

No. 698,580.

Patented Apr. 29, 1902.

A. P. STORRS.  
STUDENT'S LAMP.

(Application filed Jan. 16, 1900.)

(No Model.)

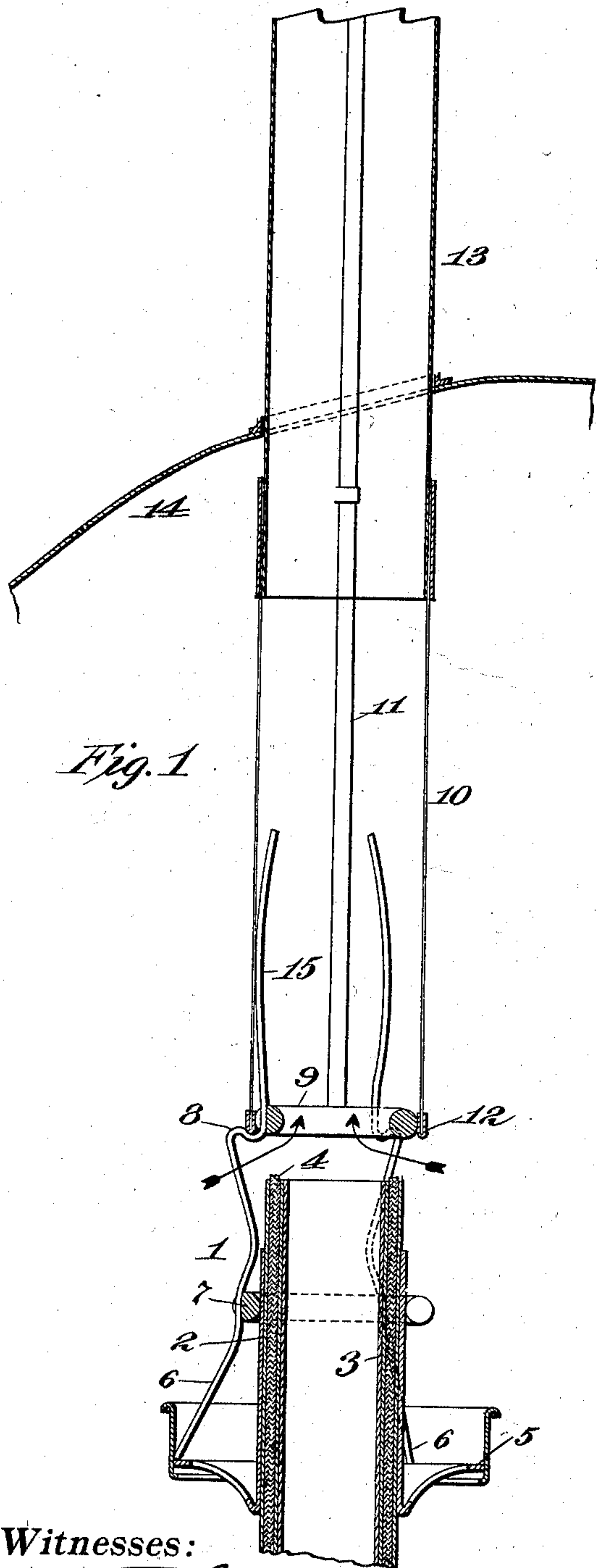


Fig. 1

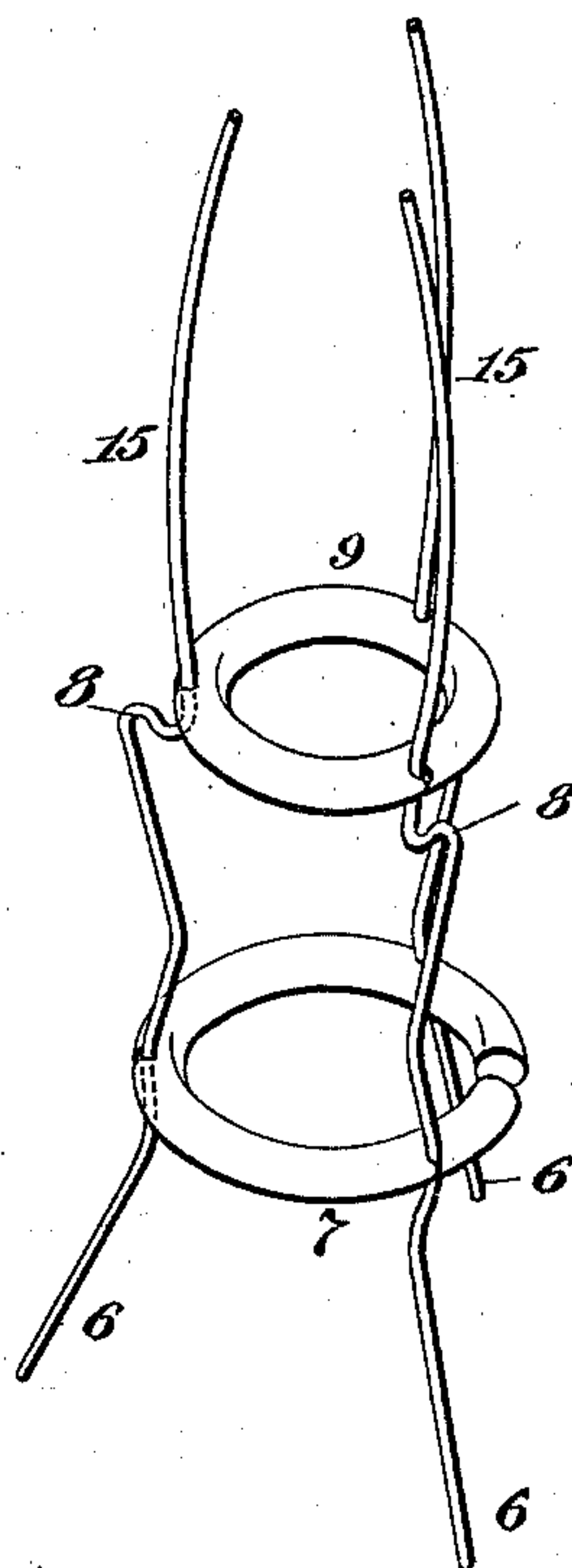


Fig. 2

Witnesses:

*Jas. S. Coleman*  
*Geo. A. Taylor*

Inventor

*Harold P. Storrs*

*by* *Alfred Edmunds*

Att'ys.



# UNITED STATES PATENT OFFICE.

AARON P. STORRS, OF OWEGO, NEW YORK.

## STUDENT'S LAMP.

SPECIFICATION forming part of Letters Patent No. 698,580, dated April 29, 1902.

Application filed January 16, 1900. Serial No. 1,591. (No model.)

*To all whom it may concern:*

Be it known that I, AARON P. STORRS, a citizen of the United States, residing at Owego, in the county of Tioga and State of New York, have invented a certain new and useful Improvement in Students' Lamps, of which the following is a description.

My invention relates to improvements in students' lamps adapted particularly for use in connection with the headlights of locomotives and motor-cars, but obviously capable of other uses.

As is well known, the peculiar flame obtained in students' lamps is secured by employing with a central-draft circular burner a chimney having a contracted neck located a proper distance above the wick, whereby air-currents in passing up through the chimney will at the neck flow inward against the flame and cause the latter to be contracted, while its brilliancy is very materially enhanced. Students' lamps, because of the brilliancy of the flame thus secured, have commended themselves favorably as the source of illumination in headlights. Owing to the rough usage to which such lamps must necessarily be subjected when employed in connection with headlights, the chimneys become very rapidly broken, and the cost of maintenance is large. A mica chimney, owing to its durability, would be very desirable for use with such lamps; but owing to the character of mica it has been found impossible heretofore to make a chimney with a contracted neck which would be suitable for use with students' lamps. I have discovered that so much of a student's-lamp chimney as extends below the neck thereof is functionless and that such portion may be dispensed with without in any way affecting the correct operation of the lamp and the securing of the proper flame. As a result of this discovery I have been able to make a mica chimney for a student's lamp which will secure the proper results.

Broadly stated, my invention consists in combining with the ordinary burner of a student's lamp a mica chimney essentially cylindrical in form, maintained the proper distance above the wick, and carrying within its lower end a suitable contracting device, by means of which air-currents entering the bottom of the chimney will be caused to be di-

rected against the flame in the same way and with the same result as such currents are now directed against the flame by the neck or contracted portion of ordinary student's-lamp chimneys.

In carrying my invention into effect I prefer to properly support a metal ring at a suitable distance above the wick and to carry upon said ring a cylindrical mica chimney having a diameter substantially equal to the external diameter of said ring. The contracting-ring may be supported in any suitable way—as, for example, by means of supporting-wires, which are carried from the wick-tube of the lamp. For purposes of economy and strength the upper portion of my improved chimney is made of metal having substantially the same bore as the lower portion, and said metal portion of the chimney is preferably passed through and supported by the usual reflector, so that the chimney will be very rigidly maintained in place. In order that the chimney may be prevented from being dislodged by vibrating vertically in use, I prefer to employ elastic fingers, which engage the bore of the chimney and which may conveniently constitute extensions of the supports for the contracting-ring.

In order that the invention may be better understood, attention is directed to the accompanying drawings, forming part of this specification, and in which—

Figure 1 represents a vertical section of an ordinary student's-lamp burner, illustrating my improved chimney in combination therewith and showing the usual reflector for supporting the upper end of the chimney; and Fig. 2, a perspective view of the supporting devices for the chimney, including the contracting-ring.

In both of the above views corresponding parts are represented by the same numerals of reference.

The student's-lamp burner 1 is composed, as is common, of the two concentric sleeves 2 and 3, with the circular wick 4 between them. Suitable means are provided for feeding the wick.

5 represents the usual shoulder, which at the present time carries the ordinary glass chimney of the lamp.

6 6 are a plurality (three in the present



case) of supporting-legs, which are made of wire and which at their lower ends bear within the shoulder 5, as shown. These supporting-legs are secured to a split ring 7, which is  
 5 passed over the outer tube 2 and which tightly engages said tube by its elasticity. The supporting-legs 6 are each bent to form a shoulder 8 at the proper distance above the top of the wick, and immediately above said  
 10 shoulders a contracting-ring 9 is carried by said supporting-legs, as shown. The contracting-ring 9 is located at about the same distance above the top of the wick as is the contracting-shoulder of the ordinary glass stu-  
 15 dent's-lamp chimney.

10 represents my improved mica chimney, which is made in any suitable way. I illustrate in the present case a chimney made of a single panel of mica, the edges of said panel  
 20 being secured together at a rib 11 and being strengthened at the bottom by a strip 12. The upper portion of the chimney 13 is made, preferably, of metal, secured to the mica part in any suitable way. When the usual re-  
 25 flector 14 is employed, the metallic portion 13 of the chimney may pass through said reflector, so as to firmly support the device. In order to prevent the chimney from being dislodged by vertical vibrations, the supporting-  
 30 legs 6 are preferably extended upward above the contracting-ring 9 and are bent outward at 15 to form spring-fingers, which engage the interior of the chimney, so as to prevent accidental vertical movements thereof.

35 In use the air-currents passing, as indicated by the arrows, beneath the bottom of the chimney and within the contracting-ring 9 impinge against the flame of the wick and cause the flame to be contracted inwardly  
 40 in exactly the same way as with an ordinary student's lamp, whereby the proper brilliant flame will be secured. The device being ordinarily employed within the usual lantern, there can be no danger of the light being ex-  
 45 tinguished.

Not only am I enabled to secure by the construction described a mica chimney by which a student's-lamp flame will be secured, but having a chimney which is located at all times  
 50 above the wick it does not become necessary to handle the chimney or to touch it in lighting the lamp.

By the expressions "student's lamp" and "student's-lamp flame" as used herein I have

reference to any lamp employing a central 55 draft and using a chimney with a contracted portion above the flame and to the variety of flame which is produced in such an apparatus.

Having now described my invention, what I claim as new, and desire to secure by Letters 60 Patent, is as follows:

1. The combination with a central-draft burner, of a contracting-ring supported above the wick thereof, and a mica chimney sup-  
 65 ported above the wick and with its lower end surrounding the contracting-ring, substantially as set forth.

2. The combination with a central-draft burner, of a series of supporting-legs main-  
 70 tained by said burner, a contracting-ring carried by said supporting-legs above the wick, and a mica chimney carried by said supporting-legs above the wick with its lower end surrounding said contracting-ring, substantially  
 75 as set forth.

3. The combination with a central-draft burner, of a series of supporting-legs carried by said burner, shoulders formed on said legs, a contracting-ring carried by said legs above  
 80 the wick, and a mica chimney supported by said shoulders above the wick with its lower end surrounding said contracting-ring, substantially as set forth.

4. The combination with a central-draft burner, of a plurality of supporting-legs car-  
 85 ried by said burner, an elastic ring secured to said legs and engaging the outside of the burner, a contracting-ring carried by said legs and located above the wick, and a mica chimney carried by said legs above the wick with  
 90 its lower end surrounding said contracting-ring, substantially as set forth.

5. The combination with a central-draft burner, of a series of supporting-legs carried by said burner, a contracting-ring carried by  
 95 said legs above the wick, a mica chimney carried by said legs above the wick with its lower end surrounding said contracting-ring, and elastic extensions of said legs engaging the interior of said chimney, substantially as set  
 100 forth.

This specification signed and witnessed this 12th day of January, 1900.

AARON P. STORRS.

Witnesses:

C. M. BROOKS,  
 R. T. HODGE.