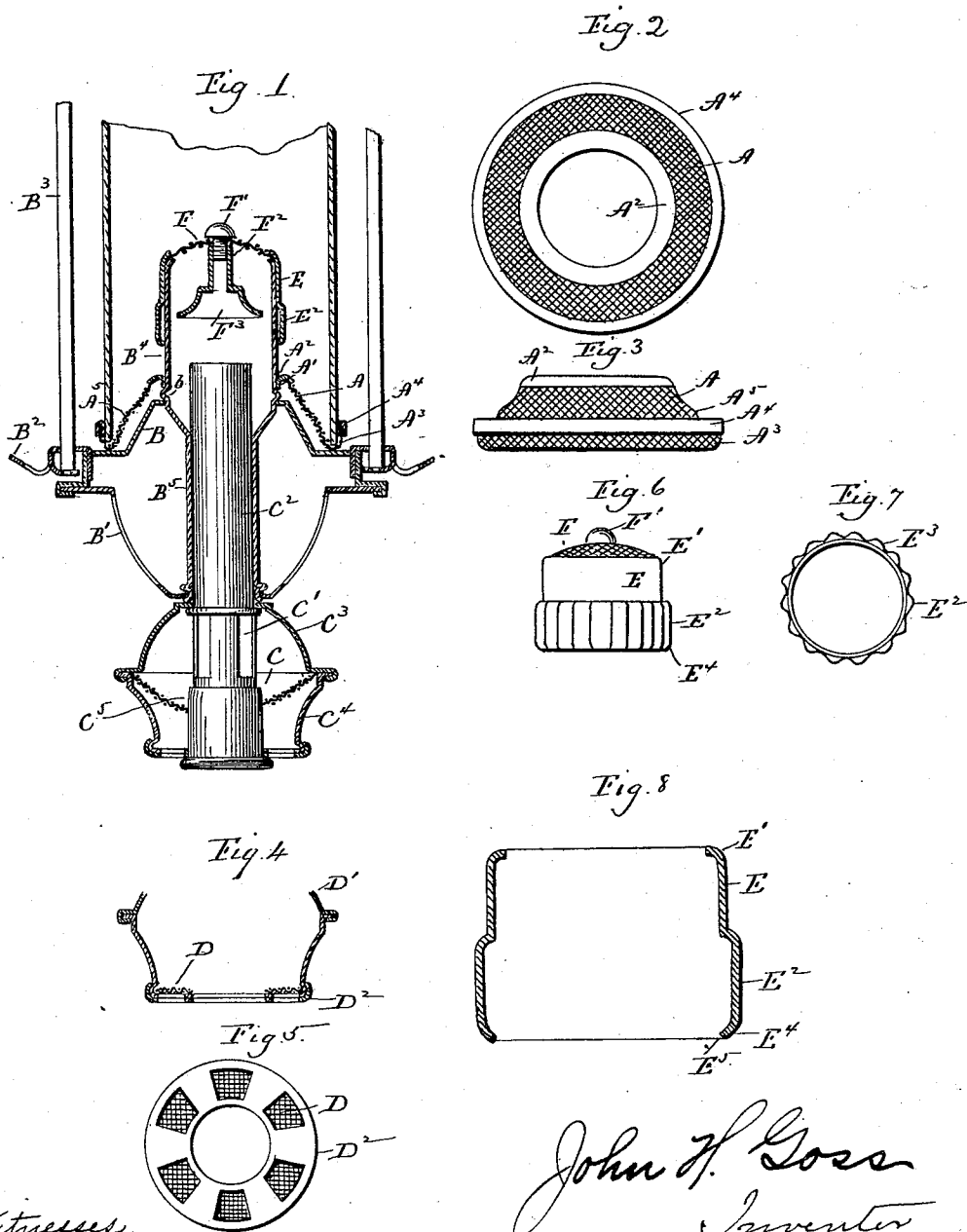


(No Model.)

J. H. GOSS.
LAMP BURNER.

No. 579,796.

Patented Mar. 30, 1897.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN H. GOSS, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE SCOVILL MANUFACTURING COMPANY, OF SAME PLACE.

LAMP-BURNER.

SPECIFICATION forming part of Letters Patent No. 579,796, dated March 30, 1897.

Application filed August 31, 1896. Serial No. 604,383. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GOSS, of Waterbury, in the county of New Haven and State of Connecticut, have invented a new Improvement in Lamp-Burners; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in vertical central section of a burner constructed in accordance with my invention; Fig. 2, a detached plan view of the chimney-holder; Fig. 3, a view thereof in side elevation; Fig. 4, a detached broken sectional view showing a modification of the air-chamber; Fig. 5, a reverse plan view thereof; Fig. 6, a detached view, in side elevation, of the burner-cap; Fig. 7, a reverse plan view thereof; Fig. 8, an enlarged sectional view of the burner-cap, showing in particular the mode of forming the lower edge thereof.

My invention relates to an improvement in lamp-burners of the Welsbach type, in which a fibrous-mineral mantle is heated to incandescence by the flame, whether the same be derived from oil or gas, the object of the invention being to produce a simple, durable, and effective burner constructed with particular reference to more firmly supporting the chimney, to receiving chimneys varying in size and accurately centering them in right relation to the mantle, to preventing the access of small insects to the interior of the burner, to breaking the force of and dividing air-currents and drafts, and to beveling the lower ends of the corrugations of the burner-cap and making the lower ends of the bevels coincident with the lower edge of the cap, which is cut off at a right angle to the plane of the metal of which it is formed, whereby the corrugations are prevented from cutting the mantle, and whereby also a gripping edge is secured for holding the cap against displacement, particularly during the transportation of the burner from the maker to the consumer.

With these ends in view my invention consists in a lamp-burner having certain details

of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In carrying out my invention as herein shown I employ a chimney-holder composed of a gauze body portion A, having a large central opening A', the edge of which is reinforced and protected by a sheet-metal band A², to the inner face of which the gauze is secured in any approved manner. The outer edge of the gauze body portion is turned upward to form a retaining-flange A³, the extreme upper edge of which is protected by a sheet-metal band A⁴, clasped tightly upon it. The gauze body portion is itself shaped to form a shoulder A⁵, located within the flange A³ and band A⁴ and standing in a plane substantially parallel with the same and parallel with the perpendicular plane of the burner. This shoulder A⁵ is a yielding shoulder and has that quality by virtue of the yielding character of the gauze itself. The said chimney-holder is suspended by its sheet-metal band A², and therefore by its inner edge, from the burner-cone, which is formed with an outwardly-projecting annular bead b, with which the said band A² engages. The said chimney-holder may or may not be supported by its outer edge upon the chimney-gallery B, which may be of any approved construction and which is supported upon and secured to the perforated burner body or skirt B', which may also be of any approved construction.

Radially-projecting bobische-supporting arms B², secured to the chimney-gallery, support the uprights B³, to the upper ends of which the shade-supporting ring, which is not shown, is secured in any approved manner. The burner-cone B⁴ extends downward through the center of the chimney-holder and is furnished with a bead b, which rests upon the chimney-gallery B, the lower end of the cone being reduced to form a tube B⁵, the lower end of which is fastened to the lower end of the burner skirt or body B'. A chimney-holder constructed in accordance with my invention holds chimneys more firmly in place than the chimney-holders ordinarily employed and effectually prevents them from rattling. It also permits chimneys varying considerably in diameter to be used and with

practically uniform results. Thus it is designed that the internal diameter of the flange A³ and band A⁴ shall be large enough to receive chimneys running the largest in size, while chimneys running smaller than the average size will engage with the shoulder A⁵ of the holder, the said shoulder yielding to allow the chimneys to be pushed downward into place. My improved chimney-holder also centers the chimneys perfectly (and this is very important) with respect to the fragile mantle, whereby the commingled gas and air rising through the burner is supplied to the mantle uniformly or equally on all sides thereof, external conditions of draft being uniform. A perfect combustion is thus secured, and hence a light of maximum whiteness and uniformity.

Another very important function of the chimney-holder is the prevention of the access of insects to the interior of the burner and therefore to the mantle, which is not shown. The meshes of the gauze may be fine enough to keep out the smallest insects and still not interfere with a free supply of air to the interior of the chimney. If desired, the gauze may be replaced by fine perforated metal, but I prefer the gauze on account of its yielding character.

For the purpose also of preventing insects from entering the burner I locate a gauze fender C in the air-chamber at a point below the air-ports C', formed in the gas-supply tube C², which passes upward through the said chamber, which, as shown in Fig. 1, consists of an upper member C³ and a lower member C⁴, the meeting edges of the said members being clamped together with the outer edge of the fender C between them, and the fender having a central opening C⁵ for the upward passage through it of the tube C². In Figs. 4 and 5 of the drawings I have shown a gauze insect-fender D, located in the bottom of the air-chamber D' and just within the rotatable cut-off D² thereof. The insect-fenders C and D not only prevent insects from entering the burner, but also perform valuable service in breaking up the air-currents and securing a better diffusion of the air.

I may here note that if the external conditions before referred to are not uniform the fine meshes of the gauze of the chimney-holder and of the insect-fender so modify abnormal currents and drafts by breaking their force and comminuting them that their detrimental effects upon the action of the burner and the light are reduced to the minimum. Under ordinary conditions of use it is presumed that the air-supply to the burner is sufficiently broken in force and volume, so as to secure a steady action of the burner, but without the gauze body portion of the chimney-support and without the gauze insect-fender unusual conditions of draft or air-supply are not provided for.

The third feature of my invention resides in the burner-cap, which comprises a broad

sheet-metal band E, having its upper edge turned slightly inward to form a flange E', and having its lower end formed with a circle of vertical corrugations E², the high points of which extend beyond its plane, so as to hold the mantle away from the band, reducing its engagement therewith to the minimum and preventing it from sticking thereto. The spaces E³ between the corrugations form air-passages through which currents of air pass to the interior of the mantle. The lower ends of the corrugations are forced inward or shaped to form bevels E⁴, which prevent the mantle from being cut by the corrugations, as it would be if they were continued straight down through the lower edge of the band. The lower ends of these bevels are coincident with the extreme lower edge of the band, which is cut off at a right angle to its plane, as shown in Fig. 8, whereby the edge of the metal stands at an angle, its inner corner biting into the burner-cone, so that the cap is firmly held thereupon. This last is an important feature, as it insures the keeping of the cap in place during the transportation of the burner, which is supplied to the consumer provided with one of the fragile mantles and ready for use. The adjuncts of the burner-cap may be of any desired form and construction. As herein shown they consist of a dished wire-gauze disk F, the edges of which extend under the flange E' of the band. The ignition of the commingled gas and air takes place upon the upper surface of this disk, which prevents the mixture from "lighting back," as the expression is. A screw F', passing downward through the center of the disk, enters the upper end of the tubular stem F² of the bell-like deflector F³.

It is apparent that in carrying out my invention some changes from the construction shown and described may be made, and I would therefore have it understood that I do not limit myself thereto, but hold myself at liberty to make such changes as fairly fall within the spirit and scope of my invention.

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

1. In a Welsbach burner, the combination with a burner-skirt, a chimney-gallery and a burner-cone, of a chimney-holder having a central aperture for the burner-cone, from which it is suspended, and constructed to accommodate chimneys varying in size.

2. In a Welsbach burner, the combination with a burner body or skirt, a chimney-gallery and a burner-cone, of a chimney-holder suspended from the burner-cone and having its body portion made of wire-gauze or equivalent material.

3. In a Welsbach burner, the combination with a burner body or skirt, a chimney-gallery and a burner-cone, of a chimney-holder suspended by its inner edge from the burner-cone and having its body portion made of wire-gauze, formed with a central aperture

for the burner-cone, and having its inner edge bound with a sheet-metal band and its outer edge turned upward to form a retaining-flange, and also bound with a sheet-metal band.

4. A chimney-holder having its body portion made of gauze the inner edge of which is secured to a sheet-metal ring, and the outer edge of which is turned upward to form a flange, and bound by a sheet-metal band, the gauze being struck up to form a shoulder standing opposite to and within the said flange and its band.

5. In a Welsbach gas-burner, the combination with the burner-cone thereof, of a cylindrical burner-cap comprising a sheet-metal band, the lower portion of which is struck outwardly to form a circle of vertical corrugations, the lower edges of which are struck

inward and beveled and include the extreme lower edge of the band which is cut at a right angle to the plane of the metal forming it, so as to produce an inclined gripping edge which takes hold of the burner-cone and prevents the cap from displacement thereupon.

6. In a Welsbach burner, the combination with a burner-skirt, a chimney-gallery and a burner-cone, of a chimney-holder having a central aperture for the burner-cone, suspended therefrom and made yielding to accommodate chimneys varying in size.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JNO. H. GOSS.

Witnesses:

M. J. WARNER,
GEO. F. HODGES.