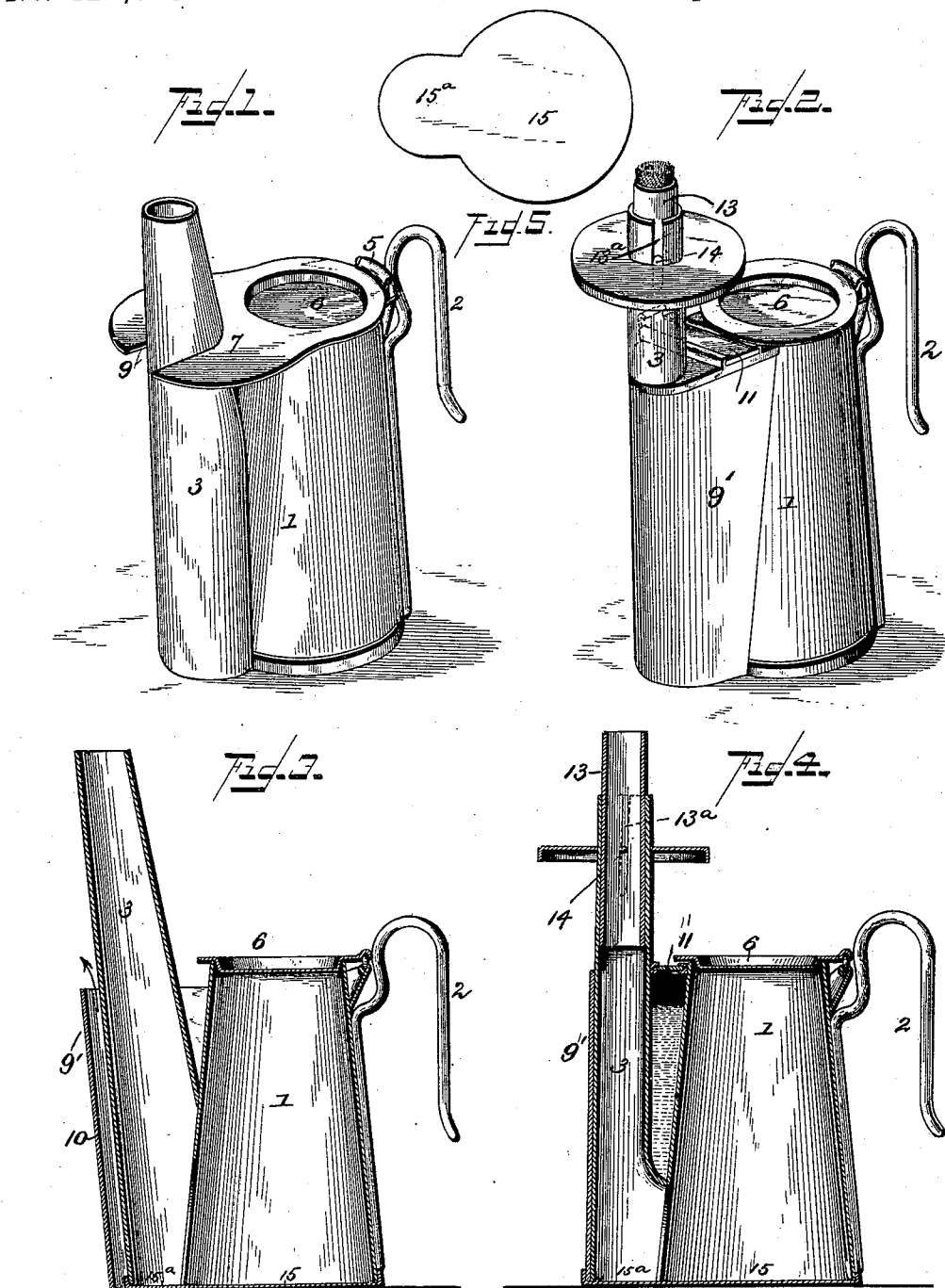


(No Model.)

H. J. RICHARDS.  
MINER'S LAMP.

No. 427,013.

Patented Apr. 29, 1890.



WITNESSES,  
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# UNITED STATES PATENT OFFICE.

HENRY J. RICHARDS, OF WILKES-BARRÉ, PENNSYLVANIA, ASSIGNOR OF  
ONE-HALF TO CHARLES H. GARDNER, OF SAME PLACE.

## MINER'S LAMP.

SPECIFICATION forming part of Letters Patent No. 427,013, dated April 29, 1890.

Application filed November 6, 1889. Serial No. 329,413. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY J. RICHARDS, a citizen of the United States, residing at Wilkes-Barre, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Miners' Lamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in miners' lamps which are designed to be secured to the cap or hat of the user. As now ordinarily constructed, these lamps are very objectionable, in that the spout projects obliquely from the lamp-body, causing the oil to ooze out of the top of said spout when a person is in a leaning position, as the lamp is then higher than the top of the spout or wick-tube.

It is the object of my invention to overcome this difficulty by employing a lamp base or bottom of peculiar shape in connection with a wick-tube arranged perpendicular thereon, which will appear more fully hereinafter.

The invention consists in the novel features of construction and new combinations of parts, hereinafter fully described, and definitely pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a perspective view of a lamp constructed according to my invention. Fig. 2 is a perspective view of a modification of the same. Fig. 3 is a sectional view of another modification, and Fig. 4 a sectional view of the modification shown in Fig. 2. Fig. 5 is a view of the lamp-bottom.

In the said drawings, the reference-numeral 1 designates the body of the lamp, which may be of the ordinary or usual construction.

2 designates the handle or hook by which it is secured to the hat or cap.

3 is the wick-tube, which forms part of the lamp-body or is secured thereto at its forward or front portion, and contains an ordinary wick.

Hinged to the body at 5 is the cover 6, which is stamped or struck up from sheet

metal, with a depression in the center which corresponds with the opening in the lamp-body. As seen in Fig. 1, this cover is extended forwardly at 7 and is provided with a slot 9, which receives the wick-tube. This top forms a shield whereby the heat and flame are prevented from striking the lamp, and thus unduly heating the same. It will be seen that this top is stamped from a single piece of metal, thus forming a combined hinged cover or top as well as a shield or guard.

In Figs. 2 and 4 the shield is made separate from the top and is carried by the wick-tube.

In Fig. 3 the wick-tube is shown as surrounded by a casing or housing 9', which forms an air-space 10 around it and aids in keeping the lamp-body cool.

In Figs. 2 and 4 the casing 9' is shown closed at the top and provided with a hinged cover 11, and the space 10 in this case may be filled with water.

In burning different kinds of oil it is necessary that the wick-tube should be elevated at different heights or be made adjustable. For this purpose I have devised the improvement shown in Figs. 2 and 4, the same consisting in providing the upper portion of the wick-tube with a vertical slot 13<sup>a</sup>, extending from the edge thereof to a suitable distance below. I have also provided a supplemental interior tube 13, fitting within the wick-tube proper and provided with a pin or projection 14, working in the slot 13<sup>a</sup> and limiting its vertical movement.

From the above it will be seen that the lamp-body is effectually shielded from the heat and flame by the shield 7 and prevented from being overheated. The casing 9 also aids in keeping the body cool. It will also be noted that the wick-tube carrying the wick can be adjusted vertically within the wick-tube 3, thus adapting it to burning heavy or light oils.

Fig. 5 of the drawings illustrates clearly the contour of the lamp-body, from which it will be seen that it has formed integrally therewith a projecting lip 15<sup>a</sup>. Upon this projecting lip the lower end of the wick-tube

is adapted to be seated, said lower end registering with usual opening in the lamp-body. By this construction I am enabled to provide a perpendicular wick-tube, (illustrated in Figs. 1, 2, and 4,) which is the preferred plan of constructing my device and which secures many advantages.

Experience has taught that a perpendicular spout is the most desirable in miners' lamps, and experience has also demonstrated that a perpendicular spout cannot be put on a common miner's lamp with a round bottom so that it will burn satisfactorily. This construction of the bottom of the lamp therefore enables—

First, the employment of an upright spout or wick-tube which will burn any one of the many kinds of burning-oil now used in the mines or any mixture of these oils, because the upright spout admits of a large aperture being made in the lamp-body where the spout is connected thereto, thus allowing the heavy burning-oils to mingle freely with the wick and also feed the flame properly.

Secondly, all ordinary miners' lamps are provided with a round bottom, and therefore the spout must necessarily project from the side of the lamp and the inclination be away from the body. When a person wearing such a lamp is in a leaning position, the lamp-body is higher than the top of the spout, and naturally the oil oozes out thereof, runs down the sides, and frequently catches on fire, melting the solder on the lamp and rendering it unfit for further use. It thus happens very often that a miner is burned by oil which drops from the top after catching on fire. My spout, being perpendicular, remains in almost an upright position whatever be the posture of the person wearing it, thus avoiding the danger of accident, as described above.

Thirdly, on account of the upright position

of my spout it brings the top of it above the lamp-body, and when the lamp is worn by mule-drivers and car-runners, who are generally compelled to work in a strong current of air, the flame, instead of blowing back against the body of the lamp, is blown over the top thereof, thus avoiding the heating of the body and keeping it comparatively free from smut and dirt.

Having thus described my invention, what I claim is—

1. In a miner's lamp, the combination, with a lamp-body provided with an enlarged exit-aperture at the front and having the bottom provided with a forwardly-projecting lip, of a wick-tube secured to said forwardly-projecting lip and having the lower open end registering with the opening in the lamp-body, substantially as set forth.

2. In a miner's lamp, the combination, with a lamp-body provided with an enlarged exit-aperture at its front and having its bottom provided with a forwardly-projecting lip, of a perpendicular wick-tube secured to said forwardly-projecting lip and having its lower open end registering with the opening in the lamp-body, substantially as set forth.

3. In a miner's lamp, the combination, with a wick-tube provided at its upper end with a vertical slot, of a supplemental tube fitting therein, said tube provided with a laterally-extending pin or projection passing through said slot, and a shield or guard arranged upon said wick-tube intermediate the flame and lamp-body, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY J. RICHARDS.

Witnesses:

CHAS. H. GARDNER,  
W. H. RICHARDS.