

C. C. VAIL.
GAS FIRE LIGHTING DEVICE.
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956,868.

Patented May 3, 1910.

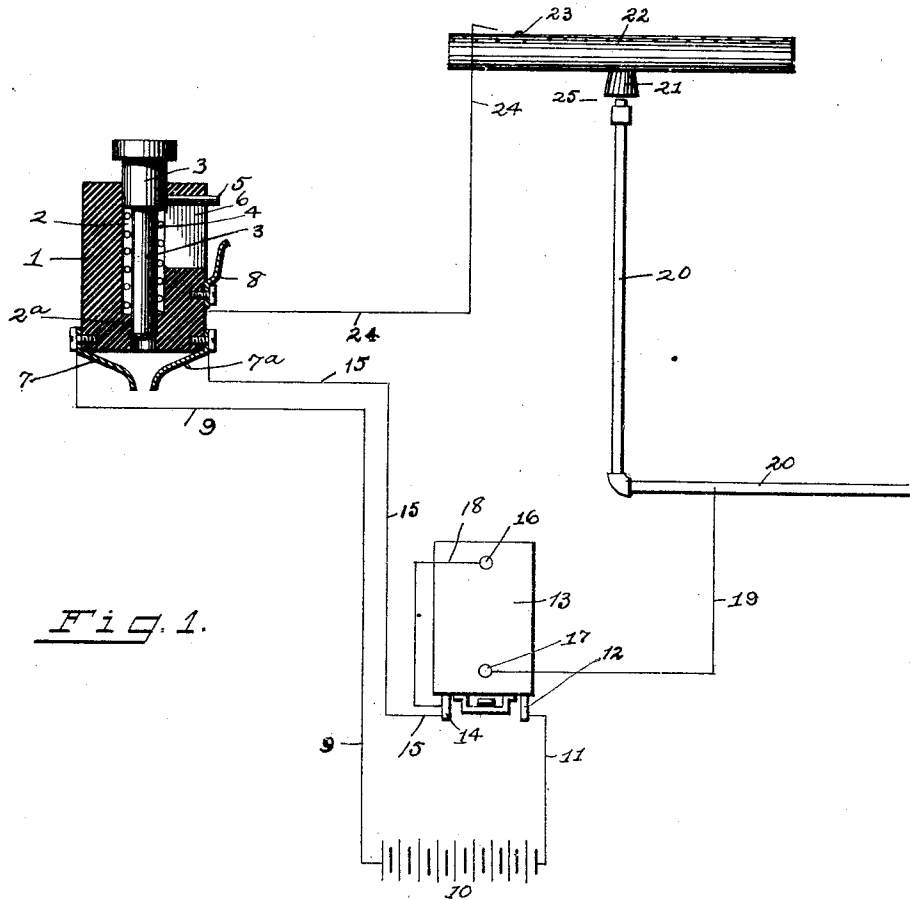


Fig. 1.

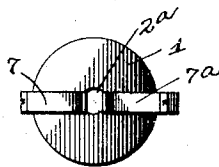


Fig. 2.

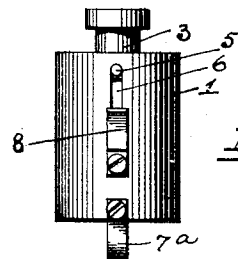


Fig. 3.

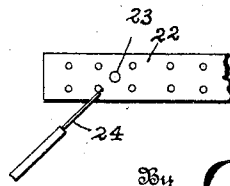


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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GAS-FIRE-LIGHTING DEVICE.

956,868.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES C. VAIL, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Gas-Fire-Lighting Devices, of which the following is a specification.

My invention relates to the improvement of gas-fire lighting devices, and the objects of my invention are to provide simple, reliable and effective means for igniting gas at a heater burner by the aid of an electric spark or flame; to provide for this purpose an improved construction of push button for closing the circuits through the primary and secondary connections and to produce other improvements, the details of which will be more fully pointed out hereinafter.

These objects I accomplish in the manner illustrated in the accompanying drawing, in which:

Figure 1 is a central vertical section of my improved current closing push button, showing in connection therewith a diagrammatic view of the connections between said push button and a gas heater burner. Fig. 2 is an underside view of the push button, Fig. 3 is a side elevation of the same at right angles with that shown in Fig. 1, and, Fig. 4 is a plan view of a portion of a gas heater burner showing my improved sparking means in conjunction therewith.

Similar numerals refer to similar parts throughout the several views.

In carrying out my invention, I employ a suitable form of button or plug 1, the body of which is of suitable insulating or non-conducting material. This button has formed centrally therethrough an opening 2, the lower end portion of which is reduced in size as indicated at 2^a. Extending downward through this opening 2 is a push pin 3, the enlarged head of which fits movably in said opening 2 and the lower end of which movably fits within the reduced portion 2^a of said opening. This push pin is normally elevated to the position shown in the drawing, through the medium of a coiled spring 4 which surrounds said pin between its head and the shoulder formed by the reduction in the size of the opening 2. The pin 3 is of metal or conducting material and connected with the upper portion thereof, is a lateral extending metallic contact

arm 5 which normally projects through the upper portion of a vertical slotted opening 6 in the wall of the button 1. To opposite sides of the button 1 adjacent to the lower end thereof, I secure the corresponding ends of two metallic contact strips 7 and 7^a, the latter being bent downward and inward toward each other beneath the button 1, the downturned separated ends of said strips being arranged beneath the lower end of the reduced portion 2^a of the opening 2. On that side of the button which is provided with the slotted opening 6, I secure below said slotted opening, one end of an outwardly thence upwardly bent contact strip 8.

It will be understood that the button which is herein described may be suitably supported in or secured to a floor, wall or other framework of a building at a convenient point therein. From the strip 7, leads a wire 9 which connects with one pole of a battery 10, the remaining pole of which is connected by a wire 11 with a connecting member 12 of one terminal of the primary coil member of an induction or spark coil contained in a coil box 13. The other terminal of said primary coil, is connected as indicated at 14 with one end of a wire 15, which leads to the button strip 7^a.

16 and 17 represent respectively the terminals of the secondary coil member of said spark coil, the terminal 16 being connected by a wire 18 with the primary wire 15 and the terminal 17 being connected by a wire 19 with a gas conducting pipe 20. This gas conducting pipe leads in the usual manner to the mixer 21 of a suitable form of gas burner 22, which may be located in a grate, furnace, stove or other suitable point, where it is employed for heating purposes.

The form of gas burner which I have used in the illustration, is the perforated cylindrical form which is commonly in use as a natural gas burner for grates. It is obvious, however, that other desirable forms of metallic burners may be employed. At a desirable point with relation to the gas exits of the burner, I provide said burner with a platinum point 23 and at a desirable distance from said point, is the terminal of a wire 24 which leads to the button strip 8. In order to effect a connection between the gas pipe 20 and the burner or its mixer, I bridge the space between said parts with a short wire 25.

In operation the desired spark or electric

flame is produced between the terminal of the wire 24 and the point 23 at the gas burner, for the ignition of the gas escaping therefrom, by pressing inward on the pin 3. This movement of said pin, results in the inner end of the pin engaging both the spring strips 7^a and closing a circuit through the wires 9 and 15, battery 10 and primary coil member of the induction coil. Simultaneously with the contact of the pin with the strips 7^a, the pin arm 5 is brought into contact with the strip 8, with the result that the circuit is completed by the connections described through the gas pipe 20, connecting wire 25, burner body 22, and gas point 23 and the wire 24, the connection being effected between said wire 24 and point 23 by a spark or electric flame.

It has been found that it is difficult to ignite natural gas by the ordinary short electric jump-spark and for that reason the distance between the point 23 and the terminal of the wire 4 is such as to produce a comparatively long spark or electric flame and it will be readily understood that the production of such a spark or flame is accomplished by the connections described, through both the induction coil and battery. It will also be understood that while but one gas burner and point of ignition is shown herein, that by extending the wire, the ignition of gas at several burners may be as readily accomplished.

Where natural gas is commonly used for heating purposes, it is sometimes extremely difficult, owing to the relative positions of the gas key and the burner to light the gas at the burner and at the same time turn the key to provide a supply of gas. It is obvious that by placing the button 1 at a position adjacent or convenient to the gas cut-off, both of these devices may be operated at once, if desired, and that by the use of my

device gas may be instantly ignited on the pressing of the button.

What I claim, is:

1. In a gas heater igniting device, the combination with a button of non-conducting material, a spring actuated contact pin working through said button and normally elevated, and a contact arm projecting laterally from said pin and extending through a slotted opening in said button, of a contact strip connected with said button below said slot, and normally separated contact strips below said button and adapted to be engaged by said pin, and a wire connected with each of said strips.

2. In a gas heater igniting device, the combination with a button body, comprising a spring actuated contact pin adapted to be projected through said button against the tension of said spring, contact members adapted to be connected by said pin when said pin is projected, a contact strip, an arm projecting from said pin, a gas burner, a pipe leading thereto, an induction coil, a battery, wires leading from the first named contact members respectively through said battery to the terminals of the primary winding of the induction coil, a connection between one terminal of the secondary winding of the coil and one of the primary winding terminals of said coil, a connection between the remaining secondary winding terminal and said gas pipe, a wire leading from a point adjacent said gas terminal to the contact strip, and a platinum point on said burner near the terminal of said last mentioned wire.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES C. VAIL.

Witnesses:

A. L. PHELPS,
L. CARL STOUGHTON.