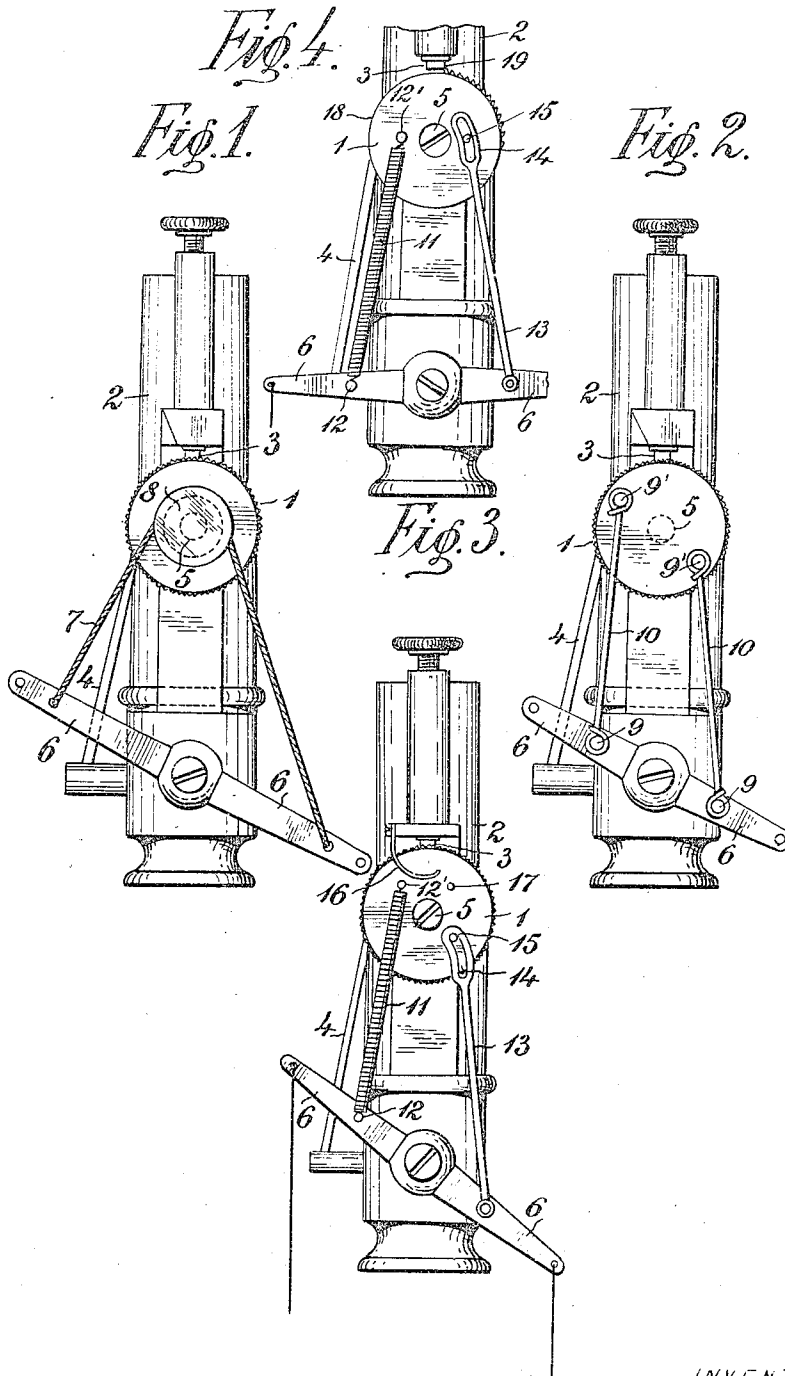


J. JERGLE, K. MACHAL & J. HELLER.
IGNITER FOR GAS BURNERS.
APPLICATION FILED DEC. 22, 1910.

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Patented June 6, 1911



WITNESSES
L. H. Grote
W. E. Keir

INVENTORS,
JOSEF JERGLE,
KARL MACHAL,
JULIUS HELLER,
BY *Henderson & Henderson*
Attorneys

UNITED STATES PATENT OFFICE.

JOSEF JERGLE, KARL MACHAL, AND JULIUS HELLER, OF VIENNA, AUSTRIA-HUNGARY,
ASSIGNORS TO FRITZ HAMBURGER AND ANTON URBAN, BOTH OF VIENNA, AUSTRIA-HUNGARY.

IGNITER FOR GAS-BURNERS.

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To all whom it may concern:

Be it known that we, JOSEF JERGLE, KARL MACHAL, and JULIUS HELLER, all subjects of the Emperor of Austria-Hungary, residing at Vienna, Empire of Austria-Hungary, have invented certain new and useful Improvements in Igniters for Gas-Burners; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to igniters for gas burners of that class in which an abrading body is moved over a spark producing body such for instance as a body made of an alloy of iron and cerium, whereby sparks are produced. On starting the abrading body gas is admitted to a small igniter tube and nearly at the same time also to the burner proper. The sparks produced ignite the gas issuing from the igniter tube and the flame thus obtained ignites the gas issuing from the burner proper. When the abrading body has completed its movement the gas supply to the igniter tube is cut off.

According to this invention a disk carrying the abrading body and journaled in the burner frame is connected with both arms of a two armed lever secured to the gas cock so that the movement of the said lever serving for opening the gas cock is directly transmitted to the said disk. This connection may be effected by a rope or chain, by links or the like or by a spring and a slotted link. In the two first named cases when the lever is moved continuously the disk moves continuously too. In the last named case, however, when the lever moves continuously in one direction the disk is arrested at a predetermined point of its path by a stop spring the lever continuing to move putting under tension the actuating spring. After the lever has thus moved through a certain angle the disk is released and the disk moves under the action of the distending actuating spring with increased rapidity.

In the annexed drawing Figure 1 is a side elevation of the present improved gas igniter. Figs. 2, 3 and 4 are similar views showing modifications.

Like numerals of reference indicate similar parts in all the figures.

1 is a disk carrying or constituting an

abrading body as shown, the abrading body consists of a set of teeth provided on the periphery of the disk. This disk is journaled at 5 on the body 2 of the burner.

3 is the spark producing body such as a piece of an alloy of iron and cerium mounted on the burner body 2 in the usual way.

4 is a small igniter pipe through which escapes the gas to be ignited by the sparks.

6 is the lever serving for actuating the gas cock. The movement of the latter is directly transmitted to the disk. In the construction shown in Fig. 1 this is done by means of a pulley 8 fast on and concentric with the disk 1 and a cord, chain or perforated band 7 on such pulley and having its ends secured to the lever 6 at opposite sides of its fulcrum.

In the modification shown in Fig. 2 the disk is connected to the lever 6 by links engaging pins 9, 9' on opposite sides of the lever 6 and pins 9'' 9''' on opposite sides of the journal pin 5 of the disk.

In order to insure a sufficient admission of gas to the igniter tube 4 prior to the setting up of the sparks which is necessary for the reliability of the device, it is preferred to offer a resistance to the movement of the cock in the beginning of its motion by means of a stop spring or a tilting weight which in the latter part of the motion of the lever when the sparks have to be produced acts to accelerate the lever during the first part of the motion of the lever when this moves slowly a continuous gas current is set up, while by the rapid movement of the disk toward the end of the lever motion efficient sparks are produced.

In the modification shown in Fig. 3 one arm of the lever is connected with the disk by means of an actuating spring 11 engaging pins 12' and 12 on the disk and the lever respectively. To the other arm of the lever 6 there is pivoted a link 13 having a slot 14 at its outer end engaging with a pin 15 on the disk. A stop spring 16 is secured to the burner frame the free end of which is in the path of a stop pin 17 on the disk. In the position of the cock lever 6 shown in the drawing the gas cock is closed. If now the gas cock is opened by pulling down the left hand end of the lever 6 in the well known manner the disk 1 with the abrading body is moved through the medium of the cord or chain 7

as shown in Fig. 1 or through the medium of the links 10 as shown in Fig. 2. Sparks are thus produced by the body 3 and ignite the gas issuing from the small pipe 4.

5 In the modification shown in Fig. 3 the disk 1 first turns together with the lever until the stop pin 17 strikes against the stop spring 16. As the lever continues to turn while the disk is arrested the actuating
10 spring 11 is put under tension and the pin 15 slides along the slot 14 until it reaches the end of the latter so that the disk and the cock lever are then rigidly connected. Consequently the disk is then turned to-
15 gether with the lever the stop spring 16 being pushed back by the stop pin 17 thereby releasing the disk 1. This disk moves then under the action of the actuating spring with great rapidity through a certain com-
20 paratively small angle whereby strong efficient sparks are produced from the spark producing material 3. The link 13 of the modification Fig. 3 may be dispensed with provided that the actuating spring is so pro-
25 portioned that it assumes a sufficient degree of tension during the time that the disk is arrested, for causing the disk to be released before the cock lever has completed its movement. When the cock is returned into its
30 normal or closed position by the lever 6 no sparks are produced owing to the well known arrangement of the abrading body or surface.

Fig. 4 shows a modification of the construction shown in Fig. 3. In this modifica-
35 tion the part 18 of the periphery of the disk 1 which at the beginning of the movement of the cock moves past the spark producing body 3 is smooth and slightly deeper or
40 nearer the center of the disk than the points of the teeth constituting the abrading body.

In the first part of the opening movement of the cock the smooth portion 18 of the disk 1 passes in front of the spark producing
45 body, so that the disk moves along with the cock until the first tooth 19 of the abrading body strikes against the spark producing body whereby an increased resistance is offered to the movement of the disk and the
50 latter is temporarily arrested while the lever 6 continues to move. Thereby the tension of the spring 11 is increased until it overcomes the resistance offered to the further movement of the disk by the body 3. Then
55 the disk begins to move again with increased speed, whereby efficient sparks are produced. The restarting of the disk after this temporary stopping of the same may be assisted or brought about positively by the slotted
60 link 13 as described with reference to Fig. 3.

In the arrangement shown in Fig. 4 the stop spring 16 and the stop pin 17 is dispensed with, the wear of the spark produc-
65 ing body is reduced and the movement of the parts is more smooth.

Claims:

1. In a gas igniter the combination of a burner, a spark producing body mounted on the burner, a disk journaled on the burner and provided with an abrading body, an igniter tube having its open end near the
70 spark producing body, a gas cock adapted to admit gas to the igniter tube and the burner and to shut off the gas from the igniter tube, means for turning the gas cock com-
75 prising a lever mounted on the said gas cock and an operative connection between said lever and said disk for rotating the latter in one direction upon the actuation of said lever in one direction, and in the other direc-
80 tion upon the actuation of said lever in the opposite direction.

2. In a gas igniter the combination of a burner, a spark producing body mounted on the burner, a disk journaled on the burner and provided with an abrading body, an
85 igniter tube having its open end near the spark producing body, a gas cock adapted to admit gas to the igniter tube and the burner and to shut off the gas from the igniter tube, means for turning the gas cock comprising
90 a lever mounted on the said gas cock, means for connecting the said lever to the said disk such means comprising an actuating spring having one of its ends secured to the said
95 lever and its other end to a pin fast on the said disk and means for temporarily increasing the resistance offered to the movement of the said disk whereby the tension put on the actuating spring is increased, substantially
100 as and for the purpose described.

3. In a gas igniter the combination of a burner, a spark producing body mounted on the burner, a disk journaled on the burner and provided with an abrading body, an
105 igniter tube having its open end near the spark producing body, a gas cock adapted to admit gas to the igniter tube and the burner and to shut off the gas from the igniter tube, means for turning the gas cock com-
110 prising a lever mounted on the said gas cock, means for connecting the said lever to the said disk such means comprising an actuating spring having one of its ends secured to the said lever at one side of the fulcrum of
115 the said lever and its other end to a pin fast on the said disk and a link having one of its ends pivoted to the said lever at the other side of the fulcrum of the said lever, its other end being slotted and engaging an-
120 other pin fast on the said disk and means for temporarily increasing the resistance offered to the movement of the said disk whereby the tension put on the actuating spring is increased, substantially as and for
125 the purpose described.

4. In a gas igniter the combination of a burner, a spark producing body mounted on the burner, a disk journaled on the burner and provided with an abrading body an
130

igniter tube having its open end near the
spark producing body, a gas cock adapted
to admit gas to the igniter tube and the
burner and to shut off the gas from the ig-
5 niter tube, means for turning the gas cock,
comprising a lever mounted on the said gas
cock, means for connecting the said lever to
the said disk such means comprising an ac-
tuating spring having one of its ends secured
10 to the said lever at one side of the fulcrum
of the said lever and its other end to a pin
fast on the said disk and a link having one
of its ends pivoted to the said lever at the
other side of the fulcrum of the said lever,
15 its other end being slotted and engaging an-

other pin fast on the said disk, a stop spring
fast on the burner and a stop pin fast on the
disk adapted to engage with the stop spring
whereby the said disk is temporarily ar-
rested while the lever continues to move, 20
substantially as and for the purpose de-
scribed.

In testimony whereof, we affix our signa-
tures, in presence of two witnesses.

JOSEF JERGLE.
KARL MACHAL.
JULIUS HELLER.

Witnesses:

ARTHUR BAUMANN,
AUGUST FUGGER.

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