F. D. SPEAR.

LENS CARRIER FOR LANTERNS.

APPLICATION FILED MAR. 27, 1909.

939,754. Patented Nov. 9, 1909.

Fig. 1.

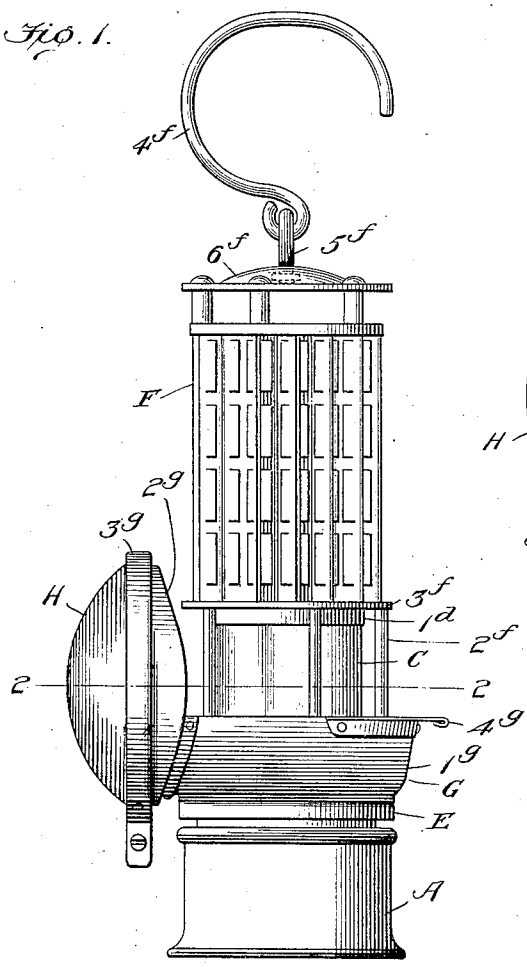


Fig. 3.

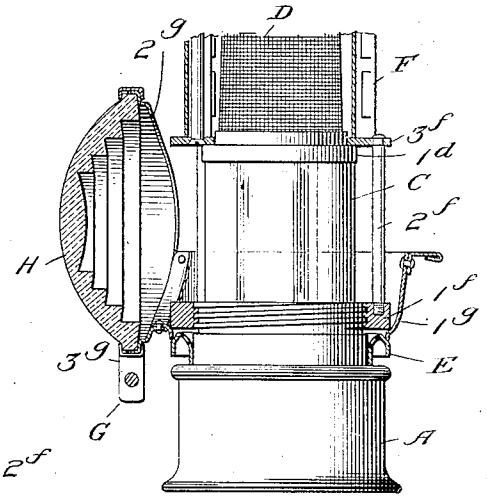


Fig. 2.

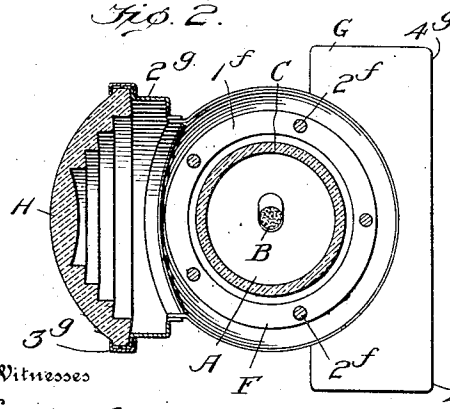
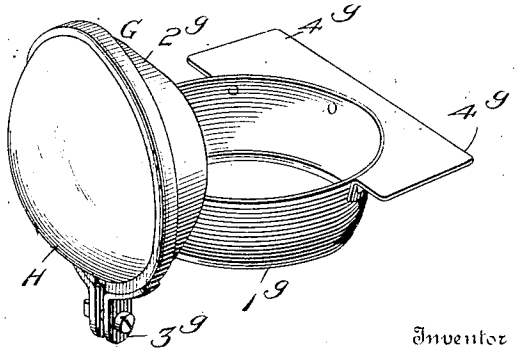


Fig. 4.



Witnesses

Edwin L. Bradford

G. P. Ritter

Inventor

Furman D. Spear

By F. M. Ritter Jr.

Attorney

UNITED STATES PATENT OFFICE.

FURMAN D. SPEAR, OF BROOKLYN, NEW YORK.

LENS-CARRIER FOR LANTERNS.

939,754. Specification of Letters Patent. Patented Nov. 9, 1909.

Application filed March 27, 1909. Serial No. 486,072.

To all whom it may concern:

Be it known that I, FURMAN D. SPEAR, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Lens-Carriers for Lanterns; 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 the construction of lanterns, and has for its object to provide simple, strong, compact and durable means for mounting a lens or the like thereon and for steadying the lantern when suspended to permit the light projected through the lens to be thrown in the desired direction.

To this end the main feature of my invention, generally stated, consists in combining with a lantern, a ring or collar which surrounds said lantern, said collar being provided upon one side with devices for securing a lens thereto and being provided on the side opposite the said lens securing devices with outwardly projecting means affording bearing points adapted to engage a surface adjacent to which the lantern may be hung, to thus prevent the lantern from turning, said bearing points being upon opposite sides of the principal axis of the lens.

There are other, minor, features of invention, residing in particular combinations and elemental constructions, all as will hereinafter more fully appear.

In the drawings chosen for the purpose of illustrating my invention, the scope whereof is pointed out in the claims, Figure 1 is a side elevation of a lantern provided with a lens carrier embodying my invention; Fig. 2 is a horizontal section taken in the plane of the line 2—2, Fig. 1; Fig. 3 is a vertical central section of the lens carrier showing its mode of application to the specific form of lantern illustrated in connection therewith, portions of the lantern being shown in side elevation and portions being shown in vertical central section; and Fig. 4 is a perspective view of the lens carrier.

Like symbols refer to like parts wherever they occur.

I will now proceed to describe my invention more fully, so that others skilled in the art to which it appertains may apply the same.

As my invention is especially useful with lanterns having swiveled suspending means, I have illustrated it as applied to a miner's lamp, which is a type of lantern in which such swiveled suspending means is very frequently employed.

In the drawings, A indicates the oil cup, B the wick, C the glass chimney, D the gauze cap, E the draft ring, and F the perforated metallic guard frame of a miner's lamp. These several parts, in the form shown, are maintained in proper relation by means of an internally threaded ring 1^f which is secured to the lower ends of the chimney protecting bars 2^f of the guard frame F and which engages an externally threaded upwardly extending ring attached to the oil cup A. When the guard frame is screwed down upon the oil cup, the ring 3^f at the upper ends of the protecting bars 2^f presses upon the shouldered collar 1^a at the base of the gauze cap D and thus causes the said cap to be tightly confined to the chimney and the chimney to be effectually secured to the oil cup, asbestos packings being usually interposed between these parts.

The lantern may be suspended by means of a hook 4^f which is connected to an eye 5^f that is swiveled in the center of the top plate 6^f of the guard frame F.

The lens carrier G consists of a body portion which is provided with means for securing a lens thereto and with projecting portions or members which extend outwardly from the periphery of the body portion sufficiently far so that the straight line connecting their outer extremities does not intersect said body portion. As shown, the body portion of the lens carrier is preferably formed as a collar 1^g which embraces the lantern and which is detachably secured thereto, the collar being preferably of such height as to permit a portion of the chimney C to remain uncovered, thus permitting the lantern to shed white light and be used for ordinary purposes even when a colored lens or colored glass disk is mounted in the lens frame. In the special form of lantern illustrated in the drawings the lens carrier is detachably mounted thereon by being interposed between the draft ring E and the threaded ring 1^f of the guard frame F.

The collar 1^g is preferably of tapering form, as such a construction not only increases the rigidity of the structure and affords a convenient means for locating a com-

paratively large lens at the proper focal distance from the light, but also enables the members 4^g projecting from the periphery of the collar to be made of somewhat less length than would otherwise be necessary, thus rendering such projections or projecting portion less liable to be bent.

Rigidly attached to the collar 1^g is a frame 2^g which is adapted to receive the lens H, the said collar being cut away so as not to extend across the lens aperture in the frame. For the purpose of stiffening and strengthening the lens frame, as well as to afford a convenient means for properly positioning lenses of comparatively long focal distances, and also for the purpose of intercepting and reflecting through the lens some of the rays of light which otherwise would pass outside of the periphery of said lens, it is preferred to form the lens frame 2^g with a tubular marginal flange or screen which extends from the lens inwardly toward the body portion or collar 1^g of the lens carrier G and is of such length and form as to permit its inner end to terminate adjacent to the lantern frame.

The lens H may be conveniently secured to the lens frame 2^g by means of a split hoop 3^g the ends of which are drawn together by a screw and nut, as will be readily understood.

In order that the light projected by the lens may be thrown in the desired direction when the lantern is suspended adjacent to a wall or the like, the lens carrier G is provided with projecting portions 4^g, 4^g which extend outwardly from the collar 1^g sufficiently far to prevent the intermediate portion of said collar from coming in contact with such adjacent wall, the lantern being thus prevented from turning and the light from the lens being consequently steadily projected in the proper direction. The projecting bearing members 4^g, which prevent the rotation of the lantern under such conditions, may be, and preferably are, connected as shown to form a plate having a straight outer bearing face which extends across the principal axis of the lens, said plate extending outwardly from the upper end of the collar 1^g to thus assist in stiffening the structure.

When supplied with a lens of the proper color, a lantern such as illustrated in the drawings forms an efficient tail light for mine cars or the like, the suspending hook 4^f of the lantern being simply hooked over the rear end of the car body in such manner that the rearwardly extending plate forming the projections 4^g contacts with said body and prevents the accidental turning of the lantern.

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

1. A lens carrier comprising a collar, a lens frame rigidly mounted upon and projecting outwardly from said collar, and projecting bearing members extending outwardly from the periphery of said collar, the straight line connecting the outer extremities of adjacent projecting members lying outside the periphery of the said collar.

2. A lens carrier comprising a collar, a lens frame secured to one side of the collar, and a bearing plate connected to said collar and extending outwardly from the periphery thereof on the side opposite the said lens frame.

3. A lens carrier comprising a tapered collar, a lens frame secured to said collar, a lens mounted on said frame, and projecting bearing members extending outwardly from the periphery of said collar.

4. A lens carrier comprising a tapered collar, a lens frame secured to said collar and provided with a tubular screen, a lens mounted on said frame, and projecting bearing members secured to said collar and extending outwardly beyond the periphery thereof.

5. The combination with a lantern, of means for flexibly suspending the same, and a lens carrier mounted on said lantern, said lens carrier comprising a collar embracing the lantern, a lens frame secured to said collar, a lens mounted on said frame, and projecting members extending outwardly from the periphery of said collar upon opposite sides of the axis of the lens aperture in the lens frame.

6. The combination with a lantern provided with a chimney, of means for flexibly suspending said lantern, and a lens carrier mounted on said lantern, said lens carrier comprising a collar which is of less height than the chimney and which embraces the lantern, a lens frame secured to said collar, a lens mounted in said lens frame, and projecting members secured to said collar and extending outwardly beyond the periphery thereof on the side opposite the said lens frame.

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

FURMAN D. SPEAR.

Witnesses:
WM. T. ARMOUR,
C. K. FREEMAN.