Dec. 6, 1932. L. V. ARONSON 1,889,849

CIGAR LIGHTER

Original Filed March 17, 1927

Fig. 1.

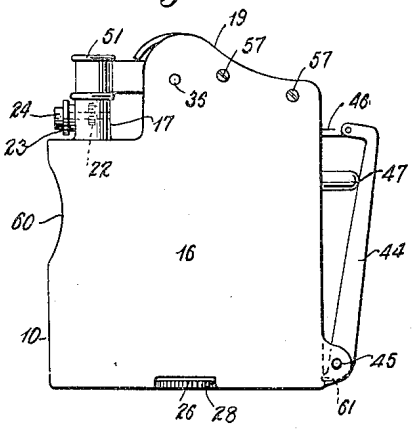


Fig. 3.

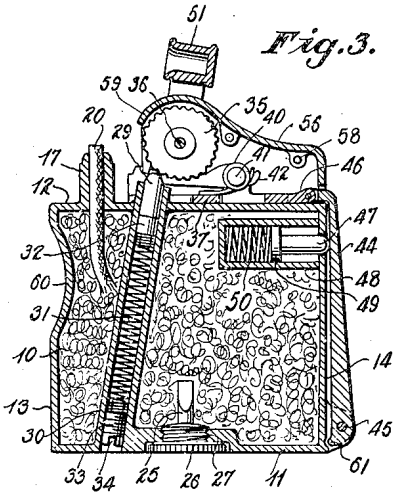


Fig. 2.

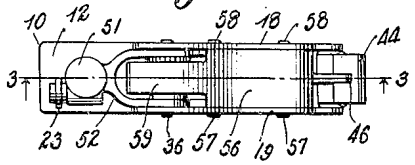


Fig. 4.

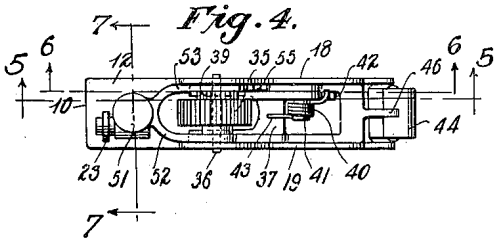


Fig. 5.

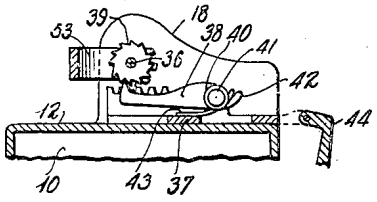


Fig. 6.

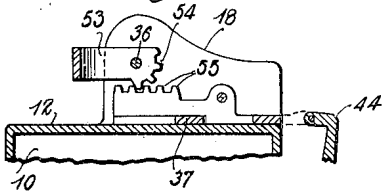
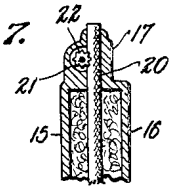


Fig. 7.



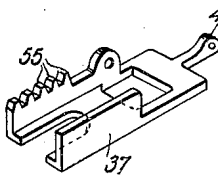


Fig. 8.

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UNITED STATES PATENT OFFICE

LOUIS V. ARONSON, OF NEWARK, NEW JERSEY, ASSIGNOR TO ART METAL WORKS, INC., A CORPORATION OF NEW JERSEY

CIGAR LIGHTER

Application filed March 17, 1927, Serial No. 176,159. Renewed September 26, 1931.

The invention relates to cigar lighters or the like and the main object of the invention is to provide a more convenient and efficient form of lighter.

Further and more specific objects, features and advantages of the invention will appear from the following description when read in connection with the accompanying drawing showing an illustrative embodiment of the invention and wherein:—

Fig. 1 is a side elevation;

Fig. 2 is a plan view;

Fig. 3 is a central vertical section on line 3—3 of Fig. 2;

Fig. 4 is a plan view with the shield removed;

Fig. 5 is a detail section on line 5—5 of Fig. 4;

Fig. 6 is a like section on line 6—6 of Fig. 4;

Fig. 7 is a detail vertical section on line 7—7 of Fig. 4 drawn to an enlarged scale; and

Fig. 8 is a detail perspective view of the reciprocation element.

As shown, the device comprises a receptacle 10 elongated in horizontal cross-section as shown in Figs. 2 and 4 and filled with absorbent material as cotton for the reception of fuel such as alcohol, benzine, or the like, said receptacle comprising a bottom wall 11, a top wall 12, end walls 13, 14, and side walls 15, 16, the side walls projecting through a portion of their extent above the top wall 12 as shown.

To hold a wick for combustion of the fuel from receptacle 10, there is shown a wick tube 17 mounted upon the top wall 12 and projecting thereabove in a position clear of the projecting portions 18, 19 of the side walls 15, 16. To feed the wick upwardly in the tube 17, there is shown a star wheel 21 journalled in the walls of the tube 17 and revolving in a recess 22 therein, the star wheel being so placed that its teeth will enter the wick 20 as clearly shown in Fig. 7.

To provide for the revolution of the star wheel 21, the shaft upon which it is journalled is shown as provided with an enlarged head 23 having a slot 24 in its face for engagement with a screw driver. A screw driver 25 for operation of the star wheel is shown as conveniently mounted upon the screw plug closure 26 for the filling opening 27 of the fuel receptacle.

The head of the screw plug 26 is shown as seating flush in a recess 28 in the bottom wall 11 of the receptacle and its diameter is such as to cause it to project slightly beyond the side walls 15, 16 of the receptacle for convenience in manipulation in removal of the plug.

A source of sparks for ignition of the fuel with which the wick 20 is saturated is shown in the form of a pyrophoric element 29 housed in a tube 30 opening through each of the walls 11, 12, and passing through the fuel receptacle. Means for pressing the pyrophoric element outwardly is shown in the form of a spring 31 acting between a head 32 and a screw threaded retainer plug 33.

The spring 31 is desirably coiled about reduced portions of members 32, 33 so as to be attached thereto and remain assembled with these members when the pressure means is removed for replacement of the pyrophoric material. In other words the respective ends of the spring 31 are firmly attached to the respective heads 32 and 33 so that they are all removed as a unit and do not become detached from one another and easily lost when so removed. The retainer 33 is shown as formed with a slot 34 which may be engaged by the screw driver 25 for its adjustment.

To produce sparks from the element 29, an abradant surfaced wheel 35 is shown journalled about a horizontal axis and centrally disposed above the top of the receptacle and between the projecting portions 18, 19 of the walls 15, 16 upon a shaft 36. To cause revolution of the said wheels, there is shown a reciprocating element 37 having journalled thereon a pawl 38 coacting with ratchet teeth 39 formed upon a hub of wheel 35, the pawl 38 being yieldingly pressed into contact with teeth 39 by means of a coiled spring 40 coiled about the journal 41 of the pawl and anchored about a finger 42 carried by the pawl also anchored as at 43 upon the reciprocating member 37. It will be seen that as the re-

ciprocating member 37 is forced to the left in the figures the abradant wheel will be caused to revolve and as the member 37 returns to normal position the pawl will slip over teeth 39, revolution of the wheel being prevented by its contact with the pyrophoric element 29, while the pawl is returning to normal.

To cause reciprocation of the member 37 there is shown a manually operated lever 44 pivoted to the end wall 14 of the receptacle as at 45 and also pivoted to a projecting member 46 carried by the reciprocating member 37. To return the lever 44 to its normal position there is shown a plunger 47 shown as reciprocatingly mounted in cylinder or tubular member 48 carried and located within the interior of receptacle 10, the plunger having an enlarged head 49 abutting against a coil spring 50 acting against the interior end of the cylinder and urging the plunger to its projecting position shown in Fig. 1.

To provide a snuffer for the wick 20, there is shown a cap member 51 mounted upon a U-shaped lever 52, the two arms of which extend one upon each side of the abradant wheel 35 and are journalled upon the shaft 36 so that the snuffer is journalled about the same axis as the wheel 35. To cause the snuffer to lift when the wick is to be ignited, one arm 53 of the lever is shown as formed with a gear member or pinion teeth 54 meshing with rack teeth 55 formed upon the reciprocating member 37. The snuffer 51 will thus be caused to lift when reciprocating member 37 is moved to the left in the Figure to ignite the wick and will be returned to wick covering position by means of rack and pinion teeth when the member 37 returns to normal position under influence of spring 50.

To cover the spark producing mechanism, there is shown a shield member 56 set between the portions 18, 19, in the side walls and secured therebetween as by means of screws 57, 58, the shield having a reduced portion 59 arcuate in cross section projecting over the abradant wheel 35 and extending between the arms of the U-shaped lever 52. The end wall 13 and the edges of the side walls 15, 16 are desirably formed to provide arcuate depression 60 for convenience in grasping the device. The wick projects vertically from the top of the receptacle adjacent the abradant wheel at one side thereof while the manually operated member 44 is on the other side. The screw plug 26 which closes the filling opening is centrally disposed in the bottom of the receptacle while the tube 30 extends through the receptacle from a point on the bottom thereof at one side of the filling opening to a point at the top of the receptacle beneath the abradant wheel, so that the coil spring 31 will urge the head 32 and pyrophoric member toward the wheel. It will also be noted that the pyrophoric member projects from the top of the receptacle and engages the abradant wheel some distance to one side of the vertical plane passing through the axis of the wheel, whereby when the wheel is rotated, sparks from the pyrophoric member are directed upwardly at an angle toward the top of the wick.

To limit the outward movement of lever 44 under action of the spring 50, there is shown a portion 61 projecting beyond the pivot 45 and adapted to engage the wall 14 of the receptacle at the outward limit of movement of the lever 44. By the illustrated structure the point of contact of the pyrophoric element 29 with the abradant wheel 35 will be the point of tangency of a line passing slightly above and closely adjacent the end of wick 20. Since sparks given off by the wheel 35 will follow the general line of a tangent to their point of production, they will act more effectively upon vapors arising from the wick than if the point of contact of the pyrophoric element were differently chosen.

In operation the device may be grasped by a forefinger of the user seating in the recess 60 and by the thumb of the user pressing upon the lever 44 whereupon by tightening the grasp the reciprocating member 37 may be forced inwardly causing the lifting of the snuffer and the rotation of the wheel 35 by manual force to ignite the fuel, the parts being held in this position with the snuffer elevated while the flame is being used. When the grasp is released the spring 50 will return the parts to their normal position, the snuffer 51 seated upon the end of the wick tube 15 as shown in Fig. 1 thus effectually extinguishing the blaze.

Various other forms and features of my invention are disclosed and claimed in my Patents No. 1,673,727, dated June 12, 1928, and No. 1,792,350, dated February 10, 1931, and in my copending applications Ser. No. 323,329, filed December 3, 1928, and Ser. No. 196,255, filed June 3, 1927 (the latter being now involved in interference proceedings).

Many changes may be made in the physical embodiment of the invention within the scope of the appended claims without departing from its spirit.

I claim:

1. A cigar lighter comprising in combination, a fuel receptacle having a top wall and side walls projecting therebeyond in spaced relation, a wick tube carried by said top wall and housing a wick projecting into said receptacle, an abradant wheel journalled between said projecting walls, a hub upon said wheel bearing ratchet teeth, a pyrophoric element mounted for pressure against said wheel, a lever journalled upon the axis of said wheel, pinion teeth carried upon said lever to cause motion thereof about its axis, a snuffer carried by said lever normally housing the projection of said wick, means recip-

rocably mounted upon said top wall, a pawl pivoted upon said means and spring pressed into contact with said ratchet teeth, rack teeth carried by said means and meshing with said pinion teeth, means to cause reciprocation of said means to simultaneously raise said snuffer and cause rotation of said wheel, and spring means to return said reciprocable means to normal position whereby to return said snuffer to normal position and said pawl to position for subsequent action.

2. A cigar lighter comprising in combination, a fuel receptacle having a top wall, a wick tube mounted on said top wall housing a wick projecting into said receptacle, pyrophoric sparking mechanism mounted upon said top wall adjacent said wick, an operating lever pivoted to the exterior of the receptacle adjacent the bottom wall thereof and extending alongside one edge of the receptacle, the opposite edge of the receptacle having a depression for engagement by a finger of the user while the thumb is pressed against said lever, means operable by said lever to cause actuation of said sparking mechanism.

3. Pyrophoric lighting mechanism comprising a receptacle, an abradant wheel journalled on said receptacle, a pyrophoric element biased into engagement with said abradant wheel, a wick tube, a wick extending therethrough, a movable snuffer coacting with said wick tube, manual means for operating said abradant wheel and for elevating said snuffer, said manual means including a member mounted to reciprocate along a wall of said receptacle and having a pair of longitudinally extending guiding portions extending at either side of said wheel, guiding means on said receptacle wall coacting respectively with said portions, another tube carried by said receptacle and a reciprocatory member in said last named tube, said reciprocatory member coacting with said manual means to bias the latter and said snuffer as operated thereby, in their normal positions respectively.

4. A lighter having in combination a fuel receptacle, an abradant wheel having ratchet means and journaled at the top of the receptacle, a pyrophoric member in operative engagement with the wheel, a wick projecting from the receptacle adjacent the wheel, a manually pressible member for operating said abradant wheel, at least a portion of said member being positioned at the top of said receptacle and opposite from said wick in respect to said wheel, a snuffer for the wick pivotally mounted on the receptacle with an axis located between said manually pressible portion and said wick, means operatively associating the manually pressible member with said snuffer member, and a pawl member operatively connected to said last named means and engaging said ratchet member, said pawl means being positioned beneath the wheel and movable in a generally horizontal direction in the space between said wheel and the adjacent receptacle wall, whereby when pressure is applied to the manually pressible member the snuffer member is raised and the wheel is rotated, and spring means acting to restore the manually pressible member when pressure is released therefrom, and also serving to restore the snuffer member to closed position.

5. A lighter having in combination a fuel receptacle, an abradant wheel journaled at the top of the receptacle, a pyrophoric member in operative engagement with the wheel, a wick projecting from the receptacle adjacent the wheel, a manually operable lever member extending in a generally vertical direction along a wall of the receptacle and pivoted thereto at a point spaced substantially below the top thereof, a slidable member extending along the top of said receptacle and beneath said wheel, said slidable member being pivotally connected to the upper portion of said lever, a snuffer member for said wick pivotally mounted on said receptacle with an axis located between said manually operable lever and said wick, and interengaging means on said snuffer member and said slidable member whereby when said lever is pressed, the snuffer member will be raised, and ratchet and pawl means operable by said slidable member whereby said wheel will be rotated concurrently with the elevation of said snuffer member.

LOUIS V. ARONSON.