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FILLER PLUG FOR POCKET LIGHTERS

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Fig. 1.

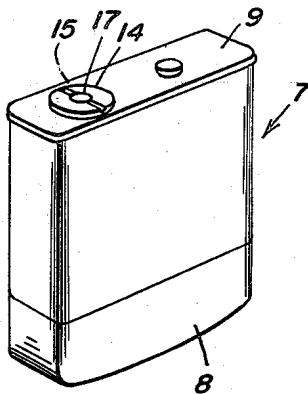


Fig. 2.

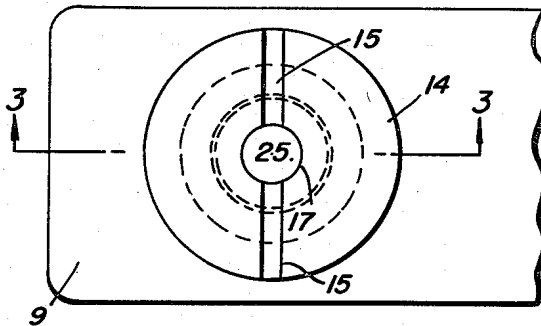


Fig. 3.

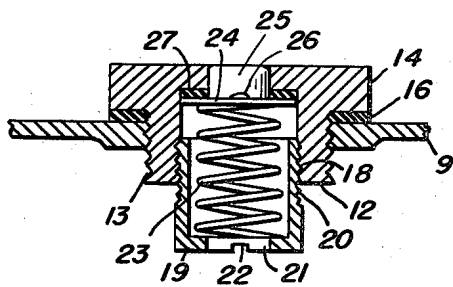


Fig. 4.

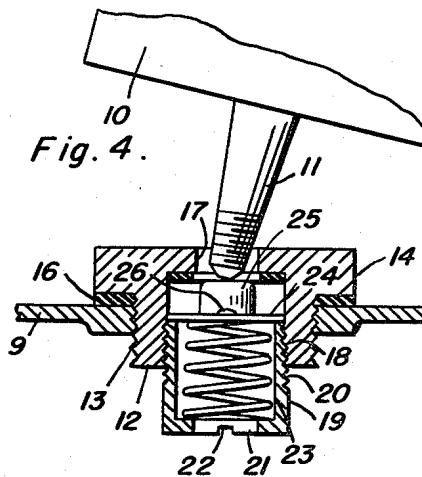


Fig. 5.

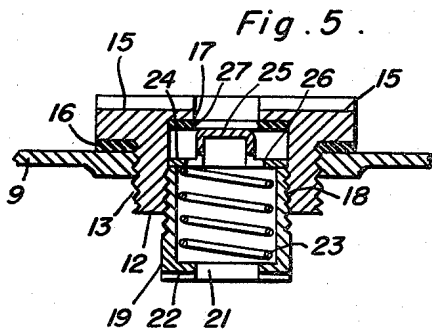
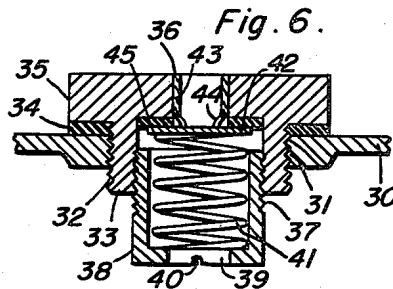


Fig. 6.



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FILLER PLUG FOR POCKET LIGHTERS

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3 Claims. (Cl. 220—86)

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The present invention relates to certain new and useful improvements in pocket and table type lighters commonly referred to in the trade as pocket lighters or cigar and cigarette lighters as the case may be, and the object of the invention is to provide a simple, efficient and practical filler plug to assist one in conveniently and readily filling the lighter with so-called lighter fluid.

More particularly, the invention is primarily designed for use in conjunction with dispensers containing lighter fluid which are placed on store counters and in public places for convenience of the public. Naturally, it is inconvenient to have to remove the usual screw plug, inject the fluid and then replace the plug.

The purpose of the present invention is to provide a filler plug which has a closing valve incorporated therein, the closing valve being available and including a press-button, the latter being situated so that by forcibly pressing the end of a rigid nozzle against same, the job of replenishing the lighter fluid is made easy.

In carrying out a preferred embodiment of the invention we provide a simple and economical screw type plug which is characterized by the plug proper and which carries a readily attachable and detachable fitting, the latter serving as a valve cage and there being a button type valve provided, the latter operable in the plug proper and the plug proper being provided with a filler hole into which the button is spring pressed when closed and not in use.

Other objects and advantages will become more readily apparent from the following description and the accompanying illustrative drawings.

In the drawings:

Figure 1 is a perspective view of a conventional type pocket lighter, so called, constructed in accordance with the principles of the present invention.

Figure 2 is an enlarged fragmentary plan view.

Figure 3 is a section on the line 3—3 of Figure 2, looking in the direction of the arrows.

Figure 4 is a sectional view based on Figure 3 and showing the manner in which the device is employed during the filling step.

Figure 5 is a view similar to Figure 4 with the nozzle removed and the button appearing in section, said view being at right angles to Figure 4 to bring out the screw driver kerfs.

Figure 6 is a view like Figure 3 showing a modified type of spring closed valve, a form which is used on larger type lighters, for instance, so-called table models.

Referring now to the drawings and first to Figure 1, the numeral 7 designates a conventional

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cigar or cigarette lighter which may be of the pocket or counter type, whichever is desired. The numeral 8 designates a cap forming a part of the lighter and the numeral 9 designates the bottom of the lighter through which the fluid from the can 10 is delivered into the container. Usually the bottom 9 in a lighter of this type has a screw hole and a simple screw plug (not shown) with a flanged and knurled grip is provided. It is necessary to remove the plug and to then insert the stiff nozzle 11 of the fluid can 10 into the then uncovered filler opening. We contemplate doing away with the usual screw plug and substituting the improved type herein shown. The plug proper is denoted by the numeral 12 and has external threads 13 which screw into the opening in the bottom 9 as shown in Figures 3, 4 and 5 particularly. A suitable finger grip 14 is provided and in addition screw driver kerfs 15 are available provided for use if and when necessary. The numeral 16 designates a gasket and 17 the centralized filler hole to accommodate the nozzle 11 as shown in Figure 4. The plug is of a hollow type and this provides a socket having internal threads 18 to accommodate a screw cup-like fitting 19. The fitting which, as stated, takes the form of a screw threaded cup is threaded as at 20 and has a central discharge opening 21 for the fluid and screw driver kerfs 22 for a small screw driver. The fitting serves as a sort of a cage for the valve and spring. The spring here takes the form of a coiled spring 23 and is fitted in the cup and bears against the disk-like portion 24 of the projectable and retractable valve. The central portion of the valve is fashioned into a button 25 and the latter is projectable and retractable in relation to the filler hole 17. The numeral 26 designates intake ports formed in the valve and the numeral 27 designates a suitable washer located in the socket of the plug and serving to affect a substantially fluid tight closure when the valve is spring closed as shown in Figure 3.

In practice the nozzle 11 is simply pressed forcibly against the button 25 and the latter is, in turn, pressed into the plug 12, compressing the spring 23. The fluid flows from the nozzle through the inlet ports 26 and is then delivered into the casing portion of the lighter by way of the discharge opening 21.

The construction is simple and the mode of application and use is equally simple. In such circumstances it seems unnecessary to dwell at greater length on secondary particulars.

Referring now to the modification of the larger

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table sized lighter, here the bottom of the lighter is denoted by the numeral 30, the same having a screw threaded hole 31 to accommodate the threads 32 on the plug 33. The numeral 34 is a packing ring and 35 denotes finger gripping portion of the plug. The plug has a central filler hole 36 and has internal screw threads to accommodate the coacting threads 37 on the inverted cup-like fitting 38. This has a discharge opening 39 and screw driver kerfs 40. The fitting serves to accommodate the heavy gauge coiled spring 41 which presses against the disk-like portion 42 of the valve. Here the valve has a tubular neck 43 and ports 44. The disk portion is pressed by the spring against the packing washer 45. The only difference in this form of the invention over that shown is that instead of using the closed end button 25 we use a hollow button in the form of a neck to receive the nozzle 11 of the fluid can. The spring in this arrangement is fairly heavy and therefore it is necessary to telescope the nozzle into the neck 43 and to press it against the disk 42 for purposes of opening the valve against tension of the spring.

A careful consideration of the foregoing description in conjunction with the invention as illustrated in the drawings will enable the reader to obtain a clear understanding and impression of the alleged features of merit and novelty sufficient to clarify the construction of the invention as hereinafter claimed.

Minor changes in shape, size, materials and rearrangement of parts may be resorted to in actual practice so long as no departure is made from the invention as claimed.

Having described the invention, what is claimed as new is:

1. A closing plug for the screw threaded filler hole of conventional-type pocket or equivalent cigar or cigarette lighters comprising a hollow externally screw-threaded plug provided at one end with a finger grip and centrally provided with a fluid inlet filler hole, said plug being, in addition, internally screw-threaded, an externally screw-threaded centrally apertured cup-like fitting screwed into the internal threads in said plug, said fitting providing, within the confines of said plug, an annular stop shoulder, a coiled spring mounted in said fitting and projecting into said plug, a disk-like valve slidably mounted in said plug and lined up for operation in conjunction with the fitting and spring, said valve having a central cylindrical protuberance and the latter being provided, adjacent said disk-valve, with orifices defining fluid inlet ports, said protuberance projecting into the filler hole in said plug and providing a convenient closure and actuating member which, in practice, is adapted to be forcibly pressed "open" by the customary nozzle on a conventional-type lighter fluid can.

2. A closing plug for the screw-threaded filler hole of a conventional-type pocket or equivalent cigar or cigarette lighter comprising a hollow externally screw-threaded plug provided at one end with a circular outstanding marginally knurled finger grip, said finger grip being provided with screwdriver kerfs and being additionally provided with a central filler hole, said hole being of a diameter appreciably less than the bore of said plug, said plug, at its opposite end, being

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internally screw-threaded, an externally screw-threaded centrally-apertured cup-like fitting screwed into the internal threads of said plug, said fitting providing, within the confines of said plug, an annular stop shoulder, the apertured end portion of said fitting being provided with screwdriver kerfs, a disk-like valve fitting snugly and slidably in the bore of said plug, said valve being provided with a central cylindrical hollow button, said button, at its point of connection with said valve, having inlet orifices, the button projecting into the aperture in said finger grip and being normally flush therewith, said finger grip limiting the outward movement of the disk valve and the aforementioned shoulder limiting the movement in the opposite direction, a packing ring situated in said plug and surrounding the filler hole in said finger grip, and a coiled spring confined in said fitting and bearing at one end against the fitting and at the opposite end against said valve.

3. A closing plug for the screw-threaded filler hole of a conventional-type pocket or equivalent cigar or cigarette lighter comprising a hollow externally screw-threaded plug adapted to thread into said filler hole and provided at its normally outer end with an outstanding circular marginally knurled finger grip, said finger grip having a central reduced aperture constituting a filler hole to accommodate the nozzle of a lighter fluid can, said finger grip being further provided with screwdriver kerfs, said plug at its inner end being internally screw-threaded, a cup-like fitting having external screw threads screwed into the internal threads of said plug, one end of said fitting projecting beyond the adjacent end of the plug, being centrally apertured and provided with screwdriver kerfs, a coiled spring located in said fitting, a disk-like valve operable in said plug, one end of said spring bearing against and serving to normally close said valve, said valve being provided with a central hollow cup-like neck, the latter being provided with orifices at its point of juncture with said valve, said neck projecting into the filler hole in said finger grip, where it is in readiness to receive and be pushed open by the nozzle of the stated lighter fluid can.

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