PATENT SPECIFICATION

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COMPLETE SPECIFICATION

Improvements in or relating to Lighters

I, ERIC WILLOUGHBY ROLLINSON, a British Subject, of the firm of Stevens, Langner, Parry & Rollinson, Chartered Patent Agents, of 5—9, Quality Court, Chancery Lane, London, W.C.2, do hereby declare the nature of this invention, (communication from Ronson Art Metal Works, Inc., a company incorporated under the laws of the State of New Jersey, United States of America, of 46—50, Center Street, Newark, New Jersey, United States of America), and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The invention relates to cigar lighters of the type which employ a fuel-containing casing into which a wick projects, and which are usually provided with a filling of absorbent material such as cotton by which the lighter fluid is carried and conducted to the wick. In lighters of the above type, access to the interior of the lighter casing is needed for replenishing the fuel supply, and it is also necessary at times to remove the absorbent filling if the wick becomes dislodged from the wick tube or when a new wick is to be inserted.

The invention is concerned with a lighter casing construction which may be readily manipulated to afford access to the interior fuel chamber for any of the above purposes, without requiring special tools or appliances, and which will still afford a sufficient seal against the evaporation of lighter fluid when the casing is closed. The invention aims to provide a casing construction as aforesaid, wherein the closure for the fuel chamber is so combined with the flint tube construction that the latter serves as a mounting for the closure, and access to the flint tube is afforded without disturbing the closure structure. Further objects and advantages of the invention will be in part obvious and in part specifically referred to in the description hereinafter contained which, taken in conjunction with the accompanying drawings, discloses certain preferred lighter casing constructions capable of operating in accordance with the invention; the disclosure however should be considered as merely illustrative of the invention in its broader aspects. In the drawings:—

Fig. 1 is a side view with certain parts cut away, of a lighter having a casing constructed to operate in accordance with the invention, the closure for the casing being shown in fuel-chamber-sealing position.

Fig. 2 is a view similar to the lower portion of Fig. 1 but showing the closure in fuel-chamber-exposing position.

Fig. 3 is a bottom plan view of the parts as they appear in Fig. 2.

Fig. 4 is a fragmentary view similar to the lower portion of Fig. 1, but showing a somewhat modified construction.

The invention is disclosed as applied to a cigar lighter having fuel casing 1 of general oval cross section, the fuel chamber within the casing being filled with absorbent material 2. A fingerpiece 3, snuffer 4 and wick tube 5 are shown as mounted on the top of the casing, the wick tube enclosing the upper end of a wick 6 which extends down into the absorbent material 2 but the above parts of the lighter need not be described in detail since they may be assumed to be of any known or appropriate construction for igniting the upper end of the wick 6. I prefer to employ a flint tube 7 which projects down through the central portion of the fuel chamber and encloses a pressure spring 8. The latter may be adjusted by means of a screw 9 which engages within a threaded sleeve 10 fixed

to the lower end of the flint tube 7. In the form shown, a bracing piece 11 extends between the flint tube 7 and the lower end of a casing 12 which receives the stem of fingerpiece 3.

In accordance with the present invention, the fuel casing 1 is provided with a charging opening which is normally covered and sealed by a closure plate 13, the latter being pressed into sealing relation with the portion of the casing which surrounds the charging opening, but the closure plate being so mounted that it can be drawn away by the user from its sealing position shown in Fig. 1, and twisted into the position shown in Figures 2 and 3, wherein it largely exposes and affords ready access to the interior of casing 1. In the illustrated form of the invention, the lower rim 14 of the casing 1, which surrounds the charging opening, is beveled as shown to provide a sharp edge, and the closure plate 13 is provided with an annular packing ring 15 of neoprene or like resilient material which is surrounded by the peripheral flange 16 of the closure plate, the ring 15 being pressed into close engagement with the rim 14 of casing 1.

The closure plate 13 is shown as provided with a central internal hub 17 which surrounds the flint tube structure above described. A compression spring 18 within this hub seats at its lower end against an annular flange 19 on the sleeve 10, and at its upper end against a packing washer 20 of neoprene or the like, the washer 20 in turn seating against the upper end wall of the hub 17. This construction mounts the closure plate slidably and rotatably upon the flint tube structure, the packing ring 20 sealing the joint, and limits the extent to which the closure plate may be moved away from the fuel casing.

Thus in the position shown in Fig. 1, the spring 18 resiliently presses the closure plate 13 into sealing relation with casing 1, but the operator may grasp the closure plate in his fingers and move it outwardly from its sealing position, against the pressure of spring 18, after which the closure plate may be twisted into the crosswise position with respect to the casing which is shown in the Figs. 2 and 3, whereupon the closure plate may be released by the user and will be held in open position by spring 18. In this position the fuel chamber in casing 1 will be largely exposed, which simplifies the operation of adding fuel to the fuel chamber, and makes it easier for the user to observe when a proper amount of fuel has been added and absorbed by the absorbent material in the different zones of the fuel chamber. Also this large exposure much facilitates the withdrawal of the absorbent material from the fuel chamber, and the proper repacking of such material into the chamber, and the adjustment or replacement of the wick, when necessary. To restore the closure plate to sealing relation, it is merely necessary to twist it back into alinement with the casing 1 and then release it so that the spring 18 forces the two parts into tight engagement. Access to the flint tube 7 for replacement of a flint may be had at all times by removal of screw 9, without disturbing the closure structure.

In Fig. 4 I have shown a somewhat modified construction wherein the sleeve 10*a* of the flint tube is provided with an annular flange 19*a* spaced inwardly from the bottom wall of the casing so as to afford an annular chamber between this flange and the head of the flint adjustment screw 9*a*, said chamber being surrounded by the hub 17*a* and serving as a receptacle for a number of replacement flints 21. The hub 17*a*, spring 18*a* and neoprene washer 20*a*, of Fig. 4, and also the unnumbered parts therein may be understood as being similar in function to the correspondingly numbered parts of Figs. 1 to 3.

While the invention has been disclosed as carried out by lighter casings of the above described specific constructions, it should be understood that changes may be made therein without departing from the invention in its broader aspects, within the scope of the appended claims.

What we claim is:—

1. A pyrophoric lighter construction comprising a casing having a fuel chamber therein and having a charging opening extending through an entire exterior wall of the casing, characterized by the fact that an interior supporting member for a pivoted closure plate is positioned within said casing and extends toward said opening, the closure plate is seated with its edge against the portion of the casing which surrounds said charging opening to close and seal said chamber, and said closure plate is mounted to afford movement along said supporting member between its seating position and a position relatively remote from the casing so that said fuel chamber may be exposed by pivoting the plate about said supporting member and spring means being provided for urging said closure plate toward the casing structure in both the fuel chamber closing and fuel chamber exposing positions.

2. A lighter construction according to Claim 1 characterized by the fact that a

to the lower end of the flint tube 7. In the form shown, a bracing piece 11 extends between the flint tube 7 and the lower end of a casing 12 which receives the stem of fingerpiece 3.

In accordance with the present invention, the fuel casing 1 is provided with a charging opening which is normally covered and sealed by a closure plate 13, the latter being pressed into sealing relation with the portion of the casing which surrounds the charging opening, but the closure plate being so mounted that it can be drawn away by the user from its sealing position shown in Fig. 1, and twisted into the position shown in Figures 2 and 3, wherein it largely exposes and affords ready access to the interior of casing 1. In the illustrated form of the invention, the lower rim 14 of the casing 1, which surrounds the charging opening, is beveled as shown to provide a sharp edge, and the closure plate 13 is provided with an annular packing ring 15 of neoprene or like resilient material which is surrounded by the peripheral flange 16 of the closure plate, the ring 15 being pressed into close engagement with the rim 14 of casing 1.

The closure plate 13 is shown as provided with a central internal hub 17 which surrounds the flint tube structure above described. A compression spring 18 within this hub seats at its lower end against an annular flange 19 on the sleeve 10, and at its upper end against a packing washer 20 of neoprene or the like, the washer 20 in turn seating against the upper end wall of the hub 17. This construction mounts the closure plate slidably and rotatably upon the flint tube structure, the packing ring 20 sealing the joint, and limits the extent to which the closure plate may be moved away from the fuel casing.

Thus in the position shown in Fig. 1, the spring 18 resiliently presses the closure plate 13 into sealing relation with casing 1, but the operator may grasp the closure plate in his fingers and move it outwardly from its sealing position, against the pressure of spring 18, after which the closure plate may be twisted into the crosswise position with respect to the casing which is shown in the Figs. 2 and 3, whereupon the closure plate may be released by the user and will be held in open position by spring 18. In this position the fuel chamber in casing 1 will be largely exposed, which simplifies the operation of adding fuel to the fuel chamber, and makes it easier for the user to observe when a proper amount of fuel has been added and absorbed by the absorbent material in the different zones of the fuel chamber. Also this large exposure much facilitates the withdrawal of the absorbent material from the fuel chamber, and the proper repacking of such material into the chamber, and the adjustment or replacement of the wick, when necessary. To restore the closure plate to sealing relation, it is merely necessary to twist it back into alinement with the casing 1 and then release it so that the spring 18 forces the two parts into tight engagement. Access to the flint tube 7 for replacement of a flint may be had at all times by removal of screw 9, without disturbing the closure structure.

In Fig. 4 I have shown a somewhat modified construction wherein the sleeve 10*a* of the flint tube is provided with an annular flange 19*a* spaced inwardly from the bottom wall of the casing so as to afford an annular chamber between this flange and the head of the flint adjustment screw 9*a*, said chamber being surrounded by the hub 17*a* and serving as a receptacle for a number of replacement flints 21. The hub 17*a*, spring 18*a* and neoprene washer 20*a*, of Fig. 4, and also the unnumbered parts therein may be understood as being similar in function to the correspondingly numbered parts of Figs. 1 to 3.

While the invention has been disclosed as carried out by lighter casings of the above described specific constructions, it should be understood that changes may be made therein without departing from the invention in its broader aspects, within the scope of the appended claims.

What we claim is:—

1. A pyrophoric lighter construction comprising a casing having a fuel chamber therein and having a charging opening extending through an entire exterior wall of the casing, characterized by the fact that an interior supporting member for a pivoted closure plate is positioned within said casing and extends toward said opening, the closure plate is seated with its edge against the portion of the casing which surrounds said charging opening to close and seal said chamber, and said closure plate is mounted to afford movement along said supporting member between its seating position and a position relatively remote from the casing so that said fuel chamber may be exposed by pivoting the plate about said supporting member and spring means being provided for urging said closure plate toward the casing structure in both the fuel chamber closing and fuel chamber exposing positions.

2. A lighter construction according to Claim 1 characterized by the fact that a

flint tube structure is provided within said casing and extends toward said opening, and said closure plate is mounted upon said flint tube structure to afford both angular and longitudinal movement of the closure plate with respect thereto to expose said chamber, said spring means being positioned to act between said closure plate and said flint tube structure.

3. A pyrophoric lighter construction according to Claim 2, characterized by the fact that a seal is provided between the closure plate and the flint tube and the end of the flint tube is accessible through the closure plate without breaking the seal between the closure plate and the casing and the flint tube.

4. The pyrophoric lighter construction substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

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