Aug. 22, 1944. G. P. SCHMITT 2,356,356

HOLDER OR CUP FOR CATALYTIC LIGHTERS

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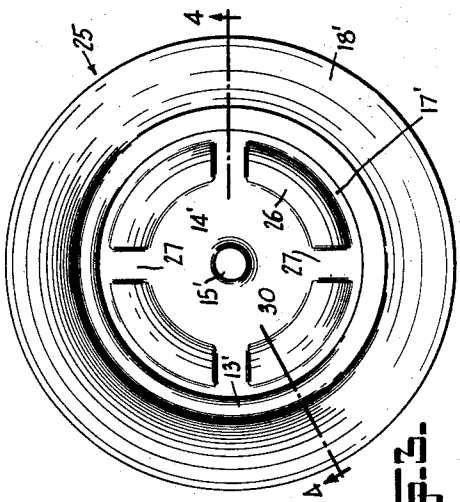


FIG. 3.

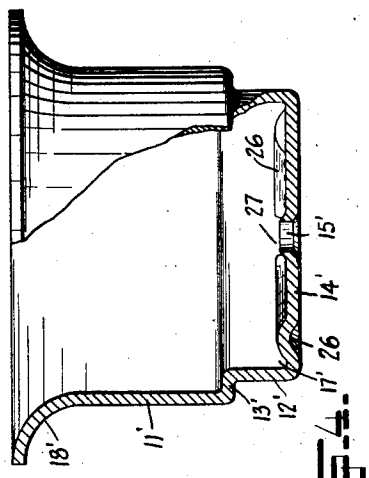


FIG. 4.

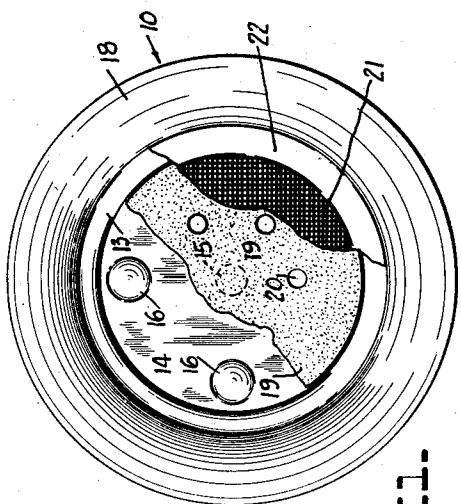


FIG. 1.

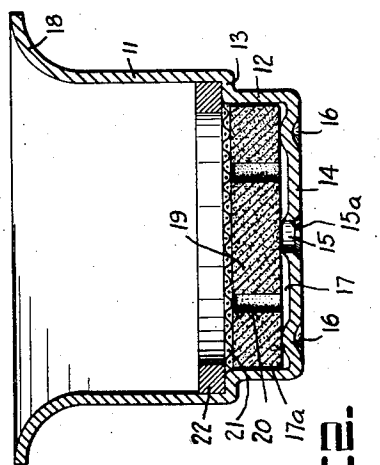


FIG. 2.

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HOLDER OR CUP FOR CATALYTIC LIGHTERS

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In Mexico March 19, 1942

2 Claims. (Cl. 67—7)

This invention relates to lighters which employ a catalyst for igniting cigarettes, cigars, pipes and the like, wherein the vapor of alcohol or other vaporizable liquid is employed for effecting such reaction upon the catalyst, in the presence of air, as will render such catalyst incandescent, so that a cigarette or the like applied thereto and drawn upon may be ignited.

More particularly this invention has reference to improvements in the cup or holder which contains the catalyst.

Catalytic lighters of the above type operate on the principles that platinum black or other catalytic compound can be made incandescent under the influence of vapor of certain volatile liquid in the presence of atmospheric air. The temperature resulting from the heat produced by the chemical reaction of the vaporizable fuel and air mixture in the presence of the catalyst is sufficiently elevated to ignite the cigarette when applied to or near the catalyst, and drawn upon.

In one of the types of lighters to which the invention has reference to, the catalyst is contained in a receptacle, cup or holder having a perforated bottom through which the vaporizable fuel passes for coaction with the catalyst, a screen or perforated disc is disposed above the top of the catalyst acting as a shield or front covering for the catalyst which enables a cigarette applied thereto to be quickly ignited, and at the same time protects the catalyst which is usually in the form of spongy platinum composition, from rupturing while in use.

In order to provide sufficient passages for the fuel vapor for contact with as much of the surface of the catalyst as possible, the catalyst should be spaced from the internal wall and bottom of the holder or cup.

It is an object of the present invention to provide, in a catalyst unit, for the free flow of the fuel vapor over substantially the entre bottom surface of the catalyst pill by providing a space between the said pill and the bottom of the catalyst holder.

It is another object of this invention to raise the catalyst pill slightly above the bottom of the holder, thus providing a fuel chamber below the catalyst pill securing a more uniform passage of fuel vapors through substantially the entire pill, this being accomplished by providing ridges in the bottom of the catalyst holder.

It is a still further object of the present invention to facilitate the free flow of fuel vapors along the side wall of the pill by making the catalyst pill of slightly smaller diameter than the internal diameter of the holder.

These and other objects and advantages of the invention and the means for their attainment will be more apparent from the following detailed description, taken in connection with the accompanying drawing illustrating embodiments of which the invention may be realized and in which:

Fig. 1 is a top plan view (partly broken away) of a catalyst unit embodying the invention;

Fig. 2 is a cross-sectional view taken through Fig. 1;

Fig. 3 is a top plan view of the catalyst holder or shell shown in a modified form; and

Fig. 4 is a cross-sectional view taken along line 4—4 of Fig. 3.

The catalyst unit generally designated by the numeral 10 consists of shell or cup 11 having the reduced bottom portion 12, thereby forming a shelf portion 13. The bottom 14 is provided with a central orifice 15, preferably having its surrounding wall 15a raised.

A plurality of indentations 16 are provided in the bottom 14 of the holder, thus raising the catalyst pill 19 from the said bottom and thus establishing a vapor passage 17 between the pill 19 and bottom 14 of holder 11.

The catalyst pill 19, which is the active element and usually comprises platinum black composition, is slightly smaller in diameter than the inside of the shell portion 12, thus creating additional vapor space 17a around the peripheral wall of the pill.

The holder or housing 11 is flared outwardly as indicated at 18 to facilitate the entrance of the cigarette.

The top surface of the pill 19 is preferably covered by the fine-meshed screen 21, which is held in place together with the catalyst pill 19, by a retainer ring 22, forced down into shell 11 and made to rest against shelf portion 13.

The shell 25 shown in Figs. 3 and 4 in a modified form consists of the side wall 11' with the constructed side portion 12' and the shelf portion 13'. The bottom portion 14' of holder 11' is provided with a central orifice 15' having its walls raised upward.

Bottom 14' of holder 11' is further provided with raised circumferentially arranged arcuate portions 26 interrupted by a plurality of passages 27 communicating space 30 with space 17'. The construction shown in Figs. 3 and 4 is similar to that shown in Figs. 1 and 2, with the exception, however, of the substitution of elongated raised

portions 26 in the bottom 14' for the circular raised portions 16 in the floor 14 of the holder illustrated in Figs. 1 and 2.

As changes of construction can be made within the scope of the invention, it is intended that all matters contained in the foregoing description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

Having thus described the invention what is claimed as new and desired to secure by Letters Patent is:

1. In a catalytic lighter of the flameless type, a cup, a catalyst disk in said cup, said cup having an opening in its bottom and a raised wall surrounding said opening, said bottom having raised portions in spaced relation to each other and spaced laterally from said raised wall, said catalyst being seated upon said raised wall and said raised portions whereby said catalyst may be supported above the unraised portion of said bottom whereby communication between said opening and the spaces between said catalyst and the unraised portion of said bottom may be provided for the passage of vaporizable fuel to said catalyst.

2. In a catalytic lighter of the flameless type, a cup, a catalyst disk in said cup, said cup having an opening in its bottom and a raised wall surrounding said opening, said bottom having raised portions in spaced relation to each other and spaced laterally from said raised wall, said catalyst being seated upon said raised wall and said raised portions whereby said catalyst may be supported above the unraised portion of said bottom whereby communication between said opening and the spaces between said catalyst and the unraised portion of said bottom may be provided for the passage of vaporizable fuel to said catalyst, and said catalyst being smaller in diameter than the diameter of the adjacent side wall portion of the cup whereby a space communicating with the spaces between said raised portions is provided for the passage of said fuel.

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