

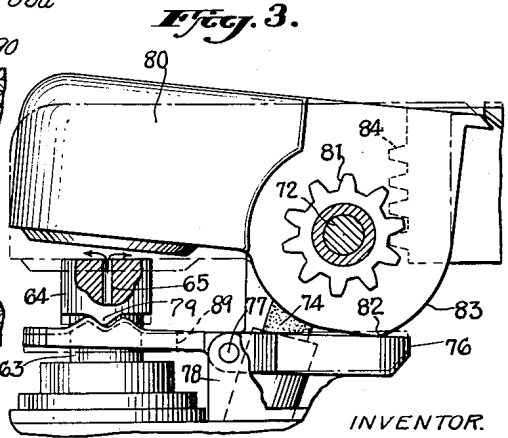
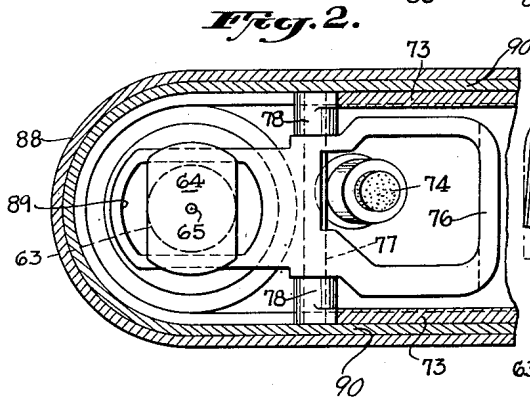
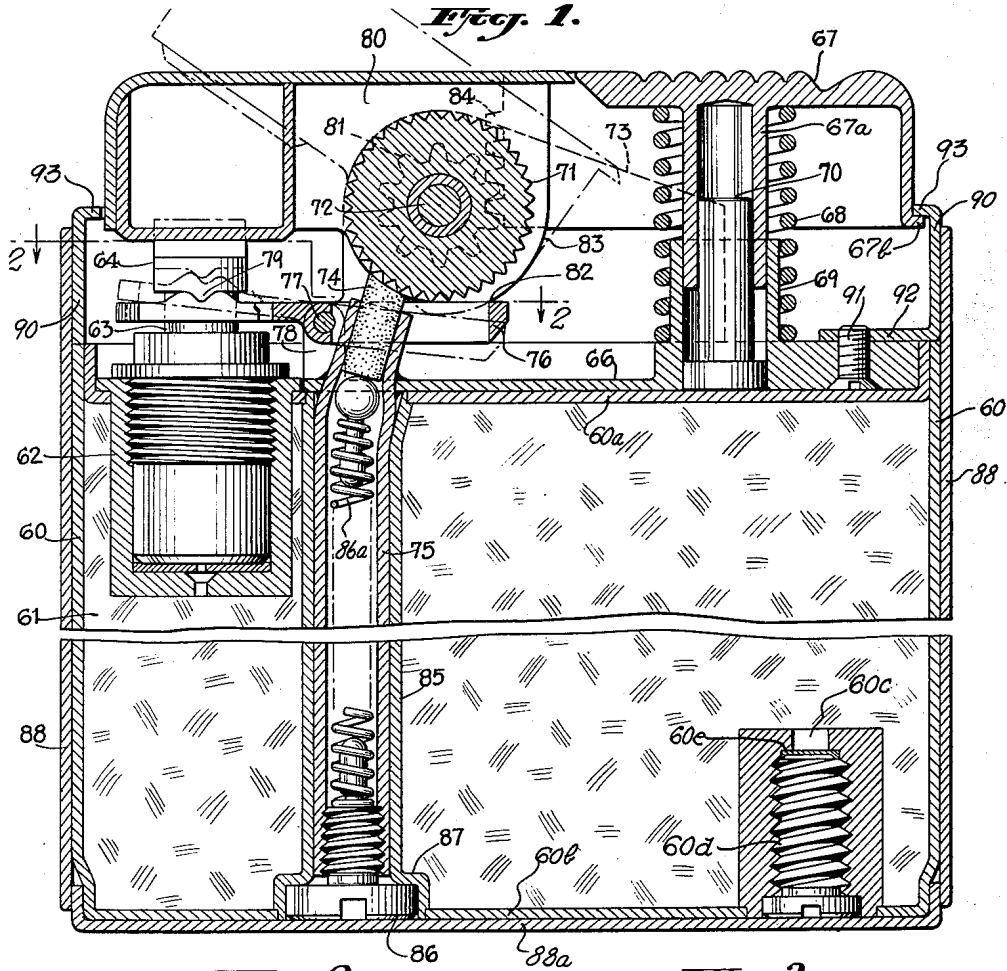
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CIGAR LIGHTER

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## CIGAR LIGHTER

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The invention relates to cigar lighters of the type wherein a fingerpiece actuated mechanism is used to produce and extinguish the flame. In one of its aspects the invention relates more particularly to a fingerpiece construction of the above character which, as hereinafter set forth in greater detail, has certain advantages in respect to the structural relationship between the fingerpiece and the fuel container and other operating parts of the lighter. In another aspect the invention relates more particularly to the operating mechanism actuated by the fingerpiece, whereby for example the valve of a lighter fueled by gas under pressure, may be readily opened or closed by operation of the fingerpiece, or a windshield for the flame moved between operative and inoperative positions by operation of the fingerpiece. 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 preferred form of cigar lighter constructed to operate in accordance with the invention; the disclosure however should be considered as merely illustrative of the principles of the invention in its broader aspects. In the drawings—

Fig. 1 is a central vertical section taken through a cigar lighter constructed in accordance with the invention.

Fig. 2 is a fragmentary section taken on the broken line 2—2 of Fig. 1 looking in the direction of the arrows.

Fig. 3 is a detail side view with certain parts cut away, of the upper left hand portion of the lighter shown in Fig. 1.

The invention is disclosed as applied to a lighter of the type which is fueled by gas under pressure, and wherein a gas fuel container 60 is removably received within an outer enclosing casing 88 which carries the operating parts of the lighter. In the form shown, the fuel container is provided with a top wall 60a and a bottom wall 60b between which extends a tube 85 which receives the flint tube 75 of the lighter, this flint tube having at its lower end an adjusting screw 86, and containing a spring 86a which urges the flint 74 into contact with a sparking wheel as hereinafter described. The upper wall 60a of the fuel container is also shown as having mounted therein an appropriate fuel valve structure denoted generally at 62 and the details of which need not be fully described, it being understood that the valve structure includes a reciprocable valve plunger 63 having a T-like head 64 within which

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a burner opening 65 is provided, the valve plunger 63 being urged toward closed position by a spring (not shown) and lifted to open position as hereinafter described, to admit gaseous fuel to the burner opening 65. Fuel such as butane or propane may be charged into the container 60 through a charging opening 60c, which is thereupon sealed by a threaded plug 60d bearing against a gasket 60e, whereupon the fuel is progressively converted into gaseous form to provide a supply of gaseous fuel under pressure for delivery through the valve structure above referred to. A mass 61 of fuel absorbent material such as cotton will usually be provided in container 60, and the above described parts of the container are secured in fluid-tight relation to each other. When a fuel container of the above type is removed from its enclosing casing 88, as may be done after removal of the detachable cap 88a at the bottom of the casing and release of the screw 86 which clamps the fuel container to the actuating mechanism, the above described valve structure comes out with the fuel container, being a constituent part thereof, but the flint tube 75 remains in place, being secured to a plate 66 located above the fuel container.

The fingerpiece structure for actuating the operating mechanism of the lighter comprises a fingerpiece proper 67, having a hollow stem 67a extending downwardly therefrom, and slidably engaging within a socket member 69 located exteriorly of the fuel container and extending upwardly from the plate 66. A guide post 70 is positioned centrally within the socket 69 and slidably engages within the stem 67a of the fingerpiece to guide the latter during its reciprocatory movements. In the illustrated form of the invention a band-like frame piece 90 extends around the fingerpiece and fits telescopically within the upper portion of the outer casing 88, and the base plate 66 is attached to frame piece 90 by a screw 91 which passes into an internal flange 92 on such plate. The fingerpiece 67 is urged toward its upper idle position by a restoring spring 68 surrounding the members 67a and 69, and the frame piece 90 is shown as provided with an inwardly extending lip 93 under which a flange 67b at the bottom of the fingerpiece engages to limit the upward movement of the fingerpiece. A construction of the above character in effect houses in the fingerpiece, and either the fuel container or the fingerpiece structure may be removed from assembly without interfering with the other, the two being structurally independent, although they rest one against the other when the parts are in assembled position.

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Sparking wheel 71 is mounted upon an axle 72 which is supported between webs 73 extending upwardly from the plate 66, in position to project sparks 74 into the path of a stream of gas issuing from burner opening 65, when valve plunger 63 is open, and sparking wheel 71 is rotated. As shown, the opposite side walls of the fingerpiece 67 are provided with sets of teeth 84 (Figs. 1 and 3) which engage respectively with gears 81 mounted on axle 72 on opposite sides of sparking wheel 71. An appropriate pawl and ratchet mechanism will be understood as acting between the gearing above described and wheel 71 to rotate the latter when fingerpiece 61 is depressed, this mechanism not being shown or described in detail since appropriate forms thereof are known in the art.

To open the valve plunger 63 when the fingerpiece is moved from idle to active position as above described, I mount one or more cam members 83 on the axle 72, in position to actuate a lever 76 located beneath the sparking wheel 71 and engaging with the head 64 of valve plunger 63, to lift the valve immediately to open position when fingerpiece 67 is depressed from the idle position shown in Fig. 1. As shown two of these cams 83 are provided, and constituted by ears at the sides of a protective closure cap 80, which overlies the burner opening 65 when the cap 80 is closed, the cap being thus pivotally mounted to swing about the axle 72. The ears 83 which act as cams, are to be understood as fixed with respect to the gears 81, so that when the fingerpiece is depressed from the idle position shown in Fig. 1, the cap 80 is tilted to an upright position in which it is clear of the burner opening 65 and gases issuing therefrom. So long as fingerpiece 67 remains in its depressed active position, the closure cap remains open, and when manual pressure on the fingerpiece is released, spring 88 restores the closure cap to the position shown in Fig. 1.

The cam members 83 above referred to are provided with peak portions 82 (Fig. 3) which rock the fuel valve actuating lever 76 to move the fuel valve plunger 64 immediately to substantially fully open position during the initial part of the downward movement of fingerpiece 67, and during the remainder of such downward movement the cams act to hold the fuel valve in fully open position while sparking wheel 71 continues to be rotated to project sparks into the path of the stream of gaseous fuel issuing from burner opening 65. In the form shown, the fuel valve actuating lever 76 is pivoted about a stud 77 supported by bearings 78 on the webs 73 above mentioned, the right hand end of the lever as the parts appear in Figs. 1 and 2 surrounding the flint 74, and the left hand end of the lever having an opening 89 therein within which the valve plunger 63 is located, in such manner that the lever engages with lugs 79 (Figs. 1 and 3) on the head 64 of the fuel valve.

When the fuel container and associated parts are to be disassembled with respect to the operating mechanism of the lighter, the head 64 of the fuel valve is twisted until it registers with the opening 89 in lever 76, whereupon the fuel container may be removed through the bottom of casing 88 as previously described; and the operating mechanism of the lighter, which is all carried by the frame piece 89 and plate 66 affixed thereto, may be separately removed when desired, through the upper end of casing 88.

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While the invention has been disclosed as carried out by a lighter of the above described specific construction, it should be understood that changes may be made without departing from the invention in its broader aspects, within the scope of the appended claims.

I claim:

1. A cigar lighter including a casing enclosing a fuel chamber, a hollow socket member mounted at one end thereof on said casing with the remainder thereof extending away from said fuel chamber, a fingerpiece having a hollow stem which fits within said socket member with its exterior wall in engagement with the interior wall of said socket member, the free end of said stem being spaced from said end of said socket member in the idle position of said fingerpiece, a guidepost mounted at one end thereof on said casing with the remainder thereof extending away from said fuel chamber, said guidepost being mounted within said hollow stem with the exterior surface thereof in engagement with the interior wall of said stem, and a restoring spring for said fingerpiece surrounding said stem and socket member and mounted between said casing and said fingerpiece.

2. A cigar lighter including a casing enclosing a fuel chamber, a hollow socket member mounted at one end thereof on the top wall of said casing with the remainder thereof extending above said top wall, a fingerpiece having a stem which reciprocably engages with said socket member, a restoring spring for said fingerpiece surrounding said socket member and said stem and mounted between said fingerpiece and said top wall, a sparking wheel mounted above and on said top wall, and mechanism inter-connecting said fingerpiece at one side of said stem with said sparking wheel to rotate the latter as said fingerpiece moves from idle to active position, said casing having a frame piece above said top wall and at least partially surrounding said fingerpiece and said socket member and said frame piece being engageable with said fingerpiece on the opposite side of said stem from said mechanism to limit the movement imparted to said fingerpiece by said spring.

3. A gas fueled cigar lighter of the character described, including a casing having therein a chamber constructed to contain a gaseous fuel under pressure, a finger piece, sparking wheel, fuel burner and closure cap mounted at the top of said casing, means interposed between said finger piece and burner for mounting said wheel and closure cap to move angularly, said finger piece being mounted to move between idle and active positions, a fuel valve interposed between the mouth of said burner and said fuel chamber, mechanism interconnecting said finger piece, sparking wheel and closure cap to turn said wheel and swing said closure cap to a burner exposing position upon movement of said finger piece from idle to active position, a rocking lever underlying said closure cap and engaging said fuel valve, and a cam member moving angularly with said closure cap to actuate said lever and open said valve, as said closure member swings toward its aforesaid burner exposing position.

4. A gas fueled cigar lighter of the character described, including a casing having therein a chamber constructed to contain gaseous fuel under pressure, a fuel burner structure extending through the top wall of said casing, said burner structure including a reciprocable fuel

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valve interposed between the mouth of the burner and said chamber, a depressible fingerpiece, means for reciprocally mounting said fingerpiece upon the top wall of said casing to move between an upper idle position wherein said valve is closed and a lower active position where said valve is open, a sparking wheel mounted upon the top wall of said casing for rotation about an axis located between the fingerpiece and the burner, a closure cap pivotally mounted upon the top wall of the casing to swing angularly about the same axis between lower burner covering and upper burner exposing positions, said closure cap having a cam member spaced laterally from said sparking wheel along the axis thereof and angularly movable with said closure cap about said axis, mechanism interconnecting said fingerpiece, sparking wheel and closure cap to simultaneously rotate said wheel and swing said closure cap upwardly to burner exposing position as the fingerpiece moves from its upper idle to its lower active position, said lighter also including a lever mechanism underlying said cam member and engageable therewith upon initial movement thereof, said lever mechanism extending from said cam member to the fuel valve and interconnecting the cam member with said valve to

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open the latter as the fingerpiece moves downwardly to actuate the first above-mentioned mechanism to rotate the sparking wheel and swing the closure cap upwardly as aforesaid.

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