

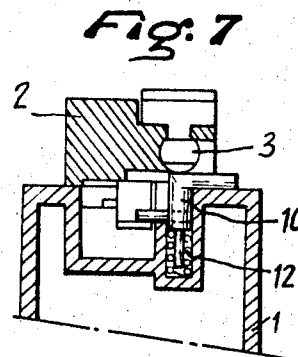
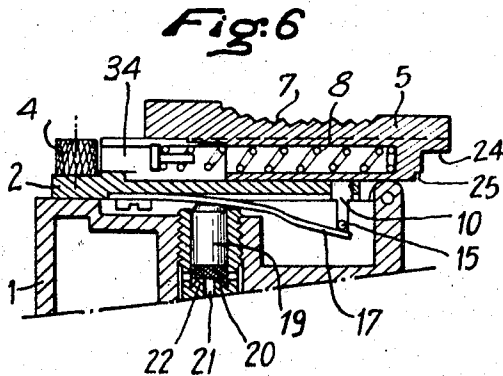
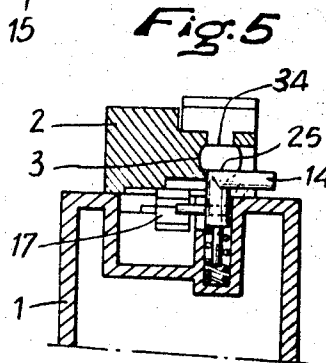
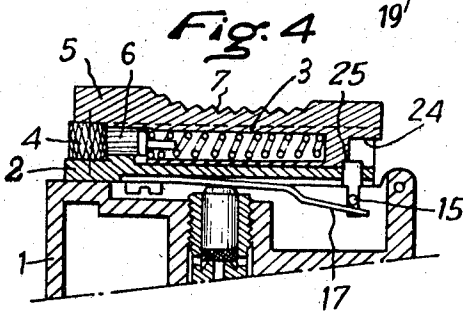
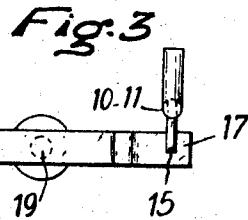
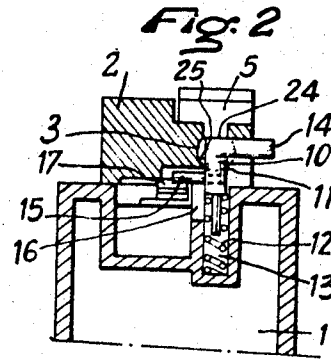
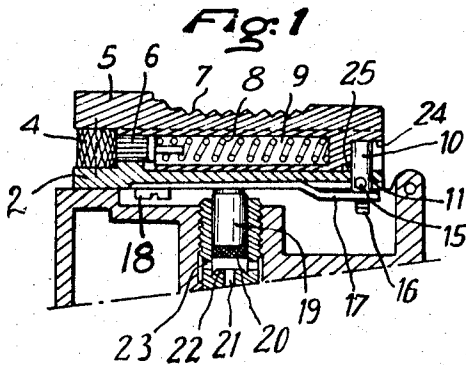
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MECHANISM FOR GAS LIGHTERS

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MECHANISM FOR GAS LIGHTERS

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Continuation of application Ser. No. 615,724, Feb. 13, 1967. This application July 15, 1968, Ser. No. 751,667

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Int. Cl. F23d 11/36; F23q 2/16

U.S. Cl. 431—153

7 Claims

ABSTRACT OF THE DISCLOSURE

A gas lighter wherein the flint is fitted with its spring inside a slide so that upon retraction of the slide the flint is released and can be changed. The retraction of the slide being performed by the collapsing of a movable stop, the latter closes the output of the gas as soon as the slide has receded by a small amount while the cover the opening of which normally controls said output, is still closed. Thus, the flint can be changed without any escape of gas due to the opening of the cover.

This application is a continuation of Ser. No. 615,724, filed Feb. 13, 1967, now abandoned.

The present invention relates more particularly to the gas lighters of the type wherein the gas is shut off by closing the cover of the lighter, while a flint-urging spring is fitted in a slide housed underneath said cover. In such lighters, the slide engaging a movable stop compresses generally said spring in the direction of the flint, so as to urge the latter against the knurled wheel and simultaneously said slide covers the location of the flint and holds the knurled wheel in position with reference to its axis.

When it is desired to replace a worn flint, it is sufficient to make the movable stop recede whereby the slide is thrust outwardly in a direction facing away from the knurled wheel by the spring which had been previously compressed by said slide.

The location of the flint is thus uncovered and it is possible to provide for a replacement of the worn flint by a fresh one. However, throughout the duration of said operation the cover of the lighter is of necessity open, so that some gas may escape.

In order to cut out said loss of gas, various auxiliary contrivances have already been proposed for controlling the gas output with a view to cutting out in a manner independent of the movements of the cover the output of gas. Apart from the complexity of the mechanism thus designed and consequently apart from the increase in the cost price of the lighter involved thereby, such contrivances do not protect the user of the lighter against his forgetting to shut off the gas and in such cases gas escapes during the change of the flint.

Now, the present invention has for its object a gas lighter of the above-disclosed type wherein the flint-urging spring is fitted in a slide adapted to be shifted between a normal operative position and a retracted position which allows replacing the flint. The novelty of the invention resides in that a part associated with the slide is operatively connected with a member closing the gas outlet in a manner such that the gas output is cut off whenever said slide is in its retracted flint-replacing position.

Furthermore, said invention provides the following auxiliary improvements:

In a lighter according to the invention as just defined assuming the slide is locked in its operative position by a movable stop, said stop engages a lever or blade spring controlling the flap valve closing the gas outlet in a

manner such as to provide a cutting off of the gas outlet whenever the movable stop is brought into its slide-releasing position;

In the lighter disclosed in the preceding paragraph, one at least of the associated bearing surfaces provided between the slide and the movable stop is designed in a manner such that said stop may enter a stable intermediate position between its two extreme positions ensuring respectively the operative locking of the slide for normal operation of the lighter and the release of said slide, said intermediate position being such that the stop still cuts off the output of gas through the agency of said lever controlling the closing flap valve and also locks the slide which has executed under the action of the flint-urging spring a translational movement of a predetermined reduced amplitude urging it away from the knurled wheel. Said arrangement allows a cleaning of the mechanism and in particular of the knurled wheel without any loss of gas.

The invention will be readily understood from a reading of the following description, reference being made to the accompanying drawings wherein—

FIGS. 1 and 2 are sectional views of the upper portion of a lighter incorporating the improvements according to the invention, the cover, pressure reducer for the gas and burner not being illustrated since they form no part of the present invention.

FIG. 3 is a view from above of the movable stop and of the lever or spring controlling the gas outlet.

FIGS. 4 and 5 which are cross-sections similar to those of FIGS. 1 and 2 show the intermediate position of the movable stop corresponding to a partial release of the slide.

FIGS. 6 and 7 which are cross-sections similar to those of FIGS. 1 and 2 show the extreme position of the movable stop corresponding to a complete release of the slide.

It is apparent, from inspection of the drawings, that the body 1 of the gas lighter carries a block 2 in which is formed a slide-way 3, through milling. Through said block, there passes a spindle which is not illustrated and which carries the knurled wheel 4 adapted to be driven into rotation by the operator. The slide 5 covers the top of the knurled wheel 4 and the flint 6 resting on the block 2 and is provided in its upper surface with a series of notches 7 which allow a better engagement of a finger of the operator when the latter returns the slide into its starting position.

The flint-urging spring 8 is carried in a housing 9 formed in the slide 5. The latter engages at its rear end a movable stop 10 adapted to move in a plane perpendicular to the direction of movement of the actual slide.

The movable stop includes a cylindrical upstanding section 11 resting on a coaxial spring 12 and guided therewith in a recess 13 in the body 1. At its upper end opposed to the spring, the cylinder 11 is rigid with a stud 14 the axis of which is perpendicular to that of said cylinder, said stud 14 projecting rearwardly with reference to the block 2, so as to allow the operator to depress said stud and stop.

A further stud 15 radially fitted on the cylindrical section 11 projects towards the inside of the mechanism and slides together with the movable stop 10-11 in the vertical slot 16 provided for this purpose in the body 1.

As mentioned hereinabove, FIGS. 1 and 2 show the lighter after removal of its cover. The spring or lever 17 controlling the gas output and secured to the block 2 by a screw 18 is shown in its inoperative position. The actual outlet closing member 19 is urged upwardly against the spring 17 by the packing 20 subjected in its turn to the pressure of the gas passing in an expanded condition out of the channel 21 formed in the middle of the closing seat 22. The gas passing through the ports 23 formed radially

of the channel 21 above the seat 22 enter then a further channel leading it to the burner which is not illustrated. At such a moment, the stud 15 is almost in contact with the spring 17.

FIG. 3 is a view from above of the arrangement including the spring 17, the movable stop 10-11 and the stud 15 on the latter.

FIGS. 6 and 7 illustrate the arrangement in its extreme position allowing a replacement of the flint.

The location of the flint at 34 is entirely released by the retracted slide and the gas outlet is closed by the spring 17 shifted by the stud 15 into the movable stop 10. The downward movement imparted to the latter releases the rear end of the slide 5 which, being subjected to the thrust of the flint-urging spring 8, recedes suddenly and engages the inside of the cover, which is not illustrated, while the location 34 of the flint is released as mentioned since the stud 15 has followed the downward movement of the stop 10. This deforms the spring 17 and causes it to engage the closing member 19 which in its turn urges the packing 20 onto the seat 22 and closes the gas outlet channel 21. Thus, the gas output is closed automatically at the very moment at which the slide has been shifted with a view to changing the flint.

When the flint has been inserted, it is sufficient to urge the slide back into its starting position by shifting one's finger over the notched surface 7. The movable stop 10 is then urged upwardly by the cooperating spring 12 so as to return into its normal position underneath the shoulder 24 formed on the slide 5. The latter is thus locked in its normal position by the stop and the stud 15 which has risen with the movable stop acts no longer on the spring 17 which returns into its normal inoperative position illustrated in FIG. 1. This releases the gas output which can be closed again only upon closing of the cover.

FIGS. 4 and 5 illustrate the intermediate position for which the slide 5 still covers the flint 6 and the knurled wheel 4, the movable stop 10 not having then completed its downward motion.

The shouldered section 24 of the slide 5 is stepped and the stop 10 engages for this intermediate position the lower step 25. The travel of the stop is then sufficient for it to depress the spring 17 through the agency of the stud 15 whereby the gas outlet is closed while the shifting of the slide remains of a reduced amplitude. It is possible for this intermediate position to close the lighter cover so as to cut out any possible output of gas before complete return to a normal operative position.

What I claim is:

1. In a gas lighter, the combination of a gas-containing body provided with a gas outlet at its upper end, a block carried by said body, a slide adapted to be shifted transversely over said block between two extreme positions and provided with a longitudinal blind bore opening forwardly, a flint resting on the block in front of the opening of said blind bore, a knurled wheel carried revolvably by the block to the front of the flint, a spring fitted in said blind bore to the rear of the flint and urging it forwardly towards the knurled wheel, means holding normally the slide in its front extreme position for which the spring-urged flint engages the knurled wheel, a projection rigid with the front of the slide adapted to cover the flint when the slide is in its front extreme position and to release said flint to allow its change when the slide is in its rear extreme position, a valve adapted to close the gas

outlet, means ensuring normal control of the valve, and means adapted to release the slide to make it recede into its rear extreme position under the thrust of the flint-urging spring and thereby allow replacement of the flint and a member through which last-mentioned means when operative close the gas outlet valve.

2. A gas lighter as claimed in claim 1, wherein the slide releasing means are constituted by a downwardly shiftable stop engaging normally the rear end of the slide to lock the latter in its front extreme position, the downward shifting of the stop releasing the slide and operating last-mentioned member.

3. A gas lighter as claimed in claim 1, wherein the slide-releasing means are constituted by a downwardly shiftable stop engaging normally the rear end of the slide to lock the latter in its front extreme position, the downward shifting of the stop releasing the slide and operating last-mentioned member as soon as said stop has been depressed slightly into an intermediate position for which it locks the slide after a slight rearward shifting thereof into an intermediate position under the action of the flint-urging spring to thereby release the knurled wheel with reference to the flint.

4. In a gas lighter of the type having a lighter body, a gas outlet through which gas is adapted to be admitted from a reservoir to a burner, a spark generating means including a housing containing a replaceable flint urged against a knurled wheel, the improvement comprising,

(A) movable means associated with said housing and adapted to assume a first position for the normal operation of said lighter and a second position for rendering said housing accessible for the replacement of flint,

(B) closing means associated with said gas outlet and adapted to assume an open position allowing passage of gas through said outlet and a closed position sealing off said outlet to prevent passage of gas therethrough, and

(C) connecting means adapted to be actuated by said movable means and operatively connected with said closing means for permitting said closing means to assume its said open position when said movable means is in its said first position and for holding said closing means in its said closed position when said movable means is in its said second position.

5. A gas lighter as defined in claim 4, wherein said movable means is slidably mounted on said body and is adapted to be linearly displaced from one of its said positions into the other.

6. A gas lighter as defined in claim 4 including a spring urging said movable means into said second position, said connecting means includes a stop means adapted to hold said movable means in said first position against the force of said spring, said connecting means is manually operable to withdraw said stop means and permit said spring to displace said movable means from said first position into said second position.

7. A gas lighter as defined in claim 6, wherein said spring is adapted to urge said flint against said knurled wheel when said movable member is in its said first position.

References Cited

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