W. J. KENNEDY.

AUTOMATIC VALVE.

APPLICATION FILED JULY 30, 1913.

1,190,656. Patented July 11, 1916.

Fig. 1

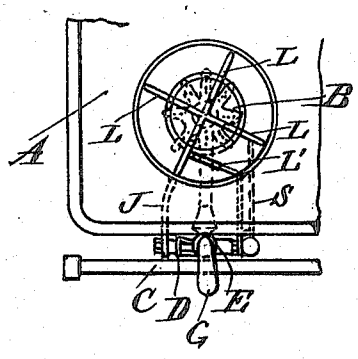


Fig. 8

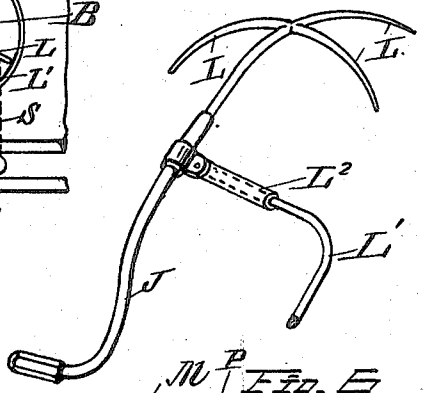


Fig. 2

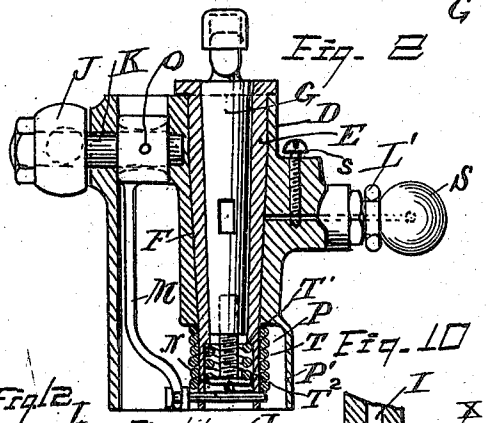


Fig. 6

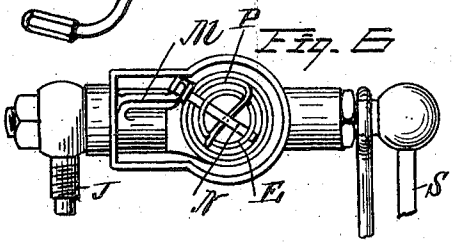


Fig. 10

Fig. 12

Fig. 11

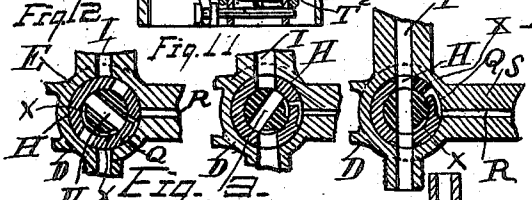


Fig. 3.

Fig. 4

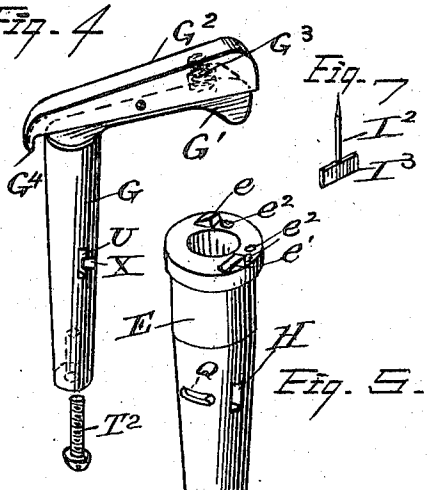


Fig. 7

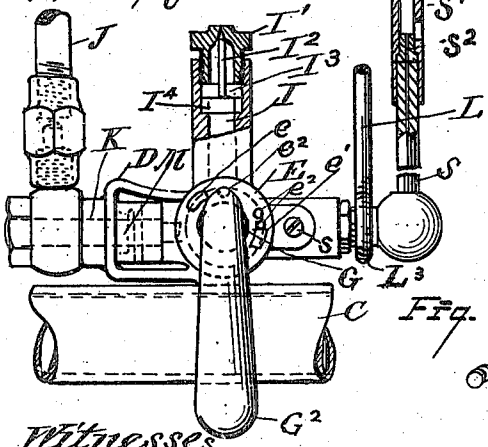


Fig. 9



Fig. 5.

Witnesses
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WALTER J. KENNEDY, OF CLEVELAND, OHIO, ASSIGNOR TO THE FUEL ECONOMIZER COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

AUTOMATIC VALVE.

1,190,656. Specification of Letters Patent. Patented July 11, 1916.

Application filed July 30, 1913. Serial No. 782,112.

To all whom it may concern:

Be it known that I, WALTER J. KENNEDY, a citizen of the United States, and resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Automatic Valves; of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

The objects of the invention are to provide an improved tilting lever and valve operated by cooking utensils when placed upon a gas or fuel oil stove, in which the flow of fuel gas is controlled by the action of the lever and valve, which controls in turn the supply of gas to the burner and by means of which the supply of fuel gas to the burner is automatically increased when the cooking utensil is placed over the burner and decreased when the utensil is removed, thus economizing the use of fuel, and reducing the danger of burning the hands or clothing while the cooking utensils are being placed on the burners and removed therefrom.

The invention comprises an improvement upon the inventions described and claimed in my former Letters Patent No. 867,139 issued September 24, 1907, No. 887,945 issued May 19, 1908, and No. 894,957 issued August 4, 1908.

In this invention a simpler, more efficient and practical form of device is employed in which the flow of gas is direct and unobstructed to the burner and in which the valve is made to occupy less space, so that it can be applied to all forms of gas stoves and ranges as a standard form of valve.

The invention includes a main rotary valve, furnishing a direct means of communication from the supply tube to the burner, and pilot light, and an auxiliary valve rotatable within the main valve for controlling the amount of gas fed to the burner and pilot light.

It includes automatically acting means controlled by the action of the utensil support for operating the main valve and separate manually operated means for adjusting the position of the auxiliary valve relative to the main valve.

The invention further includes the combination and arrangement of parts and construction of details hereinafter described, illustrated in the accompanying drawings and specifically pointed out in the claims.

In the accompanying drawings Figure 1 is a plan view of a burner showing the device in operation; Fig. 2 is an enlarged vertical section of the valve; Fig. 3 is a plan view of the same; Fig. 4 is a perspective view of the auxiliary valve; Fig. 5 is a similar view of the main valve; Fig. 6 is a bottom view of the valve and casing; Fig. 7 is a perspective view of a needle valve for adjusting the flow of gas to the mixer; Fig. 8 is a perspective view of the tilting lever and fingers thereon; Fig. 9 is a perspective view of the pin which secures the main spring for the valve and is employed to operate the valve; Fig. 10 is a transverse section of main and auxiliary valves showing the port openings therein. Fig. 11 is a transverse section of main and auxiliary valves showing inlet I closed and pilot inlet open. Fig. 12 is a transverse section of main and auxiliary valves showing inlets to burner and pilot light closed.

In these views A represents the top plate of a gas stove, B the burner, C, the gas supply pipe leading thereto.

D is the valve casing placed intermediate of the top A of the stove and pipe C and so constructed and arranged as to be applicable to this confined position in all stoves and ranges. To obtain the compact form of valves desired, a main rotary valve E is seated in a transverse seat F in the casing, and an auxiliary valve G is rotatably mounted within the main valve, and after adjustment the auxiliary valve moves with the main valve.

The main valve is provided with the port H which in the position of the valve shown in Figs. 2 and 3 forms a direct communicating passage without tortuous passages of any kind communicating with the pipe C and the jet I leading to the burner. This valve is automatically operated by means of the tilting lever J mounted upon a rock shaft K and at its outer end is provided with the downwardly turned fingers L which form smooth rounded extremities for the lever that will offer no resistance, so that a cooking utensil will depress the lever easily when sliding over the stove. A rock arm M depending from the shaft K engages a pin N radially extending from the lower

extremity of the valve and rotates the valve to open and close the port H. This rock arm is pivoted at O upon the shaft so as to be capable of a certain amount of freedom of movement so that its lower extremity will follow the pin N in its changing positions as the valve rotates. The valve is closed automatically by means of the torsion of a coiled spring P sleeved about the end of the valve and seated in an enlargement P′ of the casing. The smaller port Q in the main valve is always in communication with the opening R leading to the tube S for the pilot light which in this invention is independent of the tilting lever.

The auxiliary valve G is pivoted centrally within the main valve and secured therein by means of the spring T engaging a shoulder T′ upon the main valve and a screw T^2 which is rigidly seated in the lower end of the auxiliary valve. The auxiliary valve has only one opening U which controls the passage of gas through the main valve. This opening communicates also with the small radial opening leading to the pilot light at all times except when all gas is entirely shut off from the jet pipe. This is permitted by means of the short chamfers X, X at the edges of the main radial opening U. The auxiliary valve G is provided with a handle G′ upon which is pivoted a catch G^2 pressed by a spring G^3 and having a downwardly extending point G^4. This point when depressed can be made to engage at option with either of the indentations e^2, e^2, spaced upon the upper extremity of the main valve, and stops e, e' limit the movement of the auxiliary valve. The three positions represent respectively wide open, closed, and partially open.

The openings Q and X upon the valves furnish communication between the gas inlet pipe and the pilot light except in one position shown in Fig. 11.

In Figs. 3 and 7 are shown a stationary needle valve I^2 which is provided with narrow side wings I^3 which are inserted in slots I^4 in the extremity of the jet pipe I. Upon the end of this pipe is adjustably screwed the jet I′ into the orifice of which the stationary needle enters when the jet is moved up and down the pipe. In this manner a simple and convenient means of adjustment is afforded for the jet orifice.

In Figs. 1 and 8 the lever which operates the main valve is shown. Here the lever J is provided with an outer extremity longitudinally adjustable in the main portion and provided with fingers L which are curved downwardly to permit a utensil to slide over and depress them, and a brace bar for the lever is shown at L′ which is laterally adjustable in the sleeve L^2 secured to the main portion J. The outer end of the brace is provided with an eye L^3 which encircles a portion of the pilot tube and pivots thereon.

The outer extremity of the pilot tube is provided with an air mixer S′ sleeved thereover and inclosing a perforated plug S^2.

Having described the invention what I claim as new and desire to secure by Letters Patent is:

1. In a valve for a gas stove, a valve casing, a shaft in said casing, a lever secured thereto, and having an extensible outer end, laterally and downwardly extending fingers secured to said extension, an extensible brace for said lever having one end pivoted in said casing, and the other adjustably secured to said lever, a main rotary valve in said casing, a radial member extending from said valve, an arm upon said shaft, engaging said radial member, and a return spring for said valve, arm and lever.

2. A lever for operating the valve of a gas burner for a cook stove, comprising, a main portion and an adjustable extremity therefor, said extremity provided with laterally and downwardly extending fingers, and a brace bar therefor, said brace bar adjustably connected with said main portion.

3. A valve operating lever for a gas stove adapted to be depressed to operate the valve when a cooking utensil is placed thereon, said lever comprising a body portion operatively connected with said valve, an outer extremity for said lever, longitudinally adjustable in the body portion, fingers upon said outer extremity having laterally and downwardly turned portions, and a brace rod for said lever secured to the lever, and laterally adjustable relatively thereto.

In testimony whereof, I hereunto set my hand this 15th day of July, 1913.

WALTER J. KENNEDY.

In presence of—
CHAS. H. OLDS,
WM. M. MONROE.

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