No. 647,457. Patented Apr. 17, 1900.

L. T. ALTON.

GAS CHECK FOR INCANDESCENT BURNERS.

(No Model.) (Application filed Oct. 4, 1898.)

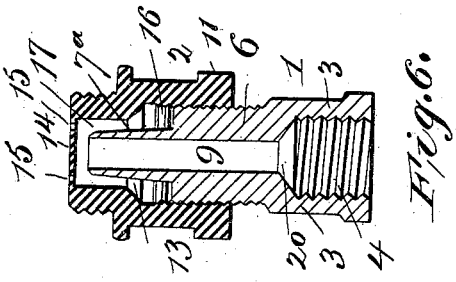

Fig. 6.

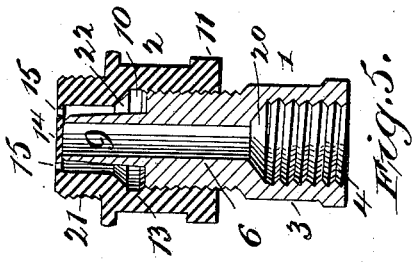

Fig. 5.

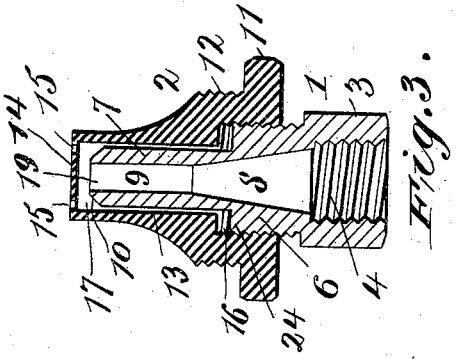

Fig. 3.

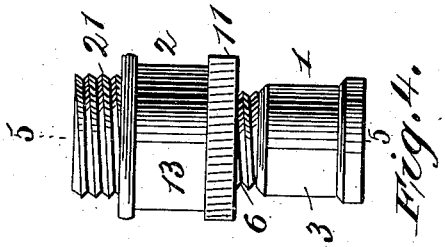

Fig. 4.

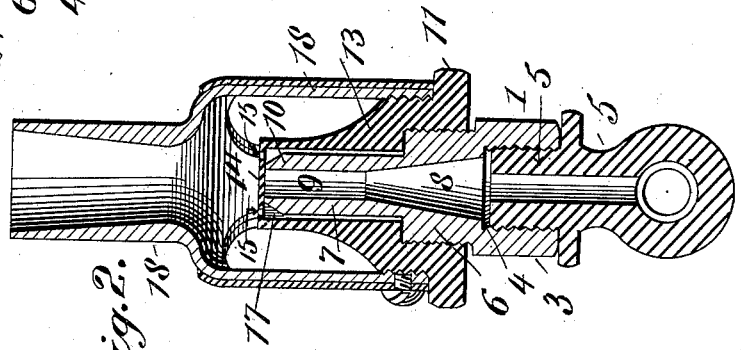

Fig. 2.

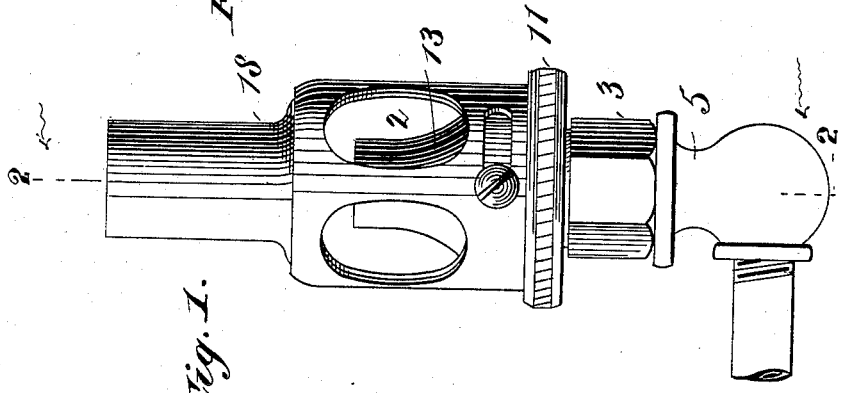

Fig. 1.

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Wm. Jacobs

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# UNITED STATES PATENT OFFICE.

LEE T. ALTON, OF NEW YORK, N. Y.

## GAS-CHECK FOR INCANDESCENT BURNERS.

SPECIFICATION forming part of Letters Patent No. 647,457, dated April 17, 1900.

Application filed October 4, 1898. Serial No. 692,580. (No model.)

*To all whom it may concern:*

Be it known that I, LEE T. ALTON, a citizen of the United States, residing at New York, (Brooklyn,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Gas-Checks for Incandescent Gas-Burners and the Like, of which the following is a specification.

My invention has for its object to provide an efficient checking and regulating device which is economical in construction, free from any complication in mechanism, and which can be readily operated to check the volume of gas passing therethrough without interfering with the pressure, which it is essential should be maintained in incandescent gas-burners especially to a comparatively-high degree.

Among the many advantages of the device I have invented are that it can be operated to regulate the volume of the gas without materially cutting off the gas-pressure and will not materially change the flow of the volume of gas passing through it, the checking or regulation of the volume can be accomplished without diminution of the size of the gas-apertures, and the column of gas passing through the regulator will not be diverted.

The device consists, substantially, of a lower and stationary part adapted to be secured to a gas branch or in any other manner put into mechanical connection with a source of supply, the lower part having an exteriorly-threaded shoulder to receive the upper part and a tubular projection from said shoulder, the lower part being apertured throughout its length, and an outer part or cap movable on the lower part and provided with a tubular projection into which the projection of the lower stationary part enters, the crown of the movable part being perforated to allow of the egress of the gas.

My invention comprehends these essential parts, and they may be embodied in devices differing in specific detail of construction from that herein shown without departing from the spirit of my invention.

My invention, therefore, consists in the construction and combination of devices hereinafter described, and further pointed out in the claim.

In the drawings forming part of this specification, Figure 1 is a side elevation of my improved regulator or check attached, as to the stationary part, to an ordinary gas branch, and to the movable portion thereof is secured the lower section of an incandescent gas-burner of preferred construction, the check being closed. Fig. 2 is a vertical section on the line 2 2, Fig. 1. Fig. 3 is a sectional elevation of the regulator in one of its open positions. Fig. 4 is a side elevation, and Fig. 5 is a sectional elevation on the line 5 5, Fig. 4, of a modified form of construction; and Fig. 6 is a sectional elevation of the same in one of its open positions of adjustment.

Similar numerals of reference indicate corresponding parts throughout the several views.

In the drawings, 1 is the lower stationary element of my check or regulator, and 2 is the movable part. The stationary part consists of the lower cylindrical portion or base 3, interiorly apertured and screw-threaded, as at 4, to receive the threaded projection 5 from an ordinary gas branch or other like device, and at 6 is a shoulder of reduced diameter and exteriorly screw-threaded, and from the shoulder is a tubular extension 7, of still further reduced diameter, the stationary part having a bore formed therein comprising threaded aperture 4, a conical aperture 8, opening into the aperture 4, and a cylindrical aperture 9, extending from the apex of the conical aperture 8 out of the top of the extension.

The top of the extension is beveled off, as at 10, to reduce its diameter for a purpose hereinafter described.

The movable section comprises a cap-shaped body having a flange 11 and a shoulder 12, of lesser diameter and exteriorly threaded, from which shoulder is projected upwardly a chambered extension 13, having the crown-piece 14, provided with a series of gas-emitting apertures 15. The interior of the cap or movable section is apertured and interiorly threaded, as at 16, to movably engage the shoulder 6 on the section 1, and, as shown clearly in Figs. 2 and 3, the projection 7 is of lesser diameter than the bore 17 of the extension 13. Secured to the threaded shoulder 12 is the Bunsen base 18 of an incandescent burner of desired construction.

With the parts in position, as shown in Fig. 3, the gas passes from the source of supply primarily into the conical passage 8 in the stationary part 1, where its flow is checked by the said conical passage, and it then traverses the cylindrical aperture 9 out of the same into the chamber formed by the bore 17 between the top and sides of the extension 7 and the bore. To regulate the volume of gas, the cap 2 is adjusted up and down by moving it on the threaded shoulder 6, so as to bring the head 19 of the projection nearer to or farther away from the crown-piece 14, the gas being emitted from the aperture 9 up to and against the crown-piece at all periods of its adjustment.

The upper ridge or rim 19 of the projection acts as the seat of a valve, the disk of which is the crown-piece 14.

In order not to divert the form or direction of the flow of the gas from the bore of the cap, the aperture 9 in the projection 7 is made of a lesser diameter than the distance between the holes or apertures in the crown-piece, so that at all times the flow of gas would be directly through the projection up to the solid portion of the crown-piece.

While the parts are separated, as shown in Fig. 3, for the purpose of allowing the passage of gas, the latter fills the chamber, as before described, the gas in said chamber which surrounds the extension below the opening therein acting as a flexible abutment, whereby the pressure of the gas is maintained irrespective of the enlargement or diminution of its volume.

By carefully fitting the cap 2 to the shoulder 6 the gas will not escape therethrough.

I do not limit myself to the precise construction, as the parts can be given varying shapes. For example, the conical aperture or passage 8 may be sustituted by one continuously cylindrical throughout, and the aperture 9 in the extension may be as wide or wider than the distance between the holes in the crown-piece; but I prefer, as the result of experiments, the construction herein described, especially in regard to the relative size of the opening 9 and the distance between the holes 15.

The construction shown in Figs. 4, 5, and 6 does not differ from that shown in Figs. 1, 2, and 3 except in small details of construction. The stationary part 1 has the base 3, threaded shoulder 6, and extension 7 therefrom, conical on the exterior, the passage through the stationary piece being formed by the enlarged interiorly-screw-threaded portion 4, adapted to fit the gas branch or the like, as before described, a short conical aperture 20 emerging directly from the screw-threaded aperture and a cylindrical aperture 9 extending from the apex of the conical aperture 20 out of the top of the projection, the coning of the entire length of the projection 7 dispensing with the necessity of reducing the diameter of the projection at its end, as I have done in the case of the device shown in Figs. 1, 2, and 3. The cap or movable section 2 does not differ materially from the same part previously described in Figs. 1, 2, and 3, except that its upper portion 21 is exteriorly screw-threaded to receive a tube and the aperture or chamber therein is formed in three parts instead of two, the third part being an intermediate cone-shaped connecting-passage 22 between the upper chamber and the lower chamber, the lower chamber 16 being interiorly threaded to engage the thread on the exterior of the shoulder 6 at the base of the stationary section 1.

It will be noted in connection with the form shown in Figs. 1, 2, and 3 that a shoulder is formed, as at 24, upon which the cap 2 rests when the gas is shut off, so as to prevent undue downward movement and prevent the crown-piece 14 becoming jammed onto the top of the projection.

Having described my invention, I claim—

In an incandescent gas-burner the combination with a stationary section provided with an apertured extension, the upper end of which is beveled to form a knife-edge seat, of a chambered cap movable over said extension, said cap having a crown-piece comprising an imperforate center and a series of holes therein disposed about said center, said center adapted to be seated on said knife-edge seat, substantially as described.

Signed at the city, county, and State of New York this 30th day of September, 1898.

LEE T. ALTON.

Witnesses:
WILLIAM JACOBSEN,
S. BEATRICE KUHN.