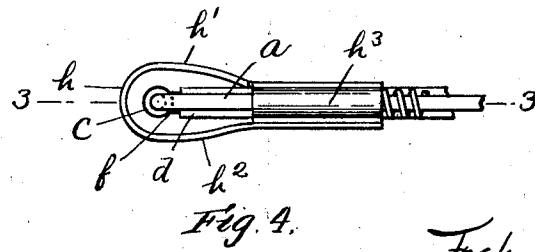
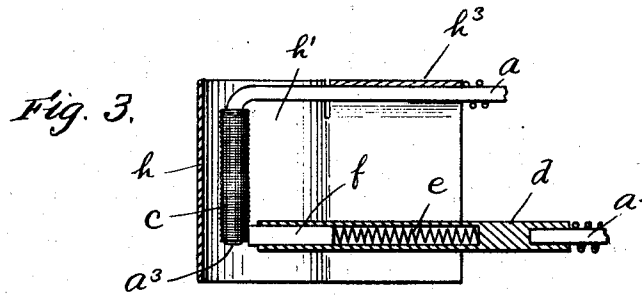
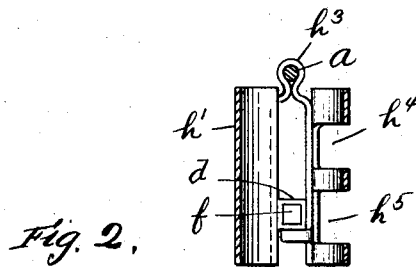
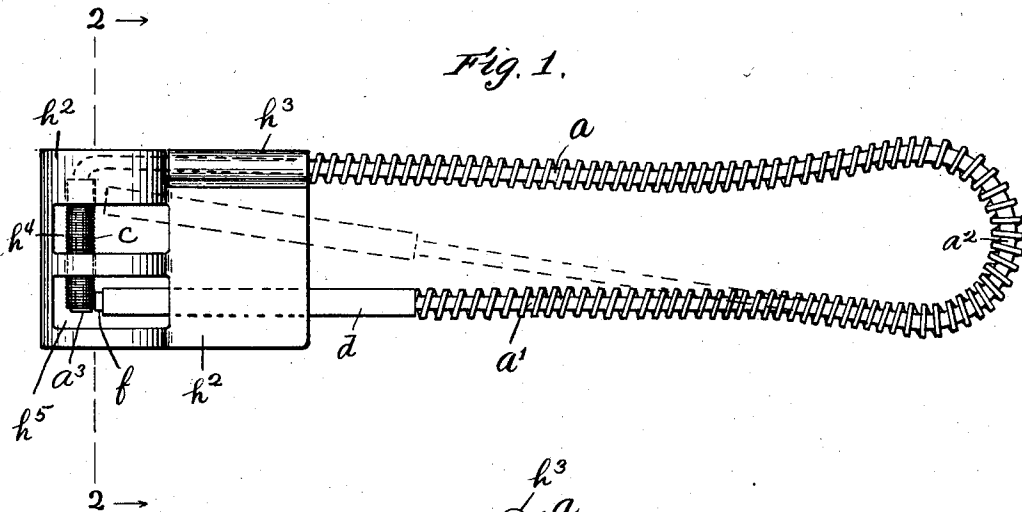


F. H. POMEROY.
GAS LIGHTER.
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1,011,643.

Patented Dec. 12, 1911.



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UNITED STATES PATENT OFFICE.

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GAS-LIGHTER.

1,011,643.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FREDERICK H. POMEROY, of Haverhill, county of Essex, and State of Massachusetts, have invented an improvement in Gas-Lighters, of which the following is a specification.

This invention relates to certain improvements in gas-lighters of the general character shown in my prior Patent, No. 940,276, of Nov. 16, 1909, in which a pyrophoric material and an abrader are pressed together, and when moved relatively will produce sparks.

The object of the present invention is to produce a hand-operated device which is simple in construction and may be manufactured at less expense than my said prior device and which may be conveniently employed in lighting a gas jet, where there is nothing available against which to press the device. I accomplish this object by the means shown in the accompanying drawing, in which,

Figure 1 is a side elevation of a device made according to my invention, Fig. 2 is a sectional view on the line 2—2 of Fig. 1, Fig. 3 is a sectional view on the line 3—3 of Fig. 4, and Fig. 4 is a plan view.

According to my invention I provide a handle comprising a U-shaped spring-wire providing two approximately parallel arms, a , a' , connected by a semi-circular spring-portion a^2 , said arms and said connecting portion being preferably wound with a coiled spring b which gives the connecting portion a^2 increased resilience, the united action of said spring b and spring-portion a^2 being to swing said arms apart, or hold them in the full line position of Fig. 1. The arm a is bent at right angles at its ends to provide an abrader-supporting end-portion a^3 , on which an abrader c , preferably in the form of a cylindrical file having corrugations over its entire surface, as in my said prior patent, is rotatably mounted. The other arm a' has a holder d , in the form of a tube having a square bore, in the bottom of which a spring e is located, which bears against the inner end of a piece of pyrophoric metal f , which is fitted to slide in the bore of holder d , and is adapted to have its outer end normally held by said spring e against the abrader c . The end-portions of said arms a , a' are preferably inclosed in a hood h , which acts to collect

the gas to be ignited about the points where the sparks are to be produced, and serves as a guide for the arms, as they are moved in relation to each other, and to carry a stop to limit the extent which they may be separated. The hood h is preferably formed of a single piece of sheet metal doubled to form two side-plates h' , h^2 , the side h' having a transversely-extending tongue h^3 , which is bent about the arm a , so as to secure the same thereto, the end of said tongue being soldered or otherwise firmly secured to the inner surface of the side h^2 . A stop-plug i is provided on the side h^2 , which is adapted to engage the holder d and limit the movement thereof at the point indicated by the full line position of Figs. 1, 2 and 3. The side h^2 is provided with one or more openings, as h^4 , h^5 , in the portion opposite the abrader, said portion being somewhat distended to provide a gas-receiving chamber, and the other portions of the sides are arranged to form a straight guide-way for the holder d as it is moved toward and from the arm a .

The operation of the above-described device is as follows: The device is held so that the gas will enter the openings h^4 , h^5 , and fill the hood h , and then the arms a , a' are pressed together, causing the pyrophoric material f to be carried over the surface of the abrader c , while firmly pressed there-against by the spring e , thereby causing the sparks to be produced and the gas to be ignited.

While the end of the tubular holder d will not be carried in exact parallelism with the surface of the abrader, it will be carried in approximate parallelism therewith, and any variations in this regard will be compensated for by the spring e , which will force the material f from the holder where necessary to maintain an even pressure of the material on the abrader.

As the entire surface of the abrader c is corrugated, by rotating the abrader to different positions on the end portion a^3 , fresh abrading faces are presented to the material f , so that when one face becomes worn another may be used.

While I have shown and described the arm a , bearing the abrader, as permanently secured to the hood, yet it will be apparent that a form of connection may be employed, which will enable the hood to be readily de-

tached therefrom, so that a fresh piece of pyrophoric material may be placed in the holder. It will also be apparent that it is of little or no practical consequence which arm is secured to the hood, provided the hood is properly arranged with relation thereto.

I claim:

1. A gas lighter comprising a pair of arms adapted to swing laterally toward and from each other and a pyrophoric material holder mounted on one arm and movable therewith, an abrader connected to the other arm and means for holding the material in said holder and the abrader in engagement during a predetermined relative swinging movement of said arms, substantially as described.

2. A gas lighter comprising a pair of arms adapted to be swung toward and from each other, an abrader connected to one of said arms and disposed to extend transversely thereof, a pyrophoric material holder on the other arm and means for holding the material in said holder and the abrader in engagement as said arms are relatively moved, substantially as described.

3. A gas-lighter comprising a pair of arms extending in approximate parallelism and having an intermediate spring normally acting to swing said arms away from each other, an abrader connected to one of said arms and extending transversely thereof toward the other arm, means on the latter arm for holding a pyrophoric material in engagement with said abrader as said arms are swung relatively to each other, and a stop for limiting the separation of said arms, substantially as described.

4. A gas-lighter comprising a spring-wire bent in U-form to provide a pair of arms extending in approximate parallelism, a stop on one of said arms for limiting the separation thereof under the action of said spring, an abrader on one of said arms extending transversely thereof, and means on the other arm for supporting a pyrophoric material and for yieldingly pressing the same longitudinally thereof against said abrader, substantially as described.

5. A gas-lighter comprising a pair of relatively-swinging arms spring-actuated to separate the ends thereof, an abrader on one arm, a pyrophoric material supported on the other arm, said abrader and material being relatively disposed, operatively to engage during a predetermined relative movement of said arms, and a hood mounted on one of said arms and inclosing said abrader and material at one side and opening at the other to permit the entrance of gas thereto, substantially as described.

6. A gas lighter comprising a pair of relatively swinging arms, a transversely extending abrader mounted on one arm, and a py-

rophoric material holder mounted on the other arm and disposed to hold the material in engagement with the abrader as said arms are moved, and a gas-deflecting plate mounted on the abrader-carrying arm adjacent the abrader and extending longitudinally thereof, substantially as described.

7. A gas lighter comprising a pair of relatively swinging arms, a transversely extending abrader mounted on one arm, and a pyrophoric material holder mounted on the other arm and disposed to hold the material in engagement with the abrader as said arms are moved, and a gas-deflecting plate mounted on the abrader-carrying arm closely adjacent one side of the abrader and extending transversely at each side thereof, substantially as described.

8. A gas-lighter comprising a pair of relatively-swinging arms spring-actuated to separate the ends thereof, an abrader on one arm, a pyrophoric material supported on the other arm, said abrader and material being relatively disposed operatively to engage during a predetermined relative movement of said arms, and a gas-collecting hood mounted on one of said arms and extending at one side of said abrader and material, said hood having a guide-way therein for the other arm, as it is moved, and a stop at the end of said guideway to limit said movement, substantially as described.

9. A gas lighter comprising a pair of relatively swinging arms spring actuated to separate the ends thereof, an abrader connected to one arm and a pyrophoric material holder supported on the other arm, said abrader and said holder being relatively disposed to cause the material in said holder to be operatively engaged by the abrader during a predetermined relative movement of said arms, substantially as described.

10. A gas-lighting device comprising a strip of spring metal bent to form approximately parallel arms and a curved connecting bow, the resilience of which tends to separate the arms, a strip of hard material having a frictional rubbing surface secured to one of said arms and extending transversely to the length thereof, and a block of spark-producing material carried by the other arm and movable therewith in a path coincident with the rubbing surface of said strip.

11. An igniting device comprising two arms resiliently connected at one end and free at their opposite ends, the resiliency of the connection causing said arms to be separated, a stop on one of the arms limiting the amount of separation, a piece of spark-producing material secured to one of said arms, and a rubbing member having a roughened surface in position to be engaged by said spark-producing member on the other arm.

12. An igniter, comprising a substantially U-shaped flexible supporting frame having its opposite extremities in operative relation with respect to each other, the said extremities carrying coöperative abrasion spark-producing members.

13. A gas lighter comprising a pair of arms connected to swing laterally toward and from each other, a pyrophoric material holder mounted on one arm, an abrader rotatably mounted on the other arm and disposed transversely thereto in position to be engaged, throughout a substantial portion of its length by the material of the holder, as the arms are swung relatively, said abrader being constructed to present different abrading faces to the material in the different positions to which it may be rotated, substantially as described.

14. A gas lighter comprising a spring-

wire bent in U-form to provide a pair of arms arranged in approximate parallelism and adapted to swing relatively, a pyrophoric material holder on one of said arms, the other of said arms having its end portion bent at approximate right angles, an abrader rotatably mounted on said end portion and constructed and arranged to present different longitudinal abrading faces to the material held in said holder when rotated to different positions on said end portion, substantially as described.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

FREDERICK H. POMEROY.

Witnesses:

L. H. HARRIMAN,
H. B. DAVIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."