A. DUBSKY.

PYROPHORIC POCKET LIGHTER.

APPLICATION FILED JULY 27, 1910.

1,015,876. Patented Jan. 30, 1912.

Fig. 1.

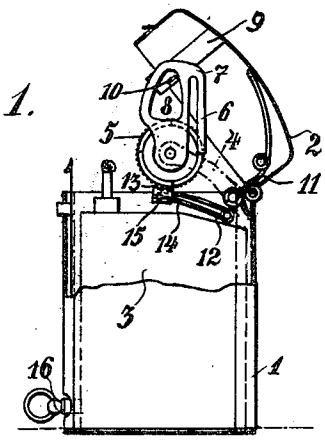
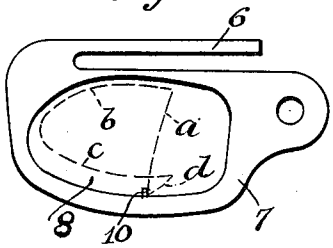


Fig. 3.



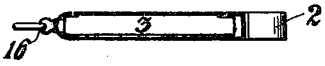


Fig. 2.

Fig. 4.

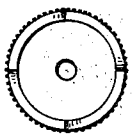


Fig. 5.

Fig. 6.

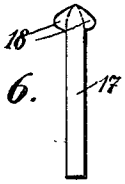
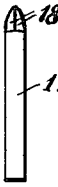


Fig. 7.



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UNITED STATES PATENT OFFICE.

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PYROPHORIC POCKET-LIGHTER.

1,015,876. Specification of Letters Patent. Patented Jan. 30, 1912.

Application filed July 27, 1910. Serial No. 574,097.

To all whom it may concern:

Be it known that I, ARTHUR DUBSKY, a subject of the Austro-Hungarian Emperor, and resident of Vienna, Austria-Hungary, have invented Improvements in Pyrophoric Pocket-Lighters, of which the following is a specification.

The present invention relates to improvements in pyrophoric pocket lighters, the essential features of which are to be found in the fact that a flat spring like member is mounted on the arbor of the strike wheel, by means of which the said strike wheel can be turned. The strike wheel is in contact with the pyrophoric metal and on being turned causes a spark. The flat spring like member is provided with an advancing pawl, which engages with a ratchet wheel, provided on one side of the strike wheel and possesses also an aperture, in which aperture a catcher, provided at the lid of the lighter, is adapted to project. This aperture is of such a shape that when opening the lid, the said catcher is allowed to freely move in said aperture, in order to effectively influence the flat spring like member when arrived at a certain angle, which influence causes the said member to be turned, when also the strike wheel will be turned by means of the pawl and the ratchet wheel.

New and novel is also the construction of the strike wheel, the catcher and the means for closing the lighter, as fully and clearly described in the following description with reference to the accompanying drawing, in which—

Figure 1 is a sectional elevation of the lighter, Fig. 2 is a cross section, Fig. 3 shows a plan of the flat spring like member, Figs. 4 and 5 show the strike wheel in front elevation and vertical section respectively, and Figs. 6 and 7 show the closing catch of the lighter.

Now with reference to the drawing, the lighter consists of a receptacle, itself composed of the receptacle proper, or lower portion 1, and the lid 2. The receptacle proper may be constructed of any desired cross sectional shape, and is open on its front side in order to allow the insertion of the fuel receptacle 3. This said fuel receptacle 3 is held in position by means of the stopper for closing its filling opening. The upper portion of the receptacle proper is furnished with an arm 4, which chiefly serves as bearing for the strike wheel 5. This strike wheel is constructed in the shape of a cap, stamped out of sheet steel of about one millimeter thickness. The rim of the said strike wheel is finely toothed so as to represent a circular file, and a ratchet wheel is provided at one side of the strike wheel, which engages a pawl 6. This pawl is part of a flat spring like member 7, which is mounted on the arbor of the strike wheel 5. The flat spring like member 7 is constructed of the shape as clearly shown in Fig. 3, having an aperture as indicated by 8 of a shape hereinafter referred to.

Within the lid 2 of the lighter, there is provided the extinguishing cap 9, which is constructed of a suitably bent strip of metal and preferably of square sectional area. The bending of said cap 9 is effected in such a manner, that little flaps are produced, which said flaps bear against the sides of the lid 2 and represent a catcher 10 for the member 7, which said catcher is adapted to move in the aperture of the member 7. The arm 4 also carries the opening spring 11 for the lid 2, and a second spring 12, for pressing the pyrophoric metal 13 against the strike wheel. The spring 12 is fork shaped, one prong of which bears through a slot of the respective bearing against the pyrophoric metal, while the other prong 14 bears against a lug bent off of the said bearing for the said metal.

As in consequence of the construction of the bearing for the pyrophoric metal, the latter has to be advanced from below, the fuel receptacle must be separately arranged.

The operation of the lighter is as follows and on account of the following explanation, the purpose of giving the aperture of the flat spring like member its peculiar shape will be comprehended. After depressing the lid engaging button the lid is thrown open by means of the spring 11, when also the member 7 is moved by means of the catcher 10. The movement of said member 7 causes also the strike wheel to be turned by means of the pawl 6. Now it has been experienced that by simultaneously opening the lid and turning the strike wheel, the said lid refused to open on account of the friction between the strike wheel and the pyrophoric metal, which drawback necessitates an allowance for the said lid of a short independent swing. This is attained in the present invention inasmuch as the catcher moves freely for a certain time in said aperture. The move-

ment or course of the catcher 10 in the aperture 8 of the member 7 is shown in Fig. 3. *a* shows the inactive course of the catcher 10, *b* shows the advancing course of the strike wheel, *c* the course of the catcher during the first half course when closing the lid and *d* the final course of the catcher during the closing period of the lid, at which point the member 7 is brought from the position shown in Fig. 1 to the position shown in Fig. 3.

The shape of the aperture insures not only an absolutely reliable working of the lighter, but also a most economical wear and tear of the pyrophoric metal.

The locking member between the receptacle proper and lid consists of strip of sheet steel 17 or other metal, having two noses 18 at one end, Fig. 6, which said noses are bent so as to form one single nose, Fig. 7, which said nose catches in a suitable cavity provided in the lid. (See Fig. 1.)

Having fully described my invention, what I claim and desire to secure by Letters Patent is:—

1. A pyrophoric pocket lighter, comprising in combination a receptacle proper, a lid hinged on said receptacle, an arm provided at the upper portion of said receptacle, a strike wheel mounted on said arm, a ratchet wheel provided at one side of said strike wheel, a flat spring like member mounted on the arbor of said strike wheel, said flat spring like member having an aperture, a pawl provided on said member and adapted to engage with the said ratchet wheel, a catcher provided on the lid and adapted to project in said aperture, a bearing, and pyrophoric metal mounted in said bearing, a fuel receptacle fitted in the receptacle proper, a stopper for closing the filling opening of said fuel receptacle and for holding said receptacle in position, means for pressing said pyrophoric metal against the strike wheel and means for closing the lighter and a spring for operating the lid, substantially as described.

2. A pyrophoric pocket lighter, comprising in combination a receptacle proper, a lid hinged on said receptacle, an arm provided at the upper portion of said receptacle, a strike wheel mounted on said arm, said strike wheel consisting of a cap of sheet steel and having its rim finely toothed, a ratchet wheel, provided at one side of said strike wheel, a flat spring like member mounted on the arbor of said strike wheel, said flat spring like member having an aperture, a pawl provided on said member and adapted to engage with the said ratchet wheel, a catcher provided on the lid and adapted to project in said aperture, a bearing, and pyrophoric metal mounted in said bearing, a fuel receptacle fitted in the receptacle proper, a stopper for closing the filling opening of said fuel receptacle and for holding said receptacle in position, means for pressing said pyrophoric metal against the strike wheel and means for closing the lighter and a spring for operating the lid, substantially as described.

3. A pyrophoric pocket lighter, comprising in combination a receptacle proper, a lid hinged on said receptacle, an arm provided at the upper portion of said receptacle, a strike wheel mounted on said arm, said strike wheel consisting of a cap of sheet steel and having its rim finely toothed, a ratchet wheel provided at one side of said strike wheel, a flat spring like member mounted on the arbor of said strike wheel, said flat spring like member having an aperture, a pawl provided on said member and adapted to engage with the said ratchet wheel, an extinguishing cap provided within said lid and constructed of a strip of metal, a catcher constructed by bending off flaps of said extinguisher, and adapted to project in the said aperture, a bearing, and pyrophoric metal mounted in said bearing, a fuel receptacle fitted in the receptacle proper, a stopper for closing the filling opening of said fuel receptacle and for holding said receptacle in position, means for pressing said pyrophoric metal against the strike wheel and means for closing the lighter and a spring for operating the lid, substantially as described.

4. A pyrophoric pocket lighter, comprising in combination a receptacle proper, a lid hinged on said receptacle, an arm provided at the upper portion of said receptacle, a strike wheel mounted on said arm, said strike wheel consisting of a cap of sheet steel and having its rim finely toothed, a ratchet wheel provided at one side of said strike wheel, a flat spring like member mounted on the arbor of said strike wheel, said flat spring like member having an aperture, a pawl provided on said member and adapted to engage with the said ratchet wheel, an extinguishing cap provided within said lid and constructed of a strip of metal, a catcher constructed by bending off flaps of said extinguisher and adapted to project in the said aperture, a bearing, a lug bent off of said bearing, and pyrophoric metal mounted in the bearing, said bearing having a slot, a fuel receptacle fitted in the receptacle proper, a stopper for closing the filling opening of said fuel receptacle and for holding said receptacle in position, a fork like shaped spring, the prongs of which bear against a pyrophoric metal, and said lug respectively, and means for closing the lighter and a spring for operating the lid, substantially as described.

5. A pyrophoric pocket lighter, comprising in combination a receptacle proper, a lid hinged on said receptacle, an arm pro-

vided at the upper portion of said receptacle, a strike wheel mounted on said arm, said strike wheel consisting of a cap of sheet steel and having its rim finely toothed, a ratchet wheel provided at one side of said strike wheel, a flat spring like shaped member mounted on the arbor of said strike wheel, said flat spring like member having an aperture, a pawl provided on said member and adapted to engage with the said ratchet wheel, an extinguishing cap provided within said lid and constructed of a strip of metal, a catcher constructed by bending off flaps of said extinguisher and adapted to project in the said aperture, a bearing, a lug bent off of said bearing, and pyrophoric metal mounted in the bearing, said bearing having a slot, a fuel receptacle fitted in the receptacle proper, a stopper for closing the filling opening of said fuel receptacle and for holding said receptacle in position, a fork shaped spring, the prongs of which bear against a pyrophoric metal and said lug respectively, and means for closing the lighter, said means consisting of a strip of sheet steel having two noses at one end, which said noses are bent so as to form one single nose, and a spring for operating the lid, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ARTHUR DUBSKY.

Witnesses:
JOHANN BABINEK,
ANTON KRATKZ.