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MECHANISM FOR CONTROLLING EMISSION OF GAS FROM LIGHTERS

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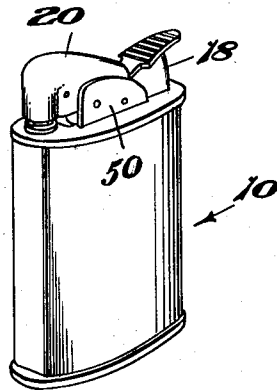


Fig. 1.

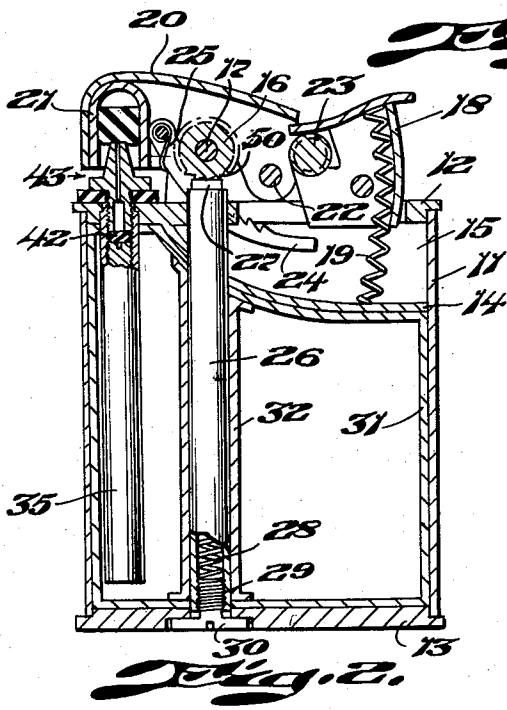


Fig. 2.

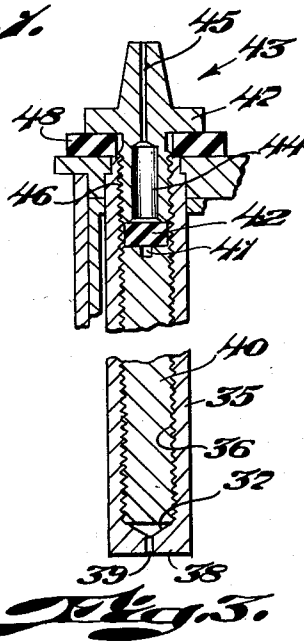


Fig. 3.

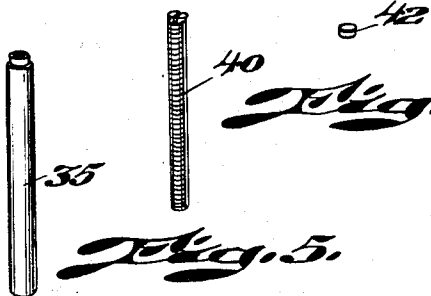


Fig. 4.

Fig. 5.

Fig. 6.

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MECHANISM FOR CONTROLLING EMISSION OF GAS FROM LIGHTERS

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4 Claims. (Cl. 67—7.1)

1

This invention relates to a pyrophoric lighter for cigars and cigarettes and more particularly to the type of lighter which has its fuel in the form of a gas under pressure.

Heretofore in the use of lighters of the type where gas was held under pressure, difficulty has been experienced in controlling the feed of the gas to the point of ignition. Valves have been utilized for such control with a loss of fuel due to leaking upon the valve wearing. Also, difficulty has been experienced in the control of the valve.

One of the objects of this invention is to provide a control for gas which is held under pressure and which is highly volatile and will pass through very small crevices or openings.

Another object of this invention is to provide a control for the gas so that the amount of gas which passes to the nozzle may be nicely controlled and adjusted.

Another object of this invention is to provide a strong and sturdy control which will not easily become damaged or get out of order.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a perspective view of the lighter constructed in accordance with this invention;

Figure 2 is a central sectional view through the lighter;

Figure 3 is a sectional view of a gas control conduit on a somewhat larger scale;

Figure 4 is a perspective view of one part of the control;

Figure 5 is a perspective view of another part of the control; and

Figure 6 is a perspective view of a still further part of the control.

In proceeding with this invention we provide a tube which is threaded internally throughout its length and provide an abutment in the tube which may be adjusted, a soft elastic member which will engage this abutment, and a nozzle which will reach down and engage the soft elastic member, the arrangement being such that the further the nozzle is turned into the tube to engage and spread the elastic member, the less may be the flow of fuel past this elastic member from the inner end of the tube toward the nozzle.

In the drawings, a casing 10 comprises side and end walls 11 with a top wall 12 and a bottom wall 13. The top wall has a sunken wall 14 providing a recess 15 for the operating mechanism.

2

A friction wheel 16 is supported on a pin or bearing 17 through ears 50 extending upwardly from the top wall and on this shaft 17 there is also pivoted a finger piece 18 which is forced upwardly by a spring 19 bottoming in the recess 15.

A snuffer cap or arm 20 carries a thimble-like snuffer 21 and is pivoted on the shaft 22 with a roller 23 located beneath the finger piece 18 so that as this finger piece is forced downwardly, the snuffer will pivot upwardly about the pin 22 and carry the rack 24 to engage the ratchet teeth on the friction wheel 16 so as to spin it in a clockwise direction (Fig. 1). A spring 25 serves to maintain this rack 24 in engagement with the ratchet wheel. A tube 26 is fixed to the top wall 12 and carries within it a sparking material usually a pyrophoric material 27 which is forced upwardly by a spring 28 which abuts a screw plug 29 having a flange 30.

A container 31 of gas under pressure has a center tube 32 which telescopically slides over the sparking material tube 26 and is held within the casing 11 by the bottom wall 13 which is held in place by the flange 30 of the screw plug 29. The gas in this cartridge, such as butane which is inflammable above 28° F., is under pressure and there is fitted into this cartridge a tube 35 which is internally threaded as at 36 throughout its length in a bore which terminates as at 37 leaving an end wall 38 with a hole 39 there-through. An abutment member 40 is also screw threaded throughout its length and is placed in the threaded bore 36 to a point adjacent the bottom wall. This is conveniently done by the slot 41 in its end for use of a screwdriver. Upon the upper end of this member 40, which may be adjusted as to position within the tube 35, we have provided an elastic soft resilient piece of material 42, which may be rubber, Neoprene, or some of the synthetic substitutes for rubber, which is of a size substantially that of the inner diameter of the threads. Gas under pressure will find its way along the threaded abutment 40 past this plug when in relaxed position. A nozzle designated 43 has a bore 44 of a substantial diameter at its inner end and a smaller bore 45 of the same diameter as the hole 39 at its outer end. This nozzle is threaded as at 46 so as to extend into the tube 35 into engagement with the elastic member 42. A flange 47 in the shape of a nut may be engaged by a wrench so as to thread the nozzle into firm engagement with the elastic member 42 and squeeze it laterally into the threads to an extent so as to block off the escape of any gas past this plug. If this plug

3

is loosened a certain amount, then a passage of gas may occur past this member and out through the nozzle. A resilient gasket 48 is positioned beneath the flange 47 on the top wall 12 so as to maintain pressure on the nozzle and hold it in the position to which it is adjusted. By this arrangement, the amount of gas escaping past the member 42 may be controlled or shut off should occasion require.

We claim:

1. A device for controlling the discharge of gas under pressure from a lighter or the like comprising an internally threaded tube having two ends, a limit means in said tube positioned near a first end thereof, an imperforate elastic member adjacent said limit means on the side thereof toward said first end, a nozzle threaded into said first end, said nozzle engaging said elastic member, said elastic member extending into said threads to control the passage of gas thereby in accordance with the force exerted by said nozzle.

2. A device as in claim 1 wherein the limit means comprises a rod threaded into said tube, said tube having an opening at its second end.

3. A device as in claim 1 wherein said tube

4

has a bottom at its second end with a restricted opening therein.

4. A device as in claim 1 wherein said tube has a bottom at its second end with a restricted opening therein of the same size as the opening through said nozzle.

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10

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