

VOID : SEALING FEE NOT PAID.

126,538

PATENT



SPECIFICATION

*Application Date, July 13, 1918. No. 11,494/18.*

*Complete Left, Jan. 13, 1919.*

*Complete Accepted, May 15, 1919.*

PROVISIONAL SPECIFICATION.

**An Improved Pyrophoric Pipe, Cigar and like Lighter.**

I, ARTHUR SAMUEL NEWMAN, of 25, Linden Mansions, Hornsey Lane, Highgate, in the County of Middlesex, Scientific Instrument Manufacturer, do hereby declare the nature of this invention to be as follows:—

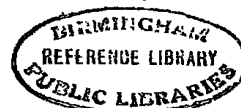
The invention relates to that type of pyrophoric lighting device comprising a reservoir for absorbent material saturated with a spirit, a wick tube, a so-called "flint", and a friction wheel acting against the "flint" to throw a spark towards the wick.

In some such lighters the wheel is rotated by the action of a finger upon its periphery, and in other such lighters the wheel is rotated by releasing a spring-actuated lid or cover, which latter acts by suitable mechanism upon the wheel. Some people find it difficult to operate the wheel directly by means of a finger and the wheel soils the finger. In those lighters where the lid is released a disturbance of the spirit-laden air is caused by the sudden motion of the lid in opening. The objects of the present invention are to construct a lighter which is more certain in its action, and one in which the "flint" may be inserted and the pressure thereon be regulated without opening the spirit reservoir.

According to the present invention the reservoir carries at its upper end an ordinary wick tube containing a wick and a friction wheel mounted in suitable bearings or upon a fixed spindle. Above the friction wheel is a tube, open at its lower end, to contain the "flint", and this tube is closed at its upper end by a screwed cap or plug. Between the cap or plug and the "flint" is located a coiled spring, which is preferably fixed to the cap or plug; for instance, it may be pressed over a nib or projection in or on the cap or plug. The tube containing the "flint" is preferably fixed to or formed integral with the standards supporting the friction wheel. The friction wheel is rotated through a small arc, about 72° to 90°, by means of a lever which is depressed by a finger against the action of a spring and is then released. This lever is conveniently of U shape and is preferably mounted concentrically with respect to the friction wheel. A spring pawl or driver is carried by the lever and it may be mounted between the two arms of the U shaped lever. This pawl slides over the teeth of the friction wheel when the lever is depressed and drives the wheel when the lever is released. A coiled spring may be employed to operate the lever, one end being fixed to the standards carrying the friction wheel and the other end being hooked beneath part of the lever.

The friction wheel may be of ordinary construction or it may consist of a pair of toothed discs slightly separated and set on their shaft at an angle, thus forming what is known as a drunken wheel. Such a wheel will not only scrape circumferentially but also laterally and will wear the "flint" away evenly

[Price 6d.]



across its entire width. The two toothed discs may be set parallel to each other or at opposite angles on their shaft.

The wick tube, friction wheel, and tube to contain the "flint" are covered by a cap or lid in any usual manner, which cap or lid is removed or opened prior to operating the driving lever.

Dated this 13th day of July, 1918.

HARRIS & MILLS,  
Chartered Patent Agents,

34—35, High Holborn, London, W.C. 1,

COMPLETE SPECIFICATION

An Improved Pyrophoric Pipe, Cigar and like Lighter.

I, ARTHUR SAMUEL NEWMAN, of 25, Linden Mansions, Hornsey Lane, Highgate, in the County of Middlesex, Scientific Instrument Manufacturer, do hereby declare the nature of this invention and in what manner the same is to be performed; to be particularly described and ascertained in and by the following statement:—

The invention relates to that type of pyrophoric lighting device comprising a reservoir for absorbent material saturated with a spirit, a wick tube, a so-called "flint", and a friction wheel acting against the "flint" to throw sparks towards the wick.

In some such lighters the wheel is rotated by the action of a finger upon its periphery, and in other such lighters the acting wheel is rotated by releasing a spring actuated lid or cover acting as a lever which latter acts by suitable mechanism upon the wheel. Some people find it difficult to operate the wheel directly by means of a finger and the wheel soils the finger. In those lighters where the lid is released a disturbance of the spirit laden air is caused by the sudden motion of the lid in opening. The object of the present invention is to construct a lighter of the said type which is more certain in its action.

According to the present invention the lighter is provided with a spring controlled lever which is quite independent of any lid or cover with which the reservoir or wick tube may be provided. The lever is provided with a spring pawl which slides over the teeth of the friction wheel when the lever is depressed by a finger and drives the friction wheel when the lever is released by withdrawing the finger, thus producing the sparks to ignite the wick. The spark producing device thus consists of four parts namely:—the friction wheel, the spring pawl engaging the teeth of the friction wheel, the lever by which the pawl is carried and a spring to drive the lever. Such a lever is much smaller in area than the usual hinged lid or cover and consequently produces little disturbance of the spirit-laden air.

The invention is illustrated in the accompanying drawings in which Fig. 1 is a side elevation of the lid or cover and Fig. 2 is a side elevation of the reservoir and lighting mechanism. Fig. 3 is a plan of Fig. 2. Fig. 4 is an axial section of the cap employed to adjust the flint. Figs. 5 and 6 are edge views of two forms of friction wheels.

As shown in the drawings the reservoir *a* carries at its upper end an ordinary wick tube *b* containing a wick *c* and a friction wheel *d* mounted in suitable bearings or upon a fixed spindle carried by the standards *e*. Above the friction wheel *d* is a tube *f* open at its lower end, to contain the "flint", and this tube *f* is closed at its upper end by a screwed cap *g* or plug in known manner. Between the cap *g* or plug and the "flint" is located a coiled spring *h* which is preferably fixed to the cap *g* or plug; for instance as shown in Fig. 4 it may

be pressed over a rib or projection  $g^1$  in the cap  $g$ . The tube  $f$  containing the "flint" is preferably fixed to or formed integral with the standards  $e$  supporting the friction wheel  $d$ . The lever  $i$  is depressed by a finger against the action of a spring  $j$ . The finger is then removed from the lever and releases it. Other forms of spring may be employed to that shown. This lever  $i$  is conveniently of U shape as seen in Fig. 3 and is preferably mounted concentrically with respect to the friction wheel  $d$  as shown in Fig. 2. A spring pawl or driver  $k$  is carried by and pivoted to the lever  $i$  at  $k^1$  and it may be mounted between the two arms of the U shaped lever. This pawl  $k$  slides over the teeth of the friction wheel  $d$  when the lever  $i$  is depressed and drives the wheel  $d$  when the lever  $i$  is released. The spring  $j$  employed to operate the lever  $i$  is fixed at one end to the top of the reservoir  $a$  and its other end is hooked into part of the lever  $i$ .

The friction wheel  $d$  may be of ordinary construction or it may consist of a pair of toothed discs  $d^1, d^1$  set on their shaft  $d^2$  at an angle, thus forming what is known as a drunken wheel. Such a wheel will not only scrape circumferentially but also laterally and will wear the "flint" away, evenly across its entire width. The two toothed discs  $d^1, d^1$  may be set at opposite angles on their shaft  $d^2$  as shown in Fig. 5 or parallel to each other as shown in Fig. 6.

The wick tube  $b$ , friction wheel  $d$  and the tube  $f$  to contain the "flint" are covered by a cap  $a^1$  or lid in any usual manner, which cap or lid is removed or opened prior to operating the driving lever. Such a cap  $a^1$  is shown in Fig. 1. It is circular in cross section and is provided with a bayonet joint  $a^2$ . The cap may be readily made a good fit on a reduced part of the reservoir  $a$  and is easy to attach or detach.  $a^3$  is a screwed plug enabling the reservoir  $a$  to be supplied with spirit.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A pyrophoric lighter having a spirit reservoir, a wick tube, a spring pressed flint and a friction wheel in combination with a spring controlled lever which does not act as a lid or cover and is adapted to be depressed and released by a finger, said lever being pivoted preferably concentrically with respect to the friction wheel and carrying a spring pawl which slides over the teeth of the friction wheel in one direction and drives the friction wheel when the lever is released substantially as shown and described.

2. A pyrophoric lighter as claimed in Claim 1 in which the friction wheel is made in two parts which are set on their shaft at an angle which is not at right angles to the shaft substantially as shown and described.

Dated this 13th day of January, 1919.

HARRIS & MILLS,  
Chartered Patent Agents,  
34 & 35, High Holborn, London, W.C. 1.

[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1.

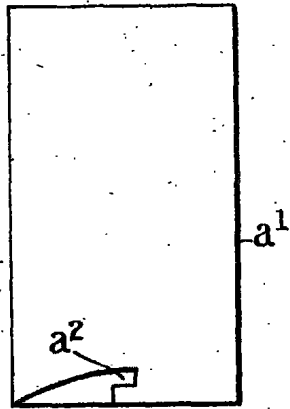


Fig. 2.

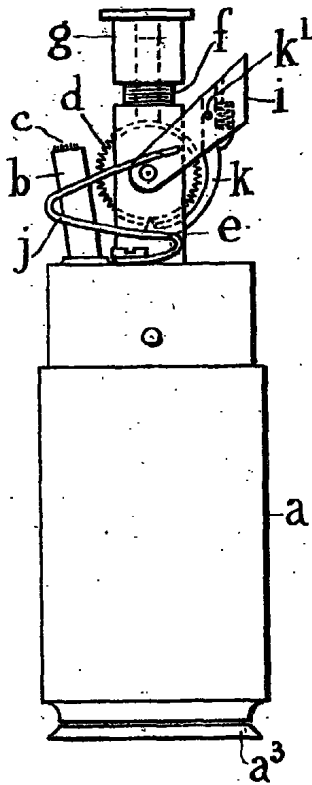


Fig. 3.

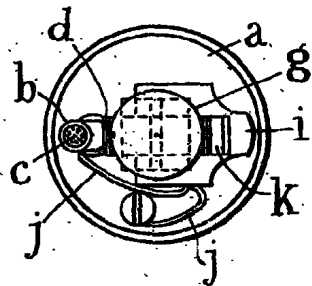


Fig. 4.

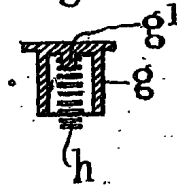


Fig. 5.



Fig. 6.

