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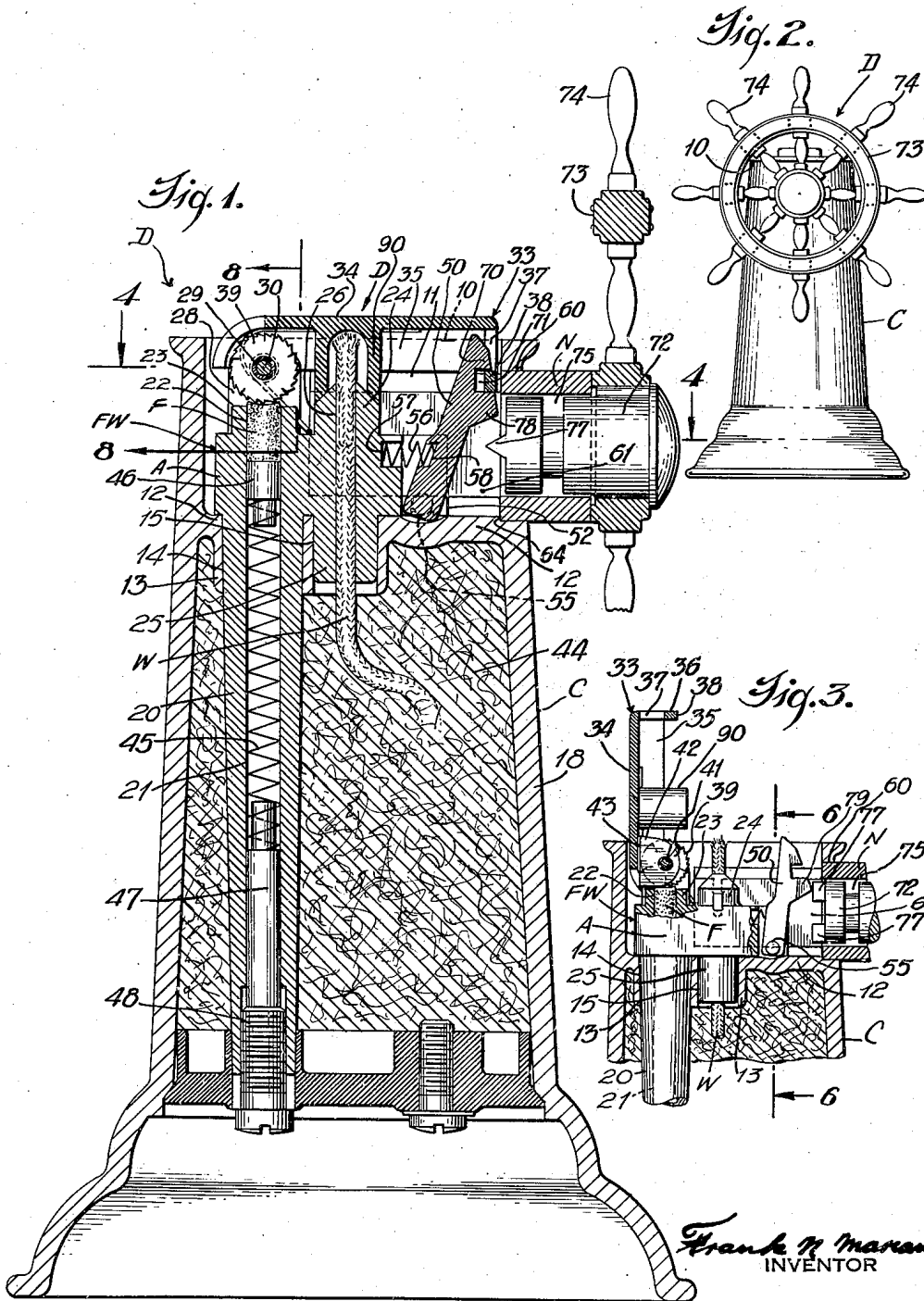
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2,480,414

CIGARETTE AND CIGAR LIGHTER

Filed April 15, 1946

3 Sheets-Sheet 1



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Fig. 4.

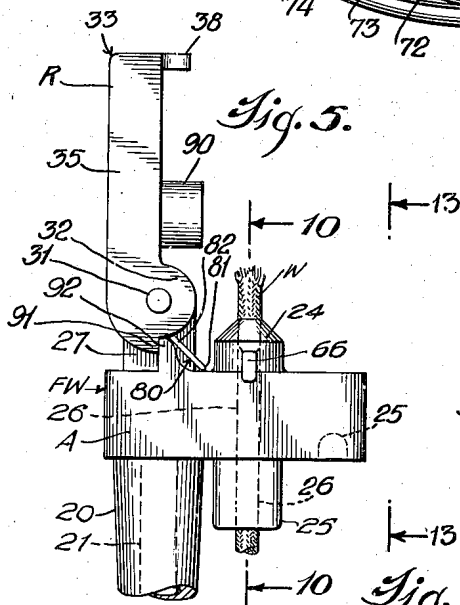
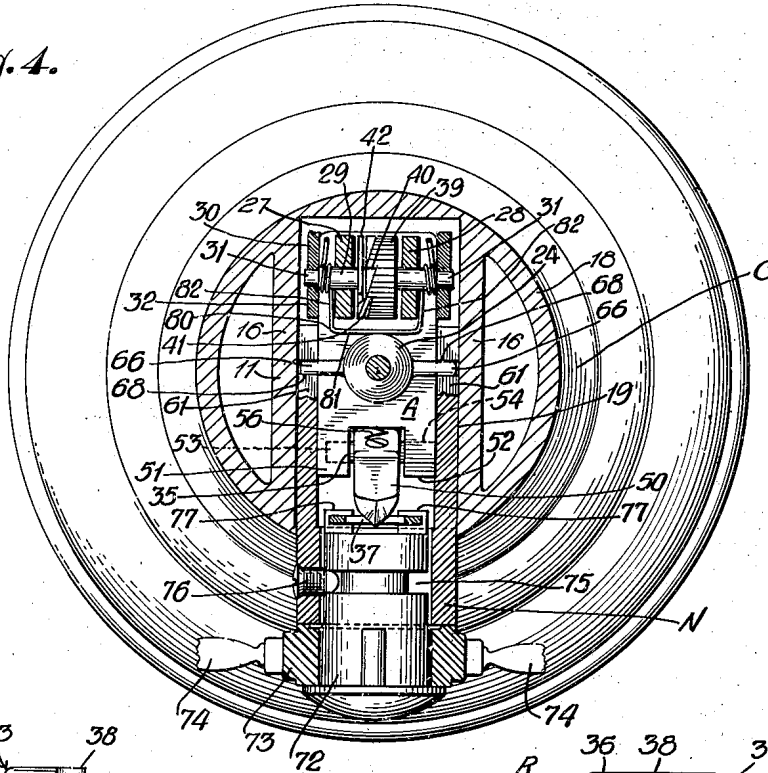


Fig. 5.

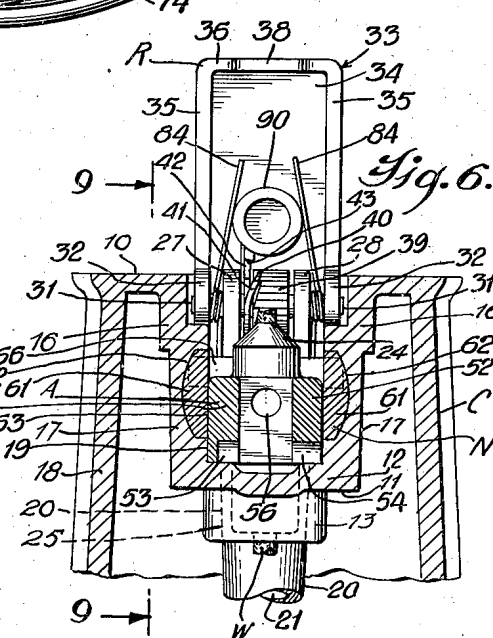


Fig. 6.

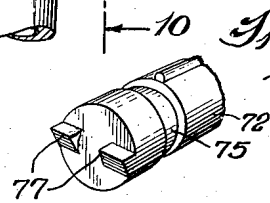


Fig. 7.

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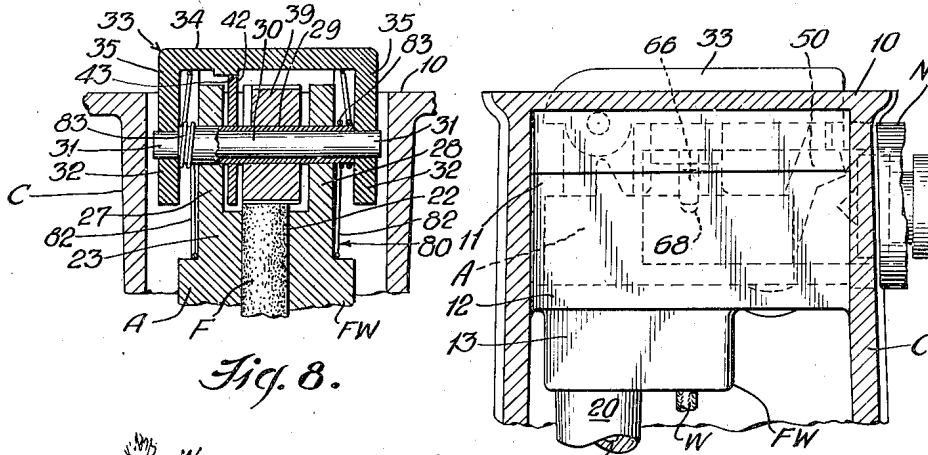


Fig. 8.

Fig. 9.

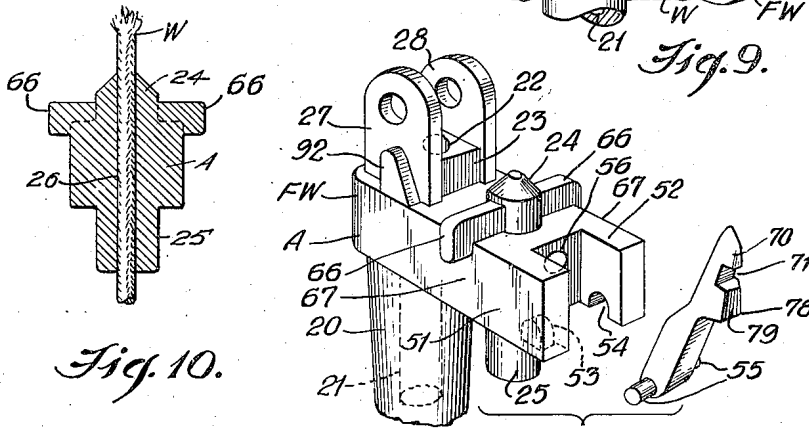


Fig. 10.

Fig. 11.

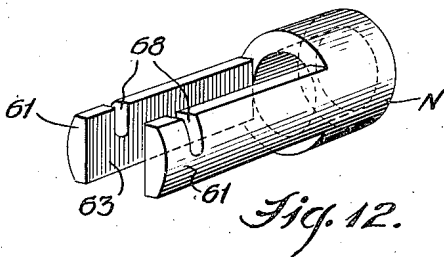


Fig. 12.

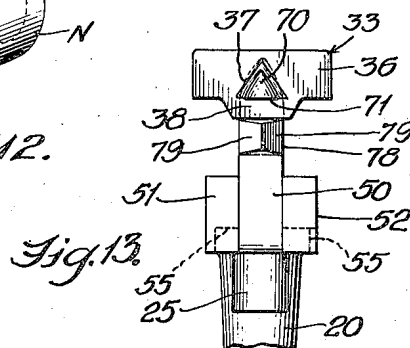


Fig. 13.

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CIGARETTE AND CIGAR LIGHTER

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Application April 15, 1946, Serial No. 662,186

11 Claims. (Cl. 67-4.1)

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The present invention deals with lighters and more particularly with desk or table lighters. The object of the invention is to provide a serviceable lighter of the type alluded to wherein bearing means for rotatably guiding an actuator for automatically releasing a spring controlled cap holding latch is held locked within the lighter casing by a wick and flint sustaining insert. Specifically the invention has for another object the provision of a serviceable lighter of the type having a spring controlled cap for controlling spark generating means rendered effective upon the release of a pivoted latch sustained by a removable insert disengageably interlocked with bearing means rotatably carrying actuator means for operating the pivoted latch. Other important objects, features, and functional and structural advantages of the invention will appear from the following detailed specification taken with the accompanying drawings wherein:

Fig. 1 is a vertical sectional view of the desk lighter according to my invention.

Fig. 2 is a front elevational view of Fig. 1 on a smaller scale.

Fig. 3 is a fragmentary sectional view of Fig. 1, however, illustrating the snuffer raised.

Fig. 4 is a transverse sectional view on the line 4-4 of Fig. 1.

Fig. 5 is a fragmentary side view of the removable insert embodying the flint and wick holder and the pivoted snuffer.

Fig. 6 is a sectional view on the line 6-6 of Fig. 3.

Fig. 7 is a fragmentary view of the rotatable latch actuating means for releasing the snuffer or pivoted cap.

Fig. 8 is a transverse vertical sectional view on the line 8-8 of Fig. 1.

Fig. 9 is a sectional view on the line 9-9 of Fig. 6.

Fig. 10 is a sectional view on the line 10-10 of Fig. 5.

Fig. 11 is a fragmentary perspective view of the insert illustrating the swingable latch detached therefrom.

Fig. 12 is a perspective view of the bearing which rotatably guides the latch actuating means, and

Fig. 13 is a view taken on the line 3-3 of Fig. 5, however, with the snuffer in its closed and locked relation.

The desk lighter broadly denoted D comprises the hollow and frusto conical fuel containing casing C having a top wall 10 (Fig. 6) from which depends the hollow boss 11 having the di-

ametrically disposed bottom wall 12 (Fig. 1) from which is struck out the depending boss 13 embodying tapered opening 14 and circular opening 15. The boss 11 is characterized by the spaced depending walls or sides 16 which are offset intermediately thereof to provide spaced lower portions 17 merging with the aforesaid diametrically arranged bottom wall 12. The boss 11 is cast integral with the top wall 10 and the annular wall 18 of the casing C which disengageably receives the laterally extending annular nipple or bearing N.

The lower wall 12 of the boss 11 constitutes a seat for the rectangular shaped arm A of the flint and wick holder FW to limit its insertion into the boss 11. The spaced inner faces of the boss 11 serve to guide and position the arm A into well or opening 19 defined by the bottom wall 12 of the boss and the side portions 16 and 17.

The arm A (Fig. 11) is cast integral with the depending externally tapered and hollow tube 20 having the circular bore 21 in alignment with bore 22 of an upwardly projecting nipple 23 integral with arm A. The tube 20 slidably guides flint F (Fig. 1) through arm A and into the nipple 23.

Also cast integral with the arm A of the flint and with holder FW are the cylindrical nipples 24 and 25 (Fig. 10) which together with arm A embody bore 26 for threadably receiving the wick W.

Straddling nipple 23 and integral with and extending upwardly from the arm A are the spaced perforated ears 27 and 28 (Fig. 11) rotatably guiding the tubular bearing 29 (Fig. 8) closely surrounding the cylindrical fulcrum pin 30 having its ends 31 pivotally sustaining lobes 32 of the swingable cap or snuffer generally indicated 33 having a top wall 34 embodying a depending rim comprising depending side walls 35 (Fig. 6) merged with the depending front wall 36 provided with the latch receiving triangular shaped opening 37 (Figs. 1 and 13) and the depending stop lug 38.

Rotatably mounted on the bearing 29 is the flint cutting gear wheel 39 which is also provided with a number of teeth 40 (Figs. 4 and 6) on one of its sides cooperating with an offset tooth 41 of a spring clutch 42 having rectilinear face 43 adapted to be actuated by the pivoted cap 37 to rotate clutch 42 for advancing and interlocking tooth 41 with the teeth 40 of the flint striking wheel 39 on each closing stroke of the cap 33. Since the clutch 42 is now in advance relation to the gear wheel 39 the latter is rotated a prede-

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terminated amount on each lifting stroke of the cap 33.

As the cap is raised, the sparks emanating from the flint F are directed towards the frayed portion of the wick W extending beyond the nipple 24. Since by capillary attraction, the wick W is saturated with the volatile and flammable liquid to which the cotton batton 44 (Fig. 1) is subjected, the frayed portion of the wick is rendered incandescent, or in other words a flame is produced.

For urging the flint F to normally and yieldingly bear against the gear wheel 39, a normally expanded helicoidal spring 45 bears against a tumbler pin 46 slidably guided in the bore 21 of the depending tube 20. This spring is held under compression by the shank 47 of the set screw 48 threadably and removably connected to the tube 20. By this arrangement, adequate pressure is always maintained to permit the flint to be effectively scraped by the gear wheel 39 as the latter is rotated by the clutch 42 on each lifting stroke of the cap 33.

According to the invention the cap locking latch 50 is disconnectably associated with the arm A which has the forwardly projecting retaining means or legs 51 and 52 (Fig. 11). Leg 51 is provided with the socket or bearing 53 and the leg 52 with notch or bearing 55 of the latch 50, thus permitting the latter which is now positioned between legs 51 and 52 to rotatably swing or pivot towards or away from the nipple 24.

Normally latch 50 is urged in a direction away from nipple 24 by the helicoidal spring 56 having one end confined in opening 57 in arm A and has its other end retained in the opening 58 in the body of the pivotally retained latch.

Prior to inserting the flint and wick holder FW into the casing C and more particularly within opening 19 of the rectangularly shaped boss 11, the cylindrical nipple N is first positioned in the circular bore 60 (Figs. 1 and 3) of the casing C whereupon the spaced legs or keys 61 (Figs. 4, 6 and 12) of the nipple N are received and positioned in the guideways or keyways 62 (Fig. 6) in the side portions 17 of the boss 11. Bore 60 of course is in communication with the interior of hollow boss 11. The upper and lower faces of the keys 61 and guideways 62 are substantially horizontal. The inner faces of the guideways 62 are concaved to closely but removably receive the convexed outer faces of the keys 61. With the keys or legs 61 interlocked by the walls of the slots or keyways 62, the inner straight faces 63 of the keys 61 are flush with the spaced and straight faces of the opening or well 19 of the boss 11. An annular stop shoulder 64 (Fig. 1) in the bottom wall 12 cooperates with the head of the nipple or bushing N to limit the insertion of the keys 61 into the boss 11.

Pursuant to positioning and locking of the nipple or bushing N, that is, specifically its keys or lugs 61 thereof, the flint and wick holder or insert FW is disengageably locked thereto. In this connection, the arm A is positioned between the legs 61 of the nipple N and dropped downwardly whereby keys or ribs 66 extending laterally of the nipple 24 and transversely of the arm A although integral therewith and overhanging the straight sides 67 of the arm A, are received by the transversely aligned notches or keyways 68 interrupting legs 61 of the nipple N. By such arrangement the insert or arm A is disengageably interlocked with the nipple or bushing N. Such arrangement facilitates assembly of the parts. Thus by the

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present arrangement, the various parts carried by the flint and wick holder FW may be first assembled and thereafter as a unit may be dropped into the casing C, that is, in the boss 11, whereby the flint and wick holder readily interlocks with the nipple N which in turn is held against removal from the casing by the interlocking action of ribs 66 cooperating with the walls of the aligned notches 68.

The flame extinguishing and pivoted cap 33 is held closed and locked due to the automatic projection of the cam shaped nose 70 into the opening 37, thus interlocking with the lug 38 of the pivoted cap 33. Lug 38 is removably received in the notch 71 of the pivoted latch 50. By this construction, nose 70 thus prevents the cap from moving to its opened position.

Rotatably mounted within the hollow nipple or bushing N is the shaft 72 fixedly carrying wheel 73 having the radially projecting arms 74. Shaft 72 includes the annular groove 75, the walls of which interlock with the removable set screw 76 (Fig. 4) hence holding shaft 72 against longitudinal displacement within the nipple N. The posterior or inner end of shaft 72 embodies the spaced and diametrically disposed and tapered projections or wedge shaped cams or teeth 77 severally adapted to actuate the overhanging and inclined lip 78 of the pivoted latch 50, that is, its beveled faces 79. If therefore nose 70 of this pivoted latch is within the opening 37 of the snuffer or cap 33, and the hand wheel or manipulator 73 is rotated, the latch is disengaged from the cap and the latter pivots upwardly or opens. Once, however, the latch is released, the cap opens or rises automatically. This automatic action is due to the action of the U-shaped spring generally denoted 80 (Fig. 4) having its bridge 81 bearing against the upper surface of the arm A and its sides 82, that is, the lower portions thereof, closely straddle the perforated upstanding lugs 27 and 28 (Fig. 8). The sides 82 have intermediately arranged coils 83 surrounding the bushing or bearing 29 and terminate in free portions 84 (Fig. 6) abutting the inner face of the swingable cover 33. Normally the coils 83 are expanded. In such relation the cover is fully raised. When the cover is manually closed, the coils 83 are condensed or compressed and at such time lug 38 of the swingable cap 33 actuates the nose 70 of the pivoted latch 50, hence causing the latch to be displaced towards the wick whereby lug 38 ultimately snaps into opening 71 at which time the latch 50 retracts due to the expansion of spring 56 and the cap and latch are interlocked to prevent accidental opening of the former. On closing the cover, its depending socket 90 telescopes over the nipple 24 to extinguish the flame on the wick W. By the arrangement disclosed, the cap is unlocked upon rotatably manipulating the wheel 73. Thereafter the cover opens automatically whereby the flint scraping wheel 39 is rotated, causing sparks to be directed to the saturated wick and the latter is rendered incandescent. However, the cover is limited on its opening due to the coaction of the posterior lug 91 (Fig. 5) of the cover 33 abutting the projections or stop 92 extending from arm A. By the present invention, access to the parts thereof may be readily had in that the flint and wick carrying insert FW may be withdrawn or removed from the boss 11 of the casing. This action unlocks the bushing or bearing N in that the laterally extending or overhanging keys or ribs 66 are removed from the spaced notches 68.

The bushing N with its rotatable shaft 12 may now be detached from the casing.

Prior to assembling of the parts, it is obvious that if the nipple N were permanently attached to the casing C, it would project from the latter, and hence in buffing appreciable time is lost. Buffing is facilitated in the use of separate parts and hence considerable economy is thus realized.

The beveled faces 19 of the lip 18 on the pivoted latch 50 permit the beveled teeth 77 of the rotatable shaft 12 to be urged in a neutral or non operative position after teeth or cams 77 have severally released the latch from the swingable and self rising cap 33. Consequently the latch 50 is automatically retracted by the spring 56 and thus is freely straddled by the teeth 77 and the spring 56 is adequately strong to fully retract the latch so it effectively awaits to interlock with the keeper means namely, opening 37 and lug 38 of the cap as the latter is closed.

Various changes may be made in the details of construction and arrangement of parts without departing from the spirit of the invention or sacrificing any of the advantages thereof inherent therein.

I claim:

1. In a lighter, a casing having a hollow boss and including an opening in communication with the interior of said boss, a bushing insertible in said opening and having projecting means insertible into said boss, means to interlock said projecting means with said boss, a wick holder insertible in said boss, means for locking said holder to said projecting means, a latch pivotally connected to said holder, a closure cap at the upper part of said casing, means swingably connecting said cap to said holder, said cap and latch having means for removably holding said cap closed, and spring means to automatically open said cap upon releasing of said latch from said cap.

2. In a lighter, a casing having a hollow boss and including an opening in communication with said boss, a bushing insertible in said opening and having spaced projecting means interlocked into said boss, means to interlock said projecting means with said boss, a wick holder insertible in said boss and interposed between said spaced projecting means, means for locking said holder to said projecting means, a latch pivotally connected to said holder, a closure cap at the upper part of said casing, means swingably connecting said cap to said holder, said cap and latch having means for removably holding said cap closed, and spring means to automatically open said cap upon releasing of said latch from said cap.

3. In a lighter, a casing having a hollow boss and including an opening in communication with said boss, a bushing insertible in said opening and having spaced projecting means removably insertible into said boss, means to disconnectably interlock said projecting means with said boss, a wick and flint holder removably insertible in said boss and removably interposed between said spaced projecting means, means for disconnectably locking said holder to said projecting means, a latch pivotally connected to said holder, a closure cap at the upper part of said casing, means swingably connecting said cap to said holder, said cap and latch having means for removably holding said cap closed, spring means to automatically open said cap upon releasing of said latch from said cap, and means responsive to an opening of said cap for generating sparks above said holder.

4. In a lighter, a casing having a hollow boss and having an opening in communication with the interior of said boss, a bushing insertible in said opening and having spaced projecting means insertible into said interior and including spaced notches, means to limit the insertion of said projecting means into said interior, said boss having spaced keyways for removably receiving said projecting means, a wick holder insertible in said boss and removably interposed between said spaced projecting means, and key means insertible in said notches for removably locking said holder to said projecting means.

5. In a lighter having a wick and a pyrophoric member; a casing having a hollow boss and having an opening in communication with the interior of said boss, a bushing insertible in said opening and having spaced projecting means insertible into said interior and including spaced notches, means to limit the insertion of said projecting means into said interior, means for removably locking said projecting means with said boss, a wick holder insertible in said boss and interposed between said spaced projecting means, key means cooperating with the walls of said notches for removably locking said holder to said projecting means, a closure cap at the upper part of said casing and pivoted to said holder, and means responsive to the lifting of said cap for scraping said member to issue sparks in the region of said wick.

6. In a lighter having a wick and a pyrophoric member; a casing having a hollow boss and having an opening in communication with the interior of said boss, a bushing insertible in said opening and having spaced projecting means insertible into said interior and including spaced notches, means to limit the insertion of said projecting means into said interior, means for removably locking said projecting means with said boss, a holder insertible in said boss and interposed between said spaced projecting means and having a rotatable scraping wheel, means cooperating with the walls of said notches for removably locking said holder to said projecting means, a closure cap at the upper part of said casing and pivoted to said holder, and means for actuating said wheel upon lifting of said cap for scraping said member to issue sparks in the region of said wick.

7. In a lighter, a casing having a hollow boss and having an opening in communication with the interior of said boss, a bushing insertible in said opening and having spaced projecting means insertible into said interior and including spaced notches, means to limit the insertion of said projecting means into said interior, means for removably locking said projecting means with said boss, a wick holder insertible in said boss and interposed between said spaced projecting means, key means cooperating with the walls of said notches for removably locking said holder to said projecting means, a closure cap at the upper part of said casing and pivoted to said holder, a latch for removably holding said cap closed, spring means acting against said latch to resist displacement of said latch, and a manipulator rotatably guided by said bushing and having toothed means for actuating said latch against the resistance of said spring means.

8. In a lighter, a casing having a hollow boss and an opening in communication with said boss, a bushing insertible in said opening and having spaced projecting means extending into said boss, means to interlock said projecting means

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with said boss, a wick holder insertible in said boss and interposed between said spaced projecting means, means for locking said holder to said projecting means, a latch pivotally connected to said holder, a closure cap at the upper part of said casing, means swingably connecting said cap to said holder, said cap and latch having means for removably holding said cap closed, spring means to automatically open said cap upon releasing of said latch from said cap, a shaft rotatably guided in said bushing and having cam means for actuating said latch, and a hand wheel carried by said shaft.

9. In a lighter, a casing having a hollow boss and an opening in communication with said boss, a bushing insertible in said opening and having spaced projecting means extending into said boss, means to interlock said projecting means with said boss, a wick holder insertible in said boss and interposed between said spaced projecting means, means for locking said holder to said projecting means, a latch pivotally and removably connected to said holder and comprising a nose and a tapered portion, a closure cap at the upper part of said casing and having an opening for removably receiving said nose, means swingably connecting said cap to said holder, spring means to automatically open said cap upon removal of said nose from said cap, a shaft rotatably guided by said bushing and having spaced means for severally actuating said tapered portion, and a hand wheel carried by said shaft.

10. In a lighter, a casing, a wick holder within said casing and having a pivoted latch provided with a lip having inclined faces, a bushing carried by said casing, spring means interposed between said holder and latch, a shaft rotatably guided by said bushing and having spaced teeth

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severally adapted to actuate and shift said lip inwardly of said casing and against the resistance of said spring means and severally adapted to permit said latch to automatically return when either of said teeth clear said lip whereupon said teeth freely straddle said lip, and manipulating means carried by said shaft.

11. In a lighter, a casing, a wick holder within said casing and having a pivoted latch provided with a lip having inclined faces, a closure cap at the upper part of said casing and pivotally connected to said holder and having keeper means for removably locking said latch, a bushing carried by said casing, spring means interposed between and cooperating with said holder and latch, a shaft rotatably guided by said bushing and having spaced beveled teeth severally adapted to actuate and shift said lip inwardly of said casing and against the resistance of said spring means to remove said latch from said keeper means and severally adapted to free and permit said latch to automatically retract when either of said teeth clear said lip whereupon said teeth freely straddle said lip, and manipulatable means carried by said shaft.

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