June 10, 1930. C. HARDY 1,762,980

POCKET CIGAR LIGHTER

Filed Nov. 7, 1927

Fig. 1.

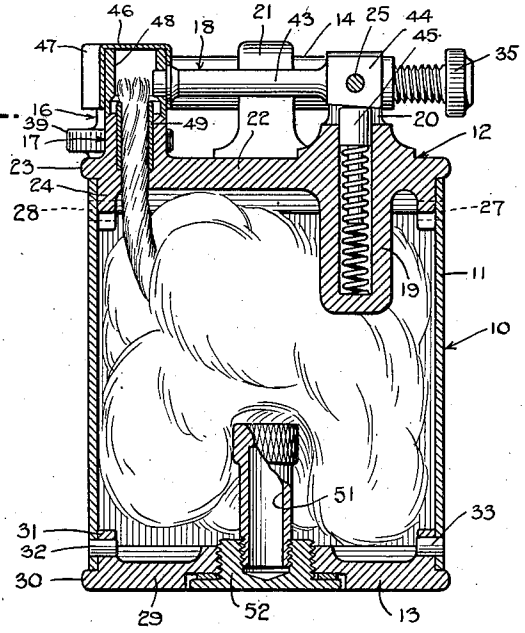


Fig. 2.

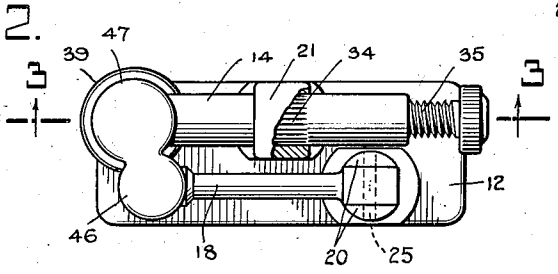


Fig. 3.

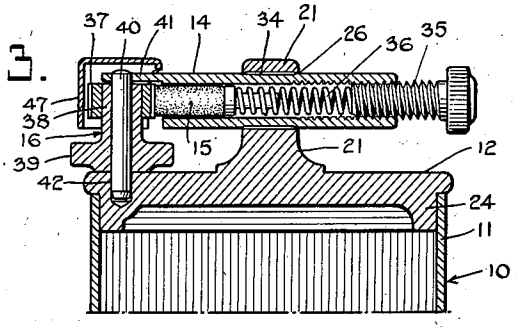
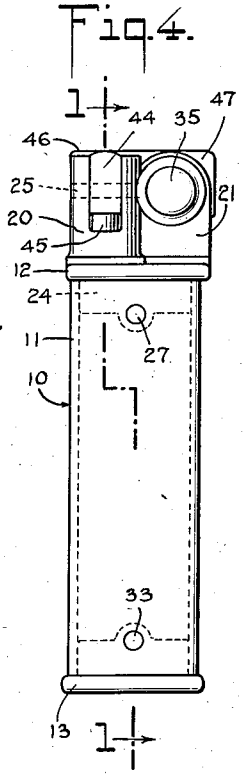


Fig. 4.



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UNITED STATES PATENT OFFICE

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POCKET CIGAR LIGHTER

Application filed November 7, 1927. Serial No. 231,569.

This invention relates to a cigar lighter, and relates more particularly to a pocket cigar lighter of the type in which a friction wheel is rotated in contact with a body of a pyrophoric alloy for producing a spark emission which serves to ignite a fuel containing wick.

In pocket cigar lighters of this class a liquid fuel is contained in a receptacle, the top or cover of which carries the operating parts of the lighter which include a wick tube, a holder for a body of pyrophoric alloy, the actuating means cooperating with the alloy for producing the spark emission, and a snuffer device cooperating with the wick. Among the prime desiderata in a cigar lighter of this type are the provision of a receptacle construction which is proof against leakage or evaporation of the liquid fuel contents thereof, the provision of a construction and assemblage of the operating parts which possesses ruggedness and reliability of action, and the provision of such an organization of all of the parts which affords ease of manufacturing, assembling and finishing operations. A prime object of my invention centers about the provision of a pocket cigar lighter in which these combined desiderata are effectively accomplished.

To the accomplishment of the foregoing and such other objects as will hereinafter appear, my invention consists in the elements and their relation one to the other, as hereinafter more particularly described and sought to be defined in the claims, reference being had to the accompanying drawings which show the preferred embodiment of my invention, and in which—

Fig. 1 is a vertical elevational view of the cigar lighter of my present invention, the same being shown in section taken in the plane of the line 1—1, Fig. 4,

Fig. 2 is a top plan view thereof with a part broken away,

Fig. 3 is a fragmentary view of the same taken in cross-section in the plane of the line 3—3, Fig. 2 and

Fig. 4 is a side elevational view thereof.

Referring now more in detail to the drawings, the pocket cigar lighter as an entirety comprises a fuel receptacle generally designated as 10 having a casing side wall 11, a cover wall 12 and a bottom wall 13 fitted thereto, the said cover wall 12 carrying the operating parts of the lighter including a holder or tube 14 containing the pyrophoric alloy 15, a friction wheel and actuating mechanism generally designated as 16, both cooperating with a wick tube 17 with which in turn cooperates a snuffer device 18.

In accordance with my present invention the cover wall 12 combined with the operating parts mounted thereon is so constructed and related to the receptacle casing as to accomplish in effective combination the desired objects of producing a leak and evaporation proof receptacle and an organization of parts which affords ease and convenience of manufacturing, assembling and finishing operations, the resulting construction possessing the desired ruggedness and reliability of action. This I accomplish by making the cover wall 12 in the form of a metal casting embodying supporting and housing means for lighter operating elements, specifically, a wick tube 17, a spring plunger housing 19 and a cooperating support 20 for the snuffer arm 18, as well as a standard or post 21 for the pyrophoric body container 14, all cast into an integral unit, and by then relating this unitary casting with the casing wall 11 in such a way as to produce a leak-proof joint therebetween.

More specifically, therefore, the cover wall 12 is made in the form of a metal casting having a substantially thick plate section 22 terminating in a marginal lip 23 and provided with a depending marginal flange portion 24 set slightly inwardly of the lip 23, the said plate being cast as an integral unit with the upwardly extending wick tube 17, the downwardly extending or depending spring plunger housing 19, the support 20 which comprises the tines of a fork in which is journaled the snuffer arm 18 by means of the pivot pin 25 and the post 21 suitably apertured as at 26 for receiving the holder or tube 14 in the manner to be described more in detail hereinafter. With this integral casting construction it will be noted that

none of the supporting parts for the operating elements are joined to the cover plate by any means, as is the case in prior constructions, which are subject to being loosened and thus producing undesirable leak crevices for the receptacle. It will be further manifest that by making these parts into an integral unit the number of assembling steps hitherto necessitated by the joining together of these parts are eliminated, thus permitting of a simplification in the manufacture and assembling of the lighter.

To effect a further simplification in the assembling of the cigar lighter parts and to afford a wider latitude and greater convenience in producing a finished appearance for the receptacle casing, which usually is made of a costly metal, the cover plate 12 is combined with the casing wall 11 without the use of sealing means such as solder heretofore employed at the joining edges. This result is preferably accomplished by the making of the upper wall 12 in the form of a casting which provides the marginal flange 24, the latter serving as a substantially rigid forming means over which the comparatively yieldable metal casing wall 11 is fitted. By reference to Figs. 1 and 3 of the drawings, it will be noted that the top of the casing wall 11 is fitted over the marginal flange 24; this being done with a binding fit, the organization and use of materials being such that the upper part of the casing wall 11 takes the form and shape of the marginal flange and makes therewith a leak-proof joint, this being assisted by the engagement of the upper margin of the wall 11 with the cover lip 23. By means of this interrelation of the parts I have found that it is entirely unnecessary to solder the joint between these parts, and that it is sufficient in order to permanently prevent detachment of the parts to secure the same together by additional interengaging and locking means, in this case a pair of rivets 27 and 28, the depending flange portion 24 being preferably bossed at the points which receive the rivets.

To provide for a leak-proof joint for the bottom of the casing wall 11, the cover wall 13 is also constructed in the form of a casting embodying a plate 29 similar to the top cover plate having a marginal lip 30 and an inwardly set flange 31, which flange receives the bottom portion of the casing wall 11 with a binding fit, the parts being secured together by means of the oppositely positioned rivets 32 and 33, this construction also providing a leak-proof joint.

To carry out the desideratum of eliminating special tooling operations and special securing elements, the pyrophoric body holder 14 is attached to the post 21 by the provision of an externally toothed section 34 provided centrally of the tube 14, which toothed section is forced into the wall of the aperture 26 of the post 21, the toothed section thereby cutting complementary teeth in the aperture wall, the cooperating teeth forming the means for securely holding the tube or holder 14 in position. This tube is also provided with the usual adjusting screw 35 acting on a spring and plunger 36 which in turn is active against the pyrophoric body 15.

Cooperating with the pyrophoric body I provide the operating means heretofore designated as 16 which comprises a friction wheel 37 force-fitted onto a sleeve 38 formed integrally with an operating finger wheel 39, the same being force-fitted onto a spindle 40 which is loosely journalled in the extending part 41 of the tube 14 and in the aperture 42 provided in the cover plate 12. The snuffer device 18 preferably comprises an arm 43 having at one end a block 44 journaled in the pivot pin 45, said block having two of its faces cooperating with a spring-pressed plunger 45′ housed by the casing 19 operative for holding the snuffer device in either its closed or open position, the said snuffer device 18 at its other end including a snuffer box 46 and a cover 47 integral therewith, said cover fitting over the sparking wheel 37. The snuffer box 46 is provided internally with a tube 48 which fits over the wick tube 17, said wick tube being internally provided with the tubular element 49 which snugly holds the wick 50.

The bottom plate 29 may be provided with the customary holder 51 for refills, said holder being threadedly removable from a cap 52 which in turn defines a filling closure threadedly removable from the bottom plate 29.

The use and operation of the cigar lighter of my present invention and the many advantages thereof will in the main, be fully apparent from the above detailed description thereof. It will be particularly seen that the manner of constructing and organizing the parts is such as to permit the manufacturing of a minimum number of parts and the assembling thereof with a minimum of securing elements, all to the end of producing a very rigid structure having a certainty of action. It will be also apparent that the parts are so designed as to minimize any such leak crevices as appear after some use in prior devices, through which crevices the volatile liquid fuel readily evaporates. It will be further seen that the cover and bottom plates are so joined to the casing wall as to permit the obtaining of leak-proof joints without the use of solder heretofore employed, this permitting a greater convenience and range of use of different finishes for the metals employed in devices of this character.

It will be further apparent that while I have shown and described my invention in the preferred form, many changes and modifications may be made in the structure dis-

closed without departing from the spirit of the invention, defined in the following claims.

I claim:

1. A lighter comprising a tubular casing of elongated cross section and a cast cover wall permanently fitted thereto, the said cover wall having integrally cast therewith supporting and housing means for lighter operating elements and a depending marginal flange, and the tubular casing being force fitted over the marginal flange with a binding fit to make therewith a permanent leakproof joint.

2. A lighter comprising an open ended tubular casing of elongated cross section, and cast cover and bottom walls permanently fitted thereto, the said cover wall having integrally cast therewith supporting means and housing means for lighter operating elements and a depending marginal flange, the said bottom wall having integrally cast therewith an upstanding marginal flange, and the said tubular casing being fitted over the marginal flanges and making therewith permanent leakproof joints.

3. A lighter comprising a tubular casing of elongated cross section and a cast cover wall permanently fitted thereto, the said cover wall having integrally cast therewith supporting and housing means for lighter operating elements and a depending marginal flange, the tubular casing being fitted over the said marginal flange and making therewith a permanent leakproof joint, and additional interengaging means for mechanically locking the tubular casing permanently to the cover wall.

4. A lighter comprising a tubular casing of elongated cross section, and cast cover and bottom walls permanently fitted thereto, the said cover wall having integrally cast therewith supporting means and housing means for lighter operating elements and a depending marginal flange, the said bottom wall having integrally cast therewith an upstanding marginal flange, the said tubular casing having its top and bottom fitted over the said marginal flanges and making therewith permanent leakproof joints, and additional interengaging means for mechanically locking the said tubular casing permanently to the said cover and bottom walls.

5. A lighter comprising a fuel receptacle having a cast cover wall, said cover wall embodying a plate and an upwardly extending apertured post cast integrally therewith, and a separate tube for carrying a pyrophoric element forced into and rigidly held by the wall of the aperture in the post.

6. A lighter comprising a fuel receptacle having a cast cover wall, the said cover wall embodying a plate, a depending marginal flange, and an upwardly extending apertured post all cast integrally therewith, a tube for carrying a pyrophoric element carried by said post, and means permanently securing said tube to said post consisting of an externally toothed section on said tube forced into and rigidly held by the wall of the aperture in the post.

7. A lighter comprising an open ended tubular casing, and a cast cover wall, the said cover wall having integrally cast therewith an upstanding wick tube and snuffer cap seat, an upstanding snuffer arm support, a depending spring plunger housing, and a depending marginal flange, a spring pressed plunger in said housing, and a snuffer arm and cap journaled in said support and acted upon by said spring pressed plunger for normally closing the cap on the seat, the said tubular casing being fitted over the marginal flange.

8. A partially cast and partially tubular lighter comprising a tubular casing of elongated cross section, cast cover and bottom walls permanently fitted thereto, and a tube for carrying a pyrophoric element, the said cover wall having integrally cast therewith supporting means and housing means for lighter operating elements, including an upstanding apertured post for holding the tube for carrying a pyrophoric element, the said bottom wall having integrally cast therewith an upstanding marginal flange, the tubular casing being fitted over the said marginal flanges and making therewith permanent leakproof joints, and the tube for carrying a pyrophoric element being forced into and rigidly held by the wall of the aperture in the post.

Signed at New York in the county of New York and State of New York this 3rd day of November A. D. 1927.

CHARLES HARDY.