March 27, 1945. A. S. WESTON 2,372,238

WIND RESISTING LIGHTER

Filed May 3, 1943 2 Sheets-Sheet 1

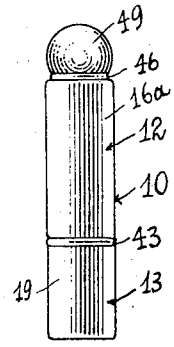



Fig. 1




Fig. 2.

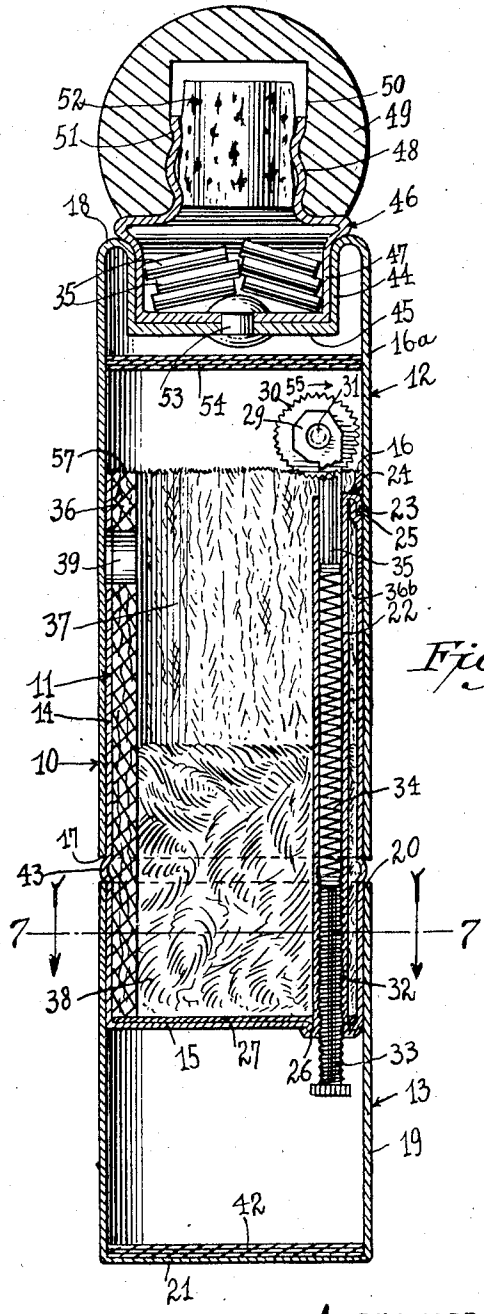



Fig. 3.

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INVENTOR.
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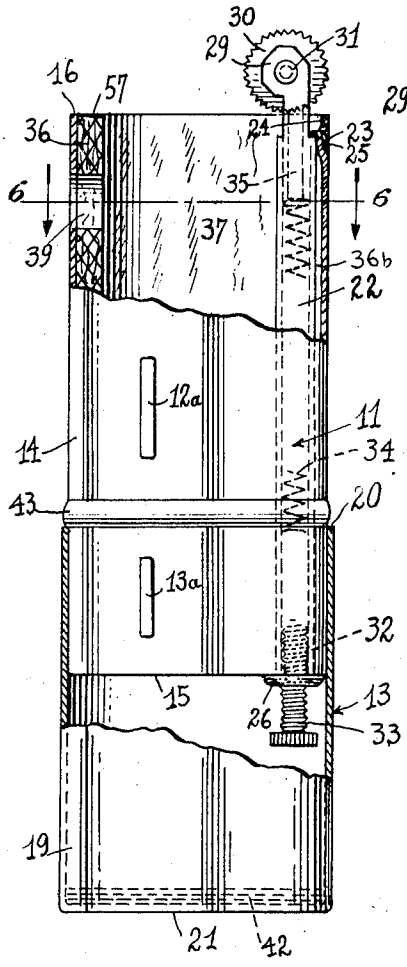



Fig. 4.

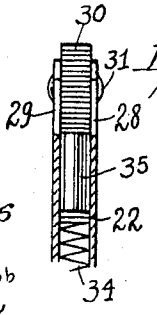



Fig. 5.

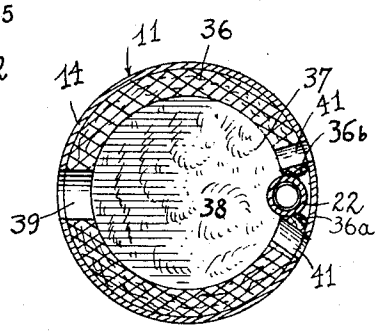



Fig. 6.

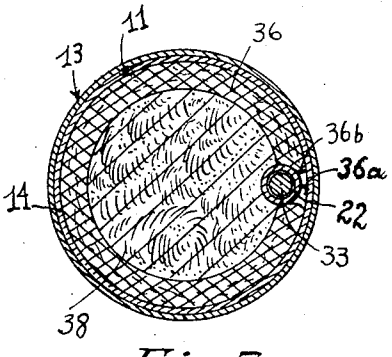



Fig. 7.

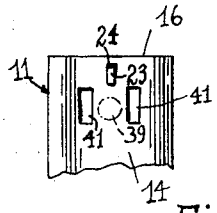



Fig. 8.

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Patented Mar. 27, 1945 2,372,238

# UNITED STATES PATENT OFFICE

2,372,238

## WIND RESISTING LIGHTER

Alexander Sydney Weston, New York, N. Y.

Application May 3, 1943, Serial No. 485,441

2 Claims. (Cl. 67—7.1)

This invention relates to lighters for cigars, cigarettes and for similar uses, and is a continuation in part of my co-pending application for Lighters, filed December 30, 1940, Ser. No. 372,266, which matured into Letters Patent of the United States, dated May 4, 1943, No. 2,318,037.

An object of my present invention is to provide a device of this type, in which novel means are provided against the loss of combustible mixture through liquid vapors, or to retard the same.

Another object of my invention is to provide a lighter, as characterized hereinbefore, in which novel means are arranged to feed oxygen to the flame and to prevent an easy extinguishing thereof, thereby making my novel lighter practically wind and stormproof, or at least better resisting the actions thereof than the lighters now in use.

In the drawings, forming a part of this specification and accompanying the same:

Fig. 1 is a side elevation of my novel lighter in a closed position and on a small scale, and

Fig. 2 is a top view thereof;

Fig. 3 is a sectional elevational view of the assembled lighter in a closed position, and on a much larger scale than the earlier figures;

Fig. 4 is a partly sectional side elevation of the central portion of the main body of the lighter with the bottom cap attached thereto;

Fig. 5 is a fragmentary sectional detail of the upper end of the tube containing the flint and spark wheel;

Figs. 6 and 7 are cross sectional plan views on the lines 6—6 of Fig. 4, and 7—7 of Fig. 3, respectively, and

Fig. 8 is a fragmentary side elevation of the upper portion of the middle or central section of the housing of my lighter indicating the three apertures provided therein.

Referring now to the drawings more in detail by characters of references, my assembled lighter is indicated in general by the numeral 10 and is composed of three main parts or sections being a middle or main body section, generally indicated by the numeral 11, a top or upper cap section generally indicated by the numeral 12, and a lower or bottom cap section generally being indicated by the numeral 13.

The middle or main section 11 is arranged in a cylindrical housing 14 having a closed bottom 15 and an open top 16 and preferably being made of some appropriate thin sheet metal material. The upper or top section 12 also has a cylindrical hollow body 16a, open at the bottom 17 and closed at the top 18, its inner diameter being such that it may snugly slide over the main body section 11. The bottom cap section 13 also comprises a hollow cylinder 19 at the top as at 20, having a closed bottom 21 and being substantially of identical diameter to the top section adapted to slide over the middle section 11, as indicated in Figs. 3 and 4.

A narrow tube 22 is arranged adjacent to the wall of the central section 11, which tube I prefer to call the flint tube, and from the upper end of the flint tube, an ear or tongue 23 is struck out, while a corresponding slot or aperture 24 is provided in the wall of the middle section 11, said ear or tongue 23 being bent outwardly passed through said slot 24 and then bent over the wall of the section 11 in a downward direction, thereby securing the flint tube 22 in its position.

An indention 25 may be provided in the wall of the section 11, whereby the downward bent portion of the ear or tongue 23 may be flush with the rest of the cylindrical housing 14.

To further secure the flint tube in the middle section 11, the lower end 26 of the tube is passed through a circular opening in the bottom 15 of said section and is bent or riveted down over the edge of said opening. To insure a better sealing of the tube in said aperture in the bottom 15, I preferably pour a small amount of solder in a hot liquid condition over the bottom 15 within the middle section 11 when assembling my device, said solder upon cooling forming a thin layer 27 thereover tightly sealing the flnt tube 22 within said bottom.

At the upper end of the flint tube, two identical oppositely placed projections 28 and 29 are provided, having the rotatable knurled spark producing wheel 30 arranged between them on a shaft 31. The lower portion 32 of the flint tube 22 is screw threaded and a regulating and adjusting screw 33 is arranged therein. A helical spring 34 is placed over said screw and the spark producing flint 35 is pressed by said spring against the spark wheel 30, as it is well known in this art.

A comparatively heavy layer of wick fabric 36 is arranged around the circumference of the cylindrical housing 14 of the middle portion, its ends 36a and 36b being spaced apart to leave room for the flint tube 22. A cylindrical hollow space 37 is thus produced within the wick 36 and the lower portion thereof is filled with an appropriate material 38, like cotton, said material being the carrier of the combustion vapor producing liquid, like gasoline, ether, or some appropriate specific composition, used in this art for such purpose, a small quantity of said liquid being

dropped over and on the cotton 38 and being absorbed thereby when filling the lighter.

A comparatively large hole 39 is provided near the upper end of the middle portion through the wall thereof and through the wick lining 36, and two narrower axial slots 41 are provided in said wall opposite to said large hole 39 and preferably equi-distantly placed from the end of the diameter passing through the large hole 39. The bottom cap portion 13 of my device may have an absorbent lining 42 arranged over its bottom, said lining preferably being formed of a plurality of thin layers of textile material, like cotton, tightly pressed one over the other. I found that a cotton sheet, made as indicated hereinabove, and being sold on the market under the name "Lintine" by the firm Johnson & Johnson of New Brunswick, N. J., is highly satisfactory for such lining.

An outwardly curved bead 43 is formed in the wall 14 of the middle section to provide an upper limit for the sliding of the bottom section 13 thereover, and similarly, a lower limit for the downward sliding of the top section 12.

The closed top 18 of the top section is bent inwardly in a counter-sunk manner to provide a cylindrical socket 44 with a closed bottom 45. A hollow sheet metal body 46, which I prefer to call the magazine for the reserve flints, is placed into said socket 44 with its cylindrical bottom portion 47, while its upper portion 48 projects over the closed top 18 of the device, and screw threads are pressed into its wall. A spherical body 49 is provided to close the open upper end of the portion 48 of the flint magazine, said ball or sphere 49 having a bore or socket 50, the lower portion 51 of which is similarly screw threaded as the portion 48 of the flint magazine. In this manner, ball 49 may be closed down upon said magazine by their cooperating screw threads and in the manner indicated in Fig. 3.

A plurality of reserve flints 35 are arranged in the magazine 47, and preferably I also employ a cork stopper 52 in the open upper screw threaded part 48 thereof for better sealing and to prevent an unnecessary rattling of the flints 35.

The reserve flint magazine or container 47 may be secured within the counter-sunk socket 44 of the top 18 of the device by a rivet 53. A lining 54, identical in character to the lining 42 of the bottom cap 13, may be provided for the upper cap 12.

The use and operation of my lighter will be obvious from the drawings and the herein description.

Normally the device is in a closed position, as indicated in Fig. 3.

When it is desired to use it, the upper cap 12 will be pulled off the middle section 11, and the spark wheel quickly rotated in the direction of arrow 55, producing a succession of sparks from the upper end of the flint 35. The combustible liquid will rise in the wick lining 36 by capillary action and will evaporate from the open upper end 57 of said wick, and the flame will be produced by the sparks igniting the vapors of the liquid around the upper end of the wick 36, as it is well known.

A draft of air will be produced by the action of the large hole 39, and the opposite two axial slots 41 feeding oxygen to the flame, so that the flame will not be extinguished even in a strong wind or storm. When it is desired to extinguish the device, the upper cap 12 will be pushed over the middle portion 11.

As has been mentioned, it also is my experience that the flame will be more resisting against wind and storm than in any of the similar devices used at present.

Finally, it has been my experience that the combustible liquid in my device will last much longer than in the other lighters of similar construction at present in use, which I attribute to the sealing layer 27 in the bottom of the middle section.

This result may also be aided by the lining 54, which may absorb and condense the vapors from the wick and the liquid saturated cotton in my device, which vapors in similar lighters now in use will slowly seep out of the closed lighter or are freed when the upper cap 12 is removed preparatory to using the lighter.

Lining 42 in the bottom cap 13 is for a similar purpose, but it mainly is intended to be used when no sealing layer 27 is provided in the bottom 15 of the central or main section 11 of my lighter, and when fuel vapors may better escape around the bottom of the flint tube 22 and then from the vacant space in the bottom cap 19.

In Fig. 4, the numerals 12*a* and 13*a* indicate elongated outwardly projecting indentations in the wall of the middle section 11, whereby the frictional engagement between said section and the upper cap 12 and lower cap 13, respectively, will be increased, as it is well known in this art.

What I claim as new, is:

1. In a lighter having a casing open at the top and with vaporizable fuel therein, a wick exposed at said top reaching into said fuel, and means to light said wick, a removable closure cap for the casing, and a disk of fuel absorbing material pressed on the bottom of the cap, said disk being adapted to absorb the fuel vapors while the casing is closed by said cap.

2. In a lighter, as set forth in claim 1, said disc being composed of a plurality of layers of thin textile material pressed one upon the other.

ALEXANDER SYDNEY WESTON.