

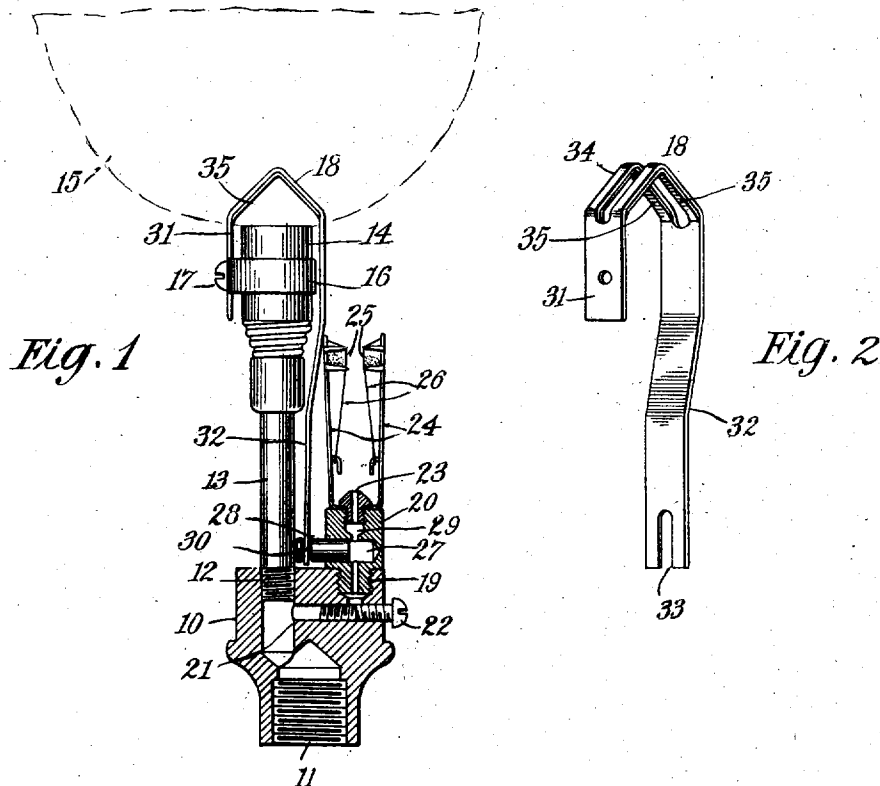
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SELF LIGHTING GAS BURNER.

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UNITED STATES PATENT OFFICE.

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SELF-LIGHTING GAS-BURNER.

972,938.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, JOHN R. STANTON and FORTUNATO M. D'ARSI, citizens of the United States, residing at New York, in the
5 county and State of New York, and WILLIAM F. MUNZER, a citizen of the United States, residing at West Hoboken, in the county of Hudson and State of New Jersey, have invented certain new and useful Im-
10 provements in Self-Lighting Gas-Burners, of which the following is a full, clear, and exact description.

This invention relates to gas burners of the self-lighting pilot type, and its object,
15 stated generally, is to provide thermostatic mechanism of the utmost simplicity for cutting off the supply of gas to the pilot burner after the main burner is lighted.

A further object is to make the device
20 thoroughly reliable in operation.

To these and other ends the invention resides in the novel features of construction and combinations of elements hereinafter described, and more particularly set forth in
25 the appended claims.

The preferred embodiment of the invention is illustrated in the annexed drawings, in which—

Figure 1 is a side view of the complete
30 burner, partly in vertical section. Fig. 2 is a perspective view of the thermostatic valve-actuating device.

The body portion, designated by 10, is provided with a downwardly open threaded
35 socket 11 for attachment to the gas supply pipe, not shown, and in the top, at one side of the body, is a threaded aperture 12 to receive the pillar 13 which is surmounted by a burner tip 14 of suitable type, for example
40 one adapted to give a bat-wing or fish-tail flame, as indicated in dotted lines at 15. On the burner tip is a collar 16, adjustable vertically and held in adjusted position by a set screw 17 which also serves to hold the
45 thermostatic valve-actuating device 18, as hereafter described. The body 10 is also provided in its top with a threaded socket 19 to receive a pilot burner 20, said socket 19 being in communication with socket 12
50 through a transverse passage 21 in which is a valve-screw 22 by which the flow of gas to the pilot burner can be regulated or cut off entirely, as will be readily understood. Mounted on the pilot burner, on opposite
55 sides of the orifice 23, are two standards 24

carrying the buttons 25 of suitable catalytic material in the path of the gas issuing from the pilot burner, for the purpose of igniting this stream of gas in the well known way. The usual platinum filaments 26 may be
60 provided if desired.

In the side of the pilot burner toward the pillar 13 is a horizontal valve socket 27, in which is fitted a horizontally movable valve
65 plug 28 by which the gas passage 29 of the pilot burner can be closed and opened. On the outer end of the valve plug is a head 30 by which the plug may be engaged to actuate the same.

The thermostatic device 18 is of the arch
70 or inverted-U form shown, with a short leg 31 secured to the supporting collar 16 by means of the set screw 17 as previously mentioned, and a longer leg 32 extending downwardly on the opposite side of the pillar.
75 The bottom of this long leg is forked or notched, as at 33, to embrace the head 30 on the valve-plug 28. The arched portion of the thermostatic device, lying above the burner tip, has a flame aperture in the form
80 of a slot 34, the ends of the slot lying below the base of the flame as indicated in Fig. 1. The thermostatic device is chiefly of iron or steel, but on the underside of the arched
85 portion are brazed two short strips of brass, 35, on opposite sides of the flame slot 34. Inasmuch as brass has a greater coefficient of expansion than iron or steel it will be evi-
90 dent that when the arched portion of the device is heated by the flame the greater expansion of the brass strips will cause the longer leg to swing outwardly, moving the valve plug 28 inwardly with respect to its socket.

The proportions and arrangement of the
95 parts are such that when the burner is extinguished and the thermostat cold, the valve plug will stand in the position shown; that is, with the pilot passage 29 open. Now when gas is admitted to the burner by open-
100 ing the usual cock (not shown) in the gas supply pipe, the gas will flow to the main and pilot burners, and that issuing from the latter will be ignited by the catalytic buttons or pellets 25. The pilot flame thus pro-
105 duced immediately lights the sheet of gas issuing from the main burner. This main flame then heats the thermostatic device, causing the leg 32 to swing outwardly, thereby pushing in the valve plug 28 past
110

the pilot passage 29 and cutting off the supply of gas to the pilot burner. This condition of affairs continues so long as the main flame is burning; but when the main flame is extinguished the cooling of the thermostat swings the valve-actuating member 32 backward and with it the valve plug 28, thereby opening the pilot passage 29 and leaving the parts in their initial positions.

It will be seen that the device is exceedingly simple, the moving parts being only two, namely, the thermostat and the valve plug. At the same time the operation is positive. It will also be noted that the operative parts are on the outside, where they can be inspected without dismantling the burner. The valve plug 28, when the burner is assembled, is in line with the side of the pillar 13, so that it cannot be removed from its socket, either intentionally or accidentally, unless the pilot burner is turned slightly in its socket so as to carry the plug clear of the pillar. The size of the pilot flame can be regulated to a nicety by means of the valve screw 22. The construction of the thermostat, with the brass part confined to the arch portion, is an advantageous feature, for the reason that while the entire device will undergo more or less expansion lengthwise by the heat the flexure will occur only at the arch portion, thereby throwing the longer leg directly out without curling as would be the case if the brass portion were coextensive with the iron. It is also advantageous to have the thermostat mounted adjustably, as by that means the arched portion can be raised or lowered to bring it into the most effective position with respect to the lower edge of the luminous flame.

The construction herein described is the preferred form of the invention, but it is to be understood that the invention can be embodied in other forms without departure from its proper spirit and scope as defined by the appended claims.

We claim:

1. In a self-lighting gas burner, in combination, a base adapted for connection with a gas supply pipe, a main burner mounted on the base, a pilot burner alongside of the main burner, catalytic means for lighting the pilot burner, a transversely slidable valve plug for closing and opening the gas supply to the pilot burner, said valve plug

being outside the said base, and a thermostatic valve-actuating device arched over the main burner to be heated thereby and having a leg extending into engagement with the valve plug to actuate the latter and cut off the supply of gas to the pilot burner when the main burner is lighted.

2. In a self-lighted gas burner, in combination, a main burner, a rotatably movable pilot burner alongside the main burner and having a valve socket directed toward the main burner, catalytic means for lighting the pilot burner, a valve plug slidably mounted in the valve socket to control the supply of gas to the pilot burner and prevented by the main burner from removal from said socket except when the pilot burner is turned to carry the plug clear of the main burner, and a thermostatic valve-actuating device associated with the main burner and the valve plug to actuate the latter and cut off the supply of gas to the pilot burner when the main burner is lighted.

3. In a self-lighting gas burner, in combination, a base adapted for connection with a gas supply pipe and having a plurality of gas passages, a main burner mounted on the base to receive gas from one of said passages, a pilot burner mounted on the base to receive gas from another of said passages, means for regulating the flow of gas through the last mentioned passage to the pilot burner, catalytic means for lighting the pilot burner, a transversely slidable valve plug mounted in the pilot burner to control the supply of gas thereto, and a thermostatic valve-actuating device of arch form having a leg mounted at one side of the main burner and a leg on the other side of the main burner extending into connection with the said valve plug to actuate the same and cut off the supply of gas to the pilot burner when the main burner is lighted.

In testimony whereof we affix our signatures in the presence of two subscribing witnesses.

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