

No. 812,192.

PATENTED FEB. 13, 1906.

E. A. EDWARDS.  
LOCOMOTIVE HEADLIGHT.  
APPLICATION FILED NOV. 25, 1901.

Fig. 2.

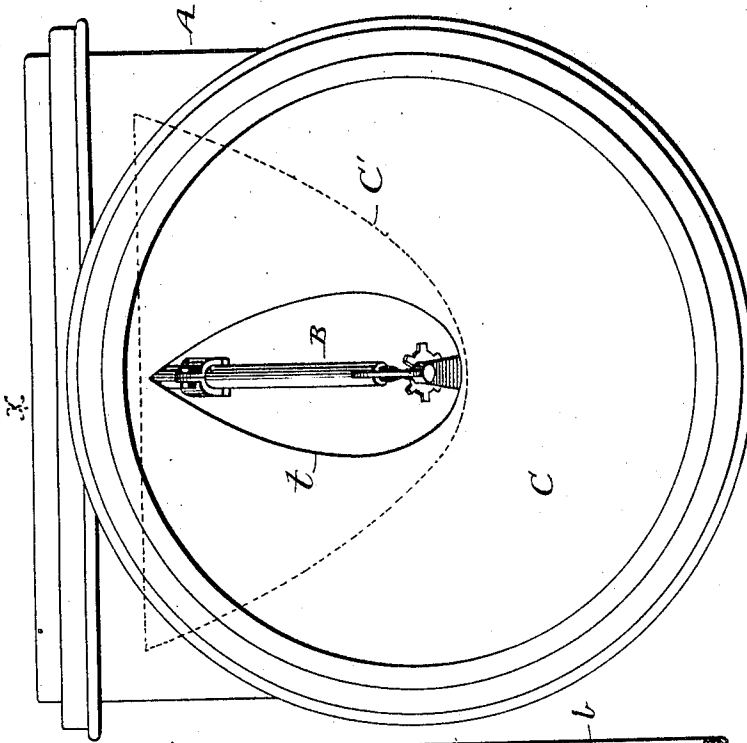
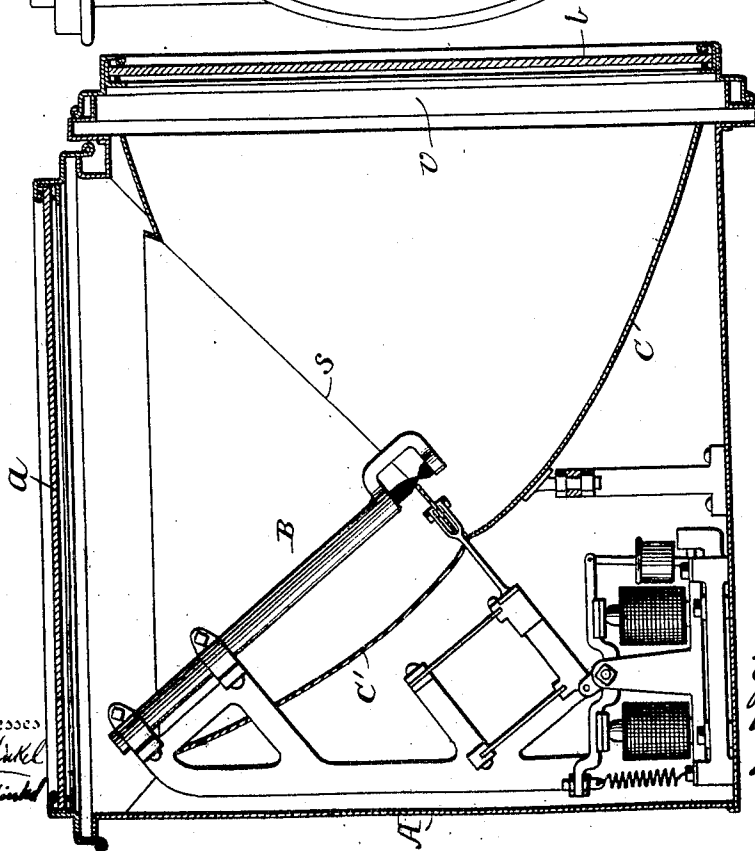


Fig. 1.



Witnesses  
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# UNITED STATES PATENT OFFICE.

EDGAR A. EDWARDS, OF CINCINNATI, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO METROPOLITAN TRUST & SAVINGS BANK, TRUSTEE, A CORPORATION OF ILLINOIS.

## LOCOMOTIVE-HEADLIGHT.

No. 812,192.

Specification of Letters Patent.

Patented Feb. 13, 1906.

Application filed November 25, 1901. Serial No. 83,535.

*To all whom it may concern:*

Be it known that I, EDGAR A. EDWARDS, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Locomotive-Headlights, of which the following is a specification.

My invention relates to locomotive-headlights and to that class of headlights—such, for instance, as is illustrated in Samuel H. Harrington's Letters Patent, No. 495,938, dated April 18, 1893—in which a signal-light is projected upward from the headlight, so as to signal the approach of a train from a distance when the usual horizontal light could not, in consequence of curvatures of the road and intervening objects, &c., be perceived; and my invention consists in providing the casing of the headlight with two intersecting reflectors, one of which will throw certain light-rays upward and the other will throw certain light-rays forward, as fully set forth hereinafter and as illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of a locomotive-headlight, illustrating my improvement; and Fig. 2 is a front view.

The casing A of the headlight is suitably constructed so as to provide an opening at the front, as well as one at the top, the said openings being covered by glass plates *a* and *b*, as shown. Within the casing is arranged a paraboloidal reflector C of the usual construction, and at the focus of this reflector is the flame of the lamp, which may be of any suitable character, but as shown is an arc-lamp, the reflector C being so constructed as to throw the light-rays forward through the front opening *v* in a substantially horizontal direction. Within the casing A is arranged a second reflector C', of the same shape as the reflector C; but it is so arranged as to have the same focus as the reflector C. To make this arrangement, it becomes necessary to cut away each of the reflectors so that they meet upon a plane *s* passing through the said focus, forming a limited opening between the interiors of the parabolas, the

shape of which is best shown by the outline *t* in Fig. 2. The reflector C' also receives the rays of light from the lamp B, and these are thrown upward through the opening *x* at the top of the casing. There are therefore within the casing A two similar reflectors, one throwing a portion of the light-rays forward and the other throwing a portion of the light-rays upward, each receiving its rays from the same lamp, which is arranged in a focus common to both.

It will be seen that when two reflectors of the character described intersect each other there is but a comparatively small portion of each reflector cut away, so that a large portion of each reflector will receive and project the light-rays through the opposite opening, while both reflectors are combined within the same casing and protected from the weather and receive their light from a common source.

Without limiting myself to the precise construction and arrangement of parts shown, I claim as my invention—

1. In a locomotive-headlight, the combination of a casing open at both the front and top, and two intersecting paraboloidal reflectors having a common focus and arranged one to reflect the light from said focus forward and the other upward, substantially as set forth.

2. The combination with the lamp of a locomotive-headlight, of a paraboloidal reflector, the focus of which corresponds with the light of said lamp and arranged to project the light-rays forward, and a second paraboloidal reflector intersecting the first, having the same focus and arranged to project the light-rays upward, substantially as set forth.

3. The combination with the lamp of a locomotive-headlight, of a paraboloidal reflector, the focus of which corresponds with the light of said lamp and arranged to project the light-rays forward, a second paraboloidal reflector intersecting the first, having the same focus and arranged to project the light-rays upward, and a casing with end and top openings for the passage of the light-rays forward and upward and transparent coverings for said openings, substantially as set forth.

4. The combination in a locomotive-head-  
light, of a casing with openings at the top and  
front, and intersecting paraboloidal reflec-  
tors having a common focus arranged to pro-  
5 ject light-rays forward and upward, and a  
lamp arranged to produce the flame at said  
focus, substantially as set forth.

In testimony whereof I have signed my  
name to this specification in the presence of  
two subscribing witnesses.

EDGAR A. EDWARDS.

Witnesses:

H. M. GILLMAN, Jr.,  
W. CLARENCE DUVALL.