Dec. 31, 1946. H. C. SUNDBY 2,413,473

LIGHTER

Filed March 14, 1946

Fig. 1.

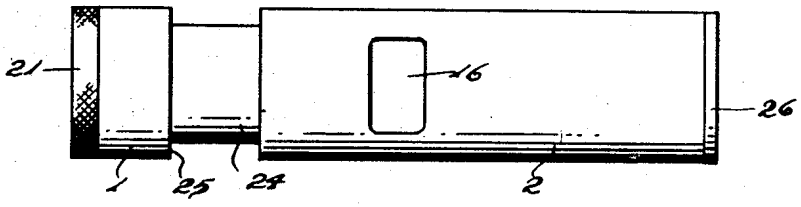


Fig. 2.

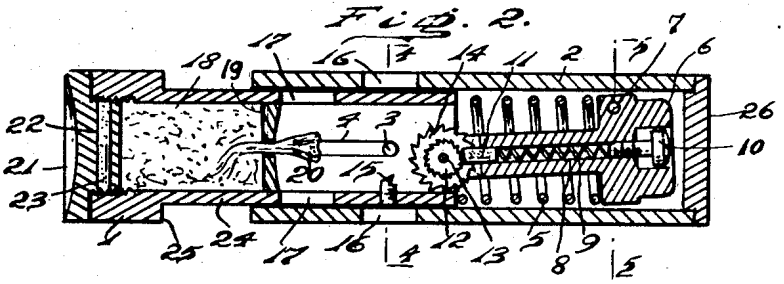


Fig. 3.

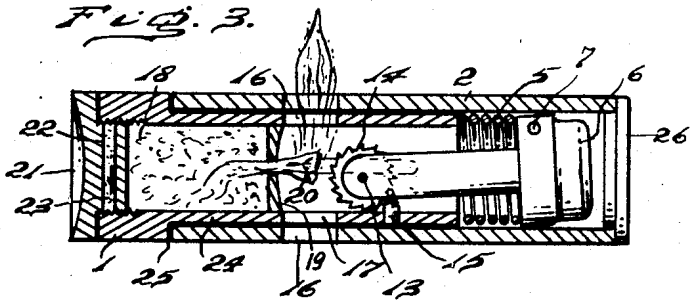


Fig. 4.

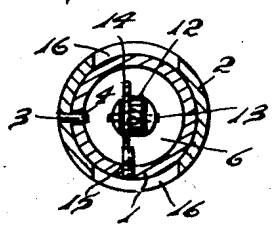
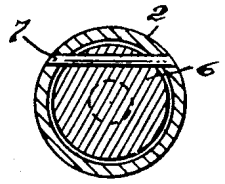


Fig. 5.



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2,413,473

LIGHTER

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3 Claims. (Cl. 67—7.1)

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The object of this invention is to devise a novel lighter wherein the ignition mechanism is concealed within a sectional casing, and the ignition is effected by relative movement of the sections.

Further objects of the invention are to devise a novel casing with telescopic sections, and a novel ignition mechanism, the casing sections having ports so arranged that upon relative movement of the sections the ports will register and the air within the casing is compressed and thus aids in passing the flame through the registering ports and thereby produce a strong flame for the ignition of a desired article.

A further object of the invention is to devise a novel lighter which is especially adapted for the lighting of a pipe as well as a cigarette or cigar.

With the foregoing and other objects in view as will hereinafter clearly appear, my invention comprehends a novel lighter.

It further comprehends a novel lighter having a novel construction of a casing and a novel construction of ignition mechanism which is concealed within the casing.

For the purpose of illustrating the invention, I have shown in the accompanying drawing a preferred embodiment thereof which I have found, in practice, to give satisfactory and reliable results. It is, however, to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized and the invention is not limited to the exact arrangement and organization of these instrumentalities as herein set forth.

Figure 1 is a top plan view of a lighter, embodying the invention.

Figure 2 is a longitudinal section, showing the parts in their normal positions.

Figure 3 is a section similar to Figure 2, but showing the parts in the positions they assume after the ignition has taken place.

Figure 4 is a section on line 4—4 of Figure 2.

Figure 5 is a section on line 5—5 of Figure 2.

Similar numerals of reference indicate corresponding parts.

Referring to the drawing:

The casing comprises telescopic sections 1 and 2. The outer section 2 has a stud 3 extending into a longitudinally extending slot 4 in the inner casing section to limit relative movement of the sections in one direction. A spring 5 bears at one end against the inner end of the section 1 and at its other end against the head of a carrier 6 pivotally mounted within the outer casing section 2 by a pivot pin 7. The carrier has a forward extension of reduced diameter provided

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with an aperture 8 to receive a spring 9, the tension of which is adjusted by a manually actuated screw 10 in the head of the carrier.

The spring 9, at its forward end, bears against a flint 11 in the aperture 8 and maintains the flint in engagement with a friction wheel 12 mounted on a pin 13 extending through the bifurcated end of the carrier, see Figure 4. A ratchet wheel 14, integral with the friction wheel, cooperates with a pawl 15 carried by and projecting into the inner casing section 1.

The casing section 2 has ports 16 at opposite sides which are normally out of register with ports 17 in the inner casing section 1.

The outer portion of the casing section 1 forms a chamber 18 to receive the conventional cotton which is soaked with lighter fluid in the usual manner. The inner end of the chamber is closed by an apertured partition 19 through which a wick 20 extends. The rear end of the chamber 18 is closed by a cap or plug 21 in threaded engagement with its casing section, and if desired the plug may be apertured as at 22 to receive a spare flint 23.

The inner casing section 1 is of reduced diameter at 24, thereby forming a shoulder 25 with which the inner end of the section 2 contacts to limit relative movement of the sections in one direction.

The outer end of the section 2 is closed by a removable cap or plug 26 connected therewith in any suitable manner and as shown by having a friction fit therewith.

The operation of the lighter will now be clear to those skilled in this art and is as follows:

The lighter is held in one hand between the thumb and a finger, and the casing sections are pressed towards each other to effect the ignition. The pawl 15 engages the ratchet wheel 14 and causes the friction wheel 12 to turn against the spring pressed flint to produce sparks which pass to the wick to ignite it. The compression of air within the casing causes a strong flame to pass through the upper set of registering ports 16 and 17. The lower set of ports 16 and 17 are partially open when ignition begins to provide air for combustion.

If a pipe is to be lighted, the flame may be directed into its bowl from the upper set of ports or the flame may be drawn from the lower set of ports into the bowl of the pipe.

When the pressure tending to move the sections together is released, the spring 5 will cause the parts to assume their normal positions seen in Figure 2. At this time the ports 16 and 17 are

out of registry so that evaporation of the lighter fluid is reduced to a minimum.

Due to the manner in which the carrier is pivotally mounted within the casing section **2** and the manner in which the spring **5** cooperates with it, the tendency is to rock the forward end of the carrier downwardly into the position seen in Figures 2 and 3 so that the ratchet is in the path of the pawl to effect the turning of the friction wheel when the sections are moved together by pressure applied to the ends of the sections by the user.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a lighter, a casing comprising telescopic sections having limited relative movement and having ports in registry when in igniting position and out of registry when not in igniting position, a pawl in one section, a carrier pivoted off-center with respect to the casing in the other section, a friction wheel rotatably supported on the carrier, a flint for the friction wheel, a ratchet to turn the friction wheel, a spring to effect outward movement of the sections and cooperating with the carrier to position the ratchet in the path of said pawl, and a fuel impregnated wick to receive sparks from the friction wheel and flint.

2. In a lighter, tubular, telescopic sections having limited relative movement and having ports to register when in igniting position, a pawl at the inner wall of one section, a carrier pivotally supported at one end to be off-center with respect to itself in the other section, a friction wheel rotatably mounted at the forward end of the carrier, a spring pressed flint for the friction wheel, a ratchet fixed to the friction wheel, a spring bearing at one end against a section and at its opposite end against the carrier to position the ratchet in the path of said pawl, and a fuel impregnated wick in the casing to receive sparks from the friction wheel and flint.

3. In a lighter, a casing having telescopic sections having ports in register when in igniting position, a pawl at the inner wall of one section, a carrier having one end pivoted off-center with respect to itself in the other section, a friction wheel and a ratchet connected to rotate in unison and rotatably supported at the opposite end of said carrier, yielding means to rock said carrier on its pivot to position said ratchet in the path of said pawl, a fuel impregnated wick, and a spring pressed flint in the carrier and engaging said friction wheel.

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