C. W. BOYSE.

GAS COCK.

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928,898. Patented July 20, 1909.

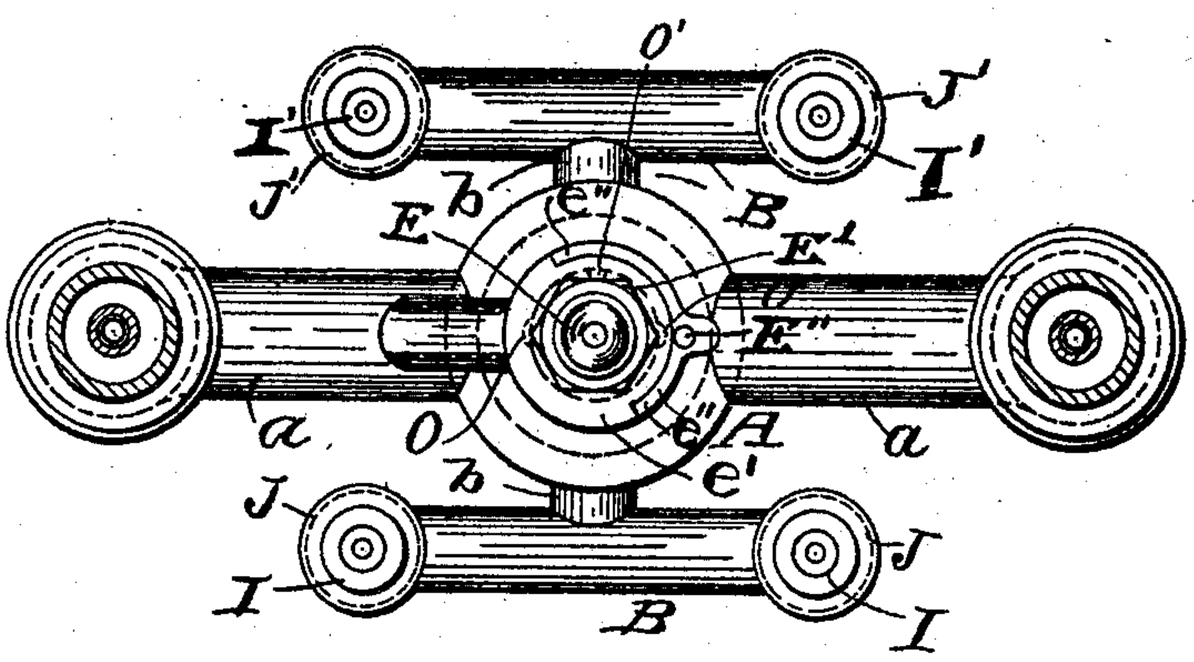

Fig. 1.

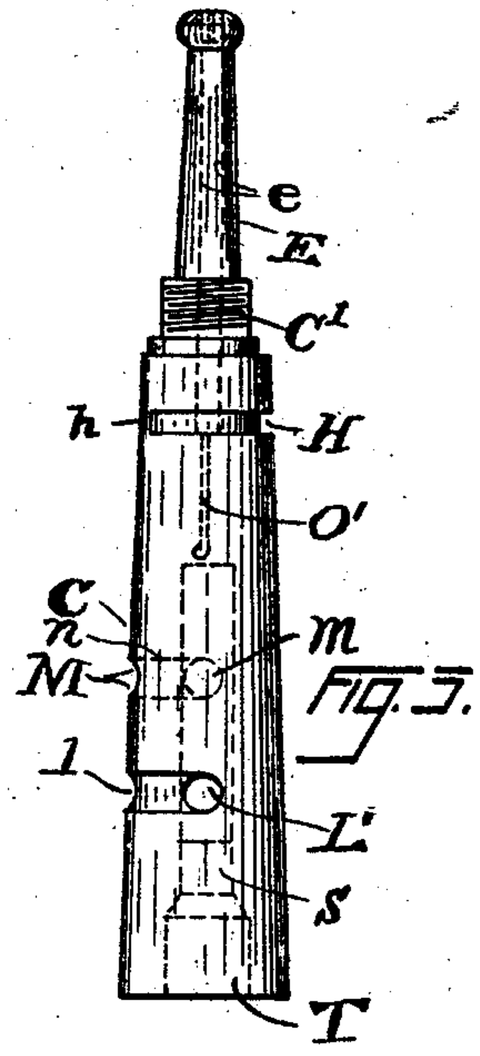

Fig. 3.

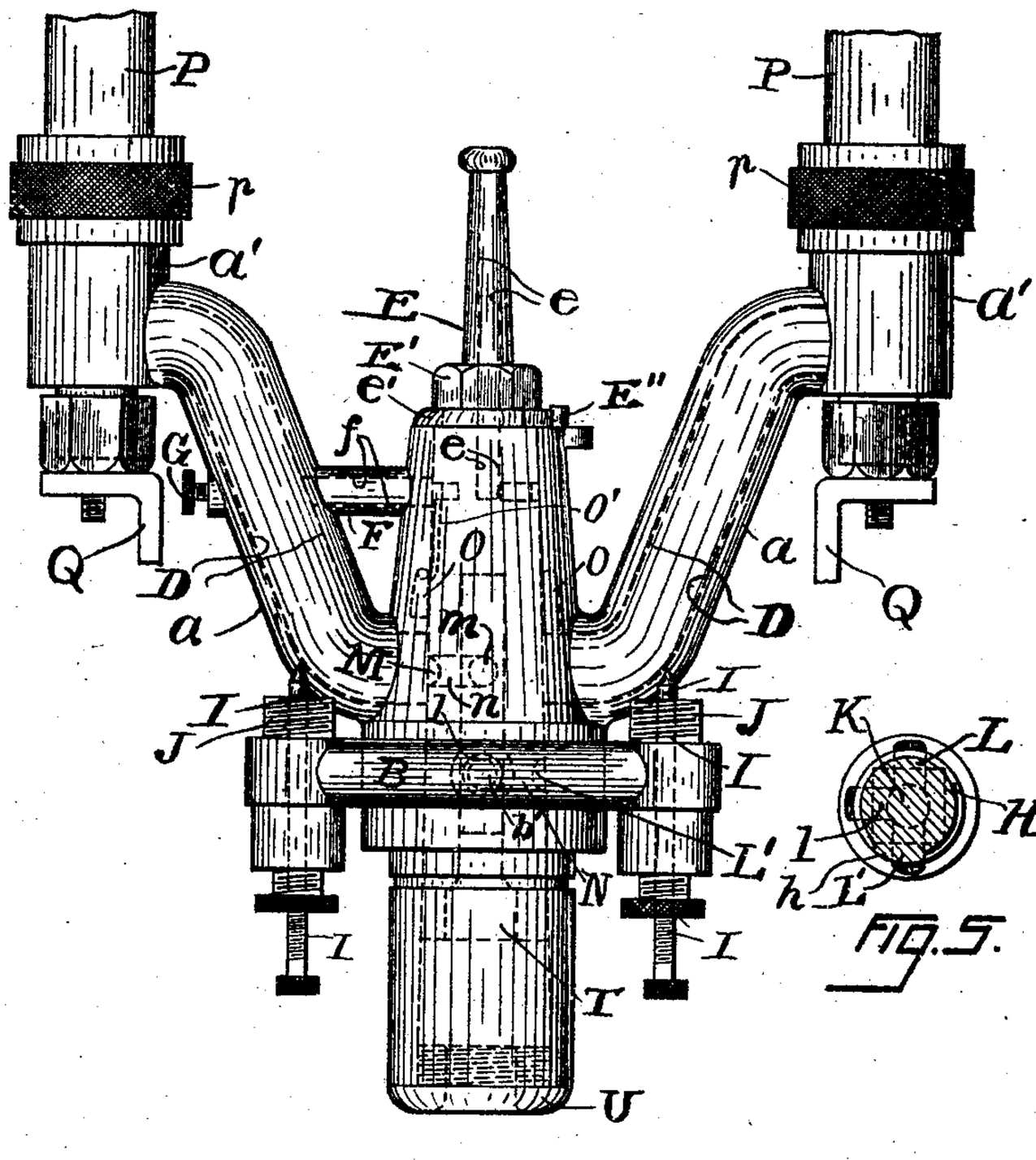

Fig. 2.

Fig. 5.

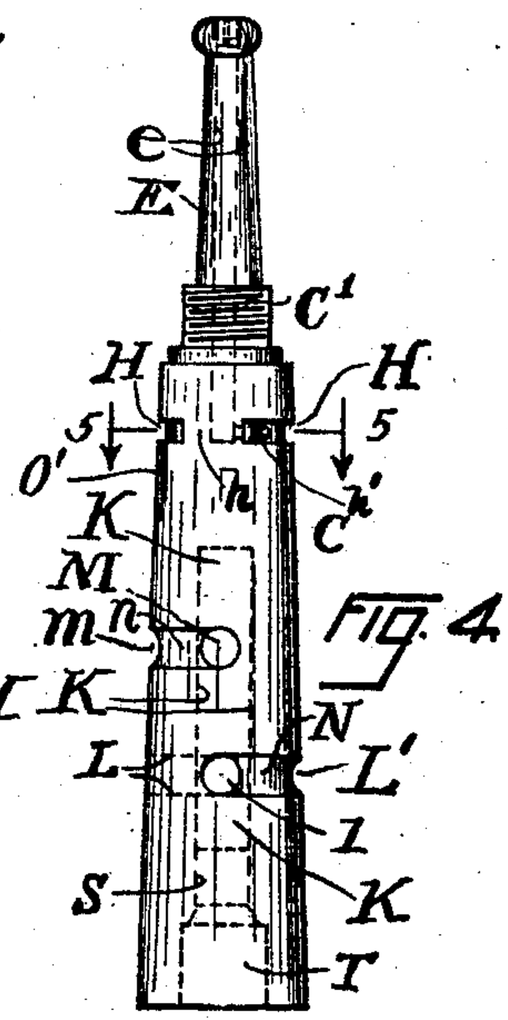

Fig. 4.

WITNESSES:

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GAS-COCK.

No. 928,898. Specification of Letters Patent. Patented July 20, 1909.

Application filed June 17, 1908. Serial No. 439,058.

To all whom it may concern:

Be it known that I, CLEMENT W. BOYSE, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Gas-Cocks, of which the following, when taken in connection with the drawing accompanying and forming a part hereof, is a full and complete description, sufficient to enable those skilled in the art to which it pertains to understand, make, and use the same.

This invention relates to gas cocks used for cluster lamps, usually mantle lamps, and the object of the invention is to obtain a gas cock by means of which a pilot lamp may be maintained lighted when the mantle lamps are not lighted and which will not burn the pilot light when all the mantle lamps are lighted.

A further object of the invention is to obtain a gas cock by means of which a part of the lamps of the cluster may be lighted and the remainder of such mantle lamps will not be lighted, and no gas will flow from the unlighted lamps.

A further object of the invention is to obtain a gas cock which may be suspended by a plurality of gas pipes to which it is attached without danger of its turning or twisting thereon.

A further object is to obtain a gas cock of the kind named which consists of but few parts, easily assembled, not liable to get out of order.

Other objects sought by me are set out in the description of the device, and in the claims.

In the drawings referred to Figure 1 is a top plan view of a device embodying the invention. Fig. 2 is a side elevation of the device. Fig. 3 is a side elevation of the center plug of the device. Fig. 4 is a side elevation of the center plug of the device, viewed at an angle of ninety degrees from the view of Fig. 3, and Fig. 5 is a horizontal sectional view of the center plug of the device, on line 5—5 of Fig. 4, viewed in the direction indicated by the arrows.

A reference letter applied to designate a given part is used to indicate such part throughout the several figures of the drawing, wherever the same appears.

A is the main shell or casing of the device. B, B, are additional shells or casing, respectively attached to shell A by external screw threads on the several branches *b*, *b*, which fit into corresponding screw threads in holes provided therefor in shell A.

a, *a*, are arms on shell A respectively provided with passage ways D, D, therethrough communicating with the central passage way of such shell or casing A, and C is a central plug arranged to fit into the central passage way in shell A and to be turned therein, to open and close the ends of passage ways *b'*, *b'*, and D, D.

a', *a'* are vertical portions of the shell or casing A, located at the upper end of the arms *a*, *a*, and the shell or casing is suspended by gas pipes attached to such vertical portions, as hereinafter described.

E is the pilot of the burner, and is provided with the passage way *e* therein. Pilot E is attached to the upper end of the central plug C, and the passage way *e* in such pilot extends down into the central plug to opposite passage way *f* in by pass F, (see Figs. 2, 3 and 4). The pilot E may be integral with plug C, and is so made in the construction illustrated in the drawing. Plug C and pilot E are secured in position in the shell or casing A by nut E' on screw threads C', with washer *e'* interposed between such nut and the top of the shell or casing A. Washer *e'* turns with the turning of the plug C, and the movement of the plug is limited by cutting out the part of the washer adjacent to stop E''. I have indicated the part of the washer where the portion is cut away by the reference letter *e''*.

Passage way *f'* in by pass F' communicates at one end with the passage way D in one of the arms *a* of shell or casing A, and G is a needle valve by means of which the quantity of gas delivered into such passage way *f* is determined. The inner end of the passage way *f* communicates with the groove H in plug C. The groove H extends nearly around the plug, as is well illustrated in Figs. 3 and 4, and gas is delivered at all times from the passage way *f* into such groove H, in measured quantity, to maintain the pilot light lighted, except when the plug C is turned so that the part *h*, between the ends of groove H, is opposite the end of such passage way, to close it.

As will be hereinafter described, the end of the passage way *f* is closed by part *h* of plug C at the time when all the lamps on

the device are burning, and hence, at such time the pilot is not burning. At all other times the gas supplied to the pilot through such passage way *f*, groove H and the passage way or hole *h'* (see Fig. 4) maintains a small flame to the pilot.

I, I' are valves at the ends of the respective additional shells or casings B, B, and J, J, are screw threaded ends to which an ordinary Bunsen burner with mantle may be attached.

The principal object of the device is to enable the user to light the burners on valves I, I, without lighting those on valves I', I', and to continue to use the lighted burners without the escape of gas from the unlighted ones, and further, to automatically extinguish the pilot lamp when all the burners on the device (on valves I, I, and also I', I'), are lighted. To accomplish these purposes the central plug C is provided with a chamber K, passage ways L and M, *l*, *m*, and L', and grooves N, *n*. Passage ways L, L' form a continuous passage way through plug C one thereof to deliver gas from chamber K to the passage way on one of the additional shells or casings B, and the other to deliver gas to the other one of such passage ways (in the other additional shell or casing B). When plug C is turned so that passage ways L, L' are opposite to or imposed on the ends of the passage ways in such additional shells or casings B, B, all the burners on the device are lighted. Passage way *l* is at right angles to passage way L. The groove N communicates, at one end thereof, with passage way L and at the other end with passage way *l*. One end of passage way *l* communicates with chamber K. Passage ways M, *m* are at right angles to each other, and at their inner ends communicate with the chamber K; at their outer ends they communicate with each other by means of groove *n*.

When the several parts of the device are assembled and the plug C is in the position illustrated in Figs. 2 and 4, gas may flow from passage way D on the left hand side of Figs. 1 and 2, through passage way *m* into chamber K, and from chamber K through passage way *l*, into the one of the additional shell or casings B which is illustrated in Fig. 2. The burners on valves I will be lighted by the pilot, and two of the four burners to the lamp will illuminate the chamber or space in which the lamp is placed.

To insure the lighting of the burners on ends J, J, as the plug C is turned into the position thereof illustrated in Figs. 2 and 4 the groove O is placed in shell or casing A, the lower end of such groove communicating with chamber K, and groove O' is placed in plug C, the lower end of such groove O' passing the upper end of the groove O at about the time gas is discharged from such burners on the ends J, J. The upper end of groove O' communicates with groove H. The pilot light will flare up as the grooves O and O' come into alinement, thus lighting the burners on such ends. To light the additional burners the plug C is turned from the position thereof illustrated in Fig. 4 into the position illustrated in Fig. 3. While turning such plug into such last named position gas flows from the passage way D, as above described, into the groove *n*, and from such groove into chamber K through passage ways *m* and M (or through either one of such passage ways), so that gas is (during such turning) continuously supplied to the chamber K. At the same time gas is continuously discharged from chamber K through the passage way *l* and passage way L', into groove N, and from such groove into the passage way *b'* and to the lamps on ends J, J. When by the turning of the plug C, as last above described, the passage L' registers with passage way *b'*, passage way L will register with the passage way communicating with the burners on ends J', J' of additional shell or casing B, the part or portion *h* of plug C will register with the end of passage way *f*, and gas will be supplied to the burners on ends J', J', while the supply of gas from passage way *f* to the pilot will be shut off.

The device is suspended by gas pipes P, P, which are attached to the ends *a'*, *a'*, by the unions Q, Q, and the globe supporting base of the lamp is attached to the device by means of brackets Q, Q, the upper part of which are shown in Fig. 2.

The chamber K is obtained by drilling or casting a hole in the central plug C and putting the stop S, (Fig. 2) thereinto. Such plug C is turned by squaring the hole in the plug at the lower end thereof, as at T, and inserting a square ended key thereinto. U is a collar put into the lower end of shell or casing A to serve as a guide for the insertion of the key to turn the plug C.

In the operation of the device after the gas has been turned on to all the burners, as described, it may first be turned off of two of such burners by turning the plug C one quarter way back, toward initial position; at which time gas will again be admitted to the pilot, through passage way *f*, groove H and passage *h'*, as before described, and such gas will be ignited by the lamps which continue to burn. To put out such remaining two lamps the plug C is turned an additional one quarter of a turn back. The gas will continue to flow through the passage way *f*, and to the pilot, as described; and at any time two or all of the burners may again be turned on and ignited, as before described.

What I claim as new and desire to secure by Letters Patent is;—

1. In a gas cock, the combination of a

shell, provided with side arms and a vertical portion at the outer end of such arms, means to suspend the shell from gas pipes, a passage way from one of the gas pipes to the body of the shell, a plug mounted in the shell and arranged to turn not less than one half around, a chamber in the plug, passage ways to the chamber, such passage ways arranged so that when the plug is turned one quarter around one of such passage ways will register with the passage way from the gas pipe and with a passage way to the burners on one side of the shell, and when such plug is turned one half around one of such passage ways will register with such passage way from the gas pipes and additional passage ways will register with the passage ways to the burners on both sides of the shell, and a pilot light provided with a passage way thereto, such passage way arranged to remain open when the plug is turned to shut the gas flowing through the passage way from the gas pipe off from the burners of the device, to continue open when the plug is turned one quarter around and to be closed when such plug is turned one half around from its initial position; substantially as described.

2. In a gas cock, the combination of a shell provided with side arms and a vertical portion at the outer ends of the arms, with means to attach gas pipes to such vertical portions, a plug in the shell, such vertical portions and arms provided with passage ways to the periphery of the plug and such plug provided with a chamber therein, a plurality of passage ways from the chamber in the plug to the periphery of such plug, grooves in the periphery of the plug connecting the outer ends of corresponding passage ways, a pilot light, a passage way from one of the arms of the shell to the passage way of the pilot light and a valve in such passage way, an additional peripheral groove on the plug arranged to admit gas to the passage way of the pilot and to prevent such admission by the turning of the plug, additional shells attached to the first named shell, and valves in such additional shells to control the delivery of gas to burners, and such additional shells provided with passage ways, the passage ways in the shells and in the plug relatively associated to register to admit gas to some of the burners and to the pilot when the plug is turned one quarter around, and to admit gas to all of the burners and cut admission of gas to the pilot out when the plug is turned one half around; substantially as described.

3. In a gas cock, the combination of a shell provided with side arms and a vertical portion at the outer ends of the side arms, with means to attach gaspipes to the ends of such vertical portions, additional shells attached to the first named shell, valves and means to attach burners to the additional shells, a plug in the first named shell, such vertical portion and arms of the first named shell and such additional shells provided with passage ways to the periphery of the plug, and such plug provided with a chamber therein, a plurality of passage ways from the chamber in the plug to the periphery of such plug, grooves in the periphery of the plug connecting the outer ends of corresponding passage ways from the chamber in the plug, the passageways in the shells and plug relatively associated to register when turned one quarter around and admit gas to the burners in one of the additional shells, and to register when turned one half around to admit gas to all the burners; substantially as described.

CLEMENT W. BOYSE.

In the presence of—
PHELANISE CARMICHAEL,
MARGARET MCKEONE.