

J. J. COZZENS, C. F. ESTWICK & G. S. TIFFANY.
RAILWAY SIGNAL.

APPLICATION FILED APR. 2, 1910.

974,362.

Patented Nov. 1, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

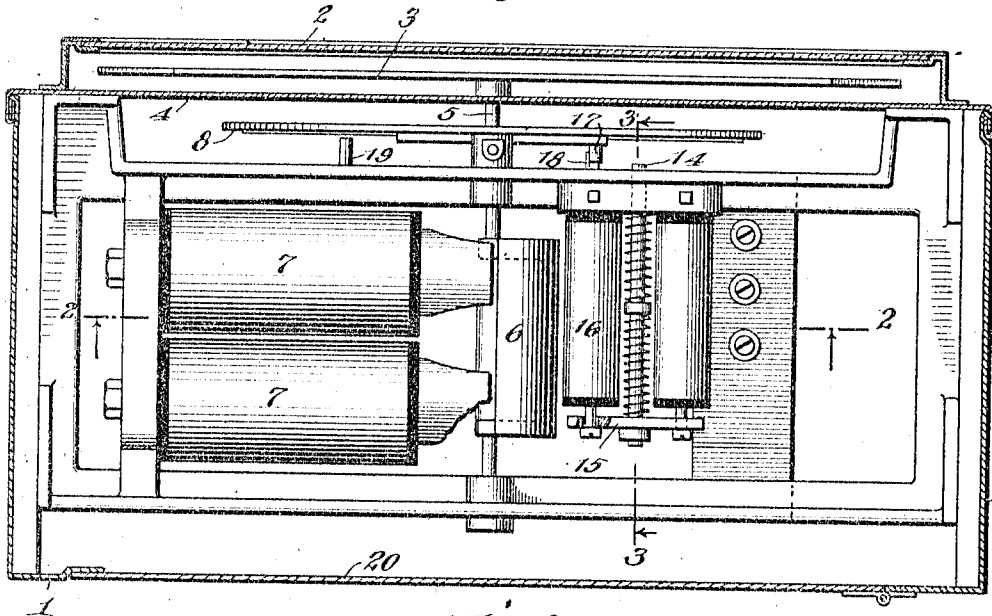
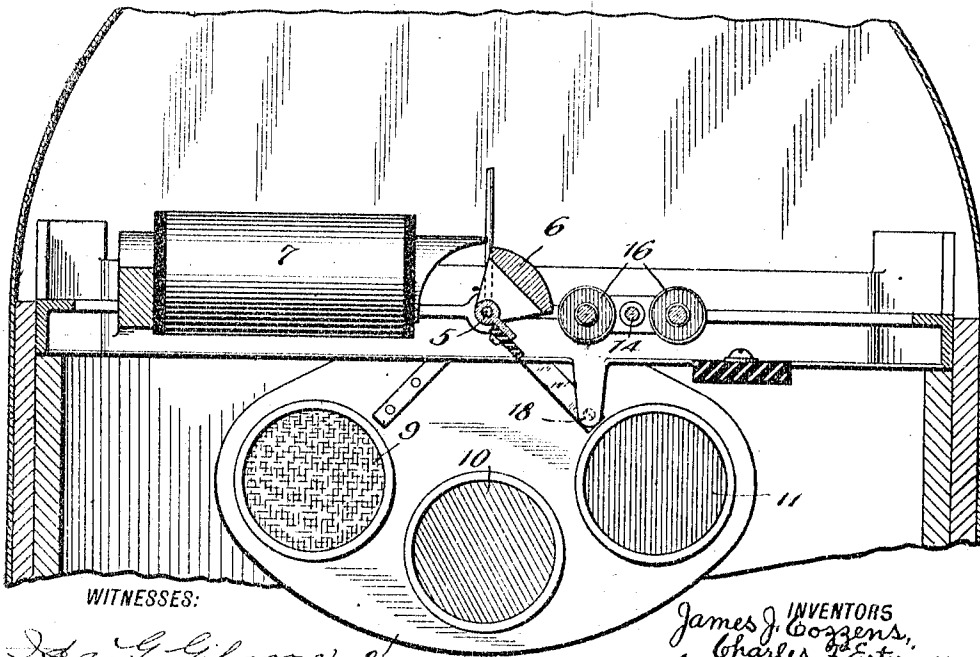


Fig. 2.



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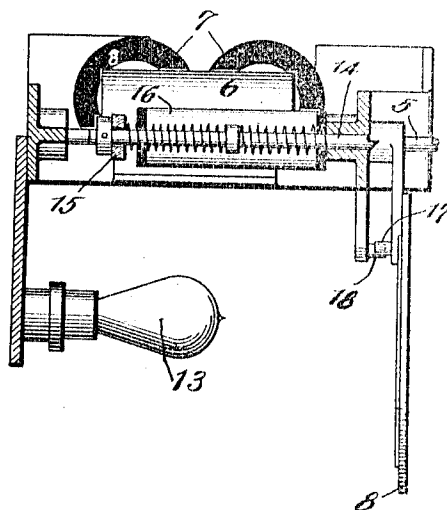
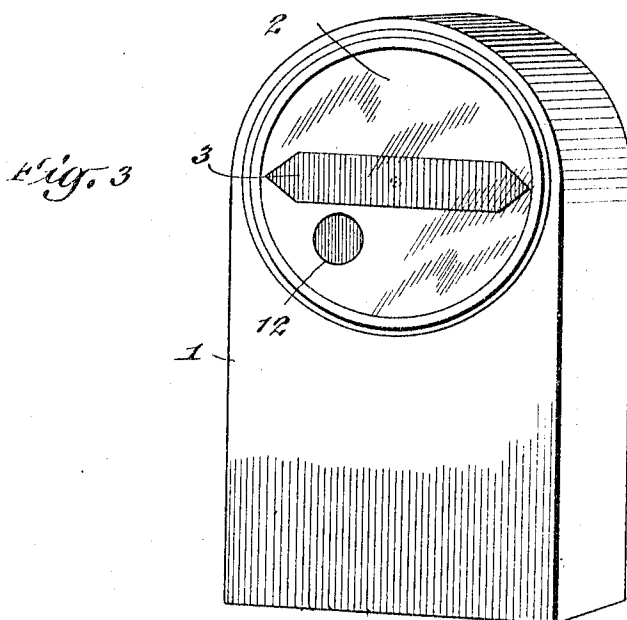
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3 SHEETS-SHEET 2



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UNITED STATES PATENT OFFICE.

JAMES J. COZZENS, OF EAST ORANGE, CHARLES F. ESTWICK, OF JERSEY CITY, AND
GEORGE S. TIFFANY, OF SUMMIT, NEW JERSEY, ASSIGNORS TO THE KINSMAN
BLOCK SYSTEM COMPANY, A CORPORATION OF NEW YORK.

RAILWAY-SIGNAL.

974,362.

Specification of Letters Patent.

Patented Nov. 1, 1910.

Application filed April 2, 1910. Serial No. 553,103.

To all whom it may concern:

Be it known that we, JAMES J. COZZENS, CHARLES F. ESTWICK, and GEORGE S. TIFFANY, all citizens of the United States, and residents, respectively, of East Orange, county of Essex, and State of New Jersey, and of Jersey City, county of Hudson, and State of New Jersey, and of Summit, county of Union, and State of New Jersey, have invented certain new and useful Improvements in Railway-Signals, of which the following is a specification.

This invention relates to railway signals and has for its object the provision of a compact, inexpensive, reliable signal apparatus.

The signal is especially designed for use on trolley roads where slow-speed traffic is the practice although it is adapted for use in other situations.

The invention consists of the apparatus hereinafter set forth and pointed out in the claims.

Referring now to the drawings forming part of this specification, and in which like reference numerals designate corresponding parts of the apparatus which is shown in one of its preferred forms,—Figure 1 is a sectional plan view. Fig. 2 is a sectional elevation on the line 2—2 of Fig. 1, partly broken away. Fig. 3 is an exterior perspective view. Fig. 4 is a detail view in section taken on the line 3—3 of Fig. 1.

Referring now more particularly to the specific features as shown in the drawings, 1 is a casing having a glass face 2 through which the semaphore blade 3 is visible in its various positions against the background 4 at the front of the casing. The semaphore blade 3 is fixed on a rotary spindle 5 and gives its indications by changes in its position, and is therefore a position signal. 6 is an armature also fixed on said spindle and operatively associated with magnet 7, which, when energized, operates to turn the spindle and semaphore so that the latter occupies a vertical or clear position. Fixed on the spindle 5 is a spectacle 8 provided with colored glasses 9, 10 and 11, the same being respectively colored green, yellow and red for the indication of clear, caution and danger. The spectacle 8 extends out from the spindle 5 at right angles to the semaphore

3 so that when the spectacle is in its lower position, as shown in Figs. 1 and 2, the semaphore will be in danger or horizontal position shown in Figs. 1 and 3. The background 4 is provided with an aperture 12 with which the glasses of the spectacle respectively register.

13 is a lamp located behind the spectacle and in register with the aperture 12. This lamp serves to illuminate the particular glass of the spectacle which, at the time being, is in register with the aperture 12.

The signal is provided with an electrically operated latch serving to engage and hold the signal in one of its positions. 14 is this latch which consists of a spring retracted rod carried by the armature 15 of the magnet 16. When the magnet 16 is energized, its armature is drawn toward the magnet and the latch 14 is thereby thrown forward into the path of the lug 17 fixed to the spectacle 8, thereby arresting the movement of the semaphore and spectacle and holding them in one position of indication.

When the motor magnet 7 is energized and armature 6 is rotated with it, the spectacle and semaphore are moved from the danger to the clear position, in which the green glass 9 registers with the lamp and the aperture 12, and the semaphore is in vertical position. When the motor magnet 7 is deenergized, the semaphore and spectacle move by gravity toward the danger position. If, however, the latch magnet 16 is energized, the latch 14 engages the lug 17 and stops the signal at the intermediate or caution position, in which the yellow glass 10 registers with the lamp and aperture 12, and the semaphore occupies a position midway between the vertical and horizontal.

18 and 19 are stops to engage the lug 17 to arrest the movement of the signal when it has reached the danger and clear positions.

20 is a door at the back of the casing.

The latch 14 is chamfered on its back face, as shown, so that the latch may be pushed back by the lug 17 in case the magnet 16 is energized as the spectacle travels from danger to safety position. This prevents the latch from stopping the signal during this return movement.

The motor magnet 7 and the latch mag-

net 16 are located in suitable circuits which may be operated by a passing car or otherwise.

What we claim and desire to secure by Letters Patent is:—

1. In a railway signal, the combination of a semaphore mounted on and arranged to turn with a rotary spindle, and giving its indications by changes in position; an armature fixed on said spindle; a magnet associated with said armature and operating to turn said armature and semaphore; an artificial background for said semaphore, having an aperture therein; a spectacle carried on said spindle behind said background and in register with said aperture; and a lamp behind said spectacle.

2. In a railway signal, the combination of a semaphore mounted on and arranged to turn with a rotary spindle, and giving its indications by changes in position; an armature fixed on said spindle; a magnet associated with said armature and operating to turn said armature and semaphore; an artificial background for said semaphore, having an aperture therein; a spectacle carried on said spindle behind said background and in register with said aperture; a lamp behind said spectacle; and an electrically operated latch arranged to engage and hold said semaphore in one of its positions.

3. In a railway signal, the combination of a semaphore mounted on and arranged to turn with a rotary spindle and adapted to occupy three positions of indication, and giving its indications by changes in position; an armature fixed on said spindle; a magnet associated with said armature and operating to turn said armature and semaphore; an artificial background for said semaphore; and an electrically operated latch arranged to engage and hold said semaphore in its intermediate position.

4. In a railway signal, the combination of a semaphore mounted on and arranged to turn with a rotary spindle and adapted to occupy three positions of indication, and giving its indications by changes in position; an armature fixed on said spindle; a magnet associated with said armature and

operating to turn said armature and semaphore; an artificial background for said semaphore, having an aperture therein; a spectacle carried on said spindle behind said background and in register with said aperture; a lamp behind said spectacle; and an electrically operated latch arranged to engage and hold said semaphore in its intermediate position.

5. In a railway signal, the combination of a semaphore biased to danger and mounted on and arranged to turn with a rotary spindle, said semaphore giving its indications by changes in position; an armature fixed on said spindle; a magnet associated with said armature and operating to turn said armature and semaphore; an inclosing casing for said armature and magnet and having an aperture in its front; a spectacle carried on said spindle within the casing and so as to register with said aperture; a lamp behind said spectacle; and an electrically operated latch to hold said semaphore in one of its positions.

6. In a railway signal, the combination of a semaphore biased to danger and mounted on and arranged to turn with a rotary spindle, said semaphore being adapted to occupy three positions of indication and giving its indications by changes in position; an armature fixed on said spindle; a magnet associated with said armature and operating to turn said armature and semaphore; an inclosing casing for said armature and magnet and having an aperture in its front; a spectacle carried on said spindle within the casing and so as to register with said aperture; a lamp behind said spectacle; and an electrically operated latch to hold said semaphore in its intermediate position.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

J. J. COZZENS.
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GEORGE S. TIFFANY.

Witnesses:

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