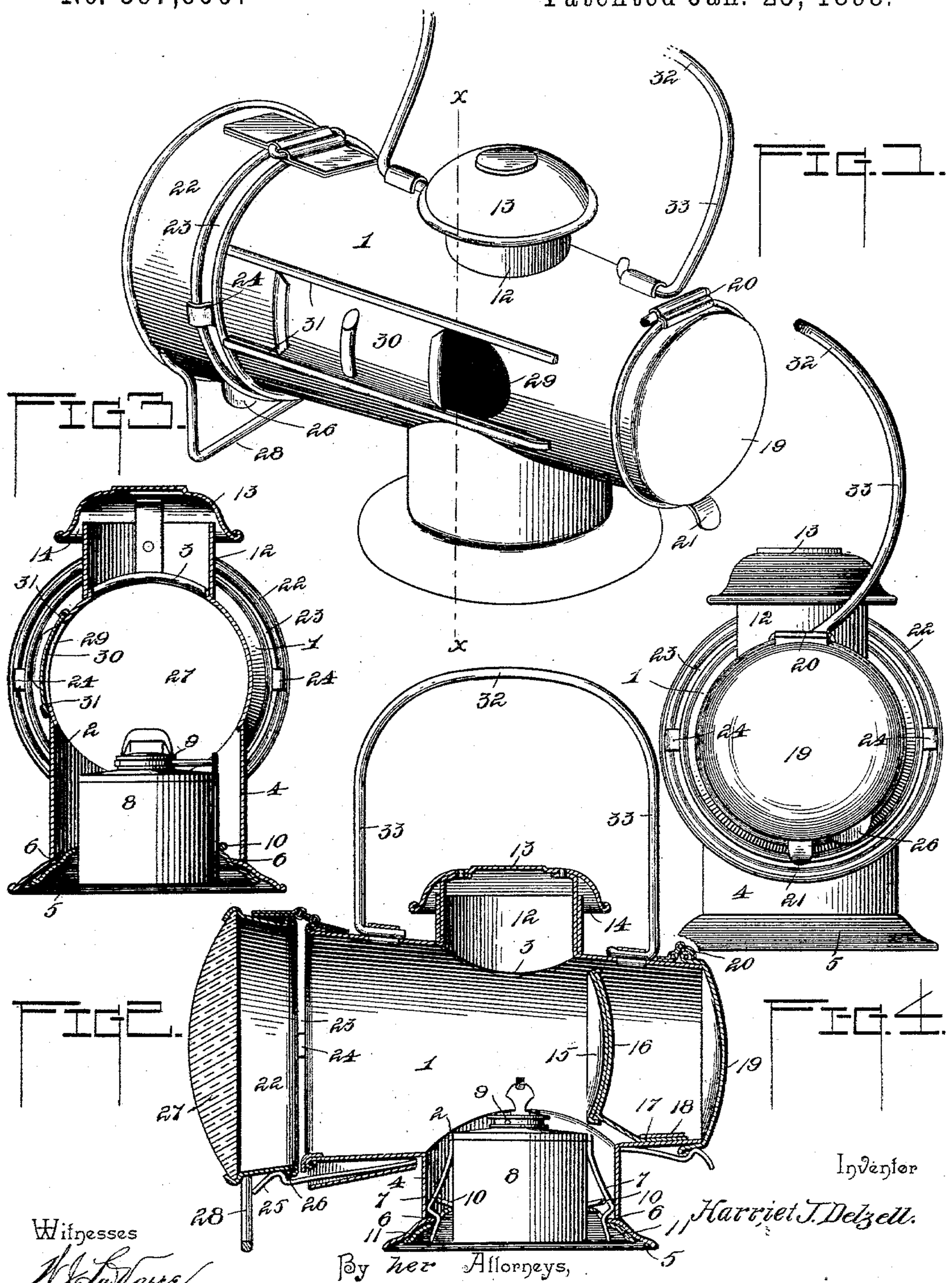
(No Model.)

H. J. DELZELL.

MINER'S LANTERN.

No. 597,960. Patented Jan. 25, 1898.



Witnesses
W. J. LaDuke.
Edwin Leise.

Inventor
Harriet J. Delzell.
By her Attorneys,
C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

HARRIET J. DELZELL, OF JACKSON, CALIFORNIA.

MINER'S LANTERN.

SPECIFICATION forming part of Letters Patent No. 597,960, dated January 25, 1898.

Application filed May 5, 1897. Serial No. 635,196. (No model.)

To all whom it may concern:

Be it known that I, HARRIET J. DELZELL, a citizen of the United States, residing at Jackson, in the county of Amador and State of California, have invented a new and useful Miner's Lantern, of which the following is a specification.

This invention relates to miners' lanterns, and the object is to provide a lantern which will give a strong light and which may be used in the wettest mines and in the strongest drafts without liability of being extinguished.

With these and other ends in view my invention consists in a lantern embodying the several details of construction and combination of parts hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a lantern made in accordance with my invention. Fig. 2 is a vertical longitudinal section. Fig. 3 is a vertical transverse section on the line *x x* of Fig. 1. Fig. 4 is an end view.

Similar reference-numerals indicate similar parts in the several figures.

The main body of the lantern is indicated by 1 and is of conico-cylindrical form with its large end toward the front of the lantern. This body is provided with apertures 2 and 3 at opposite points in its periphery and substantially midway of its length, the lower aperture 2 being larger than the upper one 3. A tube 4 is fitted into the aperture 2 and is provided with a flaring lower end 5, which forms one of the base-supports of the lantern. At the junction of the flaring end 5 with the tube 4 an internal annular flange 6 is formed, with which the spring-actuated hook-catches 7 on the reservoir 8 of the lamp 9 are adapted to engage in order to support the lamp within the tube 4, with its burner projecting into the lantern-body. Instead of a lamp a suitable holder for a candle may be similarly supported within the tube 4. The hook-catches 7 are preferably of spring metal, and in order to increase their spring action to insure positive engagement with the flange 6 a spring-wire 10 is secured midway of its length to the lamp-reservoir, with its free ends engaging the inner faces of the hook-catches 7. The ends 11 of the spring-catches project below the base of the lamp and serve as finger-holds, by means of which the hook-catches may be disengaged in order that the lamp may be removed.

The aperture 3 is for the purpose of ventilating the lamp, and a short tube 12 is secured in this aperture. A cap 13 is fitted over the upper end of the tube in such manner as to leave a space 14 between them to permit ventilation of the lantern and at the same time exclude water and strong currents of air from it.

15 represents a reflector arranged in the rear of the lantern and preferably of a diameter to fit the interior of the lantern-body. The reflector may be permanently secured to the lantern-body, but is preferably detachably connected to it in any suitable manner. In the drawings I have illustrated one method of attachment, consisting of a metal strip 16, firmly secured to the back of the reflector and bent at an angle, with its free end 17 extending beneath a strap 18, the latter being secured to the lantern-body. The rear end of the lantern-body is closed by a cap 19, which is hinged to the lantern-body at 20 and locked in its closed position by a spring-hook 21. The cap 19 may, however, be detachably connected to the lantern-body in any other suitable manner.

To the front end of the lantern-body a tapering cylindrical rim 22 is hinged, preferably in such manner that a space 23 is left between them, and a series of shouldered stops 24 are secured to the front end of the lantern-body to engage the rear end of the rim 22 to limit the inward movement of the latter.

25 represents a spring-hook attached to the lower portion of the lantern-body and adapted to engage a projection 26 on the rim 22 to lock the latter in its closed position. The cap 19 and the rim 22 are each provided with a projection 26, so disposed that it will be engaged by the forefinger of the right hand while the thumb engages the spring-hook, and by pressing in opposite directions with the thumb and finger, respectively, the cap or rim may be quickly and easily disengaged from the hook.

The small end of the rim 22 is preferably somewhat larger than the large end of the lantern-body, although they may be of the

same size, and the large end of the rim 22 supports a lens 27. Instead of a lens a plain glass may be employed.

The lantern thus tapers from its front to its rear end, and any strong draft that may move toward the front of the lantern will be carried over the space 23, and should any draft moving toward the rear of the lantern enter the space 23 it will not affect the burning of the lamp, since the tube 4 will protect the lower portion of the space 23 against a rear draft, and any current of air that enters through the upper portion of the space 23 will be deflected out again at the lower portion.

A wire loop 28 is rigidly secured to the lower portion of the rim 22 and projects downwardly to a level with the flaring bottom 5 of the tube 4 and serves as another base-support for the lantern. The front end of the lantern is much heavier than the rear end, and the support 26 prevents the lantern from tilting forward. The loop 28 also serves as a handle for moving the rim 22.

One side of the lantern-body is provided with an aperture 29 to give access to the wick in order to light it.

30 represents a slide supported and movable in suitable ways 31 to cover or uncover the aperture 29.

The lantern is provided with a bail 32, and the arms 33 of the bail are curved in order that they may fit around the body of the lantern when folded down in order to make the device more compact for packing and transportation.

The lens or glass may be colored, if desired, in order that the lantern may be used for signaling purposes.

While I have illustrated and described the rim 22 as being hinged to the lantern-body, it is obvious that it may be otherwise movably connected thereto.

From the foregoing description it will be seen that on account of the lantern tapering from front to rear and having a reflector at the rear of the lamp of substantially the same diameter as the interior of the lantern-body a strong light will be projected forward and widely diffused; also, that the light is effectually protected from strong currents of air and from water.

It will be understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim is—

1. In a lantern, a conico-cylindrical body having a downward tubular extension to form a support, combined with a rim, carrying a lens or glass, movably connected to the front end of the said body, and a downwardly-extending loop secured to the rim and forming another support for the lantern, substantially as described.

2. In a lantern, a conico-cylindrical body having a downward tubular extension provided with a flaring lower end, combined with a rim movably connected to the front end of the said body to leave a space between them, said rim carrying a lens or glass, and a downwardly-extending support rigidly secured to the rim and coöperating with the tubular extension to support the lantern, substantially as described.

3. In a lantern, a conico-cylindrical body having a downward extension to form a support, the wide end of said body being toward the front of the lantern, an illuminating device supported within the said body, and a reflector supported within the body in rear of the illuminating device, combined with a rim movably connected to the front end of said body to leave a space between them, a downward extension on the rim to form a support, a lens or glass carried by the rim, and a device to detachably lock the rim to said body, substantially as described.

4. In a lantern, a conico-cylindrical body the wide end of which is toward the front of the lantern, an illuminating device supported within the said body, and a reflector supported within the body in rear of the illuminating device, combined with a rim hinged to the front end of said body to leave a space between them, shouldered stops secured to the body and projecting forwardly therefrom to engage said rim, a device to detachably lock the rim to said body, a lens or glass carried by said rim, and downward extensions on the body and rim respectively, to form supports for the lantern, substantially as described.

5. In a lantern, a conico-cylindrical body, the wide end of which is toward the front of the lantern, an illuminating device and a reflector supported within the body, combined with a rim hinged to the front end of said body to leave a space between them, a projection on the rim, a spring-catch secured to said body to engage said projection, and a finger-piece on the rim to be engaged by the finger when the spring-catch is engaged by the thumb, whereby the rim may be released and turned on its hinge, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HARRIET J. DELZELL.

Witnesses:
THOS. CONLON,
E. CONLON.