

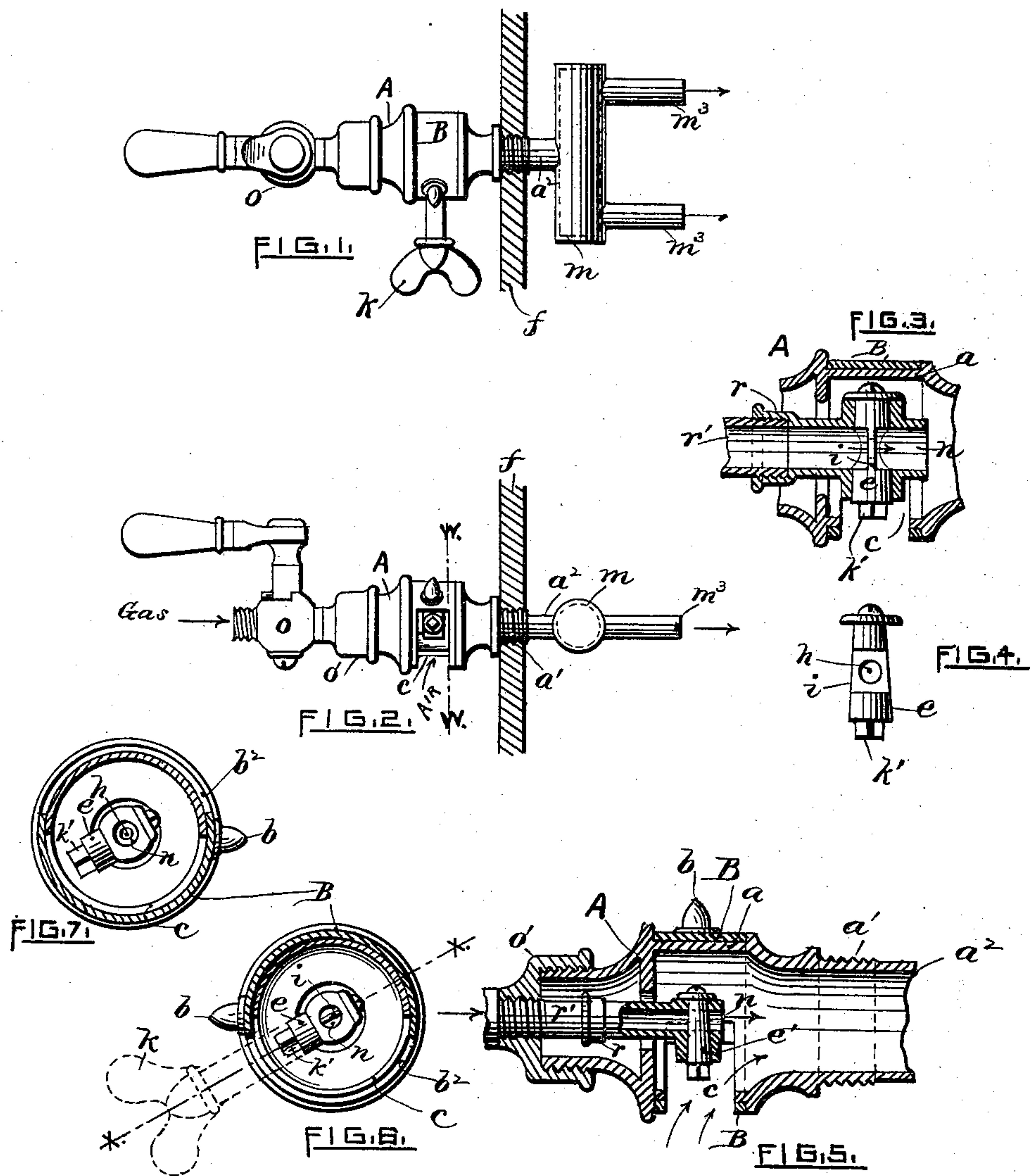
(No Model.)

H. H. SHELDON.

DAMPER COCK FOR ATMOSPHERIC BURNERS.

No. 332,168.

Patented Dec. 8, 1885.



WITNESSES:

Charles Harrigan
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UNITED STATES PATENT OFFICE.

HENRY H. SHELDON, OF PAWTUCKET, RHODE ISLAND.

DAMPER-COCK FOR ATMOSPHERIC BURNERS.

SPECIFICATION forming part of Letters Patent No. 332,168, dated December 8, 1885.

Application filed November 28, 1884. Serial No. 149,062. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. SHELDON, a citizen of the United States, residing at Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Damper-Cocks for Atmospheric Burners; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to Bunsen or atmospheric burners adapted to be used in gas-stoves, &c.; and it consists of a damper-cock of peculiar construction connected with the gas-inlet pipe, in combination with a chambered head having an adjustable air-inlet, the damper-cock being fitted at or near the end of the gas-pipe within the same, and within the said chamber, whereby gas in passing from the pipe unites with a volume of atmospheric air within the chamber, thence flowing to the burner. It has been found practically to be difficult to properly regulate the proportionate quantity of gas and air flowing to the burners necessary to produce the best results under varying conditions.

The object of this invention is to provide atmospheric burners, so called, with means for readily adjusting and controlling the volume of combined gas and air issuing from the mouth of the burners, all as will be more fully hereinafter set forth.

In the accompanying sheet of drawings, Figure 1 represents a plan view of an atmospheric burner complete embodying the invention. Fig. 2 is a side view of the same. Fig. 3 is an enlarged central sectional view of the damper-cock, together with a portion of the chambered head, the latter having an adjustable air-inlet. Fig. 4 is a detached view of the improved cock or plug. Fig. 5 is a horizontal sectional view on line *xx* of Fig. 6, showing the chambered head and its connections, and also showing a modified form of the plug. Fig. 6 is a transverse sectional view (enlarged) on line *ww* of Fig. 2, showing the adjustable air-

inlet open, and Fig. 7 is a similar view showing the air-inlet closed.

The following is a description of the invention, including the manner of its operation:

A, again referring to the drawings, designates the chambered head, adapted to be secured to the gas-inlet or stop cock *o*, the shell or casing of which is provided with the screw-threaded socket portion *b*, for the purpose as common. The center portion of the head is enlarged to form the cylindrical portion *a*, which is cut away upon its under side to form the air-inlet *c*. Each end of the said head *A* is contracted, the inlet or receiving end connecting with the gas-stop-cock *o*, just described, while the other or outlet end is screw-threaded, or otherwise adapted to terminate in or connect with the burner. In Figs. 1 and 2 the same is represented as combined with a cylinder, *m*, from which the burners *m*³ extend.

B designates an annular sleeve having a portion of its surface cut through at *b*², as shown in Figs. 6 and 7, said sleeve or cylindrical damper being fitted around the cylindrical and enlarged portion *a* of the head. Now, when the openings *c* and *b*² coincide, the greatest volume of air is admitted to the burners, the quantity of course being reduced as the said openings are correspondingly closed, the atmospheric air being entirely cut off when the openings are opposite each other, as shown in Fig. 7.

r, Fig. 5, indicates a tube secured to the delivery side of the said gas-cock *o*, said tube having the short piece of piping or tube *r* in turn secured thereto, the outer or free end of the latter pipe being formed to receive the damper-cock *e*, Figs. 3 and 4, which is cut away to form the thin plate *i*, having a small central hole, *h*, therein transversely of the plug, the latter being operated by means of the key *k*, engaging the extension *k*¹, or other equivalent means.

It will be observed that by means of the small opening *h* of the damper cock or plug *e* the gas cannot become entirely shut off. The greatest volume of gas will therefore issue from the burners when the cock is turned so that its web *i* will lie parallel with the longitudinal axis of the pipe and burner, substantially as

indicated in Fig. 6, while Fig. 7 represents the damper-cock turned ninety degrees, and corresponding to the closed position, the hole *h*, however, permitting a small quantity of gas
5 to pass through or by, as before stated.

By means of the removable pipe *r*, I am enabled to substitute pipes fitted with various-sized openings *n* and plugs *e*, as desired.

10 In Fig. 5, at *e'*, I have represented a modified form of the cock, the same being tapered or plug-shaped throughout its length, a small hole being formed transversely therein in line with the axis of said pipe *r*, substantially as shown in the cocks *e*, before described.

15 The advantage of this damper-cock resides in its being placed at the end of the gas-pipe adjacent to the burner, thus having the full pressure of the gas at its rear, the reduced quantity of gas issuing therefrom passing out
20 and mingling with the inflowing air at *c* before said gas becomes greatly expanded.

I am aware that it is not new to combine a damper or register with a mixing-chamber

within which gas and air are united before passing to the burners. Therefore I do not
25 claim such construction, broadly.

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

The damper-cock *e* herein described, having
30 the central web, *i*, provided with an opening, *h*, and means for operating the cock mounted at the free end of the internal gas-tube, *r*, opposite the air-inlet passage, in combination with the atmospheric burner-head A, having
35 an air-inlet, *c*, an annular damper, B, for regulating the air-supply, and the gas stop-cock *o*, connecting said head with the gas-supply pipe, substantially as shown, and for the purposes
40 hereinbefore set forth.

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

HENRY H. SHELDON.

Witnesses:

CHARLES HANNIGAN,
GEO. H. REMINGTON.