

No. 745,818.

PATENTED DEC. 1, 1903.

P. F. GLAZIER.
CONTROLLER FOR GAS BURNERS.
APPLICATION FILED JULY 28, 1903.

NO MODEL.

Fig. 2.

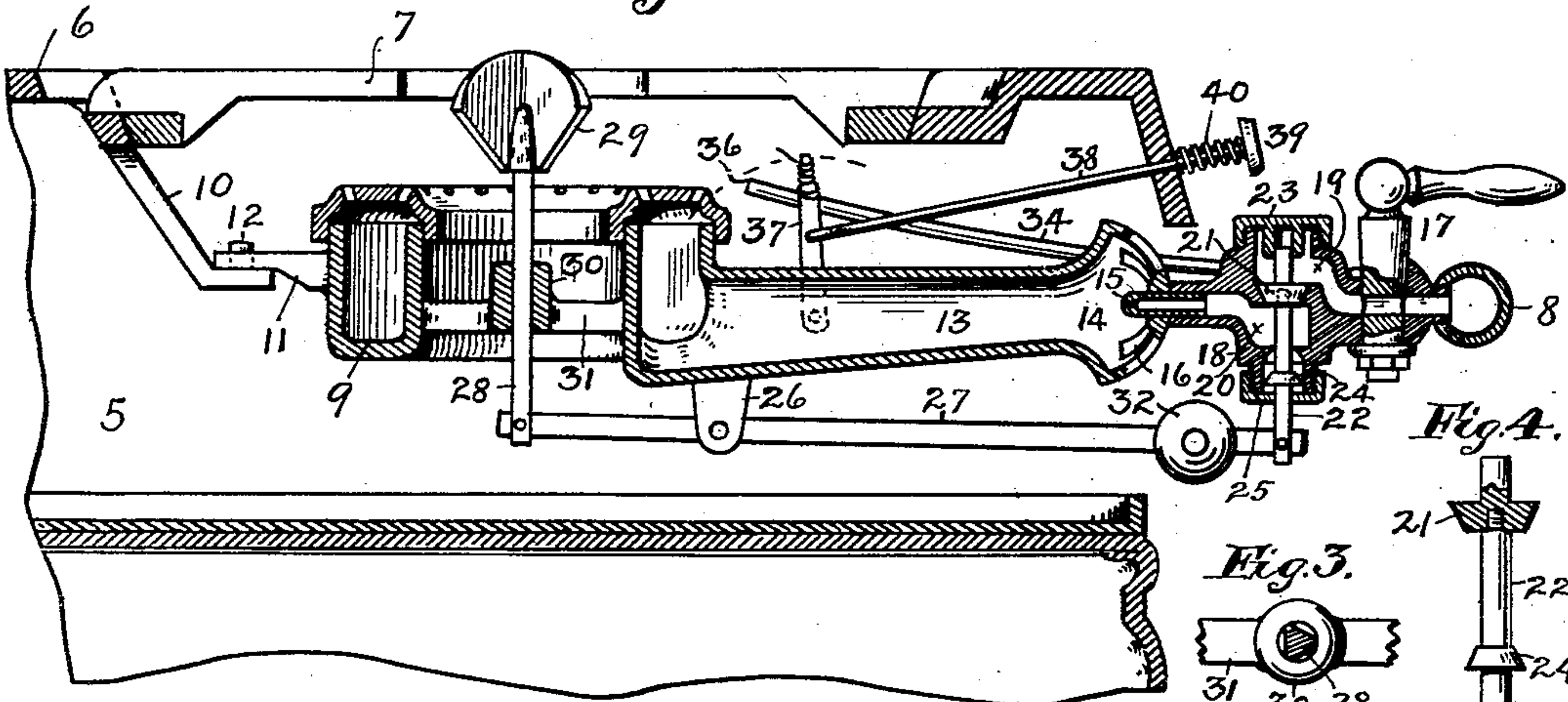
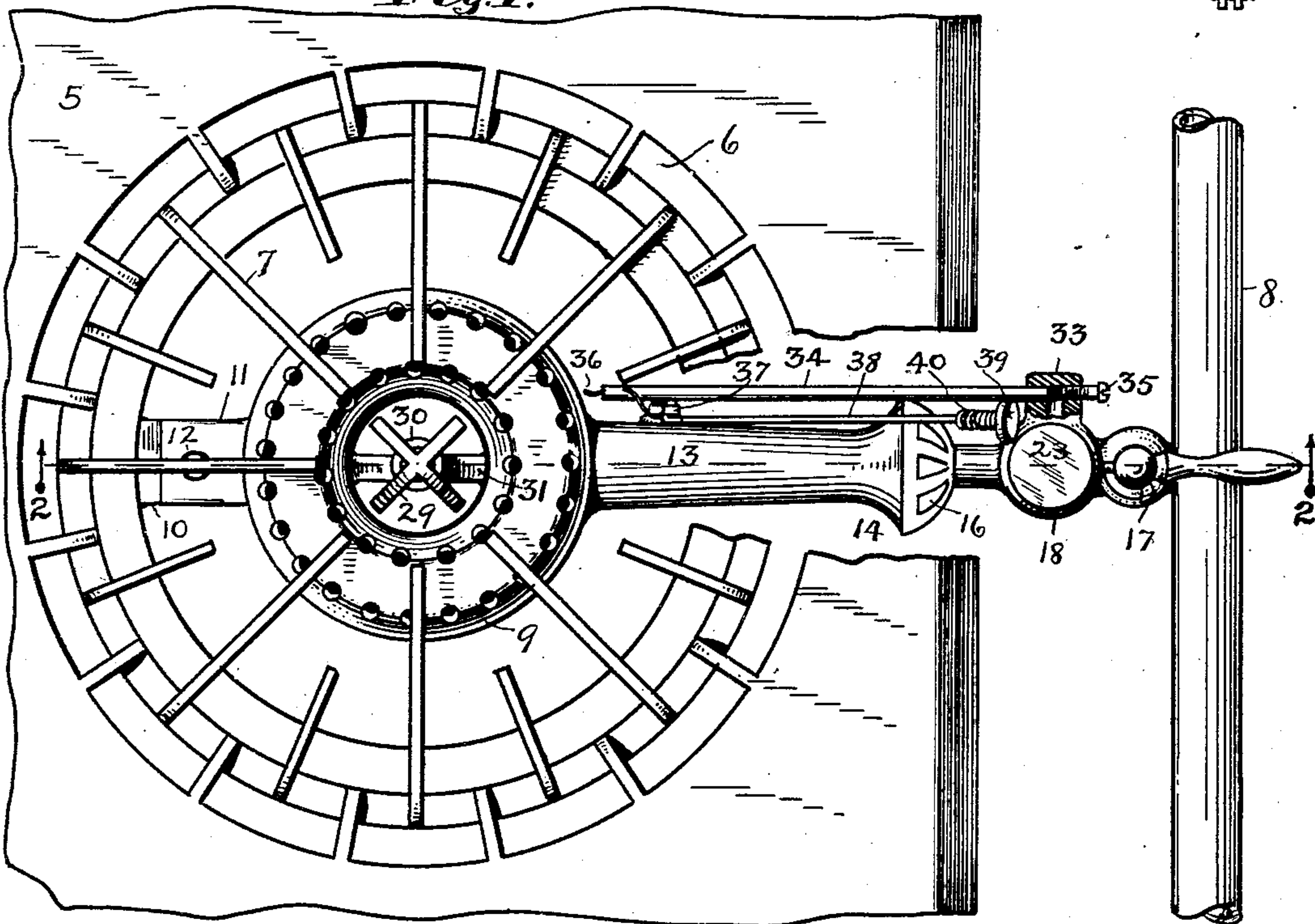


Fig. 1.



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UNITED STATES PATENT OFFICE.

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CONTROLLER FOR GAS-BURNERS.

SPECIFICATION forming part of Letters Patent No. 745,818, dated December 1, 1903.

Application filed July 28, 1903. Serial No. 167,272. (No model.)

To all whom it may concern:

Be it known that I, PETER F. GLAZIER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Controllers for Gas-Burners, of which the following is a specification.

In the consumption of gas for fuel much waste is occasioned by the failure of the housewife or cook to turn the gas off when the operation of cooking is not in actual progress, and with gas-stoves as heretofore commonly constructed a strict economy in this respect necessitates the turning off of the cut-off cock by hand with every lifting of the cooking vessel from the stove and the turning on of the cock and the relighting of the gas when the actual cooking is to be continued. These operations are too bothersome to be practical, and, indeed, the cooking operations would often prohibit the delay which such procedure would require. Again, the carelessness of servants is a bar to such economy, and the inexcusable waste of gas by leaving it burning through neglect and forgetfulness long after the period of use is a common occurrence.

The object of this invention is to provide an automatic controller by which the gas will only be turned on by the weight of the cooking vessel or cooking material while in cooking position over the burner and in which the gas will be turned off the minute that the vessel or cooking material is lifted.

The object also is to provide a simple, durable, quick-actioned, and sensitive valve for controlling the fuel-supply and to provide a valve that is readily separable for the purpose of cleaning and that will not need to be packed around the valve-stem to prevent leakage.

I accomplish the objects of the invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a detail in top plan view of part of a gas-stove equipped with my invention; Fig. 2, a section on the line 2 2 of Fig. 1 looking in the direction of the arrows; Fig. 3, a detail in cross-section of the stem which supports the pusher-head at the center of the burner; and Fig. 4, a detail of the valve-stem, showing the upper valve in vertical section.

Like characters of reference indicate like parts throughout the several views of the drawings.

5 represents a stove or range of any usual or suitable construction, which may have any desired number of stove-holes and burners; but as they will all be alike the description of one is deemed sufficient here, and the drawings and description are accordingly limited in this application to a single stove-hole and burner.

6 is the stove-hole, and 7 the removable grating which supports the cooking vessel placed upon the hole.

8 is the gas-supply pipe, and 9 the burner. The top of the stove has the hanger 10, which supports a lug 11, extended laterally from the burner and resting upon the hanger. The lug has a vertical opening to receive a pin 12, extending up from the hanger. This prevents lateral displacement of the burner. The burner is provided with the pipe extension 13 on its side toward the supply-pipe 8, terminating with the enlargement 14, having a central perforation to receive the nipple 15. The latter terminates a supply emanating laterally from the pipe 8. The enlargement 14 of extension 13 has additional perforations 16 for the admission of air, which mixes in suitable quantities with the gas coming through the nipple 15 before the latter is delivered through extension 13 to the burner. The burner thus described is readily removable by slipping its lug off of pin 12 and then drawing the burner away from the nipple which supports its opposite extension.

The conduit leading from the supply-pipe 8 to the burner extension 13 has the usual cock 17 for opening and closing said conduit, and between said cock and the mixer end of extension 13 is a specially-designed cut-off comprising a body 18, having a leading-in gas-passage 19 and a leading-out passage 20. These passages are connected by an opening having downwardly-tapering sides, and which forms the seat for a valve 21, by which communication between the passages is closed when the valve is in said seat. The valve has a stem 22, which extends above the valve and works in a socket on the under side of a cap 23, the socket serving as a guide to center the valve, and said stem also extends down

from the valve through the lower passage and to a suitable distance below and outside of the body 18. This stem passes out of the body through an upwardly-tapering hole, 5 which forms the seat for a valve 24 on said stem, and the two valves are so positioned on the stem that when the upper one 21 is open the lower one 24 will be closed or in its seat, so as to prevent the leakage of gas around 10 the stem where it passes out of said body. This obviates the necessity of a packing around the stem. The lower end of the body through which the stem passes has the cap 25, which screws upon the body. The cap 23 15 screws in like manner upon the top of the said body, and the valve-stem 22 is made in two sections, which are screwed together in the manner shown in Fig. 4. By the construction as described the parts of the cut-off are 20 separable for convenience in manufacture and also for the making of repairs or for cleaning the several parts.

Fulcrumed to ears 26 on the under side of the burner is the lever 27, one end of which 25 is pivotally secured to the lower end of the valve-stem 22, and the other end of the lever is pivotally secured to the vertical stem 28 of a pusher-head 29. The stem, which is angular in cross-section to prevent clogging, is 30 held by passing through a perforation in a boss 30 on a bar 31, supported by the walls of the burner, and preferably passes up through the opening at the middle of the burner. The lever 27 may be provided with the weight 32, 35 which normally closes or seats the valve 21, and the length of the stem 28, which supports the pusher-head 29, is such that when the valve 21 is closed the top of said head will be slightly above the top of the stove. Consequently any cooking vessel placed upon the 40 stove-hole will contact with the pusher-head and press it down to a level with the stove-top, and by so doing will cause the valve 21 to open, thereby admitting gas to the burner; 45 but the moment the cooking vessel is removed the weighted valve will close, thereby shutting off the supply of gas. By moving the weight along the lever the mechanism can be adjusted almost to a balance, so a very 50 slight pressure on the pusher-head will open the valve-controlled gas-supply.

To light the gas automatically the instant it is turned on, I provide a lug extension 33 from the body 18, from which extends a small 55 pipe 34. Gas communication is had through this lug and tube between the valve 21 and the supply-pipe 8, which is unaffected by the shutting off of the larger volume of gas to the burner, and this small "thief" when lighted 60 at the beginning of a meal or other use of the burner continues to burn and to light the gas at the burner at each turning on of gas at the latter, as above described. The opening from the lug to the pipe 34 is regulated in size by a set-screw 35 and can be 65 set so as not to consume two cubic feet of gas

in twenty-four hours—an inappreciable and inexpensive amount.

The thief may be lighted by the use of a lighted match, but, if desired, I may use the 70 electric lighter shown in the drawings, in which one of the electrodes 36 is applied to the discharge end of the pipe 34, and the other electrode is on the end of the swinging lever 37. A wiping contact of the electrodes 75 is made by swinging the lever 37 by means of the push-rod 38, which is fastened to it and extends through the rim of the stove to the outside, where it terminates with the button 39. Between the button and the stove-rim 80 is the spring 40, which presses the rod in an outward direction, so that by pressing the button the spark to light the thief will be produced.

This device of an automatic cut-off is ap- 85 plicable without departing from the spirit of the invention to gasoline and oil burners to cut off the supply of hydrocarbon to the burner, and I therefore do not desire to limit the invention in its application to gas-burners, 90 as shown and described. It is also capable of variations in form and modifications to adapt it to the many varieties of burners and stoves now in use and for other purposes, all of which modifications I desire to include as 95 a part of this invention, and

What I claim as new, and wish to secure by Letters Patent, is—

1. The combination with a burner having a fuel-supply, a lever pivotally supported adjacent to said burner, and a stem secured to the lever having a pusher-head above the burner, said stem being angular in cross-section; of a cut-off for the fuel-supply comprising a body having inlet and outlet passages, 105 a conical valve moving lengthwise of its axis to control a conical opening between said passages and a valve-stem connecting the valve with an end of said lever.

2. The combination with a burner having 110 a fuel-supply, a lever pivotally supported adjacent to said burner, and a stem angular in cross-section secured to the lever having a pusher-head above the burner, of a cut-off for the fuel-supply comprising a body having inlet 115 and outlet passages, a conical valve moving lengthwise of its axis to control an opening between said passages, a valve-stem connecting the valve with an end of the lever, and a by-pass from the supply to the burner 120 which is independent of the cut-off mechanism.

3. In a gas-burner for stoves, a cut-off between the supply-pipe and the mixer comprising a body having separate inlet and outlet 125 passages, a downwardly-tapering opening between the two passages, a valve making its seat in said opening, an opening in the lower wall of the body outside of the lower passage having an inward taper, a valve making 130 its seat in said lower opening, a two-part transversely-separable valve-stem connect-

ing the two valves and a lever to operate said stem.

4. The combination with a stove of a gas-supply pipe, a burner under an opening in the top of the stove, an auxiliary supply-pipe between the burner and the main supply, a cock in the auxiliary supply-pipe, a mixer between the cock and the burner, a cut-off between the cock and the mixer, comprising
 10 a body having an inlet and a discharge, a conical seat between the inlet and discharge, a conical valve moving longitudinally of its axis and seating in said conical seat, said body having an outside opening for the in-
 15 troduction of said valve, a cap closing said opening having an inside socket, a valve-stem extending into said socket and passing out at the opposite side of the body, a small pipe leading from the body between the valve-
 20 seat and the inlet-pipe and discharging at the burner, an electric igniter to ignite the gas issuing from the small pipe, a lever for operating the cut-off connected with the valve-stem, and a pusher-head supported from the
 25 end of the lever opposite the cut-off, said pusher-head projecting above the top of the stove when the cut-off is closed.

5. The combination with a stove, of a gas-supply pipe, a burner under an opening in the top of the stove, an auxiliary supply-pipe between the burner and the main supply, a cock in the auxiliary supply-pipe, a mixer between the cock and the burner, a cut-off between the cock and the mixer comprising
 30 a body having an inlet and a discharge, a conical seat between the inlet and discharge, a conical valve moving longitudinally of its axis and seating in said conical seat said body having an outside opening for the introduc-
 35 tion of said valve, a cap closing said opening having an inside socket, a valve-stem extending into said socket and passing out at

the opposite side of the body, a small pipe leading from the body between the valve-seat and the inlet-pipe and discharging at the burner, a lever for operating the cut-off connected with the valve-stem, a pusher-head supported from the end of the lever opposite the cut-off and a weight on said lever which is longitudinally adjustable thereon for purposes of regulation. 45 50

6. The combination with a burner of a fuel-supply, a cut-off in said fuel-supply comprising a body having an inlet and a discharge opening and a conical valve-seat between the two forming a communication between them, a conical valve moving longitudinally of its axis to open and close the said communication, an outside opening at the top of the body to allow the introduction of said valve
 55 said opening being closed by a cap and said cap having an under side socket, a valve-stem from said valve taking into said socket and being guided thereby, a pilot to light the burner extending from the inlet-pipe to said
 60 burner, a stem depending from the valve above mentioned and passing out through an opening in the cut-off body, a conical valve-seat in said outer wall of said body, an auxiliary conical valve on said stem to stop the
 65 leakage through said lower valve-seat when the supply to the burner is open, a housing around the lower valve, a lever pivoted to the under side of the burner, to which the lower end of the valve-stem is fastened, a
 70 pusher-head above the burner and a stem connecting the pusher-head with the lever. 75

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 23d day of July, A. D. 1903.

PETER F. GLAZIER. [L. S.]

Witnesses:

S. MAHLON UNGER,
 J. A. MINTURN.