A. D. ZIMMERMAN.

MINER'S LAMP.

APPLICATION FILED MAR. 26, 1919.

**1,328,553.** Patented Jan. 20, 1920.

Fig. 1.

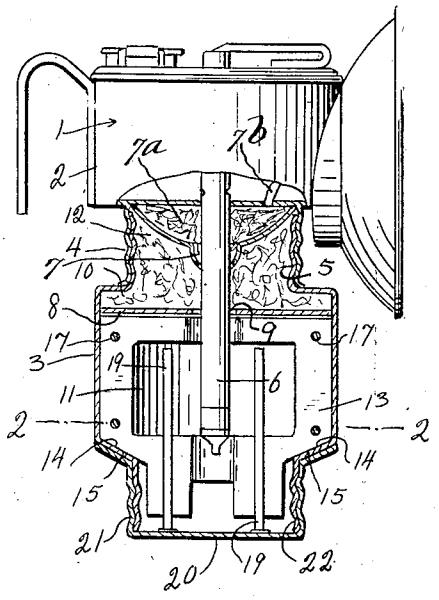



Fig. 3.

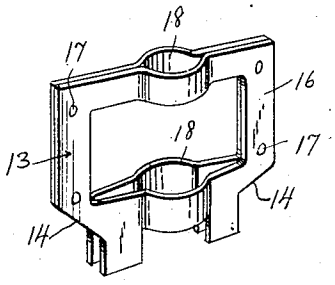



Fig. 2.

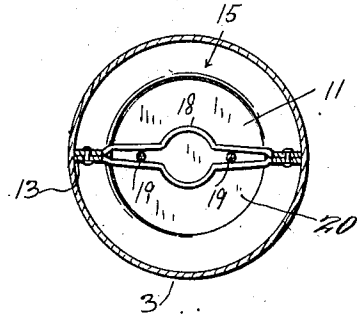
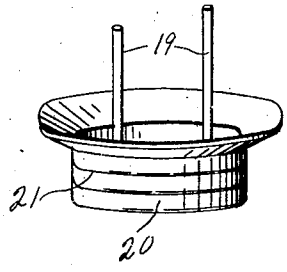



Fig. 4.




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# UNITED STATES PATENT OFFICE.

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## MINER'S LAMP.

1,328,553. Specification of Letters Patent. Patented Jan. 20, 1920.

Application filed March 26, 1919. Serial No. 285,394.

*To all whom it may concern:*

Be it known that I, ALONZO D. ZIMMERMAN, a citizen of the United States, residing at Superior, in the county of Boulder and State of Colorado, have invented certain new and useful Improvements in Miners' Lamps, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to a miner's lamp, and particularly to a cleaner or scraper.

The invention aims to provide an improved scraper or cleaning device particularly adapted for use in the carbid chamber of the lamp, for scraping or removing the particles of carbid from the wall of the chamber.

The invention further aims to provide an especially constructed scraper located in the carbid chamber, and means carried by the closure for the lower end of the chamber to engage the scraper, whereby, upon rotating the closure, the scraper is rotated in the chamber, scraping the particles of carbid from the wall.

The invention further aims to provide a scraper consisting of a pair of similarly constructed skeleton frames riveted or otherwise fastened together and having means engaging about the water feed tube from the water chamber, to support the scraper concentrically in the carbid chamber.

The invention further aims to provide a scraper, the two frames of which near their lower ends being partially separated, for the reception of a pair of uprights carried by and rising upwardy from the closure for the carbid chamber, so that when rotating the closure, the scraper will be correspondingly rotated.

The invention further aims to provide a miner's lamp having a chamber super-imposed with relation to the carbid chamber, for the reception of a packing, which constitutes filtering or straining means for the gas emanating through the central opening in the partition between the two chambers, that is ascending from the carbid. It is to be noted that an advantage of the present device is that the threads connecting the two sections of the lamp never become corroded.

While the design and construction at present illustrated and set forth is deemed preferable, it is obvious that as a result of a reduction of the invention to a more practical form for commercial purposes, the invention may be susceptible to changes, and the right to these changes is claimed, provided they are comprehended within the scope of what is claimed.

The invention comprises further features and combination of parts, as will be hereinafter set forth, shown in the drawings and claimed.

In the drawings:

Figure 1 is a vertical sectional view through a miner's lamp, showing the upper and lower chambers, and illustrating the scraper as located in the carbid chamber.

Fig. 2 is a horizontal sectional view on line 2—2 of Fig. 1.

Fig. 3 is an enlarged detail view of the scraper removed from the chamber.

Fig. 4 is a detail view of the closure for the carbid chamber.

Referring more especially to the drawings 1 designates a miner's lamp as a whole, and which consists of two sections 2 and 3. The upper section is of the usual construction, and is provided with a downwardly extending contracted threaded part 4, into which the threaded extension 5 of the lower section 3 is threaded. Extending from the bottom of the upper section 2 and in communication with the water chamber $2^a$ of the upper section 2 is a water conducting tube 6, there being openings 7 adjacent the diametrically opposite sides of the tube adjoining the gas chamber $7^a$. The lower section 3 has a partition wall 8 having a central opening 9 through which the water conducting tube passes. By means of this partition upper and lower chambers 10 and 11 are caused to be formed. The upper chamber receives a suitable packing, such as wool or the like 12 through which the gas arising from the carbid passes. The lower chamber 11 is designed for the reception of the carbid. The opening in the partition is large enough in diameter to afford a space between the wall of the opening and the exterior of the tube, so that the gas generated in the carbid chamber may pass therethrough, and then through the wool packing, and subsequently out through the gas conducting tube $7^b$.

Mounted in the carbid chamber is a scraper 13, which is of a shape to fit the contour of the chamber. This scraper is provided with shoulders 14, to engage the annular shoulder 15 of the carbid chamber, so as to support the scraper whereby its upper portion may be in close position to the under

face of the partition. This scraper consists of a pair of correspondingly constructed frames 16, which are skeleton form. These two frames have their opposite side portions riveted together as shown at 17. The upper and lower transverse portions of the frames have diametrically opposed semi-circular portions 18 engaging on diametrically opposite sides of the water conducting tube, whereby the scraper is maintained concentrically in the chamber, so that the opposite side edges of the vertical parts of the scraper may be positioned in close position to the cylindrical wall of the chamber. It is obvious that when the scraper is rotated the opposite side edges of the riveted parts of the scraper will contact with the wall of the chamber, thereby remove or scrape the particles of the carbid from the wall. Referring to the horizontal sectional view, and also to the detail view of the scraper, it will be observed that the lower portions of the frames of the scraper are separated, sufficiently for the reception of the uprights 19, which extend vertically from the bottom of the closure 20, which has threads 21 to engage the threads of the extension 22 of the section 3. It is apparent that upon rotating the closure, when detaching the same from the extension of the lower section 3, the uprights engaging between the two frames of the scraper will cause a revoluble movement to be imparted to the scraper. The edges of the scraper will then contact with the wall of the carbid chamber and scrape the particles therefrom. The edges of the upper parts of the frames of the scraper will also contact with the under surface of the partition, for the purpose of removing the particles of carbid. The shoulders of the scraper contacting with the annular shoulder of the carbid chamber, will likewise remove the particles of used carbid from the annular shoulder.

The invention having been set forth, what is claimed as new and useful is:

1. In a miner's lamp, the combination with a casing having upper and lower chambers, the former being in superimposed relation to the latter, of a partition wall between the two chambers and provided with a central opening, a water conducting tube extending from the water chamber of the lamp through said opening and into the lower chamber, a scraper mounted in the lower chamber and engaging the water conducting tube, whereby the scraper is maintained concentrically in the lower chamber, a closure for the lower chamber, and means carried by the closure engaging said scraper, for imparting motion thereto when the closure is rotated.

2. In a miner's lamp, the combination with a casing having packing and carbid receiving chambers, the former being superimposed with relation to the latter, of a partition between the two chambers and provided with a central opening, a water conducting tube extending from and in communication with the water chamber of the lamp passing through said opening and into the carbid chamber, a scraper in the carbid chamber and rotatably mounted upon the water conducting tube, said scraper comprising a pair of oppositely disposed skeleton frames riveted together, a closure for the carbid chamber, and means carried by the closure engaging between the two frames of the scraper, whereby when the closure is rotated, revoluble movement is imparted to the scraper.

3. In a miner's lamp, the combination with a casing provided with a carbid chamber in its lower portion, of a bottom closure for said chamber, a water conducting tube leading from the water chamber of the lamp into the carbid chamber, a scraper mounted in the chamber being mounted upon the water conducting tube whereby if is held concentrically in the tube, and means carried by the closure and engaging the scraper, whereby upon rotating the closure, revoluble movement is imparted to the scraper.

4. In a miner's lamp, the combination with a casing provided with a carbid chamber in its lower portion, of a bottom closure for said chamber, a water conducting tube leading from the water chamber of the lamp into the carbid chamber, a scraper mounted in the chamber being mounted upon the water conducting tube whereby it is held concentrically in the tube, said scraper comprising a pair of oppositely arranged correspondingly constructed skeleton frames, means for riveting the frames together, the upper and lower parts of said frames having semi-circular parts engaging the water conducting tube, the lower parts of the frames being spaced and means carried by the bottom closure engaging between the frames to rotate the scraper, when the closure is rotated.

In testimony whereof I hereunto affix my signatifre in the presence of two witnesses.

ALONZO D. ZIMMERMAN

Witnesses:
VIRGINIA T. PEWTHER,
WM. DILLEN.