C. R. LOTT.

AUTOMATIC GAS CUT-OFF.

APPLICATION FILED SEPT. 28, 1912.

1,067,434. Patented July 15, 1913.

Fig. 1.

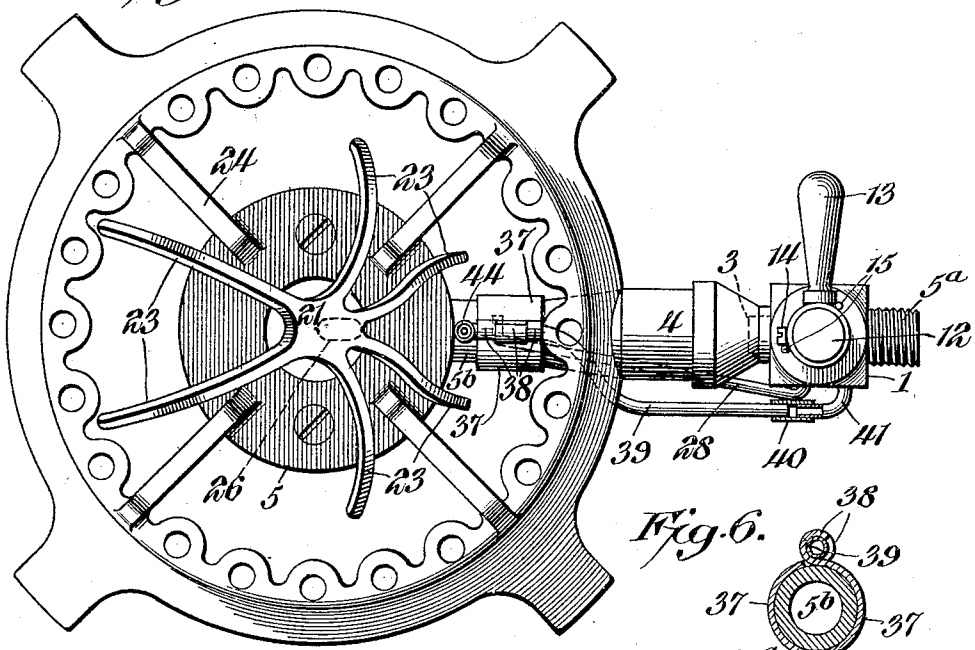


Fig. 6.

Fig. 2.

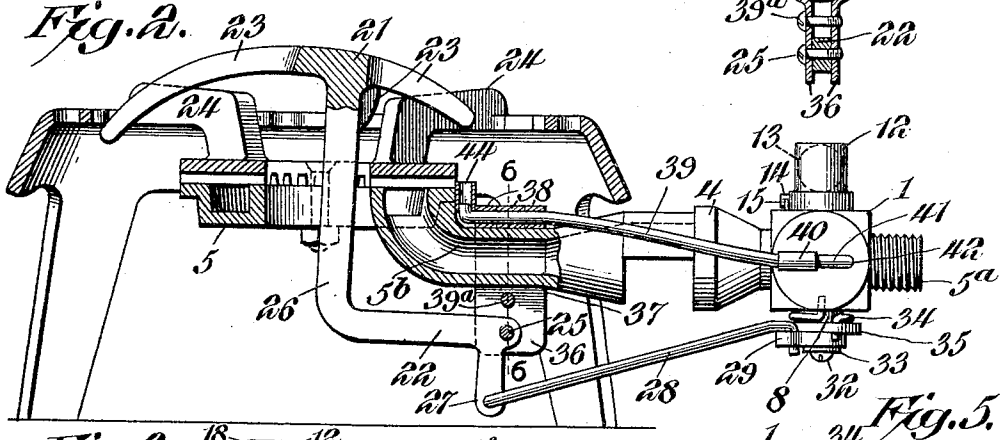


Fig. 5.

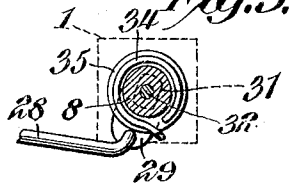


Fig. 3.

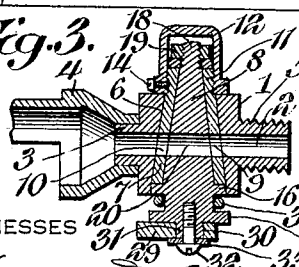
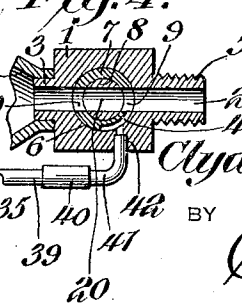


Fig. 4.



WITNESSES

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AUTOMATIC GAS CUT-OFF.

1,067,434. Specification of Letters Patent. Patented July 15, 1913.

Application filed September 28, 1912. Serial No. 722,992.

To all whom it may concern:

Be it known that I, CLYDE R. LOTT, a citizen of the United States, residing at Washington, in the District of Columbia, have invented a new and useful Automatic Gas Cut-Off, of which the following is a specification.

The invention relates to an automatic cut-off attachment for gas stoves.

The object of the present invention is to improve the construction of automatic controlling devices for gas stoves, and to provide a simple, inexpensive and efficient cut-off, adapted to be automatically operated through the placing of cooking utensils upon and their removal from a stove and equipped with manually operable means, capable of permitting a free passage of the gas to a pilot light tube, and also of being operated to vary the flow of the gas without affecting the operation of the said pilot light tube, and also of entirely cutting off the flow of gas both to the burner and to the pilot light tube.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claim hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claim, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing, Figure 1 is a plan view of a gas burner provided with an automatic gas cutoff, constructed in accordance with this invention. Fig. 2 is a vertical longitudinal sectional view of the same, the valve being shown in elevation. Fig. 3 is a vertical longitudinal sectional view of the valve. Fig. 4 is a horizontal sectional view of the same. Fig. 5 is a detail horizontal sectional view, illustrating the arrangement of the spring for actuating the valve plug in the closing movement thereof. Fig. 6 is a transverse sectional view on the line 6—6 of Fig. 2.

Like numerals of reference designate corresponding parts in all the figures of the drawing.

In the accompanying drawing in which is illustrated the preferred embodiment of the invention, 1 designates a valve casing of substantially cubical form having a horizontal bore or opening 2 to form a passage for the gas and equipped at the inner end thereof with a smooth projecting portion 3 adapted to fit in the outer end of the nozzle 4 of a burner 5 to form a thrust joint for enabling the burner to be readily connected with and disconnected from the valve casing in the usual manner.

The valve casing is provided at the outer end of its bore or opening with a threaded extension 5^a, adapted to be connected with an ordinary gas pipe or other source of supply. The valve casing is also provided with an upwardly tapered vertical opening 6, forming a valve seat and receiving a tapered tubular closure member 7, which forms a seat for a tapered valve plug 8. The tubular closure member, which is provided with diametrically opposite port openings 9 and 10, when fitted in the valve casing projects slightly above the top of the casing and terminates short of the lower face of the casing, as clearly illustrated in Fig. 3 of the drawing. The projecting upper end 11 of the tubular closure member 7 is exteriorly threaded for the reception of an interiorly threaded cap 12 of a handle 13, constituting means for manually operating the closure member 7. The closure member is limited in its movement by a screw 14 piercing the cap and operating between spaced stops 15, which are arranged to permit a quarter revolution of the closure member. The screw 14 also engages the projecting upper portion of the closure member and holds the handle rigid with the same.

The plug 8, which is adapted to rotate within the hollow closure member, is provided at its lower portion with an annular flange 16, fitting against the lower edge of the hollow closure member and arranged within the lower end of the vertical opening of the valve casing in flush relation with the lower face of the latter. The upper end 18 of the valve plug projects beyond the upper end of the hollow closure member, and is threaded to receive a nut 19, a washer being preferably interposed between the nut and the upper end of the tubular closure member. The nut and the washer are located within the cap 12 of the handle 13 and are concealed and protected by the same.

The valve plug is provided with a port or opening 20, arranged in the plane of the bore

or opening of the valve casing and adapted to be turned into and out of register with the same by the automatic means hereinafter described to turn on the gas and cut off the same when the outer closure member is in position to permit the valve plug to control the flow of gas to the burner. The openings 9 and 10 of the tubular closure member are arranged in the horizontal plane of the bore or opening of the valve casing, and when the handle 13 is at the limit of its movement in one direction, the openings 9 and 10 register with the bore or opening of the valve casing, and when at the limit of its movement in the opposite direction, the openings 9 and 10 are carried away from the bore or opening 2 of the valve casing and imperforate portions of the tubular member 7 are brought opposite the bore or opening 2 and close the same and prevent a flow of gas to the burner. When, however, the openings 9 and 10 are in register with the bore or opening 2 of the valve casing, the flow of gas is controlled by the means for automatically operating the valve plug.

The means for automatically operating the valve plug comprises a controller 21, consisting of a head and an angle lever 22. The head of the controller is provided with radial arms 23 curved downwardly from the center, and their outer terminals do not project above the grid 24 of the burner so that the controller may be depressed to operate the cutoff either by depositing a vessel upon the grid 24, or shoving it laterally over the same, and in sliding a vessel over the grid there is no danger of injuring the controller.

The angle lever, which is mounted on a transverse pivot 25, consists of an upper L-shaped arm 26 and a lower depending arm 27. The L-shaped arm extends inwardly or rearwardly from the pivot and upwardly through the burner 5 and supports the head of the controller above the burner 5. The lower depending arm 27 is connected by a rod 28 with a short arm 29, secured to the lower end of the valve plug and projecting horizontally therefrom. The arm 29 is provided with an opening 30 to receive a reduced portion 31 of the valve plug, and it is secured thereon by a screw 32, engaging a threaded bore or socket of the valve plug and carrying a washer 33, which extends beyond the opening 30 and bears against the lower face of the arm 29.

The valve plug 8 is automatically maintained in its closed position by a curved spring 34, extending around the valve plug and arranged in a groove formed by the flange 16 and a lower annular flange 35. One end of the spring is secured to the lower flange 35 and its other end is connected to the valve casing. The opening movement of the valve plug distends the spring, which is adapted to contract and close the valve plug automatically when the controller is relieved of pressure.

The angle lever of the controller is supported between depending terminal extensions or flanges 36 of a sectional sleeve or clamp 37, embracing the mixing tube 5^b of the burner and composed of two semicircular sections provided at the top with reversely arranged open eyes or hooks 38, and hinged together by a pilot light tube 39, which passes through the open eyes or hooks. The sections of the clamp or sleeve are detachably interlocked with the pilot light tube and enables the parts to be readily assembled or separated. The lower ends of the sections are extended to form the flanges 36 and are connected by a screw 39^a, or other suitable fastening device.

The pilot light tube is provided at its outer portion adjacent to the valve casing with a smooth coupling sleeve 40, which provides a detachable connection between the main or body portion of the pilot light tube and an elbow 41. The elbow 41 is mounted on the valve casing and extends into a transverse bore or opening 42, which communicates with an arcuate channel 43, extending horizontally from one side of the opening 9 and terminating about midway between such side of the opening 9 and the other opening 10. When the tubular closure member 7 is in its open position, as illustrated in Fig. 4 of the drawing, the channel permits a free passage of gas from the supply pipe to the pilot light tube, and the rotary movement of the valve plug does not affect the flow of gas through the channel 43 to the pilot light tube. When the tubular closure member is entirely open, the channel 43 extends some distance beyond the bore or opening 42 to permit an adjustment of the tubular closure member to vary the flow of gas without affecting the free passage of the same to the pilot light tube. When, however, the tubular member is carried to the limit of its closing movement, the channel is moved to a point beyond the bore or opening 42, and the flow of gas to the pilot light tube is cut off.

The pilot light tube extends from the valve casing along one side of the nozzle and has its inner portion arranged centrally over the mixing tube 5^b, and its inner end, which is upturned, is equipped with a nipple 44, which provides an enlarged opening in which the gas from the pilot light tube mixes with the air. The nipple is adapted to protect the gas from the pilot light tupe to insure the continuous burning of the same, and it is located adjacent to the burner 5 so that the pilot light will ignite the gas at the burner in the usual manner.

What is claimed is:—

An automatic cutoff of the class described

including a valve casing having a passage and provided with an opening forming a valve seat, a pilot light tube connected with the valve casing and communicating with the said opening, a tubular closure member located in the opening and provided with spaced ports arranged to be carried into and out of register with the passage of the valve casing, said tubular closure member being also provided with an arcuate channel extending from one of the said openings and arranged to permit the tubular closure member to be turned to control the flow of gas through the valve casing without affecting the flow of gas to the pilot light tube, a valve plug operating within the tubular valve closure and provided with a port opening arranged to be carried into and out of register with the passages of the valve casing, manually operable means connected with the top of the tubular closure member, and automatically operable means connected with the bottom of the valve plug for actuating the same.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CLYDE R. LOTT.

Witnesses:
JOHN H. SIGGERS,
EDITH L. BROWN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."