

H. YOUNKER.
ELECTRIC GAS IGNITING FIXTURE.
APPLICATION FILED MAY 27, 1910.

987,339.

Patented Mar. 21, 1911.

2 SHEETS—SHEET 1.

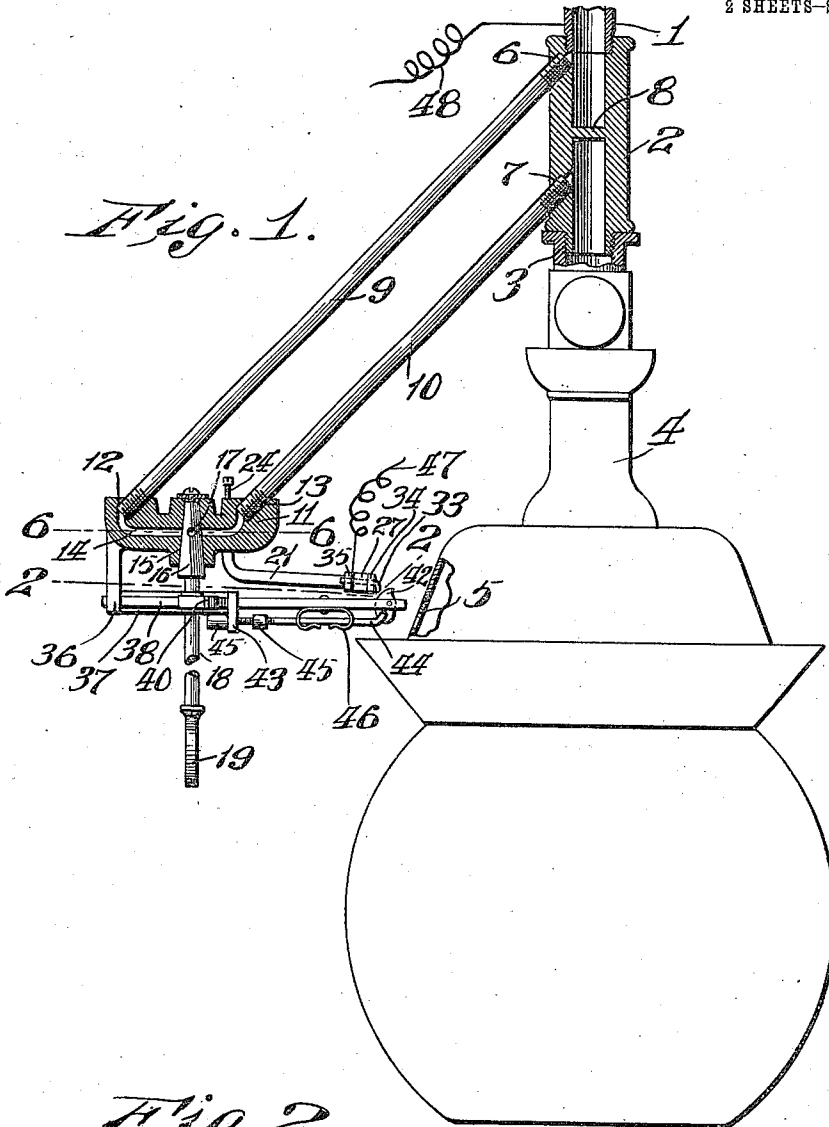


Fig. 2

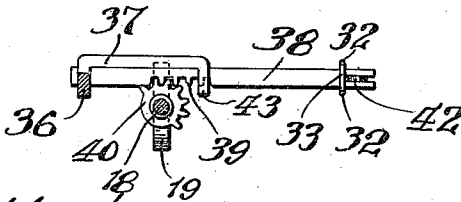
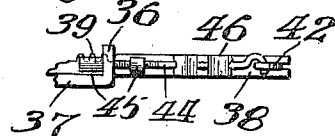


Fig. 3



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Fig. 4.

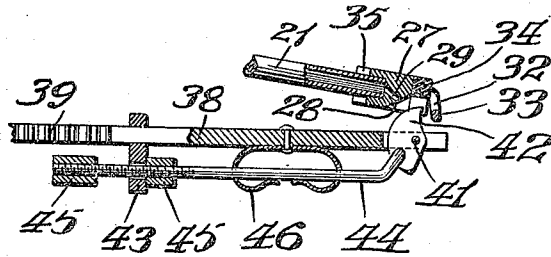


Fig. 5.

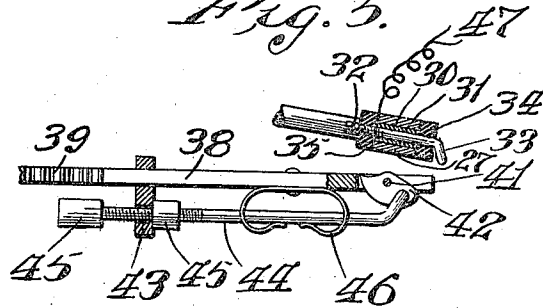


Fig. 6.

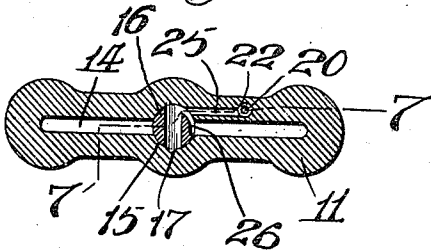


Fig. 7.

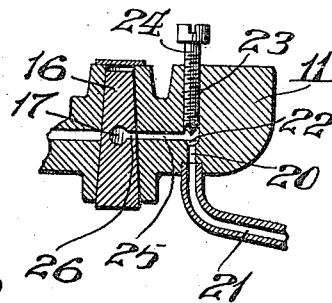
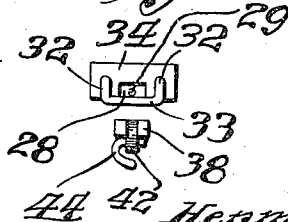


Fig. 8.



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ELECTRIC GAS-IGNITING FIXTURE.

987,339.

Specification of Letters Patent.

Patented Mar. 21, 1911.

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To all whom it may concern:

Be it known that I, HERMAN YOUNKER, a citizen of the United States, and resident of Louisiana, Missouri, have invented certain new and useful Improvements in Electric Gas-Igniting Fixtures, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in electric gas igniting fixtures, the primary object of my invention being to construct a simple, inexpensive device which is carried by the casing inclosing the valve and arranged to be actuated when the valve is moved to automatically open a pilot tube momentarily and at the same time create a spark for the ignition of the gas issuing from the pilot tube and arranged in such manner that when the valve is full open the pilot tube is closed, the movable contact member being arranged to create a spark only when the valve is being opened, the spark being created at the same time when the contact member is moving toward the end of the pilot tube.

A further object of my invention is to construct a fixture having an electric ignition attachment which fixture is so shaped that an inverted mantle burner may be applied thereto and held in a vertical position with the fixture applied to service pipes in a rigid manner to hold the burner proper against vibrations when the valve and sparking devices are being operated.

For the above purposes my invention consists in certain novel features of construction and arrangement of parts as will be hereinafter more fully described, pointed out in the claims and illustrated by the accompanying drawings, in which—

Figure 1 is a view illustrating my attachment as applied to an ordinary inverted mantle burner, a portion of the fixture and the valve proper being shown in section; Fig. 2 is a plan of a portion of the igniting device taken on the line 2—2 of Fig. 1; Fig. 3 is an inverted plan illustrating the arrangement of the movable contact member; Fig. 4 is an enlarged elevation partly in section illustrating the ignition devices which are in position just after a spark or contact has been made; Fig. 5 is an elevation illustrating the arrangement of the contact points after the contact has been made and

the valve fully open; Fig. 6 is an enlarged, sectional plan taken on the line 6—6 of Fig. 1; Fig. 7 is an enlarged, sectional elevation taken on the line 7—7 of Fig. 6; and Fig. 8 is an enlarged end elevation illustrating the fixed and movable contact members.

Referring by numerals to the accompanying drawings: 1 designates the service pipe, the lowermost end of which is threaded.

2 designates a fitting internally threaded at its upper end for connection with the service pipe and provided with an integral externally threaded extension 3 at its lower end to which the inverted mantle burner 4 is connected. The burner is of the ordinary type arranged to hold an inverted mantle and in which there is an opening 5 of ordinary arrangement adjacent the mantle (not shown) for the purpose of igniting the gas in the mantle. Arranged in the side walls of the fitting 2, adjacent either end are the angularly disposed threaded seats 6 and 7 communicating with the interior of the fitting, there being a partition 8 which cuts off communication within the fitting between the seats 6 and 7.

9 and 10 designate tubular members of different lengths threaded at each end preferably in opposite directions and seated respectively in the seats 6 and 7 of the fitting.

11 designates a valve casing having angularly disposed seats 12 and 13 for the reception of the outer ends of the tubular members 9 and 10, there being a passage way 14 in the valve casing connecting the seats 12 and 13. Formed centrally through the valve casing is a conical valve seat 15 in communication with the passage way 14, and 16 designates a cone valve provided with a transverse opening 17 vertically alining with the passage way 14, the opening being provided to establish communication between the two sides of the passage way 14. The stem 18 of the valve is preferably made of greater length than the ordinary valve stem and at its lower end is provided with a suitable key 19.

Laterally removed from the transverse center of the valve casing is a passage way the lowermost end of which is enlarged and internally threaded to receive the threaded end of a pilot tube 21, the upper end of the passage way 20 being provided with an enlarged seat 22. Vertically alining with the passage way 20 is a threaded aperture 23 arranged to receive the needle valve 24

arranged to close the passage way 20 when it is not desired to use the automatic igniting attachments and also arranged to control the flow of gas through the pilot tube.

Communicating with the passage way 20 is a passage way 25 extending to the valve seat 15.

Formed in the valve 16 on a line intersecting the opening 17 is a depression or groove 26 of such length as to admit gas to the pilot tube through the passage ways 25 and 20 when the valve is being opened and to close said passage ways when the valve is fully opened.

The pilot tube 21 is substantially L-shaped, the short arm being seated in the valve casing 13 and the long arm extending laterally and parallel with the casing projecting toward the burner 4. Carried by the outer end of the pilot tube is a metallic block 27 the lower, forward corner of which is chamfered at 28 and extending through the block from the end of the pilot tube to said chamfered corner is a passage way 29. Extending through the block on either side of the pilot tube and parallel therewith are openings 30 in each of which is inserted an insulating sleeve 31, in which sleeves are inserted the legs of a substantially U-shaped contact member 32, the forward, doubled end 33 of which is bent downwardly to project a slight distance below the lower face of the block 27. To insulate the U-shaped contact member from the block 27 I have employed the fiber block 34 and the fiber nuts 35 which, together with said sleeves, fully insulate the U-shaped contact member from the block 27 in the pilot tube.

Formed integral with the valve casing and projecting downwardly therefrom at the end of the casing opposed to the end carrying the pilot tube is an arm 36 which arm is provided with an integral extension 37 paralleling and lying underneath the casing, the outer free end of which extension is bent at right angles to the arm proper and having an opening formed therethrough which opening aligns with an opening formed through the lowermost end of the arm 36, the openings just described form a support for a movable bar 38 upon which is formed a rack 39.

40 designates a mutilated gear wheel secured to and arranged to be rotated with the valve stem 18, so that when the valve stem is moved to open or close the valve, the mutilated gear and rack 39 will cause the bar 38 to move.

The outer free end of the bar 38 is bifurcated, there being a pin 41 inserted through the bifurcated portion for the support of a pivoted contact member 42.

Depending from the arm 37 and formed integral therewith is a perforated ear 43 designed for the support of the rod 44 for

the actuation of the movable contact member 42, the other end of the rod 44 being pivotally secured to the lowermost end of the contact member. The end of the rod 44 opposed to the end secured to the contact member is threaded and embracing the rod on either side of the perforated ear 43 are the nuts 45 arranged for engagement with the perforated ear 43 for the movement of the rod 44 to actuate the contact member.

46 designates a leaf spring secured to and movable with the bar 38 and frictionally engaging the rod 44 for the movement of said rod, at intervals between the times of moving, by the nuts 45.

47 designates a conductor leading from a sparking device (not shown) and connected with one of the legs of the fixed contact member and 48 designates a conductor leading from the sparking device and secured to the service pipe which grounds the circuit when the contact members are together.

Assuming the parts to be assembled and in their normal position as shown in Fig. 1 and it be desired to ignite the burner, the operator grasps the key 19 and rotates same which first establishes communication between the pilot tube and the service pipe through the upper portion of the fitting 2, tube 9, the outer end of the passage way 14, through the slot 26 in the valve and the passage ways 25 and 20, thereby admitting a quantity of gas to discharge from the end of the pilot. A further movement of the key and valve opens communication between the pipe 9 and pipe 10 and thence to the burner and closes the pilot communication. During the time the valve is being moved to admit a quantity of gas to the pilot and then to the burner, the mutilated gear 40 through connection with the rack 39 moves the bar 38 and draws the contact member 42 toward the fixed contact member 33. The first movement of the contact member is dependent solely upon the pin 41. After the contact member 42 engages the member 33 a continued movement of the bar 38 springs the bar 38 sufficiently to permit the contact member to move beneath the member 33, at which time a spark is created and forced in a direction toward the end of the pilot tube instead of in a direction away from the pilot tube as is ordinary. By a continued movement of the bar the nut to the right of the perforated ear engages the ear and thus moves the rod to turn the contact member 42 into the position as shown in Fig. 5 and in this position the valve is fully open so that the burner will be maintained in an ignited condition. When it is desired to shut off the light, the key is turned in a reverse manner and the bar 38 moved, which movement, by reason of the spring 46, carries the rod 44 and contact member to a point permitting the upper end of the contact member 42 to free the

member 33. A continued movement of the bar places the rearmost nut 45 in contact with the ear 43 and thus positively moves the rod to position and the contact member 5 42 to its normal position as shown in Fig. 1.

I claim:

1. In a device of the class described, a valve casing, a valve operating in said casing, a pilot tube carried by the casing, an electric contact member carried by the pilot tube, a longitudinally movable bar carried by the casing, a movable contact member carried by said bar, means for moving the bar when the valve is moved and means for 15 actuating the movable contact member to engage the contact member on the pilot tube when the valve is moved in one direction only.

2. In a device of the class described, a 20 valve casing, a valve operating in said casing, a pilot tube carried by the casing, an electric contact member carried by the pilot tube, a longitudinally movable bar carried by the casing, a pivotally mounted contact member carried by said bar, means whereby the 25 contact members are brought together im-

mediately after gas is admitted to the pilot tube, and means whereby the movable contact member may be moved to its starting position, when the valve is being closed, 30 without contacting with the contact member carried by the pilot tube.

3. An electric gas igniting fixture, comprising a valve casing provided with an inlet and an outlet, a valve, provided with a 35 stem, operating in said casing, an electric contact arranged adjacent the outlet, a longitudinally, movable bar arranged adjacent the valve stem and outlet, a contact member carried by said bar, a connection between said 40 bar and valve stem for actuating said bar when the valve stem is turned, and means for actuating one of the contact members to engage the other contact member when the 45 valve is moved in one direction only.

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

HERMAN YOUNKER.

Witnesses:

E. E. LONGAN,
E. L. WALLACE.