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2,423,567

LIGHTER

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Fig. 1.

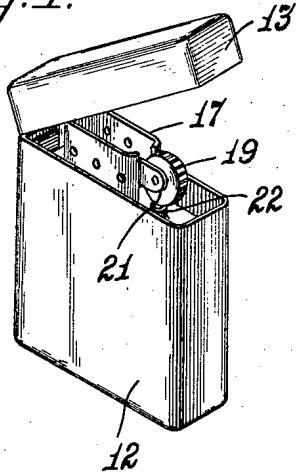


Fig. 2.

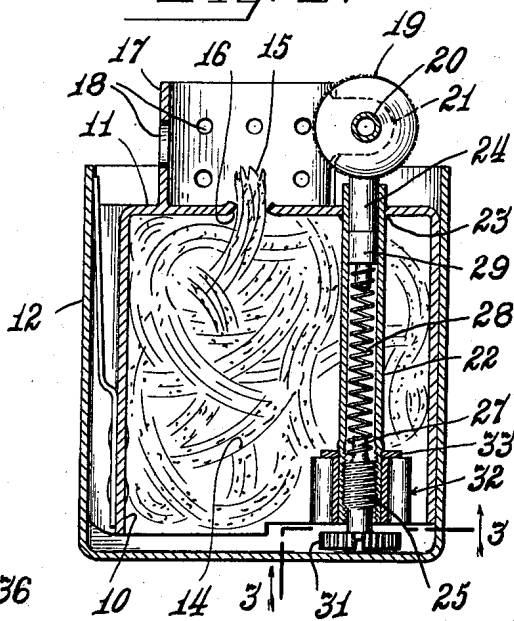


Fig. 3.

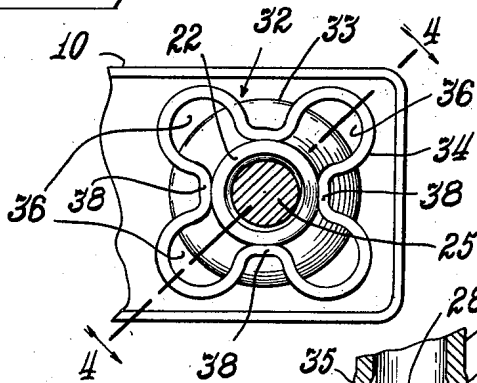
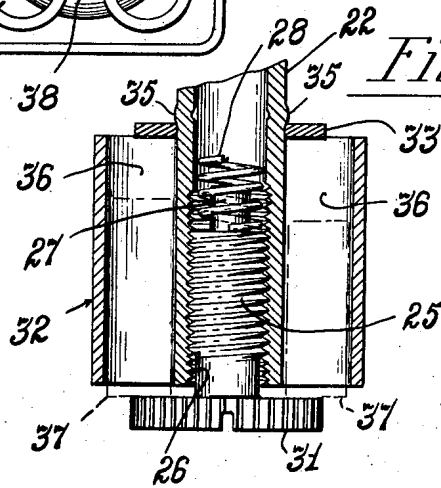


Fig. 4.



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LIGHTER

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5 Claims. (Cl. 67-7.1)

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The invention relates to improvements in lighting devices and more particularly to a pocket flint lighter having a novelly constructed magazine adapted to contain replacement pieces of flint.

An object of the present invention is to provide a lighter of a kind including a friction wheel actuable to create sparks upon frictional rubbing engagement with a piece of flint, with a novelly constructed multiple magazine adapted to contain replacement pieces of flint.

Another object of the invention is to provide a lighter of the kind described in which a magazine, adapted to contain replacement pieces of flint, is so arranged within the lighter casing as to be effectively closed by the usual adjusting screw provided to adjust a piece of flint relative to a friction wheel mounted on said casing.

Another object is to provide the flint feeder tube of a lighter with an integral, readily accessible magazine adapted to contain replacement pieces of flint.

Another object of the invention is to provide a lighter device including a novelly constructed normally concealed flint magazine which may be easily and inexpensively embodied in the device and which is very practical.

Other and further objects of the present invention will be apparent from the following description and claims and are illustrated in the accompanying drawing which discloses a preferred embodiment and the principle thereof, and which is considered to be the best mode contemplated for applying that principle. Other embodiments of the invention embodying the same or equivalent principle may be used and structural changes may be made as desired by those skilled in the art without departing from the spirit of the present invention and the purview of the appended claims.

In the drawing:

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

Fig. 2 is a longitudinal central sectional view of the lighter.

Fig. 3 is a sectional detail view, on an enlarged scale, taken substantially on line 3-3 of Fig. 2, but omitting the shell.

Fig. 4 is a sectional detail view taken on line 4-4 of Fig. 3, but omitting the casing and showing pieces of flint therein in broken lines.

The pocket lighter shown in the accompanying drawing is of a kind having a casing containing a wick to be saturated with a suitable lighting fluid, which wick is projected out of the casing in the region of a friction element, including a piece of flint, actuable to emit sparks for igniting the projected end of the wick.

Lighters of this general character are com-

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pactly constructed and consequently the piece of flint provided therein necessarily is very small and requires frequent replacement. Considerable inconvenience and annoyance in replacing a piece of flint is avoided in the use of a lighter of the instant construction which includes a normally concealed but readily accessible magazine adapted to contain one or more pieces of flint which are rendered available for use easily and quickly.

As best shown in Fig. 2 the mechanism of the lighter is carried on and within a substantially flat casing 10 including a top wall 11 and an open bottom, which casing is removably contained within a similarly shaped shell 12 having a movable cover 13. Normally, the cover 13 is closed to conceal the casing 10 and such parts of the lighter as are mounted on the top wall 11 thereof. To use the lighter, the cover 13 is moved into an open position about a suitable hinge provided on the complementary end walls thereof so as to expose the normally concealed actuating parts of the lighter mechanism.

A wick 14 is firmly packed within the casing 10 and one end 15 thereof projects through an opening 16 in the casing top wall 11. A windshield 17 is suitably provided on the top wall 11 of the casing around the wick opening 16, and said windshield has a plurality of holes 18 so as to admit oxygen freely into the confined air-space within the windshield 17 to enable the projected end 15 of the wick, when properly saturated with a lighting fluid, to become ignited and to burn upon operation of the lighting mechanism to be described presently.

Such lighting mechanism includes a friction wheel 19 which may be suitably journaled on a trunnion 20 firmly mounted in spaced wings 21 extending outwardly from one side of the windshield 17 and preferably formed integral therewith.

An open ended tube 22 is arranged within the casing 10 and is firmly secured, as at 23, to and projects beyond the top wall 11 of said casing. The tube 22 is located in substantially vertical alignment with and terminates a short distance below the lower peripheral edge of the friction wheel 19 as shown, and it is adapted to contain a piece of flint 24. The piece of flint 24 normally is urged upwardly in the tube 22 into yieldable contact with the periphery of the friction wheel 19 so that when said friction wheel is rotated manually sparks are created due to the frictional engagement between the frictional wheel and flint, which sparks are directed into the windshield 17 and against the projected wick end 15 to ignite the same.

The means provided to urge the piece of flint 24 into frictional contact with the friction wheel 19 preferably includes an adjusting screw 25

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threadingly engaged with internal threads 26 provided within the lower open end of the tube 22. The inwardly disposed end of the adjusting screw 25 is suitably reduced in diameter as at 27 to receive thereover one end of the coiled tension spring 28, the other end of which carries a follower 29. The spring 28 normally is of a length considerably greater than the length of the tube 22 so that when the adjusting screw 25 and said spring and follower are mounted within the tube, said spring is tensioned to thereby hold the follower 29 tightly against the piece of flint 24, whereby said flint is maintained under the required tension.

The adjusting screw 25 includes a large flat head 31 suitably knurled on its peripheral edge to facilitate its being manually engaged when the casing 10 is withdrawn from the shell 12. Such engagement is necessary when the screw 25 is inserted or withdrawn from the tube 22 or when it is necessary to adjust the screw to increase the tension of the spring 28 as when the piece of flint 24 becomes worn. When the piece of flint 24 has been worn to such an extent to become unserviceable it is necessary to withdraw the adjusting screw 25 and its complementary parts 28 and 29 and insert a new piece of flint in the tube 22.

It is one of the features of the present invention to provide means within the casing 12, preferably in the form of a magazine, adapted to contain one or more replacement pieces of flint in such manner that said pieces of flint may be made available for use easily and quickly. To this end, the lower end of the tube 22 carries a magazine, generally indicated at 32, which magazine includes an end wall 33 and a surrounding wall 34. The end wall 33 may be formed in any desired manner but preferably consists of a washer snugly fitted around the tube 22 adjacent its lower end and limited in its sliding upon said tube preferably by suitable detents 35 or other protuberances formed in the wall of said tube.

The wall portion 34 of the magazine surrounds the portion of the tube 22 below the washer or end wall 33 and said wall 34 preferably is fashioned from a sheet of stiff shape retaining material, such as thin sheet steel, and is suitably shaped to provide a plurality of cells 36, each of sufficient size to freely receive one piece of flint as indicated in broken lines at 37 in Fig. 4. The provision of a multi-celled magazine such as is disclosed herein may best be accomplished by pressing circumferentially spaced portions of the magazine wall 34, longitudinal of its length, inwardly radially as at 38 into tight abutment with the wall of the tube 22 to thereby leave the segments of the wall 34 between said deformed portions curved or bulged outwardly as best shown in Fig. 3. It will thus be observed that the magazine, consisting of the end wall 33 and surrounding wall 34, is press-fitted onto a lower end of the tube 22 and consequently is firmly secured in place.

As previously mentioned hereinabove, the flat head 31 of the adjusting screw is relatively large and, as best shown in Fig. 4, it is of sufficient diameter to partially overlie the lower open end of each of the cells 36 in the magazine. As a result, the head of the adjusting screw 25 serves effectively to retain the pieces of flint 37 within the cells 36. When the adjusting screw 25 is withdrawn from the tube 22, the head 31 is moved from its overlapping relation with the cells 36

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whereupon a piece of flint 37 may be withdrawn from any one of the cells 36 and inserted in the tube 22. When the adjusting screw 25 is replaced in the tube 22 and its related spring 28 is properly tensioned to hold the piece of flint in frictional contact with the friction wheel 13, the head 31 is again disposed in overlapping relation with the cells 36 to retain the remaining piece of flint in said cells.

It should be evident that applicant has provided a very practical and inexpensively constructed magazine for replacement piece of flint, which magazine may include any number of cells of any depth within the dimensional limits of the lighter casing, and that the invention may embody various other modifications in the detail construction of the magazine without departing from the spirit of the invention or the scope of the appended claims.

I claim:

1. In a lighter, an open ended feeder tube adapted to contain a piece of flint, adjustable means extending into said tube from one end to urge the flint towards the other tube end, a magazine for replacement pieces of flint carried by and surrounding said tube, said magazine including cells open at one end, and means on said adjustable means to prevent inadvertent removal of the replacement pieces of flint.

2. In a lighter of the kind described, a feeder tube adapted to contain a piece of flint, an external annular flange on said tube adjacent one end, a fitting press-fitted onto the said tube end, said fitting having a plurality of openings therein each to receive a piece of flint, and means adjustable in said tube to retain pieces of flint in said openings.

3. In a lighter device, a feeder tube adapted to contain a piece of flint, and a magazine for replacement pieces of flint, said magazine comprising a piece of sheet material press-fitted around said tube and shaped to define with wall portions of said tube a plurality of cells each to receive a piece of flint.

4. In a lighter device, a feeder tube adapted to contain a piece of flint, a magazine for replacement pieces of flint, said magazine comprising a piece of sheet material press-fitted around said tube and shaped to define with wall portions of said tube a plurality of cells each to receive a piece of flint, and means common to said tube and to each of said cells to retain pieces of flint therein.

5. In a lighter device, a feeder tube adapted to contain a piece of flint, a magazine for replacement pieces of flint, said magazine comprising a piece of sheet material press-fitted around said tube and shaped to define with wall portions of said tube a plurality of cells each to receive a piece of flint, and means common to said tube and to each of said cells to retain pieces of flint therein, said means consisting of a screw threaded into an end of said tube and having a head a sufficient size to overlap the filling openings in said cells.

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REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
1,717,205	Greene	June 11, 1929