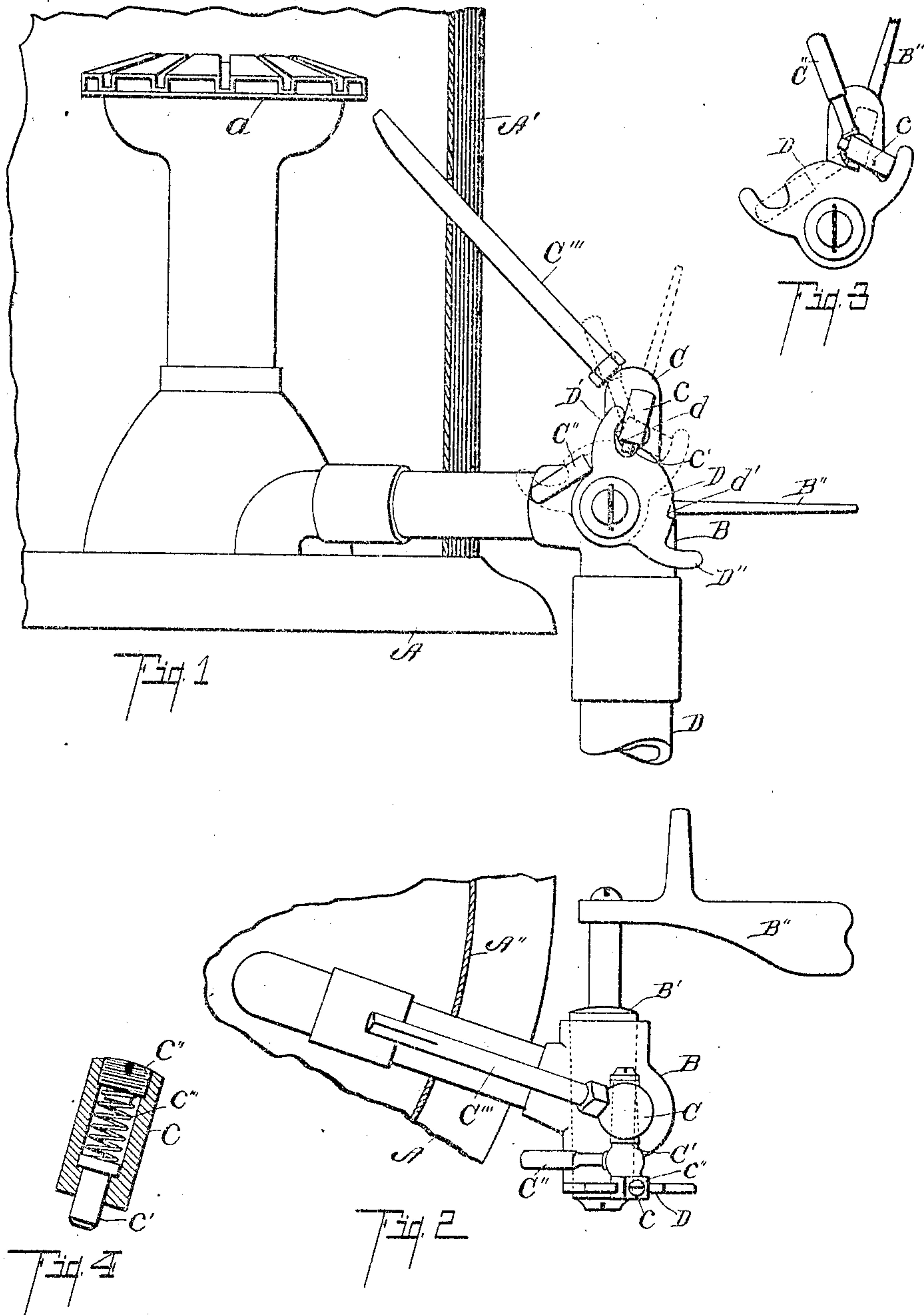


No. 888,237.

PATENTED MAY 19, 1908.

H. S. HUMPHREY.  
VALVE FOR GAS BURNERS.  
APPLICATION FILED JUNE 27, 1906.



Witnesses:  
Lulu G. Grunfeld  
Annie J. Alber

Inventor.  
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Att'ys



# UNITED STATES PATENT OFFICE.

HERBERT S. HUMPHREY, OF KALAMAZOO, MICHIGAN.

## VALVE FOR GAS-BURNERS.

No. 888,237.

Specification of Letters Patent.

Patented May 19, 1908.

Application filed June 27, 1906. Serial No. 323,587.

*To all whom it may concern:*

Be it known that I, HERBERT S. HUMPHREY, a citizen of the United States, residing at Kalamazoo, county of Kalamazoo, State of Michigan, have invented certain new and useful Improvements in Valves for Gas-Burners, of which the following is a specification.

This invention relates to improvements in valves for gas burners. In the use of gas burners lighted by pilots, serious explosions have occurred owing to the turning on of the burner valve and allowing considerable quantity of gas to escape before turning on the pilot valve.

The objects of this invention are: first, to provide in a structure having a gas burner and a pilot burner an improved structure and arrangement of valves in which it is impossible for the main or burner valve to be opened until the pilot valve has been opened. Second, to provide in such a structure pilot and burner valves which co-act and serve as stops for limiting movement of each other. Third, to provide a structure of the class described in which it is impossible to close the pilot valve until the main or burner valve is fully opened. Fourth, to provide a structure of the class described which is very economical to produce and at the same time very effective for the purpose and durable in use.

Further objects, and objects relating to structural detail will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawings forming a part of this specification, in which,

Figure 1 is a detail elevation of the structure embodying the features of my invention, the casing A of the burner being shown in vertical section; the open position of the valves being indicated by dotted lines. Fig. 2 is a detail plan of the structure appearing in Fig. 1, the burner a being omitted. Fig. 3 is a detail side elevation showing the burner and the pilot valves in their open position the pilot valve being indicated in its closed position by the dotted lines. Fig. 4 is an enlarged section through the stop block c of the pilot valve, the yielding stop pin c', the screws c'' and the spring c''' being shown in full lines.

In the drawings similar letters of reference refer to similar parts throughout the several views.

Referring to the drawing, A represents the base of the casing in which the burner a is supported, and A' the wall of the casing.

D is the gas supply pipe. The gas supply pipe is provided with a valve consisting of a suitable casing B and valve plug B', on the stem of which is a handle or finger piece B''. The pilot valve casing C is mounted upon the burner valve casing B and is preferably cast integral therewith. The pilot C''' is arranged through the casing A' at a point near the main burner. The pilot valve C' is provided with a suitable finger piece C''.

Secured to the burner valve plug is a stop plate D, having upwardly projecting stops D', D'' at its ends. The edge of the stop plate is provided with notches d d', the objects of which will appear later. On the pilot valve is a stop block c in which is arranged a yielding stop pin c'. This pin is held normally outward by the coiled spring c''' arranged within the block, the spring being held in position by the screw plug c''. With the parts thus arranged the stop block c on the pilot valve serves as a stop limit to the movement of the main burner valve, the same being engaged by the projecting stops D' D'' on the stop plate D; see Figs. 1 and 3. The stop plate D serves as a stop to limit the movement of the pilot valve, its open position being indicated by dotted lines in Fig. 1 and its closed position being indicated by the dotted lines in Fig. 3, in which position the stop pin c' engages the notch d' in the stop plate. When the valves are in their closed position, as shown in Fig. 1, the pin c' engages in the notch d of plate D, thereby preventing the opening of the main valve until the pilot valve is opened. With the main valve partly open, it is impossible to close the pilot valve as the stop block thereon is engaged by the edge of the stop plate. This arrangement prevents the opening of the main valve until after the pilot valve is fully opened and also prevents the closing of the pilot valve until the main valve is fully opened. It also avoids the necessity of any additional stops for the valves, which is of advantage in the manufacture, as it simplifies the casting and also enables the grinding of the valves into their seats as they can be turned therein.

Further advantages will readily appear to



those skilled in the art to which this invention relates.

I have illustrated and described my improvements in the form preferred by me although I am aware that they are capable of considerable variation in structural detail without departing from my invention.

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

1. The combination with a gas burner and a pilot light, of a valve for said burner; a valve for said pilot light; a stop block on said pilot valve; a yielding pin carried thereby; a spring arranged to hold said pin yieldingly outward; and a stop plate on said burner valve arranged to coact with said stop block, said stop plate having outwardly-projecting stops at the ends thereof, adapted to engage said stop block to limit the movement of said burner valve, and notches in its edges adapted to receive said stop block to permit the opening or closing of said pilot valve only when said burner valve is in its closed or in its fully opened position, said pin carried by said stop block, being adapted to yield to permit the closing of said burner valve while the pilot valve is closed and to automatically engage said stop plate when the burner valve is closed and retain it in its closed position until disengaged by the opening of the pilot valve.

2. The combination with a gas burner and a pilot light, of a valve for said burner; a valve for said pilot light; a stop block on said pilot valve; a yielding pin carried thereby; a spring arranged to hold said pin yieldingly outward; and a stop plate on said burner valve arranged to coact with said stop block, said stop plate having notches in its edges adapted to receive said stop block to permit the opening or closing of said pilot valve only when said burner valve is in its closed or in its fully opened position, said pin carried by said stop block being adapted to yield to permit the closing of said burner valve while the pilot valve is closed and to automatically engage said stop plate when

the burner valve is closed and retain it in its closed position until disengaged by the opening of the pilot valve.

3. The combination with a gas burner and a pilot light, of a valve for said burner; a valve for said pilot light; a stop block on said pilot valve provided with a yielding portion; and a stop plate on said burner valve arranged to coact with said stop block, said stop plate having outwardly-projecting stops at the ends thereof, adapted to engage said stop block to limit the movement of said burner valve, and notches in its edges adapted to receive said stop block to permit the opening or closing of said pilot valve only when said burner valve is in its closed or in its fully opened position, said yielding portion of said stop block being adapted to permit the closing of said burner valve while the pilot valve is closed and to automatically engage said stop plate when the burner valve is closed and retain it in its closed position until disengaged by the opening of the pilot valve.

4. The combination with a gas burner and a pilot light, of a valve for said burner; a valve for said pilot light; a stop block on said pilot valve provided with a yielding portion; and a stop plate on said burner valve arranged to coact with said stop block, said stop plate having notches in its edges adapted to receive said stop block to permit the opening or closing of said pilot valve only when said burner valve is in its closed or in its fully opened position, said yielding portion of said stop block being adapted to permit the closing of said burner valve while the pilot valve is closed and to automatically engage said stop plate when the burner valve is closed and retain it in its closed position until disengaged by the opening of the pilot valve.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

HERBERT S. HUMPHREY. [L. S.]

Witnesses:

LULU G. GREENFIELD,  
OTIS A. EARL.