

(No Model.)

W. PATTERSON.  
MINER'S SAFETY LAMP.

No. 575,903.

Patented Jan. 26, 1897.

Fig. 2.

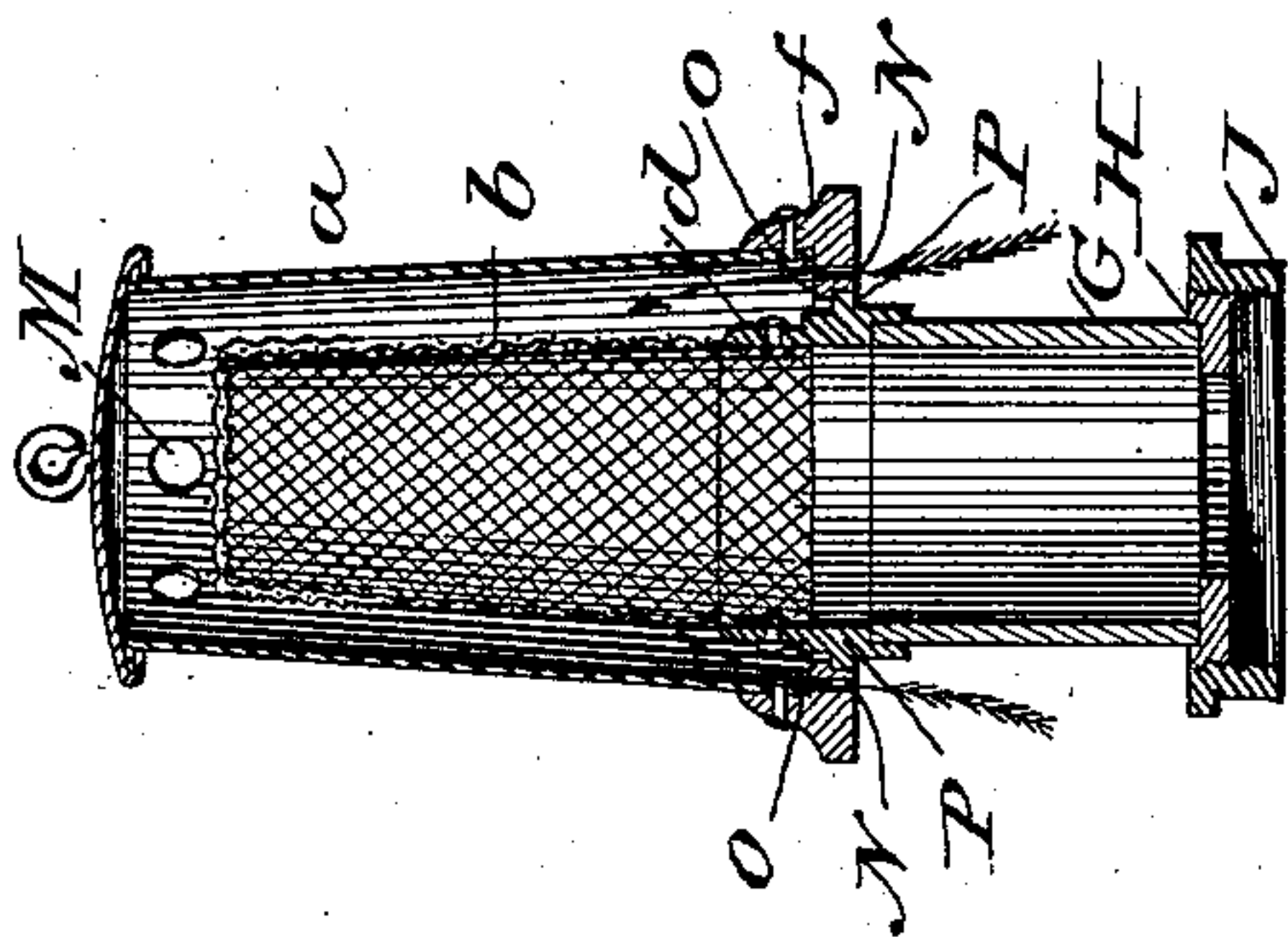


Fig. 1.

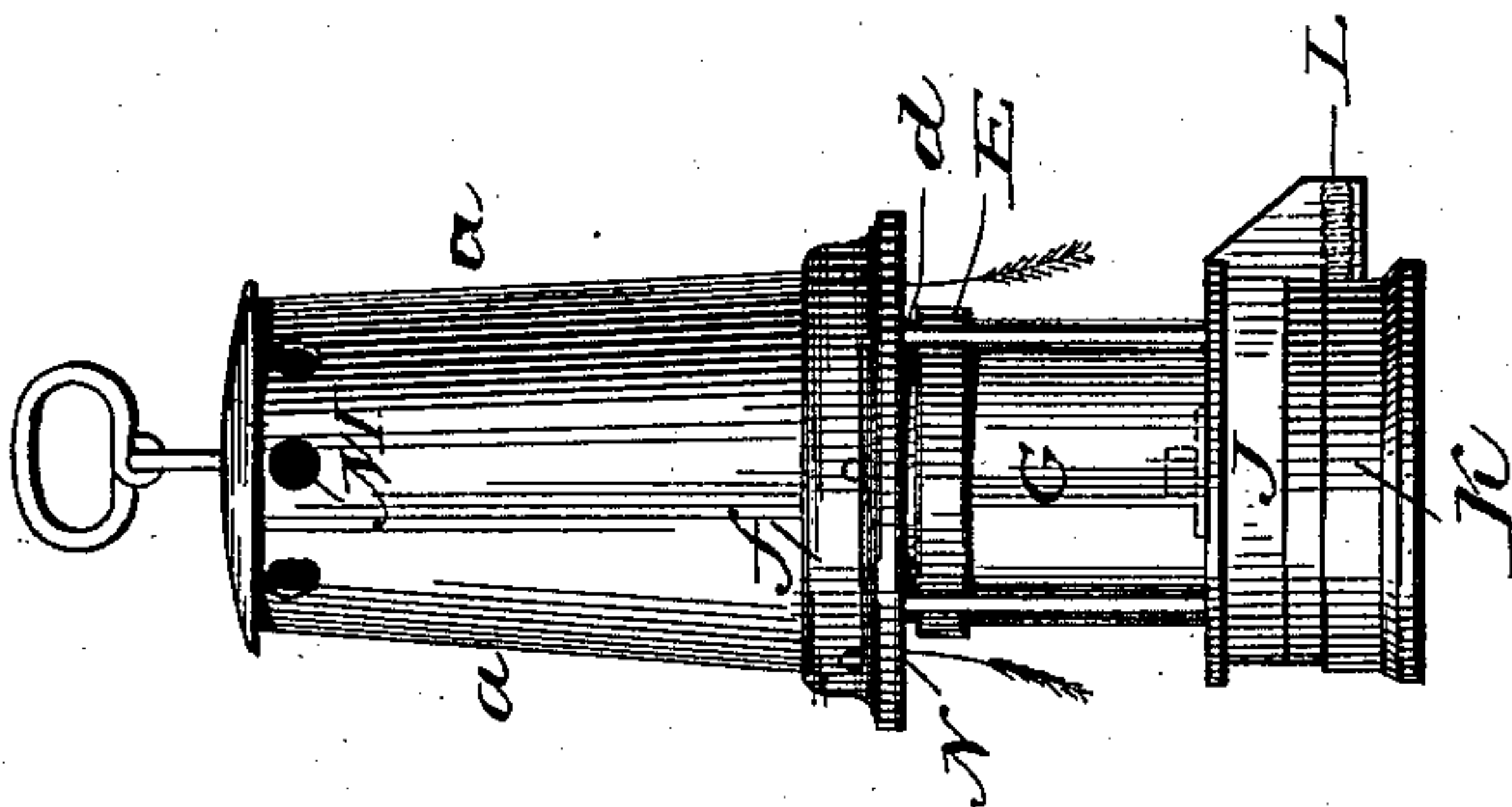
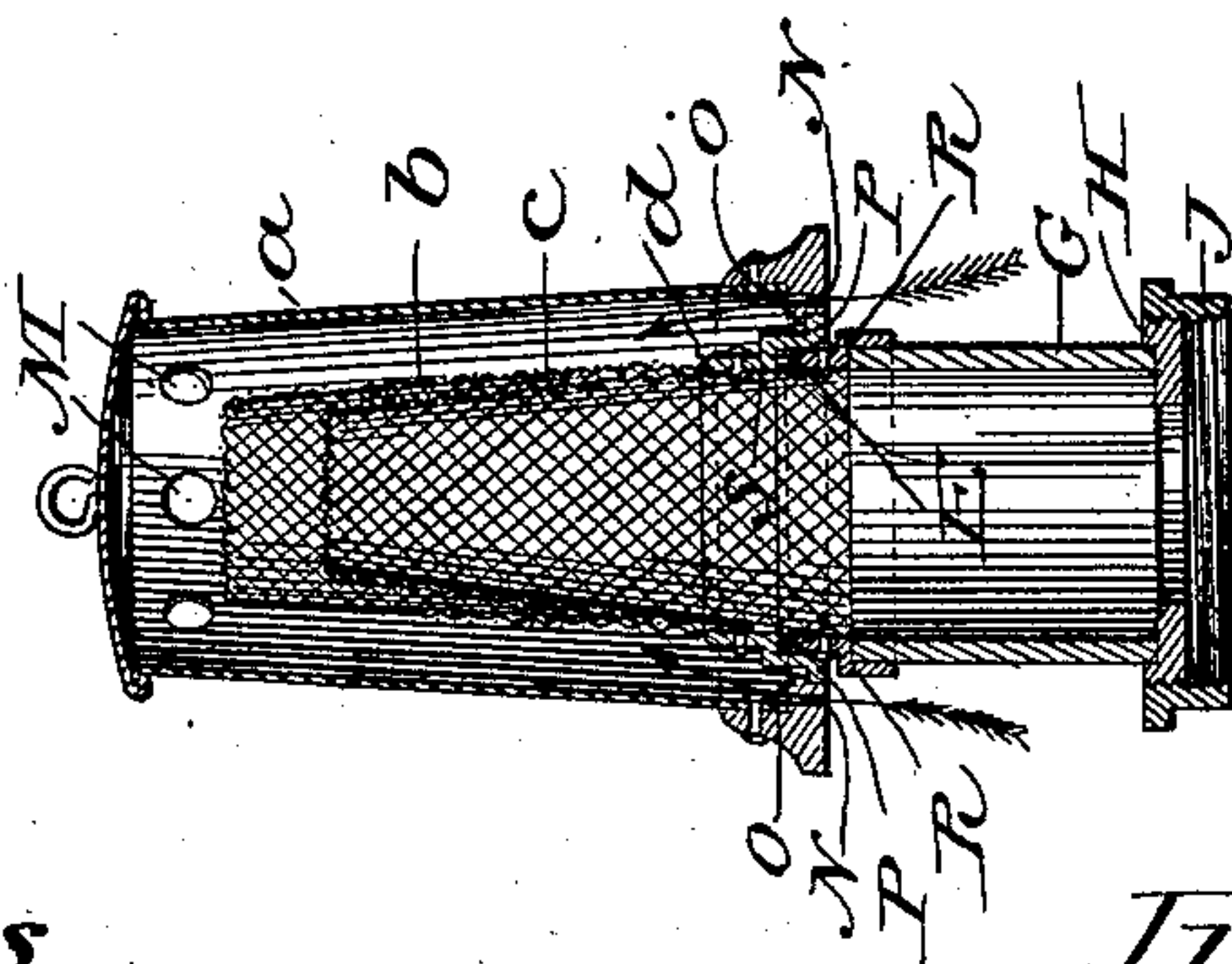


Fig. 3.



*Witnesses.*

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# UNITED STATES PATENT OFFICE.

WILLIAM PATTERSON, OF SCRANTON, PENNSYLVANIA.

## MINER'S SAFETY-LAMP.

SPECIFICATION forming part of Letters Patent No. 575,903, dated January 26, 1897.

Application filed April 23, 1896. Serial No. 588,845. (No model.) Patented in England November 17, 1890, No. 18,510.

*To all whom it may concern:*

Be it known that I, WILLIAM PATTERSON, a subject of the Queen of Great Britain and Ireland, residing in the city of Scranton, county of Lackawanna, State of Pennsylvania, have invented a new and useful Improvement in Miners' Safety-Lamps, which improvement is fully set forth in the following specification and accompanying drawings, and for which Letters Patent have been granted in Great Britain, No. 18,510, dated November 17, 1890.

My invention consists of a miner's safety-lamp having a case-top and lower rings, formed as described and claimed, whereby the omission of any of the said parts in assembling the same will be readily detected, owing to the inability or failure of the connection of the same.

It further consists in the combination and arrangement of the parts hereinafter described and claimed.

Figure 1 represents a side view of a lamp embodying my invention. Fig. 2 represents a vertical section of a lamp embodying my invention in which one gauze and ring is used. Fig. 3 represents a vertical section of lamp embodying my invention in which two gauzes with rings are used.

Similar letters indicate like parts in the different figures.

Referring to the drawings, *a* designates the bonnet of a miner's safety-lamp, preferably formed of sheet metal and provided at top with a handle *A* and in its side with the openings *M* for the passage therethrough of the products of combustion. Secured to the lower end of the bonnet by screws or in any other suitable manner is the annular metallic case-top *f*, which is provided with a perforated base *N*, having an inwardly-extending shoulder *O*.

Below the case-top *f* and connected therewith by standards *G*<sup>x</sup> is the ring *J*, to which the lamp-bottom or oil-reservoir *K* is detachably secured.

In Fig. 2 a single gauze *b*, with the ring *d* secured to its base, is shown, said ring having an outwardly-extending flange *P*, adapted to abut against the shoulder *O* of the case-top *f*.

*G* designates a glass cylinder or globe which is supported on the holder *H*, the latter being adjustable in the ring *J*. The upper end of the cylinder *G* bears against a shoulder *S* on the inner face of the ring *d*. The rotatable screw-threaded holder *H* supports said cylinder, operating the same. Washers of asbestos are preferably placed between the ends of the cylinder and the ring *d* and support *H*, so as to form tight joints.

In Fig. 3 an outer gauze *b* with its ring *d*, having a flange *P*, bearing against the shoulder *O*, as in figure, is shown; but there is also an inner gauze *C* with its ring *E*, the latter ring being below the ring *d* and having an outwardly-extending flange *R*, which bears against the lower end of the ring *d* to prevent its entrance into the same. The lower end of the said ring *E* has a shoulder on its inner face, against which bears the cylinder *G*, which is supported on a ring *H*, as in Fig. 2. The external diameter of the ring *E* is such that it would pass through the shoulder *O* if the ring *d* were removed or absent, so that the parts could not be properly assembled or put together were said ring *d* with its gauze to which it is secured left out, while if the ring *E* with its gauze *c* were omitted the glass cylinder would pass into the bonnet of the lamp.

It is evident that any omission or absence of the parts is readily seen when the lamp is being put together, as such omission prevents the proper assembling of the parts.

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

1. In a miner's safety-lamp, a bonnet having attached thereto at its lower end a case-top with an inwardly-extending flange forming a shoulder, a gauze having a ring with an outwardly-extending flange adapted to abut against said shoulder and the case-top, and means for receiving the upper end of the glass of the lamp adapted to be prevented by said gauze-ring from entering said bonnet, the said glass normally passing through said case-top.

2. In a miner's safety-lamp, a bonnet having a case-top with an inwardly-extending flange forming a shoulder, a gauze with a ring

secured to its base having an outwardly-extending flange adapted to abut against said shoulder, and a gauze having a ring with an outwardly-extending flange adapted to be  
5 seated on a shoulder in the ring on the first-mentioned gauze, the glass of the lamp which abuts against said second gauze-ring being

normally adapted to pass through the case-top of said bonnet if the first gauze be omitted.

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Witnesses:

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