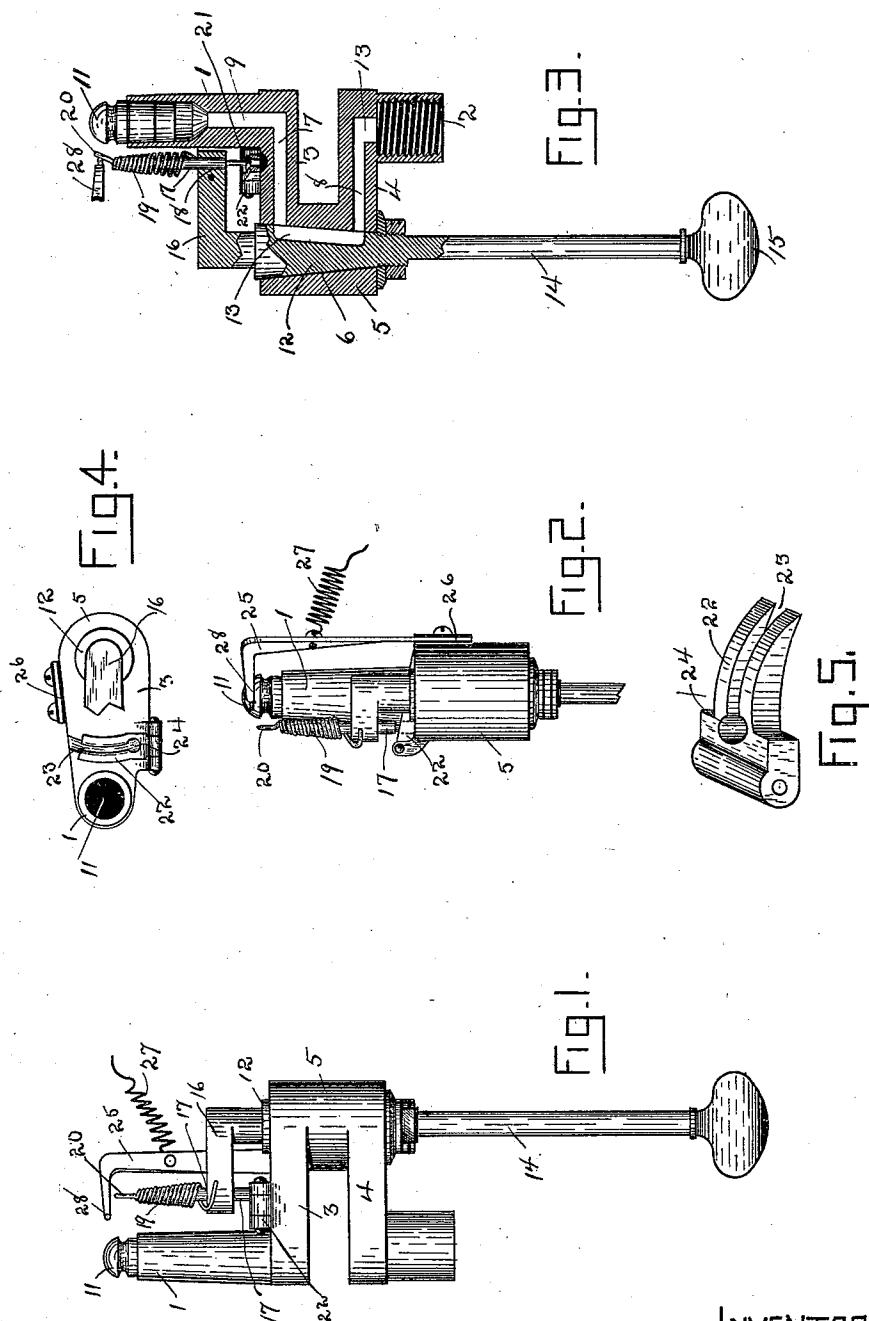


(No Model.)

J. P. DOYLE.
ELECTRIC GAS IGNITER.

No. 556,138.

Patented Mar. 10, 1896.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES P. DOYLE, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-FOURTH
TO EDWARD W. WUNCH, OF SAME PLACE.

ELECTRIC GAS-IGNITER.

SPECIFICATION forming part of Letters Patent No. 556,138, dated March 10, 1896.

Application filed October 29, 1895. Serial No. 567,290. (No model.)

To all whom it may concern:

Be it known that I, JAMES P. DOYLE, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Electric Gas-Igniters; 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.

My invention relates to improvements in electric gas-igniters of that class which embraces a fixed electrode, the terminal of which is located in close proximity to the top of the gas-burner, and a movable electrode attached to and operating with the gas-valve in such manner as to produce an electric spark simultaneously with the turning on of the gas.

The object of my invention is to simplify and cheapen the construction of parts and at the same time increase their reliability of action.

To that end my invention consists of a bracket or offset on the pillar of the burner, a valve-casing in the bracket or offset, a vertical valve-stem projecting above the bracket and provided at its upper end with a swinging arm having upon its inner end a vertically-actuated electrode, a slotted gravity-cam hinged to the upper side of the bracket for vertically actuating the swinging electrode and a fixed insulated electrode secured to the bracket with its terminal adjacent to the tip of the gas-burner, the fixed electrode being wired to one pole of a battery.

In the drawings, Figure 1 is a side elevation of my improved burner and gas-igniter. Fig. 2 is an end elevation of the same. Fig. 3 is a vertical section taken in the line *xx* of Fig. 2. Fig. 4 is a top plan view with the fixed and movable electrodes removed, and Fig. 5 is a detached perspective view of the slotted gravity-cam enlarged.

Referring to the drawings, 1 is the upper part, and 2 the lower part, of the pillar of the burner.

3 is the upper arm, and 4 the lower arm, of the bracket or offset, each extending out at

right angles to the parts 1 and 2 of the pillar and parallel with each other. Between the outer ends of these arms 3 and 4 is the valve-casing 5, having the interior tapering socket 6. The gas-passage 7 extends from the socket 6 through the arm 3 and communicates with the vertical gas-passage 9 in the part 1 of the pillar. The upper end of this passage 9 is enlarged for the reception of the tip 11. The gas-passage 8 extends from the socket 6 through the arm 4 and communicates with the vertical gas-passage 10 in the part 2 of the pillar. The portion 12 of the valve-stem which rests and turns within the socket 6 tapers upwardly and is provided on one side with a groove or passage 13, which connects or disconnects the gas-passages 7 and 8 to turn or shut off the gas. The lower outside extension 14 is provided at its lower end with the thumb-piece or handle 15. From the upper end of the valve-stem the swinging arm 16 extends inwardly and is provided with a vertically-actuated electrode consisting of the vertical pin 17 passing loosely through a socket 18 at the inner end of the arm 16, and the conical spiral spring 19, its lower end being secured to the swinging arm 16 and its upper end consisting of the straight portion 20 forming the terminal of the electrode. The vertically-actuated pin 17 rests within the conical spiral spring and has at its lower end the knob 21. A gravity-cam 22 is hinged to one side of the upper arm, 3, of the bracket or offset. This cam is slightly curved horizontally and has the vertical longitudinal slot 23, its inner end 24 being of increased width to permit of the downward passage of the knob 21 upon the lower end of the pin 17.

25 is the electrode, which is rigidly secured to the upper arm, 3, of the bracket, a flat piece of insulating material 26 being interposed between it and the arm 3. This fixed electrode 25 is connected by the wire 27 to one pole of a battery, the gas-pipe acting as the ground for the other electrode. The arm 28 at the upper end of the fixed electrode 25 is its terminal, the pointed outer tip being located adjacent to the tip 11 of the burner.

In operation the thumb-piece 15 is turned until the passage 13 in the valve-stem connects the two gas-passages 7 and 8, which per-

mits a flow of gas to the tip. As the valve-stem is turned the arm 16 swings with it and the knob 21 on the pin 17 rides up the cam along the curved recess 23, pushing up the pin and with it the surrounding spiral spring 19 until its terminal 20 is at a sufficient height to effect a contact with the fixed terminal 28. As it brushes by a spark is thrown off which ignites the gas already turned on. When the knob 21 reaches the enlarged end 24 of the slot 22, the reaction of the spring 19 forces it down under the cam and at the same time lowers the movable terminal 20 so as to avoid contact with the fixed terminal in its retro-grade movement. As the thumb-piece 15 is turned in the opposite movement to turn off the gas, the knob 21 on the pin 17 travels under the hinged cam, lifting the same until it escapes its outer end, when the cam will drop by gravity to its normal position ready for the next succeeding lighting operation.

It will be seen that my operative mechanism is located and operates upon an offset to the pillar, thus leaving the pillar clear and unobstructed for the reception of any variety of shade which is adapted for use upon the ordinary burner.

I claim—

1. An electric gas-igniting burner consisting of a bracket or offset on the pillar of the burner, a valve-casing in the bracket or offset, a vertical valve-stem projecting above the bracket and provided at its upper end with a swinging arm having upon its inner end a vertically-actuated electrode, a slotted

gravity-cam hinged to the upper side of the bracket for vertically actuating the swinging electrode and a fixed insulated electrode secured to the bracket with its terminal adjacent to the tip of the gas-burner.

2. In an electric gas-igniting burner having a fixed electrode and a movable electrode actuated by the valve-stem, the combination with the movable electrode of a hinged and slotted gravity-cam by means of which the movable electrode is vertically actuated to effect a contact of the electrodes in one direction only.

3. An electric gas-igniting burner consisting of a bracket or offset upon the pillar of the burner, a valve-casing in the bracket or offset, separate gas-passages in the bracket or offset leading to the socket in the valve-casing, a vertical valve-stem having a groove or passage connecting and disconnecting the separate gas-passages, such valve-stem projecting above the bracket and provided at its upper end with a swinging arm having upon its inner end a vertically-actuated electrode, a slotted gravity-cam hinged to the upper side of the bracket for vertically actuating the swinging electrode and a fixed insulated electrode secured to the bracket with its terminal adjacent to the tip of the gas-burner.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES P. DOYLE.

Witnesses:

OTTO H. SCHROEDER,

W. T. MILLER.