No. 618,758. Patented Jan. 31, 1899.

J. F. WILLIAMS.

GAS BURNER.

(Application filed Feb. 1, 1898.)

(No Model.)

Fig. 1.

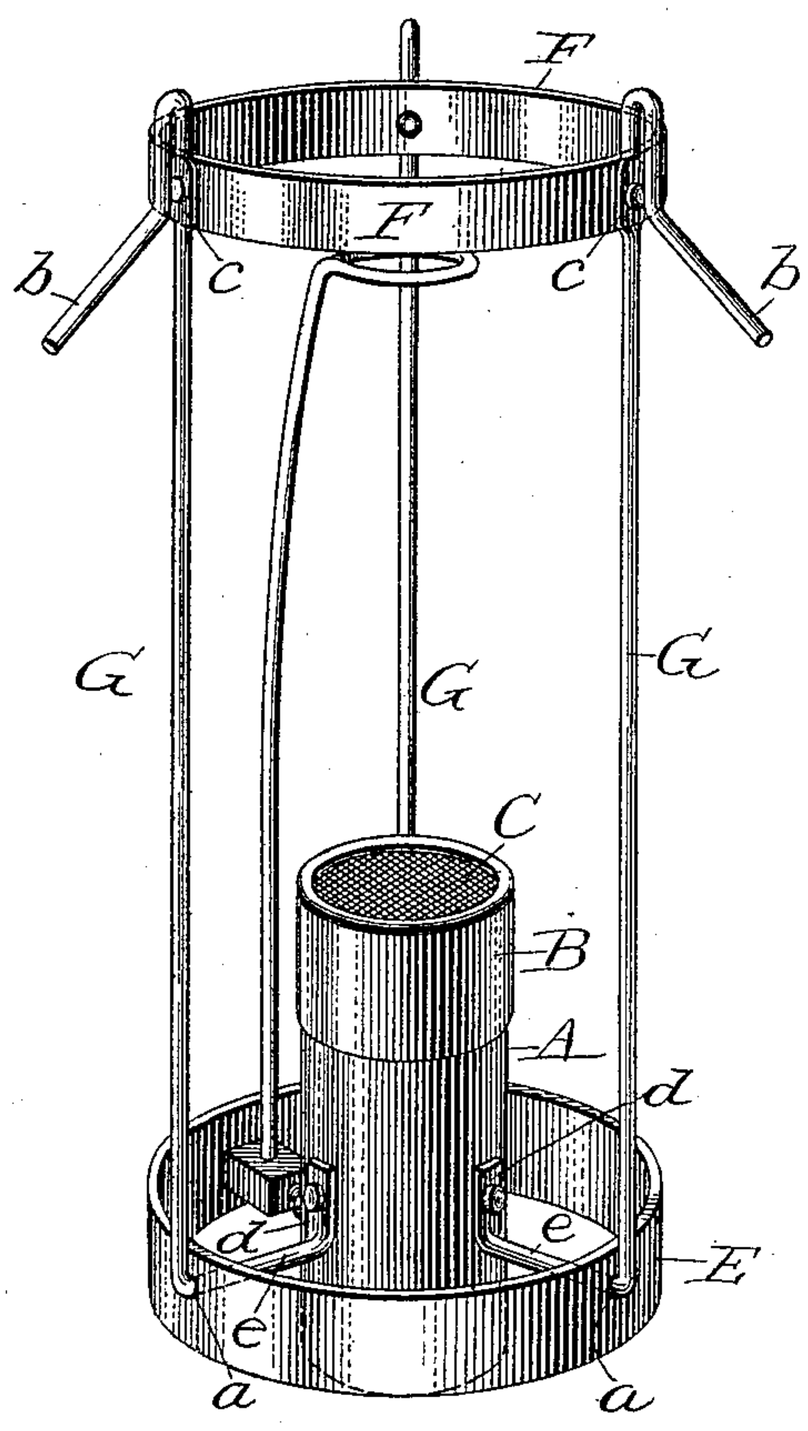


Fig. 2.

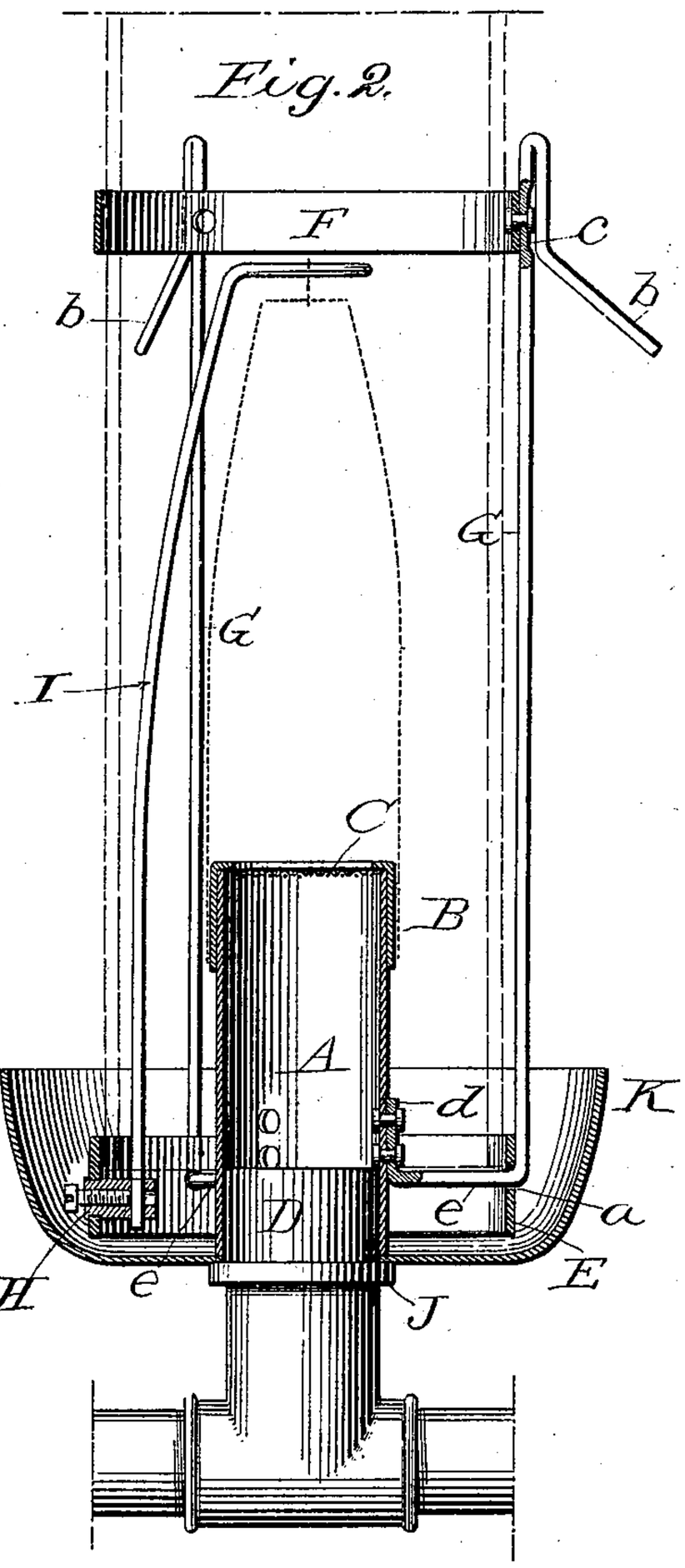


Fig. 3.

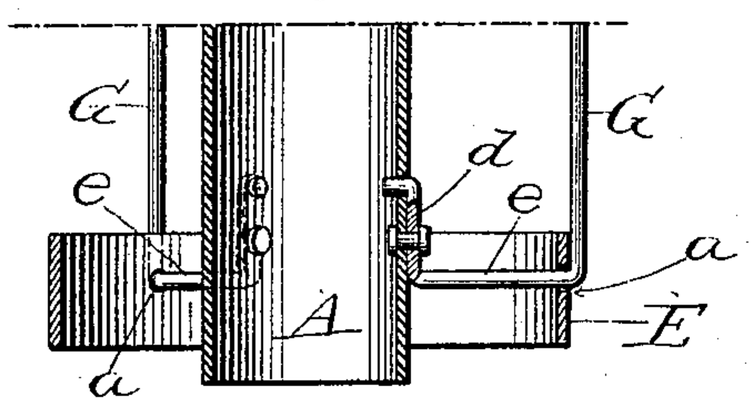
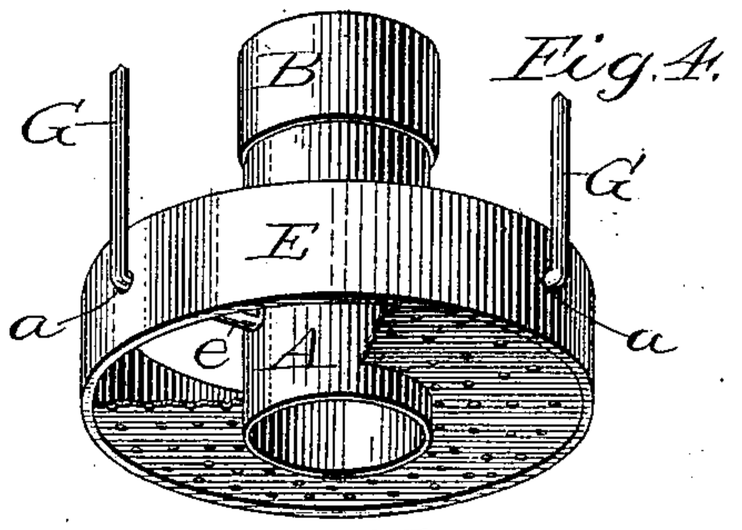


Fig. 4.



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UNITED STATES PATENT OFFICE.

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GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 618,758, dated January 31, 1899.

Application filed February 1, 1898. Serial No. 668,757. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. WILLIAMS, a citizen of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Gas-Burners, of which the following is a specification.

My present invention pertains to gas-burners, and relates more particularly to the construction of the gallery or chimney support hereinafter set forth, reference being had to the annexed drawings, wherein—

Figure 1 is a perspective view of the device; Fig. 2, a vertical sectional view showing certain modifications and details of construction; Fig. 3, a similar view of the lower portion of a burner, and Fig. 4 a perspective of so much of a burner as is necessary to show a still further modification of the invention.

The object of my invention is to provide a simple and strong chimney and shade support more especially adapted for use in connection with the so-called "incandescent" burners in which a mantle of incandescing material is employed.

A further object of the invention is to provide such a construction as will permit of a certain amount of give or play between the mantle-support and the burner proper, so that any shock which is given to the fixture, and consequently to the burner, is not of necessity transmitted to the mantle-support and mantle.

A still further object is to provide a construction which presents a large area or passage for air intermediate the mantle and the chimney and also to provide means for controlling the admission of the air and preventing sudden drafts or gusts from injuring the mantle or destroying the flame.

Referring to the drawings, A indicates a tube or shell carrying at its upper end a removable cap B, a wire disk C being secured to the cap or between the upper end of the tube and the cap. This portion of the device forms the burner proper and may be used in conjunction with the ordinary Bunsen burner or may, as shown in Fig. 2, be mounted upon a pipe D, leading from a suitable source of supply, in which the proper mixture of gas and air is made.

E indicates a ring or collar provided with openings *a*, extending transversely therethrough, and F denotes a second ring or collar likewise provided with openings and preferably of less height than the lower ring. These rings E and F are connected to each other by wires G, bent to form, as shown, and secured to tube A and the rings, as will now be described. The upper end of the wire is bent back upon itself a slight distance and then inclined outwardly and downwardly, forming an arm *b*, the arms of the various wires taken altogether forming a shade-support. That portion of the wire which comes against the ring F is flattened, as at *c*, and a suitable rivet is passed through this portion and the opening in the ring, securely fastening the wire and ring together. The wire near its lower end is bent at right angles to the main body and is passed through the opening *a*, the diameter of the wire being slightly less than that of the openings, so that there is a certain amount of play provided for. The inner lower end *d* of the wire is flattened and bent up at right angles to the horizontal section *e*, said end being secured to tube A, as shown in Fig. 1, by a suitable rivet. Each of the wires is alike, three being preferably used, though more may be employed, if so desired. The lower ring or collar E carries a stud or block H, in which may be mounted the supporting-wire I for the incandescing body, as is usual.

By making the openings *a* larger than the wires G the burner and the wires G, together with the shade and chimney which rest upon the arms *e*, may move slightly under any sudden jar or shock without necessarily moving the collar E and the mantle supported thereby. By this arrangement mantles which would otherwise be broken are saved from injury and their life materially prolonged.

With the construction shown in Fig. 1 it may be found desirable to solder the end *d* to the tube as well as to rivet it, in order to prevent any side play or twisting of the parts. To the same end two rivets may be passed

through the end *d*, as shown in Fig. 2. In Fig. 3 a still further means of effecting the same result is shown, wherein the extreme end *f* of the wire is bent at right angles to the flattened face *d* and passed into an opening formed in tube A.

It has been found expedient with lights of this nature where they are employed out of doors and subject to drafts and gusts of wind, to provide some means for preventing the air from passing too suddenly up into the chimney. In Fig. 2 I have shown tube or pipe D provided with a shoulder J, upon which is mounted a cup K, said cup extending out beneath ring or collar E and up above the same, as indicated in the drawings. With this construction any air which passes up through the chimney must of necessity pass down in the cup and up around the bottom of collar E before it can enter the chimney. Another construction having the same object in view is illustrated in Fig. 4, wherein a disk of perforate sheet metal is fitted in between the inner face of the collar and tube A.

Having thus described my invention, what I claim is—

1. In combination with a burner; a chimney-holder rigidly affixed thereto; and a mantle-support carried by said chimney-holder; said holder and support being free to move laterally and vertically to a limited extent one in relation to the other, substantially as described.

2. In combination with a burner; a chimney-holder rigidly affixed thereto; and a mantle-support loosely mounted upon said holder, whereby the burner may move in any direction independent of the mantle-support.

3. In combination with tube A having arms *e* extending therefrom; a ring E provided with openings *a* of a diameter larger than the arms; said arms extending through said openings; and a mantle-support carried by said ring.

4. In combination with tube A; rings E and F; and wires G, said wires being secured at their upper ends to ring F, and formed at their lower ends with substantially horizontal arms which arms pass through ring E and are directly and independently connected to tube A, substantially as described.

5. In combination with tube A, ring F; wires G secured to said ring F and provided with downwardly-inclined arms *b;* ring E provided with openings *a* through which arms *e* of the wires G are passed; and upturned ends *d*, secured to tube A, substantially as described.

6. In combination with tube A, ring F; wires G provided with flattened faces *c* secured to said ring; ring E provided with transverse openings; arms *e* of the wires passed through the openings; and upturned ends *d* secured to tube A.

In witness whereof I hereunto set my hand in the presence of two witnesses.

JOHN F. WILLIAMS.

Witnesses:

HORACE A. DODGE,

C. C. BURDINE.