

W. S. ANDREWS & T. VAN ALLER.

IGNITING DEVICE.

APPLICATION FILED JAN. 21, 1910.

985,097.

Patented Feb. 21, 1911.

Fig. 1.

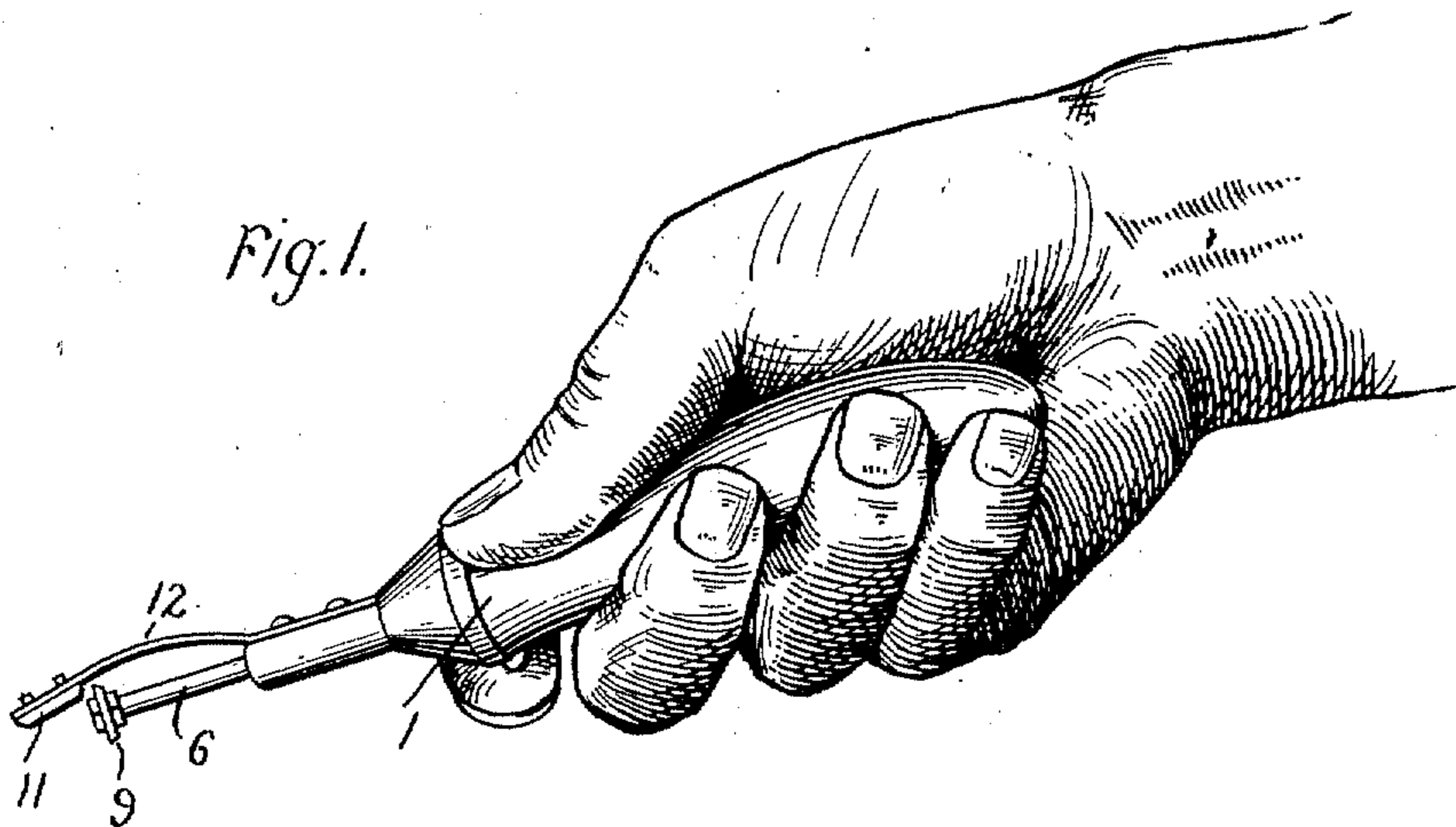
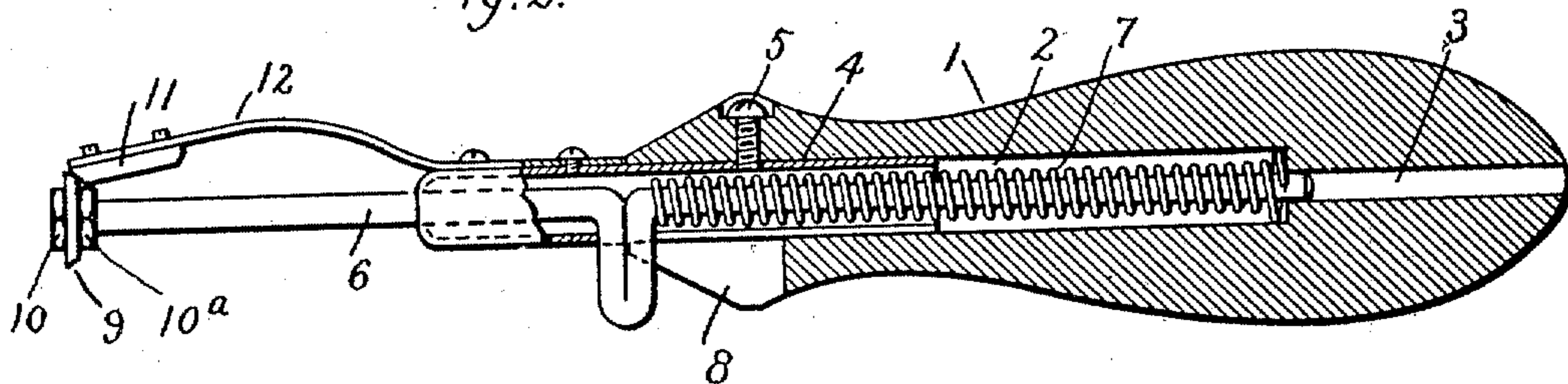


Fig. 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM S. ANDREWS AND TYCHO VAN ALLER, OF SCHENECTADY, NEW YORK.

IGNITING DEVICE.

985,097.

Specification of Letters Patent.

Patented Feb. 21, 1911.

Application filed January 21, 1910. Serial No. 539,375.

*To all whom it may concern:*

Be it known that we, WILLIAM S. ANDREWS and TYCHO VAN ALLER, citizens of the United States, both residing in the city and county of Schenectady and State of New York, have invented a new and useful Improvement in Igniting Devices, such as Gas-Lighters and the Like, the object being to provide a portable implement which may be used as often as desired through a long period of service, and may dispense largely with the use of matches.

The invention is based on a pyrophoric alloy discovered by Von Welsbach, and which, when struck a smart blow with a pointed or edged tool emits a hot spark. Steel when struck by a hard substance, such as flint, displays the same property, but alloys of iron and cerium, or iron and lanthanum, known as pyrophoric alloys, emit sparks which are much larger and have a greater heating effect; therefore there is no uncertainty of ignition, and our device is rendered of practical value for domestic uses.

The invention is carried out by producing a quick relative motion between a sharp edge of hardened steel and a small block of the pyrophoric alloy. The wear is so slight that a small block of the alloy will be serviceable for years.

In the accompanying drawing, which illustrates our invention: Figure 1 shows our igniter grasped by the hand of an operator in the instant of automatic release, and Fig. 2 shows, full size, the igniter in partial section.

1 represents a wooden handle, in which is a long bore 2 and shorter counter-bore 3. In the former is placed a metal tube 4 fastened by a set screw 5. The forward end of the tube 4 acts as a bearing for a rod 6, whose rear end slides freely in the counter-bore 3. A helical spring 7 bears against the rear wall of the bore 2, and at its forward end bears against a right angled bend of the rod 6. Thus any movement of the rod is resisted by the elasticity of the spring. A slot is cut in the end of the handle at 8 to permit to and fro movement of the right angled bend of the rod 6. The operator's thumb or finger engages the right angled projection of the rod, and the end of the handle is tapered as shown, the highest part of the taper being sufficient to cause the finger to ride above the projection of the rod, thereby releasing

the spring, and permitting the rod to be thrust outward rapidly by the spring. The forward end of the rod carries a disk of hardened steel 9 held between two nuts 10 60 10" in such a manner that it will freely rotate and continually present a sharp edge to the alloy.

A small block of the pyrophoric alloy, such as cerium 70 parts, iron 30 parts, of 65 substantially the size shown at 11 in Fig. 2 is secured by screws to a flat spring 12, the spring being mounted on the handle by screws as indicated. The leading and trailing ends of the block of alloy are beveled as 70 shown, and the steel disk is also beveled, pressing a sharp edge against the alloy, which scrapes across its inner face, and causes it to emit a shower of sparks, until the disk arrives at the position shown in 75 Fig. 2 under the thrust of the spring.

In using the implement the gas is turned on, and the operator holds the front end near the jet of gas, and by an inward movement of thumb or forefinger, the latter slides 80 over the top of the handle, simultaneously pressing the rod back against the spring. When the thumb or finger reaches the top of the sloping wall, the rod is freed and is shot forward, causing the steel disk to strike a 85 sharp scraping blow on the alloy, producing a shower of sparks and igniting the gas jet.

The implement may be of use on gas jets of all kinds, but is especially convenient for use on gas stoves. 90

While we have described a concrete example of our igniter we desire it to be understood that the parts may be arranged in other relations than shown in the drawings and still be within the scope of our claims. 95

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. An igniting device comprising a fragment of pyrophoric alloy, a spring holding 100 the same elastically, an adjustable steel scraper with a sharp circular edge, a rod attached thereto movable within the body of the handle, a coil spring urging the rod forward to effect engagement of the alloy and 105 scraper, and a trigger receding into a slotted wall to effect automatic release of the rod when the spring is fully strained.

2. A pyrophoric igniting device comprising a fragment of pyrophoric alloy and a 110 circular scraper relatively movable to engage each other, a long spring to urge them

together, a handle, a movable rod sliding in the body of the handle, and a finger piece fixed on the rod projecting from the handle and movable in a slot in the same, the handle wall being beveled to gradually cover the finger piece to effect automatic release.

3. A pyrophoric igniting device having a spring secured to a handle, a fragment of pyrophoric alloy carried by the spring and having a beveled edge at the front and rear ends, a spring actuated rod carrying a beveled steel scraper, and a lock-nut to permit circular adjustment of the scraper.

4. A pyrophoric igniting device comprising a wooden handle, a spring-pressed hammer-rod within the handle, a beveled slotted wall to permit movement of a lateral projection from the rod, a fragment of pyrophoric alloy, and a steel scraper relatively

movable to each other and controlled by the hammer-rod to produce igniting sparks from the alloy. 20

5. A pyrophoric igniting device provided with a stationary elastically mounted fragment of pyrophoric alloy having beveled front and rear ends, and an adjustable spring-actuated steel scraper disk having a sharpened edge at its front side, and means for projecting the scraper over and beyond the alloy. 25

In witness whereof we have hereunto set our hands this 8th day of January, 1910. 30

WILLIAM S. ANDREWS.  
TYCHO VAN ALLER.

Witnesses:

BENJAMIN B. HULL,  
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