

H. RUPPERT.
GAS BURNER.

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977,904.

Fig. 1

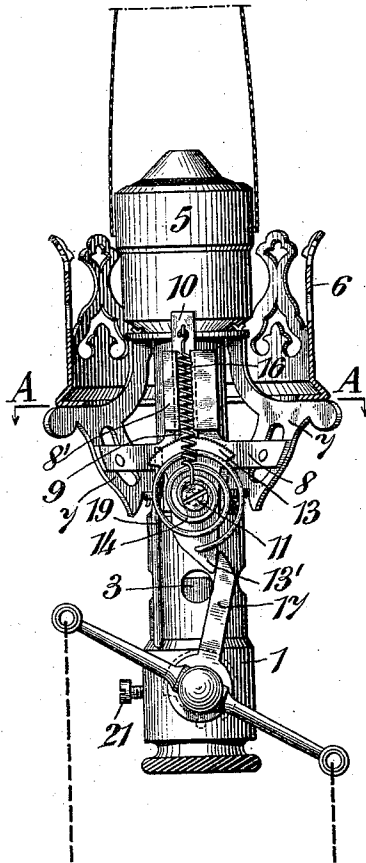


Fig. 2

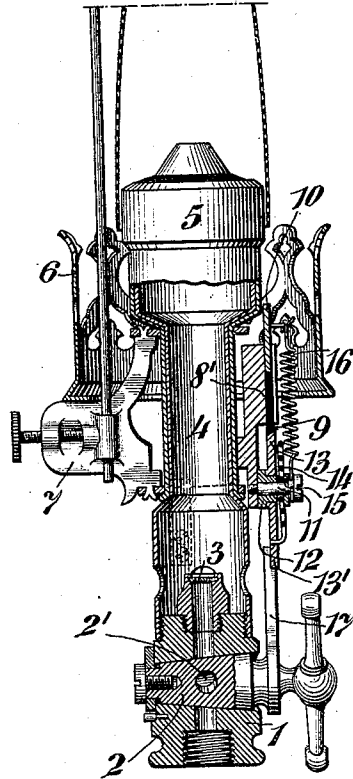


Fig. 3

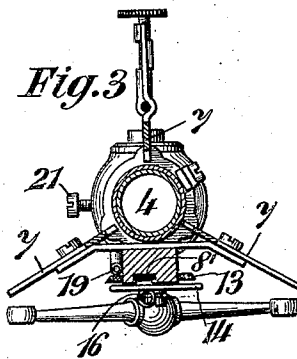


Fig. 5

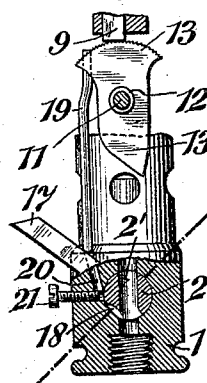
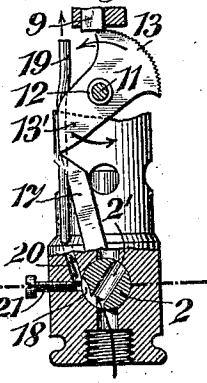


Fig. 4



Witnesses:

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UNITED STATES PATENT OFFICE.

HANS RUPPERT, OF ZURICH, SWITZERLAND.

GAS-BURNER.

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Specification of Letters Patent.

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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 51 Kurvenstrasse, Zurich, Switzerland, have invented certain new and useful Improvements in 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 letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in gas burners provided with an automatic igniting-device. Such burners have already been constructed with means, which on the burner cock being opened, scrape particles from a member made of an alloy of a rare earth-metal and iron, thus causing sparks, which ignite the issuing current of gas. In these burners, however, the scraper and the said member are both located above the gas exit of the burner, that is to say, they lie in the very center of the flame. The result of this is that the hard metal or other scraper is heated to incandescence by the flame, and is thus soon worn out.

According to my invention I overcome the drawback just referred to by locating the scraper and the rare earth-metal and iron alloy member below the gas exit, that is, outside the province of the flame, so that the scraper is no longer exposed to the intense heat of the flame.

A practical embodiment of the invention is illustrated in the accompanying drawing, in which—

Figure 1 is an elevation of the burner, the gallery being shown in section. Fig. 2 is a vertical section. Fig. 3 is a section on the line A—A of Fig. 1. Figs. 4 and 5 are sectional elevations depicting the lower portion of the device, with the operative parts in two successive positions.

1 is the nozzle-carrier, 2 the cock-plug, and 3 the nozzle; 4 is the mixing-tube and 5 the burner-head, while 6 is the gallery and 7 the arms supporting the latter. Below the head 5 there is affixed to two of the arms 7 a carrier 8 (Figs. 1 and 3) whose top part constitutes a guide 8' to receive two slidable bars 9, 10, the lower one 9 of which is made of an alloy of a rare earth-metal and iron. Below the guide 8' there is

screwed into the carrier 8 a pin 11, which serves as axis for a bushing 12. On this latter there is mounted a steel or other hard metal segmental shaped oscillatory scraper 13. The scraper 13 is returned to its initial position after each movement by a flat spirally coiled spring 14, whose one end is held between the bushing 12 and a washer 15, by means of the pin 11, while its other extremity is connected to the tail 13' of the scraper. To the pin 11 there is attached one end of a tension-spring 16, whose other end is fastened to the bar 10, in which manner the bar 9 is pressed against the roughened edge of the scraper, which is chamfered in the direction of the mixing-tube 4 (Figs. 1 and 2).

The cock-plug 2 is furnished with an arm 17, whose end is chamfered and bears against the tail 13' of the scraper, which is likewise chamfered. The plug 2 is cut away peripherally at 18, the recess communicating with the passageway 2' for the gas. By turning the plug, the recess 18 can be brought opposite a channel 20, which conducts to the ignition-tube 19. The channel 20 can be more or less closed by means of a regulating-screw 21. The top of the tube 19, which lies outside the burner-head 5, is located at the level of the place where the bar 9 rests on the scraper (Fig. 1).

The operation of the mechanism is as follows:—When the cock 2 is closed, the gas supply both to the burner and the ignition tube 19 is cut off (position Fig. 1). If however, the cock is opened, its arm 17 will bear upon the tail 13' of the scraper 13, and overcoming the action of the spring 14, will turn the scraper against the bar 9. At the same time the recess 18 in the plug 2 will arrive opposite the mouth of the channel 20, whereby the gas, entering through the partially opened passage 2', has free access to the tube 19, out of the top of which it will issue (position Fig. 4). On further rotation of the cock-plug 2, however, the arm 17 will release the scraper 13 and the latter will snap back in the direction of the arrow, Fig. 4, into the position Fig. 5, under the action of the spring 14, and in doing so its roughened periphery will scrape minute particles from the bar 9 and cast them in the direction of the orifice of the tube 19. The sparks thus occasioned will ignite the gas rushing from the tube 19 with the result that a flame will shoot forth reaching up to the level of

the burner 5, whence the gas issuing from the latter will be lighted. Just as the cock fully opens, the passage 20 will be shut and the ignition-flame thus extinguished. On
5 closing the cock, its arm 17 will return to its initial position of rest (Fig. 1) without actuating the scraper. As the substance of the bar 9 wears away, the latter is drawn
10 down tight against the periphery of the scraper by the spring 16, so that it always remains in contact with the same. The bar 9 can be renewed when wholly worn down. Since the scraper 13 and the bar 9 are located
15 below the burner-head 5, and are thus outside the province of the flame, the scraper is not exposed to the intense heat of the flame and thus retains its hardness, whence it will always reliably operate.

Having now particularly described and
20 ascertained the nature of the said invention and in what manner the same is to be performed, I declare that what I claim is:

1. In a gas burner, in combination, a cock
25 controlling the burner passage, a carrier presenting a guide secured to the burner, a scraper pivoted to said carrier and actuated by the cock-plug, a member sliding in said guide and consisting of an alloy of iron and a rare earth-metal from which sparks are

struck by the scraper, said scraper and mem- 30
ber being located below the gas exit and outside the province of the flame, and means for conducting an ignition gas jet to the neighborhood of the place where the sparks are
35 produced, substantially as described.

2. In a gas burner, in combination, a cock
controlling the burner passage, a carrier presenting a guide secured to the burner, a
40 scraper pivoted to said carrier and actuated by the cock-plug, a member sliding in said guide consisting of an alloy of iron and a rare earth metal from which sparks are struck by the scraper, said scraper and mem-
45 ber being located below the gas exit and outside the province of the flame in such relative position to each other that they are always in contact with each other and means
50 for conducting an ignition gas jet to the neighborhood of the place where the sparks are produced.

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

HANS RUPPERT.

Witnesses:

HERMANN GRAF,
CARL GUBLER.