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PYROPHORIC POCKET IGNITER

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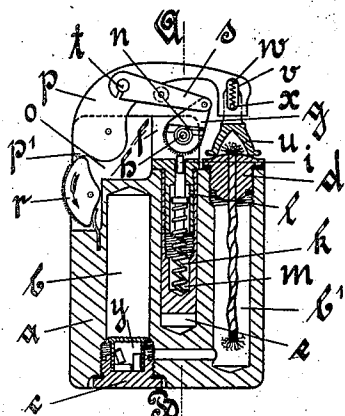


Fig: 1

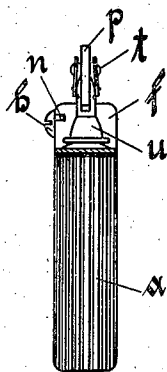


Fig: 2

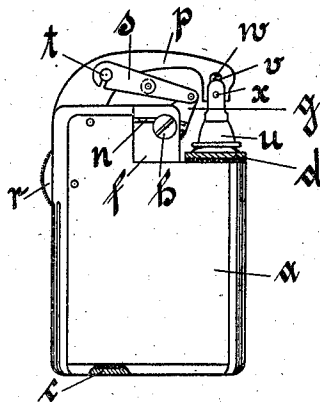


Fig: 3

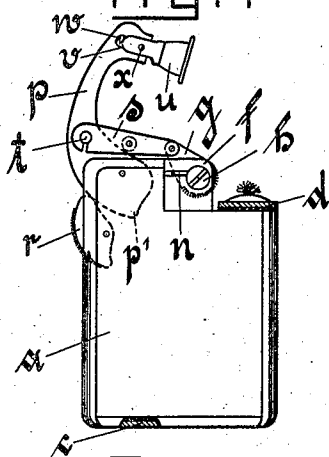


Fig: 4

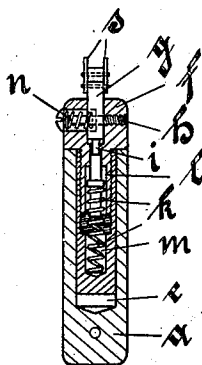


Fig: 5

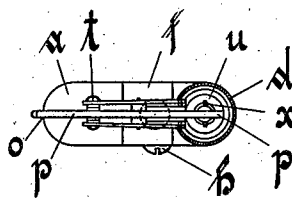


Fig: 6

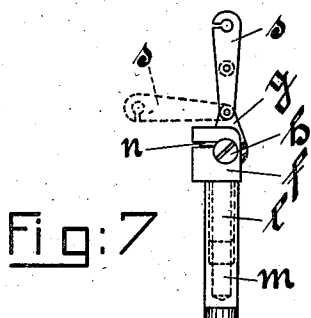


Fig: 7

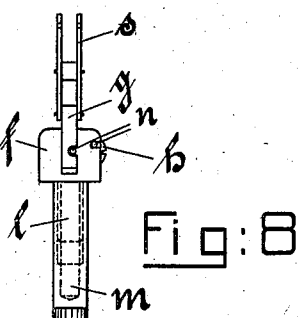


Fig: 8

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PYROPHORIC POCKET IGNITER

Application filed August 16, 1927, Serial No. 213,359, and in Germany July 23, 1927.

This invention relates to improvements in pyrophoric pocket igniters, the object of the invention being to provide an improved device of this character which is simple in construction, is efficient in operation and is not likely to get out of order.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of devices hereinafter described and claimed.

The drawings illustrate by way of example a form of construction of a pocket igniter in accordance with the present invention, and in which

Figure 1 is a sectional elevation.

Figure 2 is a rear view.

Figure 3 is a side elevation, showing the igniter mechanism in the closed position.

Figure 4 is a side elevation, showing the igniter in the opened position.

Figure 5 is a section on the line A—B of Figure 1.

Figure 6 is a plan view of the complete igniter.

Figure 7 is a detail view of the supporting head and associated elements in side elevation, and

Figure 8 is a detail view of the same in elevation from the rear.

A container *a* for the inflammable material is provided with chambers *b*, *b'* communicating with each other and which receive the liquid inflammable material. The chamber *b* is open at its lower end and is provided with a closure *c* for said opening, threaded therein and which when removed permits the filling of the chamber *b*, *b'*. The chamber *b'* has a closure holder *d* for the wick screwed tightly into the cover. A chamber *e* open at the top is formed in the solid portion between the chambers *b* and *b'* and into which a plug of a supporting head *f* is inserted. The container for the inflammable material is cut away at the top and the rectangular supporting head *f* is so inserted into the cut away portion, that it forms the continuation of the rear part of the container and is insured against distortion without special securing means. The supporting head *f* has a slot equal to the width of a friction member *g*

constructed in the form of a lever and which is freely rotatable upon a screw axle *h* and has a friction surface only upon its rounded portion. An opening is provided for a flint *i* which rests upon a plug pushed forward by the action of a spring *k*. The whole device for pushing the flint forward is introduced into a casing which consists of a plug *l* on the supporting head *f* and provided with exteriorly arranged screw-threads and of a tubular shaped cap *m* screwed thereupon, by means of which by screwing either up or down, the tension of the spring *k* can be adjusted.

The actuating spring of the lever-shaped friction member *g* consists of a spring *n* wound in the form of a screw with bent up ends, one of which is inserted into a slot in the supporting head *f*, and the other in a similar slot in the friction member *g*. It is pushed over the screw axle *h* and embedded partly in a bored-out portion in a cheek of the supporting head and partly also in a similar portion in the friction member *g*. An exceedingly strong spring reaction is obtained in this manner without having to construct the friction member and its supporting head too thick. The head-like raised portion of the cover of the container is provided with a slot-shaped cut-away portion *o* extending into the wall of the container proper. A closing and tension lever *p* as well as a stop-member *r* for the same are rotatably disposed in the cut-away portion *o*. The stop member has the shape of a sector of a circle and is roughened on its rear surface to ensure a grip and tends to swing its head inwards by means of a spring acting against the lower limb, in order to retain a stop nose *p'* of the closing and tension lever *p*. If it is desired to set free this latter, the stop member *r* is rotated in the direction of the arrow shown in Figure 1 against the action of its spring and to cause its head to swing outwards (Figure 4). By means of a link *s*, the free end of the lever-shaped friction member *g* is releasably connected to the closing and tension lever *p*. For this purpose the latter has laterally projecting pins *t*, which are inserted into open slots provided in the

link *s*. The forward free end of the closing and tension lever carries an extinguishing cap *u* which remains tightly pressed upon the wick-container *d* when the igniter is not in use, in spite of the tendency of the closing and tension lever to spring back. The extinguishing cap *u* is resiliently and slidably mounted upon the lever *p*. To render this possible, the closing and tension lever is provided with a vertical slot *v* and this slot is covered at the sides by the sliding cheek of the extinguishing cap *u*. A small spring *w* is introduced into the slot *v* which presses continually upon the retaining pin *x* of the extinguishing cap and connected to the sliding cheek, and the extinguishing cap with the closing and tension lever pressed down remains pressed tightly upon the plate containing the wick. The closing and tension lever *p* is itself held against the action of the spring *w* driving the friction member *g* in the closed position i. e. the pressed down position by the resilient stop member *r*.

The filling screw *c* of the container for the inflammable material is provided with a hollow cap *γ* loosely inserted and conveniently removable, and in which a number of spare flints may be introduced and carried about.

In using the igniter, the stop member *r* is rotated with the thumb in the direction shown in Figure 1 and its head swung out from under the stop nose *p'* of the closing and tension lever. The latter is thereby freed and in consequence of its link connection with the friction member is thrown out by the driving spring *w* into the position shown in Figure 4. Sparks produced by the friction element are thrown upon the wick and thus ignite it. The outward movement of the friction member is limited by the striking of the link against the supporting head. For the purpose of extinguishing the flame, the closing and tension lever *p* is again pressed down and the lever itself is again retained by the stop member *r* resiliently swinging back. A too easy and perhaps accidental release of the closing and tension lever is avoided by the particular arrangement and construction of the stop member.

When the substitution of a flint or the exchange of the friction member becomes necessary, the link *s* is unhooked from the pins *t* of the closing and tension lever *p*, this latter then thrown back and the supporting head *f* with all parts directly or indirectly connected therewith withdrawn upwards from the container for the inflammable material. The insertion of the supporting head and the linking up of the friction member to the closing and tension lever are effected in an equally simple manner.

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

1. A pyrophoric pocket igniter having a

container for inflammable liquid and having a chamber, a wick holder in the container, a supporting head having a threaded tubular portion, a friction member provided with a spindle and carried in the supporting head, a helical spring disposed around the spindle of the friction member and having one of its ends inserted into the supporting head and the other in the friction member and embedded partly in the said head and partly in the said friction member, a flint, a tubular member disposed in said chamber and threaded for engagement with the tubular portion upon the supporting head, a spring in said tubular member for pressing the flint into contact with the friction member, a pivotally mounted closing and tension lever, a link associated with the friction member and releasably connected to the closing and tension lever, a releasable stop device for retaining the said lever in the closed position and an extinguishing cap disposed at the free end of said lever.

2. A pyrophoric pocket igniter having a container for inflammable liquid and having a chamber, a wick holder in the container, a threaded tubular member disposed in the said chamber, a supporting head having a threaded tubular portion for engagement with the threaded tubular member, a friction member having a spindle and carried in the supporting head, a helical spring disposed around the spindle of the friction member and having one of its ends inserted into the supporting head and the other in the friction member and embedded partly in the said head and partly in the said friction member, a flint, a spring in the threaded tubular member for pressing the flint adjustably into contact with the friction member, a pivotally mounted closing and tension lever, provided with a stop nose co-operating with a pivotally mounted stop member in the form of a circular sector upon the casing, a fixed pin upon the container supporting the stop member, a spring acting upon the stop member to retain the closing and tension lever normally in the closed position but yielding to permit the stop member to become disengaged from the tension lever.

3. A pyrophoric pocket igniter having a container for inflammable liquid and having a chamber, a wick holder in the container, a supporting head, a friction member formed as a lever and having a curved portion provided with a friction surface and carried by the supporting head, a spring acting directly upon said friction member, a flint, a tubular member disposed in the chamber, means disposed in said tubular member for pressing the flint into contact with the friction member, a pivotally mounted closing and tension lever releasably connected to the friction member, a releasable stop device for retaining normally the said lever in the closed position and

an extinguishing cap disposed at the free end of said lever.

4. A pyrophoric pocket igniter having a container for inflammable liquid and having a chamber, a wick holder in the container, a slotted supporting head, a spindle, a friction member rotatably mounted upon the spindle, a spring acting directly upon the friction member, a flint, a tubular member disposed in the said chamber, means disposed in said tubular member for pressing the flint into contact with the friction member, a pivotally mounted closing and tension lever, a link associated with the friction member and releasably connected to the closing and tension lever, a releasable stop device for retaining normally the said lever in the closed position and an extinguishing cap disposed at the free end of said lever.

5. A pyrophoric pocket igniter having a container for inflammable liquid, a wick holder in the container, a partition provided with a chamber closed at its inner end and extending into said container and forming two intercommunicating chambers in said container, a filling screw in the bottom of said container, a supporting head, a friction member and a spring acting directly thereon carried by the supporting head, a flint, a tubular member disposed in the recess in the partition, means disposed in said tubular member for pressing the flint into contact with the friction member, a pivotally mounted closing and tension lever, a link associated with the friction member and releasably connected to the closing and tension lever, a releasable stop device for retaining normally the said lever in the closed position and an extinguishing cap disposed at the free end of said lever.

6. A pyrophoric pocket igniter having a container for inflammable liquid, a wick holder in the container, a partition provided with a chamber closed at its inner end extending into said container, a filling screw in the bottom of the container, a cap removably mounted in the filling screw, a supporting head, a friction member and a spring acting directly thereon carried by the supporting head, a flint, a tubular member disposed in the recess in the partition, means disposed in said tubular member for pressing the flint into contact with the friction member, a pivotally mounted closing and tension lever, a link associated with the friction member and releasably connected to the closing and tension lever, a releasable stop device for retaining normally the said lever in the closed position and an extinguishing cap disposed at the free end of said lever.

7. A pyrophoric pocket igniter having a container for inflammable liquid, a wick holder in the container, a partition provided with a chamber closed at its inner end extending into said container, a supporting

head, a friction member and a spring acting directly thereon carried by the supporting head, a flint, a tubular member disposed in the chamber in the partition, means disposed in said tubular member for pressing the flint into contact with the friction member, a pivotally mounted closing and tension lever, a link associated with the friction member and releasably connected to the closing and tension lever, a releasable stop device for retaining normally the said lever in the closed position and an extinguishing cap disposed at the free end of said lever.

In witness whereof I have hereunto set my hand.

KARL FRIEDRICH PROJAHN.