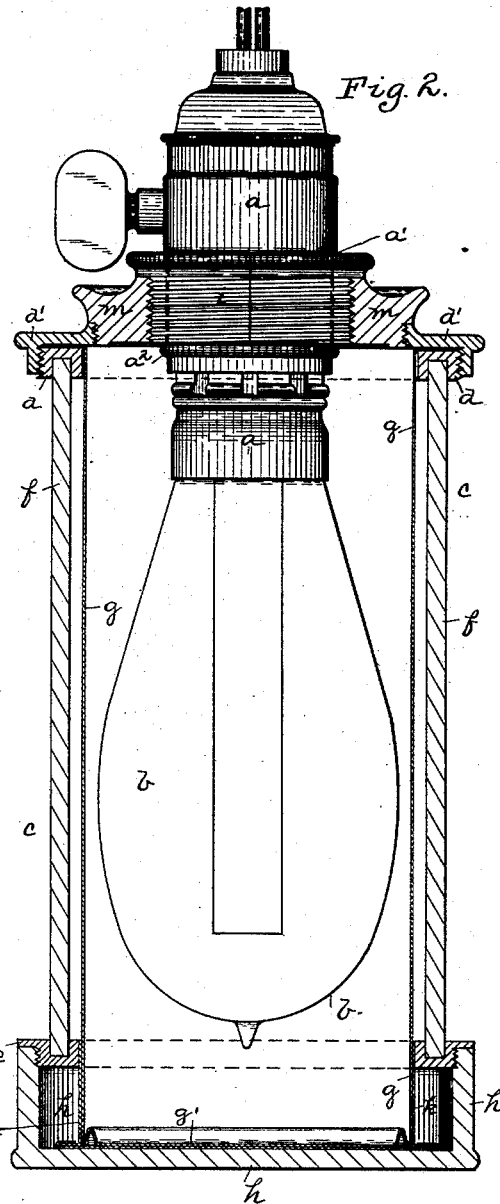
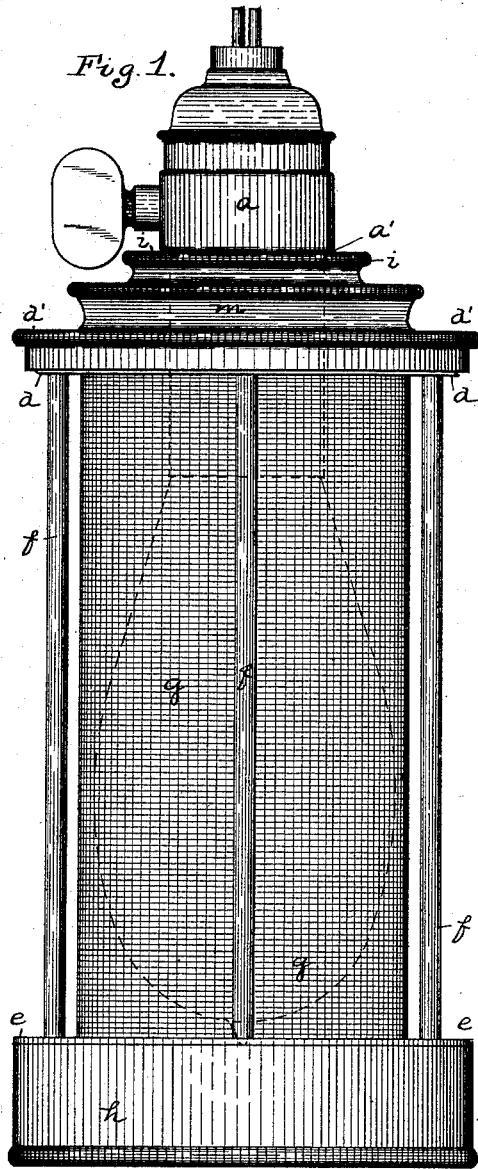


(No Model.)

A. KEIL.  
ELECTRIC LANTERN.

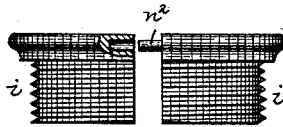
No. 489,150.

Patented Jan. 3, 1893.



Witnesses:

J. N. Coats.  
J. J. Kay.



Inventor:  
Adam Keil  
By James D. Ray  
Attorney

# UNITED STATES PATENT OFFICE.

ADAM KEIL, OF MCKEESPORT, PENNSYLVANIA.

## ELECTRIC LANTERN.

SPECIFICATION forming part of Letters Patent No. 489,150, dated January 3, 1893.

Application filed May 11, 1891. Serial No. 392,326. (No model.)

### *To all whom it may concern:*

Be it known that I, ADAM KEIL, a resident of McKeesport, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Electric Lant-  
5 new and useful Improvement in Electric Lant-  
terns; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to lanterns for use in  
10 mines and like places, with incandescent electric lights, its object being to provide a strong and substantial lantern to support the bulb and its holder, and protect it from injury by blows, while the light may be employed in  
15 any part of the mine with which electric connection can be made, and in case of the breaking or cracking of the bulb all fear of the igniting of any dangerous gases within the mine, will be precluded.

20 To these ends my invention consists in certain improvements and combinations of parts, all of which will be fully hereinafter set forth and claimed.

25 To enable others skilled in the art to make and use my invention, I will describe the same more fully referring to the accompanying drawings, in which

30 Figure 1 is a side view of my improved lantern; Fig. 2 is a sectional view showing the bulb within the lantern and illustrating the manner of connecting the bulb holder and lantern; and Fig. 3 is a side view of the sectional ring, partly in section.

35 Like letters of reference indicate like parts in each of the figures.

The bulb holder *a* can be of any suitable construction and the bulb *b* depending from the holder within the lantern may be of any suitable form. The frame *c* of this lantern is  
40 formed of the top ring *d*, the bottom ring *e* and the bars *f* extending between said rings so as to give it a rigid body. Where the inclosing body *g* is formed of wire gauze, it extends through between said rings and is  
45 flanged out over the top ring *d* and is clamped in place by the cap ring *d'* which screws onto the top ring *d*. This wire gauze body *g* is also closed at its lower end by the wire disk *g'* which may be formed integral therewith and  
50 this disk is inclosed within the base piece *h* which screws onto the bottom ring *e*, so firmly

inclosing the base of the gauze body. At the same time as it is extremely desirable to prevent the passage of flame from the lantern in case of the ignition of the gases therein, I prefer to employ a supplemental gauze cap *h*  
55 within the base piece *h* and fitting around the disk *g'*, of the gauze body, (thereby providing a gauze body with two thicknesses of material for its base) and so entirely precluding the  
60 passage of any such flame or spark in case of the breaking of the bulb and the ignition of any gas within the lantern in consequence thereof. At the same time the base piece *h* forms a solid and substantial base on which the lantern may  
65 rest. It is also necessary to form a substantial and gas tight connection between the bulb holder and the lantern and to insure a tight joint between the same so that it is necessary to have some construction which will engage  
70 with the bulb holder without the necessity of passing over or around the bulb. To accomplish this I employ a sectional or partible ring *i* which, as illustrated, is formed in two  
75 pieces which fit around the annular seat *a'* of the bulb holder just above the shoulder *a'* of the outer face of such sectional ring being threaded and a screw ring *m* screwing onto  
80 such sectional ring and binding it onto the bulb holder. The edges of the two parts of the sectional ring fit against each other and in order to hold them in line, I employ pins  
85 *n*<sup>2</sup> on one section, fitting into seats on the other section, so drawing the two parts of the ring into such position that the threads on the outer surface of the ring will coincide.  
90 When the screw ring *m* is secured around the sectional ring, it binds the two parts thereof together and at the same time it provides a ring of greater diameter than the  
95 largest portion of the bulb to screw into the cap ring *d'* and so provide a means of entering the bulb into and securing it within the lantern body. The sizes and shapes of the different parts may of course, be varied ac-  
100 cording to the different bulbs or bulb holders which are to be employed with the lamp.

In employing the lantern as above described, the operator before the bulb is secured within the bulb holder, places the sectional ring *i* around the seat *a'* of the bulb holder and above the shoulder *a'* thereof, the

pins  $n^2$  in one section entering the seats in the other section of the ring, he then screws around such sectional ring the screw ring  $m$ , so securing the sectional ring around the bulb holder. The bulb is then connected to the bulb holder in the usual way, and the bulb is passed down into the lantern, the entrance through the top ring and its ring cap being large enough to permit the bulb to enter the lantern. He then screws the ring  $m$  into the top ring or its ring cap and so secures the bulb within the lantern. The lantern may be employed in any desired way, either within the hallways of the mine or within the rooms where the work is being done, being either hung by the cords carrying the wires of the incandescent lamp, or supported on its base piece. When mining, the operator can place it upon the floor of the mine, or can hang it in the mine, and in case it is turned over and meets with any hard usage, the body of the lantern is of sufficient strength to entirely protect the fragile bulb and prevent fracture thereof by blows; while at the same time, the lantern may be swung by the operator as may be found necessary and danger of injury to the bulb in case the lantern comes in contact with any hard surface, is prevented. He may also, as found necessary, pass the same into the kerf or cutting without fear of injury to the lantern, this being necessary under some circumstances in the ordinary operations of mining. In case the lantern body should be crushed by any severe accident happening thereto by which the bulb would be cracked or broken, and cause the ignition of any gases which might be within the lantern body by the spark of the incandescent light all liability of ignition of surrounding gases so as to cause an explosion, would be prevented by the gauze body of the lantern, so that the liability of the ignition of the gases is precluded under any circumstances. The lantern

may be employed in this way for any length permitted by the connecting cords carrying the wires, and a much more brilliant light and safer light than has heretofore been found practicable to be used in mines, is obtained; while the fouling of the air of the mine by the miners' lamps is prevented. The lantern may of course be employed for other purposes, and in case it is desired to employ a glass body portion instead of the gauze body portion, the glass may be secured within the frame and seated therein, in any suitable way. If such lantern is employed in a mine, the ends of the glass body would of course be seated against rubber or like rings so as to preclude the passage of any gases into the lantern.

What I claim as my invention and desire to secure by Letters Patent, is:

1. In combination with an incandescent lamp bulb and its holder, a sectional ring fitting around the holder and having a threaded outer surface, a screw ring around the sectional ring, and an inclosing lantern body fitting around the bulb and engaging with the screw ring, substantially as and for the purposes set forth.

2. The combination with an incandescent lamp bulb and its holder, of the sectional ring  $i$  having a threaded outer surface the screw ring  $m$  screwing thereon and the lamp body having the top ring  $d$  and bottom ring  $e$  connected by the bars  $f$ , and a threaded connection between said screw ring and said top ring, substantially as and for the purposes set forth.

In testimony whereof I, the said ADAM KEIL, have hereunto set my hand.

ADAM KEIL.

Witnesses:

J. N. COOKE,  
ROBT. D. TOTTEN.