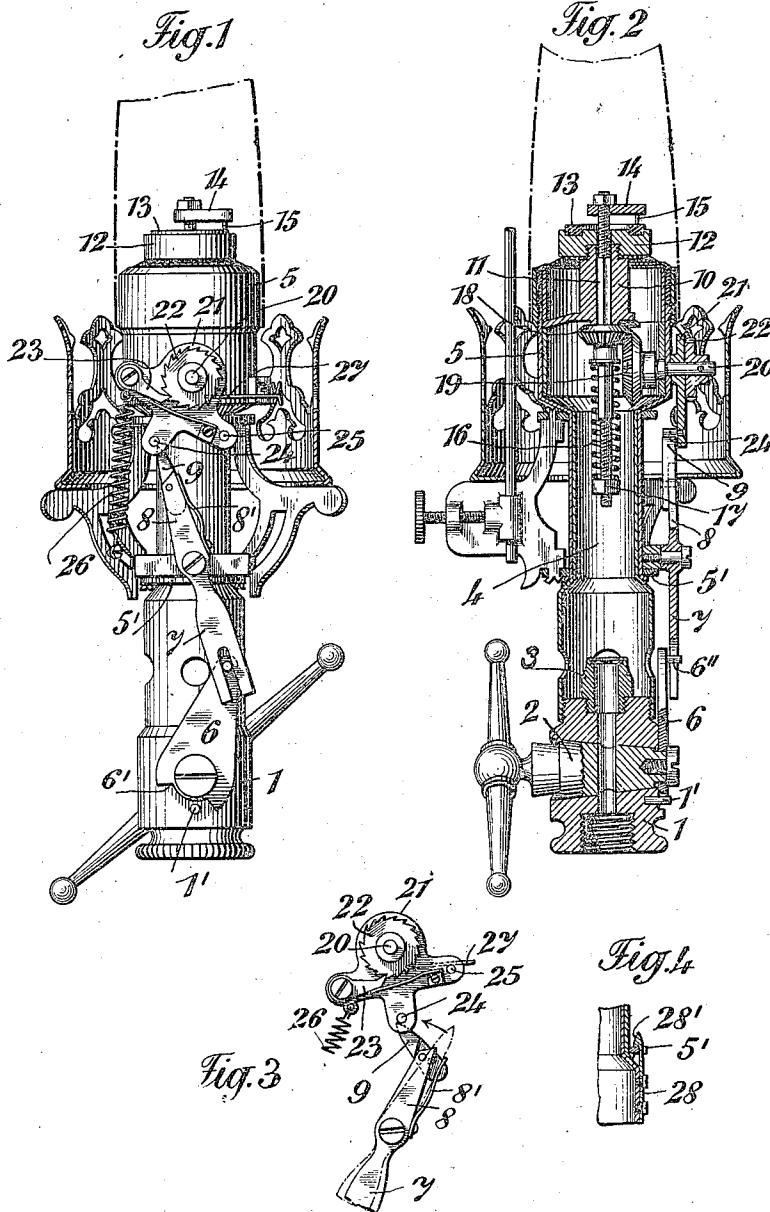


H. RUPPERT.
 SELF IGNITING GAS BURNER.
 APPLICATION FILED SEPT. 9, 1908.

949,599.

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Witnesses:

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UNITED STATES PATENT OFFICE.

HANS RUPPERT, OF ZURICH, SWITZERLAND.

SELF-IGNITING GAS-BURNER.

949,599.

Specification of Letters Patent.

Patented Feb. 15, 1910.

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To all whom it may concern:

Be it known that I, HANS RUPPERT, a citizen of the Republic of Switzerland, residing at Zurich, Switzerland, have invented certain new and useful Improvements in Self-Igniting Gas-Burners; and I 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; reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

The object of the invention is to provide a gas burner with a self-igniting device, which latter has as an essential part a fragment of an alloy of iron and a rare earth metal, preferably cerium, from which fragment of alloy particles will be scratched at the opening of the valve of the gas burner; said particles burn in the air and ignite the gas.

An example of the invention is illustrated in the accompanying drawing, wherein—

Figure 1 is a front view of the burner, partly in section. Fig. 2 is a longitudinal section of this burner, and Figs. 3 and 4 are details of the construction.

1 designates the support of a gas nozzle 3, in which support is arranged a gas valve 2. 4 designates the mixing tube, and 5 the burner head which is mounted on the mixing tube and surrounded by a mantle, shown in dotted lines. On the gas valve 2 is fixed an arm 6, which is provided with a shoulder 6' adapted to engage a pin 1' on the support 1, for limiting the turning of the valve. On the arm 6 is also fixed a pin 6'' which engages in a slit at the end of an arm 7 of a two-armed lever fixed on the mixing tube 4. The other arm 8 of this lever is provided with a spring 8', which lies against a lip 9 which forms a prolongation of the arm 8, and may be turned against the action of the spring 8'. In a guide 10, which is fixed in the burner head 5 is mounted a square spindle 11 adapted to turn in said guide, and on the latter is fixed a holder 12, in which is arranged a ring 13 consisting of an alloy of iron and a rare earth metal, preferably cerium.

On the end of the spindle 11 which extends above the holder 12 is screwed an arm 14, which comprises a scraper provided at its under side with one or more points 15.

This point (or points) is pressed down against the ring 13 by means of a spring 16 arranged on the lower end of the spindle 11, the degree of pressure being regulated by a nut 17 on the lower end of the spindle 11 (Fig. 2). A bevel gear wheel 18 is mounted on the spindle 11 below the guide 10, and meshes with another bevel gear wheel 19, on an axle 20 arranged horizontally in the head of the gas burner. On the axle 20 is loosely mounted a carrier 21 provided with three arms, one of which carries a pawl 23, which, by means of a spring, engages a ratchet wheel 22 arranged on the axle 20. Each of the other arms of the carrier 21 is provided with a pin, 24, 25, respectively, the pin 24 being in the path of the lip 9. One end of a coiled spring 26 is fixed to the arm of the carrier 21, which carrier is provided with the pawl 23, and a spring 27 acts against the pin 25 and holds the carrier 21 in the position indicated in Fig. 3. The burner head 5, is held in its normal position on the mixing tube by means of a spring lip 28 (Fig. 4) which engages in a notch in the under ring 5' of the head, and the latter is prevented from turning or raising by means of a hook 28', at the end of the lip 28, taking over a ring 5' on the lower end of the head.

A jerking movement is imparted to the scraper arm 14 when the gas valve 2 is opened to let the gas escape. By rotating the gas valve 2 the lever 7—8 will be turned by the arm 6 in the direction of the arrow, Fig. 3, whereby said lever 7—8 strikes with its lip 9 against the pin 24 and turns the carrier 21 on its axle 20, and during this turning the spring 26 will be extended while the pawl 23 slides over the teeth of the ratchet wheel 22. When at the end of the movement of the lever 7—8 the lip 9 leaves the pin 24, the carrier springs back and the pawl turns the ratchet wheel with a jerk, whereby by means of the bevel gear wheels 18, 19, and the spindle 11, the arm 14 will be jerked forward. By the turning motion of the arm 14, the point 15 scratches off the spark forming particles from the ring 12 whereby the escaping gas is ignited. In closing the gas valve 2 it is essential that the lip 9 of the lever 7—8 be moved out of contact with the pin 24, and the lip, when striking against the pin 24 on its return movement will be turned over against the action of its spring and can pass under said pin, whereupon the lip, under the action of

its spring 8' is returned to its normal position.

I claim—

1. In a gas burner, a self-igniting device comprising a ring of an alloy of iron and a rare earth metal arranged upon the head and within the mantle of the gas burner, a scraper lying against the ring, a spindle carrying the scraper and means for imparting a jerking movement to the spindle at the opening of the gas valve.

2. In a gas burner, a self-igniting device comprising a fragment of an alloy of iron and a rare earth metal located within the mantle of the burner, a scraper lying against the fragment, a spindle carrying the scraper and means for imparting a jerk to the spindle at the opening of the gas valve, substantially as described.

3. In a gas burner, a self-igniting device, comprising a ring of an alloy of iron and a rare earth metal arranged upon the head and within the mantle of the gas burner, scraper points resting on the ring, a spindle carrying the scraper and means for imparting a jerk to the spindle at the opening of the gas valve, substantially as described.

4. In a gas burner, a self-igniting device comprising a fragment of an alloy of iron and a rare earth metal, a scraper lying against the fragment, a spindle on which said scraper is mounted, a ratchet wheel, a pawl engaging the latter, means for rotating the pawl with a jerk at the opening of

the gas valve, and means for imparting the motion of the ratchet wheel to the spindle of the scraper, substantially as described.

5. In a gas burner, a self-igniting device, comprising a fragment of an alloy of iron and a rare earth metal, a scraper lying against the fragment, a spindle on which said scraper is mounted, a ratchet wheel, means for transmitting the motion of the latter to said spindle, a swinging carrier loosely mounted on the axle of the ratchet wheel, a pawl on the carrier engaging the ratchet wheel, and means for swinging the carrier with a jerk at the opening of the gas valve, substantially as described.

6. In a gas burner, a self-igniting device comprising a fragment of an alloy of iron and a rare earth metal, a scraper lying against the fragment, a spindle on which said scraper is fixed, a ratchet wheel, means for transmitting the motion of the latter to the spindle, a swinging carrier loosely mounted on the axle of the ratchet wheel, a pawl and a pin on the carrier, said pawl engaging the ratchet wheel, and a lever on the gas valve provided with a lip cooperating with the pin on the carrier, substantially as described.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

HANS RUPPERT.

Witnesses:

ERNST FISCHER,
JOSEPH SIMON.