No. 623,671. Patented Apr. 25, 1899.

J. JORGENSON.

RAILROAD SIGNAL.

(Application filed Aug. 3, 1898.)

(No Model.) 3 Sheets—Sheet 1.

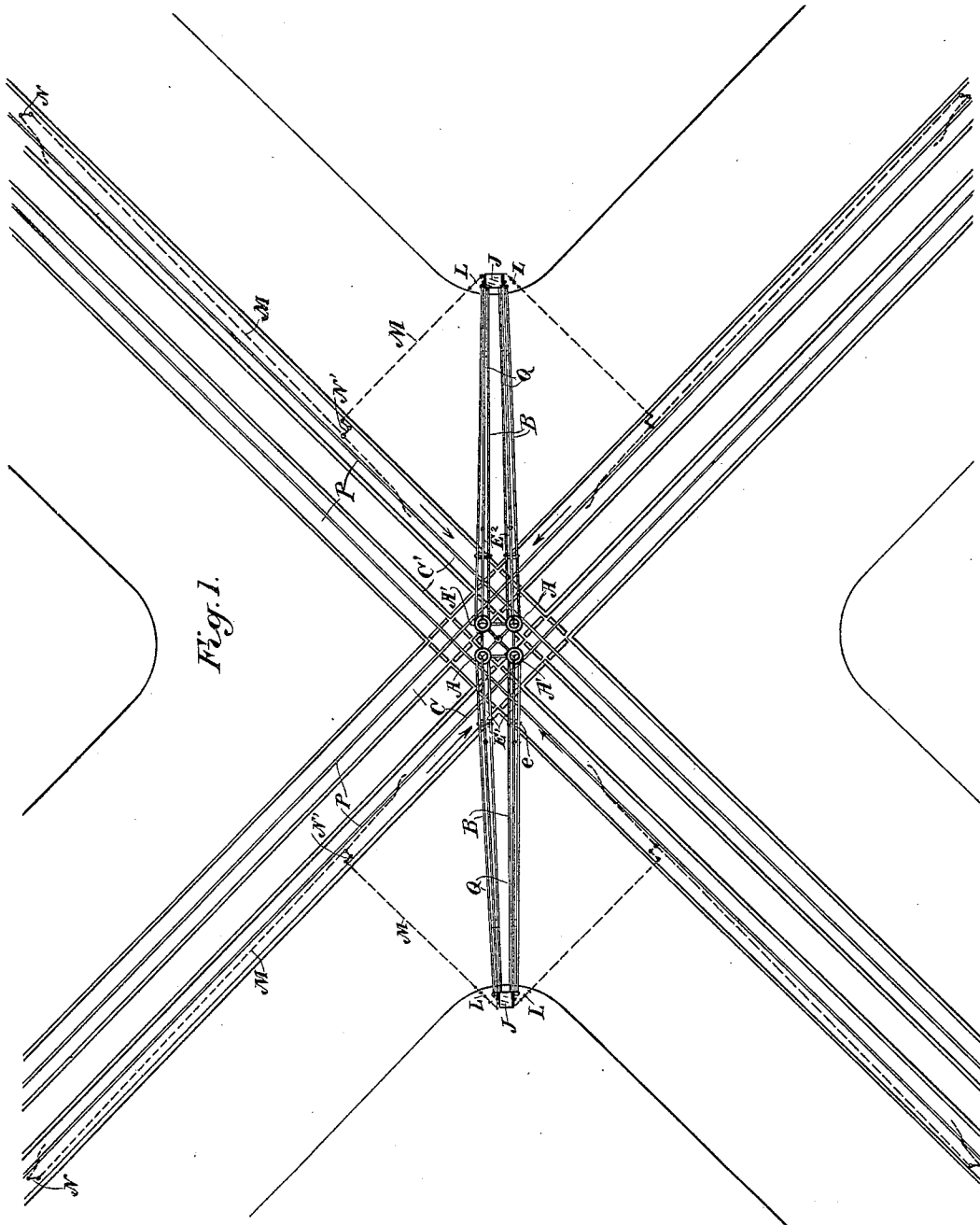

Fig. 1.

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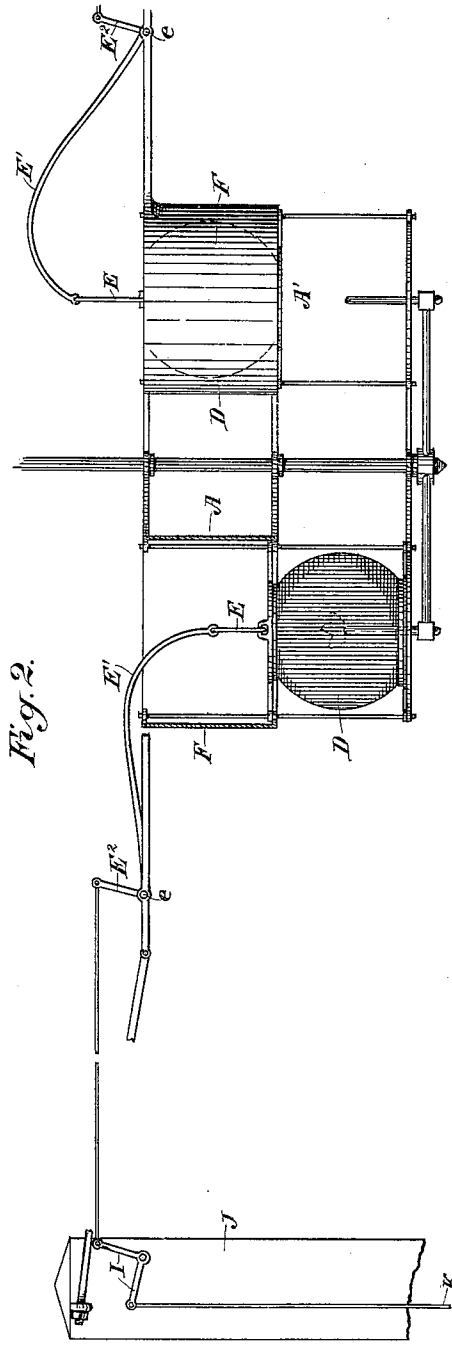

Fig. 2.

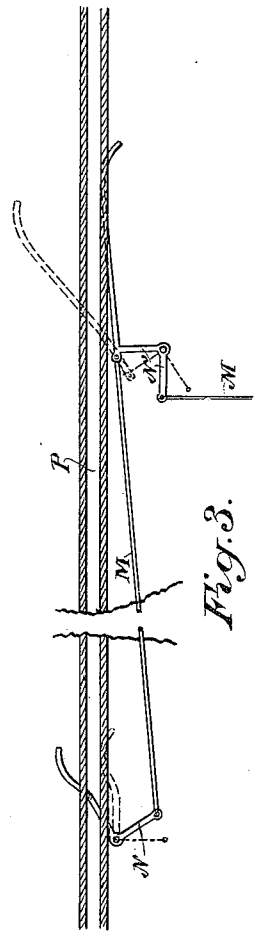

Fig. 3.

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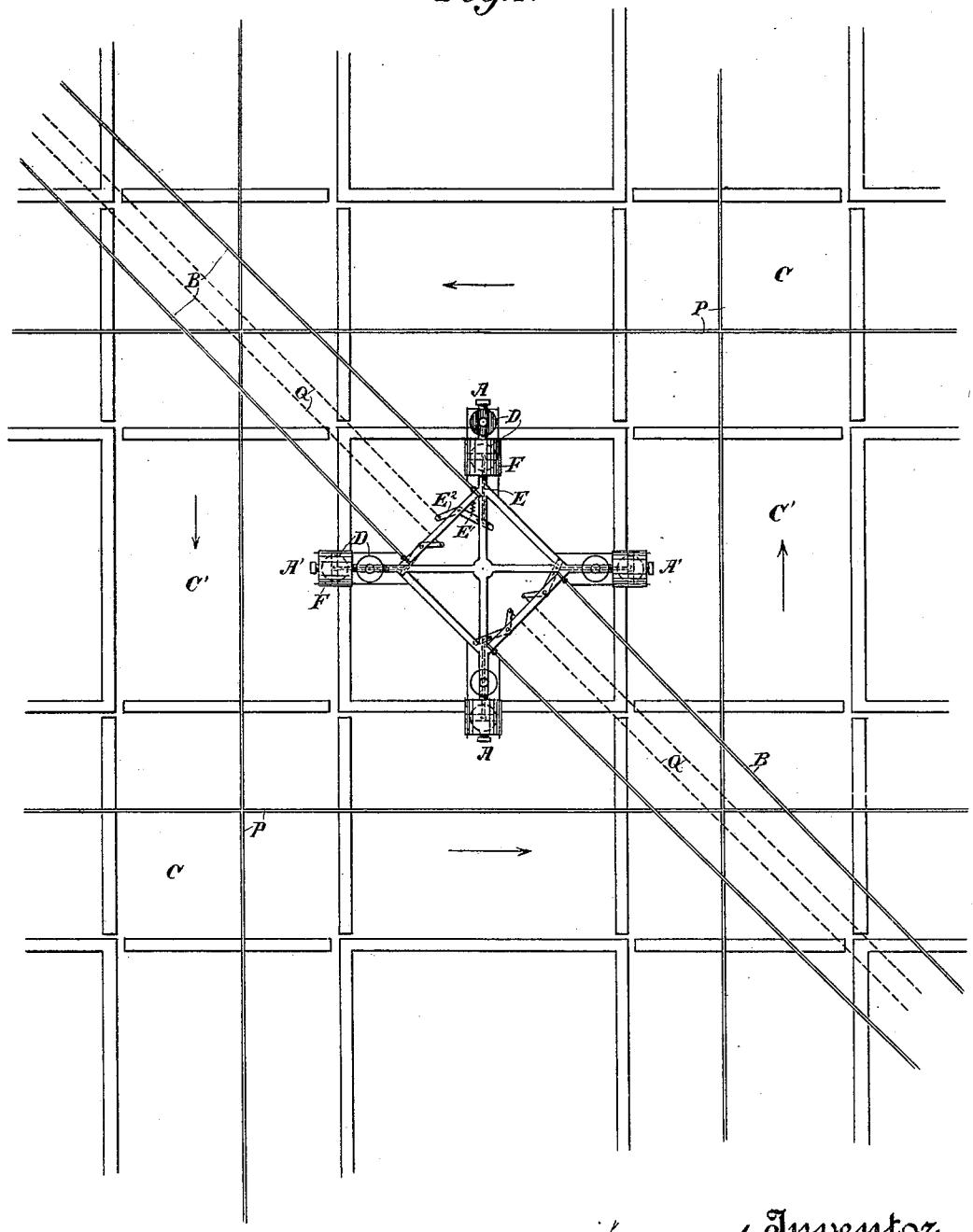
Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN JORGENSON, OF SAN FRANCISCO, CALIFORNIA.

RAILROAD-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 623,671, dated April 25, 1899.

Application filed August 3, 1898. Serial No. 687,603. (No model.)

To all whom it may concern:

Be it known that I, JOHN JORGENSON, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Railroad-Signals; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a signaling device which is especially applicable to indicate when crossings of two lines of railway are clear or obstructed.

It consists, essentially, of fixed signals placed with relation to each of the crossing lines of track and devices actuated by the approaching and receding cars which are so operated as to leave the signals clear when the roads are unobstructed and by which colored signals are exposed as a car approaches to indicate "danger" at the crossing for either one or both the lines.

My invention consists in details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a plan view of a crossing, showing my apparatus in position. Fig. 2 is an elevation of one side of the same. Fig. 3 is a plan view of the actuating-levers. Fig. 4 shows the signals close together and stationary.

The object of my invention is to provide an automatically-operating signal, and I have here shown it as applied to the crossing of two street-railways in such a manner that the cars approaching upon either line will be warned when another car is about to cross their own line, so that they can hold up until the way is again clear.

Various devices may be employed for carrying out the invention. As shown in the present case, the lighting devices A, which may be either gas, electric, or of other form, are suspended by suitable rods or wires B, extending from posts at the corners of the street or sidewalk adjacent to the point where the car-tracks cross. These signals are arranged in sets, the signals A being separated to a considerable distance in line transversely of the tracks C, while the signals A′ are correspondingly separated at right angles with the tracks C′, which cross the first-named tracks at a point beneath the position occupied by the signals. By thus having the signals in pairs they will be separated to a considerable distance and above each track, facing the cars which are to be cautioned and which are to wait for the other cars to cross, and a colored signal will be presented toward the approaching cars.

Two methods for manipulating the signals are shown. In the one illustrated in Fig. 2 colored globes are moved to inclose the signals or so as to expose a white signal. In Fig. 4 both signals are stationary, and they are exposed and concealed or lighted and extinguished by the mechanism actuated by the passing cars.

D D are globes made of colored glass, usually red, because red has been adopted as a danger-signal in such cases. These globes are open at top and bottom and are suspended by yokes or arms E, so that they may be moved vertically, as will be hereinafter described. At a point above the signals are suspended opaque cylinders F, which may be made of sheet metal painted or enameled white or any desired color and having such a diameter that the colored globes can be drawn into them, so as to be entirely concealed, or moved downward to inclose the lights which are below, and thus produce a colored signal. The levers or yokes E, by which these globes are moved, are suitably fulcrumed in the framework supported by the wires and may be actuated either by means of electromagnets and suitable connections and contact-wires or by mechanical means. In the present case I have shown the devices as actuated by mechanical means. The suspending arms or yokes E are suitably pivoted or fulcrumed, as shown at *e*, and have upwardly-projecting lever-arms E′. From these arms wires, wire ropes, or other suitable connections extend to bell-crank levers I, which are here shown as fixed upon the supporting-posts J, from which the apparatus is suspended. Wires K lead from the other arms of these levers to other bell-crank levers L. Thence other connecting-wires M lead to levers N, which are fulcrumed in the line of travel of the cars. In the illustration I have shown the slots in which grips of cable-railway-propelled cars are adapted to travel, and the lever-arms N are so fulcrumed that one arm extends into the line of

travel of the grip, so that whenever the car approaches the crossing it will actuate one of the lever-arms N and through the connections will drop one of the colored globes, so that it will inclose the light, and thus indicate that a car is approaching upon that track.

As the lines of track are usually double on street-railways, the signal which will be inclosed with the danger-color will be the one corresponding with the line of track on which the car is approaching. As soon as the car has reached the crossing or passed it and at any suitable point and distance with relation to said crossing another lever-arm N′ projects across the line of travel of the grip, so that the latter will engage it and will reverse the movement of the levers and connections hereinbefore described, so that the colored globe will be raised into the concealed casing, thus leaving only a white signal and showing that the way is again clear.

In Fig. 4 the white and colored signals are close together and stationary. If gas is used, any well-known form of electric-lighting devices may be actuated by the levers N N′ or equivalent devices to light one and extinguish the other, and if electric lights be employed contacts will be similarly made and broken for the same purpose.

It will be understood that by the use of contact-points through which electrical connections may be made, said points being so placed as to be operated by the approaching and receding car, the white and colored lights could readily be exposed or made to disappear by electrical action, and various mechanical devices may be employed to produce the results herein described. This device is especially valuable in city streets where the buildings extend to the street-corners and conceal approaching cars from view upon transverse streets until they are almost upon the crossing. With the signals side by side, as in Fig. 4, the shields F are connected with the actuating mechanism, so as to be movable transversely to expose one signal and conceal the other.

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

1. The combination with two transversely-crossing lines of track, of a plurality of alternately-actuated signals, one suspended over the up-track and the other over the down-track, said signals including opaque or concealing cases disposed with relation to said signals and colored globes and mechanism connected therewith and extended into the line of track whereby the passage of the cars acts to move the globes with relation to the signals and the concealing-casings.

2. The combination with two transversely-crossing lines of track, of a plurality of alternately-actuated signals arranged in pairs with one signal of each pair disposed over an up-track of one line and the other signal of the same pair disposed over the down-track of the same line, said signals consisting of opaque open-bottomed casings and situated above the signals, colored open-ended globes movable to inclose the signal or to be raised into the concealed casings, and connections between the globes and the line of track whereby the passage of the cars acts to move the globes with relation to the signals and concealing-casings.

3. The combination with a line of track, of signals separated transversely with one signal disposed over the up-track and the other signal disposed over the down-track, a second line of track crossing the first-named track and signals for said second-named track, separated transversely and with one signal over the upper track and the other over the down-track thereof, said signals including concealing-casings and colored globes, one movable with relation to the other and means whereby the signals are operated substantially as described.

In witnesses whereof I have hereunto set my hand.

JOHN JORGENSON.

Witnesses:
S. H. NOURSE,
JESSIE C. BRODIE.