

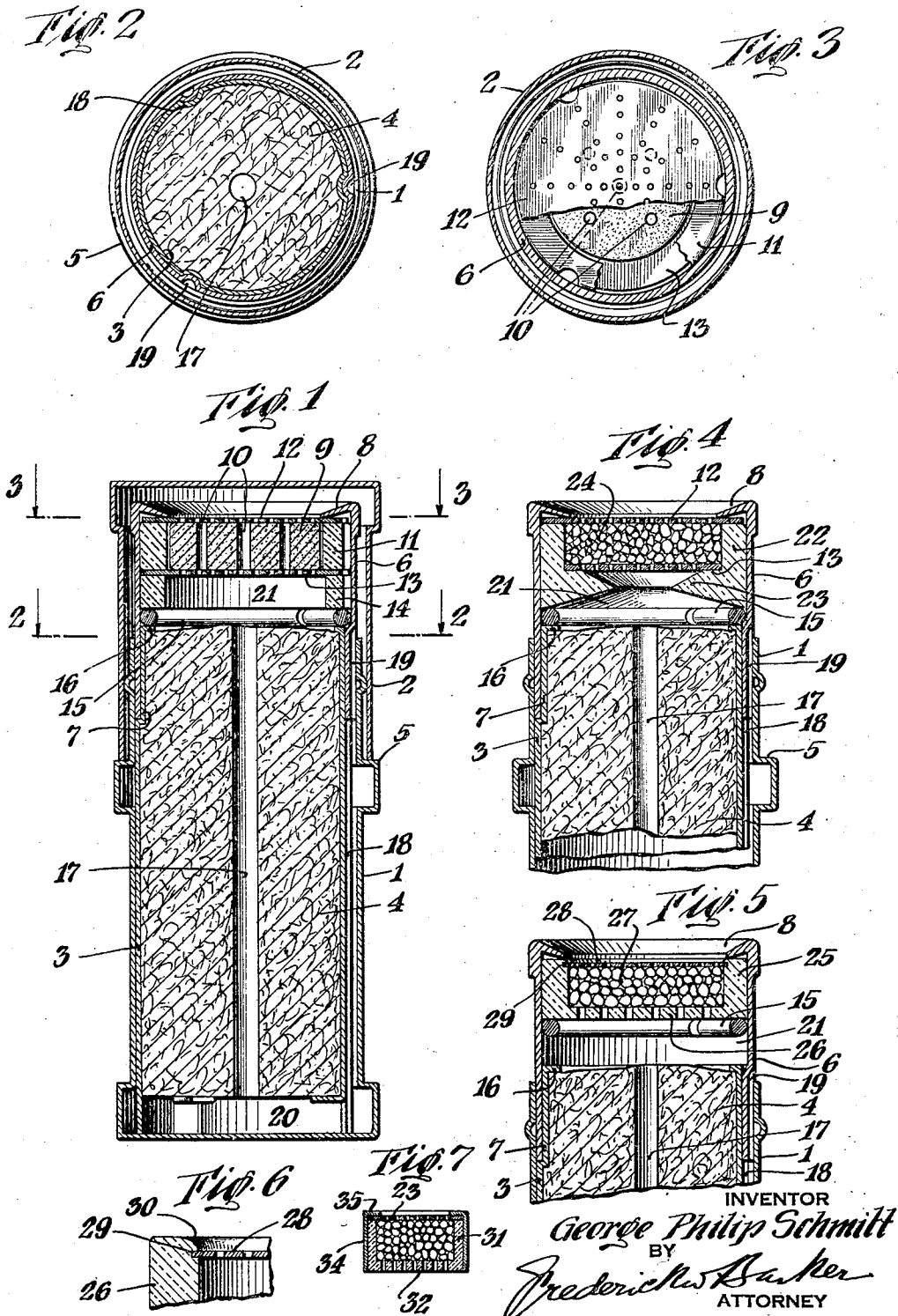
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G. P. SCHMITT

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LIGHTER

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LIGHTER

George Philip Schmitt, New York, N. Y., assignor to Platinum Products Corporation, a corporation of New Jersey

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5 Claims. (Cl. 67-7)

This invention relates to lighters for use in igniting cigarettes and the like and employing a catalyst which becomes incandescent in co-action with the vapor of alcohol, in the presence of air, such class of lighters being described in United States Patent No. 1,899,008, dated February 28, 1933, and in my pending application, Serial No. 689,114, filed September 12, 1933.

My present improvement comprises a capsule or container for the catalyst, which catalyst consists of platinum black, either in the form of a pellet, or in a granular state.

Heretofore the platinum black has been used in the form of a pellet, with a surface thereof exposed for contact by a cigarette or cigar for ignition purposes, and when used with a degree of care, as by only lightly touching the pellet with the cigarette or cigar end, the service is efficient and the pellet has a long life of usefulness. But when handled more roughly, the pellet, being of a frangible nature, may crack and disintegrate, when it will fall out of place. Therefore I have devised container means for the catalyst, whether it be in pellet or granular form, and have provided such container means with the necessary qualifications to permit the functioning of the catalyst with the highest degree of efficiency. Thus, the container has a base and wall of porcelain or other suitable heat insulating material, in order that heat generated in the catalyst may not pass to the lighter casing, the base also being either porous or perforated, in order that alcoholic vapor and air may pass to the catalyst; and the container has a front cover composed of a thin disk of mica, forming the outer, exposed closure, which confines the catalytic material, and is sufficiently tough to resist such impacts and pressures as may be made thereon by a cigar or cigarette when applied thereto. Besides the quality of resistance to heat possessed by mica renders it very desirable for use as the front closure element, in contacting relation with the catalyst.

The disk of mica is perforated so that suction may be had therethrough, and the igniting heat of incandescence generated in the catalyst is communicated through the mica disk to the cigarette or the like that is applied thereto.

Other features and advantages of my invention will hereinafter appear.

In the drawing:—

Figure 1 is a sectional view of a lighter including my improved catalyst containing means.

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

Fig. 3 is a section on the line 3—3 of Fig. 1.

Fig. 4 is a partial, sectional view showing a modified form of container means.

Fig. 5 is a partial, sectional view, showing the container means in the form of a capsule.

Fig. 6 is an enlarged detail view, showing a portion of the capsule of Fig. 5, and

Fig. 7 is a detail of the capsule in a further modification thereof.

In said views let 1 indicate the lighter casing, having a cap 2 to fit removably thereover, and let 3 indicate a cylindrical sleeve which is adapted to contain absorbent material, such for example as cotton wool or felt, here indicated at 4. The casing is provided with an annular shoulder 5 to form a seating stop for the cap.

A hollow, cylindrical holder 6, is adapted at one end to fit snugly, but removably, over the outer end of sleeve 3, said outer end being reduced in diameter, as at 7, to receive said holder, in order that the sleeve and holder, when fitted together, may have the same outside diameter throughout their combined length. This is for the purpose of enabling the united sleeve and holder to fit tightly, though removably, within the casing. The holder 6 has an inturned flange 8 at its outer end, to retain the catalytic element, which appears here in the form of a block or pellet 9 of spongy platinum composition, having a series of apertures 10 therethrough.

In Figs. 1 and 3 the perforated pellet 9 is shown as surrounded by an encasing annulus 11 composed of porcelain or other suitable material that is a non-conductor of heat, and a capsule-like enclosure for the pellet is provided by means of front and rear, perforated disks 12, 13, the front disk 12 being of mica, and the rear disk 13 being of either mica or some other suitable, heat resisting material. The disks 12 and 13 may be secured to the annulus 11 in any suitable manner, to constitute a catalyst containing capsule.

The capsule is confined between the flange 8, with which the disk 12 is in contact, and an annulus of porcelain or the like, 14, which lies contactingly beneath the disk 13, said annulus 14, and hence the capsule, being localized by means of a split ring 15 that is tensionally fitted within holder 6.

The sleeve 3 has an inturned flange 16 at its outer end, said flange serving the double purpose of retaining the absorbent material within the sleeve, and of butting against the split ring 15, when the holder 6 has been fitted upon the sleeve, to firmly hold ring 15, annulus 14, and the capsule in their adjusted positions.

The absorbent material 4, when of felt or the

like, may have a longitudinal passageway 17 therethrough, and, as in my application Serial No. 689,114 co-acting indented channels 18, 19, respectively in the sleeve and holder, provide for
 5 air admission therethrough in communication with a clearance 20 in the base of the casing, beneath the absorbent material, and the passageway 17 up to the space or chamber 21 which is formed between the absorbent material and the capsule.

10 In Fig. 4 a modified form of capsule is shown, wherein the porcelain annulus, here indicated at 22, is of extended height, and is provided with an inward shoulder portion 23, to seat the disk 13 of the capsule, this shoulder portion being con-
 15 caved at its under surface and leaving a diminished intermediate opening for the purpose of concentrating and adding speed to the flow of mingled fuel vapor and air that is drawn through the absorbent material in the act of igniting a
 20 cigarette or the like. The extended height of the annulus 22 permits it to take the place of annulus 14, shown in Fig. 1, it being directly localized by the split ring 15, and providing the chamber 21.

As will be noted in Fig. 4, the catalyst here
 25 shown, instead of being in pellet form, is in the form of granules 24, these granules being larger than the perforations in discs 12, 13, so that they may not pass therethrough.

I have found that the catalyst in granular form,
 30 is highly efficient, and it also avoids the extra expense of moulding the catalytic material into pellets.

In yet another form of container for the catalyst, shown in Fig. 5, a porcelain or the like vessel
 35 is provided, having the wall 25 and perforated base 26. This vessel is to be filled with the catalyst, in granular form, as indicated at 27, or, if preferred, the catalyst may be in the form of a pellet, and then a thin disk of perforated mica,
 40 shown at 28, is to be sprung into a groove 29 provided in the inner periphery of wall 26, for its secure lodgement, thus providing a capsule which can conveniently be placed in the holder, and removed therefrom, for renewal purposes. As
 45 more clearly shown in Fig. 6, the wall 26 has an inner sloping perimeter, 30, to ease the mica disk toward the groove 29 when springing it thereinto.

In the still further modification of Fig. 7 I have shown a porcelain vessel having wall 31 and
 50 perforated base 32, as provided with a perforated mica disk 33 which is imposed upon the edge of

wall 31, and then a sleeve 34, which may be of metal, and has an inturned flange 35, is telescoped snugly over the wall 31, and the flange 35 caused to clamp the disk 33 between said flange and the edge of wall 31, thereby constituting a
 80 simple and practical form of capsule, which securely contains the inserted catalyst.

Whilst various means of attaching the perforated disk of mica to the top of the vessel, to close it, have been herein described and illustrated,
 85 I do not wish to be limited to the use of these precise attaching means, being aware that other modes of attachment may be employed, within the spirit and scope of my invention.

I claim:

1. A catalyst container for lighters comprising a vessel having an imperforate wall composed of heat insulating, non-porous material, a perforated base, a top closure consisting of a perforated disk of mica, and catalytic material enclosed within
 95 said container.

2. A catalyst container for lighters comprising a vessel composed of heat insulating, non-porous material, said vessel having an imperforate surrounding wall and a perforated base, a perforated
 100 disk of mica at the top of said vessel, to close it, means for attaching said disk to said vessel, and catalytic material enclosed within said container.

3. A catalyst container for lighters comprising a vessel composed of heat insulating, non-porous
 105 material, said vessel having an imperforate surrounding wall and a perforated base, a perforated disk of mica at the top of said vessel, to close it, a sleeve to fit snugly over the wall of said vessel, said sleeve having an inturned flange to clamp
 110 the disk against the edge of said wall, and catalytic material enclosed within said vessel.

4. A catalyst container for lighters composed of a porcelain vessel having an imperforate surrounding wall and a perforated base, a perforated
 115 disk of mica to close said vessel, means for attaching said disk to said vessel, to constitute a capsule, and catalytic material in granular form enclosed within said capsule.

5. A catalyst container for lighters comprising
 120 a vessel having a perforated base and perforated front closure means, to constitute a capsule, and catalytic material in granular form enclosed within said capsule.

GEORGE PHILIP SCHMITT.

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