April 22, 1941. E. M. BERTHOLD 2,239,479

LIGHTER

Filed Sept. 20, 1938

Fig. 2

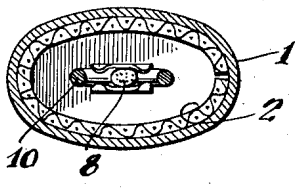


Fig. 1

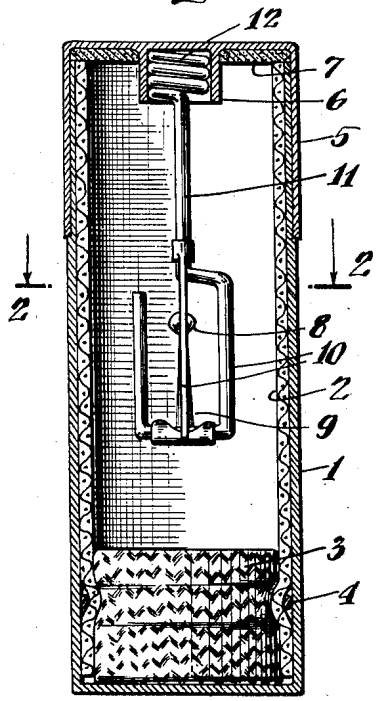
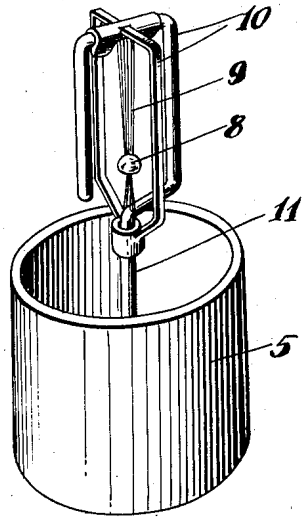


Fig. 3



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2,239,479

UNITED STATES PATENT OFFICE

2,239,479

LIGHTER

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Application September 20, 1938, Serial No. 230,766

1 Claim. (Cl. 67—7)

This invention relates to catalytic, flaming lighters, for use in lighting tobacco in pipes, cigars and cigarettes, and my improvement is directed particularly to a single tube lighter in which the catalytic element is contained when the lighter is closed, said element being carried by a tube cap which is removable for the purpose of causing ignition of the contained vapor.

Heretofore with single tube, catalytic flame lighters difficulty has been experienced in attaining efficient operation. The catalytic element, usually supported by the cap, has been entered within a tube of relatively small cross-sectional area, precluding the presence in the tube—which is lined with wicking saturated with alcohol—of a sufficient quantity of air to support combustion, and, in consequence, the device has failed to function satisfactorily. Therefore, my present invention consists in providing a casing of suitable depth and substantial cross-sectional area, said casing being lined with absorbent material, for saturation with alcohol. Further, I provide a cap that fits snugly over the open end of the casing, to close it, and said cap has in its end a socket which is adapted to frictionally receive and hold the base end of the wire frame which supports the catalytic element, whereby when said cap is fitted over the casing to close it, the catalytic element will become enclosed within the casing, and, as the cap is withdrawn, to open the casing, the large supply of air enables the catalyst to function and provide the incandescent field which causes the alcoholic vapor to ignite.

It should be noted that the proper functioning of the device is due entirely to the relatively large cross-sectional area of the wick-lined casing, said large area necessitating the use of a closure cap of corresponding size, and such large cap requiring the provision of suitable engaging means for the element supporting frame.

Other features and advantages of my invention will hereinafter appear.

In the drawing:

Figure 1 is a side sectional view of my improved catalytic flame lighter.

Fig. 2 is a section on the line 2—2 of Fig. 1, and

Fig. 3 is a reverse perspective view of the closure cap with the supporting frame of the catalytic element fitted therein.

Although flaming catalytic lighters have long been known in the trade, the fact remains that while the double tube variety of these lighters have been successful for many years, the single tube attempts have not done so well. In the double tube lighters the catalytic element is kept in a separate pocket and only introduced into the tube containing wicking which is saturated with alcohol, for igniting. But in the single tube lighter the catalytic element is entered within a tube whose area, when exposed to the atmosphere, proves insufficient to enable the catalyst to perform its function.

Now referring to the drawing, let 1 indicate the shell or casing of the lighter, it being lined interiorly with suitable absorbent material, 2, for saturation with alcohol.

The absorbent material may be in the form of wicking and may be stoppered, at its lower end, by a plug 3 of absorbent material, which is shown as secured in place by a binding strand 4.

A cap 5, adapted to fit over the open end of casing 1, to close the latter, is shown as provided with a tubular socket piece 6, projected from and suitably secured to the top of the cap at its inner surface. Placed against the inner surface of the cap top is a gasket 7 for engagement by the open end of the casing to effect a vapor tight joint between the casing and cap when the lighter is closed.

The catalyst consists, as is usual, of a pill 8 composed of a spongy platinum composition, said pill being fitted on fine platinum filaments 9 that are strung on a metallic frame 10. The frame 10 has a continuing rod 11, that terminates in a concentric coil 12 whose outside diameter enables it to fit engagingly within the socket piece 6.

Upon opening the lighter, withdrawing the cap slowly, the spongy platinum then becoming exposed to atmospheric air, assumes incandescence by its absorption of the alcoholic fumes and communicates its incandescence to the platinum filaments, which latter provide a field of incandescence capable of igniting the fumes and creating the desired flame.

Although I have shown the lighter as oval in cross-section this is to facilitate its portage in a waistcoat pocket. Obviously it may be of other shape in cross-section, provided its interior area is ample.

Variations within the spirit and scope of my invention are equally comprehended by the foregoing specification.

I claim:

A catalytic flame lighter comprising a casing closed at one end and open at the opposite end, a lining therefor of absorbent material to be saturated with alcohol, a cap to fit the open end of said casing to close it, the depth and cross-

sectional area of said casing providing a single relatively large vapor confining space defined at all times by said lining, said cap and the bottom of the space, a catalyst and a frame therefor mounted on the inner surface of said cap, the catalyst and the frame in normal position disposed within the single vapor confining space in constant contact with the vapors emanating from said lining and disposed a substantial distance both from said cap and from the bottom of said vapor confining space.

EMILY MARIE BERTHOLD.