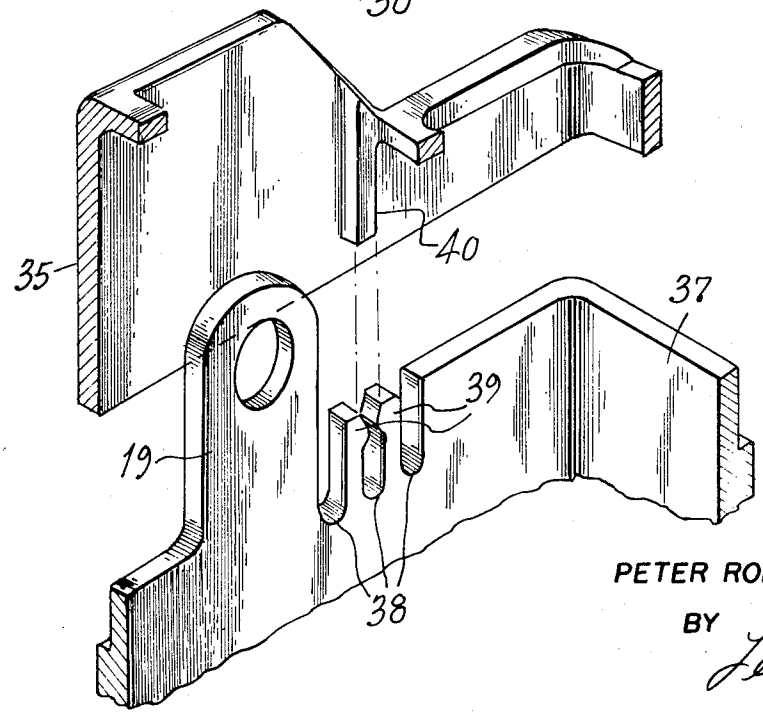


FIG. 7.



INVENTOR
PETER ROBERT MARTIN DESSOY

BY Lewis H. Eslinger
ATTORNEY

GAS FUELED LIGHTERS

This invention relates to an improvement in cigarette lighters and specifically to the mechanism for opening the burner valve.

Cigarette lighters, and especially gas fueled lighters, use a burner valve which vaporizes the liquefied fuel and releases it to the atmosphere. Various mechanisms have been devised for the opening and closing of such valves. One of these mechanisms is termed a "forklift." In this type of mechanism a lever has one end which is U-shaped, much like a fork and an opposite end which underlies the fingerpiece. The lever is pivoted at some intermediate position. A removable circlip or other attachment mechanism secures the forked end of the lever to the burner valve which is normally biased to a closed position by a spring. Upon actuation of the fingerpiece, the lever is pivoted and the forked end is raised carrying with it the burner valve thereby opening it. An example of a structure depicting the above-described forklift mechanism is shown in U.S. Pat. No. 2,571,435 entitled "Gas Fueled Cigar Lighter" which issued on Oct. 16th, 1951.

The prior art mechanism used to actuate a burner valve mechanism is relatively complicated to produce and time consuming to assemble and dismantle as, for example, when it is required to service or replace the burner valve. The present invention has for an object the provision of a mechanism which is inexpensive to produce and which is simple to assemble or disassemble.

The improved mechanism comprises a rockable lever including an actuating limb and an actuating plate having one side pivotally located by the lighter housing and the other side overlying the actuating limb, the plate being operatively connected with the shutoff stem of the burner valve by means of a slot formed in the plate and engaging a portion of reduced diameter formed in the stem.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a sectional elevation of the upper portion of a gas fueled lighter,

FIG. 2 is a plan view of the lifting mechanism,

FIG. 3 is a plan view of the lift plate,

FIG. 4 is a sectional view in elevation of a modification of the invention,

FIG. 5 is a view taken along the arrow 5—5 in FIG. 4,

FIG. 6 is a plan view of the lighters shown in FIGS. 1 and 5; and

FIG. 7 is a fragmentary perspective view showing how the shroud is positioned.

Referring to FIGS. 1 to 3, the lighter comprises a body 10, which can be formed of any material such as plastic or metal for example. A socket 11 is bored into the top wall 12 of the lighter body and dimensioned to receive a burner valve 13. A flint tube 14 which can be formed integrally with the lighter extends between the lower wall 15 and the top wall 12 of the lighter body. The upper end 14*a* of the flint tube 14 projects above the top wall 12. A flint biasing mechanism 14*b* which can be a coiled spring is located within the hollow flint tube 14 and serves to urge a flint 16 against a sparkwheel 17.

The sparkwheel 17 is held on the lighter body 10 by a pin 18 which is journalled in the pair of upstanding ears 19 which can be formed integral with the lighter body

10. If desired a thumbwheel 20, which comprises a pair of discs having serrated edges can be fixed to opposite sides of the flintwheel 17 to assist in the rotation of the flintwheel.

The burner valve actuating mechanism comprises a rockable lever 21 which can be formed of any material such as plastic and can be formed in one piece. The lever 21 comprises a finger-piece 22 having serrations or any other type of frictional surface thereon or it could, if deisred, be a smooth surface. A resilient leg 23 can be formed integral with the lever 21 in which a rounded surface 23*a* is formed on the lower portion of the leg where it contacts the upper wall 12 of the lighter. The inherent resiliency of the leg 23 causes it to function like a spring in that it returns the fingerpiece 21 to its rest position after it has been actuated and will flex to allow the fingerpiece to be depressed. An opening 24 is provided in the lever 21 through which the flint tube 14 extends. A finger 25 is formed on the end of the lever 21 opposite the fingerpiece 22. A groove 26 is formed on the underside of the lever 21. When the lever is assembled in position it seats on a rib 27 formed on the top wall 12 of the lighter body. The rib 27 extends on opposite sides of the flint tube 14.

The remaining part of the actuating mechanism comprises an actuating plate 28. The plate is T-shaped as shown in FIG. 3 in which projections 29 form the top bar of the T-shape. Formed in the plate 28 is a keyhole slot having a round opening 30 and a slot 31. The projections 29 are engaged under corresponding shoulders 32 which can be integral with the lighter body.

The burner valve 13 has a hollow shut-off stem 33 which in its lower position serves to preclude gas flow by sealing an orifice as is well known; an example is shown in U.S. Pat. No. 2,571,435. The shut-off stem 33 is held in the closed position by a spring means (not shown). An enlarged burner mouth 34 is formed on the shut-off stem 33 through which the gas ultimately escapes when the burner valve is open. The burner mouth 34 forms a shoulder 34a where it joins the shut-off stem 33.

The plate 28 is positioned over the burner valve 13 by passing the mouth 34 of the burner valve through the opening 30 and by drawing the plate to the right as viewed in FIG. 1, the slot 31, which is narrower than the shoulder 34*a* lies under the mouth 34 and the plate is thereby maintained in position. The projections 29 reside beneath the shoulders 32 and the rear portion of the plate 28 overlies the finger 25 and is contiguous therewith. With the one side of the plate engaged under the shoulders 32, depression of the fingerpiece 22 will cause the lever 21 to pivot about its fulcrum 27 and the concommitant upward movement of the finger 25 will engage the lower side of the plate 28, causing it to tilt about the shoulders 32, to thereby raise the shut-off stem 33 to the extent required to open the burner valve 13. The resilient leg 23 returns the lever 21 to its rest position when finger pressure is removed from the fingerpiece and the valve is closed simultaneously therewith.

A shroud 35 which is preferably a heat resistant material is formed having an aperture 36 therein through which a flame emanates. Openings are also provided in the shroud for the thumb-wheel 20 and the fingerpiece 22. The shroud serves to retain the lever 21

in position and also acts as a stop for the lever as well as adding a pleasant decorative effect to the lighter. The shroud **35** can be secured to the lighter in any known manner.

Referring to the embodiment shown in FIGS. **4–6** where like numerals refer to like parts, there is shown a lighter **10** which is identical to the lighter shown in FIGS. **1** to **3** except in the following respects. No shoulders **32** as shown in FIG. **1** is to be found in the embodiment shown in FIG. **4**. Instead, the one side of the plate **28** is arranged to overlie the upstanding flange **37** which can be integral with the lighter body, so that when the opposite side is raised by the finger **25**, the plate **28** will tilt about the side which contacts the upstanding flange **37**. The shut-off stem **33** will be lifted and the burner valve **13** will be opened to emit gas.

The plate **28** is closely confined by the shroud **35** and by the ears **19** so that it cannot move appreciably in any direction transverse to the axis of the burner valve **13**. When the shroud is removed, the plate **28** can be slid to the left as seen in FIGS. **4** and **6** and then removed from the shut-off stem **33** of the burner valve **13**. In this embodiment, it is not necessary to form the plate with the keyhole slot **30** since a simple slot extending to a side of the plate would be sufficient.

It will also be seen that in the embodiment of FIGS. **4** to **6**, the fulcrum **27** for the lever **21** has been moved slightly away from the center line of the flint tube **14** toward the lever **21**.

While the shroud **35** can be designed to be a push fit on the lighter body, it can also be secured in position in the manner shown in FIG. **7**. The upstanding flange **37** of the lighter body is shown as formed with three slots **38** which provide two limbs **39** between which a rib **40** formed on the inside of the shroud **35** is frictionally engaged.

In FIG. **4**, there is shown a removable dust cover **41** which permits the user to replace the flint **16**. A known inlet valve **42** is shown secured to the baseplate **15**. The fuel reservoir can be filled with fuel, such as butane through this valve which is fully described in U.S. Pat. No. 3,085,601 entitled "Gas Fueled Lighter Valve" which issued on Apr. 16, 1963.

While there has been shown and described a particular embodiment of this invention, it will be obvious to those skilled in the art that various changes and modifications can be made therein without departing from the invention, and therefore, it is intended in the appended claims to cover all such changes.

What is claimed is:

1. In a cigarette lighter comprising,

a. a lighter body including walls forming a reservoir therein for the reception of fuel,

b. a burner valve having a reciprocable portion thereon for selectively opening and closing said burner valve,

c. said burner valve being mounted on said fuel reservoir,

d. spark producing means on said fuel reservoir adjacent said burner valve,

e. a burner valve opening mechanism on said fuel reservoir having a resilient leg which bears on the fuel reservoir, and an arm secured to said burner valve opening mechanism,

f. a plate connected to said reciprocable portion on said burner valve and extending to a position adjacent said arm whereby movement of said arm correspondingly moves said plate thereby opening said burner valve, and

g. said plate having a round opening and an intersecting slotted opening in which the width of the slot is narrower than the diameter of the opening.

2. In a cigarette lighter as defined in claim **1** in which said spark producing mechanism comprises a tube extending through said fuel reservoir and a pyrophoric flint in said tube which is urged against a sparkwheel secured to said lighter body in which spring means urge the flint against the sparkwheel.

3. In a cigarette lighter as defined in claim **1** in which said reciprocable portion includes a burner mouth which is larger in diameter than a hollow tubular stem leading to the burner mouth, whereby the opening in the plate is passed over the burner mouth and the slotted opening is axially moved under the burner mouth to secure the plate on the burner valve.

4. In a cigarette lighter as defined in claim **1** in which said burner valve opening mechanism has a fingerpiece secured thereto which is adapted to be actuated by a user.

5. In a cigarette lighter as defined in claim **1** in which said burner valve opening mechanism has an opening therein through which a portion of the spark producing means extends.

6. In a cigarette lighter as defined in claim **1** in which a rib is secured to said lighter body which provides a fulcrum for said burner valve opening mechanism.

* * * * *