

Nov. 4, 1947.

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2,430,103

LIGHTER CONSTRUCTION

Filed Dec. 22, 1944

2 Sheets-Sheet 1

Fig. 1.

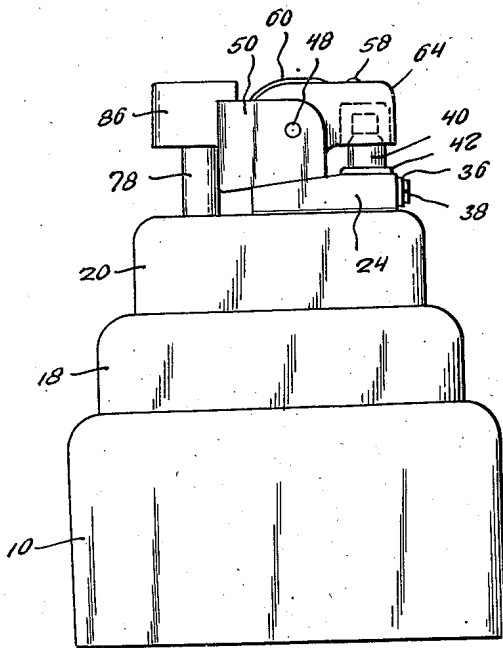


Fig. 2.

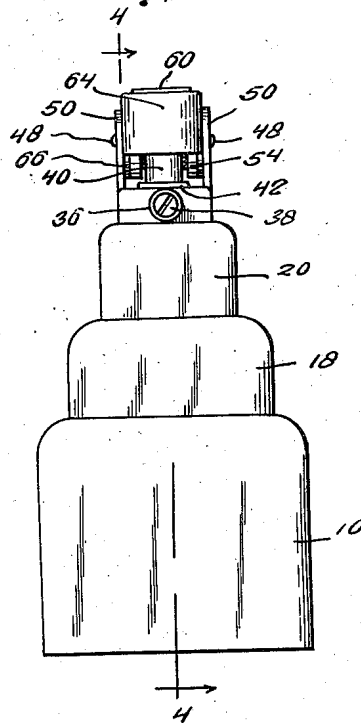


Fig. 3.

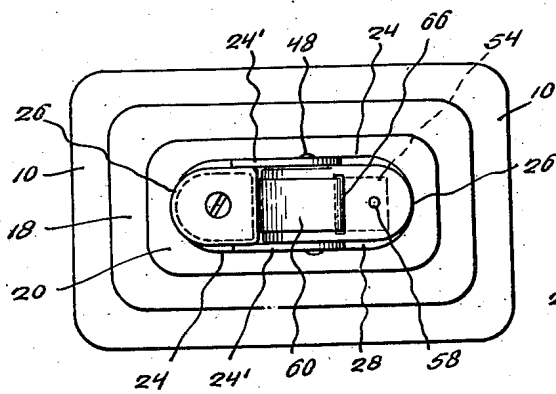
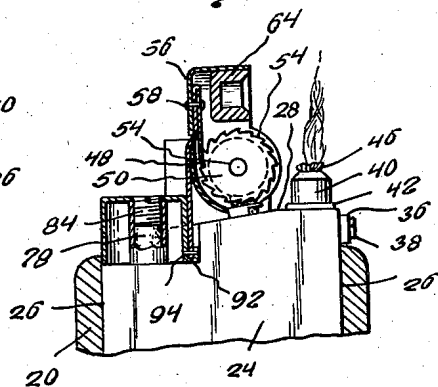


Fig. 4.



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Fig. 4.

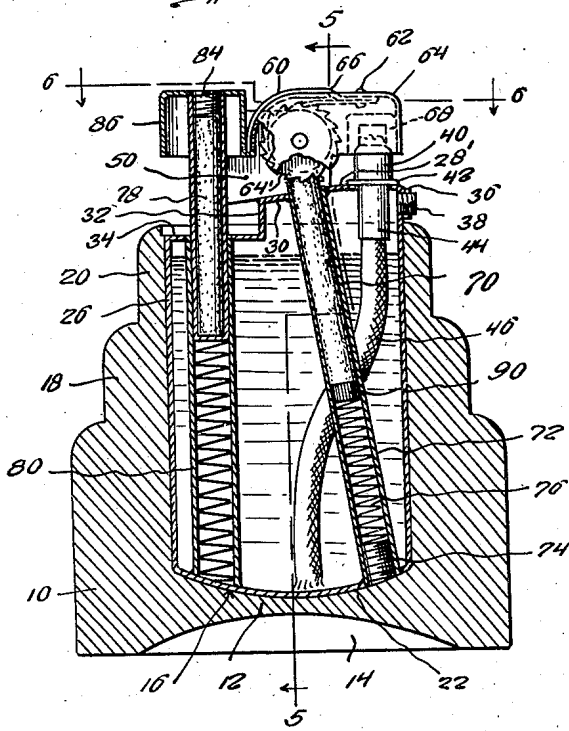


Fig. 5.

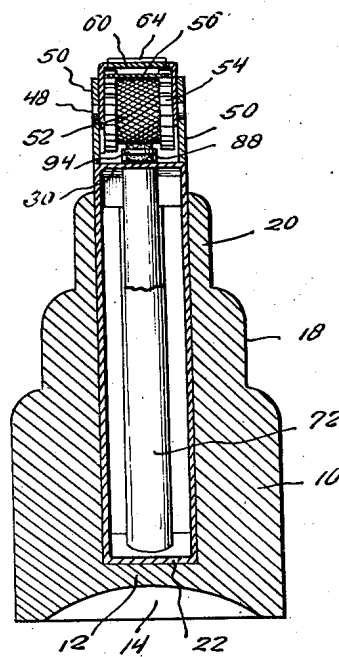


Fig. 6.

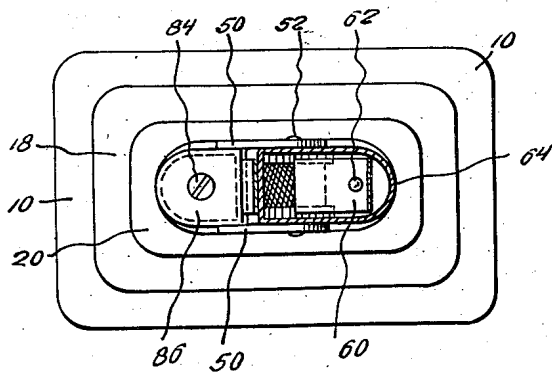
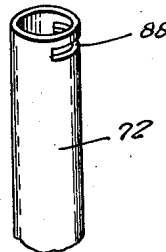


Fig. 8.



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UNITED STATES PATENT OFFICE

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LIGHTER CONSTRUCTION

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3 Claims. (Cl. 67-4.1)

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This invention appertains to a lighter for cigars and cigarettes, and has for one of its several objects to provide one of a design and construction that readily lends itself for carriage on the person, or for desk and table use in offices and homes.

Another object of the invention has to do with the provision of a lighter and holder combination, which makes the aforesaid dual purpose possible of attainment, by having the lighter removable from the holder for pocket and personal use, and seated in the holder for office desk and home table use.

A further object of the invention lies in the provision of a lighter structure of this kind, which is semi-automatic in operation, and to such end is provided with a movable wick snuffer casing or hood, which is interconnected with an actuator means and a file-wheel and flint igniter mechanism in a manner that, upon finger pressure applied to the actuator means, it is moved to a position to expose the wick end to sparks emitted from the flint and, during such movement, transmits its motion to the file-wheel for the abrading of the flint to produce the sparks and thereafter, upon the lighting of the wick end and the removal of the finger pressure from the actuator, the latter and the casing or hood automatically return to their normally disposed positions.

Yet another object of the invention is to provide a cigarette lighter as hereinbefore characterized, which is pleasingly attractive in appearance, comparatively inexpensive to manufacture, simple to manipulate, and highly efficient in operation.

With these and other objects and advantages 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 lighter and holder combination, in accordance with the invention;

Figure 2 is an end elevation;

Figure 3 is a top plan view;

Figure 4 is a vertical, longitudinal section, taken through the line 4-4 on Figure 2, looking in the direction of the arrows;

Figure 5 is a vertical, transverse section, taken through the line 5-5 on Figure 4, looking in the direction of the arrows;

Figure 6 is a horizontal section, taken through

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the line 6-6 on Figure 4, looking in the direction of the arrows;

Figure 7 is a fragmentary, vertical, longitudinal section, showing the positions of the actuator and the snuffer casing or hood following the operation thereof to cause the lighting of the wick end; and

Figure 8 is a perspective view of the top end portion of the flint feed tube or magazine, showing the sight opening therein through which a color signal, carried in the lower end of the flint, is exposed to view, as the flint nears its point of exhaustion.

Referring in detail to the drawings, wherein like characters of reference denote corresponding parts in the several views thereof, the invention, as it is exemplified therein, is generally comprised in a self-container lighter structure, including a wick igniter mechanism and a wick snuffer device, and a holder therefor, the lighter to be removed from the holder for personal transient use and to be seated in the holder for a more stable support on an office desk, reading table, or the like.

The holder is comprised in a hollow body, open at its top, and made of a moldable plastic or like material to substantially rectangular form and shaped to provide a base portion 10 and inwardly stepped intermediate and top portions 18 and 20, respectively, the corners and top edges of the several portions being rounded off, substantially as shown. The lower side of the bottom wall 12, of the base portion 10, is preferably formed with a concavity 14, to lend added stability to the holder when it is seated upon a flat supporting surface, while the upper side of the same is made substantially semi-circular, as at 16. The interior of the holder is preferably formed with flat side walls and rounded end walls to match the like side and end walls of the lighter body.

The lighter unit is comprised in a hollow metal casing, including a bottom wall 22, flat side walls 24, rounded end walls 26, and a top wall 28, and constitutes a reservoir for a liquid fuel. The bottom wall 22 is made semi-circular to match the like curvature of the inner side of the bottom wall 12 of the holder. One of the end walls 26 extends above the top of the holder and has its extended portion provided with an outwardly nipped filling opening 36, which is closed by a removable grub screw or the like 38. The top wall 28 is formed to provide a horizontal portion, designated 28', connecting the extended portion of the end wall with a downwardly sloping intermediate portion 30 which, in turn, is connected

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at its lower end with the upper end of a relatively short vertical portion 32, rising from the inner end of a horizontal portion 34, extending inwardly from the upper end of the other of the end walls 26, the latter terminating short of the top of the holder. A burner tip 40 is seated in an aperture formed in the horizontal wall portion 28' and is provided with an annular flange 42 at its base, that is welded to the wall portion, about the aperture therein. Depending into the casing from the burner tip 40, is a tubular extension 44, to receive the wick 46 and guide it to and through the burner tip.

Positioned inwardly from the burner tip 40, above the sloping wall portion 30, is an igniter mechanism, which is comprised in a file-wheel 52, mounted for rotary movement about a horizontal axis or a shaft 48, that is secured at its ends in spaced ears or wings 50, secured to the wall portion 30. The file-wheel 52 has its rasp surface centered between oppositely disposed sets of ratchet teeth 54, formed on its periphery, which are engaged by the edge of an end portion of a scape element that is secured to the under side of the top wall of a cover casing or hood 64. The scape element is in the form of a strip of spring metal, bent upwardly and over onto itself, as at 58, to provide a lower portion 56 having its end edge engaged with the teeth 54 and an upper portion 60 passing outwardly through the transverse slot 66, formed in the top wall of the hood 64, and rearwardly therefrom and curving downwardly of the rear end of the latter. The scape element, as before stated, is secured to the top wall of the hood 64, by means of a rivet or the like 62, passed through the folded portion of the same, substantially as shown. The hood 64 has portions of its side walls enlarged and apertured for engagement on the ends of the shaft 48, between the wings 50 and the opposed ends of the file-wheel 52. When normally positioned, the hood 64 extends from one side of the igniter mechanism and into overlying relation with respect to the burner tip 40. Mounted in the extended end of the hood 64, is an inverted cylindrical cup 68, which fits over the wick end to snuff out a flame, the cup resting upon the upper end of the burner tip 40 and is held in alignment therewith through the cooperation of beveled surfaces formed on the open end of the cup and the upper end of the burner tip. A flint 70 is seated in the upper end of a feed tube 72, which opens through the sloping wall portion 30 at a point beneath the rasp surface of the flint-wheel 52 and extends angularly downward through the casing to a point of securement with the bottom wall 22, with its lower end opening through the bottom wall and closed by a screw 74. A coiled spring 76 is housed within the tube 72, to support the flint 70 in contact with the under side of the rasp surface of the file-wheel 52 and its tension to that end is to be adjusted by a manipulation of the screw 74.

To operate the igniter mechanism and snuffer device, as thus constructed and arranged, an actuator in the form of a plunger 78 is mounted in the upper end of a guide tube 80, which extends vertically through the casing from a point of connection with the bottom wall 22 and opens through the horizontal wall portion 34, at the opposite side of the igniter mechanism from that nearest the burner tip 40. The plunger 78 is made of a length of tubing, closed at its lower end to seat on a coiled spring 82, housed within the guide tube beneath the same, and open at 75

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its upper end to receive a screw 84 therein to secure a cylindrical finger piece or button thereon. The button 86 is operatively connected to the adjacent, downwardly curved end of the upper portion 60 of the scape element, so that, when finger pressure is applied to the button, the plunger 78 is forced downwardly of the guide tube 80, against the tension of the coiled spring 82 therein, and in its movement exerts a pulling action on the scape element and, through it, on the hood 64, causing the latter to swing upwardly and rearwardly on the shaft 48 to lift the snuffer cup 68 from the wick end at the burner tip 40. With this movement of the hood 64, the lower portion 56, of the scape element, exerts a pushing action against the engaged teeth 54 and thereby imparts a spinning motion to the file-wheel 52, causing the rasp surface of the latter to abrade the flint 70 to produce sparks for the lighting up of the wick end, the point of contact of the flint, with the rasp surface of the file-wheel, being such that the sparks, when produced, are directed straight at the wick end. With the release of the pressure of the finger on the button 86, the coil spring 82 expands within the guide tube 80 and returns the plunger 78 to its normally elevated position. As the plunger moves upwardly, its motion is transmitted to the hood 64 to return it back to its original position, when the snuffer cup 68 again engages over the wick end at the burner tip 40. In the return movement of the hood 64, the lower portion of the scape element rides over ratchet teeth 54 to a new position of engagement therewith.

In order to assure of the positive operation of the hood 64, particularly with regard to its return movement to engage the snuffer cup 68 over the wick end at the burner tip 40, the end of curved portion of the scape element part 60 engages in a channel formed in the upper side of an angled offset 92, at the inner side of the lower end of the finger piece or button 86, a pin 94 being passed through the offset 92 and the engaged end of the scape element part 60 to secure the latter to the finger piece or button. Also, the rear end edges of the side walls of the hood 64 are formed to provide shoulders 64', which lie in the path of upward movement of the angled offset 92, so that the latter forcibly engages the shoulders 64' to aid the scape element part 60 in swinging the hood 64 back to its initial position, with the snuffer cup 68 engaged over the wick end.

As best shown in Figures 4 and 8, flint feed tube 72 is provided with an arcuate slot 88 in the front side of its upper end, at a point immediately above the wall portion 30, to serve as a sight window for the exposure therethrough of a signal element 90 provided on the lower end of the flint 70, to indicate the approach to near exhaustion of the flint, the signal element preferably taking the form of a colored tip applied to the flint end.

Without further description, it is thought that the attractiveness, novelty, and efficiency in operation, resident in the disclosed lighter construction, will be obvious to the manufacturer of smokers' appliances and to the cigar and cigarette smoking public. Also, it is to be understood that changes in design and minor details in the construction and arrangement of parts of the lighter, may be resorted to, within the limits set by the scope of the appended claims.

What I claim is:

1. In a lighter construction, a closed casing

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constituting a reservoir for a liquid fuel, a burner tip mounted in the top wall of said casing and supporting a wick extending therethrough, a file wheel having a gear means in association therewith mounted on said casing for rotary movement about a horizontal axis, a hood carried by said casing and mounted for swinging movement about said horizontal axis, a snuffer cap carried by said hood adapted to fit over the wick end extending through said burner tip to snuff out a flame, a manually-operable pressure-exerting means, and a scape element on the under-side of the top wall of said hood having one edge in engagement with said gear means and having its other edge in operative engagement with said manually-operable means.

2. In a lighter construction, a closed casing constituting a reservoir for a liquid fuel, a burner tip mounted in the top wall of said casing and supporting a wick extending therethrough, a shaft on said casing, a file wheel having ratchet teeth formed on its periphery mounted for rotary movement on said shaft, a hood carried by said shaft and mounted for swinging movement thereon, a snuffer cap carried by said hood adapted to fit over the wick and extending through said burner tip to snuff out a flame, a manually-operable pressure-exerting means, and a scape element embodying a strip of spring metal secured to the under-side of the top wall of said hood having one edge in meshing engagement with said ratchet teeth and having its other edge in operative engagement with said manually-operable means.

3. In a lighter construction, a closed casing constituting a reservoir for a liquid fuel, a burner tip mounted in the top wall of said casing and supporting a wick extending therethrough, a shaft on said casing, a file wheel having ratchet teeth formed on its periphery mounted for rotary

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movement on said shaft, a hood carried by said shaft and mounted for swinging movement thereon, a snuffer cap carried by said hood adapted to fit over the wick and extending through said burner tip to snuff out a flame, a manually-operable pressure-exerting means comprising a guide tube extending vertically through said casing and opening through a top wall of the latter at the side of said file wheel opposite from said burner tip, a plunger provided with a button mounted for reciprocatory movement in the upper end of said tube, a coil spring within said guide tube adapted to be compressed when said plunger is actuated by finger pressure applied to the button and to act to return the plunger to its normal position upon the removal of the finger pressure therefrom, and a scape element embodying a strip of spring metal secured to the under-side of the top wall of said hood having one edge in meshing engagement with said ratchet teeth and having its other edge in operative engagement with the button of said plunger.

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