Jan. 11, 1949. F. MEYER 2,459,085

PYROPHORIC LIGHTER

Filed Jan. 10, 1946

Fig. 1

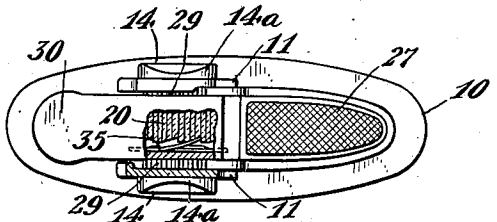


Fig. 2

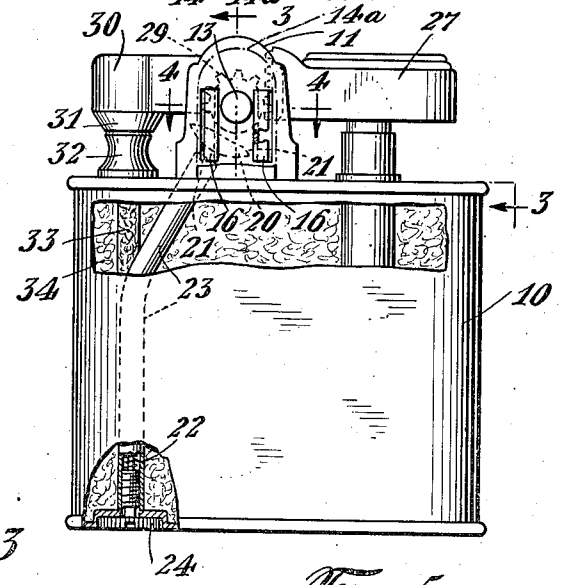


Fig. 3

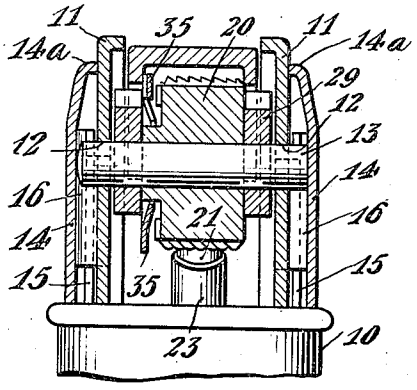


Fig. 5

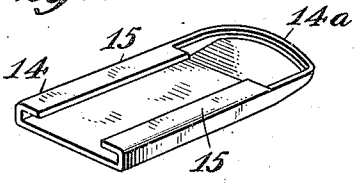


Fig. 4

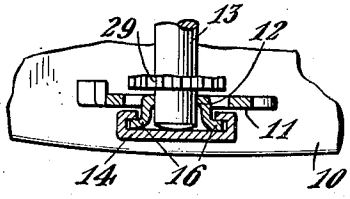
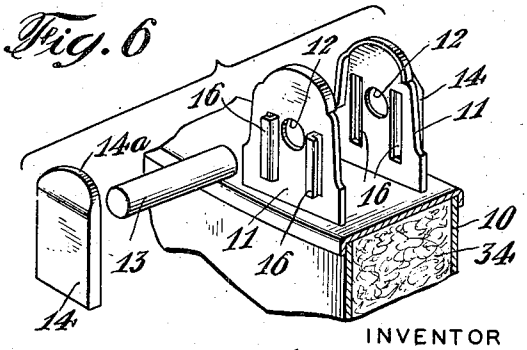


Fig. 6



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PYROPHORIC LIGHTER

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1 Claim. (Cl. 67—7.1)

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My invention relates to pyrophoric lighter improvements.

A known form of pyrophoric lighter comprises a fuel-containing casing having a pair of spaced upstanding standards or lugs which carry a fulcrum screw forming the pivotal or rotatable axis for a snuffer lever and a serrated wheel. In accordance with my invention, a pair of standards as above described are drilled so as to loosely receive a hardened pin or other member which is utilized in lieu of the aforesaid fulcrum screw for the purpose stated. This pin may be unfinished and, in order to detachably retain the same in its intended position and impart a finished appearance to the upper part of the lighter, a plate is provided for covering the exterior surface of each standard. The arrangement should be such that at least one of these cover plates is readily detachable from its supporting standard to permit ready manipulation of the aforesaid supporting pin when it becomes desirable or necessary to assemble or disassemble the lighter parts carried thereby.

Various other objects, advantages and features of my invention will become apparent from the following detailed description.

My invention resides in the pyrophoric lighter improvements, combinations and arrangements of the character hereinafter described and claimed.

For an understanding of my invention and for an illustration of one of the forms thereof, reference is to be had to the accompanying drawing, in which:

Figure 1 is a plan view, partly broken away, showing the pyrophoric lighter of my invention;

Fig. 2 is an elevational view, partly broken away, showing the pyrophoric lighter of Fig. 1;

Fig. 3 is an enlarged, vertical sectional view, taken on the line 3—3 of Fig. 2;

Fig. 4 is a horizontal sectional view taken on the line 4—4 of Fig. 2;

Fig. 5 is a perspective view showing a cover plate; and

Fig. 6 is a perspective view showing parts of my improvement in disassembled relation.

Referring now to the drawings in detail, the pyrophoric lighter may comprise a container or casing 10 at the top of which is mounted a pair of spaced parallel lugs or standards 11, one at the front and one at the rear of the container 10. The lugs 11 are drilled transversely as at 12, Figs. 3 and 6, to freely receive a pin or member 13, preferably cylindrical, which is adapted to

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support parts of the lighter sparking mechanism as will be hereinafter explained.

In accordance with the invention, the pin 13 may be of unfinished, hardened steel and it is merely inserted in the drillings 12 at the proper time during the assemblage of the lighter parts. The pin 13 is positively retained in the drillings 12 by cover plates 14 which engage the respective opposite ends of said pin 13, Fig. 3. One cover plate 14 is provided for each of the lugs 11 and the cover plates 14 preferably are formed from suitable metallic material, if desired, any suitable arrangement may be provided for preventing rotative movement of the pin 13 after it has been properly positioned on the lugs 11.

As is apparent from Fig. 5, the cover plates 14 have strip-like configuration and the sides of each may be turned inwardly to form parallel flanged portions 15 which are adapted for frictional engagement with complementary tracks 16 formed on each lug 11 at right angles to the plane of the top casing wall. It will be noted that the tracks 16 protrude outwardly from each of the lugs 11 and that they are turned in opposite directions for releasable locking engagement with the respective flanged portions 15. The tracks 16 on each lug 11 are parallel and located on opposite respective sides of the lug drilling 12. Accordingly, when the cover plates 14 are placed on the respective lugs 11, said plates serve to prevent transverse movement of the pin 13 and thus positively retain this pin in its intended position. Moreover, the cover plates 14 are disposed over the unfinished ends of the pin 13 and, hence, these unfinished pin ends are not visible.

Although the detailed construction of the lighter mechanism forms no part of this invention, a typical pyrophoric lighter has been shown in Figs. 1 to 3 for purposes of illustration. In this lighter, an abradant wheel 20 is mounted for free rotatable movement on the pin 13, a piece of sparking metal 21, Fig. 3, being urged into engagement with the abradant wheel by a spring 22 mounted within a tube 23 which extends through the casing 10, access to the tube being afforded by a screw 24 at the bottom of the casing. The abradant wheel is actuated by a reciprocable operating member 27 which has integral racks meshing, respectively, with gear segments 29 loosely mounted on the pin 13.

The aforesaid gear segments 29 mesh, respectively, with toothed sectors formed in the respective side walls of a snuffer lever 30 which carries a snuffer cap 31 engageable with a wick tube 32

for the upper end of a wick 33 disposed in the casing 10 which also contains suitable fuel such as a mass of fuel-containing absorbent material 34. A clutch disk 35 loosely mounted on the hub of serrated wheel 20 is suitably held in fixed position within the snuffer lever 30 so that it is movable as a unit therewith, said clutch disk 35 comprising a tooth which is coactable with ratchet teeth formed on the adjacent side of the serrated wheel 20. When the operating member 27 is depressed, the snuffer lever 30 is swung clockwise, Fig. 2, with the result that the wheel 20 abrades the sparking metal 21 to direct a shower of sparks toward the upper, exposed end of the wick 33 and ignite the fuel carried thereby. When the operating member 27 is released, an associated spring, not shown, returns the parts to the respective positions thereof shown in Fig. 2 and, during this movement, the clutch disk idles with respect to the serrated wheel 20.

The frictional engagement between the sets of flanged portions 15 on the respective cover plates 14 and the sets of tracks 16 on the respective lugs 11 is adequate, ordinarily, to hold the cover plates in position upon the lugs during the normal use of the lighter. In accordance with the invention, one or both of the cover plates 14 may readily be removed by a simple sliding action when it is desired to remove the pin 13 for repair or replacement of parts. In order to obtain a pleasing appearance and provide an additional contact area between the cover plates and the lugs, each cover plate 14 may be provided with an arcuate end surface 14a having generally the same shape as the top of a lug 11, said arcuate surface being bent inwardly so as to engage the adjacent outer surface of the lug with which it is associated.

More particularly, the hardened pin 13 of my invention replaces the fulcrum screw of prior art pyrophoric lighters with resultant increase in the life of the fulcrum bearing. The assembling or disassembly of the lighter mechanism may be effected with ease and without employing a screw driver which may slip and mar, scratch or damage the lighter standards, the head of the fulcrum screw or other parts of the lighter. With the lighter mechanism in operative condition as shown in Fig. 2, the parts may readily be disassembled as follows: The screw 24 may be withdrawn or loosened to such extent that the spring 22 is ineffective to hold the pyrophoric element 21 in engagement with the serrated wheel 20. Thereupon, after one of the cover plates 14 has been removed from a standard 11, the operating member 27 may be depressed and, then, by a shaking action, the pin 13 is readily detached from the standards 11. In as simple a manner, the parts of the lighter mechanism may be reassembled when desired. It will be understood, if desired, the arrangement may be such that only one of the cover plates 14 is detachable from its supporting standard 11.

While the invention has been described with respect to a certain particular preferred example which gives satsifactory results, it will be understood by those skilled in the art after understanding the invention, that various changes and modifications may be made without departing from the spirit and scope of the invention and it is intended therefore in the appended claim to cover all such changes and modifications.

What is claimed as new and desired to be secured by Letters Patent, is:

A lighter having a casing, a pair of spaced standards extending therefrom and having transverse alined passages extending therethrough, a pivot pin for operating parts of the lighter having its opposite end portions mounted within and slidable endwise through said passages, cover plates respectively overlying the outer sides of said standards and the outer end portions of said passages and pivot pin to conceal the latter and limit endwise movement of the pin, at least one of said cover plates and its corresponding standard having parts interengaging to afford sliding movement of said plate in a plane transverse to the pin to expose the corresponding end of the pin and afford endwise removal of the pin past said last mentioned cover plate.

FREDERICK MEYER.

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