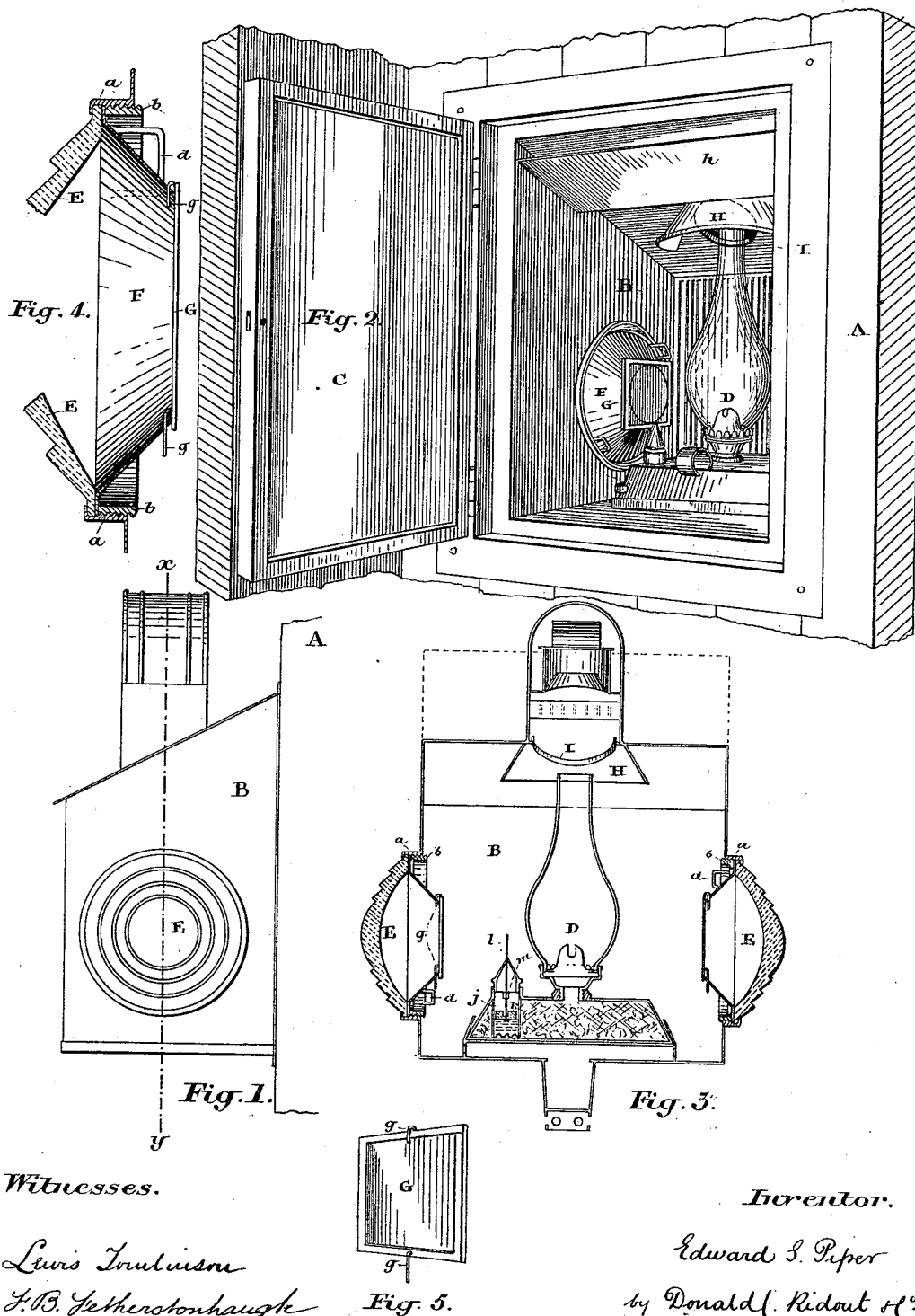


(No Model.)

E. S. PIPER.  
SIGNAL LAMP.

No. 266,719.

Patented Oct. 31, 1882.



Witnesses.

Lewis Truitt  
J. B. Fetherstonhaugh

Inventor.

Edward S. Piper  
by Donald C. Ridout & Co.  
Attorneys.

# UNITED STATES PATENT OFFICE.

EDWARD S. PIPER, OF TORONTO, ONTARIO, CANADA.

## SIGNAL-LAMP.

SPECIFICATION forming part of Letters Patent No. 266,719, dated October 31, 1882.

Application filed April 27, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD SPENCER PIPER, a subject of the Queen of Great Britain, residing at the city of Toronto, in the county of York, in the Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Signal-Lamps, of which the following is a specification.

The object of my invention is to produce a lamp arranged to give light to the interior of a car or coach, and at the same time furnish light for two bull's-eye or signal lenses, provision being made for changing the color of the signal and for making one signal invisible while the other is exhibited, the whole being arranged so that each part of the lamp and its attachments are accessible from the interior of the car; and it consists essentially of a lamp-box placed on the outside of a car, and communicating with the interior of the car through a hole made in the side, the said box having placed within it a lamp situated between two signal-lenses, each lens being provided with a reflector formed in the shape of a frustum of a cone, so as to permit the light from the lamp to reach the lens, while preventing the color of the lens on the opposite side being seen through, the attachments for accomplishing the ends of my invention being arranged substantially as hereinafter more particularly described.

In the drawings, Figure 1 is an end view of my lamp-box, showing it applied in position on the side of a car. Fig. 2 is an inside view of my lamp-box, showing it as it will appear from the interior of the car. Fig. 3 is a cross-section of my lamp box and lamp. Fig. 4 represents in detail the manner of holding the signal-lens and reflector in position. Fig. 5 is a detail of the signal-glass.

In the drawings like letters indicate corresponding parts in each figure.

A represents the wood-work on the side of a car.

B is a lamp-box, open on one side and screwed to the wood-work of the car, so that its open side shall face the interior of the car, the wood-work being cut away to form a hole corresponding with the open side of the lamp-box.

C is a glass cover or door, arranged to close the open side of the lamp-box, so as to protect

the lamp D within the lamp-box, while permitting its light to be reflected into the car, the back of the lamp-box being provided with a corrugated or otherwise suitable reflector. At each end of the lamp-box, opposite to each other and having the lamp D between them, are two holes made in the lamp-box and protected by suitable lenses, E. In order to hold the lens in position, I place around each hole in the lamp-box a flanged ring, a, having a thread or screw cut on its inner surface to receive the ring b, each ring being provided with two lugs, d, to enable the rings to be unscrewed as required. The lenses E, which are flanged for that purpose, fit against the flange of the ring a, while the flange on the reflector F rests against the flange of lens E. These are first put in position from the interior of the box B, when the ring b is screwed into position, compressing the reflector F and lenses together, forming a tight joint around them.

G is a signal-glass contained within a frame, provided with hoop-wires g. These wires g are designed to fit into holes made in the reflector F, for the purpose of holding the signal-glass over the hole made in the reflector F. As the signal-glass is easily detached and put in position again, it will be seen that the nature of the signal can readily be changed by altering the signal-glass. For instance, when it is desired to give a "danger" signal the red glass may be hung in position, which glass can readily be removed, when finished with, and replaced by a glass of different color.

When it is desired to shut off the light from either of the lenses a blank cover is hung on the reflector F in the same manner as the signal-glasses G, completely cutting off the light.

In order to hold the signal-glasses not in use, I provide a pocket, h, formed in the roof of the lamp-box, so that while being out of the way the glasses are readily accessible from the interior of the car.

When a lamp with a glass is used I provide a semicircular hood, H, placed on the roof of the lamp-box B, around the mouth of the upper ventilator, I, into which the top of the chimney projects, the said hood being designed to prevent sudden gusts of wind reaching the top of the glass when the door C is opened.

With the view of indicating the quantity of

oil contained in the lamp, I form in the interior of the oil or fluid reservoir a tube, *j*, which extends down to the bottom of the reservoir and is perforated, so that the fluid in the oil-reservoir is admitted into the tube.

*k* is a float made of cork or other suitable material, and provided with a spindle, *l*, which extends through the top of the oil-reservoir.

*m* is a flange formed around the aperture through which the spindle passes. As the oil in the tube will be the same height as that within the reservoir, and as the float *k* will swim on top of it, the length of the spindle extending above the reservoir will indicate the height of the oil within it. Should the lamp be upset, the float comes in contact with the flange *m*, thereby closing the aperture and preventing the oil escaping.

The manner of securing the bull's-eye *E* and reflector *F* together, and both to the box-casing, in this construction is an improvement upon the patent granted to me November 22, 1881, No. 249,794, as in that construction the holding-flange was a portion of the screw-ring and had to be manipulated from the outside. The present construction makes the holding-flange a portion of the permanent casing, and the screw-band is manipulated from the inside of the car or coach.

I do not in this application claim the float *K* and its containing-tube, as described, as I intend to file a separate application embodying this feature.

What I claim as my invention is—

1. The lamp-box having a contained lamp, and having a permanent holding-flange for the lenses and internal screw-threads; the lens *E* and screw-ring *b*, adapted to be secured in place from the inside of the box, combined with a

car or coach having an opening in the side thereof corresponding with the opening in the lamp-box, as set forth.

2. A lamp-box containing a lamp and attached to the outside of a car or coach having a hole through its side to communicate with the interior of the box, the said box being provided with a signal-lens protected by a reflector formed in the shape of a frustum of a cone, in combination with the signal-glass *G*, detachably connected to the reflector *F*, substantially as and for the purpose specified.

3. In a lamp-box containing a lamp and provided with a signal-lens protected by a reflector formed in the shape of a frustum of a cone, a signal-glass, *G*, contained within a frame provided with a hoop-wire, *g*, in combination with a hole or holes made in the reflector *F* for the purpose of forming a detachable connection between the signal-glass and reflector, substantially as and for the purpose specified.

4. In a lamp-box containing a lamp and having a circular hole or holes pierced through it, a flanged ring, *a*, formed around each hole and having a thread cut on its inner surface to receive the screwed ring *b*, in combination with the flanged lens *E* and flanged reflector *F*, for the purpose of protecting the hole in the lamp-box, as specified.

5. In a lamp-box containing a lamp provided with a chimney and a door to give access to the interior of the box, a semicircular hood, *H*, formed on the interior roof of the lamp-box around the mouth of the upper ventilator, substantially as and for the purpose specified.

EDWD. S. PIPER.

Witnesses:

C. C. BALDWIN,  
F. B. FETHERSTONHAUGH.