July 17, 1962 K. KRATZENBERGER 3,044,284

CATALYTIC TABLE LIGHTERS

Filed July 28, 1958

Fig. 1

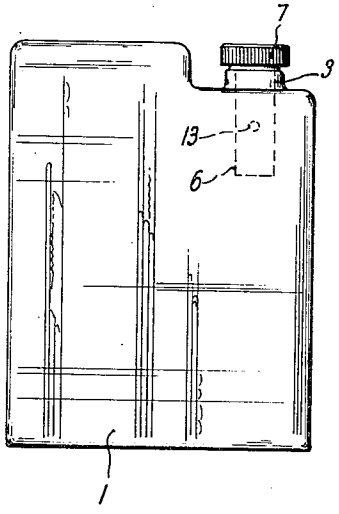


Fig. 2

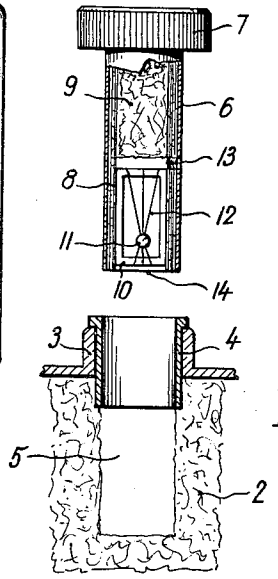


Fig. 3

Fig. 4

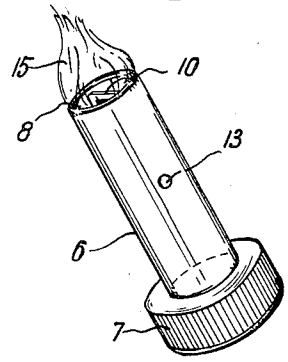


Fig. 5

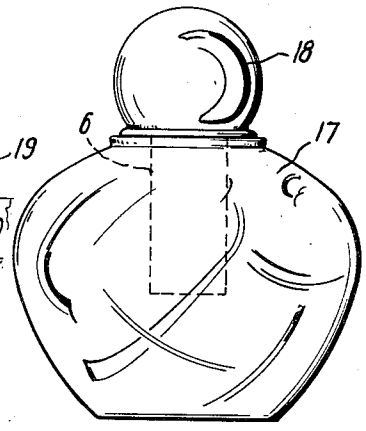
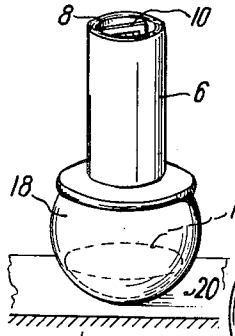


Fig. 6



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CATALYTIC TABLE LIGHTERS

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The invention relates to a catalytic lighter and has for its object a lighter of this type provided with a catalytic ignition device which is producing a flame on opening the fuel container by admission of air to the ignition device, said lighter being constructed and adapted for use as table lighter which will remain ready for operation for considerable time of several months without needing refilling and replacement of its fuel contents.

Catalytic lighters of known constructions comprising a catalytic ignition device formed by a catalytic pearl supported by fine platinum wires are normally constructed merely in relatively small dimensions for use as pocket lighters. In lighters of this type it is known to insert the ignition device directly into the hollow space of a small fuel container the wall of which is provided with a lining of porous material which is surrounding the ignition device and is extending from a filling of cotton, wool or the like to be wetted with the fuel up to the rim of the opening of the small container, said lining serving as wick supporting the flame which on its ignition is burning at the rim of the container opening. Catalytic pocket lighters of this type are normally constructed in the form of a tube provided with a removable cover in the form of a sleeve which is tightly fitting onto the tube.

It is one object of the invention to alter catalytic lighters of this type by an essential enlargement of their fuel container by which the character of such lighters will be modified from a pocket lighter to a table lighter which normally would not be adapted in view of its size for use as pocket lighter and which therefore will be ready for use for an essentially extended time.

A further object of the invention consists in a catalytic lighter which in comparison to pocket lighters of this type is provided with an enlarged opening of the container allowing a better access of air in order to obtain an accelerated formation of a combustible air-fuel mixture, thus realizing an accelerated ignition of the flame.

A further object of the invention is a catalytic lighter of simple construction which can be realized as catalytic table lighter at relatively small costs, said lighter having a detachable cover secured in particular manner to the fuel container in such way as to prevent any possibility of self opening by unintended ignition of gases, said cover ensuring a perfect seal against the escape of fuel gases, thus preserving the fuel against loss by volatilization at that time when the lighter is not used.

A further object of the invention is the formation of a catalytic lighter, which, when used, is furnishing a flame which may burn for relatively long time without entire loss of its fuel contents, thus allowing reoperation without replacement of the fuel after an extended time of flame burning.

A further special object of the invention consists in the realization of a catalytic table lighter the closure of which is effected by a burner tube fitting with tight seal into the opening of the fuel container, said burner tube having inserted therein a smal filling from fuel receiving material, a porous lining serving as wick, and the catalytic ignition device surrounded by said lining in such way that the ignition will take place apart from the fuel container at the burner tube and the flame thus will be produced not at the rim of the container opening but at the rim of the burner tube forming the closure of the main fuel container. Thus the closure of the fuel container will be formed by a device which is similar to the main body

of a catalytic pocket lighter and will be adapted to operate the table lighter and to transport the flame without lifting the fuel container from the table.

In connection herewith a further object of the invention is directed to a special construction of the burner tube closing the fuel container of the catalytic table lighter said burner tube being provided with a handle in the form of a ball loaded by an eccentric internal weight in such manner that on laying down the burner tube on a table or other support it will rise with its flame supporting end automatically to an upright position in which the supporting surface will be protected against inflammation.

The accompanying drawings are showing by way of example several embodiments of the catalytic table lighter according to the present invention. In these drawings are showing

FIG. 1 a catalytic table lighter with closed fuel container in external side view, shown in a reduced scale,

FIG. 2 the closure of this lighter alone in vertical section approximately in its real size,

FIG. 3 a vertical section through the fuel container in the area of its opening without the closure element in real size,

FIG. 4 the burner tube constituting the closure in diagramatic view,

FIG. 5 a modified form of the catalytic table lighter in closed position in external view, shown in reduced size, and

FIG. 6 the closure of this table lighter alone when placed on a supporting surface.

The catalytic table lighter according to FIG. 1 is provided with a fuel container 1 in the shape of a reduced fuel can, the container being filled with any material 2 such as cotton-wool, sawdust or the like, which is adapted for impregnation with liquid fuel, e.g. methanol. The fuel container is provided at its opening with a socket 3 lined according to FIG. 3 with a rigidly inserted metallic liner sleeve 4. In the area of its opening the filling of the container is forming a hollow space 5 for the insertion of a tube-like closure element 6 which on insertion is tightly fitting with perfect seal into the liner sleeve 4 and is provided and closed at its one end with a handle piece 7.

The closure tube 6 is forming for itself a small catalytic lighter and is provided internally with a lining 8 which may consist e.g. of rolled blotting paper or textile material extending over the entire length of tube 6, said tube containing furthermore a filling 9 from cotton-wool or like material and having inserted at its open end a small catalytic ignition device formed by a small metal frame 10 supporting one or several platinum sponge beads 11 by means of fine platinum wires 12. Frame 10 is disposed within a hollow space of tube 6 and is surrounded by the lining 8 to which it may be fixed by mere clamping effect.

In closed position of the fuel container 1 according to FIG. 1 tube 6 is extending through the liner sleeve 4 into the filling of the fuel container from which the lining 8 of the tube and its small filling 9 will be fed with fuel by wettening and internal evaporation which takes place in the closed container during non-use of the lighter. For operation of the lighter the closure with the burner tube 6 is drawn out of the fuel container. On access of air into the burner tube 6 which may be favorized by a small hole 13 provided in the wall lining 8 of the burner tube, a combustible air-gas mixture will be formed under the influence of which the catalytic ignition device will operate and will effect at the opening rim 14 of the tube the ignition of a flame 15 which will burn for some time as it is fed with fuel from the filling 9 of the tube.

In order to extinguish the flame, the closure with the burner tube 6 is reinserted into the opening of the fuel

container 1, this insertion causing the flame to extinguish for want of air and oxygen without any danger of re-ignition and explosion.

In the modified form of the table lighter according to FIGS. 5 and 6, the fuel container 17 is of vase-like form constituted by a container made from metal sheet material, porcelain, glass or any adapted synthetic material, said container having preferably inserted into its opening a liner sleeve 4 as shown in FIG. 3 in order to ensure a tight seal of the closure tube when the latter is inserted. The handle of the closure tube is formed by a ball-like head 18 which may be hollow and may have inserted therein an eccentrically arranged loading weight 19 from lead or the like in such way that on laying down the closure on the surface 20 of a table or the like, the closure will automatically rise with its open end like a tumbler as shown in FIG. 6 in order to avoid any danger of inflammation of the supporting surface when the flame is burning.

I claim:

1. A catalytic lighter comprising a relatively large fuel container, the essential contents of which is filled with liquid-absorbing material, said container having an upper opening and a small hollow inner space left free below the opening by said absorbing filling material, and a tubular closure member for the container formed by a small tube fitting with circumferential sealing contact into said container opening and extending into said hollow space when being placed into said container opening, said tube being closed at one of its ends and having a handle portion at this end while being open at the opposite end, said tube having a filling of liquid absorbing material placed therein at the closed end and extending for approximately half of the length of the tube, an internal wall lining formed by rolled blotting paper extending from the open end of the tube into its filling and serving as a wick for the transportation of fuel from the filling to the open end of the tube, said wall lining surrounding a hollow space at the open end of the tube, and a catalytic ignition device formed by a small metal frame supporting fine platinum wires and a platinum sponge bead fixed to said wires, said catalytic ignition device being inserted into said hollow space of the tube surrounded by the wall lining at the container opening and being fixed to said lining by mere clamping effect, said tubular closure member having a lateral air passage opening extending through its wall and inner lining near the inner end of said inserted ignition device, and said tubular closure member forming a small

catalytic lighter, ready for operation by its withdrawal out of said large fuel container.

2. A catalytic lighter according to claim 1, comprising a sleeve inserted into the opening of said large fuel container for lining said opening, said lining sleeve being fixed to said container opening and surrounding said tubular closure member with sealing contact.

3. A catalytic lighter according to claim 1, in which the handle portion of said tubular catalytic lighter element forming the removable closure of said large fuel container is formed by a spherical head containing an eccentrically arranged internal loading weight in such position as to obtain an automatical rise of the open end of said tubular lighter element when placed on a supporting surface.

4. A catalytic lighter comprising a tubular housing having an opening at one end and closed at the other end, absorbing material soaked with inflammable liquid filling the closed end of the housing, a plug closure device for said housing including a tubular casing fitting within the housing, the outer end of said casing being closed and having a rim adapted to seat on the edge of the opening in the end of the housing, a lining of absorbing sheet material on the inner surface of said casing and contacting the absorbing material in the housing and being capable of attracting liquid from said absorbing material, a filler of absorbing material in the closed end of the casing spaced from the absorbing material in the housing and with the lining providing an ignition chamber in the end of the casing, said casing having an opening in one side wall thereof communicating with the ignition chamber, a catalyst and a frame therefor removably mounted in the ignition chamber and normally being in constant contact with the vapors emanating from the absorbing material and lining whereby upon removal of the casing and exposure to atmosphere the vapors issuing from the absorbing material and lining will ignite upon contacting with the catalyst.

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