

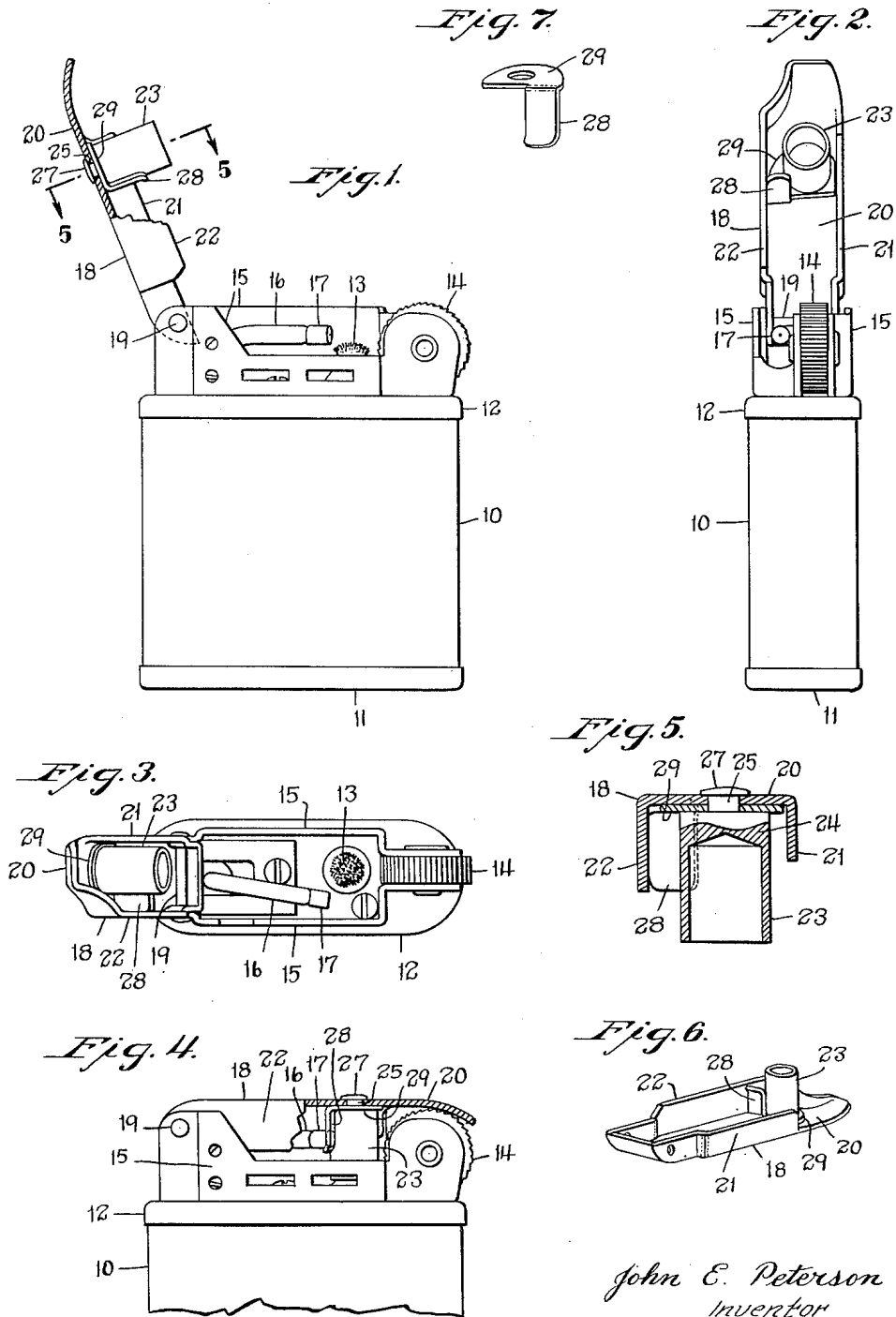
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SNUFFER FOR PYROPHORIC LIGHTERS

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SNUFFER FOR PYROPHORIC LIGHTERS

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2 Claims. (Cl. 67-7.1)

The present invention relates in general to pocket-lighters of the type having a pyrophoric element for igniting a wick and more particularly to a pocket-lighter having a jet-nozzle used in conjunction with the wick for increasing the range of usefulness of such lighters. A pocket-lighter of this type is shown in detail in the Evans Patent No. 2,242,906, May 20, 1941.

An object of the invention is to provide a superior pocket-lighter of the jet type which is of durable and inexpensive construction and which is easy and safe to operate.

A further object of the invention is to provide a pocket-lighter of the type described wherein the flame of the jet-nozzle is automatically snuffed out safely and with dispatch upon closing the cover of the lighter.

Other objects and advantages will appear to those skilled in the art from the following, considered in conjunction with the accompanying drawings.

In the accompanying drawings, in which certain modes of carrying out the present invention are shown for illustrative purposes:

Fig. 1 is an enlarged side elevation of a jet-type of pocket-lighter, the cover of which is open and shown partly in section;

Fig. 2 is a front elevation of the jet-type pocket-lighter of Fig. 1;

Fig. 3 is a top view of the lighter of Fig. 1;

Fig. 4 is a fragmentary side elevation of the jet-type lighter of Fig. 1 but with the cover closed, the cover being partly in section;

Fig. 5 is an enlarged transverse section of the cover on line 5-5 of Fig. 1;

Fig. 6 is a perspective view of the cover of the lighter detached; and

Fig. 7 is a perspective view of the jet-snuffer detached.

The invention is embodied in a jet-type pocket-lighter which comprises a fluid fuel-receptacle 10 having a bottom end-closure 11 and a top end-closure 12, the latter being arranged to support a wick 13, the lower end of which extends down into the lighter fluid in the body of the receptacle. The wick 13 is adapted to be ignited by sparks given off from a pyrophoric element (not shown), adapted to be engaged by a rotatable abrading wheel 14 which is supported by a substantially-rectangular guard-member indicated generally at 15, mounted on the top end-closure 12 of the lighter, the abrading wheel 14 being supported immediately above the upper end of the aforesaid pyrophoric element so as to engage the latter and throw a shower of sparks against the wick upon rotation of the abrading wheel.

Supported on the top end-closure 12 substantially opposite the wick is a tube 16, the lower end of which passes down through the end-closure 12 into the lighter fluid thereof. The upper end of the tube 16 is provided with a jet-nozzle 17 which is disposed slightly above the wick 13 but is offset laterally therefrom in the manner shown especially well in Fig. 3. As is shown in detail in the aforementioned Evans patent, the tube 16 is provided with a wick which terminates adjacent the jet-nozzle 17 to form a pressure-chamber therein. Thus, when a flame from the wick 13 plays upon the jet-nozzle 17 of the tube 16, the lighter fluid within the tube 16 is vaporized and collects in the pressure-chamber of the jet-nozzle 17. Upon escaping from the latter, the vaporized fuel is automatically ignited by the wick-flame and forms a long

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projected jet-flame which is adapted to be used for lighting pipes and the like.

A cover 18 is pivotally hinged at 19 to one end of the aforesaid guard-member 15 and is influenced by means of a spring (not shown) to stay in either an open position, as shown in Fig. 1, or a normal closed position, as shown in Fig. 4. Referring especially to Figs. 5 and 6, the cover comprises a substantially-rectangular top 20 having side walls 21 and 22 respectively extending along the longitudinal edges thereof, and arranged to complement the respective side walls of the guard-member, the side wall 22 being higher than the side wall 21 and on the edge of the cover which is adjacent the jet-nozzle 17 when the cover is closed. Thus, the side wall 22 of the cover is normally in juxtaposition to the jet-nozzle 17 and extends below the latter in the manner indicated in Fig. 4.

In order to automatically snuff out the flame of the wick upon closing the cover 18, the latter is provided with a wick-snuffer comprising essentially a substantially-cylindrical cup-shaped element 23. As shown especially well in Fig. 5, the latter has a solid bottom 24 from which projects an integral fastening-element comprising preferably a rivet-shank 25 which is adapted to project through an aperture in the top 20 of the cover and to be headed over on the outer face thereof as at 27, to fasten the wick-snuffing cup 23 rigidly thereto.

Pursuant to the objects of the invention, the wick-snuffing cup 23, and more especially its fastening-element 25, is adapted to secure a jet-snuffer 28 to the underside of the cover so that upon closing the latter, the jet-snuffer 28 will be moved down across the end of the jet-nozzle 17 to close off or substantially close off the aperture therein from the surrounding atmosphere and thus snuff out the jet-flame. As shown especially well in Figs. 1 and 7, the jet-snuffer 28 comprises a sheet-metal finger of some inherent resiliency, the free end of which is bent inwardly slightly as seen in Fig. 4, so as to wipe, preferably resiliently, across the end of the jet-nozzle upon closing the cover. The opposite end of the finger 28 is integral with an enlargement or base-portion 29 which is in a plane substantially at right angles to the plane of the finger and provided with a substantially-central aperture to accommodate the rivet-shank 25 of the wick-snuffing cup 23.

The jet-snuffer is assembled on the cover of the pocket-lighter by mounting its apertured base-portion 29 on the underside of the top 20 of the cover, with the aperture in the base-portion 29 in alignment with the rivet-shank receiving-aperture of the cover, whereupon the cup-shaped wick-snuffer is engaged against the base-portion 29 of the jet-snuffer by projecting the rivet-shank 25 of the wick-snuffer through the aperture in the base-portion 29 of the jet-snuffer and the axially-aligned aperture 26 in the top of the cover. Thereafter, the end of the rivet-shank is headed over as at 27 on the top side of the cover, in the manner shown especially well in Figs. 1 and 5. Thus, the cup-shaped wick-snuffer 23 and the finger-like jet-snuffer 28 are simultaneously secured to the cover of the pocket-lighter, the jet-snuffer 28 being oriented during assembly so that when the hinged cover is swung down into its normal closed position, the jet-snuffer 28 will pass across the apertured end or face of the jet-nozzle 17 to substantially close the aperture thereof in the manner shown in Fig. 4. In this connection, it will be noted in Fig. 3, that the face of the jet-nozzle 17 lies in a transverse plane which is slightly oblique to the longitudinal axis of the top end-closure 12 of the lighter. Consequently, in assembling the jet-snuffer on the cover, the jet-snuffer 28 is similarly oriented so that its planar surface lies in a transverse plane which makes a corresponding oblique angle to the longitudinal axis of the cover, whereby the planar surface of the jet-snuffer lies substantially in the plane of and against the apertured end of the jet-nozzle to effectively close off the aperture therein.

The operation of the pocket-lighter is apparent from the foregoing description, but it may be summarized briefly as follows. To use the lighter, the cover 18 is swung into its open position as shown in Fig. 1, whereupon the abrading wheel 14 is manually rotated to engage the pyrophoric element of the lighter and send a

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shower of sparks against the wick 13 to ignite the latter. Upon ignition of the lighter, the heat therefrom volatilizes the fluid within the jet-nozzle 17 of the tube 16, whereupon the highly-volatilized fluid escapes from the jet-nozzle 17 in the form of a thin pressurized jet-flame, which is admirably suited to lighting a pipe, and similar uses. Upon closing the cover of the pocket-lighter, the cup-shaped wick-snuffer 23 and the jet-snuffer 28 move down simultaneously into cooperative engagement with the wick 13 and jet-nozzle 17 respectively, to shut off oxygen from these respective elements and hence snuff out the flames.

The invention may be carried out in other specific ways than those herein set forth without departing from the spirit and essential characteristics of the invention, and the present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, and all changes coming within the meaning and equivalency range of the appended claims are intended to be embraced therein.

I claim:

1. In a jet lighter, the combination of a container adapted to hold fuel; a jet nozzle on the outside of said container, said nozzle being in communication with the interior of said container and having an outer end adapted, when heated, to emit a jet flame; a cover hinged on said container so as to be turnable to and from closed position over said nozzle; and a jet-flame snuffing element in the form of a slightly resilient blade depending from said cover and moving transversely of said nozzle end into closing engagement therewith at the end of the movement of said cover into said closed position, said blade having its end remote from said cover slightly bent from the

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plane of the remainder of said blade so that the edge of said bent blade end will pass across said outer nozzle end in resilient wiping engagement therewith toward the end of the movement of said cover into said closed position.

2. In a jet lighter, the combination with a fuel container having an end closure, a fuel-conducting wick projecting with one end thereof through said end closure to the outside of said container, a jet nozzle on said end closure in communication with the interior of said container and having an outer end projecting into close proximity to said wick end, said outer nozzle end extending transversely of the longitudinal axis of said container, a cover hinged on said container so as to be turnable to and from a closed position in which the same is in covering relation with said jet nozzle and wick end, and a cup-shaped wick-flame snuffer carried by said cover and closing over said wick end on movement of said cover into said closed position; of a jet-flame snuffing element on said cover having a surface moving transversely of said outer nozzle end into closing engagement therewith toward the end of the movement of said cover into said closed position.

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