Nov. 5, 1929. C. HARDY 1,734,465

CIGAR LIGHTER

Filed Dec. 7, 1928

Fig. 1.

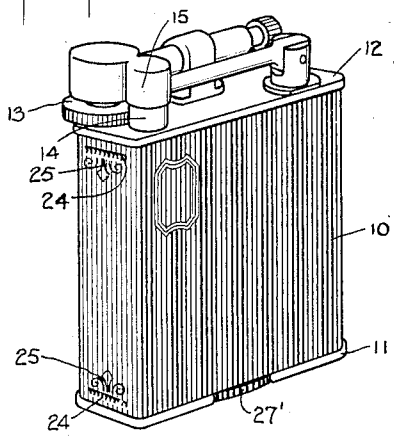


Fig. 2.

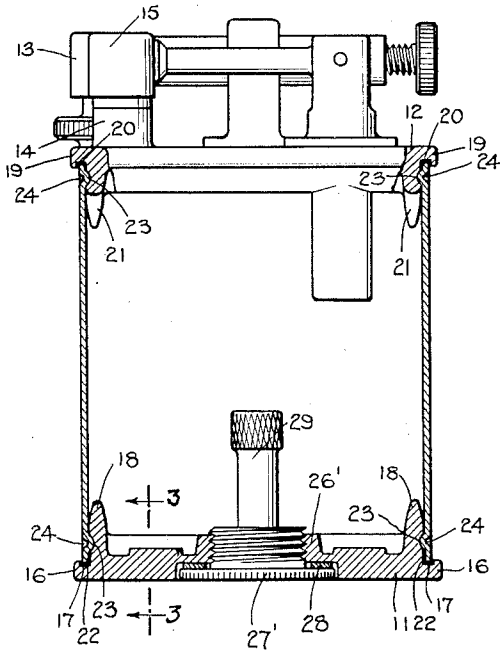
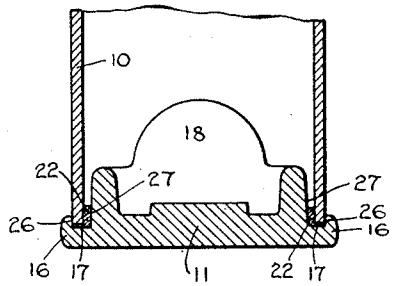


Fig. 3.



INVENTOR
Charles Hardy
BY
Cavanagh & James
ATTORNEYS

Patented Nov. 5, 1929 1,734,465

UNITED STATES PATENT OFFICE

CHARLES HARDY, OF NEW YORK, N. Y.

CIGAR LIGHTER

Application filed December 7, 1928. Serial No. 324,542.

This invention relates to pocket lighters and the main object of the invention is to provide a lighter which is simple in construction and operation and the manufacture and assembly of which is simple and effective with the resultant reduction in the cost of manufacture and with the further result that the lighter may be given several ornamental effects without any increase in the cost of production of the lighter.

The present invention is directed largely to the type of lighter which comprises a fuel chamber, the operating elements of the lighter being carried by the top closure of the fuel chamber. While the present invention is not limited to any specific form of lighter and the present invention may be adapted to a large variety of types of lighters having any desired construction and arrangement of its operating elements, the invention is shown in the present application as applied to the type of lighter disclosed in my co-pending application, Serial Number 231,569, filed November 7, 1927; it being understood, however, that this showing is merely by way of illustrating one embodiment of my invention and is not to be taken as a limitation.

One of the features of the present invention resides in the construction of the fuel chamber and in the structural features of the body portion of the chamber and of the top and bottom closures therefor which cooperate to facilitate the assembly of the lighter, it being necessary merely to press and snap the parts together, without soldering, riveting, and the like, and if cementing means is employed, without necessitating clamping the parts together while waiting for the cement to set.

Another feature of the invention resides in providing a construction which will make it possible to apply the finishing surface to the body portion of the fuel chamber and to the top and bottom closures thereof prior to the assembly of these parts so that if desired one or more ornamental tone effects may be applied to the lighter.

Other features of the invention will become apparent from the detailed description given below when taken in connection with the accompanying drawings which form a part of this specification and which illustrate one embodiment of the present invention.

Fig. 1 is a perspective view of the lighter embodying the present invention.

Fig. 2 is a longitudinal sectional view.

Fig. 3 is a detail view on line 3—3 of Fig. 2.

In the prior constructions of pocket lighters the parts were assembled and secured together by pins which necessarily extended to the outer faces of the lighter. In this prior art therefore the finishing ornamental surface had to be applied to the lighter after the various parts thereof had been assembled for the reason that the exterior faces of the pins had to be given the same finishing surface as the remainder of the lighter.

In the lighter constructed in accordance with the present invention the use of pins for the assembly is eliminated with the result that the parts of the lighter can be finished prior to assembly. Moreover, when the finishing ornamental surface is applied to the lighter after assembly, only one surface can be applied to all parts of the lighter and when it was desired to apply more than one tone effect to the lighter it was necessary to go to additional expense for this purpose. In the present construction, however, the main body portion of the lighter may be given one type of finishing surface such as by gold plating, whereas the other parts for example, the top and bottom closures thereof may be given another type of finishing surface such as nickel or chromium plating and the parts may then be assembled without in any way marring or in any manner interfering with the finished surfaces of the assembled parts.

Referring to the drawings, the lighter comprises a fuel chamber which consists of an open ended main body portion 10, which may be of any shape desired, a bottom closure 11 and a top closure 12. In the form shown herein the top closure 12 carries all of the operating elements of the lighter, such as the ignition device 13, the wick holder 14 and the snuffer 15.

The last mentioned operating elements may

be of any form desired and their showing herein is merely illustrative, the present invention being mainly concerned with the construction of the elements 10, 11 and 12, with their manner of cooperation and with the manner of assembly of these elements so as to obtain a lighter having a fuel chamber which is sealed tight at all its joints against any possible leakage and which may be ornamented in such a manner as to provide one type of ornamental surface to the body portion 10 and other types of surfaces to the closures 11 and 12.

The bottom closure 11 of the fuel chamber is a metallic plate shaped so as to conform to the shape of the main body portion 10 of the fuel chamber, and is so dimensioned that it fits inside the main body portion 10. In order to facilitate the insertion of the closure 11 into the lower end of the main body portion 10 the plate is provided at its ends with the pair of projections 18. It is also preferably provided with a laterally projecting bead 16 which projects somewhat beyond the external dimensions of the body portion 10, the bead 16 also being provided with an annular channel 17 designed to receive the lower edge of the main body portion 10. The lateral dimensions of the channel 17 are preferably such that the outer face of the edge of the fuel chamber abuts the outer wall 26 of the channel and leaves a space between the inner wall of the chamber and the inner wall 27 of the channel so as to provide a relatively limited space for the cement or other binder which is preferably employed as a sealing means as hereinafter described and to prevent any such cement from extruding to the exterior of the casing.

The top closure 12 also embodies the same features of construction as those described above with relation to the bottom closure 11. It also consists of a plate designed to fit into the top of the main body portion 10 and to project therefrom and is provided with a laterally projecting bead 19 which is provided with a channel 20 to receive the upper edge of the main body portion 10; the closure also being provided with a pair of depending lugs 21, which serve to guide the closure 12 into position.

For the purpose of permitting the desired method of assembling of the fuel chamber 10 and the top and bottom closures 11 and 12, the closures and the chamber or main body of the lighter are provided with interengaging parts or elements, formed preferably integrally with and of the same material of the chamber and closures, and which define snap engaging means, these interengaging parts being adapted to be forced into engagement with each other by a snap action in the assembling of the chamber and closures to produce the lighter assembly shown in Figure 1 and 2 of the drawings.

In order to provide an air and liquid tight seal between the fuel chamber body 10 and the closures 11 and 12, there is preferably employed a sealing means for sealing the joints between these parts; and to accomplish this, the channels 17 and 20 are filled with a drying cement in the step of assembling of the lighter parts. The snap engaging means function not only to hold the parts in assembled relation, but also to hold the parts firmly together while the sealing means, such as a liquid cement, is setting, and thus the snap interengaging means cooperates with the sealing means and cement to form a firm air and liquid tight joint.

In the principal embodiment of the present invention this snap engagement means is shown in the form of a groove 23 in each of the portions 18 and 21 and an inwardly depressed portion 24 in the main body portion 10 of the chamber. The groove 23 and the depressed portions 24 are so located that when the closures are inserted into the body portion 10 the depressed portions 24 of the body portion snap into the grooves 23 and the edges of the body portion are thereby held snugly within the channels 17 and 20 thereby causing the cement 22 to remain in the channels and to spread sufficiently so as to form an effective seal at these joints. The parts are retained firmly against each other by means of this snap engagement during the drying of the cement with the result that the joint remains air and liquid tight.

While I prefer to employ a sealing means in conjunction with the snap interengaging means, it will, of course, be understood that the method of effecting the interengagement of the parts and the assembling of the same, may be employed without the use of a sealing medium. Where the sealing medium is employed, the method of the invention permits a wider variety in the selection of drying cements than in the case of prior constructions where special cements, such as a bakelite cement, had to be employed so as not to be affected by the plating bath solution, the plating step in prior constructions being accomplished after the parts were assembled.

Moreover, by the use of the assembling method afforded by the construction of my invention, the usual baking of the special cements is obviated since binding materials may be employed without regard to the plating method, which binding materials do not require to be subjected to a baking step. It will be understood, also, that while snap engagement means is preferably produced by providing the grooves in the closure and the depressions in the body portion of the lighter, these may be reversed or other means may be used.

The bottom closure 11 is provided with an internally threaded filler opening 26′ which is normally closed by the filler cap 27′, th

resilient washer 28 being provided for maintaining a tight seal; the filler cap 27' also carrying a magazine 29 for pyrophoric elements.

It will be seen from the above that in the present invention no pins are utilized for the assembly of the main body portion 10 and the top and bottom closures of the fuel chamber and that the external faces of these elements are not affected in any manner during assembly. As a result thereof it is possible to apply any desired finishing surface to the main body portion 10 and any other finishing surfaces to the closures 11 and 12 and prior to the assembling step.

While I have described my invention in detail with respect to one embodiment thereof, I do not desire to be limited to such details, since many changes and modifications of the invention may be made by any person skilled in the art and the invention may be embodied in other forms without departing from the spirit and scope of the invention in its broad aspects. I therefore desire to cover all modifications and forms coming within the language or scope of any one or more of the appended claims.

I claim:

1. A lighter comprising an assembled fuel chamber consisting of an open ended tubular body portion of elongated cross-section, a permanent end closure therefor, said closure having an annular channel receiving the edges of said body portion contiguous thereto, and cementitious sealing means disposed within said channel.

2. A lighter comprising an assembled fuel chamber consisting of an open ended tubular body portion of elongated cross-section, a permanent bottom closure and a permanent top closure therefor, each of said closures having annular channels receiving the corresponding edges of said body portion, and cementitious sealing means disposed within said channels, whereby a leak-proof joint is obtained without necessitating soldering.

3. A lighter comprising an assembled fuel chamber consisting of an open ended tubular body portion of elongated cross-section, a permanent closure therefor, said closure having an annular channel receiving the corresponding edges of said body portion, and additional cooperating interlocking means disposed on the said body portion and on said closure for mechanically holding said parts firmly together.

4. A lighter comprising an assembled fuel chamber consisting of an open ended tubular body portion of elongated cross-section, a permanent bottom closure and a permanent top closure therefor, each of said closures having annular channels receiving the corresponding edges of said body portion, cementitious sealing means disposed within said channels, and additional cooperating interlocking means disposed on the said body portion and on said closures for mechanically holding said parts firmly together, whereby strong leak-proof joints are obtained without necessitating soldering.

5. A lighter comprising an open ended fuel chamber and a closure therefor, said closure consisting of a flanged plate disposed within the open end of said chamber, said chamber and closure being secured together by snap engagement means between said plate and said chamber, said means comprising mating elements formed integrally with and of the same material as said chamber and closure, and being of sufficient rigidity to lock the chamber and closure permanently together.

6. A lighter comprising an open ended fuel chamber, a cast metal closure for the open end of said fuel chamber, means integrally formed with the chamber and closure providing a snap engagement between said chamber and said closure for permanently securing them together, and operating devices for said lighter carried by supporting means cast integrally with said closure.

7. A lighter comprising an open ended fuel chamber, a closure for permanently closing said fuel chamber disposed within the open end of said chamber and projecting therefrom and having an annular channel for receiving the corresponding edges of said chamber, said closure and said chamber having on their inner meeting faces integrally formed mating elements defining snap engagement means of sufficient rigidity to lock the chamber and closure permanently together.

8. A lighter comprising an open ended fuel chamber, a closure for permanently closing said fuel chamber disposed within the open end of said chamber and projecting therefrom and having an annular channel for receiving the corresponding edges of said chamber, said closure having a groove on a face adjacent the inner face of said chamber, said fuel chamber having an inwardly depressed portion engaging said groove, in order to mechanically lock said chamber and closure together, and cementitious sealing means disposed within said channel in order to form an air tight joint between said chamber and closure.

9. A lighter comprising an open ended fuel chamber and a permanent closure therefor, said closure being disposed within the open end of said chamber, snap engagement means between said closure and said chamber of sufficient rigidity to lock them permanently together, and additional cementitious sealing means forming an air tight joint between said closure and said chamber.

10. A lighter comprising an open ended fuel chamber, a cast metal closure for the open end of said fuel chamber, means providing a snap engagement between said cham-

ber and said closure for permanently securing them together, cementitious sealing means forming an air tight joint between said chamber and said closure and operating devices for said lighter carried by supporting means cast integrally with said closure.

11. A lighter comprising an open ended fuel chamber, a closure for permanently closing said fuel chamber disposed within the open end of said chamber and projecting therefrom, said closure having a groove on a face adjacent the inner face of said chamber, and said fuel chamber having an inwardly depressed portion engaging said groove, said engaging means being of sufficient rigidity to permanently lock the chamber and closure together.

12. A lighter comprising an open ended fuel chamber, a closure for said fuel chamber disposed within the open end of said chamber and projecting therefrom, said closure having a groove on a face adjacent the inner face of said chamber, said chamber having an inwardly depressed portion engaging said groove with sufficient rigidity to permanently lock the closure and chamber together, and cementitious sealing means forming an air tight joint between said closure and said chamber.

Signed at New York City in the county of New York and State of New York this 4th day of Dec. A. D. 1928.

CHARLES HARDY.