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COMPLETE SPECIFICATION.

Friction Wheel Benzine Pocket Lighter.

We, AUGUST BRUCKMANN, of No. 84, Bleichstrasse, Pforzheim, Germany, of German Nationality, and GEORGES CHAUMET, of No. 12, rue de la paix, Paris, France, of French Nationality, 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:—

This invention relates to a benzine pocket lighter, in which by depressing a knob mounted on a stem slidable in the body of the pocket lighter, the arm, which carries the wick-hood and serves as lid for a box-shaped wind screen, is rotated upwards and rotates the friction wheel.

Pocket lighters of this type are known; they present however the inconvenience that the pivot axle of the arm carrying the wick-hood coincides with the axle of the friction wheel. As the axle of the friction wheel is arranged as close as possible to the wick-sleeve to ensure a good ignition, the wick-hood is carried by a short arm and is not sufficiently distant from the flame and hinders in its open position the lighting of pipes, cigars or cigarettes by the flame.

This inconvenience is obviated by the present invention.

The novelty consists in that the pivot axle of the oscillatable arm carrying the wick-hood is arranged, with regard to the wick-sleeve, behind the pivot axle of the friction wheel.

An embodiment of the invention is illustrated in the accompanying drawing in which:

Fig. 1 is a section on line 1—1 of Fig. 2.

Fig. 2 is a top plan view of the closed pocket lighter.

Fig. 3 shows in elevation the upper portion of the pocket lighter in open position.

Fig. 4 shows in side elevation the igniting mechanism of the pocket lighter adapted to be removed from the casing.

The top plate *a* of the casing is fixed at a certain distance below the top edge of the side walls *b* so that a space *c* protected against wind is produced, in which the

wick-sleeve *d* with the wick is arranged, air holes *e* serving to admit the air for combustion. In the casing two sleeves *f* and *g* are fixed by soldering so that the only openings of the benzine vessel consist of the charging hole adapted to be closed by a screw stopper *h* and of the hole for the wick sleeve *d*. In the sleeve *f* a guide sleeve *i* for an ignition pin *k* is located. On the top end of the guide sleeve *i* the ignition mechanism, consisting of the friction wheel *l* and the means for rotating said wheel, is fixed and its lower end is fixed in the bottom-plate *n* of the casing by means of a head screw *m*. In the sleeve *g* a hollow stem *p* is slidably mounted resting on a spiral spring *o*. In the hollow space *p*¹ of stem *p* any utensil, for instance a pencil *r*, a tooth-pick, a lip-stick, a perfume-bottle, a twirling-stick for champagne, a manicure implement or the like, is accommodated. The shiftable stem *p* is closed at the top end by a push knob *q* which, in the form of construction shown, forms at the same time the handle for a propelling pencil *r* or other utensil. The push knob *q* forms at the same time a screw-stopper for a magazine *r*₁ in the rear end of the pencil *r*, designed to hold spare leads or spare cerium stones. On the slidable stem *p* two racks *s*₁ are fixed by means of arms *s*, said racks meshing with pinions *t*₁ rigidly fixed on an oscillatable bow *t*. When the knob *q* is being depressed, the bow *t*, which is loosely mounted on the pivot axle *l*₁ of the friction wheel *l*, is oscillated from the position shown in Fig. 1 into the position shown in Fig. 3. The ratchet pawl *t*₂, suspended on the bow *t*, engages with the teeth of the ratchet wheel *l*₂ rigid with the friction wheel *l*, so that this friction wheel is rotated and slides over the cerium stone *k* pressed against it, and a jet of sparks directed towards the wick is produced. The pivot axle *l*₁ of the friction wheel *l* and also the pivot axle *u*₁ of the lid *u*, which serves at the same time as oscillating arm for the wick-hood *z*, are journaled in a casing *v* carried by the guide sleeve *i* for the cerium stone. These axles are, however, arranged, according to the invention, so that the

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pivot axle u_1 is situated with regard to the wick behind the pivot axle l_1 . A finger u_2 , extending to behind the hinge u_1 of the lid, is at the depressing of the knob q also depressed by a plate p_2 fixed on the stem p and extending almost to the lid hinge u_1 , so that the lid u of the box-shaped wind screen c is opened. The depressing of the stem p starts slowly, owing to the horizontal arrangement of the finger u_2 , and plate p_2 . The more the finger u_2 is inclined the more rapid will the plate p_2 slide over the same. This acceleration is also communicated to the driving means of the friction wheel l so that the rotation of the same becomes suddenly very rapid and a thick jet of sparks is produced. When the pressure on the knob q ceases, the stem p is again raised by the action of the spring o the bow t returns into the position shown in Fig. 1, the pawl t_2 sliding over the teeth of the ratchet wheel l_2 , and the friction wheel l , braked by the ignition stone which is pressed against it, does not rotate. As the friction wheel rotates only in one direction all the teeth on its circumference act continually for the formation of sparks. The lid u is closed by the pull of a spring w , the wick-hood z being guided in a guide-sleeve x in opposition to the action of a pressure spring y so as to bear tightly on the conical seat of the wick-sleeve d . The hood z being movably suspended by means of a bolt z_1 on the lid u is capable of slight displacement in all directions so that it adjusts itself to the cone of the wick sleeve d .

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

1.—Friction wheel benzine pocket lighter in which by depressing a knob mounted on a stem slidable in the casing of the pocket lighter an arm carrying a wick-hood and constructed to serve as lid for a box-shaped wind screen is rotated upwards and the friction wheel rotated,

characterized in that the pivot axle u_1 of the oscillatable arm u carrying the wick-hood z is arranged with regard to the wick-sleeve d behind the axle l_1 of the friction wheel l .

2.—A pocket lighter as claimed in claim 1, characterized in that the bearings for the axles l_1 , u_1 of the friction wheel l and of the arm u carrying the wick-hood z respectively are formed by a common casing v carried by the guide-sleeve i for the ignition pin, said sleeve being inserted into the body of the pocket lighter and removably fixed on the bottom plate of said body by means of a head screw m .

3.—Pocket lighter as claimed in claim 1, characterized in that the stem p , carrying the push knob u , slidable in the casing of the pocket lighter and driving the friction wheel l and at the same time the wick-hood z at the depressing of the push knob u comprises a hollow space p_1 designed to accommodate a utensil r .

4.—Pocket lighter as claimed in claim 1, characterized in that the arm forming the lid u for the box-shaped wind screen c and carrying the wick-hood z is rotated upwards by means separated from the driving means for the friction wheel l and consisting of a finger u_2 of the lid u extending to behind the lid hinge u_1 and of a plate p_2 fixed on the stem p and extending almost to the lid hinge u_1 , said means being arranged in such a manner that they are almost horizontal in the inoperative position.

5.—Pocket lighter as claimed in claim 1, characterized in that the wick hood z is slidable in a guide piece x in opposition to the action of a pressure spring y and suspended, by means of a bolt z_1 , on the oscillatable arm u in such a manner that it can move slightly in all directions and adjust itself accurately on the wick-sleeve d .

Dated this 24th day of December, 1928.
 CHATWIN & COMPANY,
 Patent Agents for the Applicants,
 253, Gray's Inn Road, London, W.C. 1.

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

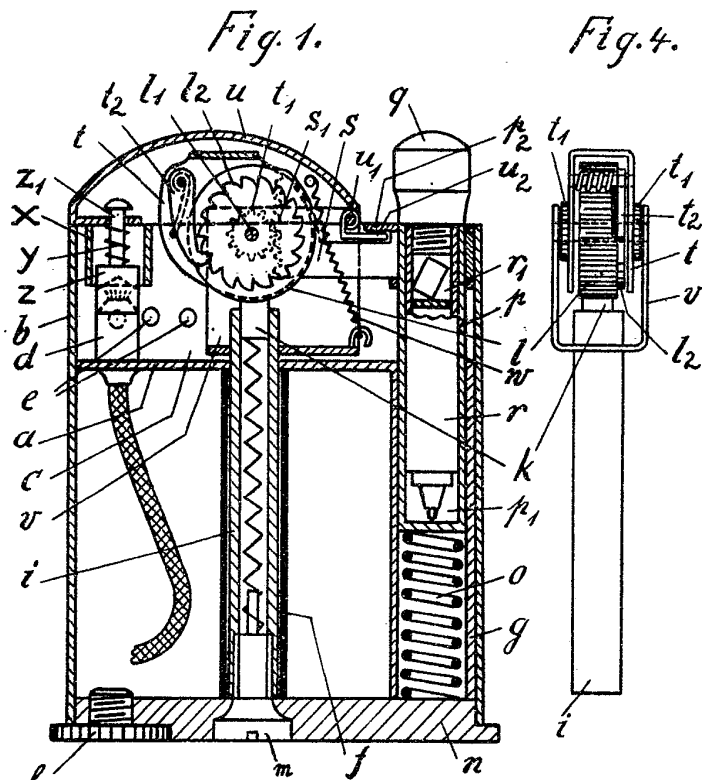


Fig. 4.

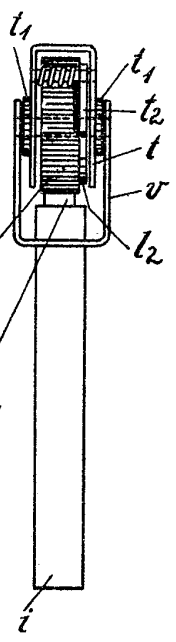


Fig. 2.

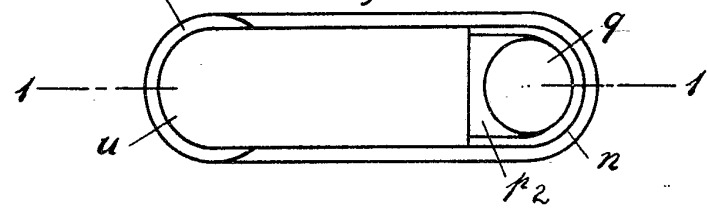


Fig. 3.

