July 4, 1967 L. REIM 3,328,980

GAS LIGHTER

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Fig. 1.

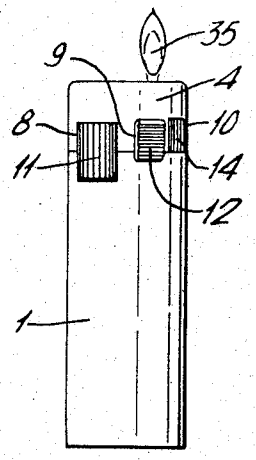


Fig. 2.

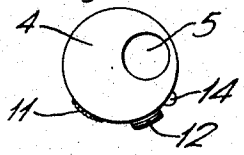


Fig. 3.

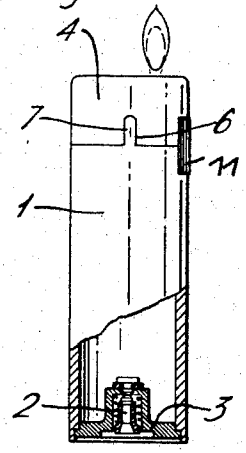


Fig. 5.

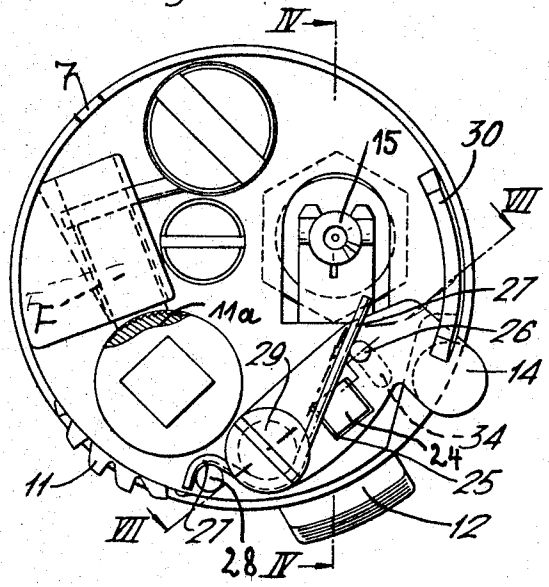
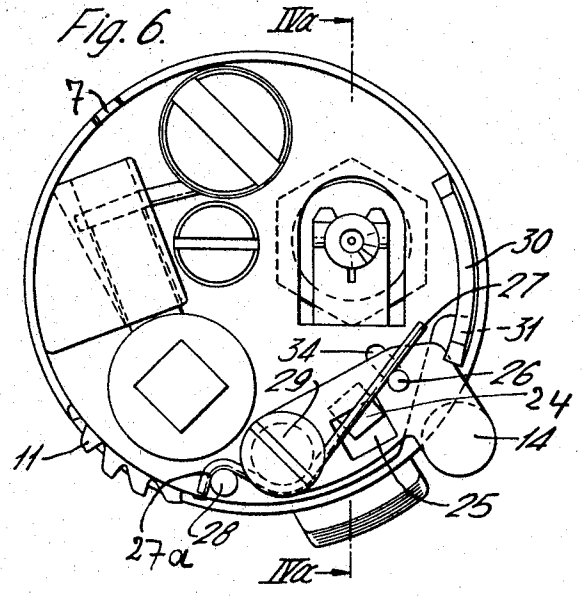


Fig. 6.



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Fig. 4.

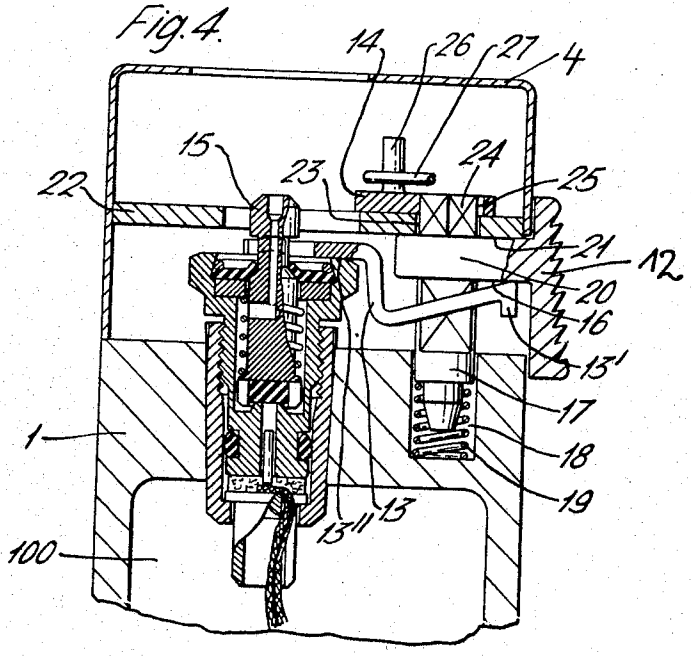
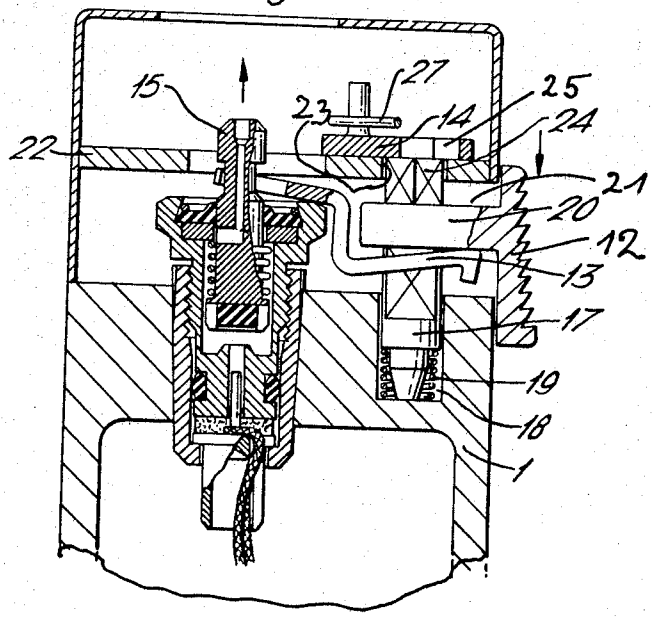


Fig. 4a.



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Fig. 7.

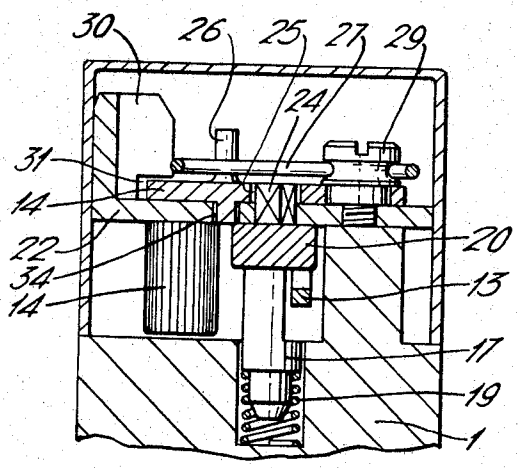
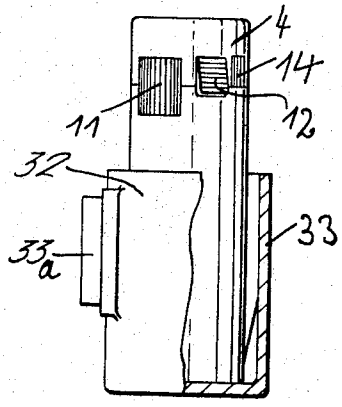


Fig. 8.



United States Patent Office 3,328,980 Patented July 4, 1967

3,328,980

GAS LIGHTER

Ludwig Reim, Nurnberg, Germany, assignor to Gebruder Kollisch AG., Nurnberg, Germany

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Claims priority, application Germany, Mar. 19, 1964, K 52,435
5 Claims. (Cl. 67—7.1)

The present invention relates to a lighter and, more specifically, a gas lighter having a tank for liquid butane gas and being equipped with a filling valve and a burner valve.

It is an object of this invention to provide a lighter of the above mentioned type which can be fully operated with one hand.

It is another object of this invention to provide a one-hand operable lighter in which all actuating elements are located adjacent to each other.

It is still another object of this invention to provide a simple one-hand operable lighter which is easy to operate and inexpensive to manufacture.

These and other objects and advantages of the invention will appear more clearly from the following specification in connection with the accompanying drawings, in which:

FIG. 1 is an elevational view of a lighter according to the present invention.

FIG. 2 is a top view of the lighter of FIG. 1.

FIG. 3 shows the lighter of FIG. 1 with the lower portion of the lighter wall sectioned to illustrate the lighter bottom construction.

FIG. 4 illustrates on a somewhat larger scale than FIGS. 1 to 3 a longitudinal section through the head of the lighter according to the invention, said section being taken along the line IV—IV of FIG. 5 and shows the lighter head in its ineffective position.

FIG. 4*a* is a section similar to that of FIG. 4 but showing the lighter head in its effective or burning position.

FIG. 5 is a top view of the arrangement shown in FIGS. 4 and 4*a* but with the top cap removed, the lighter being in its ineffective position.

FIG. 6 is a top view similar to that of FIG. 5 but showing the lighter in its effective or burning position.

FIG. 7 is a section taken along the line VII—VII of FIG. 5.

FIG. 8 shows a housing with a magnet for receiving the lighter according to the invention.

The lighter according to the present invention is characterized primarily in that for purposes of controlling the burner valve, it is equipped with a combination pressure key switch which for purposes of actuating a nozzle lifter comprises a pressure key preferably equipped with a return spring. This pressure key has associated therewith a resilient locking stop key provided with a recess for a locking member. A lighter according to the present invention is furthermore characterized in that the pressure keys are arranged at the outer circumference of the lighter housing in close relationship to each other while within the range of said pressure keys there is provided a flint actuating member. The mechanism just mentioned is covered by a removable cap having an opening for the flame.

Referring now to the drawings in detail, the lighter shown therein comprises a tank **1** having a bottom plate **3** on which is mounted a filling valve **2** which is welded to the tank bottom plate, for instance by rotation welding. The lighter is furthermore provided with a protective cap **4** which covers the control mechanism to be described in detail further below. Recess **6** is provided

in cooperation with a spring nose **7** on tank body **1** to locate and guide cap **4** with regard to the tank body **1**. Recess **8** is intended to accommodate a button **11** for actuating the ignition means. Recess **9** accommodates the pressure key **12** for a nozzle lifter **13**, and recess **10** is provided for the outer end of a stop lever **14**.

Nozzle lifter **13** is adapted to actuate the burner nozzle **15**, e.g. in a manner and for the purpose disclosed in assignee's copending application Ser. No. 385,408, filed July 27, 1964 (inventor Projahn). Pressure key **12** has a flange **20** the lower surface **16** of which is adapted to engage the outer end of nozzle lifter **13**. Pressure key **12** has furthermore connected to the bottom side **16** of flange **20** a guiding bolt **17** which is guided in a bore **18** of tank body **1**. Arranged in the bottom of bore **18** is a spring **19** which acts upon bolt **17** and through the latter continuously urges flange **20** into engagement with the bottom surface **21** of a head plate **22**. Head plate **22** has an opening **23**, for instance of square cross section for slidably receiving a correspondingly shaped extension **24** connected to flange **20** of pressure key **12**. As will be seen from FIGS. 4 and 5, extension **24** will, in FIG. 4 position of the drawing, extend into an opening **25** (see also FIG. 5) of stop lever **14**. As will also be seen from the drawing, stop lever **14** has connected thereto a bolt **26** (FIGS. 4 to 6) extending upwardly and downwardly from said stop lever **14**. Bolt **26** has a double purpose inasmuch as its upper portion serves as abutment for one end of a spring **27** which continuously urges stop lever **14** to move in clockwise direction from its FIG. 5 position to its FIG. 6 position. The lower end of bolt **26** is guided in a guiding slot **34** of head plate **22** to prevent stop lever **14** from swinging out about the axis of pivot **29** beyond the periphery of lighter **1** thereby permitting the mounting of protective cap **4**. The other end **27***a* of spring **27** engages bolt **28** carried by head plate **22** so as to anchor the said spring end **27***a*.

As will be seen from FIG. 7, head plate **22** has an upwardly extending wall or flag **30** with a slot **31** for guiding stop lever **14**.

OPERATION

In order to operate the lighter according to the present invention, first key **12** is pushed downwardly. As a result thereof, locking extension or tooth **24** is withdrawn from opening **25** of stop lever **14** so that spring **27** turns lever **14** outwardly in clockwise direction. This position is shown in FIG. 6. In this way, the return of key **12** is blocked. When key **12** is moved downwardly, its surface **16** presses arm **13'** of nozzle lifter **13** downwardly so that end **13''** of lever **14** engages and lifts nozzle **15** so that the latter is opened. The next operation consists in the actuation of the element **11** which latter acts upon ignition wheel **11***a* so as to cause the same to strike a spark from flint F until a flame **35** is formed (FIG. 1). After the flame has served its purpose, stop lever **14** is pressed inwardly whereupon spring **19** presses pressure key **12** upwardly and thus pushes the extension member or square head **24** again into opening **25** of stop lever **14**. Lever **14** will in this way again be held in its locking position shown in FIG. 5. The lighter according to the invention is then in its ineffective position and ready for the next use. The lighter according to the present invention due to its one-hand operation is particularly practical for use in a motor car so that the driver can keep one hand on the steering wheel. When used in a car, the lighter may be removably inserted in a housing **33** with a magnet **33***a* which will hold housing **33** at any convenient place on the metal dashboard or other metallic wall portion of the car.

It is, of course, to be understood that the present invention is, by no means, limited to the particular construc-

tion shown in the drawings but also comprises any modifications within the scope of the appended claims.

What I claim is:

1. A gas lighter, especially cigarette lighter, having a burner valve with a liftable nozzle and also having lifter means operatively connected to said nozzle and movable from an ineffective position to an effective position to thereby lift said nozzle from an ineffective position to an effective position, which includes: a fuel tank supporting said burner valve, housing means mounted on said tank and encasing said burner valve, first manually operable means mounted on said tank and arranged inside said housing means and having means outside the housing for selectively moving said first manually operable means from a first position to a second position, said first manually operable means being operatively connected to said lifter means so as to move said lifter means and said nozzle from their ineffective position to their effective position upon movement of said first manually operable means from its said first to its said second position, spring means biasing said first manually operable means toward its said first position, blocking means mounted on said tank arranged within said housing adjacent said first manually operable means and adapted in response to said first manually operable means moving to its second position to move into position to block first said first manually operable means in its said second position, second spring means biasing said blocking means toward blocking position, and second manually operable means connected to said blocking means and operable from the outside of said housing means for moving said blocking means out of blocking position to permit said first manually operable means to return to its first position and to thereby permit said lifter means and said nozzle means to return to their ineffective position.

2. A gas lighter according to claim 1, in which said first and second manually operable means respectively include first and second manually operable pushbutton means arranged on the outside of said housing means adjacent each other, said lighter also including an ignition wheel and actuating means for the latter arranged on the outside of said housing near said first and second pushbutton means.

3. A lighter according to claim 1, in which said blocking means comprises a lever pivoted to said housing and having a passage therethrough, said first manually operable means comprising extension means which is received in said passage means when said blocking means is out of blocking position and said first manually operable means is in its said first position, said extension means being drawn out of said passage means when said first manually operable means is moved into its said second position so said second spring means will move said lever into position to engage said extension means and block said first manually operable means in its said second position.

4. A gas lighter according to claim 3 in which said tank includes supporting means on the upper end supporting said first manually operable means and said lever, said lever having a pin projecting from the bottom, and said supporting means having a slot receiving said pin so as to limit the pivotal movement of said lever on said supporting means.

5. A gas lighter according to claim 4 in which said supporting means comprises a wall portion overlying said lever to support the lever against the thrust of said first spring means when said lever is in blocking position.

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EDWARD J. MICHAEL, *Primary Examiner.*