May 10, 1949. S. REIN ET AL 2,469,442

CIGARETTE LIGHTER

Filed May 23, 1946

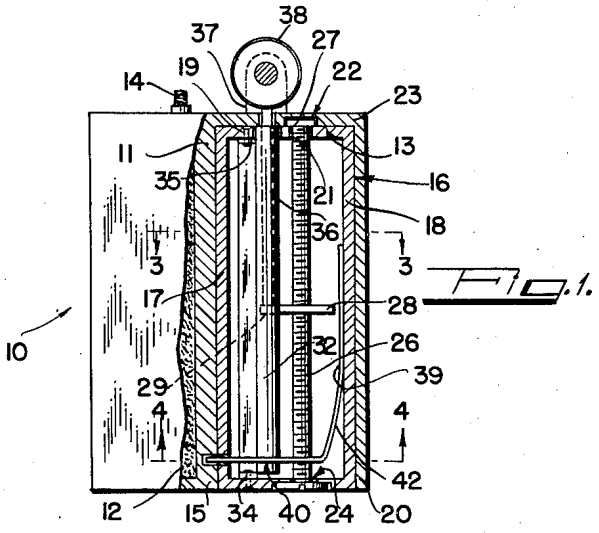

Fig. 1.

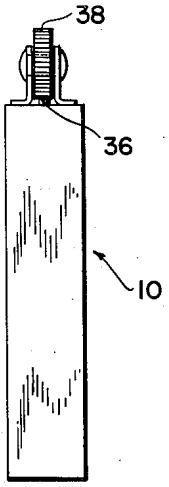

Fig. 2.

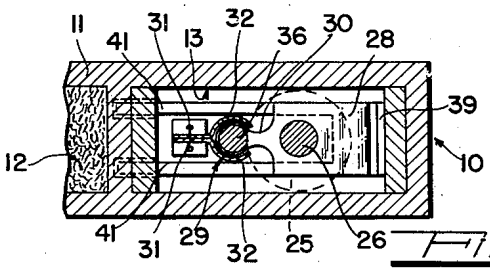

Fig. 3.

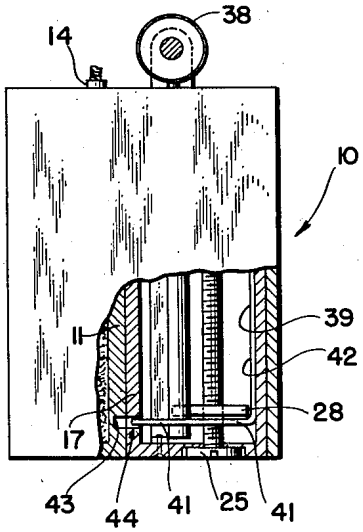

Fig. 5.

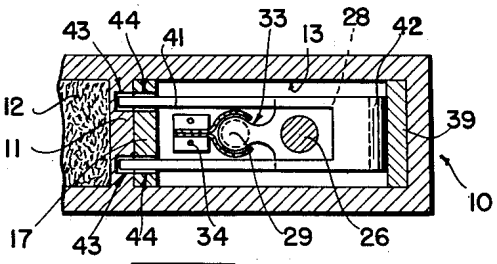

Fig. 4.

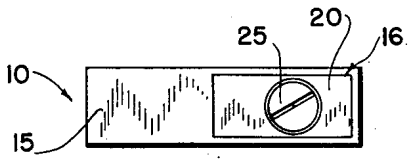

Fig. 6.

SAMUEL REIN
SEYMOUR TESLER
INVENTORS

BY J. Lederman

ATTORNEY

Patented May 10, 1949 2,469,442

UNITED STATES PATENT OFFICE

2,469,442

CIGARETTE LIGHTER

Samuel Rein, Hempstead, and Seymour Tesler, New York, N. Y.

Application May 23, 1946, Serial No. 671,783

2 Claims. (Cl. 67—7.1)

1

This invention relates to cigarette lighters, and aims to provide certain new and useful improvements in connection with the flint supply and feeding means thereof, whereby a long rod or stick of flint may be used instead of the short lengths now in common use, that the lighter may be used for a far greater period of time before the necessity to insert a new flint arises.

The frequency with which it is necessary to supply a new flint in cigarette lighters is a drawback to their popularity, as the task of removing the old flint and substituting a new one is very provoking to many smokers and is a nuisance to most. The instant invention not only very substantially lengthens the useful life of a lighter before a new flint is needed, but it also provides a very simple means and method of providing a new flint so that the operation can be performed with a minimum of trouble and time.

The above broad as well as additional and more specific objects will become apparent in the following description, wherein characters of reference refer to like-numbered parts in the accompanying drawing. It is to be noted that the drawing is intended solely for the purpose of illustration of the invention, and that it is neither intended nor desired to limit the scope of the invention to any or all of the exact details of constructions shown excepting insofar as they may be deemed essential to the invention.

Referring briefly to the drawing,

Fig. 1 is a side elevational view of a cigarette lighter, with parts broken away and partly in section, illustrating the invention and its application in a cigarette lighter.

Fig. 2 is an end elevational view of the lighter.

Fig. 3 is a cross-sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a cross-sectional view taken on line 4—4 of Fig. 1.

Fig. 5 is a side elevational view of the lighter, with parts broken away and partly in section, illustrating the invention in condition for removal or insertion of the flint into the lighter.

Fig. 6 is a bottom plan view of the lighter.

Referring in detail to the drawing, the numeral 10 indicates the housing of a cigarette lighter having a lateral partition wall 11 dividing the interior thereof into two compartments 12 and 13, the former being adapted to be supplied with fuel to feed the wick 14 in the usual manner.

The flint carrier and feed constitutes a separate member which is completely removable from and insertible into the compartment 13 through the bottom 15 of the lighter housing. This comprises a frame which may be constructed in any manner, as, for instance, the frame 16 which comprises a pair of opposed upwright walls 17 and 18 joined at the top and bottom by the walls 19 and 20, respectively. In the form of lighter illustrated the compartment 13 is also substantially rectangular, and the frame 16 is adapted to be slid through the bottom opening into the compartment 13 to register therein as shown in Figs. 1 and 3–6, with the bottom 20 of the frame 16 lying flush with the bottom 15 of the housing 10.

2

In the top member 19 of the frame 16, a circular opening 21 is provided therethrough, and above it in the underside of the top wall 23 of the housing 10 a concentric but enlarged opening or recess 22 is cut. An opening 24, in alignment with the openings 21—22, is provided in the bottom member 20 of the frame, and on its outer surface the member 20 is gouged out or countersunk to accommodate the head 25 of a screw or worm 26. The latter is rotatably supported between the openings 21 and 24 and on its upper end has an enlargement or flange 27 registrable in the recess 22.

An internally threaded nut or carriage 28 is threadably mounted on the worm 26, and has a neck 30 extending horizontally therefrom and provided on its extremity with a disc 29. A pair of complementary, somewhat less than semicylindrical, upright guide jaws 32, having flat and joined rearward extensions 31 whose bases 34 and upper extremities 35 are turned outward and secured to the bottom and top frame members 20 and 19, respectively, provide a tube-like receptacle for the slidable mounting therein of a stick or rod of flint 36. A spring, not shown, may in accordance with standard practice be mounted between the lower end of the flint rod 36 and the disc 29. Between the edges of the jaws 32 a vertical slot 33 is provided, through which the neck 30 of the carriage 28 projects, with the disc registering in the tube-like space between the jaws. The rod 36 of flint merely rests upon the disc 29. The top 23 of the housing 10 has an opening 37 therethrough, under the flint igniter wheel 38, through which the upper end of the flint rod 36 is adapted to project in the usual manner.

It is now apparent that turning of the worm in one direction by the head 25, whose periphery is preferably knurled for minimizing slipping when the fingers are applied thereto, will cause the carriage 28 to rise on the worm and thus feed the upper end of the flint rod toward the

wheel 38. Thus, as the upper extremity of the flint becomes worn with use, the rod may be repeatedly fed upward. Turning of the worm 26 in the opposite direction will of course cause the carriage 28 to move downward, and this is done after the rod of flint has been completely used up so that it is necessary to insert a fresh rod in the device.

One end of a leaf spring 39 is secured against the wall 18 of the frame 16, and the other end 40 is bent at right angles thereto and bifurcated to provide legs 41. The intermediate section 42 of the spring 39 is bent or flexed in such a way, substantially as shown, that the legs 41 are normally urged outward from the upright end of the spring. At a level substantially coplanar with the legs 41, recesses 43 are cut through the partition 11 and aligned openings 44 are cut through the frame wall 17. When the carriage is in its lowermost position, shown in Fig. 5, the legs 41 will have been withdrawn to the right by contact of the edge of the carriage with the flexed section 42 of the spring, as is obvious. As the carriage is advanced up the worm, the spring gradually flexes to push the legs 41 toward the left through the openings 44 and finally, after the carriage has risen to where it is clear of the section 42 the legs 41 will have entered to a maximum depth into the recesses 43 thereby releasably locking the frame 16 in the housing 10. The length of a fresh rod of flint 36 will be selected such that it will be sufficiently shorter than the distance between the wheel 38 and the carriage 28 in its lowermost position to permit of raising the carriage sufficiently to engage the legs 41 in the recesses 43 in fully extended condition by the time the upper end of the flint has reached the wheel 38.

It is readily apparent that the operation of supplying a fresh flint rod is extremely simple. When the old flint is used up to the point where it cannot be fed further upward, the carriage 28 will of course lie in its uppermost position, not shown. The first operation is therefore to screw the carriage down to its lowermost position, where the legs 41 are withdrawn from the recesses 43. Then the entire frame 16 will slide down out of the compartment 13. The remainder of the old flint rod is then removed and the new rod is set into the tubular housing formed by the guide jaws 32—32 encasing the disc 29, and the frame 16 is reinserted into the housing 10. When so inserted, the flange 27 of the worm will register in the recess 22 at the top of the housing, the open top end of the said tubular housing 32—32 will automatically align itself properly with the opening 37 through which the flint is adapted to be fed, and the recesses 43 will be in alignment with the openings 44 and the legs 41. The screw is then turned to advance the carriage upward, and when the flint appears through the opening 37 the legs 41 will be engaged in the recesses 43, holding the frame 16 securely within the housing 10.

Obviously, modifications in form and structure may be made without departing from the spirit and scope of the invention.

We claim:

1. In combination with a cigarette lighter housing having an opening through the top and having an igniter wheel mounted over said opening, said housing having a partition therein dividing the interior into two compartments, one of said compartments being positioned under said opening and having the lower end thereof open, a frame insertible into said one compartment and having an upright screw rotatably mounted therein, a carriage threadably mounted on said screw, a tubular housing mounted adjacent and parallel with said screw and having a longitudinal slot through the wall thereof, said carriage having an extension extending through said slot into said tubular housing and being adapted to have a rod of flint mounted in said tubular housing and supported on said extension, said tubular housing being so positioned in said frame that when said frame registers in said one compartment said tubular housing lies in alignment with said opening, means for releasably locking said frame in said compartment, one wall of said one compartment having recesses cut thereinto, a spring having one end mounted on the opposite wall of said frame and having the lower end thereof bifurcated to provide legs and bent at substantially right angles to position said legs substantially at the same level as said recesses, the intermediate portion of said spring being flexed to normally urge said legs longitudinally outward from said one end of the spring into said recesses, said screw being positioned between said legs, said carriage being positioned above said legs.

2. In combination with a cigarette lighter housing having an opening through the top and having an igniter wheel mounted over said opening, said housing having a partition therein dividing the interior into two compartments, one of said compartments being positioned under said opening and having the lower end thereof open, a frame insertible into said one compartment and having an upright screw rotatably mounted therein, a carriage threadably mounted on said screw, a tubular housing mounted adjacent and parallel with said screw and having a longitudinal slot through the wall thereof, said carriage having an extension extending through said slot into said tubular housing and being adapted to have a rod of flint mounted in said tubular housing and supported on said extension, said tubular housing being so positioned in said frame that when said frame registers in said one compartment said tubular housing lies in alignment with said opening, means for releasably locking said frame in said compartment, one wall of said compartment having a recess cut thereinto, a spring having one end mounted on the opposite wall of said frame and being deformed normally to urge the other end thereof into said recess, that portion of said spring intermediate said ends thereof extending past and adjacent said screw in the path of said carriage whereby movement of said carriage in one direction releases said spring to permit said other end thereof to enter said recess as aforesaid and movement of said carriage in the opposite direction causes said carriage to withdraw said other end of said spring out of said recess.

SAMUEL REIN.
SEYMOUR TESLER.

REFERENCES CITED

The following references are of record in the file of this patent:

FOREIGN PATENTS

Number	Country	Date
100,850	Austria	Mar. 15, 1925
316,869	Germany	Dec. 6, 1919
542,102	Germany	Jan. 20, 1932