

W. W. WILLIAMS.

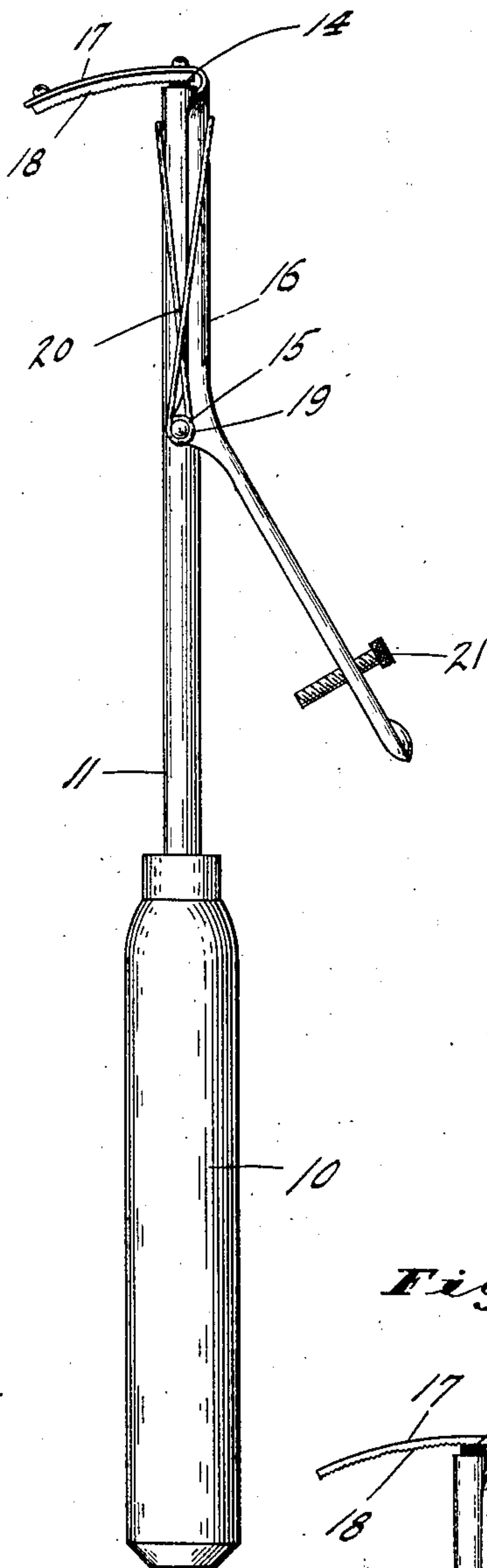
SPARK PRODUCER.

APPLICATION FILED NOV. 14, 1910.

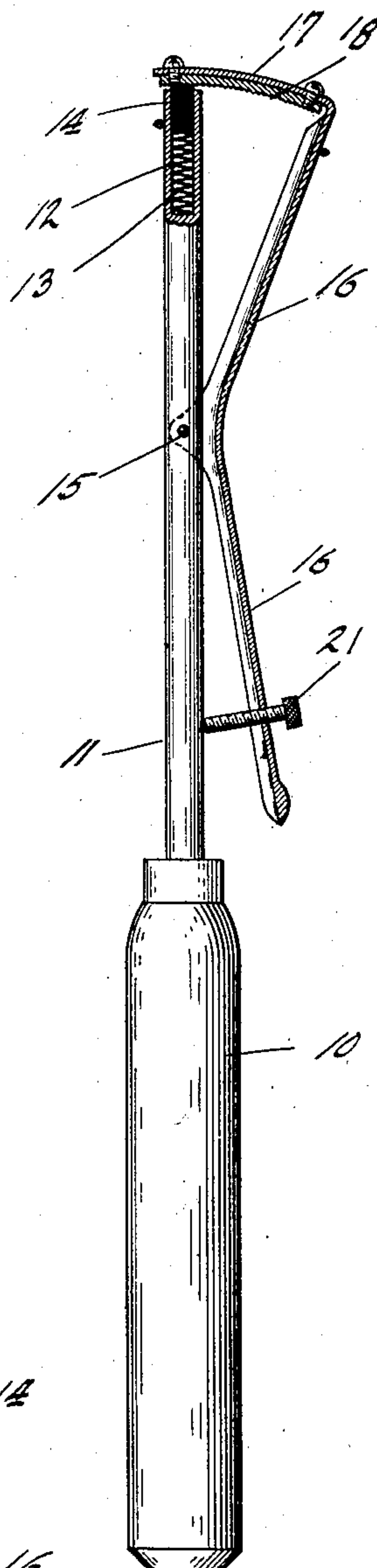
998,143.

Patented July 18, 1911.

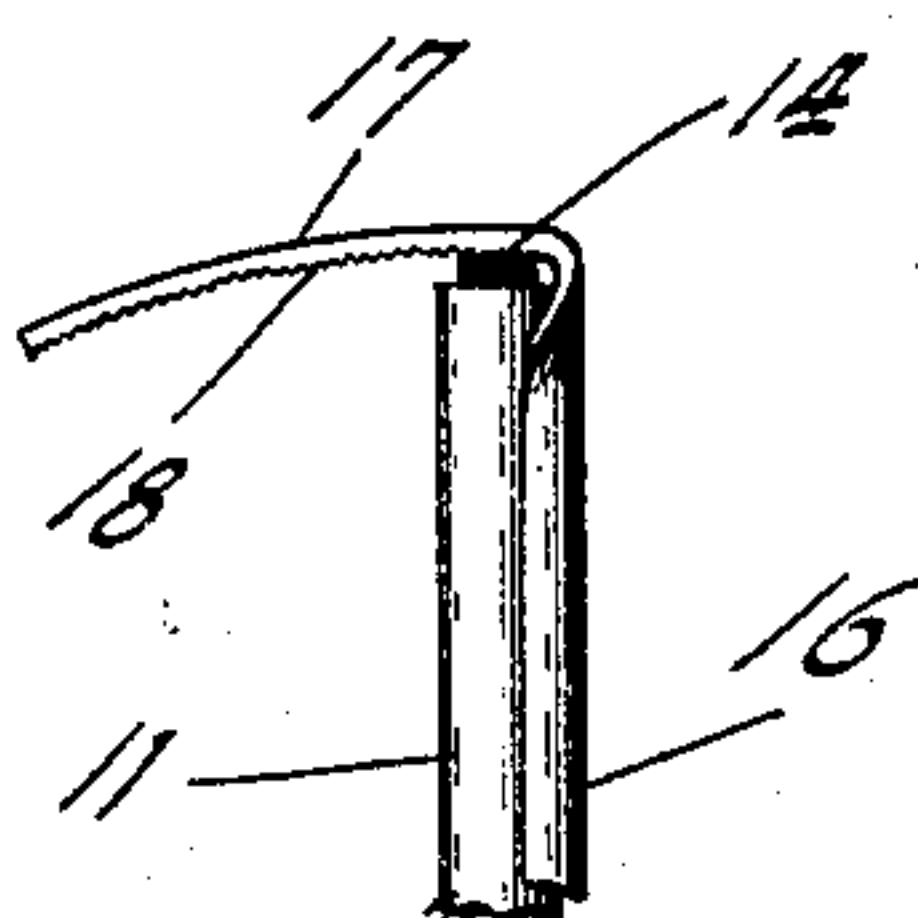
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses  
Frank A. Lohr  
Thomas H. McNease

Inventor  
William W. Williams,  
By Bradford Hood  
Attorneys.

# UNITED STATES PATENT OFFICE.

WILLIAM W. WILLIAMS, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO STAR NOVELTY COMPANY, OF INDIANAPOLIS, INDIANA, A CORPORATION OF INDIANA.

## SPARK-PRODUCER.

998,143.

Specification of Letters Patent.

Patented July 18, 1911.

Application filed November 14, 1910. Serial No. 592,375.

*To all whom it may concern:*

Be it known that I, WILLIAM W. WILLIAMS, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Spark-Producer, of which the following is a specification.

The object of my invention is to produce a neat and efficient device by means of which a non-electric spark may be produced for the purpose of lighting gas, the structure being designed to receive and operate upon a pyrophoric substance.

The accompanying drawings illustrate my invention.

Figure 1 is a side elevation of my improved device; Fig. 2 a similar view in partial section, and Fig. 3 a detail of a slight modification.

In the drawings, 10 indicates a suitable handle carrying a rod 11, which is provided at its end with an axial bore 12 arranged to receive a compression spring 13 and a short cylindrical piece of suitable pyrophoric material 14, such for instance as alloys of cerium. Pivoted at 15 upon rod 11 is a lever 16 provided at one end with a portion 17 having an abrading member 18 on its under face and overhanging the pyrophoric material 14, the spring 13 serving to drive said material against the abrading surface.

Mounted upon the pivot 15 is the eye 19 of a spring 20 the opposite arms of which engage rod 11 and lever 16 to normally hold the parts in the position shown in Fig. 1. One end of lever 16 is carried close to handle 10 where it may be readily engaged by the thumb of the operator and the lever is of such form that it may be swung to cause the abrader 18 to traverse its entire length across the exposed end of the pyrophoric 14.

Adjustably mounted in lever 16 is a temper screw 21 by means of which the normal swing of the lever 16 may be limited, the arrangement being such that, by withdrawing the temper screw sufficiently, the abrader 18 may be withdrawn entirely from across the upper end of rod 11 so as to thus expose the end of bore 12 and permit withdrawal and insertion of the pyrophoric.

In the construction shown in Fig. 3, the

abrader 18 is formed directly in the face of the portion 17 while in the construction shown in Figs. 1 and 2, the abrader is a separate member secured to member 17.

In operation, the instrument is grasped in one hand and lever 16 moved by thumb pressure to the position shown in Fig. 2. The abrader is preferably of such form that its teeth slide somewhat freely over the pyrophoric during this movement. The lever is then suddenly released, whereupon spring 20 serves to drive the abrader rapidly across the pyrophoric and remove from it a quantity of small particles which, by reason of the rapid movement of the abrader, are projected forwardly, thus producing an elongated spark which extends beyond the end of the abrader. By this means, a spark is projected from the implement into the gas to be lighted, thus rendering the operation much more efficient than is the case in many other implements which have been designed for use with similar material.

I claim as my invention:

1. A spark producer comprising a handle, a projecting rod carried by the handle and having a bore in its upper end arranged to receive a pyrophoric, a lever pivotally supported on the rod and carrying an abrader overhanging the end of the rod, a spring arranged to drive said lever in one direction, and means for maintaining the abrader and pyrophoric in contact.

2. A spark producer comprising a handle, a rod projected from said handle and provided with a bore in its end adapted to receive a pyrophoric, a spring mounted in the bottom of said bore in position to receive the pyrophoric, a lever pivoted upon said rod and provided with an abrading member overhanging the end of the rod, and a spring engaging the rod and the lever to drive the lever in one direction.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana, this tenth day of November, A. D. one thousand nine hundred and ten.

WILLIAM W. WILLIAMS. [L. S.]

Witnesses:

CHARLES SHEPERKOTER  
ARTHUR M. HOOD.