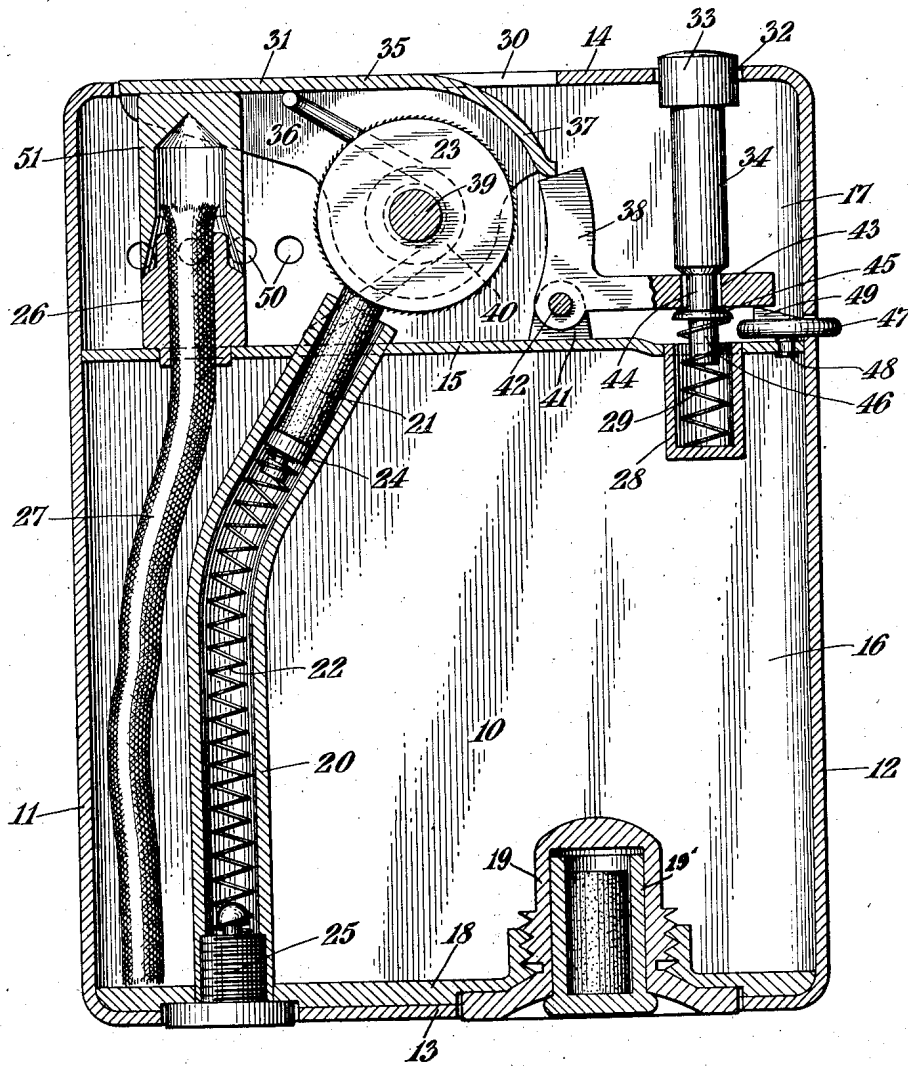


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L. V. ARONSON
LIGHTER CONSTRUCTION
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UNITED STATES PATENT OFFICE

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LIGHTER CONSTRUCTION

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The invention relates in general to lighters and, more particularly, to pocket lighters of the type commonly used for lighting cigarettes and the like.

5 The objects of the invention include the provision of a lighter of the type described which will operate with a snap action by merely pushing a button, a lighter which is safe to carry about in the pocket and which will not light accidentally and one which has a substantially smooth outer surface with no long projecting parts.

10 The invention also consists in certain new and original features of construction and combinations of parts hereinafter set forth and claimed.

The single figure represents a section in elevation.

15 In the following description and in the claims parts will be identified by specific names for convenience, but they are intended to be as generic in their application to similar parts as the art will permit.

20 In the drawing accompanying and forming part of this specification, a practical commercial embodiment of the invention is shown, but as such illustration is primarily for purposes of disclosure, it will be understood that the structure may be modified in various respects without departure from the broad spirit and scope of the invention as hereinafter defined and claimed.

25 Referring now to the drawing, the lighter comprises a casing having side walls 10, end walls 11 and 12, a bottom wall 13 and a top wall 14. A dividing wall 15 divides the casing into a reservoir 16 and an ignition space 17. The bottom wall 13 has a liner plate 18 in which is threaded a plug 19 removable for filling the reservoir with the usual fuel. A curved tube 20 connects with the liner plate 18 and passes through the dividing wall 15.

30 A stick 21 of sparking metal lies in the upper end of the tube 20 and a coiled spring 22 yieldably presses the sparking metal against the sparking wheel 23. The spring 22 has a contact piece 24 secured to the upper end and plug 25 at its lower end, the

plug being threaded into the lower end of the tube 20.

A wick holder 26 seats in an opening in the dividing wall 15 and a wick 27 is positioned in the wick holder and in the reservoir 16. Depending from the dividing wall 15 is a sleeve seat 28 seating a coiled spring 29.

35 The top wall 14 is provided with an opening 30 extending substantially the entire width of the casing in which is positioned a snuffer carrying member 31. The top wall 14 is also provided with a small opening 32 in which is positioned the button 33 of the operating member 34. The snuffer carrying member 31 has a flat top wall 35 and depending side walls 36 rotatable within the side walls 10 of the casing. The top wall 35 is bent downwardly at one end to form an abutment 37 to bear against a bell crank latch member 38. A snuffer member 40 is positioned around the pivot 39 and one end abuts the dividing wall 15 and the other end abuts the top wall 35, this spring being normally under tension to continually urge the carrying member 31 to swing to its upper or open position about the pivot 39.

45 The wheel 23 is positioned between the side walls 36 of the carrying member 31 and a pivot 39 passes through the side walls 10 of the casing, the side walls 36 of the carrying member and through the center of the sparking wheel 23. A coiled spring 40 is positioned around the pivot 39 and one end abuts the dividing wall 15 and the other end abuts the top wall 35, this spring being normally under tension to continually urge the carrying member 31 to swing to its upper or open position about the pivot 39.

50 The bell crank latch member 38 is pivoted to a lug 41 attached to the dividing wall by a pivot 42 and has an opening 43 in which is loosely positioned the reduced stem 44 of the operating member 34. A collar 45 is provided on the reduced stem 44 for limiting the relative axial movement of the operating member 34 and latch member 38 and the coiled spring 29 surrounds a reduced portion 46 under the collar 45. The connection between the operating member and latch member is loose enough to allow for the difference in motion between these members.

A safety wheel 47 projects through a slot in the end wall 12 and is pivoted to the

dividing wall 15 by a pivot 48. This wheel has a cam member 49 engageable with the bell crank lever.

When the lighter is carried in the pocket, the safety wheel 47 is in such a position that the cam 49 is under the bell crank lever 38 as shown in the drawing, thereby precluding inward movement of the operating member 34.

To light the lighter, the safety wheel 47 is rotated to remove the cam from the latch member and the button 33 is then pushed downwardly to move the catch 38 out of engagement with the abutment 37, thereby allowing the spring 40 to snap the carrying member 31 suddenly upwardly carrying the sparking wheel 23 with it. The rubbing action of the sparking wheel 23 against the sparking metal 21 causes a shower of sparks to impinge upon the wick 27 and light the wick in a well-known manner. The carrying member 31 will be left in its upper position while the lighter is being used. The openings 50 in the side walls 10 ensure sufficient supply of air.

To close the lighter, the carrying member 31 is simply pressed downwardly to its closed position in which the latch 38 under the influence of the spring 29 snaps to the position shown under the abutment 37, thereby holding the carrying member in closed position against the action of the spring 40. The safety wheel 47 is then moved to the position shown to preclude accidental operation of the operating member 34. The engagement of the snuffer member 51 over the wick 27 extinguishes the fire as is well understood.

It will be seen that, when the casing is closed, the walls are substantially continuous, being uninterrupted by long projecting parts. It is only necessary that the button 33 and the safety wheel 47 project a small amount to allow engagement with the fingers. Furthermore, it will be seen that, when the lighter is open, the walls 10, 11 and 12 of the casing protect the wick and flame from drafts which might otherwise blow out the flame. It will be seen, furthermore, that the lighter is of simple and rugged construction and can be made inexpensively. The lighter, furthermore, is of pleasing appearance and will give satisfactory service.

The filling cap 19 if desired may be provided with an internal removable sleeve member 19' and insertable from the outside of the container. The sleeve or capsule member 19' may be used to carry a spare piece of pyrophoric material in a position readily accessible to the user. Inasmuch as the capsule 19' as shown is arranged to be slid into place from the exterior of the filling cap, the pyrophoric material therein is not exposed to the contents of the fuel receptacle which under certain circumstances may in time

cause deterioration of the sparking metal when in contact therewith as is possible in the present common construction where the spare pyrophoric stick is removable from the inside of the filling cap member. The filling cap 19 is preferably provided with a thumb nut top portion, the under surface of which is tapered as shown to provide a good liquid tight fit with the receptacle. The capsule 19' may have a snug fit with the interior of the cap 19 or the capsule may be otherwise properly secured within the cap 19.

While certain novel features of the invention have been shown and described and are pointed out in the annexed claims, it will be understood that various omissions, substitutions and changes in the forms and details of the device illustrated and in its operation may be made by those skilled in the art without departing from the spirit of the invention.

What is claimed is:

1. A lighter comprising a casing having a bottom wall and a top wall, side and end walls extending therebetween, said top wall having first and second openings, a dividing wall spaced from said bottom wall to form a fuel reservoir therebetween, a wick holder carried by said dividing wall, a wick in said holder extending into said reservoir, sparking material above said dividing wall, a carrying member disposed in said first opening and having a top wall substantially coextensive with said casing top wall and depending side walls sliding within said casing side walls, a spark wheel between the side walls of said carrying member and secured thereto, pivot means connecting the side walls of said casing and of said carrying member, said wheel being disposed against said material, spring means normally urging said carrying member upwardly, said carrying member having a depending abutment, a bell crank catch pivoted in said casing with one end under said abutment, a plunger in said second opening, means to operate said catch by pressing said plunger, spring means normally urging said catch and plunger to their initial positions, a safety member projecting from said casing and means to prevent accidental operation of said plunger by said safety member.
2. A lighter comprising a casing having a bottom wall and a top wall, side and end walls extending therebetween, said top wall having first and second openings, a dividing wall spaced from said bottom wall to form a fuel reservoir therebetween, a wick holder carried by said dividing wall, a wick in said holder extending into said reservoir, sparking material passing through said dividing wall, a carrying member disposed in said first opening and having a top wall substantially coextensive with said casing top

5 wall and depending side walls sliding within
 said casing side walls, a snuffer depending
 from said carrying member, a spark wheel
 between the side walls of said carrying mem-
 ber and secured thereto, a pivot passing
 10 through the side walls of said casing and of
 said carrying member and said wheel, said
 wheel being disposed against said material,
 a coil spring around said pivot having one
 end under the top wall of said carrying
 15 member and the other end against said di-
 viding wall, said carrying member having a
 depending abutment, a bell crank catch
 pivoted to said dividing wall with one end
 under said abutment and having a hole in
 20 its other end, a seat in said dividing wall,
 a second spring in said seat, a plunger in
 said second opening and secured to said
 second spring, said plunger having a re-
 duced portion disposed in said hole, a safety
 wheel pivoted to said dividing wall and pro-
 jecting through said slot, and a cam member
 on said wheel for engagement under said
 catch.

25 3. Pyrophoric lighting mechanism com-
 prising a casing having top and bottom
 walls, side wall structure joining said top
 and bottom walls, a dividing wall spaced
 from said bottom wall to form a fuel reser-
 30 voir therebetween, a wick and a pyrophoric
 member extending through said dividing
 wall, an abradant wheel coacting with said
 pyrophoric element, a pivoted carrying
 member, a snuffer cap on said carrying
 35 member to one side of said wheel, a spring
 biasing said carrying member to open po-
 sition, and means for releasably retaining
 said carrying member in closed position,
 said means comprising a latch disposed at
 40 the other side of said wheel.

4. Pyrophoric lighting mechanism com-
 prising a casing having top and bottom
 walls, side wall structure joining said top
 and bottom walls, a dividing wall spaced
 45 from said bottom wall to form a fuel reser-
 voir therebetween, a wick and a pyrophoric
 element extending through said dividing
 wall, an abradant wheel coacting with said
 pyrophoric element, a pivoted carrying
 50 member, a snuffer cap on said carrying mem-
 ber to one side of said wheel, a spring bias-
 ing said carrying member to open position,
 and means for releasably retaining said
 carrying member in closed position, said
 55 means comprising a latch disposed at the
 other side of said wheel, and an operating
 member for said latch movable through a
 perforation in said top wall.

5. Pyrophoric lighting mechanism com-
 60 prising a casing having top and bottom
 walls, side wall structure joining said top
 and bottom walls, a dividing wall spaced
 from said bottom wall to form a fuel reser-
 voir therebetween, a wick and a pyrophoric
 65 member extending through said dividing

70 wall, an abradant wheel coacting with said
 pyrophoric element, a pivoted carrying
 member, a snuffer cap on said carrying
 member to one side of said wheel, a spring
 biasing said carrying member to open po-
 75 sition, and means for releasably retaining
 said carrying member in closed position,
 said means comprising a latch disposed at
 the other side of said wheel, an operating
 member for said latch movable through a
 80 perforation in said top wall, and locking
 means for said latch operable through said
 side wall structure.

In testimony whereof I have signed my
 name to this specification.

LOUIS V. ARONSON.

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