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J. F. ROGERS

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LIGHTER

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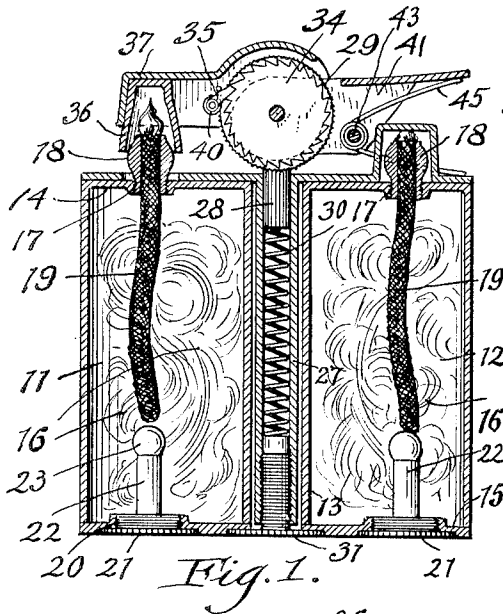


Fig. 1.

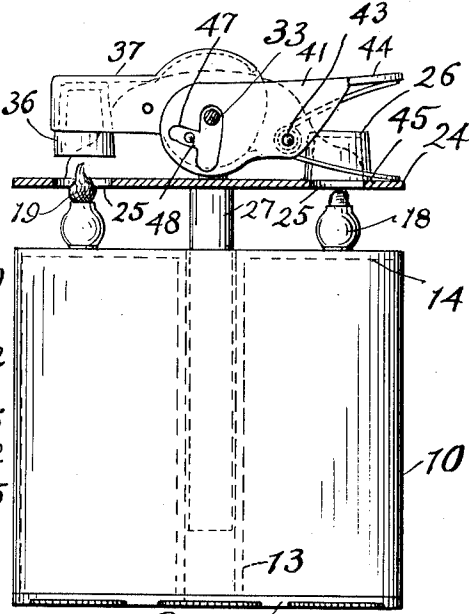


Fig. 2.

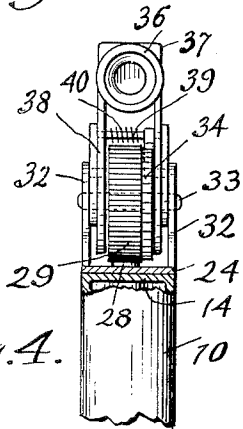


Fig. 4.

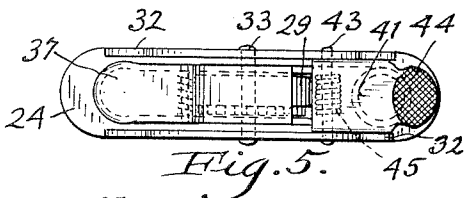


Fig. 5.

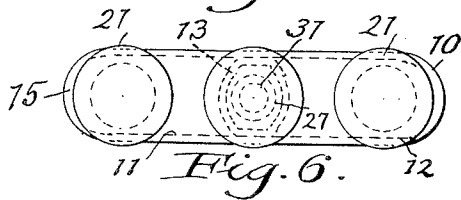


Fig. 6.

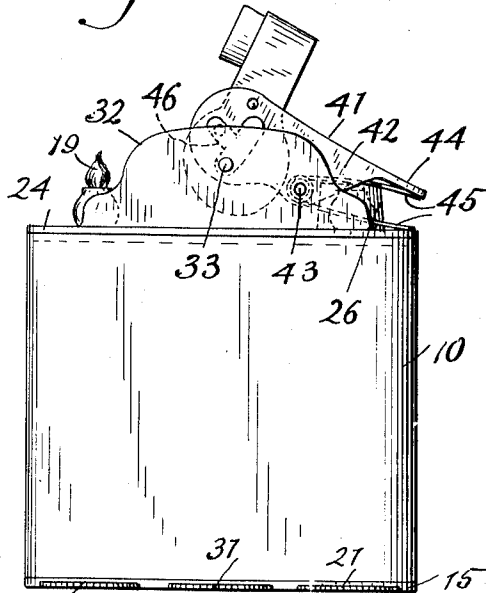


Fig. 3.

Inventor.
James F. Rogers
Knox Hudson & Kent
Attys.

UNITED STATES PATENT OFFICE

JAMES F. ROGERS, OF BAY VILLAGE, OHIO

LIGHTER

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This invention relates to lighters of the so-called sparking type and has as its primary object the provision of a lighter which is simple in construction, inexpensive to manufacture and efficient in operation.

Another object of the present invention is to provide a lighter of the type referred to which is provided with two compartments or chambers which are adapted to hold the necessary liquid which is transmitted to the wick of the lighter.

Another object of the present invention is to mount the sparking mechanism upon a detachable member which is adapted to be reversed so as to enable either chamber or compartment of the lighter to be used.

Another object of the present invention is to provide a novel sparking mechanism of simplified construction and operation which eliminates the necessity for machine work and like operations which ordinarily add materially to the cost of the lighter.

With the objects above indicated and other objects hereinafter explained in view, my invention consists in the construction and combination of elements hereinafter described and claimed.

Referring to the drawings—

Fig. 1 is a vertical longitudinal sectional view of the lighter embodying the present invention;

Fig. 2 is a side elevational view of the same showing the reversible feature of the sparking mechanism;

Fig. 3 is a side elevational view of the lighter showing the hood for extinguishing the flame in its open position;

Fig. 4 is a fragmentary end view of that shown in Fig. 3;

Fig. 5 is a top plan view of the lighter shown in Fig. 1; and

Fig. 6 is a bottom plan view of the lighter.

In the drawings 10 represents the casing of the lighter which, in the present instance, is elongated and tubular in cross section and of any desired length and height. The casing 10 is divided vertically into two compartments 11 and 12, respectively, by a vertically extending tubular member 13 which is welded or otherwise secured to the sides of the casing

10 with which the outer surface of the tube engages. The casing 10 is further provided with a top 14 and a bottom 15 which are secured in any desirable manner as by soldering or otherwise, this construction providing the fluid-tight compartments 11 and 12. The compartments 11 and 12 are filled with absorbent material 16 which is adapted to receive any suitable combustible liquor of which many kinds are at present known.

The top 14 is provided with screw-threaded apertures 17 which communicate with the interior of the compartments 11 and 12, and cooperating with the screw-threaded apertures 17 are wick guides 18 through which the wicks 19 extend in a manner shown in Fig. 1. The lower ends of the wicks 19 are surrounded by the absorbent material 16 in the compartments 11 and 12, respectively, so that the liquid is transmitted to the wicks 19 for the purpose of igniting them at the exposed ends. The bottom 15 is provided with screw-threaded apertures 20 communicating respectively with the compartments 11 and 12 and are suitably closed by threaded plugs or thumb screws 21. The combustible liquid may be supplied to the compartments 11 and 12 through the threaded apertures 20, when the plugs 21 are removed. The plugs 21 are provided with tubular extensions 22 and a screw-threaded cap 23, for the purpose of receiving spare flints.

A plate 24 of substantially the same contour or shape as the casing 10 is provided for the purpose of supporting the sparking mechanism which will be later described in detail. This plate is disposed directly above the top 14 of the casing 10 and is provided with transverse apertures 25 positioned so as to permit the wick guides 18 to extend therethrough. One of the apertures 25 of the plate 24 is provided with a cup-shaped extension 26, which may be formed by stamping a portion of the metal around the aperture 25 or may be a separate member soldered or otherwise secured around the aperture 25, as clearly shown in Figs. 1 and 2. This extension 26 is provided for the purpose of enclosing or covering one of the wicks 19 which is not in use while permitting the

other wick 19 to be ignited by the sparking mechanism of the lighter. The particular advantage of this arrangement is that two separate combustible liquid compartments 11 and 12 are provided, one as a reserve to the other, so that the wick 19 in the compartment 11 for instance, as shown in the drawings, may be ignited by the sparking mechanism until the combustible liquid has been used up. It is then possible to turn the plate 24 end for end or reverse its position with respect to the wick guides 18 and when this is done the wick 19 of the compartment 12 is then exposed for ignition by the sparking mechanism of the lighter and the extension 26 covers the wick guide 18 and the wick 19 in the compartment 11.

The plate 24 is maintained in suitable position upon the top 14 of the casing 10 by means of a tube 27 which extends through a suitable opening in the plate 24 and is soldered or otherwise secured thereto. The central opening of the tube 27 is adapted to receive at its upper end adjacent the plate 24 a flint 28 which cooperates with a steel wheel 29, the rotation of which, while in engagement with the flint 28, creates sparks which ignite one of the wicks 19. A spring 30 is disposed within the central opening of the tube 27 as shown in Fig. 1 which has one end in engagement with the flint 28 to force the latter into engagement with the steel wheel 29 while the opposite end abuts a screw-threaded plug 31 which cooperates with screw-threads at the lower portion of the central opening of the tube 27. This screw-threaded plug 31 not only functions as an abutment for the spring 30 but additionally locks the plate 24 securely in position upon the top 14 of the casing 10. When it is desired to reverse or turn the plate 24 end for end, as already described, the screw-threaded plug 31 is removed so that the plate 24 and top 27 may be elevated and swung around to the reverse position. The plate 24 may then be lowered and the screw-threaded plug screwed into place so as to clamp the plate 24 in the reverse position.

The sparking mechanism, as specified, is carried by the plate 24 and is moved therewith when the plate 24 is turned end for end or reversed for the purpose of using either the compartment 11 or the compartment 12. This plate 24 is provided with a pair of vertically spaced ears 32 within which are journaled the ends of a pin 33 which pin carries the steel sparking wheel 29. Fixed so as to rotate with the steel wheel 29 is a ratchet wheel 34 also supported upon the pin 33 and cooperating with the wheel 34 is a dog 35 which causes the ratchet wheel 34 to be rotated in one direction so as to cause the steel wheel 29 to create sparks, due to its engagement with the flint 28, for igniting the wick

19 but which rides over the ratchet wheel 34 in the opposite direction.

A hood 36 is soldered or otherwise secured to a member 37 which at its inner end is provided with depending ears or flanges 38 adapted to extend upon the outside of the steel wheel 29 and the ratchet wheel 34, as clearly shown in Fig. 4. These flanges 38 are provided with transverse openings through which the pin 33 extends so that the member 37 is adapted to move about the axis of the pin 33 and the hood 36 is so positioned with respect to the pin 33 that it will cooperate with the exposed wick 19 to thereby extinguish the flame. The dog 35 is supported upon a pin 39 the ends of which are journaled within the flanges 38 of the member 37 and a coil spring 40 surrounds the pin 39 and has one end fixed while the opposite end cooperates with the dog 35 to cause the latter to engage the ratchet wheel 34. It will therefore be seen that when the member 37 is oscillated or moved about the axis of the pin 33 the hood 36 is removed from the wick 19, as shown in Fig. 3, and, due to the fact that the dog 35 is carried by this member 37, the ratchet wheel 34 with which it cooperates is caused to move in a clockwise direction, as shown in Fig. 1. The ratchet 34 being secured to the steel wheel 29 or movable therewith causes the latter to create sparks and thereby ignite the exposed wick 19.

To cause the member 37 to be moved from its normally closed position, as shown in Fig. 1, to its normally open position, as shown in Fig. 3, a member 41 is provided which has a pair of depending ears or flanges 42 provided at their lower portions with transverse openings through which extends a pin 43 which has its ends suitably journaled within the ears 32 at a point to the rear of the pin 33 and slightly below the horizontal center thereof. This member 41 is provided with a substantially horizontally extension 44 which has a knurled upper surface and is adapted to act as a thumb support for moving the member 41 about the axis of the pin 43. A coil spring 45 encircles the pin 43 between the flanges 42 of the member 41 and has one end engaging the upper surface of the plate 24 while the opposite end engages the undersurface of the extension 44 to thereby normally return the member 44 to its normal position, as shown in Fig. 1.

The flanges 42 of the member 41 are provided at their forward portions with T-shaped slots 46 which extend in the position shown in Figs. 1 and 2 when the lighter is in its normal inoperative position. These T-slots 46 align in the opposite flanges 42 of the member 41 and the T portions of the slots are so positioned with respect to the axis of the pin 43 that the pin 33 will ride within the slots when the member 41 is depressed and moved about the axis of the pin 43. The up-

right portions 47 of the T-slots 46 extend forwardly of the T portions and are positioned so as to cooperate with projections or pins 48 which extend outwardly and are carried by the flanges 38 of the member 37. These pins or projections 48 are slightly below the horizontal center of the pin 33 and forwardly thereof and move about the axis of the pin 33 while the T-shaped slots and the upright portions 47 thereof move about the axis of the pin 43. It will, therefore, be seen that when the member 41 is depressed, so as to oscillate or move about the axis of the pin 43, the upright extensions 47 of the T-slots 46 cooperate with the pins or extensions 48 of the member 37 and cause the member 37 to be moved about the axis of the pin 33 to a position shown in Fig. 3. During this operation the steel wheel 29 has been rotated by the dog 35 carried by the member 37, thereby having caused the wheel 29 through its engagement with the flint 28 to create sparks which in turn ignite the wick 19 while the hood 36 has been moved to the position shown in Fig. 3. When it is desired to extinguish the flame of the wick the member 41 is released and the spring returns the movable parts to their normally closed position, as shown in Fig. 1.

While I have described the preferred embodiment of the invention, it is understood that I am not to be limited thereto inasmuch as changes and modifications may be resorted to without departing from the spirit of the invention as defined in the appended claims.

Having thus described my invention, what I claim is:

1. In a lighter of the character described, a casing having a pair of compartments, wicks in said compartments having portions extending through the top of said casing, a reversible member supported by the top of said casing, openings in said member cooperating with said extended wick portions, one of said openings having a cap portion, and sparking mechanism carried by said member.

2. In a lighter of the character described, a casing having a pair of compartments, wicks in said compartments having portions extending through the top of said casing, a reversible member supported by the top of said casing, a laterally extending member secured to said reversible member and extending through said casing, means cooperating with said laterally extending member and adapted to maintain said reversible member in proper position, and sparking mechanism carried by said member.

3. In a lighter of the character described, a casing having a pair of compartments, wicks in said compartments having portions extending through the top of said casing, a reversible member supported by the top of said casing, a tubular member secured to said reversible member and extending between said compartments, means cooperating

with the free end of said tubular member and adapted to maintain said reversible member in proper position, and sparking mechanism carried by said member.

4. In a lighter of the character described, a casing having a pair of compartments, wicks in said compartments having portions extending through the top of said casing, a reversible member supported by the top of said casing, openings in said member through which said wicks extend, a flint associated with said casing, a sparking wheel associated with said member and engageable with said flint, a flame extinguishing member pivotally supported on the axis of said wheel and adapted to cooperate with said wicks, and a depressible member pivotally supported by said reversible member, said flame extinguishing member and said depressible member being provided with interengaging means whereby said flame extinguishing member is moved about its pivot when said depressible member is depressed.

In testimony whereof, I hereunto affix my signature.

JAMES F. ROGERS.