

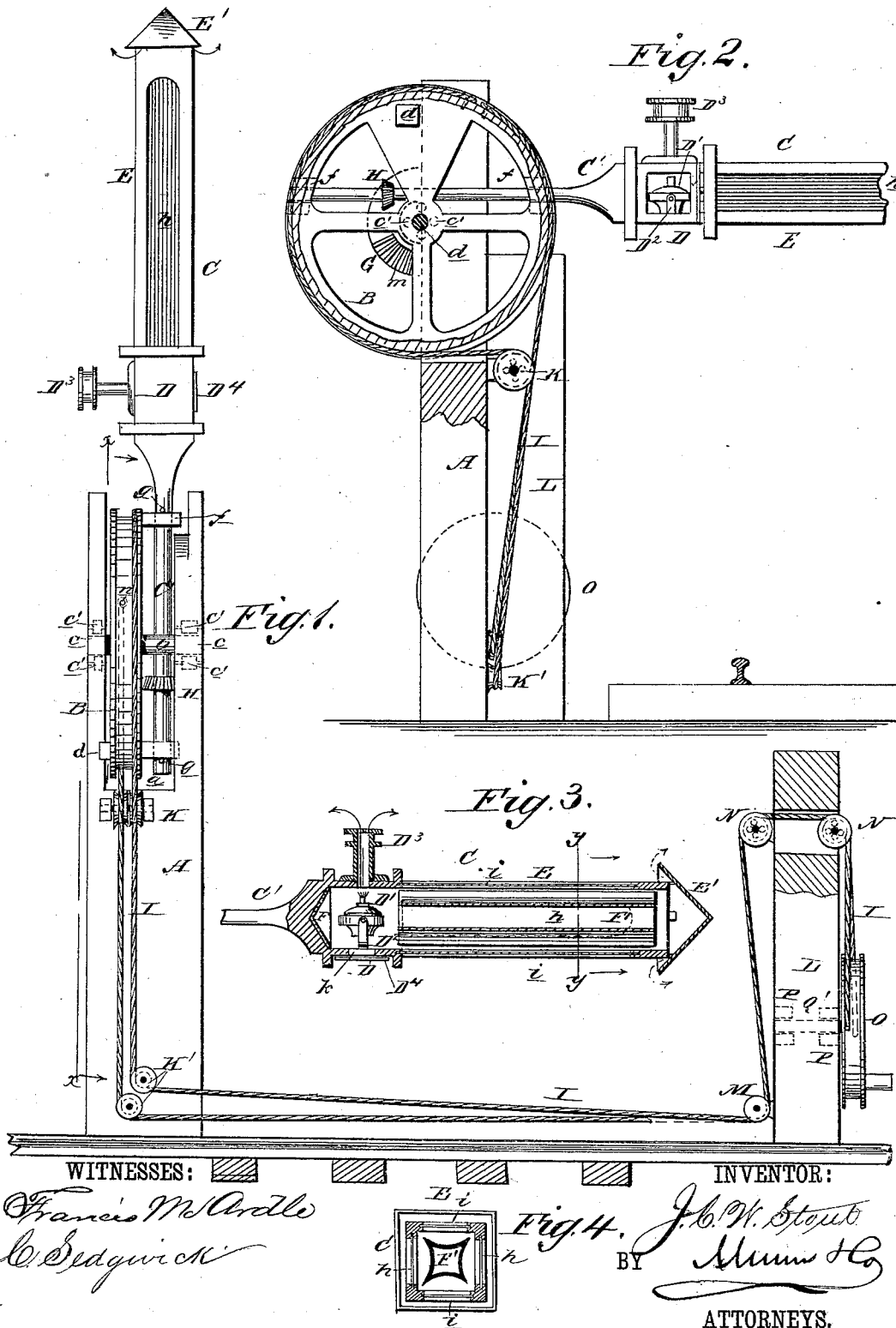
(No Model.)

J. C. W. STOUT.

RAILROAD SIGNAL.

No. 245,887.

Patented Aug. 16, 1881.



# UNITED STATES PATENT OFFICE.

JOSEPH C. W. STOUT, OF FARMINGDALE, NEW JERSEY.

## RAILROAD-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 245,887, dated August 16, 1881.

Application filed May 3, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH C. W. STOUT, of Farmingdale, county of Monmouth, and State of New Jersey, have invented certain useful  
5 Improvements in Railroad-Signals, of which the following is a specification.

The object of this invention is to prevent accidents that occur at night or by day on railroads from the color-blindness of the engineers.  
10 Switch-signal lights ordinarily present but one point of light, which to those afflicted with color-blindness is with difficulty distinguished from other lights about it, its apparent form being the same with them.

This invention consists of a light night signal, presenting an elongated beam or bar of light, and capable of being moved in a vertical plane, and rotated at the same time, so that the beam of light may be presented vertically  
20 or horizontally, the intention being to provide a light-signal that can, by its shape or form, be distinguished from all surrounding lights; and the invention further consists of novel signal-operating mechanism, all of which will be hereinafter set forth.

Figure 1 is a side elevation of the device, partly in section, showing the signal in a vertical position. Fig. 2 is a partly sectional end elevation of the same, showing the signal in a  
30 horizontal position over and across the track, on line *x x*, Fig. 1. Fig. 3 is a longitudinal section of the signal. Fig. 4 is a transverse section of the same on line *y y*, Fig. 3.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents the signal-post, in the top of which is a deep mortise, *a*, that extends from side to side thereof, to accommodate the directly-attached mechanism  
40 of the signal.

B is a sheave, rotating in a vertical plane within the mortise *a*, and keyed on a spindle, *b*, journaled in suitable boxes, *c*, that are secured on the post A, and are provided with  
45 anti-friction rollers *c'*, to permit the movement of said sheave B with a minimum of friction. On one of the spokes of the sheave B is a lateral stud or stop, *d*, that limits the rotary movement of said sheave B by contact with a  
50 side of the post A. Projecting laterally from the rim of said sheave B are two perforated

lugs, *f f*, in line with each other, in which is secured so that it can revolve the standard C' of the signal or lantern C by pins *g g*. On the top of this standard C', and forming a continuation thereof, is secured the signal or lantern C, which consists of a box, D, preferably rectangular, containing a lamp, D', supported in a gimbal, D<sup>2</sup>, and of a long rectangular frame, E, communicating at the bottom with the box D, and covered at the top by a cowl, E', which frame E is glazed on its four sides with glass, two opposite plates, *h*, of which are designed, preferably, to be red, and the other two, *i*, colorless.

At the bottom of the box D is a reflector, F, for reflecting the light from the lamp D' through the frame E; and extending throughout the frame E, from one end to the other thereof, is a hollow four-sided reflector F', presenting outward concave faces, for reflecting the light thrown by the reflector F and lamp D' out through the glass plates *h i*.

When the signal is in the vertical position shown in Fig. 1 the smoke and products of combustion from the lamp D' pass up through the interior of the reflector F', and out beneath the cowl E', and when the signal is in the horizontal position shown in Fig. 3 the said products of combustion escape through the chimney D<sup>3</sup> on the side of the box D. Air to support the combustion of the lamp D' is admitted through a perforated plate, D<sup>4</sup>, fixed over an orifice, *k*, in the box D.

Projecting laterally from the post A is a semi-circular plate, G, having on that face which is toward the signal-standard C' a number of radial teeth *m*; and opposite these, fixed on the said standard C', is a corresponding bevel-gear, H, that meshes with said teeth *m*, so that when the sheave B is turned one-quarter of a revolution, so as to bring the signal or lantern C from its vertical position, in which it exhibits a white light, to the horizontal position across the track, as shown in Fig. 2, the said signal or lantern is also turned one-quarter of a revolution, thereby exhibiting a red or "danger" signal; and on reversing the motion of the sheave B the signal or lantern C is restored to its primary upright position, exhibiting a white light in the direction of the line of the track. Thus it will be seen that by its colors, as well as by its

form, this signal can be distinguished by those having normal eyes, and readily by its shape by those who are color-blind.

Fastened to a point represented at *n* on the periphery of the sheave B is a cord or chain, I, that encircles said sheave B, and is passed down in contact with anti-friction rollers K on the post A, and about sheaves K' at the bottom of said post A to a post, L, where the signal operator is stationed. Here the chain I is carried over suitable sheaves M N, and down about a crank-sheave, O, whose axle O' has bearings in the post L between anti-friction rolls P. By turning the sheave O the signal or lantern is moved into the vertical or horizontal position, as may be desired, and at the same time the light presented to the observer changed, as hereinbefore set forth.

It is designed to have the sheave B counter-balanced on the periphery opposite the signal or lantern C, so that the work of operating the signal shall be more easily and readily performed.

I do not confine myself to the precise details of construction and arrangement as herein shown, as it is manifest that they may be modified without departing from my invention; and especially do I propose, in some instances, to substitute for the continuous light-transmitting plates *h i* sectional plates of alternate opaque and transparent substances, whereby two or more points of light shall be exhibited to the observer, the otherwise elongated continuous bar of light being broken or interrupted by the opaque plates, thereby making the signal still more easily distinguishable from surrounding lights.

Having thus fully described my invention, I

claim as new, and desire to secure by Letters Patent—

1. An improved railroad-signal constructed substantially as herein shown and described, consisting of a long lantern provided with internal longitudinal reflectors opposite each face, arranged to rotate through a quarter of a circle when being depressed to a horizontal position, or elevated to a vertical position, as set forth, whereby an elongated bar or beam of light may be displayed of different colors, if desirable.

2. In a railroad-signal, the lantern C, consisting of box D, provided with air-orifice *k*, chimney D<sup>3</sup>, and reflector F, and glazed frame E, having interior hollow reflector, F', substantially as herein shown and described.

3. In a railroad-signal, the combination, with the post A, provided with toothed plate G, of the sheave B, provided with lugs *f f*, lantern-standard C', provided with bevel-gear H, and lantern C, substantially as herein shown and described, whereby a vertically-moving and partially rotating signal-light may be displayed, as set forth.

4. In a railroad-signal, the combination, with the post A, toothed plate G, sheave B, lantern-standard C', provided with bevel-gear H, and lantern C, of the cord or chain I, post L, and crank-sheave O, arranged substantially as herein shown and described, whereby the signal is operated, as set forth.

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Witnesses:

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R. TEN BROECK STOUT.