Sept. 14, 1948. W. I. NISSEN 2,449,314

CIGAR LIGHTER

Filed May 15, 1946

Fig. 1.

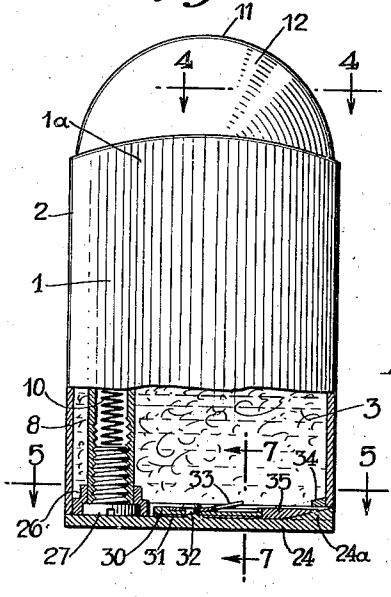


Fig. 2.

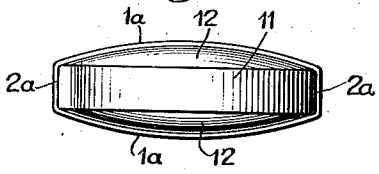


Fig. 3.

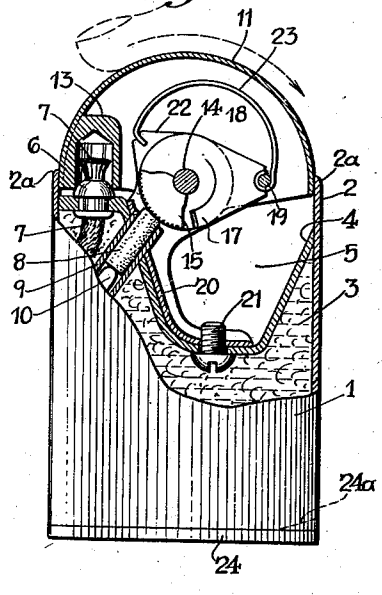


Fig. 4.

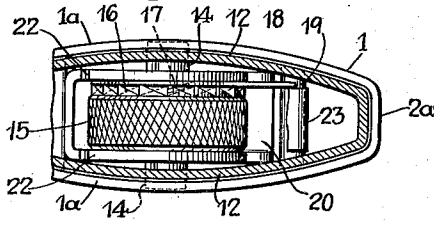


Fig. 5.

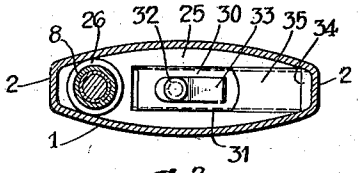


Fig. 9.

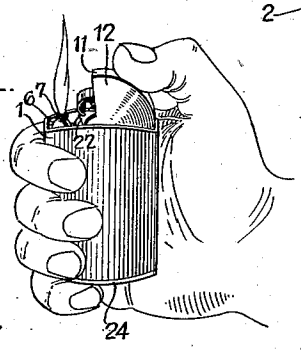


Fig. 6.

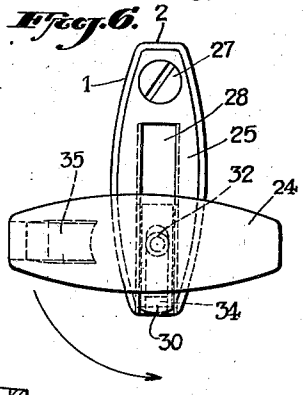


Fig. 7.

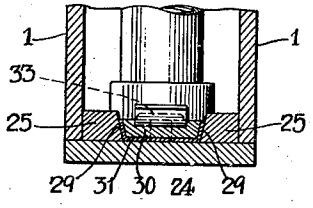
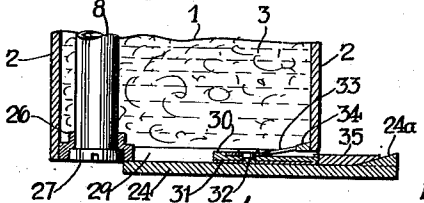


Fig. 8.



INVENTOR.

Warren I. Nissen

BY

Ward Crosby & Neal

ATTORNEYS.

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CIGAR LIGHTER

Warren I. Nissen, Newark, N. J.

Application May 15, 1946, Serial No. 669,876

2 Claims. (Cl. 67—7.1)

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The invention relates to a cigar lighter of the cap operated type, i. e. the wick is exposed and a flame produced when the cap swings from closed to open position, and the flame is extinguished as the cap moves back from open position to its closed position wherein it encloses the wick.

The invention aims primarily to provide a lighter construction of the above type wherein the cap is so constructed and mounted in relation to the casing, as to provide a substantially balanced and symmetrical cap construction, which merges or blends in symmetrically and smoothly with the side walls of the lighter casing, avoiding awkwardly protruding or projecting operating parts such as are objectionable in use, and affording facile movement of the cap in producing and extinguishing the flame. The cap construction also avoids parts which swing up into an unduly protruding or overhanging position when the cap is opened, and when closed the cap affords a substantially tight seal against the ingress of tobacco crumbs, lint or the like, into the working parts of the lighter which are enclosed within the cap.

In another aspect the invention relates to an adjustable closure member for the fuel casing of the lighter, which closure may be readily adjusted without the need of special tools, between a casing sealing position wherein it fits neatly and tightly into place against the adjacent walls of the casing, and an open position wherein it affords convenient access to the interior of the casing for fuel filling, or wick or flint adjusting purposes. 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 a lighter constructed to operate 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 front elevation, with certain parts cut away, of a lighter constructed in accordance with the invention.

Fig. 2 is a top plan view of the lighter shown in Fig. 1.

Fig. 3 is a view similar to Fig. 1 but with other parts cut away to show the interior construction.

Figs. 4, 5 and 7 are detail sections taken respectively on lines 4—4, 5—5 and 7—7 of Fig. 1 looking in the direction of the arrows.

Fig. 6 is a bottom plan of the lighter casing, showing the closure member in open position.

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Fig. 8 is a fragmentary view similar to the bottom portion of Fig. 1, but showing the closure member in partially open position.

Fig. 9 is a view illustrating the manual manipulation of the lighter.

In accordance with the first above mentioned phase of the invention, the lighter is provided with a cap member which is pivotally mounted at the central portion of the space above the fuel receptacle, and provided with a top wall which arches over the top of the casing substantially from one side edge of the casing to the other. In closed position the cap merges into and constitutes a smooth extension of the side walls of the casing, and when the cap is tilted to produce a light, one quadrant thereof tilts upwardly to expose the wick and the other quadrant thereof moves downwardly within the side walls of the casing. The invention is illustrated as applied to a lighter casing which is elongated in horizontal cross section, having side walls 1 and end walls 2 which surround a fuel chamber 3 which may be understood as containing cotton or similar absorptive material for volatile liquid lighter fuel such as is usually employed. The top wall 4 (Fig. 3) of the fuel chamber is depressed to provide a well 5 for purposes hereinafter mentioned, and wick tube 6 which receives a wick 7, is mounted in the top wall 4 near one of the end walls 2, in the manner shown in Fig. 3. A flint tube 8, carrying a flint 9 pressed by a spring 10, also projects through the top wall as shown in Fig. 3.

As shown best in Figs. 1 and 3, the cap member of the lighter is provided with a top wall 11 which arches over the top of the casing substantially from one side edge of the casing to the other side edge thereof, the cap having side walls 12 which mate with the side walls 1 of the lighter casing. A snuffer member 13 (Fig. 3) carried by the cap, encloses the exposed portion of the wick 7 and fits against the wick tube 6, when the cap member is in closed position.

The cap member is pivotally mounted at the central portion of the space above the fuel receptacle upon a transverse spindle 14 extending between the side walls 12 of the cap, and preferably mounted as hereinafter described. The side and end walls of the lighter casing are preferably provided with upwardly projecting portions 1a and 2a respectively, within which the lower edge portions of the cap are received when the cap is in closed position. Thus in closed position the cap effectively seals the entire space above the lighter against the ingress of tobacco

crumbs, dirt and the like, and the cap construction merges smoothly into the side walls of the lighter casing. When the cap member is tilted in a clockwise direction, as the parts appear in Fig. 3, the quadrant of the cap which is at the left of spindle 14 and above wick 7 swings angularly upward to expose the wick, and the quadrant of the cap which is at the right of spindle 14 in Fig. 3, swings downwardly to nest into the well 5. In this way a sufficiently wide opening of the cap is secured, to clear wick 7 adequately, and yet the construction, both in closed and in open position, involves no awkwardly projecting or overhanging parts such as are objectionable in some lighters of the portable or pocket type.

The spark producing mechanism is enclosed within the cap above described and consists of a sparking wheel 15 which in the illustrated form of the invention is journaled coaxially with the cap on spindle 14. Flint 9 is pressed against the roughened surface of wheel 15, and the latter is rotated by movement of the cap from closed to open position so as to ignite wick 7 as the cap swings to open position. Preferably the sparking wheel 15 is connected to the cap through an appropriate pawl and ratchet mechanism in such manner that the wheel remains stationary when the cap moves from open to closed position. In the particular form shown (see Figs. 3 and 4) the wheel 15 is provided with side ratchet teeth 16 which are engageable by spring finger 17 on a pawl lever 18 (Fig. 3) which is pivotally mounted on spindle 14 and has its outer end engaging with a stud 19 extending between the side walls 12 of the cap. Thus the pawl lever 18 is rocked back and forth as the cap moves between closed and open position, and wheel 15 is turned during the opening movement to project sparks on to the wick.

Preferably the top assembly consisting of the cap and the spark producing mechanism enclosed thereby, is detachably mounted in position upon the top wall 4. In the form shown in Fig. 3, this assembly is carried by a bracket 20 detachably secured to the upper surface of top wall 4 by a screw 21 which is accessible within fuel chamber 3. The bracket 20 is provided with ears 22 which support the spindle 14 which in turn carries the sparking wheel 15 and the cap. Thus the above parts may be assembled with respect to each other before the bracket is placed in position on wall 4, and the assembly is secured in position by inserting the screw 21 from the bottom of fuel chamber 3 as hereinafter described.

The illustrated form of the invention is of the manually actuated type, i. e. the lighter may be nested in the operator's hand as shown in Fig. 9, and with the cap in closed position the operator may conveniently engage his thumb with the quadrant of the cap which is above the wick 7, as indicated by the dotted lines in the upper part of Fig. 3. From the above position the thumb may be readily moved through an arc as indicated by the dotted arrow at the top of Fig. 3, to move the cap through the requisite substantial angle as is necessary to adequately clear the cap from the wick, and also the thumb movement is natural and facile, so as to promote the adequate production of sparks. In lighters of the above described type it is highly important that, within the limits of a natural and vigorous finger movement, the operator be able to actuate the sparking wheel with sufficient vigor to produce an adequate shower of sparks, and at the same time swing the snuffer well away from the flame. The above described construction fulfills these requirements in a simple and effective manner, without requiring motion multiplying connections or awkwardly protruding levers, finger-pieces or the like, or awkward finger movements by the operator. After the cap has been opened and the flame produced as above described, the operator moves his thumb in the reverse direction through the path described, to close the cap and extinguish the flame. This movement also is simple and natural, and as above stated effectively seals the space above the lighter against the ingress of dirt, and produces a cap construction which blends or merges well into the general configuration of the lighter casing.

When the invention is employed in connection with a manually actuated lighter as above described, I prefer to provide a spring construction which will assist in holding the cap member both in closed and in open position. As shown in Fig. 3, a bowed spring 23 is provided for this purpose, the ends of the spring being tensioned between the ears 22 of bracket 20, with which one end of spring 23 engages, and the stud 19 with which the other end of spring 23 engages. In the position shown in Fig. 3, spring 23 urges the snuffer 13 into seating position against the wick tube 6; when the cap member is tilted to open position as above described, the stud 19 swings down to a position where it is on the other side of a central line passing through spindle 14 and the other end of the spring 23 which is engaged with ears 22; in this latter position, spring 23 tends to hold the cap 11 in open position until the operator pushes the cap part way back toward closed position, whereupon the spring assists in completing the closing movement.

It will be noted that in the above described construction, both the spindle 14 and the stud 19 are concealed by the upper side wall extensions 1a of the lighter casing, to avoid marring of the exposed surfaces of the lighter.

To afford access to the fuel chamber 3, I prefer to provide the lighter with a slidably mounted wall section which normally is tightly held in sealing position, but may be readily manipulated when desired to expose the interior of the casing without requiring the removal of screws or like detachable parts. In the form shown, the bottom wall section 24 may be thus manipulated. The bottom portion of the lighter casing is provided with a transverse partition 25 through which extends a collar 26 surrounding the flint tube 8 and receiving an adjusting screw 27 (Fig. 1) for the flint spring 10. By adjustment of the wall section 24, as hereinafter described, access may be had to this screw 27 for the purpose of renewing the flint in the usual manner.

The partition 25 has therein a rectangular opening 28 (Fig. 6) having undercut opposite walls 29 (Fig. 7). Within this opening 28 there is slidably fitted a slide member 30 which is connected to the wall section 24 so that the latter may be slid back and forth along opening 28. Preferably the slide 30 includes a liner 31 of spring metal which urges the wall section 24 tightly into engagement with the lower edges of the casing side walls. In the form shown a pin or projection 32 pivotally secures the wall section 24 to the slide member above mentioned, and also secures in position a spring stop 33. With the parts in the position shown in Fig. 1, the wall section 24 is free to slide to the right until the position shown in Fig. 8 is reached, wherein the stop 30 comes up against a lug 34 on wall 2. This

movement exposes the screw 27 on the end of the flint tube 8. If access to the interior of fuel chamber 3 is desired, the wall section 24 may be turned angularly from the position shown in Fig. 8, to the position shown in Fig. 6. If it should be desired to entirely remove the wall section 24, as will rarely be necessary, a tool may be inserted through the opening 28, with the parts in the position shown in Fig. 6, to depress the spring stop 33 down below lug 34, whereupon the closure assembly may be slid out bodily from normal position through the open end of the slot 28. The adjustable wall section 24 preferably has fixed thereto or integral therewith, a block 35 which interengages with the undercut walls 29 above mentioned, to hold the wall section 24 against angular movement when in closed position, but when the wall section 24 has been moved to the partially open position shown in Fig. 8, the block 35 is clear of walls 39 and thus the wall section 24 may be then turned to the position shown in Fig. 6. The end portion 24*a* of the wall section 24, which end portion lies between the adjacent end portions of the walls 29 when the wall section 24 is in closed position, preferably is enlarged as shown in Figs. 1 and 8 so as to completely fill the space between the walls 29 when wall section 24 is closed.

When the wall section 24 is closed, it is held by spring member 31 in tight engagement with the adjacent lower edges of the casing side walls 1 and 2 and mates therewith. For flint adjusting purposes the casing section 24 need only be slid to the position shown in Fig. 8, and to afford access to the fuel chamber 3, supplementary adjustment is made to the position shown in Fig. 6.

This application is a continuation in part of my prior copending application Serial Number 638,967, filed January 4, 1946, entitled "Lighter," which has been abandoned.

While the invention has been disclosed as applied to a lighter of the above described specific construction, 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.

I claim:

1. A pyrophoric lighter of the character described, including a casing which is elongated in horizontal cross section, said casing having therein a fuel chamber, a sparking wheel mounted in the space above the fuel chamber and disposed

substantially centrally between the side edges of the casing, a wick tube mounted on top of the casing at one side of the sparking wheel, the top of the casing having a well located at the other side of the sparking wheel, a cap member overlying substantially the entire space above said casing, said cap member being pivotally mounted substantially concentric with the sparking wheel and having a top wall which arches substantially symmetrically over the top of the casing substantially from one side edge of the casing to the other side edge thereof when said cap member is in closed position, to provide opposed quadrants of the cap member which overlie respectively the wick tube and well, which quadrants join together at a point above the sparking wheel and afford opening movement of the cap member by manual engagement with the quadrant of the cap member which overlies the wick tube, said cap member being tiltable between the aforesaid closed position and an angularly displaced position wherein the quadrant of the cap member which overlies the wick tube is lifted upwardly therefrom to expose the latter and the quadrant thereof on the opposite side of its pivotal axis moves downwardly into said well, means being provided whereby movement of the cap member from closed position to such angularly displaced position produces rotation of said sparking wheel to project sparks therefrom toward the wick tube.

2. The combination of claim 1, wherein the sparking wheel and cap member are mounted upon a bracket, said bracket being detachably clamped to the top wall of said casing by a clamping member which is accessible for adjustment from the space within said fuel chamber.

WARREN I. NISSEN.

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