(Model.) 2 Sheets—Sheet 1.

J. H. EWING & E. L. BILL.

Lantern.

No. 236,219. **Patented Jan. 4, 1881.**

Fig. 1.

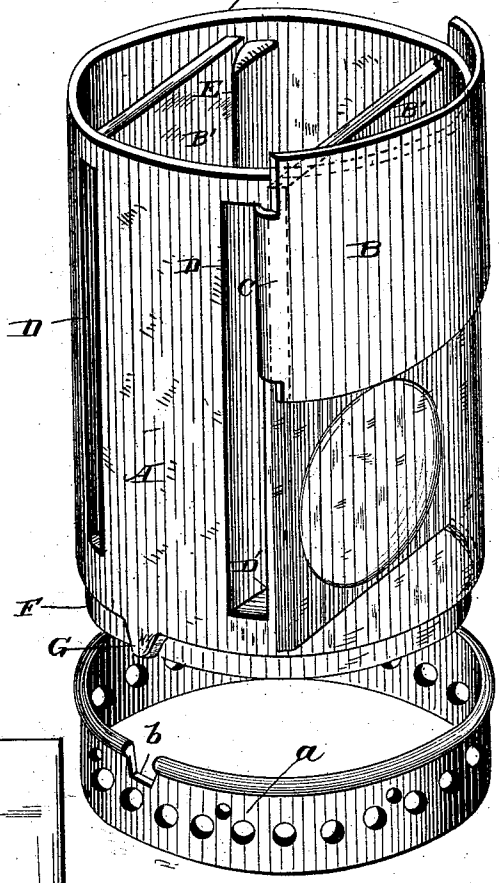


Fig. 2.

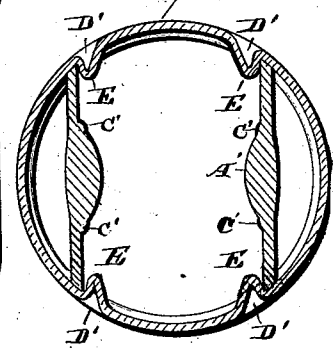


Fig. 3.

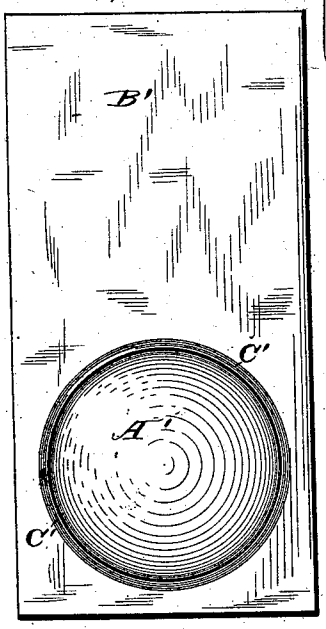


Fig. 4.

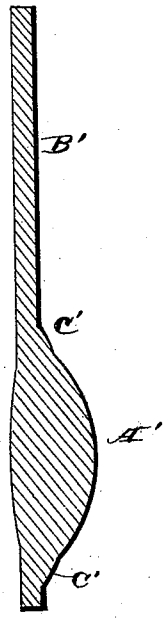


Fig. 5.

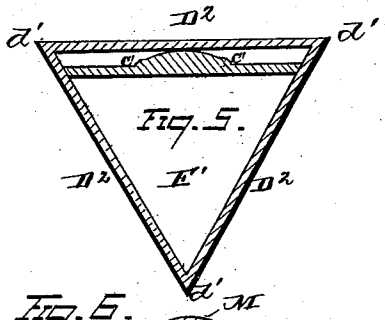
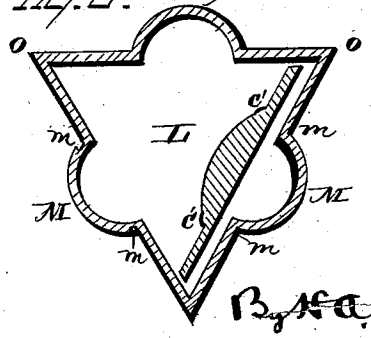


Fig. 6.



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(Model.) 2 Sheets—Sheet 2.

J. H. EWING & E. L. BILL.

Lantern.

No. 236,219. Patented Jan. 4, 1881.

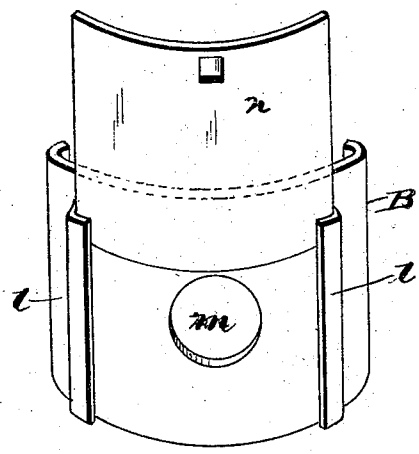


Fig. 7.

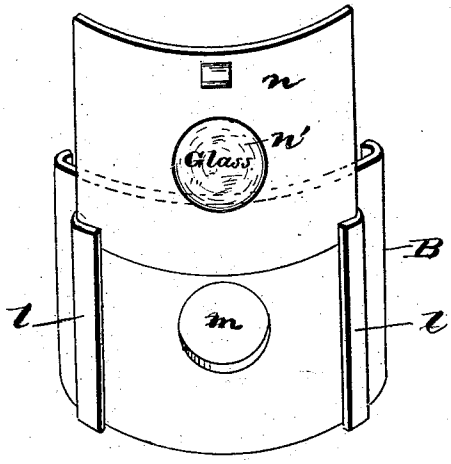


Fig. 8.

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UNITED STATES PATENT OFFICE.

JOHN H. EWING AND EDWARD L. BILL, OF WHEELING, WEST VIRGINIA.

LANTERN.

SPECIFICATION forming part of Letters Patent No. 236,219, dated January 4, 1881.

Application filed October 18, 1880. (Model.)

To all whom it may concern:

Be it known that we, JOHN H. EWING and EDWARD L. BILL, of Wheeling, in the county of Ohio and State of West Virginia, have jointly invented certain new and useful Improvements in Lanterns; and we 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to an improvement in lanterns or lamps, the object being to provide a device of this character with a cheap but effective bull's-eye lens, capable of being removed at pleasure and substituted by other lenses of different colors or magnifying powers, as the various occasions of its use may dictate.

Another object of our invention is to provide a lantern with a shield or screen having vertical adjustment on the cylinder or globe thereof and adapted to show or obscure the light, as desired.

Still another object of our invention is the provision of means whereby a lantern-cylinder may be removably but firmly secured to the lower band or ring of a lantern.

With these ends in view our invention consists, first, in the combination, with a cylinder or globe, of a bull's-eye lens removably secured thereto.

Our invention further consists in the combination, with a cylinder or globe, of a slide provided with a lens and adapted to be removably secured to the said cylinder.

Our invention further consists in the combination, with a cylinder having its inner face provided with ribs or guides, of a lens mounted on or formed integral with a slide, the latter being adapted to be received between two of the said ribs or shoulders.

Our invention further consists in the combination, with a cylinder, of a screen secured to the convex face of the cylinder and having vertical adjustment thereon.

Our invention further consists in the combination, with a cylinder having elongated vertical recesses or ribs in its convex face, of a segmental screen, the hook-shaped ends of which are adapted to be received in the elongated vertical recesses or ribs of the cylinder and retain and permit its vertical adjustment thereon.

Our invention further consists in the combination, with a cylinder, of a lens having an inclined beveled margin surrounding it and mounted on or made integral with a slide, and a screen (one or more) secured to and having adjustment on the cylinder.

Our invention further consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view, in perspective, of a lantern-cylinder provided with our improvements. Fig. 2 is a horizontal cross-section thereof. Fig. 3 is a view of a slide having a lens formed upon it and having a beveled margin around the lens. Fig. 4 is a view of the lens in vertical section. Figs. 5 and 6 show modified forms of lantern-cylinder, and Figs. 7 and 8 show modifications of screen or slide.

Let A represent a glass lantern-cylinder; B, a slide or screen, the hook-shaped ends C of which are received in the elongated vertical recesses D in the said cylinder, which latter is formed of molded or pressed glass, and is provided with elongated vertical recesses D, which latter form depressions D′ on the convex face of the cylinder and ribs or guides E on the concave face thereof. Around the lower edge of the cylinder a depending flange, F, is formed, having a projecting lug, G, on its peripheral face. Flange F is adapted to be received into the metallic band or ring *a*, the lug G of flange F being received into a notch, *b*, cut in the upper edge of the band, and thereby preventing the cylinder from rotary movement or displacement therein.

The bull's-eye lens A′ is made integral, as here shown, with a plate of glass, B′, which latter is cut to form a suitable slide to be received between two ribs, E, on the inner face of the cylinder. Said bull's-eye lens is surrounded by a margin, *c*′, which serves to increase the intensity and brilliancy of the light. An ordinary bull's-eye lens, mounted on a glass or metal slide, instead of being formed integral with the slide, as shown in the drawings, may be used, if desired. However, the superiority of our improved slide is manifest,

for, in addition to the fact that a compound construction would be more expensive, the metal frame would intercept many rays of light and also throw disagreeable shadows.

The shield or screen is constructed of metal, and has segmental form to fit the convex face of the cylinder A. Hook-shaped ends C of said screen B are received in the elongated vertical recesses D in the cylinder, and fulfill the double function of retaining the shield on the cylinder and of allowing it free vertical adjustment thereon.

If desired, the screen may be made of more parts than one, and such parts adapted to be telescoped one within the other when it is desired to show the light, or one may be provided with an aperture of sufficient size to show the light and another be adapted to slide over the aperture to completely shut off the light from that side of the cylinder. Again, the shield may be provided with very thin plates of colored glass covering an aperture in said shield, whereby the color of the light shown may be easily changed for signaling or other purposes.

Figs. 7 and 8 show screens constructed according to the description hereinabove given.

Fig. 7 represents the slide B (shown in Fig. 1 of the drawings) as attached to the outside of a glass lantern-cylinder, but here provided with two vertical grooves, *l l*, secured to its outer face, and an aperture, *m*. Screen *n* is adapted to have vertical movement in the grooves *l l* and obscure, when desired, the light passing through the aperture *m*.

Fig. 8 shows a construction of screen only different from that shown in Fig. 7 in that the screen *n* is perforated and has a thin plate of glass inserted therein, so that the light transmitted may be easily changed from its natural to a different color; or, again, both the apertures of the slide B and screen *n* may be provided with thin glass disks, each transmitting a different color. When, now, such different-colored disks are made to register with each other, the light transmitted will be of a different color from that before transmitted by either disk alone.

Fig. 5 shows a view, in cross-section, of a modified form of lantern-cylinder, wherein no ribs or recesses are necessary to support the slide or receive the screen. The glass F′ inclosing the flame is of triangular shape, and it will be seen that the slide may be supported therein in three positions and without other aid than the sides of the glass. With this triangular form of glass a flat instead of a segmental screen or slide is used, and it is retained on and has vertical movement on any one of the three faces D^2 D^2 D^2 of the glass, according to the position of the bull's-eye slide therein, by means of hook-shaped arms C, which clasp any two of the corners *d′ d′ d′*.

In Fig. 6 is shown a modified form of lantern-cylinder, wherein a triangular flame-protector or chimney, L, has a semicircular projection, M, from each face. This form of chimney, like that shown in Fig. 5, is in itself adapted to hold the slides in position without the aid of ribs or shoulders, and it may be provided with two forms of screen, as desired. One form, having a semicircular bulge in its central portion, may be adapted to clasp any two of the corners *o o o* of the chimney, while another form of screen might be secured to the face of the chimney by having hook-shaped arms locking into slight depressions at points *m* on the projections M.

The bull's-eye slide, as here shown, may be used in other connections than in lanterns. Burners may be fitted to receive a cylinder adapted to be fitted with removable bull's-eye slides. Among the instances of its advantageous use, a locomotive head-light may be mentioned here. It may be fitted to the lamp-burner or take the place of a chimney. The lenses will increase the brilliancy of the light and intercept no light-rays.

We would have it understood that we do not limit ourselves to the exact construction of parts shown and described, but hold ourselves at liberty to make such slight changes and alterations as will come within the spirit and scope of our invention.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a lantern or lamp, the combination, with a cylinder or globe, of a bull's-eye lens connected with a slide removably secured within the interior of the cylinder or globe, substantially as set forth.

2. In a lantern or lamp, the combination, with a cylinder or globe, of a slide having a bull's-eye lens formed integral therewith, said slide being removably secured within the interior of the cylinder or globe, substantially as set forth.

3. In a lantern or lamp, the combination, with a cylinder or globe, of a glass slide having a bull's-eye lens formed integral therewith, said lens being encircled by a beveled margin, substantially as set forth.

4. In a lantern or lamp, the combination, with a cylinder or globe provided with ribs or shoulders on its inner or outer face, of a bull's-eye lens constructed to be removably secured to the cylinder or globe by means of said ribs or shoulders, substantially as set forth.

5. In a lantern or lamp, the combination, with a cylinder having its inner face provided with ribs or guides, of a lens mounted on or formed integral with a slide, the latter being adapted to be received between two of the said ribs or shoulders, substantially as set forth.

6. In a lantern, the combination, with a cylinder, of a screen adapted to be secured to said cylinder by means of elongated vertical recesses in the convex face of the cylinder and hook-shaped ends of the screen, substantially as set forth.

7. In a lantern or lamp, the combination, with a cylinder having elongated vertical recesses or ribs in its convex face, of a segmental

screen the hook-shaped ends of which are adapted to be received by the elongated vertical recesses or ribs of the cylinder and retain and permit its vertical adjustment thereon, substantially as set forth.

8. In a lantern or lamp, the combination, with a cylinder, of a lens secured to the concave and a screen secured to the convex face of said cylinder, substantially as set forth.

9. In a lantern or lamp, the combination, with a cylinder, of a lens mounted on or made integral with a slide, and a screen adapted to have vertical adjustment on the convex face of the cylinder, substantially as set forth.

10. In a lantern or lamp, the combination, with a cylinder, of a lens having an inclined beveled margin surrounding it and mounted on or made integral with a slide, and a screen secured to and having adjustment on the cylinder, substantially as set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 13th day of October, 1880.

JOHN H. EWING.
EDWARD L. BILL.

Witnesses:
JOS. S. MILLER,
JAS. C. BAKER.