

March 18, 1947.

A. CAMPOS

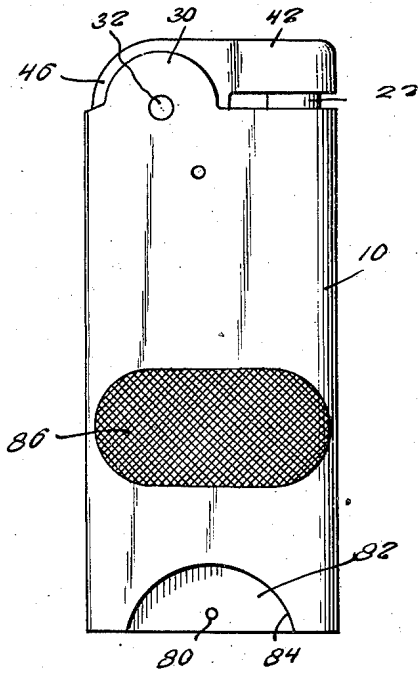
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LIGHTER CONSTRUCTION

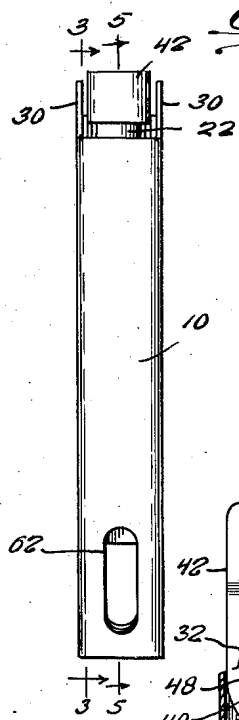
Filed Nov. 17, 1944

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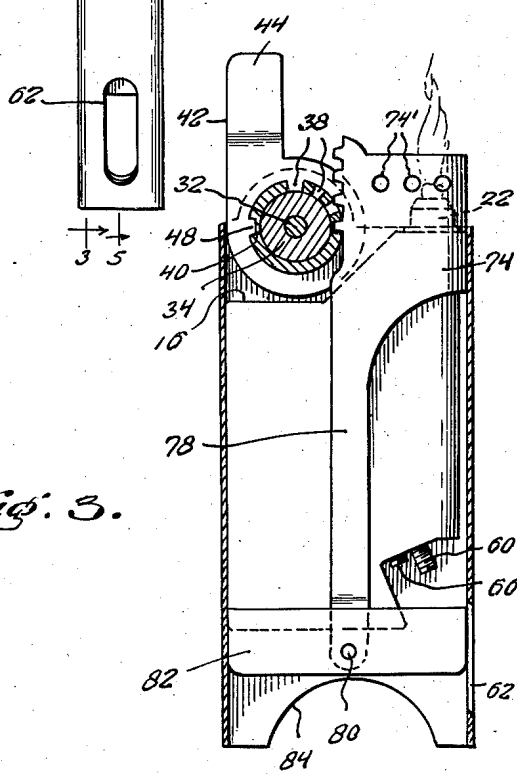
*Fig. 1.*



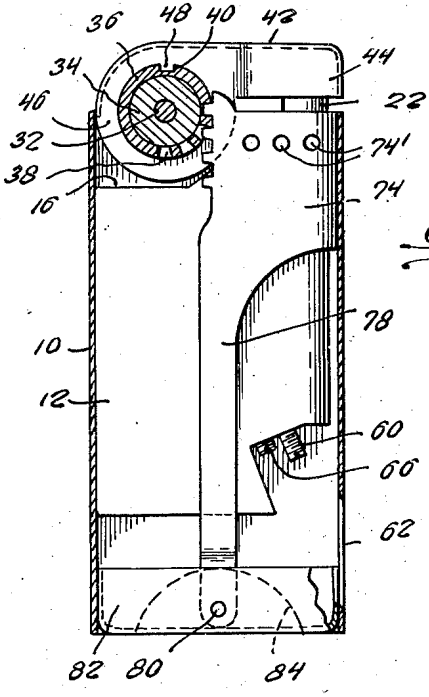
*Fig. 2.*



*Fig. 4.*



*Fig. 3.*



Inventor  
Adolph Campos.

*W. H. Morris*  
*Attorney*

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A. CAMPOS

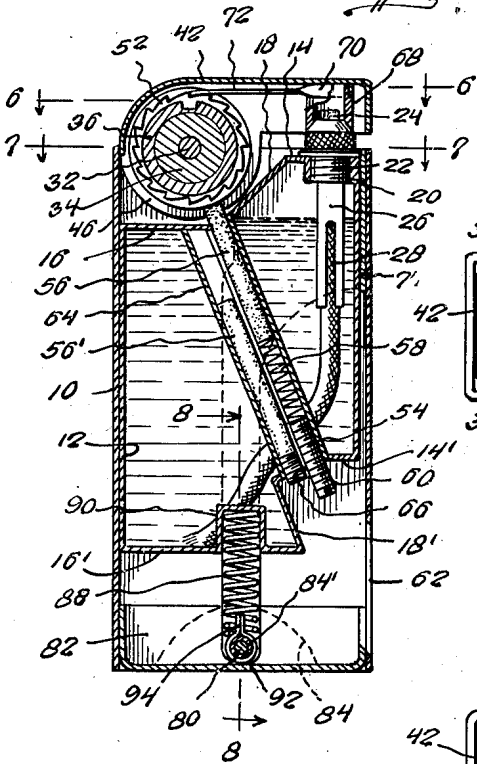
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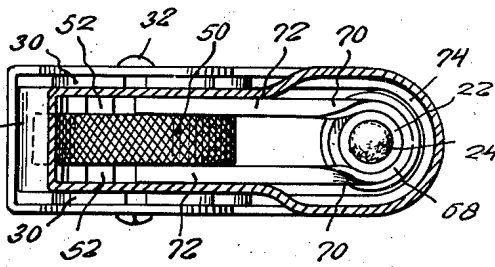
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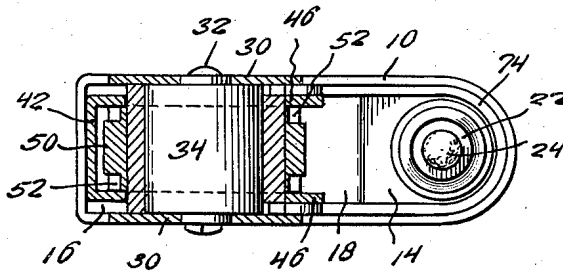
*Fig. 5.*



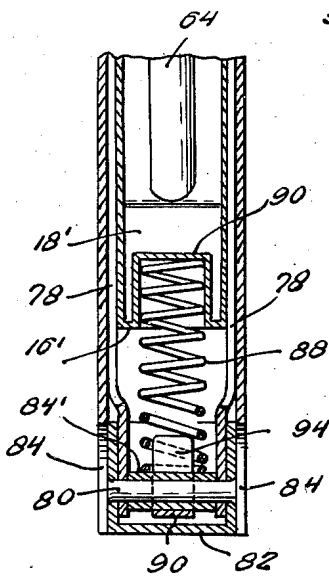
*Fig. 6.*



*Fig. 7.*



*Fig. 8.*



Inventor  
Adolph Campos,

By *McWarner & Bruan*  
Attorneys

# UNITED STATES PATENT OFFICE

2,417,630

## LIGHTER CONSTRUCTION

Adolph Campos, Clifton, N. J.

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4 Claims. (Cl. 67-7.1)

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This invention appertains to a lighter construction for pocket and personal use, and has for its primary object to provide a wick and liquid fuel type thereof, in which certain mechanical refinements are embodied that make for greater simplicity and efficiency in maintenance and operation; the ignition and extinguishing functions being automatically accomplished by a single hand manipulation of a combined spark producing and flame snuffer mechanism.

Another object of the invention has to do with the provision of a lighter of this kind, wherein the wick is carried in a holder that is frictionally seated in the filling opening of the reservoir for its easy removal and replacement during replenishment of the fuel supply, evaporation of the liquid fuel through the wick, during non-use of the lighter, being prevented by the engagement of the flame snuffer over the wick and holder.

A further object of the invention lies in the provision of a lighter construction as hereinbefore characterized, wherein the actuator of the igniter and snuffer mechanism, when manipulated to cause the igniting of the wick, takes position that portions of the same function to shield the flame against extinguishment by the wind.

With these and other objects and advantages of equal importance in view, the invention resides in the certain new and useful combination, construction, and arrangement of parts, as will be hereinafter more fully described, set forth in the appended claims, and illustrated in the accompanying drawings, in which:

Figure 1 is a side elevation of the improved lighter, in accordance with the invention;

Figure 2 is a front elevation;

Figure 3 is a vertical section, taken through the line 3-3 on Figure 2, looking in the direction of the arrows;

Figure 4 is a sectional view similar to that of Figure 3, but showing the relative positions of the snuffer and windshield parts after the manipulation of the actuator to cause the igniting of the wick;

Figure 5 is a vertical section, taken through the line 5-5 on Figure 2, looking in the direction of the arrows;

Figure 6 is a horizontal section, taken through the line 6-6 on Figure 5, looking in the direction of the arrows;

Figure 7 is another horizontal section, but taken through the line 7-7 on Figure 5, looking in the direction of the arrows; and

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Figure 8 is a fragmentary, vertical transverse section, taken through the line 8-8 on Figure 5, looking in the direction of the arrows.

Referring to the drawings in detail, wherein like characters of reference denote corresponding parts in the several views, the improved lighter, as it is exemplified therein, is comprised in a vertically elongated body or casing 10, which is open at its upper and lower ends and houses a tank 12, to serve as a reservoir for a supply of a liquid fuel. The tank 12 has an angled top wall, a horizontal part 14 being disposed flush in the plane of the upper end of the casing 10 and a second horizontal part 16 connected to the part 14 by an inclined intermediate part 18, that is disposed inwardly from the upper end of the casing, the part 14 having an inwardly flanged filling opening 20, into which, a holder 22, for a wick 24, is screw threaded. Depending within the tank 12, from the holder 22, is a guide tube 26 for the wick 24 to direct its feed upwardly of the holder, the lower end of the tube being split, as at 28, to prevent any binding or kinking of the wick in its feeding movement.

The top ends of the side walls of the main casing 10 are formed to provide a pair of complementary ears 30, each substantially semi-circular in form and apertured to receive an end of a pin 32, that may take the form of a bolt, upon which a cylindrical bearing 34 is supported between the ears. Mounted for rotation on the bearing 34, is a sleeve 36, which has its ends formed to provide complementary sets of notches or teeth 38 and a pair of notches 40, separated from the teeth 38, into which a pair of lugs 48, formed on a cover casing, are engaged. The cover casing is formed from a sheet metal blank, that is shaped to provide a top wall 42 and depending side walls 44, with rear portions of the side walls outwardly offset and taking the form of substantially circular ears 46, which are apertured for engagement over the opposite ends of sleeve 36; the aforesaid lugs 48 being formed on the peripheries of these ears for engagement in the notches 40 in the sleeve; the space within the main casing 10, above the lower and sloping portions 16 and 18 of the top wall of the latter, providing a proper clearance for the positioning of the rear end of the cover casing therein. The rear end of the top wall 42, of the cover casing, curves downwardly in conformity with the curvature of the peripheries of the ears 46, while the front end of the narrower forward end portion of the cover casing is closed by a wall depending from the top wall 42. Mounted on the sleeve 36,

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is a file-wheel 50, which is positioned thereon between a pair of ratchet wheels 52 that are formed with, or secured to, the file-wheel for simultaneous rotation, relatively to the sleeve.

Extending angularly through the tank 12, from a point of open connection with the horizontal top wall portion 16 and immediately adjacent the lower end of the intermediate sloping top wall portion 18, is a flint feed tube 54, which has its lower end opening through a front angled portion 14', of the bottom wall of the tank. This wall portion 14' is connected to a rear horizontally disposed wall portion 16' by an intermediate angled wall portion 18', as is best shown in Figure 5. A flint 56 is positioned in the upper end of the tube 54 and is urged against the under side of the file-wheel 50 by means of a coiled spring 58, the lower end of the tube being closed by a screw plug 60, that is accessible for removal and replacement by means of a proper tool, e. g., a screw driver, to be inserted through an opening 62, formed in the front side wall of the casing 10. Arranged in juxtaposition to the flint feed tube 54, is a tubular magazine 64, to house a replacement flint 56', and it has its lower end opening through the angled wall portion 14' and closed by a screw plug 66, which is also accessible for tool application from the opening 62.

Mounted within the front end portion of the cover casing 42, is a cylindrical member 68, which functions as a snuffer to extinguish the flame at the wick end, when the cover casing is normally positioned. This member 68 is formed of sheet metal and in a manner to have two parallel strips cut out from its upper end and extending rearwardly therefrom, after being given a twist, as at 70, to form a pair of flat resilient pawls 72 engaged with the teeth of the ratchet wheels 52, so that, when the cover casing is swung upwardly and rearwardly, they will impart rotary motion to the ratchet wheels and the file-wheel 50, causing the latter to abrade the flint 56. With the opening movement of the cover casing, the snuffer member 68 is lifted from its engagement with the wick end and sparks from the flint 56 are directed upwardly of the sloping wall 18 to ignite the latter.

The igniter and snuffer mechanism just described is to be actuated by means of a substantially U-shaped member 74, which is engaged about the front and opposite sides of the tank 12, in spaces between the same and the opposed walls of the main casing 10, it being understood that the rear side wall of the tank is secured to the like side of the main casing, in any suitable manner. The vertical edges of the opposite side wings of the actuator member 74 are toothed, as at 76, and engaged with the notches or teeth 38, formed in the sleeve 36. Extending downward from the inner ends of the opposite side wings of the actuator member 74, through the spaces at the opposite sides of the tank 12, are a pair of arms 78, that have their lower ends secured, as at 80, to a push button 82, which is slidably housed within the lower end of the main casing 10, below the bottom wall of the tank 12. This push button 82 is of dished form and has the lower ends of the arms 78 projecting into the same alongside the opposite side walls thereof, against which, they are held by a spacer sleeve 84' engaged on the fastening 80, which is in the form of a cross-pin. To permit the push button 82 being set flush in the lower end of the main casing 10 and to otherwise facilitate its manipulation, the edges of the side walls of the latter

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are provided with cutouts 84. This actuator mechanism is sustained in its inactive condition by means of a coiled spring 88, which has one of its ends seated in a socket 90, formed centrally in the bottom wall of the tank 12, and its other end engaged by abutted lugs 94 formed by the out-turned ends of a split collar 92, engaged on the spacer sleeve 84'.

In operation, an upward push on the push button 82, depresses the coiled spring 88 and forces the actuator member 74 to move vertically within the spaces between the main casing 10 and the tank 12, during which movement, rotative movement, in an anti-clockwise direction, is imparted to the sleeve 36, through the engagement of the teeth 76, on the actuator member, with the notches or teeth 38 on the sleeve. This rotative motion of the sleeve 32 is transmitted to the cover casing 42, through the lugs 48 engaged with the notches 40, on the sleeve, and it is swung upwardly and rearwardly to a substantially vertical position at the rear side of the main casing. In this movement of the cover casing 42, the snuffer member 68 is lifted from the wick end and, at the same time, a rotary motion, also in an anti-clockwise direction, is imparted to the ratchet wheels 52 and the file-wheel 50, causing the latter to abrade the flint 56 for the spark igniting of the wick end. Upon the release of the push button 82, the coiled spring 86 expands in a downward direction, forcibly returning the operative parts to their original positions. As best shown in Figure 4, in the elevated position of the actuator member 74, the upper end portion thereof projects from the top end of main casing 10 and encloses the wick end to shield the flame against being extinguished by air currents, this portion of the member 74 being provided with sets of openings 74' at the opposite sides of the same to admit sufficient air to support combustion at the wick end.

Without further description, it is believed that the novel features incorporated in this lighter construction will be readily comprehended by those skilled in the manufacture of devices of like character, and that its ease of operation and the refinements in its design will be appreciated by the purchasing public. Also, it is to be understood that changes in design and minor details of construction may be resorted to, provided such changes fall within the scope of the appended claims.

I claim:

1. A lighter construction comprising a casing open at its upper and lower ends, a fuel tank positioned within the casing inwardly from the lower end thereof and having an angled top wall, said angled top wall having an upper horizontal portion lying flush in the plane of the upper end of the casing and a lower horizontal portion spaced inwardly from the upper end thereof, the upper horizontal portion of the top wall being at the front side of the tank and having a filling opening, a wick holder removably seated in the filling opening, a file-wheel mounted for turning movements between the side walls of said casing and immediately above the lower horizontal portion of said top wall, a cover mounted for pivotal movements coaxially with respect to said file-wheel, a snuffer cup mounted within said cover, actuator means extending through said casing and between the same and said tank and operatively connected with said cover to move the snuffer cup from and to its flame snuffing position, a flint supported in contact with said file-wheel

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and means for transmitting the motion of the cover to the file-wheel during its movement to expose the wick for igniting by the sparks emitted from said flint.

2. The lighter construction as in claim 1, with an end wall and adjacent portions of the side walls of said fuel tank spaced from the opposed end and side wall portions of said casing for the extension of said actuator means through the space for its operative connection with said cover.

3. The lighter construction as in claim 1, with a flint feed tube extending angularly downwardly through said tank from a point below the file wheel and opening through the bottom wall of the tank adjacent a wall of said casing, and a removable closure for the lower end of said tube, said casing having an opening in its said wall for access to said removable closure.

4. The lighter construction as in claim 1, with said spark producing mechanism including a file wheel, a flint feed tube extending angularly downward through said tank from a point below the

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file wheel and opening through an angled portion of the bottom wall of the tank adjacent the front wall of said casing, and a screw plug closing the lower end of said tube, said casing having an opening in said front wall for access to said screw plug.

ADOLPH CAMPOS.

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