

F. J. HALL.  
 GAS LIGHTER.  
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1,000,730.

Patented Aug. 15, 1911.

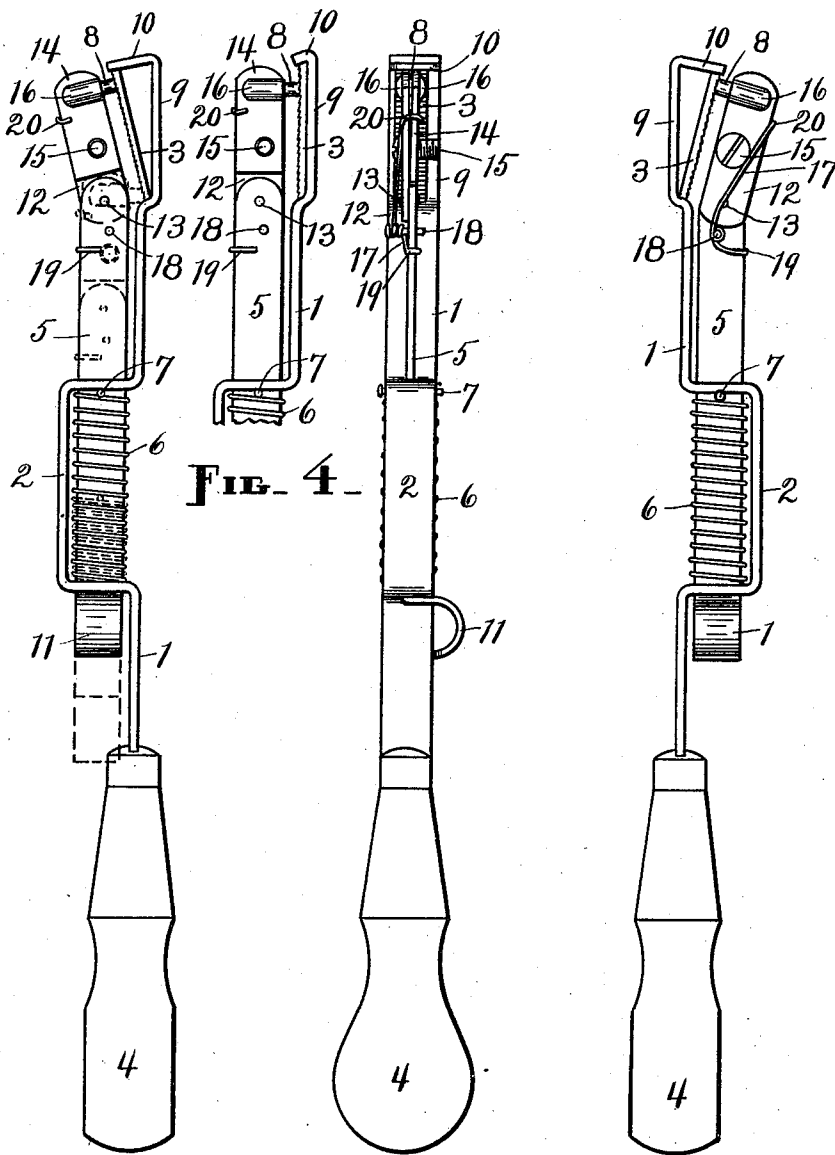


FIG. 1.

FIG. 2.

FIG. 3.

WITNESSES:  
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# UNITED STATES PATENT OFFICE.

FRED J. HALL, OF SPRINGFIELD, MASSACHUSETTS.

GAS-LIGHTER.

1,000,730.

Specification of Letters Patent. Patented Aug. 15, 1911.

Application filed November 25, 1910. Serial No. 593,985.

To all whom it may concern:

Be it known that I, FRED J. HALL, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Gas-Lighter, of which the following is a specification.

My invention relates to improvements in igniting devices, and consists generally of a supporting member provided with a friction member, and a spring-pressed member mounted for longitudinal movement in said supporting member and equipped with a holder for spark-producing material, such holder being carried by said movable member in operative relation to said friction member, all of certain peculiar construction and as hereinafter set forth.

The object of my invention is to provide a simple and inexpensive but strong, durable and highly efficient implement especially designed for lighting illuminating gas by means of material, such as an alloy of iron and a rare earth metal as cerium, which produces sparks sufficient for that purpose when brought into frictional contact or rubbing engagement with a suitable surface.

A further object is to furnish such an implement with means whereby the spark-producing material, hereinafter called the sparker, can be easily and quickly placed in position, adjusted, or renewed, as may be required.

Other objects will appear in the course of the following description.

I attain these objects by the means illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of a gas-lighter which embodies my invention in a practical form, the two normal extreme positions of the operating parts being shown; Fig. 2, a side elevation of such lighter; Fig. 3, a rear elevation of the same, and, Fig. 4, a front elevation of the upper portion of a lighter which is a slight modification of that illustrated in the other views.

Similar figures refer to similar parts throughout the several views.

As illustrated, my gas-lighter comprises a supporting member 1 which has an intermediate offset 2 and is provided at its upper terminal with a friction member, in the form of a file 3, and at its lower terminal with a handle 4, a carrier 5 loosely mounted in the top and bottom portions of said offset

and being parallel with said supporting member, a spring 6 encircling said carrier between said top and bottom portions of the offset, or between such bottom portion and a pin 7 which extends through the carrier and projects in front and behind below such top portion, and a holder at the upper end of the carrier for a sparker 8. The file 3 is set into an offset 9 at the upper terminal of the member 1, either at an incline, as shown in Figs. 1, 2 and 3, wherein said file slants from below upwardly to the left over the carrier 5, or vertically, as in the last view, wherein said file lies against and parallel with the vertical part of said offset. In either example the file 3 is sprung or forced into place between the angular part of the offset 9 and a lip 10 at the top thereof, and may be removed when worn out, a new one being then put in its place. The carrier 5 has a thumb-piece 11 at its base below the offset 2.

Although I may use any suitable holding device for the sparker 8, the one which I prefer and which I have illustrated in connection herewith is similar to that set forth in my copending application for United States Letters Patent, Serial No. 584,483, and consists of a plate 12 having its base pivoted at 13 to the upper terminal of the carrier 5, and a plate 14 clamped to said plate 12, with a sparker 8 grasped between them, by a screw 15 that passes through said first-mentioned plate into threaded engagement with said plate 14. The sparker 8 is held in recesses within bulging portions 16—16 of the plates 12 and 14 near the upper ends of said plates, and its protruding terminal is the part that is in contact with the file 3. The holder is pressed toward the file 3 and retained with the sparker 8 in more or less forcible contact with said file by means of a spring 17. Said spring, in this case, is given several turns around a pin 18 set in the back side of the carrier 5, and has its lower end hooked over the outer edge of said carrier and its upper end hooked over the corresponding edges of the holder plates 12 and 14, as represented at 19 and 20, respectively. It will thus be seen that the spring 17 when in place exerts its force constantly to retain the sparker in close contact with the file.

In practice, while the implement is grasped in the hand by the handle 4, the carrier 5 is drawn down against the resili-

ency of the spring 6, by applying the thumb to the thumb-piece 11, as far as it will go and into the position indicated by dotted lines in Fig. 1, and then released to said spring. Instantly the spring 6 acts to shoot the carrier 5 upward as far as the pin 7 and the thumb-piece 11 will permit, they coming into contact with the undersides of the horizontal parts of the offset 2, and this action on the part of said carrier wipes the sparker 8 swiftly and forcibly over or along the file 3 and thus causes the sparks to be produced. Although the spring 17 is instrumental in retaining the sparker 8 in contact with the file 3 at all times, it is during the swift upward movement of said sparker that most if not all of the sparks are produced, the usually slow downward motion with which said sparker is drawn down into what may be termed initial position not being conducive to spark production.

The two devices, that is, the lighter with the tilted file and that with the upright file, operate in practically the same manner and give substantially the same results, although with the first there is a tendency to produce sparks which increase in number, size, or both as the sparker approaches the upper end of the file, due to the increasing friction between the rubbing members which results from the tilting of the holder more and more and the consequent actuation of the same against the resiliency of the spring 17 or in such a way as to increase the tension of said spring. This may be an advantage, since it is generally desired to have the sparks fly from the extreme end of the implement and in quantity be sufficient to ignite the gas without fail. These results are insured with the first construction, even when comparatively light springs are employed; nevertheless, very satisfactory and equally good results on the whole may be obtained with the Fig. 4 construction.

When the sparker 8 needs readjusting or renewing, unhook the spring 17 at 20 from the holder, swing the latter outwardly on its pivot, loosen the screw 15, and make the change, and then retighten said screw, throw said holder over toward the file 3, and replace the detached portion of said spring, all of which is accomplished without difficulty.

Various modifications and changes may be made in this implement, such as will occur to one skilled in the art to which it appertains, without departing from the nature of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A gas-lighter comprising a supporting member having an offset therein and provided at one terminal with a handle and at the other terminal with a friction member arranged longitudinally of said support-

ing member, and a longitudinally-movable spring-pressed member extending through said offset but in parallel relation generally with said supporting member, having a thumb-piece at the end adjacent to said handle, and being provided at the other end with a holder for spark-producing material, the arrangement of parts being such that the spark-producing material is rubbed on said friction member, lengthwise of the latter, when said movable member is actuated.

2. The combination, in a gas-lighter, with a supporting member having an offset therein and provided at one terminal with a handle and at the other terminal with a friction member arranged longitudinally of said supporting member, of a spring-pressed carrier extending through said offset in said supporting member, having a thumb-piece at the end adjacent to said handle, and provided at the other end with a holder for spark-producing material, and tension means to press said holder toward said friction member, the parts being so arranged that the spark-producing material is rubbed on said friction member, lengthwise of the latter, when said carrier is actuated.

3. The combination, in a gas lighter, with a supporting member provided with a friction member, of a longitudinally-movable spring-pressed carrier mounted in said supporting member in parallel relation thereto, a holder for spark-producing material pivotally connected with said carrier adjacent to said friction member, and a spring arranged to swing said holder toward said friction member.

4. The combination, in a gas-lighter, with a supporting member provided with a friction member, of a spring-pressed carrier mounted in said supporting member, a holder for spark-producing material pivotally connected with said carrier adjacent to said friction member, and a spring arranged normally to swing said carrier toward said friction member and retain a sparker held by said holder in contact with the friction member, but having a detachable connection with said holder.

5. A gas-lighter comprising a supporting member provided with a friction member, a longitudinally-movable spring-pressed member operatively connected with said supporting member, and a spring-pressed holder, for spark-producing material, carried by said movable member with the material held thereby in contact with said friction member, the latter being arranged in said supporting member at an angle relative to the path of travel of said spring-pressed member, so that the friction between said material and said friction member increases as the movable member approaches the end of the stroke imparted to it by its spring.

6. The combination, in a gas-lighter, with a supporting member having an offset and provided with a friction member, of a carrier mounted in said offset, a spring arranged to force said carrier in the direction of said friction member, a holder for a sparker pivotally attached to said carrier, and a second spring arranged to swing said holder toward said friction member.

FRED J. HALL.

Witnesses:

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

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