

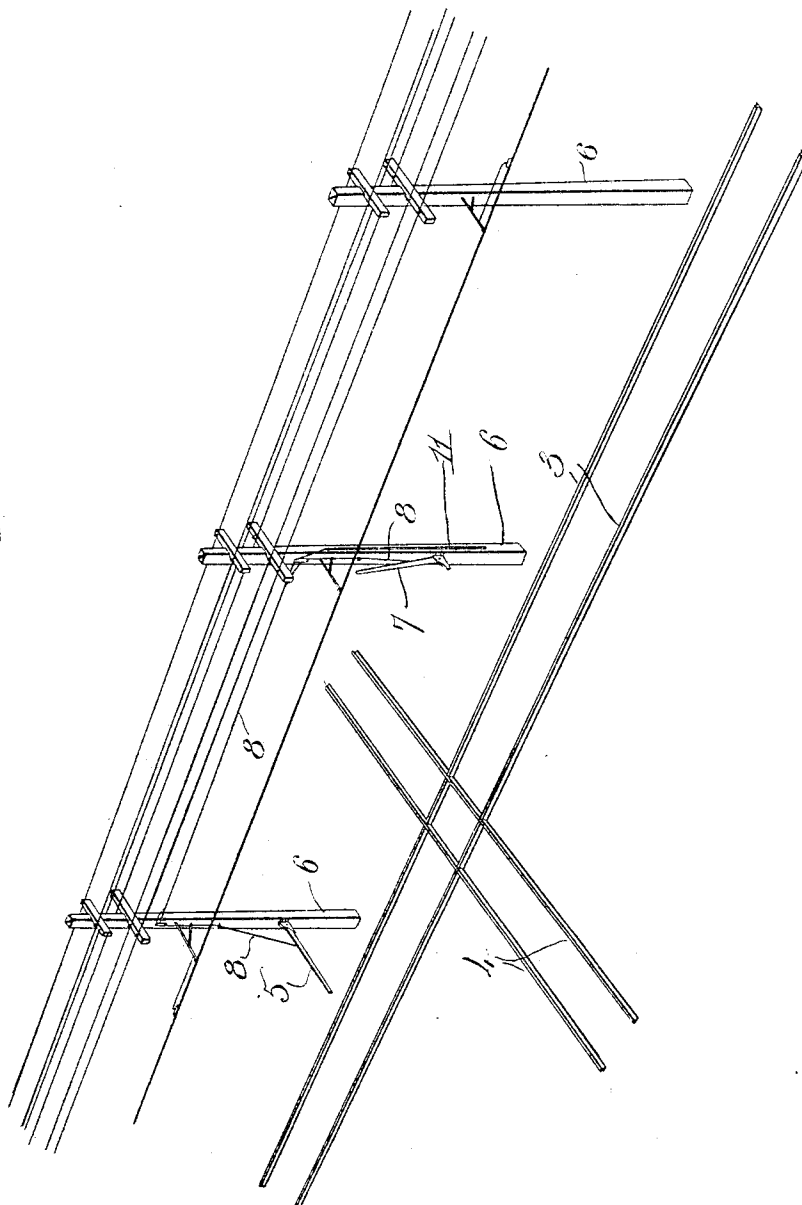
No. 801,509.

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V. CHISHOLM.
SIGNAL SYSTEM.
APPLICATION FILED APR. 14, 1905.

2 SHEETS--SHEET 1.

Fig. 1.



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SIGNAL SYSTEM.

No. 801,509.

Specification of Letters Patent.

Patented Oct. 10, 1905.

Application filed April 14, 1905. Serial No. 255,503.

To all whom it may concern:

Be it known that I, VALENTIN CHISHOLM, a citizen of the United States, residing at Rockland, in the county of Knox and State of Maine, have invented an Improvement in Signal Systems, of which the following description, in connection with the accompanying drawings, is a specification, like figures on the drawings representing like parts.

This invention relates to a signal system which has been especially designed for use in positions where a street-railway crosses another street-railway track or steam-railway track. The rules of most street-railway companies require that under such circumstances the conductor of the street-car shall cross the steam-railway track in advance of his car to see if the track is clear. The conductors, however, do not always do this.

It is the object of my invention to provide a novel form of signal system including car-stops so arranged that it will be necessary for a conductor to cross the railway-track in order to remove from the path of the car an operative car-stop which normally blocks the passage of the car.

In the present form of my invention the car stops or signals are in the nature of swinging arms, and I employ one each side of the steam-railway crossing, and the operative connections to each are so arranged that it can only be raised out of the way of the street-car from a position on the opposite side of the steam-railway track. When a street-railway car comes to the crossing, therefore, and the swinging arm is down in operative position, it will be necessary for the conductor or some other person to go clear across the steam-railway track in order to raise the arm and let the street-car go by.

The particular features wherein my invention resides will be more fully described and then pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a steam-railway track and a street-railway track which cross each other, showing how my invention is applied. Fig. 2 is another view taken parallel to the street-railway track. Fig. 3 is an end view of Fig. 2. Fig. 4 is a detail hereinafter described. Fig. 5 is a perspective view of the locking-latch for each car-stop.

In the drawings, 3 designates a single line of street-railway track, and 4 a steam-railway track, said tracks crossing each other.

Arranged at each side of the railway-track 4 is a car-stop device, herein shown as a swinging arm, said arms being designated 5 and 7, respectively, and when in their lowered or horizontal position standing in the path of the street-car traversing the track 3. I have shown these car-stops as supported by suitably-arranged posts 6, although it would be within my invention to support them in any suitable way.

The arms are connected by a cord or flexible connection 8, which extends over suitable direction-pulleys 9, carried by the posts, so that said arms move in unison, but in opposite directions, and when one arm is raised the other arm is lowered, and vice versa. Connected to the cord 8, near each end thereof, is another cord or connection 10, one of said cords being connected to a pull device 11 and the other being connected to another pull device 12. Said pull devices are conveniently arranged adjacent the posts 6 and are shown as rods which are guided in suitable bearings or guides 13, carried by the posts. Each rod is normally held in its elevated position by means of a suitable spring 15. Associated with each pivoted arm is a latch 17, which is adapted to engage a shoulder or projection 18 on said arm and hold it elevated at the proper times. Each of the pull devices carries a pivoted pawl 19, which can swing freely upwardly, but is limited in its downward movement. The function of this pawl will be more fully described hereinafter.

The operation of the device as thus far described is as follows: As shown in the drawings, the car-stop 5 is in its lowered position, while the car-stop 7 is elevated and is held elevated by its latch 17. If now a street-car on the track 3 approaches the steam-railway track 4 from the left, said car will be unable to proceed farther than the stop 5, because the latter is in its lowered or operative position. In order to raise said stop 5, it is necessary for the conductor to cross the track 4 and draw down upon the pull 11, thereby to draw on the cord 8 and raise the arm 5. The construction is such that it will also be necessary for the conductor to remain at the post 6 and hold the pull 11 in its lowered position until the car has crossed the steam-railway track 4 and has passed the stop 7, for if the pull 11 is released before the car has passed the stop 7 said pull will be ele-

vated by the spring 15, and during this upward movement the pawl 19 thereon will engage the latch 17, which holds the car-stop 7 elevated, or a projection 170, extending from said latch, thereby to release said latch and allow the car-stop 7 to drop. This would necessitate the conductors recrossing the track 4 and drawing down on the pull 12 in order to again raise the stop 7 to permit the car to pass. By my improvement therefore it is necessary that the conductor shall cross the track 4 and shall remain across the track until the car has passed the stop 7. After the car has passed the stop 5 is in its raised position and held by its latch 17 and the stop 7 is down. If now a car comes along the track 3 from the right, it will be necessary for the conductor to cross the track 4 and draw down on the pull 12 in order to elevate the stop 7. After the car has passed the crossing and the stop 5 and the pull 12 is raised it will during its upward movement release the latch 17, thereby allowing the stop 5 to drop. The parts are thus in the positions shown in the drawings and are ready for the car coming from the left again.

It sometimes happens that one or two cars follow each other in the same direction. The stop devices are shown in the drawings as they would be after a car has passed from the right to the left. If another car should follow from the right, it would find the stop 7 raised and the stop 5 lowered. The stop 5 can be raised only by drawing down on the pull 11, and if the stop 7 remained elevated it would be possible under such circumstances for the conductor to draw down on the pull 11, raise the stop 5, and allow the car to proceed over the track 4 without having first crossed the track. In order to prevent this, I have provided means whereby under such circumstances the drawing down on the pull 11 will allow the stop 7 to swing into its horizontal or operative position, thereby compelling the conductor after having elevated the stop 5 to cross the track 4 and draw down on the pull 12, thereby to elevate again the stop 7.

Situated over each pawl 17 is a magnet 21. The coils of one magnet are in a circuit 26, including a circuit-closer 25, and the coils of the other magnet are in a circuit 23, including a circuit-closer 22. These circuit-closers are arranged to be closed by the movement of the car, and one convenient way of arranging them is so that they will be operated by the trolley of the car.

Assuming that the stops are arranged as shown in the drawings and that a street-car is proceeding over the track 3 from the right, it will be seen that as said car passes the circuit-closer 25 it will momentarily energize the magnet 21, and thereby release the latch 17 from the projection 18 on the stop 7. Said stop, however, will not swing into the hori-

zontal position, because it is connected by the cord 8 to the stop 5, which is lowered. When, however, the conductor draws on the pull 11 to elevate the stop 5, said stop 7, having been released from the latch 17, will drop into the horizontal position as the stop 5 is elevated. The conductor, therefore, in order to elevate the stop 7 and allow his car to proceed is compelled to cross the track 4 and draw down on the pull 12.

It will thus be seen that I have provided an effectual means for preventing a car passing over a crossing until after the conductor has first crossed the track to see if it is clear.

Although I have illustrated one arrangement of stop devices for accomplishing this object, I do not wish to be limited to the construction shown. I believe I am the first to provide a stop device which prevents the passage of a car across an intersecting track and which is so arranged that the conductor is compelled to cross the track in order to throw the stop into its inoperative position, and therefore I desire to claim this feature broadly.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a signal system, two signals separated from each other and connected to move in unison but oppositely, and means adjacent each signal to throw the other signal in inoperative position.

2. In a signal system, two car-stops separated from each other and connected to move in unison but oppositely, and means at each stop to throw the other stop into inoperative position.

3. In a signal system, two pivoted car-stops separated from each other, and manually-operated means adjacent each stop to swing the other stop into position to allow the car to pass.

4. In a signal system, two pivoted car-stops, a cord connecting said stops so that they move in unison but oppositely, and means at each stop to elevate the other.

5. In a signal system, two swinging arms, each when lowered standing in the path of movement of a car, a flexible cord connecting said arms so that they move in unison but oppositely, a latch for each arm to hold it elevated, and a pull device at each arm connected to the cord for raising the other arm.

6. In a signal system, two swinging arms, each when lowered standing in the path of movement of a car, a flexible cord connecting said arms so that they move in unison but oppositely, a latch for each arm to hold it elevated, and a pull device at each arm connected to the cord for raising the other arm, each pull device having means to engage and release the latch of the adjacent arm.

7. In a signal system, two pivoted arms, each when in lowered position being in the

path of movement of a car, a flexible cord
connecting said arms so that they move in
unison but oppositely, a latch to engage each
arm when in its elevated position, a pull de-
5 vice adjacent each arm for raising the other
arm and automatic means to release each
latch by the movement of a car.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

VALENTIN CHISHOLM.

Witnesses:

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