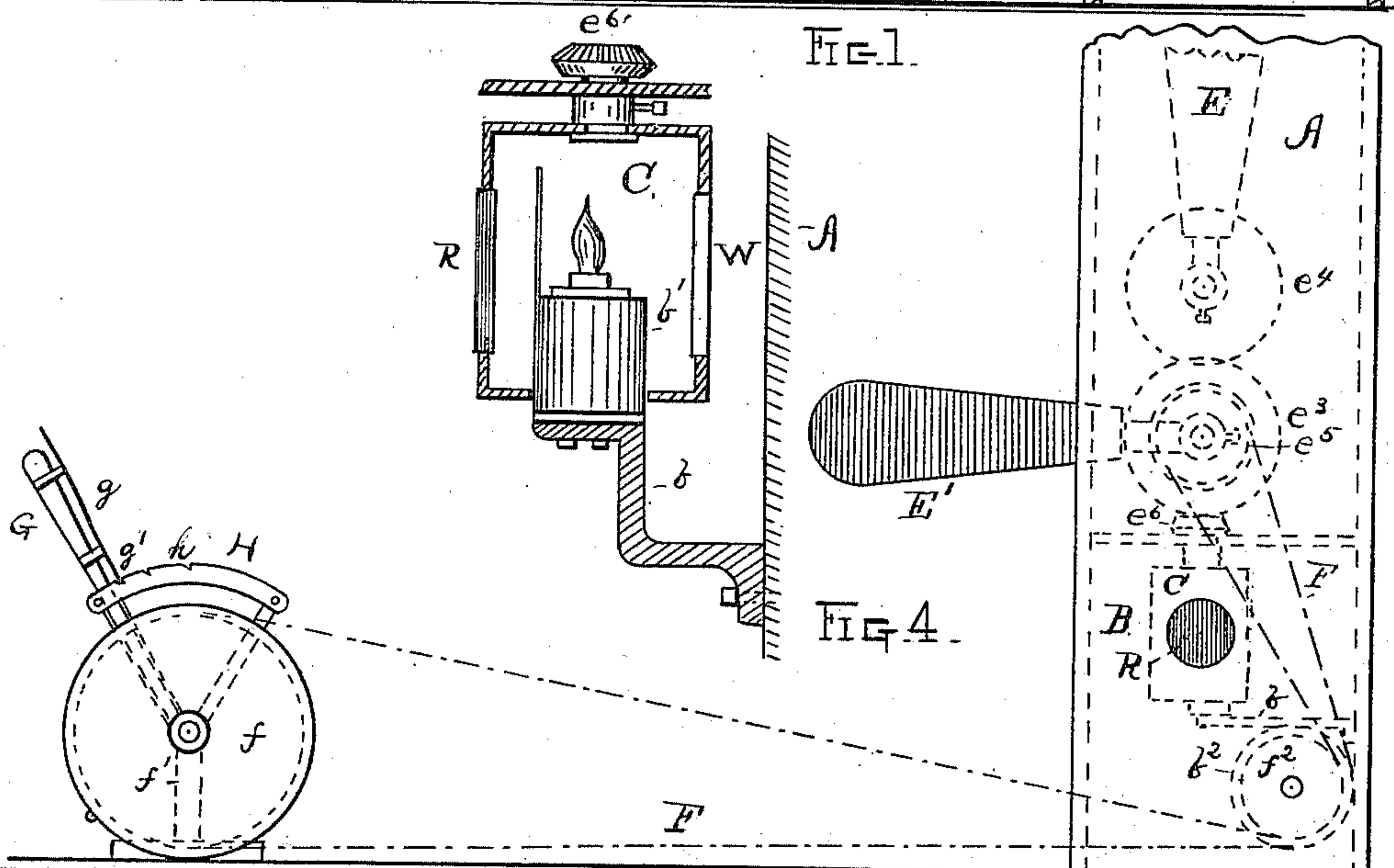
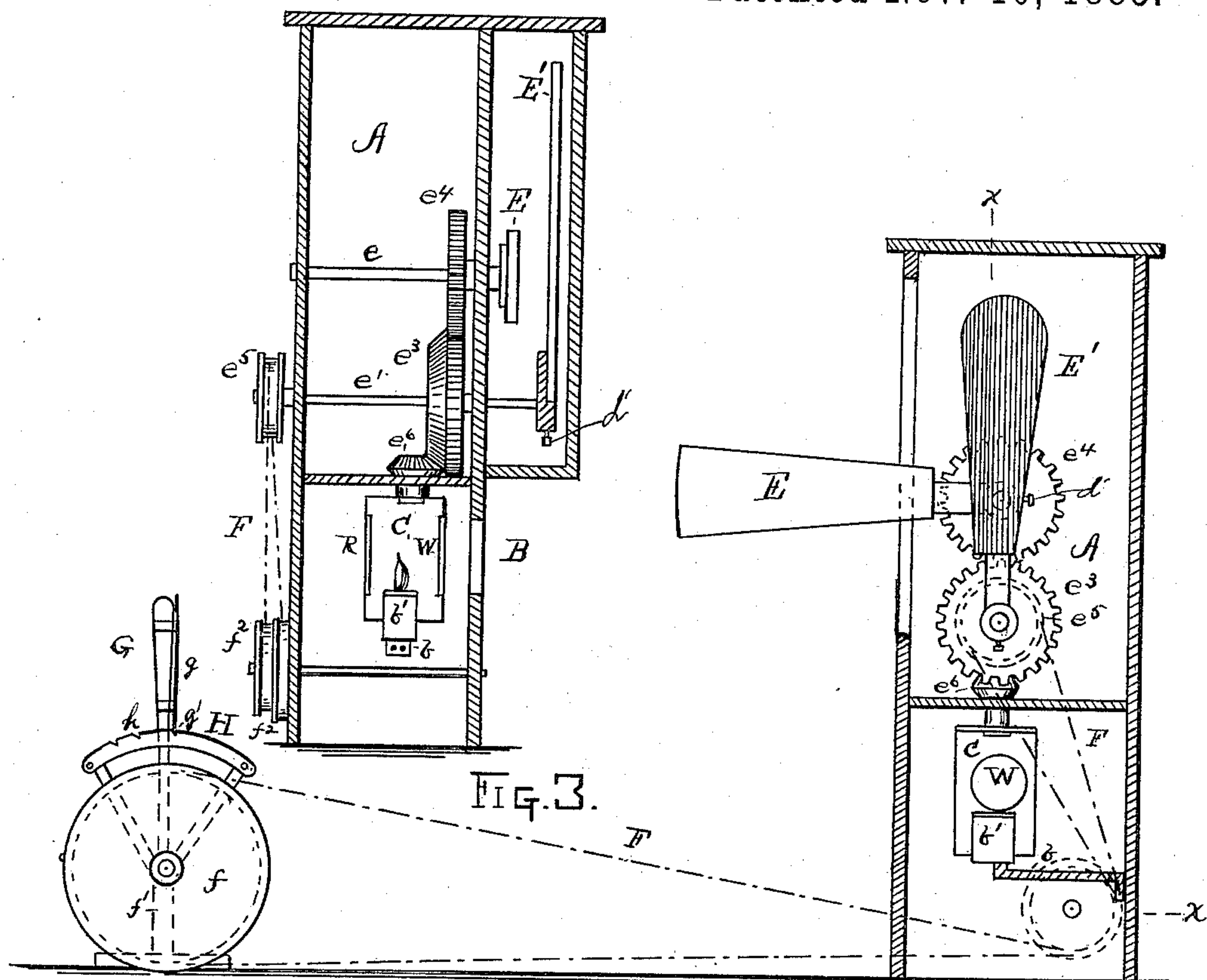


(No Model.)

C. M. WILSON.
RAILWAY SIGNAL.

No. 330,077.

Patented Nov. 10, 1885.



WITNESSES:

FIG. 2.

INVENTOR.

Pierpont Bastow.
Charles DeH. Hosie,

Charles M. Wilson
by Kelly, Levin & Tury, his attorneys

UNITED STATES PATENT OFFICE.

CHARLES M. WILSON, OF WHITESTOWN, NEW YORK.

RAILWAY-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 330,077, dated November 10, 1885.

Application filed April 10, 1885. Serial No. 161,860. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. WILSON, a citizen of the United States, residing at the town of Whitestown, in the county of Oneida, in the State of New York, have invented a new and useful Improvement in Railway-Signals, of which the following is a specification.

My present invention relates to a railway-switch signal; and it consists in two or more signal-arms moved simultaneously in opposite directions; a rotatable lamp-case carrying two or more glass eyes of the required color, constructed to partially rotate for exposing the required light; a link-belt for simultaneously moving the signal-arms and the lamp-case, with means for moving and rigidly holding the arms and lamp-case stationary; and other mechanism, hereinafter more fully described.

In the accompanying drawings similar letters of reference refer to corresponding parts throughout the several views.

Figure 1 represents a side view of my railway-signal with a signal-arm exposed and a light of a similar color. Fig. 2 represents a signal-arm and light of another color. Fig. 3 is an end view of the same, taken at line *x x*, Fig. 1. Fig. 4 is a detail view of a section of the lamp-case and the bracket on which the lamp is placed.

Having described my invention by reference to the drawings, I will now proceed to describe the same by reference to the letters marked thereon.

A represents the housing inclosing the signal-arms, lamp-case, and gear for operating the same.

B represents an opening or window in the housing, through which the light may shine.

b represents a bracket on which the lamp is placed, and is attached to the inside of the housing, and so located with reference to the window as to cast its light through the same. In the drawings an oil-lamp is shown. Other means of lighting may be used.

b' is the lamp, which is a stationary one. Surrounding the lamp is a case, preferably constructed of sheet metal.

C represents the lamp-case, constructed to partially rotate, and having glass eyes on opposite sides of different color, so that the light

of the lamp may shine through the same to expose the required light.

R represents a red glass, and W a white glass.

E and E' represent signal-arms. One end of each is attached by set-screws *d* to shafts *e* and *e'*, suitably journaled in suitable bearings, as shown in Fig. 3, and are rigidly held thereto. By means of these set-screws the signal-arms may be adjusted at any angle to each other. Shaft *e'* has rigidly attached thereto a wheel with a straight and beveled cog gear, *e*³. The straight gear meshes into wheel *e*⁴, similarly constructed and mounted on shaft *e* for moving signal-arm E, as hereinafter described. Attached to shaft *e'* is a small sheave-wheel rigidly attached for receiving and operating a belt.

*e*⁵ is the sheave.

*e*⁶ is a bevel pinion-wheel, rigidly attached to a shaft held firmly to the top of the lamp-case, and meshes into the beveled gear-wheel for partially rotating the lamp-case.

F represents a metallic jointed belt working on wheel *f* and sheave *e*⁵, for operating the signal-arms and lamp-case simultaneously. The belt is placed on the wheels and is run over two small sheaves, *f*² *f*², to bring the belt near the ground for convenience. It is obvious that a sprocket-wheel might be used and the sheaves *f*² dispensed with. In the accompanying drawings the belt F is attached to the wheels, over which same work to secure a positive action of the belt.

f represents a shifting-wheel pivoted or journaled in an upright, and *f'* represents the upright or support in which the wheel is journaled.

G represents a shifting-lever rigidly attached to and moving with wheel *f*.

g represents a lever for operating a dog.

g' represents the dog working in notch-bar H, which is rigidly attached to upright *f'*, and so constructed as to hold the lever in any desired angle by the dog dropping into notches in the notch-bar. This device is an ordinary method well known in mechanics, but very important in this connection, as it is absolutely necessary that these railway-signals should be held positively in position, and they should

be provided with means which shall securely lock them in position on the instant, as any variation or failure to do this might cause great damage, and even loss of life.

5 Operation: The signal being in the position shown in Fig. 1, with signal-arm E, representing a white surface, being extended, the eyeglass W reflects a light of a similar color. To shift this signal and the light with it, the operator grasps the lever G with his hand, compressing the lever which actuates the dog, thereby raising the same from the notch-bar, bringing the lever to the position indicated in Fig. 2. This operation moves belt F and the connecting mechanism, thereby raising arm E into the position shown in Fig. 2 in dotted lines. At the same time signal-arm E' is moved into the position shown in Fig. 2. At the same time, and by the same operation, the lamp-case makes a half-revolution, the red light R stopping opposite of window B, the dog dropping into the notch-bar in the position indicated in Fig. 2, thereby holding the signal and lamp-case rigidly in the position indicated. By reversing the operation signal-arm E' and the eyeglass R will move into the position indicated in Fig. 1.

In the accompanying drawings a signal having two arms and two eyeglasses is shown.

30 It is obvious that by adding other gear-wheels and eyeglasses two or more signals may be given by employing substantially the same mechanism.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a railway-signal, the casing A, made in sections, two upper sections and one lower section, one of said upper sections containing the shafts *e* and *e'*, the former provided with a cog-wheel, *e⁴*, and a signal-arm, E, the latter provided with a cog-wheel and a bevel-wheel, and also provided on one end with a pulley, and on the other end with a signal-arm, E', in combination with a perforated rotatable lamp-case journaled and rotating in the lower section of the casing, (said section having the opening B,) and provided with a bevel spur-wheel which meshes the bevel-wheel on the shaft *e'*, said rotatable lamp-case encircling a stationary light, and the whole provided with the devices for operating the same, substantially as described.

2. In a railway-signal, the casing A, provided with the stationary light *b'*, and made in sections, one of said sections containing the shafts *e* and *e'*, the former provided with a cog-wheel, *e⁴*, and a colored signal-arm, E, the latter provided with a bevel-wheel and a cog-wheel, and also provided with a pulley at one end and a signal-arm, E', at the opposite end, said signal-arm E' being of a color different from the color of the arm E, said signal-arms being secured on the shafts *e* and *e'*, respectively, substantially at right angles to each

other, in combination with a perforated lamp-case journaled in the lower perforated part of the casing A, and provided with a bevel spur-wheel, *e⁶*, which meshes with the bevel-wheel on the shaft *e'*, the perforations in said rotatable lamp-casing being provided with colored lights which correspond with the colored signal-arms E and E', respectively, said rotatable casing also inclosing the stationary light *b'*, and the means, substantially as described, which operates the above combination of parts, whereby the signal-arms and their corresponding lights are simultaneously operated and caused to alternately appear and disappear, substantially as described.

3. In a railway-signal, the perforated casing A, provided with the stationary lamp *b'*, the horizontal shafts *e* and *e'*, and the vertical shaft having a bevel gear-wheel and supporting a rotatable lamp, said shaft *e'* provided with a cog-wheel and a bevel-wheel, said cog-wheel meshing with the cog-wheel on the shaft *e*, and said bevel-wheel meshing with the bevel-wheel on the vertical shaft, suitable colored signal-arms, E and E', attached to the shafts *e* and *e'*, respectively, and adjusted at an angle to each other, said rotatable lamp also provided with perforations covered by colored lights, between which is situated the stationary light, in combination with a pulley on the shaft *e'*, a pair of sheaves, *f² f²*, mounted on a pulley-shaft at the bottom of the case, the wheel *f*, provided with the lever G, having the lever *g* and the dog *g'* secured thereto, and a belt, whereby the signal-arms and their correspondingly-colored lights are instantaneously and simultaneously caused to alternately appear and disappear and are locked positively in either position, substantially as described.

4. In a railway-signal, the housing A, provided with the stationary light *b'*, the perforation B, the shafts *e* and *e'*, having the cogs and bevel-gear, and the signal-arms, and also provided with a vertical shaft having a perforated rotatable lamp case and a bevel-gear secured thereto, in combination with suitable pulleys and a belt which simultaneously operate the signal-arms and a rotatable perforated light-casing, said pulleys provided with a belt which is rigidly secured to the two pulleys, whereby instantaneous and positive movement of signals and light-casing is secured, and an operating-lever having a locking-lever and dog which simultaneously operates and positively locks the signals in position, substantially as described, and for the purposes explained.

Dated Utica, New York, March 27, 1885.

CHARLES M. WILSON.

Witnesses:

C. D. F. HOXIE,
WILLIAM B. FENN.