

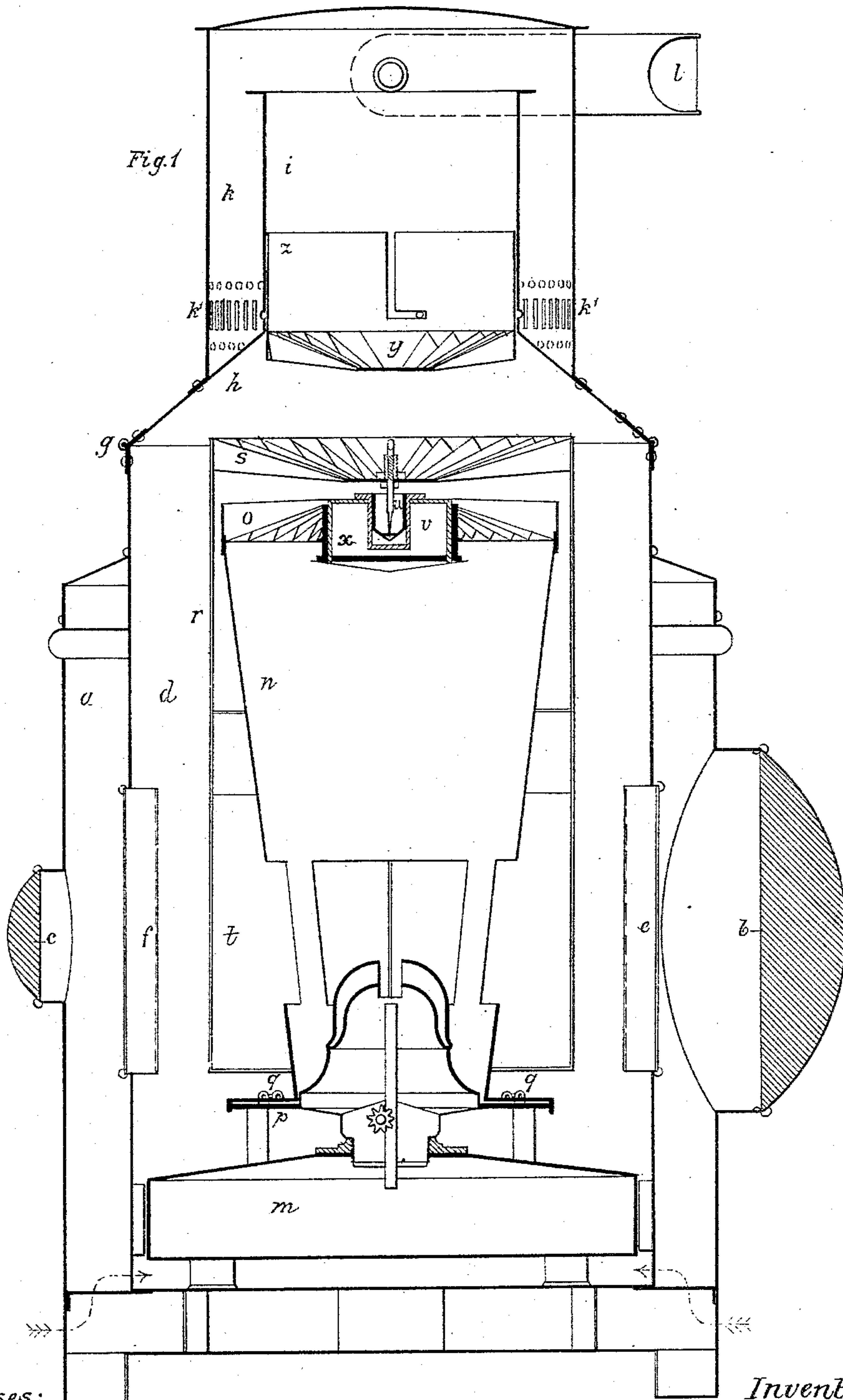
(No Model.)

2 Sheets—Sheet 1.

G. W. LYTH.  
SIGNAL LANTERN.

No. 380,293.

Patented Mar. 27, 1888.



Witnesses:  
William D. Bonner.  
David S. Williams.

Inventor:  
Georg W. Lyth  
by his Attorneys  
Howson & Son

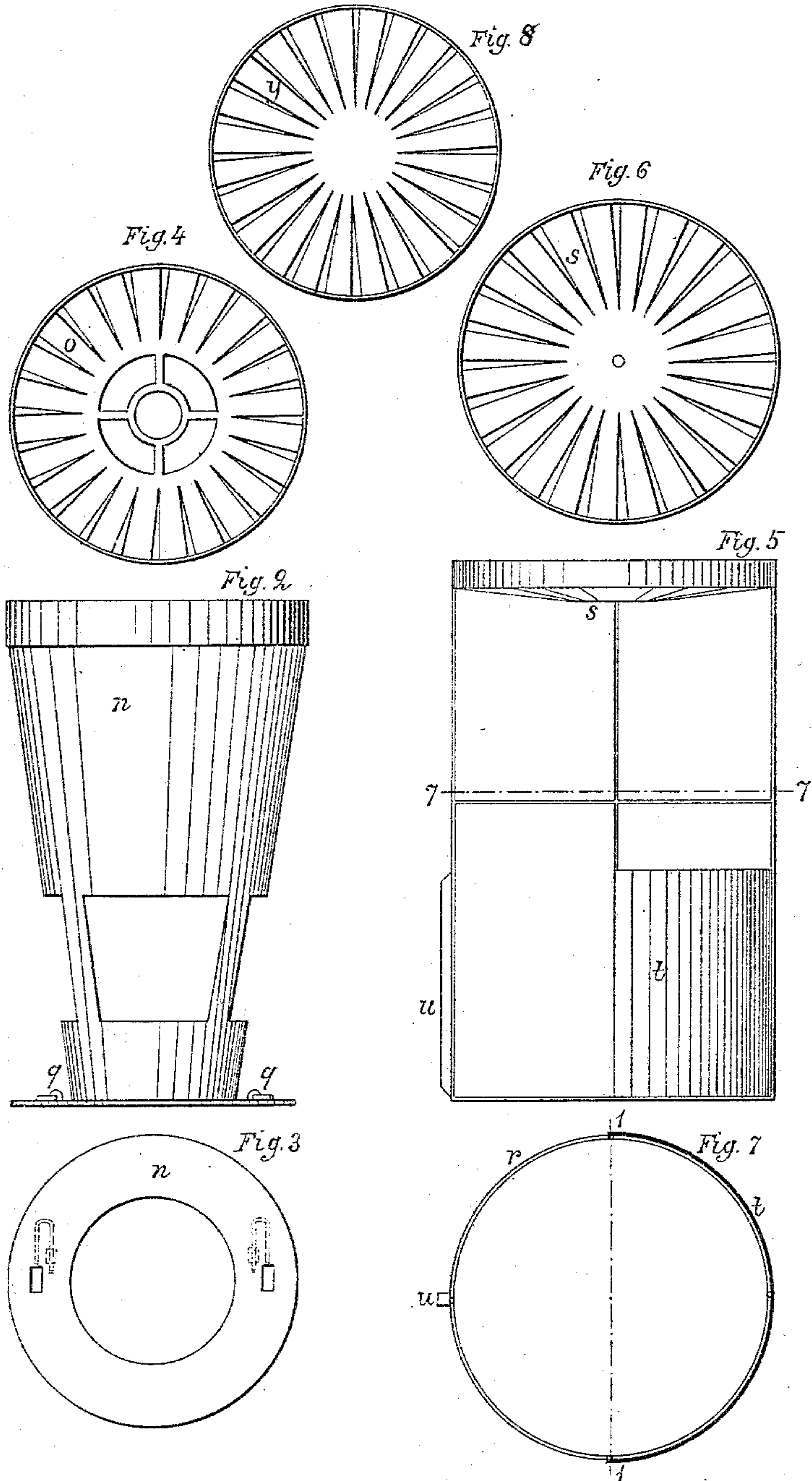
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# UNITED STATES PATENT OFFICE.

GEORG WILHELM LYTH, OF STOCKHOLM, SWEDEN.

## SIGNAL-LANTERN.

SPECIFICATION forming part of Letters Patent No. 380,293, dated March 27, 1888.

Application filed March 15, 1887. Serial No. 231,043. (No model.)

*To all whom it may concern:*

Be it known that I, GEORG WILHELM LYTH, a subject of the King of Sweden, and a resident of Stockholm, Sweden, have invented certain  
5 Improvements in Signal-Lanterns, of which the following is a specification.

This invention consists of an improved signal-lantern for use on railways and for other purposes, and is intended to give signals by  
10 intermittently cutting off the rays of the light of the lamp therein. For obtaining such signals the current of heated air rising from the flame is employed to act on a turbine, consisting of obliquely-bent blades attached to a  
15 frame-work turning on a vertical pivot, which frame-work carries a screen. During the revolutions the screen intermittently stops the light of the lamp from passing through the lens of the lantern. By means of this contrivance  
20 alone intermittent light signals can be produced; but it may happen in some states of the atmosphere that the turbine and the revolving screen may come to a momentary standstill, owing to a downdraft. Now, an important fea-  
25 ture of the present invention is a contrivance by which the aforementioned inconvenience is obviated. This contrivance consists in fixing in the chimney of the lantern, above the rotating turbine with its oblique blades, other stationary blades or deflectors inclined in the  
30 same direction as the blades of the turbine, and these blades tend to direct downward currents, which occasionally occur, in a direction favorable, or at least not unfavorable, to the rotation of the screen. The effect of the current of heated air on the turbine is rendered  
35 more powerful by putting fixed wings or guides underneath the turbine, which guides are inclined in opposite direction to the blades of the turbine. The current of air in its passage  
40 between these fixed guides is diverted and made to impinge more directly on the surface of the blades of the turbine. These fixed guides are surrounded by a funnel extending down  
45 toward the flame to prevent the current of air from spreading too much.

In the accompanying drawings is shown as an example a railway-lantern adapted to give  
50 such light.

Figure 1 is a vertical section through the lantern, with the revolving part shown in a section

on the line 1 1 in Fig. 7. Figs. 2 and 3 show the collecting-funnel in elevation and from below, the bearing for the pivot being removed. Fig. 4 shows the same funnel from above with  
55 its fixed guide-blades. Figs. 5, 6, and 7 show the revolving frame-work with the turbine and screen, but without the pivot, in elevation, in plan, and in section through the line 7 7 in Fig. 5; and Fig. 8 shows in plan the fixed  
60 guide-blades placed in the inner chimney.

*a* is an exterior covering, provided with two opposite lenses, *b* and *c*, while *d* is an interior lantern, provided with two opposite openings  
65 covered by glasses, which may be colored or not, behind the lenses. This interior lantern, *d*, is in its upper part covered by a lid, *h*, turning on a hinge, *g*, and provided with an inner and an outer chimney, *i* and *k*. A swinging  
70 handle, *l*, is pivoted to the outer chimney.

In the lower part of the lantern is a common paraffine-lamp, *m*, with free burner, and *n* is a funnel for the current of air rising from the lamp. This funnel is provided with holes near  
75 its bottom and with the fixed guide-blades *o* at the top. The funnel rests on a plate, *p*, carried by the lamp, and is fastened to it by two bolts, *q q*. The funnel may, however, be secured to the lamp by any other suitable means. Around the funnel is the revolving frame-  
80 work *r*, which carries the screen *t* at the lower end and the turbine *s* at the upper end. A counter-weight, *u*, Figs. 5 and 7, may be provided on the frame-work, which at its upper part is provided with a pivot, *v*, resting on a  
85 concave sapphire stone or any other hard material contained in a box, *x*, Fig. 1, mounted in the middle of the guides of the funnel *n*. In order to give to the frame-work ample room for swinging without touching the funnel *n*,  
90 this latter is made tapering downward. Within the inner chimney, *i*, I place fixed blades or deflectors *y* above the blades of the turbine and inclined in the same direction as the turbine-blades. In the lantern shown they are  
95 carried by a tube, *z*, which is attached to the interior of the chimney by means of a bayonet-joint.

When in use, air enters through openings in the lower part of the lantern, (see arrows in  
100 Fig. 1,) and escapes, mixed with the products of combustion, through the holes *k'* at the bot-



tom of the outer chimney, *k*, after having passed through the funnel *n* and through the guides *o* and the turbine *s* in the revolving frame-work, (which is thereby rotated,) as well  
5 as the fixed blades *y* in the inner chimney, *i*. The air is drawn through the funnel *n* by the draft of the products of combustion.

In the absence of the fixed blades *y* in the chimney *i* it frequently happens, as before  
10 mentioned, that the turbine is brought to a momentary standstill by a downward current occurring in the lantern. By putting in the fixed blades or deflectors *y* over the turbine the revolving part will not be stopped by such  
15 a current of air in the lantern, because these guides direct the current in such a way that it assists, or at least does not interfere with,

the revolution of the turbine and screen in the right direction.

I claim as my invention—

A signal-lantern having a case with a glass-covered opening and a lamp, and provided with a rotary turbine carrying a screen over the lamp, a chimney, and fixed guide-blades or deflectors in the chimney above the said tur- 25  
bine and inclined in the same direction as the blades of the latter, substantially as and for the purposes specified.

GEORG WILHELM LYTH.

Witnesses:

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