March 13, 1956 A. MOSCH 2,737,796

PYROPHORIC LIGHTER

Filed Sept. 22, 1952 2 Sheets-Sheet 1

Fig. 1.

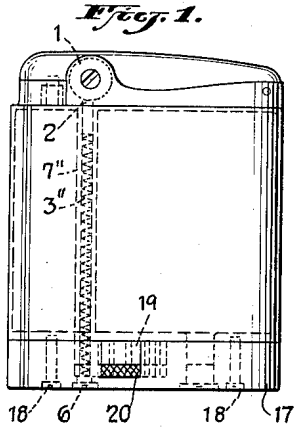


Fig. 2.

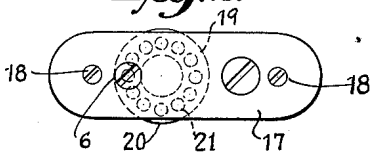


Fig. 3.

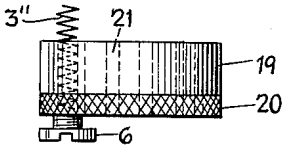


Fig. 4.

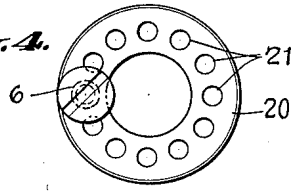


Fig. 5.

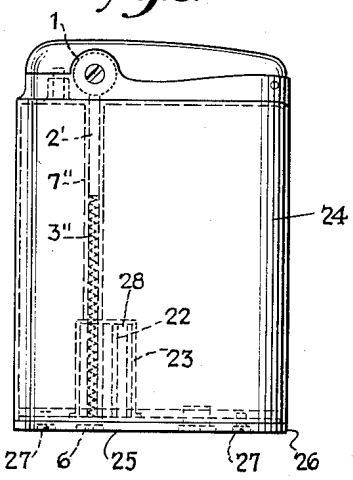


Fig. 6.

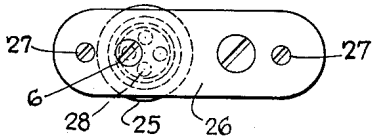


Fig. 7.

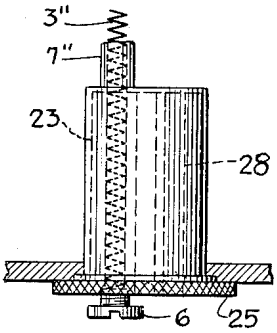
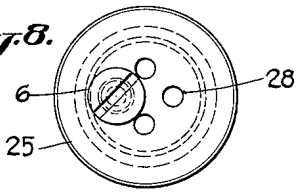


Fig. 8.



INVENTOR.
ALFRED MOSCH.
BY
H. A. Mayer
ATTORNEYS.

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PYROPHORIC LIGHTER

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Fig. 9.

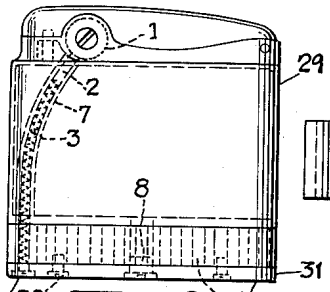


Fig. 10.

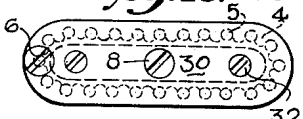


Fig. 11.

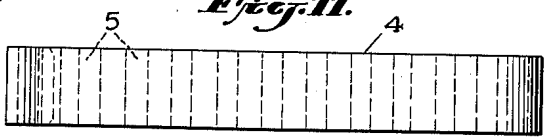


Fig. 12.

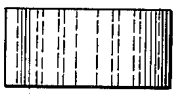


Fig. 13.

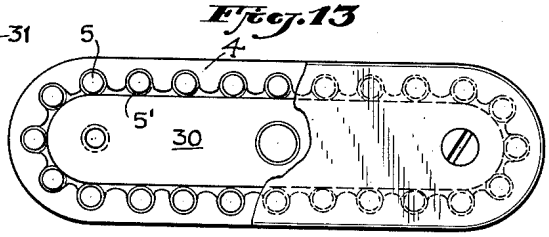


Fig. 14.

Fig. 15.

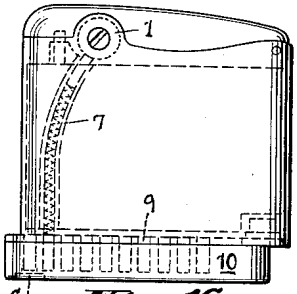


Fig. 16.

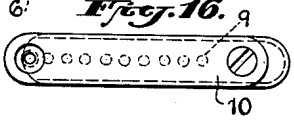


Fig. 17.

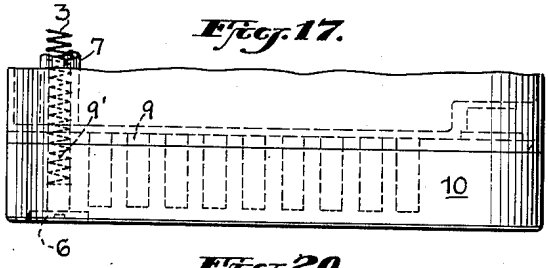


Fig. 18.

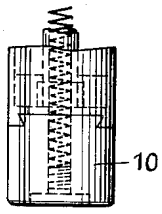


Fig. 19.

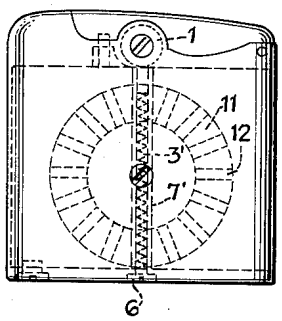


Fig. 20.

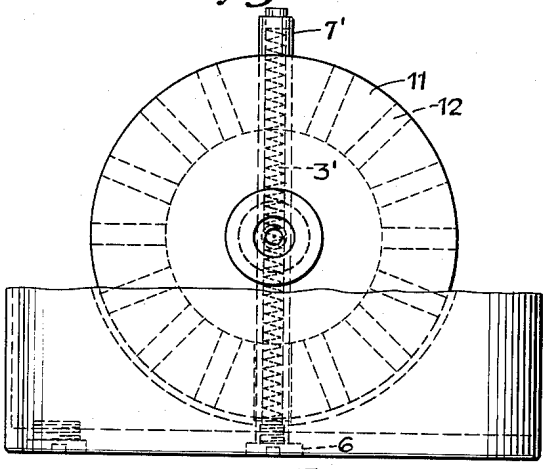


Fig. 21.

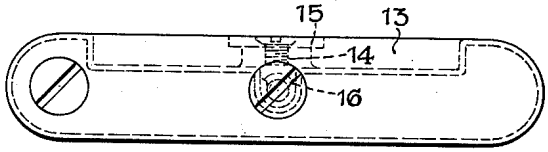
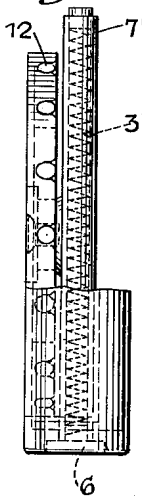


Fig. 22.



INVENTOR.
ALFRED MOSCH.
BY
K. A. Mayer
ATTORNEY.

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2,737,796

PYROPHORIC LIGHTER

Alfred Mosch, Jackson Heights, N. Y.

Application September 22, 1952, Serial No. 310,788

3 Claims. (Cl. 67—7.1)

The present invention relates to a pyrophoric lighter, more particularly to a lighter comprising magazine means for storing a plurality of flints and adapted for transfer of individual flints from the magazine into operating position to replace worn down flints.

Conventional lighters carry only one flint, the one which is in use. When this flint is exhausted, a new flint must be inserted which is usually not available when needed.

It is an object of the invention to movably attach a magazine member to the lighter casing, which member has a plurality of cavities, each containing a spare flint. The magazine member can be moved so that its cavities are individually aligned with a tube in the lighter casing containing the conventional spring urging the flint, which is in use, against an abradant wheel. Upon temporary removal of the spring, a new flint can be transferred into the tube from a cavity in the magazine member.

Further and other objects of the present invention will be hereinafter set forth in the accompanying specification and claims, and shown in the drawings which, by way of illustration, show what I now consider to be preferred embodiments of my invention.

In the drawings:

Fig. 1 is a side view of a lighter according to the invention;

Fig. 2 is a bottom view of Fig. 1;

Fig. 3 is an enlarged side view of the flint magazine of the lighter according to Figs. 1 and 2 including a portion of a coil spring for urging a flint to an abradant wheel, and a closure screw;

Fig. 4 is a view from below of the parts shown in Fig. 3;

Fig. 5 is a side view of a modified lighter according to the invention;

Fig. 6 is a bottom view of Fig. 5;

Fig. 7 is an enlarged view of the flint magazine of the lighter according to Figs. 5 and 6 including a portion of a coil spring for urging a flint to an abradant wheel, and a closure screw;

Fig. 8 is a view from below of the parts shown in Fig. 7;

Fig. 9 is a side view of another modification of the lighter according to the invention;

Fig. 10 is a bottom view of the lighter according to Fig. 9;

Fig. 11 is an enlarged side view of the flint magazine belt of the lighter shown in Figs. 9 and 10;

Fig. 12 is a front view of Fig. 11;

Fig. 13 is an enlarged bottom view of the device shown in Fig. 9 with parts broken away;

Fig. 14 is a side view of a sleeve forming part of the magazine belt shown in Figs. 11 to 13;

Fig. 15 is a side view of a further modification of a lighter according to the invention;

Fig. 16 is a bottom view of the device according to Fig. 15;

Fig. 17 is an enlarged view of the lower part of Fig. 15;

Fig. 18 is a view taken at a right angle to Fig. 17;

Fig. 19 is a side view of a further modification of a lighter according to the invention;

Fig. 20 is an enlarged side view of the lighter according to Fig. 19 with parts broken off;

Fig. 21 is a bottom view of the device shown in Fig. 20;

Fig. 22 is an end view of Fig. 20.

Like parts are designated by like numerals in all figures of the drawings.

Figs. 1 and 2 illustrate a lighter having a conventional abradant wheel 1 to which a flint 2 is urged by means of a coil spring 3″ inserted in a tube 7″ which extends through the fuel tank of the lighter. The lighter has a bottom portion 17 which is secured to the lighter body by screws 18. Spring 3″ extends through portion 17 and is held therein by a screw plug 6. The inside of portion 17 has a cylindrical cavity into which a cylindrical magazine member or drum 19, shown separately and in larger scale in Figs. 3 and 4, is rotatably inserted. Member 19 has a knurled surface portion 20 which is accessible from the outside of portion 17. Member 19 has a plurality of bores 21 placed in a circle coaxial of member 19. The center line of a bore in portion 17 through which spring 3″ extends extends also through the aforementioned circle and is in line with one of the bores 21 when the device is in normal operating position. If plug 6 and spring 3″ are removed, member 19 can be revolved by manipulating the knurled surface portion 20 until a new hole 21 containing a new flint is in line with tube 7″. Thereupon the new flint can be pushed into the tube and spring 3″ re-inserted and held in position by plug 6.

The modification illustrated in Figs. 5 to 8 is suitable for storing particularly long flints in a lighter. The cylindrical magazine member 22 shown separately in larger scale in Figs. 7 and 8 is rotatably inserted in casing 23 extending from the bottom of fuel tank 24 into the latter. The magazine member has a flange 25 whose knurled rim is accessible from the outside for revolving member 22. The latter is held in the lighter body by a bottom plate 26 secured to the bottom of the lighter body by screws 27. In normal operation position, a coil spring 3″ extends through one of a plurality of bores 28 arranged in member 22 in a circle coaxially of the member. The coil spring extends upwardly through a tube 7″ in fuel tank 24 for pressing a flint 2′ against abradant wheel 1. The spring is retained in the desired position by means of a screw plug 6. For insertion of a new flint into tube 7″, the operation is the same as in the device shown in Figs. 1 to 4. Plug 6 and spring 3″ are removed, permitting turning of member 22 by manipulation of flange 25 until a new flint is in line with tube 7″.

Referring more particularly to Figs. 9 to 14 of the drawings, numeral 1 designates a spark-producing wheel of a lighter of the conventional type, against which wheel a flint 2 is urged by a spring 3. A trunk part 30 extends from the bottom of the lighter casing, around which trunk part extends an endless belt 4, shown in larger scale in Figs. 11 and 12. Belt 4 can be pushed around the trunk part 30 and is prevented from falling off the trunk part by means of a bottom plate 31 fixed to the trunk part 30 by screws 32. The inside of the belt has a plurality of grooves 5, a sleeve 5′ shown in larger scale in Fig. 14 being placed in the bottom of each groove. Sleeves 5′ are adapted to individually receive a spare flint. When a flint 2 is exhausted, spring 3 extending through one of the sleeves 5′ and through guide tube 7 is removed, so that the magazine belt can be moved until a sleeve 5′ containing a fresh flint is aligned with the guide tube 7. By re-inserting spring 3 and a plug 6 in plate 31 for retaining

spring 3, the new flint is pushed into position next to the wheel 1. If liquid fuel is used in the lighter, a filler screw 8 is removed for refueling.

In the modification illustrated in Figs. 15 to 18, the flints are stored in cavities 9 in a slide 10 which is slidably attached to the bottom of the lighter casing. It is normally held in the position shown in Fig. 17, i. e. flush with the lighter casing, by means of coil spring 3 extending from tube 7 through a bore 9' in the left part of slide 10, bore 9' being closed by a screw plug 6. When a new flint is needed, plug 6 is removed, and the coil spring in tube 7 is withdrawn, whereupon the slide 10 is moved to the left as shown in Figs. 15 and 16 until a cavity or pocket 9 containing a flint is in line with tube 7, so that a new flint can be transferred into tube 7. Thereupon the slide is pushed back into its original position on the bottom portion of the lighter body, the coil spring is inserted through bore 9' into tube 7, and plug 6 is inserted, holding the spring urging a flint against the abradant wheel 1 and thereby the slide 10 in place.

In the modification shown in Figs. 19 to 22, a disc 11 having radial recesses 12 individually containing a flint is used as storage member. The disc is received in a recess 13 in a lateral wall of the lighter casing so that the latter closes the radial recesses. The disc is rotatably secured to the lighter body by means of a screw 14 and a washer 15. When a new flint is needed, plug 6 is removed and spring 3' is pulled out of tube 7', whereupon wheel 11 can be turned until a recess 12 containing a new flint is adjacent to a slot 16 in the lower part of tube 7'. The latter is laid in a groove in the recessed side wall of the lighter casing to which wheel 11 is attached. After transfer of a new flint into tube 7', the spring 3' is reinserted and plug 6 screwed into place.

While I believe the above described embodiments of my invention to be preferred embodiments, I wish it to be understood that I do not desire to be limited to the exact details of design and construction shown and described, for obvious modifications will occur to a person skilled in the art.

I claim:

1. A pyrophoric lighter having a casing containing fuel, an abradant wheel supported by said casing, a tube extending through said casing and terminating adjacent to said wheel, a flint in said tube, a spring in said tube for urging said flint against said wheel, means extending from said casing and having a cross-sectional configuration similar to and smaller than that of said casing to form a recess extending around said casing, said tube having an end terminating in said casing at said recess, a flexible endless belt longitudinally movably received in said recess, said belt having a plane outside surface flush with the surface of said casing, the inside of said belt having a plurality of cavities adapted to individually receive a spare flint and to be individually aligned with said tube upon longitudinal movement of said belt.

2. A pyrophoric lighter having a casing containing fuel, an abradant wheel supported by said casing, a tube extending through said casing and terminating adjacent to said wheel, a flint in said tube, a spring in said tube for urging said flint against said wheel, means extending from said casing and having a cross-sectional configuration similar to and smaller than that of said casing to form a recess extending around said casing, said tube having an end terminating in said casing at said recess, a plurality of sleeves so placed in said recess as to afford rolling of said sleeves around said means extending from said casing, a spare flint in each of said sleeves, a flexible endless belt longitudinally movably placed around said sleeves for individually aligning said sleeves with said tube upon longitudinal movement of said belt.

3. A pyrophoric lighter as defined in claim 1 including a member removably connected with said casing for holding said sleeves, said spare flints, and said belt in said recess.

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