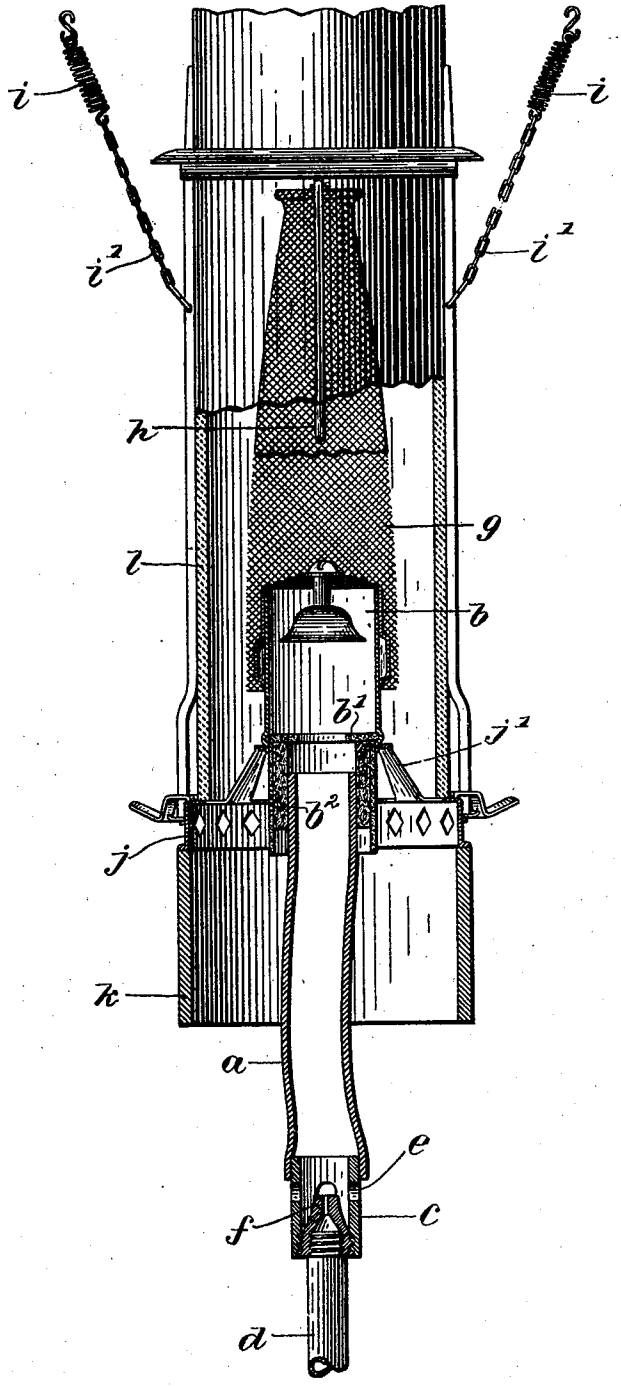
(No Model.)

G. S. & W. E. BARROWS.

WELSBACH OR OTHER LIGHT.

No. 590,815. Patented Sept. 28, 1897.



Witnesses:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE S. BARROWS AND WILLIAM E. BARROWS, OF PHILADELPHIA, PENNSYLVANIA.

WELSBACH OR OTHER LIGHT.

SPECIFICATION forming part of Letters Patent No. 590,815, dated September 28, 1897.

Application filed July 8, 1896. Serial No. 598,375. (No model.)

To all whom it may concern:

Be it known that we, GEORGE S. BARROWS and WILLIAM ELIOT BARROWS, citizens of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Welsbach or other Lights, of which the following is a specification.

One object of our invention is to provide an atmospheric burner in which the burner-cap may be moved into any required position independently of the base, which may be fixed.

Another object of our invention is to protect the mantles or hoods of Welsbach and other incandescent lights from shocks and vibrations such as tend to their injury.

Other objects of our invention, as well as the nature, characteristic features, and scope thereof, will be more fully understood from the following description, taken in connection with the accompanying drawing, forming part hereof, and in which is illustrated, partly in elevation and partly in central section, apparatus embodying features of our invention.

In the drawing a flexible Bunsen tube *a*, as rubber or the like, is interposed between the burner-cap *b* and the base *c*, which may be and usually is attached to the gas-pipe *d* of a fixed bracket, chandelier, or other supply of gas. To complete the Bunsen burner, air may be supplied, as at *e*, and use may be made of a gas-check, as *f*. The hood or mantle *g* is sustained by an elastic support, and is shown as connected with a mantle-carrier *h*, which suspends it over the burner-cap *b*.

In the embodiment of our invention shown in the drawing the mantle and its carrier *h* are sustained by elastic supports *i*, for example, through the intervention of a gallery *j*, having a spider *j'*, to which the carrier *h* and cap *b* are connected.

The elastic supports *i* may consist simply of springs or other elastic bodies, or they may consist of springs and articulated portions forming chains *i'*.

As shown in the drawing, the burner-cap *b* is fitted to an aperture in the spider *j'*, and is provided with a gasket or centrally-perforated washer *b'*—for example, of asbestos or the like—and with a depending sleeve or skirt b^2—for example, also of asbestos or the like—which accommodates the upper end of the flexible Bunsen tube *a* in such manner that clearance is afforded between the top of the tube and the part *b'*.

k is a weight applied to the mantle-carrier *h* or to some part connected therewith, and for the sake of description it is shown as applied to the gallery *j*.

l is a chimney mounted upon the gallery *j*.

In use the flexible Bunsen tube *a* permits the burner-cap *b* and parts connected therewith to occupy any required position or positions in respect to the base *c*, which is usually fixed, while at the same time this flexible tube *a* supplies through itself a mixture of gas and air for producing a Bunsen flame outside of the cap *b*. Moreover, the flexible Bunsen tube interposed between the base and cap presents a sightly and neat appearance. The location of the tube *a* above the air-inlets causes it to operate both as a Bunsen tube and as a flexible gas connection. By thus making one part do the work of two the height of the burner is comparatively small, no greater than in an ordinary fixture or light, whereby an attractive appearance is presented. The elastic supports *i* at their free ends are connected with a suitable fixture (not shown)—for example, to the ceiling or to a framework or lantern carried by the part *d*. Undue vibrations are compensated for by these elastic supports, and hence are not transmitted to the mantle, whereby it is protected from breakage or injury.

Since the parts *i'* are composed of chains of articulated members, they are movable laterally in all directions. They coöperate with the elastic parts or springs, and thus assist in taking up shocks, jars, and vibrations, and in the protection of the mantle. The presence of a weight, as *k*, is of importance because by reason of its mass it possesses considerable inertia, which of course tends to protect the mantle from sudden shocks and jars. The washer and sleeve *b'* and b^2 not only afford a seat into which the upper end of the flexible tube is loosely fitted, but also protect the same from heat, which might injure it if it were made of rubber.

It will be obvious to those skilled in the art to which our invention appertains that modifications may be made in details without departing from the spirit thereof. Hence we do not limit ourselves to the precise construction and arrangement of parts hereinabove set forth, and illustrated in the accompanying drawings; but,

Having thus described the nature and objects of our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In combination, a burner-cap suspended by antivibration connections, a base, inlets for admitting air near the base, and a flexible tube interposed between the base and cap and operating both as a Bunsen tube and as a flexible gas connection, substantially as described.

2. In combination, a burner-cap suitably suspended by antivibration connections, a sleeve depending from said cap, a base, inlets for admitting air near the base, and a flexible tube interposed between the sleeve and base and adapted for operation both as a Bunsen tube and a flexible gas connection, substantially as described.

3. In combination a mantle or hood, a mantle-carrier, elastic supports for said mantle or hood, and a weight connected with said carrier and sustained by said supports, substantially as described.

4. In combination an antivibration incandescent or Welsbach burner, and a weight applied to said burner, substantially as described.

5. In combination a mantle or hood, a mantle-carrier, elastic supports for said mantle or hood, flexible gas connections, and a weight connected with said carrier and sustained by said supports, substantially as described.

6. In combination a gallery provided with a burner-cap and a mantle or hood, elastic supports for said gallery, a weight applied to said gallery, a sleeve depending from said burner-cap, a base, and a flexible Bunsen tube applied to said base and fitted to said sleeve, substantially as described.

In testimony whereof we have hereunto signed our names in the presence of two witnesses.

GEORGE S. BARROWS.
WILLIAM E. BARROWS.

Witnesses:
EDWARD WOOLMAN,
FRANK L. KELLNER.