Oct. 26, 1954 I. FLORMAN 2,692,490

LIGHTER

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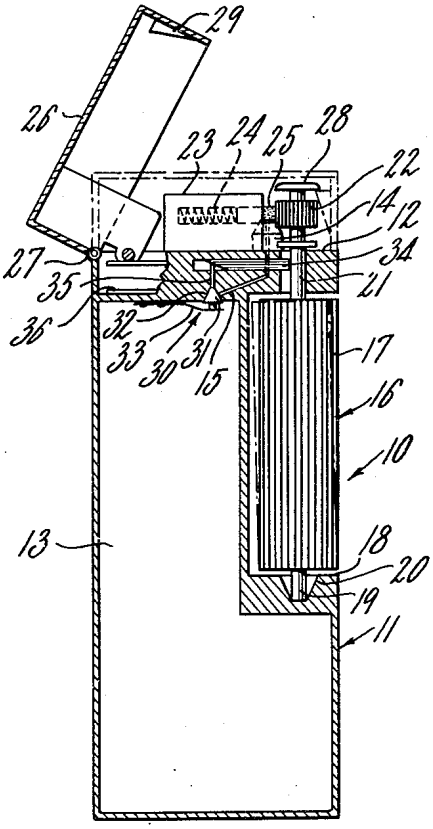

FIG. 1

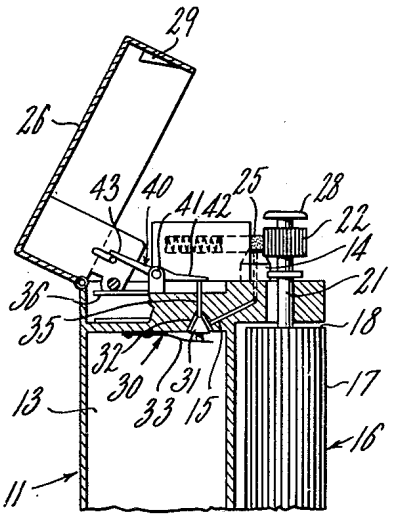

FIG. 2

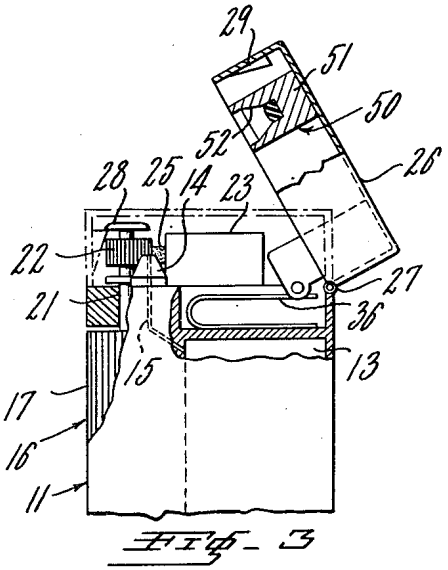

FIG. 3

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LIGHTER

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1

The present invention relates to cigarette or cigar lighters and more particularly to a manually operable lighter of the aforesaid type employing a gaseous medium.

An object of the present invention is to provide means rendering possible the obtainment of a light from a gaseous medium by a simple manual operation requiring a minimum of skill and dexterity.

Another object of the present invention is to provide means assuring safe storage of the aforesaid gaseous medium until such time as it is desired to ignite said medium to obtain a flame for lighting a cigarette, cigar or the like.

A further object of the present invention is to provide means affording the storage of the gaseous fuel to be ignited by the lighter in an airtight chamber and subsequently facilitating the ignition of said fuel in a highly economical manner wherein a minimum of said fuel is permitted to escape unignited into the atmosphere.

It is a still further object of the present invention to provide means of the aforesaid character in which the gaseous medium is automatically withdrawn from the storage chamber and brought into condition for ignition in response to the movement of a cover or closure for the lighter.

It is a still further object of the present invention to provide means of the aforesaid character in which a first manual operation brings the gaseous fuel or medium in condition for ignition and another manual operation effects the ignition of the fuel or medium.

Briefly described, the present invention provides a lighter which comprises a casing having a top and provided with a chamber for storing a supply of a gaseous medium or fuel. A nozzle is connected to the casing top and in communication with the storage chamber.

Suitable igniting means are arranged in operative relation to the nozzle for bringing the gaseous medium to ignition at the nozzle, the igniting means including an operating roller movable upon application of pressure thereto.

A cover is provided for the nozzle and igniting means and mounted on the casing for movement into and out of operating position, the cover being normally biased into the operating position by a suitable spring. Respective interengaging means on the cover and on the operating roller normally maintain the cover out of the operating position and upon movement of the operating roller release the cover for movement to the operating position. A suitable closure means is

2

arranged in operative relation with respect to the nozzle and actuable upon movement of the cover into the operating position to release the gaseous medium through the nozzle.

Accordingly the gaseous fuel or medium can be brought into condition for ignition and subsequently ignited by manually operating the aforesaid operating roller.

The above objects and brief description of the present invention will best be understood by reference to the specification in conjunction with the drawing, wherein:

Fig. 1 is an elevational view, with parts shown in section and broken away, of a first embodiment of a lighter constructed according to the present invention;

Fig. 2 is a fragmentary elevational view, with parts shown in section and broken away, of a second embodiment constructed according to the present invention;

Fig. 3 is a fragmentary elevational view, with parts broken away and shown in section, of a third embodiment constructed according to the present invention.

Referring now with particularity to Fig. 1, there is shown the lighter 10 constructed according to the present invention which includes a casing or container 11 having a top 12, the casing being provided with a chamber 13 for the storage therein of a supply of a gaseous fuel or medium.

Mounted on the casing top 12 of the container 11 is a nozzle 14 for the withdrawal therethrough and combustion thereat of the gaseous fuel or medium. The nozzle 14 is connected in communication with the chamber 13 by means of the conduit 15 provided therebetween.

Carried on the casing 11 is an igniting device 16 which is arranged in operative relation with respect to the nozzle 14. The igniting structure comprises an operating roller 17 housed within a suitable recess 18 provided in the casing 11. Dependingly carried by the roller 17 is a stub shaft 19 which is receivable within the frustro-conical bearing socket 20 to thereby mount the roller 17 for rocking movement into a predetermined position, illustrated by the broken lines of Fig. 1.

Projecting upwardly from the operating roller 17 through the adjacent portions of the casing 11 is an extension 21 which carries a flint wheel 22. Mounted on the casing top 12 is a flint holder 23 provided with a spring 24 for biasing the flint 25 into contact with the flint wheel 22 to thereby provide a spark upon rotation of the flint wheel.

Pivotally supported on the casing top 12 is a

cover 26 which is movable into a position enclosing the nozzle 14, flint wheel 22 and the flint carriage 23, the enclosing position being illustrated by the broken lines of Fig. 1. As clearly illustrated the cover 26 is pivotally supported for movement about an axis transverse of the casing 11 by means of the hinge 27.

Operatively connected to the cover 26 is a spring 36 which normally biases the cover into an operating position, illustrated by the full lines of Fig. 1.

Respective interengaging elements are provided on the cover 26 and on the extension 21 of the operating roller 20 for maintaining the cover out of the operating position and in the position indicated by the broken lines of Fig. 1. The interengaging means includes a latch or detent 28 secured to the extension 21 above the flint wheel 22 and a ledge or catch 29 provided in the cover 26.

Suitable closure means 30 are arranged in operative relation to the nozzle 14 and are actuable upon movement of the cover 26 into the operating position to release the gaseous medium through the nozzle. As illustrated, the closure or operable means 30 includes an outlet control valve 31 engageable with the seat 32 provided in the end or outlet of the conduit 15 adjacent the chamber 13. The valve 31 is biased into engagement with the seat 32 by means of a leaf spring 33 which bears against the valve.

Disposed transversely of the casing is an operating member 34 which has one end bearing against the extension 21 and has the other end beveled and engaging the stem 35 of the valve 31. Accordingly upon moving the operating roller into the position illustrated in the broken lines of Fig. 1, the operating member 34 is displaced to the left to thereby urge the valve 31 out of engagement with the seat 32.

Normally the lighter 10 is carried about with the cover 26 in the non-operating or closed position. When it is desired to obtain a light, the operating roller 17 is moved into the broken line position thereby disengaging the latch or detent 28 from the ledge or catch 29 and permitting the cover 26 to swing into the operating position.

Simultaneously the valve 31 is moved out of the constricting position with respect to the conduit 15 and the gaseous medium contained within the chamber 13 flows outwardly through the nozzle. Upon subsequently rotating the flint wheel 22, a spark is provided for igniting the gaseous medium. After obtaining the light, the cover is again urged into the non-operating or enclosing position and the detent 28 once again engages the catch 29 to maintain the cover closed.

In Fig. 2 there is shown a modification in which the valve 31 is directly actuated in response to the movement of the cover.

In this embodiment, the operating member 34 between the extension 21 and the valve stem 35 is replaced by a pivoted bell crank lever 40 which is rotatable about the pivotal axis 41 and has one arm 42 bearing against the valve stem 35 and has the other arm 43 slidably connected to the cover. Accordingly upon counter-clockwise rotation of the bell crank lever 40 about the pivot 41 from the position illustrated in Fig. 2, the valve 31 of the closure means 30 is permitted to return to the constricting position in engagement with the seat 32.

The counter-clockwise movement of the bell crank lever 40 is effected in response to the

pivotal movement of the cover 26 from the operating position illustrated to the non-operating or enclosing position illustrated in Fig. 1 in phantom. Conversely upon movement of the cover from the enclosing position to the non-enclosing position the bell crank lever is rotated in a counter-clockwise direction about the pivot 41 to urge the valve out of constricting relation to the conduit 15. In actually using the lighter illustrated in Fig. 2, it is merely necessary to rock the operating roller 17 inwardly in the recess 18 whereupon the detent 28 is disengaged from the catch 29 and the cover swings to the operating position.

In response to the swinging movement of the cover to the operating position, the chamber 13 is brought into communication with the nazzle and upon subsequently rotating the flint wheel 22 a light is obtained.

Referring now with particularity to Fig. 3 there is shown a further modification of the present invention in which the valve 31 and associated components are replaced by a snuffer assembly 50 secured interiorly of the cover 26. The snuffer assembly 50 includes a cap 51 provided with a downwardly opening tapered socket which is shaped complementary to the nozzle 14 and engageable thereabout in the closed position of the cover 26, which is illustrated in the broken lines of Fig. 3.

Fixedly secured within the socket is a resilient disk, preferably fabricated of a rubber-like material, which is engageable about the nozzle opening and constricting the latter when the cover is moved out of the operating position and into the non-operating position.

In using the embodiment illustrated in Fig. 3, it is merely necessary to urge the operating roller inwardly of the casing whereupon the cover swings to the operating position under the action of the spring 36. The snuffer assembly 50 is thereby brought out of constricting relation with respect to the nozzle and the gaseous medium flow outwardly from the latter, and thereafter ignited by actuation of the ignition structure 16.

It is apparent to one skilled in the art that the flint wheel can be replaced by any other suitable means for effecting the ignition of the gaseous medium. For example, a catalytic action or an electric action can be employed to ignite the gaseous medium.

While several preferred embodiments of the invention have been shown and herein described, it will be understood that the same are capable of modifications without departure from the general scope and spirit of the invention as defined in the claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent, is:

1. A lighter comprising a casing having a top, chamber means provided in said casing for storing a supply of a gaseous medium, nozzle means carried on said casing top, conduit means connecting said chamber means in communication with said nozzle means, igniting means carried on said casing in operative relation with respect to said nozzle means for bringing said gaseous medium to ignition at said nozzle means, said igniting means including an operating roller movable upon application of pressure thereto, a cover for said nozzle and igniting means and mounted on said casing for movement into and out of an operating position, spring means operatively connected to said

cover for urging the latter into said operating position, respective interengaging means on said cover and on said operating roller for maintaining said cover out of said operating position and, upon movement of said operating roller to release said cover to said operating position, operable means arranged in said conduit means and actuable upon movement of said cover into said operating position to release gaseous medium from said chamber means through said nozzle means, said operable means including a valve operating said conduit means and movable into and out of constricting position with respect to the latter, means biasing said valve into said constricting position, and means operatively connected to said operating roller for moving said valve out of said constricting position in response to movement of said operating roller.

2. A lighter comprising a casing having a top, said casing being provided with chamber means for storing a supply of gaseous medium, nozzle means communicating with said chamber means and extending from the latter to the top of said casing, igniting means carried by said casing and operable to bring said gaseous medium when discharged through said nozzle means to ignition, a cover enclosing said nozzle means and mounted on said casing for movement relative to the latter, displaceable roller means supported by said casing and adapted to actuate said cover, said igniting means and said nozzle means, whereby fluid flow through said nozzle means may be regulated by said roller means, said nozzle means including valve means in operative connection with said displaceable roller means.

3. In a lighter having ignition means, nozzle means and a swingable cover therefor; in combination a fluid pressurized chamber including an outlet control valve communicatable with said nozzle means, roller means for actuating said ignition means, said roller means being rotatable about an axis and being also movable sidewards in transverse direction to said axis, means connected to said roller means and to said cover, respectively, for operating said cover when moving said roller means in said transverse direction, and displaceable means operatively connected to said roller means and simultaneously actuatable with said cover for operating said valve.

4. In a lighter according to claim 3, wherein said displaceable means includes a member shiftable by said roller means, said valve being operatively connected with said member to thereby open and close said nozzle means when said roller is moved in said transverse direction of its axis.

5. In a lighter according to claim 3, wherein said cover includes a snuffer assembly with a yieldable and displaceable disc for registry with said nozzle means.

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