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PATENT SPECIFICATION



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PROVISIONAL SPECIFICATION

Improvements in or relating to Catalytic Lighters

I, ARTHUR BOREL, of Saars 4, Neuchâtel, Switzerland, a Swiss citizen, do hereby declare the nature of this invention to be as follows:—

5 This invention relates to catalytic lighters, employing platinum sponge as the lighting or igniting element, and the object of the invention is to provide an improved lighter of this type which will be free from the disadvantages associated with those known hitherto.

10 It is known to provide a catalytic lighter with an element carrying thin platinum wires on which is fixed a small pellet of platinum sponge, the lighter being ignited by introducing this element into a cavity partly occupied by a wick impregnated with benzine or the like. The benzine vapour ignites on contact with the platinum sponge and after withdrawal of the element carrying the platinum sponge, the lighter is ready for use.

15 A construction of this kind has several disadvantages, the chief of which is that the fragile sponge carrying element may easily be damaged by an inadvertent movement, whilst the thin wires may themselves be damaged by the flame.

20 These disadvantages are avoided with the lighter according to the invention which operates without the production of a flame and which comprises a petrol reservoir containing a wick and a pellet of platinum sponge of a section at least equal to that of the exposed end of the wick, the said pellet being mounted on wires, unaffected by the action of heat and arranged in a movable frame mounted on the lighter so that in one position of the frame the pellet of platinum sponge will be placed flat adjacent the exposed end of the wick, where, as a result of contact with the petrol vapour coming therefrom it becomes incandescent, whilst in another position of the frame the pellet will be remote from the wick and exposed to the action of the air on all sides, the

wick in this position of the frame being covered by a cap mounted on the cover of the lighter so as to exclude air from the wick. 50

The frame may be moved from one position to another by rotation about a pin in the edge thereof nearest the wick in the inoperative position of the frame and the platinum sponge pellet carried thereby. 55

The lighter according to the invention has the advantage that the pellet of platinum sponge is removed from the wick after use and is exposed to the action of the air so that it is completely regenerated and is always ready for use. The wires for holding the pellet and which may be of platinum, for example, are not exposed to a flame and are therefore much less liable to deterioration. 60 65

The portion of the lighter in which the frame and the associated platinum sponge pellet are situated when in the inoperative position is preferably formed as a portion of the body of the lighter closed against the petrol reservoir and the wick but perforated so as to permit the free entry of air, the cover of the light being preferably divided to form a corresponding perforated portion and a cap to cover the wick. 70 75

Obviously the pellet-carrying frame may be brought into and out of engagement with the wick by various means other than those referred to; for example, the frame may be formed with pins, adapted to slide in slots formed in the lighter casing, so as to bring the said frame into engagement with the wick when moved to one end of the slots and out of engagement with the wick when moved to the other end of said slots. 80 85

Dated this 6th day of January, 1939.

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COMPLETE SPECIFICATION

Improvements in or relating to Catalytic Lighters

I, ARTHUR BOREL, of Saars 4, Neuchâtel, Switzerland, a Swiss citizen,

do hereby declare the nature of this invention and in what manner the same is

to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to catalytic lighters, employing platinum sponge as the lighting or igniting element, and the object of the invention is to provide an improved lighter of this type which will be free from the disadvantages associated with those known hitherto.

It is known to provide a catalytic lighter with an element carrying thin platinum wires on which is fixed a small pellet of platinum sponge, the lighter being ignited by introducing this element into a cavity partly occupied by a wick impregnated with alcohol or the like. The alcohol or other vapour ignites on contact with the platinum sponge and, after withdrawal of the element carrying the platinum sponge, the lighter is ready for use.

A construction of this kind has several disadvantages, the chief of which is that the fragile sponge carrying element may easily be damaged by an inadvertent movement, whilst the thin wires may themselves be damaged by the flame.

These disadvantages are avoided with the lighter according to the invention which operates without the production of a flame and which comprises a reservoir for fuel such as alcohol containing a wick and a pellet of platinum sponge of a section at least equal to that of the exposed end of the wick, the said pellet being mounted by means of wires, unaffected by the action of heat, in a movable frame mounted on the lighter so that in one position of the frame the pellet of platinum sponge lies flat immediately adjacent the exposed end of the wick, where, exposed to the alcohol vapours coming therefrom, it becomes incandescent, and in another position of the frame the pellet lies remote from the said wick and is exposed to the action of air on all sides, and the cover or lid of the lighter carrying a cap adapted, in the closed position of the lid, to cover the wick so as to exclude air therefrom.

The frame may be moved from one position to another either by rotating the said frame about an axis located in the plane thereof and preferably formed by a pin in the edge thereof nearest the wick in the inoperative position of the frame, or by bodily displacing the frame in the reservoir.

The improved lighter has the advantage that the pellet of platinum sponge is removed from the wick after use and is exposed to the action of the air so that it is completely regenerated and is always ready for use. The wires for holding the

pellet and which may be of platinum, for example, are not exposed to a flame and are therefore much less liable to deterioration than in the prior known construction.

The portion of the lighter in which the frame and the associated platinum sponge pellet are situated when in the inoperative position is preferably formed as a portion of the body of the lighter closed against the alcohol reservoir and the wick but perforated so as to permit the free entry of air, the cover of the lighter being preferably divided to form a corresponding perforated portion and a cap to cover the wick.

In order that the invention may be fully understood, I shall now describe two embodiments thereof, by way of example by reference to the accompanying diagrammatic drawing, in which:—

Fig. 1 is a perspective view of one form of catalytic lighter constructed in accordance with the invention, and

Fig. 2 is a similar view of a modification.

Similar reference numerals refer to similar parts in the two figures.

Referring first to Fig. 1, in the fuel reservoir or container 1 of the lighter, the cover or lid 2 of which is shown in the raised or open position, is located a wick 3, the end of which is exposed. A rectangular frame 4, pivotally mounted transversely of the reservoir 1 by means of pins projecting from its lowermost horizontal edge 7, is provided with a plurality of crossed platinum wires 5, which support, in the plane of the said frame 4, a pellet 6 formed of platinum sponge.

The portion of the lighter adjacent to that housing the wick 3 is formed as a separate compartment having perforations 8 therein permitting the free entry of air. The cover or lid 2 is also divided into two compartments, one of which is formed with perforations 8 corresponding to those in the reservoir 1 and the other of which carries a cap 9 adapted to cover the wick 3 when the lid 2 is closed down.

The lighter functions in the following manner:—

When the lid 2 of the lighter is raised, the frame 4 lies flat on the top of the reservoir 1 in the rear or perforated compartment. The said frame 4 is then moved through 180° around its pivot edge 7 so as to lie flat in the front compartment with the pellet 6, carried thereby, covering the wick 3. The pellet 6, as a result of coming into contact with the alcohol vapours coming from the said wick 3, is heated and becomes incandescent and capable of igniting a combustible article brought into proximity thereto. After use, the frame 4 is pivoted

in the reverse direction so that the pellet 6 again lies in the perforated compartment where it is exposed to the action of the air on all sides owing to the presence of the perforations 8. The cover or lid 2 is then closed, the cap 9 completely covering the exposed portion of the wick 3.

In the modified construction shown in Figure 2, the frame 4, carrying the platinum sponge pellet 6, instead of being rectangular and pivotable around its horizontal edge 7, is made circular and is bodily slidable in the plane thereof in the reservoir or container 1. The frame 4 is constantly maintained horizontal through the medium of a pair of opposed pins 11 engaging and slidable in slots 10 formed in the opposite sides of the reservoir 1. By sliding the pins 11 to one end of the slots 10, the pellet can be located in the rear or perforated compartment and by sliding the pins to the other end of the slots, the said pellet 6 can be moved horizontally into the other compartment so as to cover the wick 3. In all other respects, the lighter, shown in Figure 2, is similar to that previously described.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A catalytic lighter, which operates without the production of a flame, comprising a reservoir or container for fuel, such as alcohol, carrying a wick and a pellet of platinum sponge of a section at least equal to that of the exposed end of the wick, the said pellet being mounted, by means of wires unaffected by the action of heat, in a movable frame mounted on the lighter in such a manner that, in one position of the frame, the pellet lies flat immediately adjacent the exposed end of

the wick where, exposed to the alcohol vapours coming therefrom, it becomes incandescent and, in another position of the frame, the pellet lies remote from the wick and is exposed to the action of air on all sides, and the cover or lid of the lighter carrying a cap adapted, in the closed position of the lid, to cover the wick so as to exclude air therefrom.

2. A catalytic lighter, as claimed in Claim 1, wherein the frame is moved from one position to the other by rotating the said frame about an axis located in the plane thereof.

3. A catalytic lighter as claimed in Claim 2, wherein the frame is rectangular and the pin passes through the edge thereof located nearest the wick in the inoperative position of the pellet and frame.

4. A catalytic lighter, as claimed in Claim 1, wherein the frame is moved by bodily displacing the said frame in the reservoir or container.

5. A catalytic lighter as claimed in Claim 4, wherein the frame is of circular section and is provided with a pair of opposed pins adapted to slide in slots formed in the reservoir or container of the lighter, such that, when the pins are moved to one end of the slots, the pellet lies over the wick and, when moved to the other end of the slots, the pellet is moved out of engagement therewith.

6. The improved catalytic lighter constructed and arranged substantially as hereinbefore described and illustrated in Figure 1 or 2 of the accompanying diagrammatic drawing.

Dated the 8th day of January, 1940.

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Fig. 1.

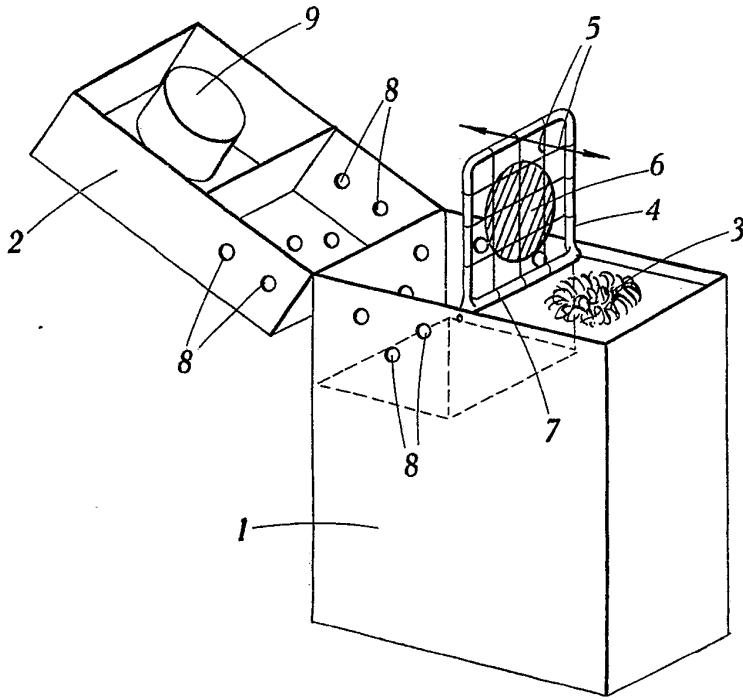
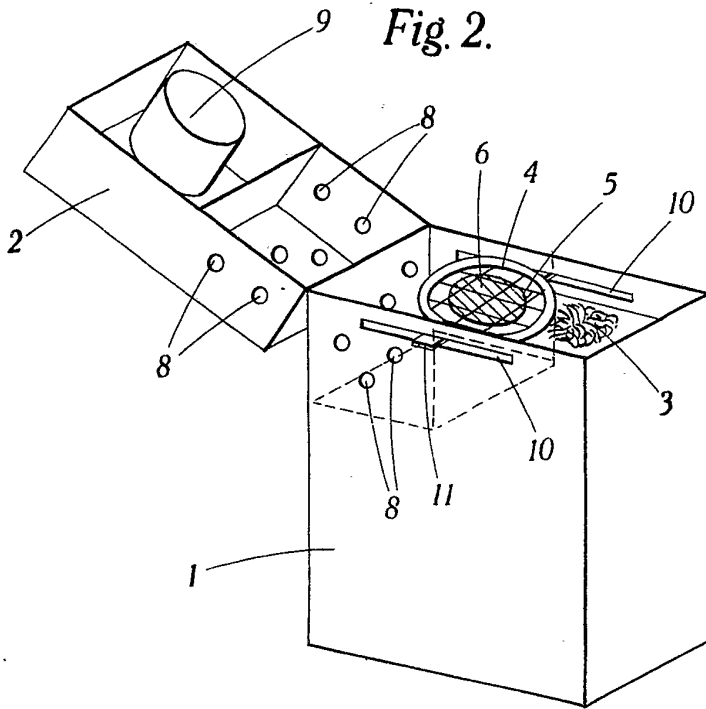


Fig. 2.



[This Drawing is a reproduction of the Original on a reduced scale.]