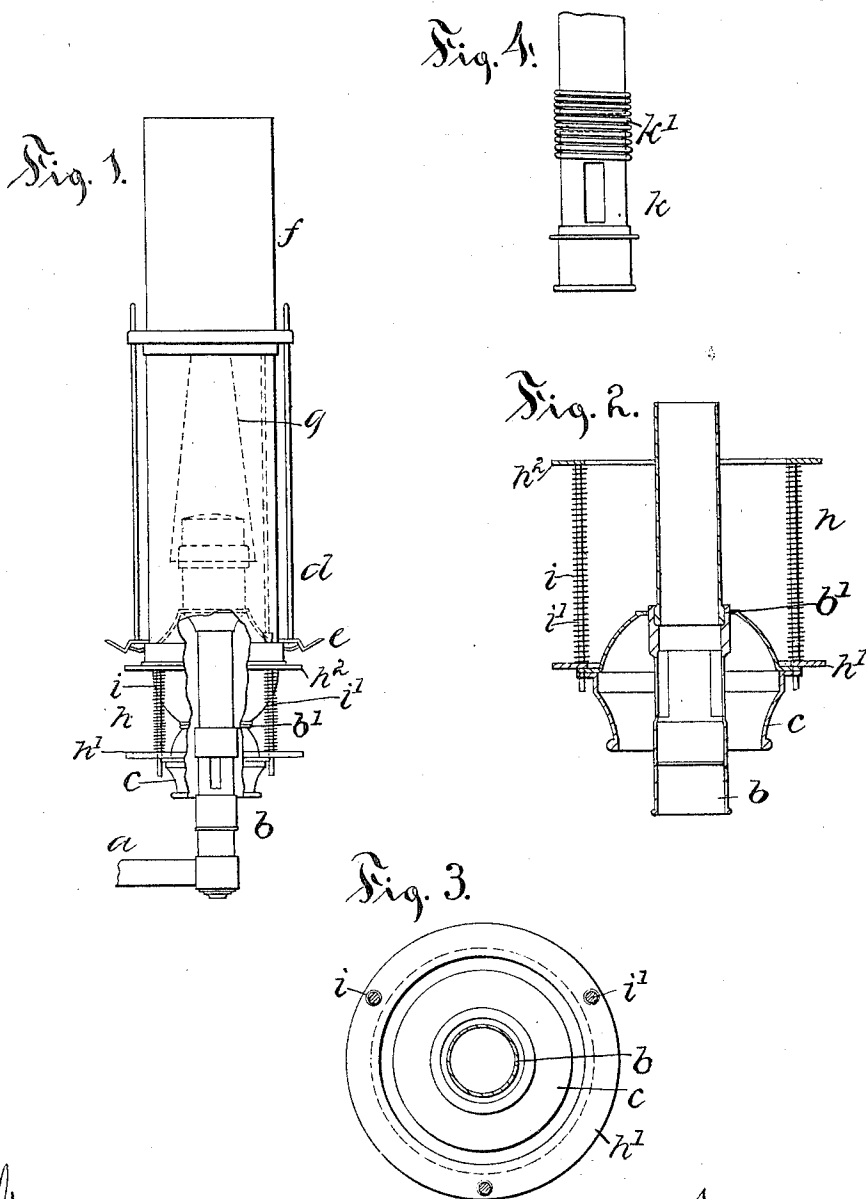


(No Model.)

F. A. CORTIS.  
LAMP.

No. 581,879.

Patented May 4, 1897.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## LAMP.

SPECIFICATION forming part of Letters Patent No. 581,879, dated May 4, 1897.

Application filed July 11, 1896. Serial No. 598,780. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK A. CORTIS, a citizen of the United States, and a resident of Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Lamps, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

The object of my invention is to provide a "Welsbach" lamp with a yielding support or cushion so arranged in combination with the lamp and burner as to insulate the mantle-supporting portion of the lamp from all shocks and jars, whether vertical or lateral; and to this end my invention consists in the device hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a view in side elevation of a lamp embodying the improvement with parts broken away to show construction. Fig. 2 is a view, on an enlarged scale, in section through the burner and connected parts. Fig. 3 is a view in crosswise section through the burner and cushion. Fig. 4 is a detail view showing a modified form of the invention.

In the accompanying drawings the letter *a* denotes a gas-bracket or the like; *b*, the burner-tube, secured to the pipe, as by means of threaded interengaging parts; *c*, an "air-shutter," so called, which consists of a hollow structure having central openings through which extends the burner-tube, ports through which air is admitted to support combustion being provided in the under side of this air-shutter. A movable valve controls the degree of opening through the ports of the air-shutter.

An objection has been found in prior devices of this general class in which the burner-tube has been made rigid by reason of the breaking of the mantles from shocks due to lateral blows, and in order to prevent such shocks resulting from lateral blows from being communicated to the fragile mantle of the lamp I make this tube flexible, as by jointing it at about the point where it emerges from the air-shutter, as at *b'*. This burner-tube may be made flexible in any convenient manner. This upper portion extends within

the burner *d*, which is provided with the usual chimney-gallery *e*, supporting a chimney *f*, and directly over the burner the fragile mantle *g* of the lamp is suspended.

The device as described provides for a lateral swinging movement of the upper part of the burner, but this movement is controlled by a cushion *h*, interposed between the chimney-gallery and the air-shutter. In the form shown this cushion consists of a collar *h'*, which rests upon a flange on the air-shutter, a collar *h''*, which underlies the flange of the chimney-gallery, and a plural number of springs *i*, located between the two collars and of a strength sufficient to support the upper part of the burner, the chimney, and the shade, and sufficiently flexible to prevent any jar or shock, whether vertical or lateral, given to the bracket from being communicated to the mantle with sufficient force to fracture it. Guides *i'*, secured to one collar and extending through openings in the opposite collar, may be provided, if desired, for the purpose of determining the extent of movements of the parts. This construction of parts provides a yielding cushion to support the weight and insulate the burner from shocks, and also has the added advantage of providing a cushion to prevent breaking the mantle when the bracket receives a blow sideways, as often happens when the bracket-arm forms part of a chandelier.

It is obvious that other forms of cushion than that specially described may be used without the exercise of more than mechanical skill, and these other forms are contemplated as part of my invention.

In the form of cushion described the springs are located at about the same distance from the axial center of the burner as is the outer edge of the lamp-gallery, and this construction enables the springs to operate more promptly to restore the lamp to a vertical position, from which a jar may have moved it, than would be the case if the springs were located within a narrow space closely about the burner-tube.

In the modified form of the invention shown in Fig. 4 of the drawings the flexibility between the two sections of the burner-tube *k* is attained by means of a spiral spring

h', secured to and between the respective sections of the tube.

I claim as my invention—

1. In combination with a bracket-arm or like support for a lamp having a fragile mantle over the flame, the mantle-support, a flexible metallic burner-tube secured to the lamp-bracket and extending through the air-shutter and within the burner, and a yielding cushion interposed between the mantle-support and the bracket, all substantially as described.

2. In combination with a support for a lamp having a fragile mantle over the flame, the mantle-support supported on the burner, the burner, a flexible metallic burner-tube secured to the lamp-support and projecting through an air-shutter into the burner, the air-shutter, and a yielding cushion interposed between the mantle-support and the lamp-support, all substantially as described.

3. In combination with a support for a lamp having a fragile mantle over the flame, the mantle-support located on the burner, the burner, a flexible metallic burner-tube secured to the lamp-support and extending through a shutter into the burner, a yielding cushion interposed between the mantle-support and the lamp-support, and guides for determining the extent of movement of the parts, all substantially as described.

4. In combination with a support for a lamp having a fragile mantle over the flame, the mantle-support located on the burner, the burner, a flexible metallic burner-tube secured to the lamp-support and extending through an air-shutter into the burner, the air-shutter, and a plural number of yielding cushions interposed between the air-shutter and the burner, all substantially as described.

5. In combination with a support for a lamp having a fragile mantle over the flame, the mantle-support located on a burner, the burner, a flexible metallic burner-tube secured to the lamp-bracket and extending through the air-shutter and within the burner, the air-shutter, and a plural number of yielding cushions interposed between the air-shutter and the burner and near the outer periphery of the latter, all substantially as described.

6. In combination with a support for a lamp having a fragile mantle supported over the flame, the mantle-support, a flexible metallic

burner-tube secured to the lamp-support and extending through the air-shutter and within the burner, the burner, the air-shutter, a plural number of yielding cushions interposed between the air-shutter and the burner and in line near the periphery of the latter, and guides to determine the extent of movement of the parts, all substantially as described.

7. In combination with a support for a lamp having a fragile mantle over the flame, the mantle-support located on the burner, the burner, a flexible metallic burner-tube secured to the lamp-support and extending through the air-shutter within the burner, the air-shutter, a flange on the air-shutter of about the same diameter as the greatest diameter of the burner, and a plural number of cushions interposed between the burner and flange and near the outer periphery of the latter, all substantially as described.

8. In combination with a support for a lamp having a fragile mantle over the flame, the mantle-support, a flexible jointed burner-tube secured to the lamp-support and extending through the air-shutter and within the burner, the air-shutter, the burner, and the yielding cushion interposed between the mantle-support and the lamp-support, all substantially as described.

9. In combination with a support for a lamp having a fragile mantle over the flame, the mantle-support located on the burner, the burner, a flexible jointed tube secured to the lamp-support and extending through the air-shutter and within the burner, the air-shutter, and a yielding cushion interposed between the air-shutter and the burner, all substantially as described.

10. In combination with a support for a lamp having a fragile mantle over the flame, the mantle-support located on the burner, the burner, a flexible jointed burner-tube secured to the lamp-support and extending through the air-shutter and within the burner, the air-shutter, and a plural number of yielding cushions interposed between the air-shutter and the burner and near the periphery of the latter, all substantially as described.

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Witnesses:

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