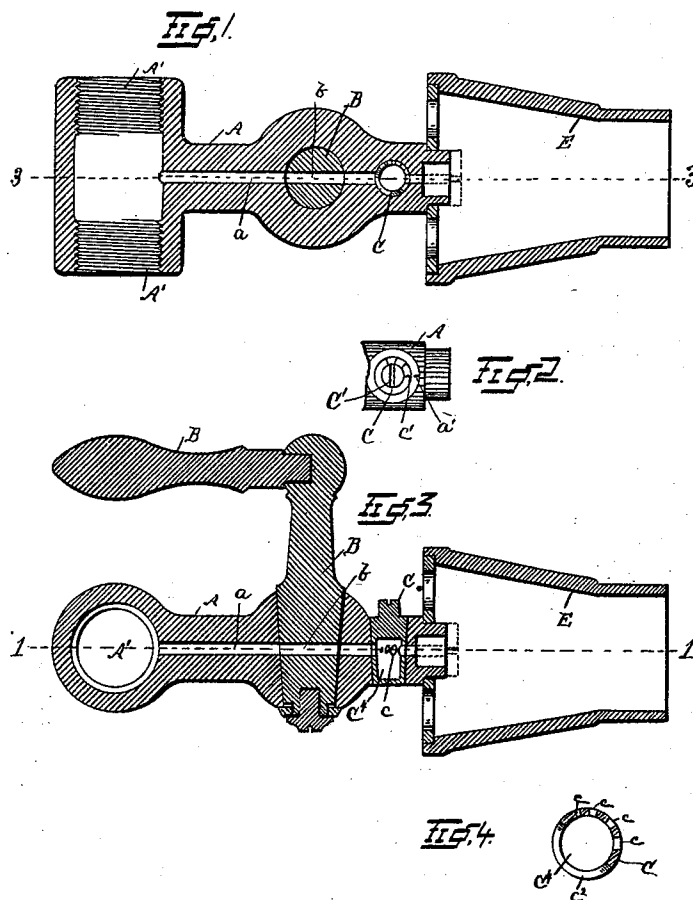


(No Model.)

J. B. WALLACE.
COCK FOR GAS STOVES, &c.

No. 527,567.

Patented Oct. 16, 1894.



Witnesses
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UNITED STATES PATENT OFFICE.

JACOB B. WALLACE, OF ERIE, PENNSYLVANIA.

COCK FOR GAS-STOVES, &c.

SPECIFICATION forming part of Letters Patent No. 527,567, dated October 16, 1894.

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To all whom it may concern:

Be it known that I, JACOB B. WALLACE, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Cocks for Gas-Stoves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to cocks for gas stoves, and consists in certain improvements in the construction thereof as will be hereinafter fully described and pointed out in the claims.

Figure 1 is a horizontal section of the cock on the line 1—1 in Fig. 3. Fig. 2 is a plan of the top of the adjusting cock, showing the registering dial. Fig. 3 is a vertical section on the line 3—3 in Fig. 1. Fig. 4 is an enlarged section of the adjusting cock plug the line of section being the same as in Fig. 1.

A marks the body of the cock; A' A', the ordinary connection fittings thereon; *a*, the way leading through the cock body; B, the plug of the controlling cock; B', its handle; *b*, the way through said plug; C, the plug of an adjusting cock, preferably placed between the controlling cock and the mixer, and E the mixer.

In gas stoves it is desirable that the cock have an accurately and positively ascertainable variable capacity. The capacity of the ordinary cock, or valve, can be readily varied by turning them full on or only partly on, but it is difficult to make any number of these so accurately alike that a given predetermined movement of any one of the cocks will have the same effect upon the flow through the cock that the same movement would have upon the flow through any of the other cocks. Of course each cock can be tested and the position of the plug or valve for each capacity registered so that the capacity of the cock at each position can be ascertained without noting the effect of the flow through it, but such a test would be too expensive for the uses to which these cocks are ordinarily put. A cock, the capacity of which can be readily ascertained without such a test is particularly desirable in connection with gas burners, especially in gas stoves where natu-

ral gas is used, as it is seldom that the gas pressures at any two different sections of country are the same, and as the burners and mixers are designed for a certain volume of gas, so that where the pressure is greater a smaller capacity of cock is desirable and vice versa, and an inexperienced person can, with a cock so made and instructions as to the capacity desired for a certain pressure, properly adjust the cock for the best results.

To make a cock having the hereinbefore desired qualities, I make the cock plug, C, preferably with an internal cavity, C¹, therein, and perforate it with a series of ways, *c*, of the various sizes desired, preferably in regular rotation. At the rear of the plug and at the opposite side from the perforation or ways, *c*, is cut the elongated way, *c*², which opens into the way, *a*, of the cock body, and is of such circumferential length that it is open to the way, *a*, whenever any of the ways, *c*, are open to the way, *a*, in front of the plug. This construction is particularly desirable wherever it is desired that the gas should be ejected in the form of a fine jet into a mixer, as it has been found that better results are obtained with a smaller jet at greater pressure than with a larger jet at less pressure. Where an ordinary plug is used having but one straight way, as shown in the drawings, plug, B, and way, *b*, of the controlling cock, and it is desired to use less than the entire capacity of the cock, the cock plug is turned slightly, so that the passage, *b*, is at a slight angle to the passage, *a*, and the gas, as it comes from the way, *a*, is first reduced at the cock side of the plug and then again at the mixer side of the plug so that the force of the jet is very much reduced and its injector force broken. With a plug constructed in accordance with my invention, by reason of the elongated way, *c*², and the internal cavity, C¹, there is but one reduction, and the small or reduced way (*c*) is so short that the friction and loss of pressure are reduced to a minimum, and where the regulating is accomplished (as shown) by means of a series of ways of different sizes opening into an enlarged way at the opposite side of the plug, the jet leaves the plug in a direct line with the way, *a*, and enters the mixer, if the plug is in close proximity to it, in an unbroken

column with substantially the initial pressure of the gas.

In order that the capacity of the cock may be readily ascertainable I place indicating marks on the cock plug, *c'*, and the cock body, *a'*. If the ordinary plug is used these marks will have to be placed by means of a test. Where they are placed on a plug of my improved construction, the marks, *c'*, are preferably placed directly over the ways, *c*, and the mark, *a'*, over the way, *a*, so that it can be ascertained at a glance which of the ways, *c*, is open to the way, *a*, and the cock regulated accordingly.

The features hereinbefore described are especially designed to be used simply for adjusting or auxiliary cocks in connection with a shut-off or controlling cock, and I prefer that the adjusting cock be placed between the controlling cock and the mixer or burner, as shown, in order that the reduction of the flow may be as near the outlet as possible so as to obtain a greater force for the jet, and I also prefer that it have no handle, and be turned simply by a slot, *C'*, the intention being that the position of the adjusting cock should be practically permanent after once adjusted to the pressure.

What I claim as new is—

1. In combination with a fuel gas burner, and the mixer therefor; of a cock placed in the gas way and in close proximity to the mixer, the way in the plug of which is so enlarged in the cock side of the plug as to be in full register with the cock way throughout the regulating movement of said plug.

2. In combination with a fuel gas burner, and the mixer therefor; of a cock placed in

the gas way in close proximity to the mixer, the plug of which has a series of ways of different sizes adapted to be brought one at a time into direct line with the gas way in the cock body.

3. In combination with a fuel gas burner, and the mixer therefor; of a cock placed in the gas way in close proximity to said mixer, the plug of which has a series of regulating ways at one side of the plug, said ways being of different sizes and adapted to be brought into register with the gas way of the cock body one at a time, and all of said ways leading into an enlarged common way at the opposite side of the plug, which said common way registers with the way of the cock body when any one of the regulating ways is in register with said way in the cock body.

4. In combination with a fuel gas burner, and the mixer therefor; of a cock placed in the gas way in close proximity to said mixer, the plug of which has a series of regulating ways in the mixer side of said plug, said ways being of different sizes and adapted to be brought into register with the way leading to the mixer one at a time, and all of said ways leading into an enlarged common way in the cock side of said plug which said common way registers with the ways leading into the cock body when any one of the regulating ways is in register with said way in the cock body leading to the mixer.

In testimony whereof I affix my signature in presence of two witnesses.

JACOB B. WALLACE.

Witnesses:

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