

(No Model.)

W. H. JORDAN.
SIGNAL FOR ELECTRIC RAILWAYS.

No. 604,866.

Patented May 31, 1898.

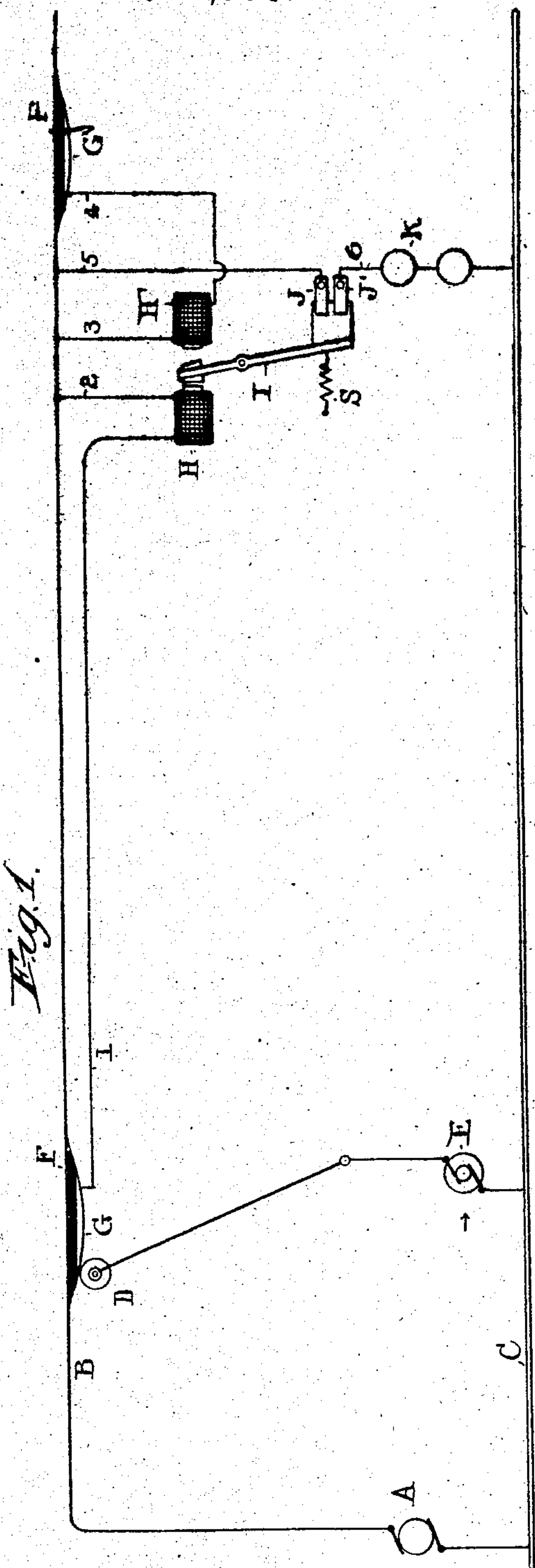


Fig. 1

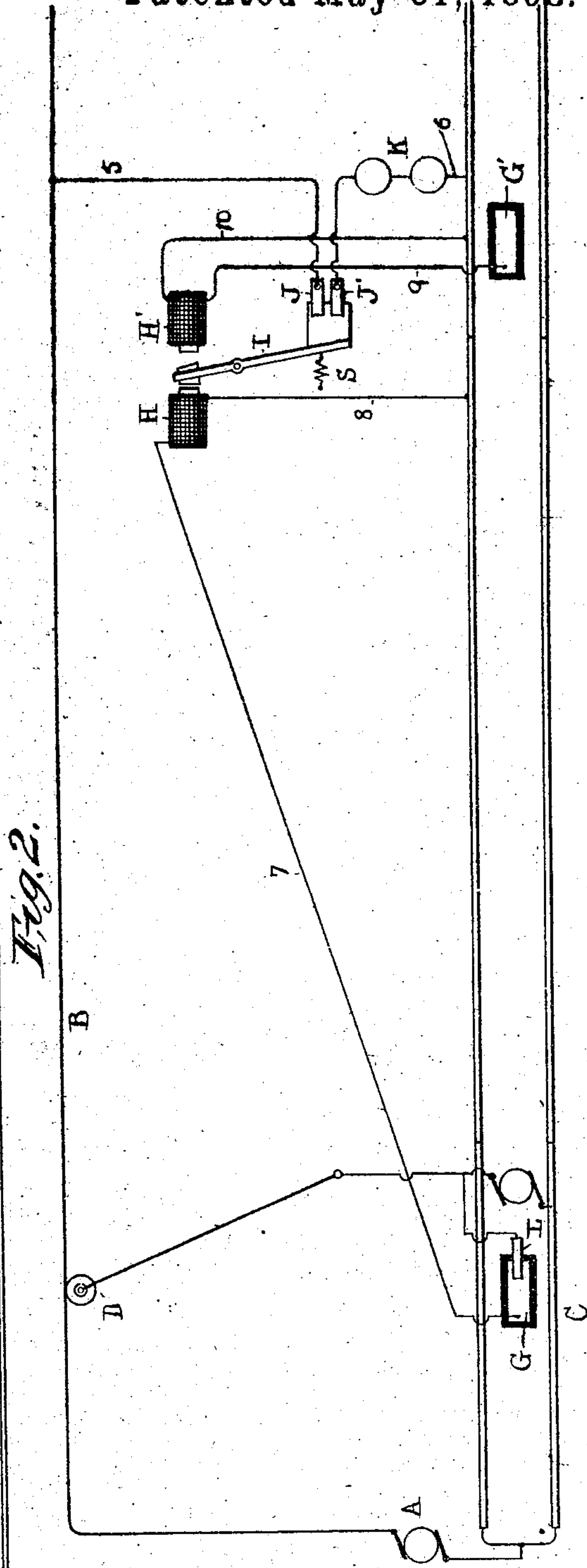


Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM H. JORDAN, OF BROOKLYN, NEW YORK.

SIGNAL FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 604,866, dated May 31, 1898.

Application filed February 16, 1897. Serial No. 623,723. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. JORDAN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Signals for Electric Railways, of which the following is a specification.

This invention relates to signals for electric railways; and my object is to produce a simple arrangement and mechanism for operating signals at street-crossings, although my invention is equally applicable for other purposes.

In the accompanying drawings, Figure 1 illustrates my invention applied to an overhead contact system, and Fig. 2 illustrates a modified arrangement.

Referring to Fig. 1, A is the main source, B the overhead conductor, and C one of the rails or other return-conductor. D is the trolley, and E the motor which propels the car. Secured to the overhead conductor at suitable distances apart are two insulators F and F', provided with contact-plates G and G', with which the trolley is adapted to make contact. H and H' are two electromagnets adapted to operate a pivoted switch-lever I, which carries the armatures for the magnets. Lever I is provided with a switch-blade which cooperates with contact-plates J and J'. Contact-plate G is connected by wire 1 with one end of the coil of magnet H, the other end of which is connected to the trolley-wire B by wire 2. Magnet H' is connected in the circuit 3 4 between the trolley-wire and contact-plate G'. Contact J is connected to the trolley-wire by wire 5, and contact J' is connected to the return-conductor C by wire 6, which contains the signaling devices K, which may be of any suitable form, either visible or audible. Contact G', the signaling device K, and the signal-controlling switch mechanism are located at one end of a block or section of the road or at a street-crossing, and the contact G is located at the other end of the block or section or at a point from which it is desired to operate the signal.

The operation is as follows: When a car is traveling in the direction of the arrow and the trolley rides onto contact-plate G, the motor will receive current through conduc-

tors 2 and 1 and magnet H, and the magnet being energized it will attract its armature, operating the switch and closing the signal-circuit 5 6. When the trolley rides off the contact G, circuit 1 2 will be opened; but the friction between the switch-blade and contacts J and J' will maintain the switch closed, and the signal will remain set until the trolley rides onto contact G', when the motor will receive current through circuit 3 4 and magnet H' will be energized. This magnet then attracts its armature and operates the switch-lever to open the signal-circuit. A light spring S is provided to prevent the switch swinging back into engagement with contacts J and J' when magnet H' is deenergized as the trolley leaves contact G'.

Fig. 2 shows practically the same arrangement, except that instead of mounting the contact-plates G and G' on insulators carried by the trolley-wire those contacts are placed between the rails and suitably insulated. With this arrangement the car carries a contact-brush L, which makes contact with the plates G and G'. When the brush L makes contact with plate G, magnet H is energized by current flowing from the trolley through wires 7 and 8 to the return-conductor and effects the closing of the switch and the operation of the signal, as in Fig. 1. The signal remains set when the brush leaves plate G, and when the brush makes contact with plate G' magnet H' is energized by current flowing from the trolley through wires 9 and 10 to the return-conductor and effecting the operation of the switch to open the signal-circuit.

It will be understood that any form of switch may be substituted for that shown without departing from the spirit of my invention and that the invention may be applied to underground contact systems as well as overhead systems.

What I claim is—

1. In an electric railway, the combination with the main or working conductors, of an electromagnetic signal-controller connected between one of the main or working conductors and two distant contact-plates located in close proximity to the same conductor, and which contact-plates are adapted to be electrically and successively connected with the other main or working conductor through the

contact devices and circuit connections of a moving vehicle, substantially as set forth.

2. In an electric railway, the combination with the main or working conductors, of two
5 electromagnets for controlling a signal, said magnets being independently connected between one of the main or working conductors and two distant contact-plates located in close
10 proximity to the same conductor, and which contact-plates are adapted to be electrically and successively connected with the other main or working conductor through the contact devices and circuit connections of a moving vehicle, substantially as set forth.

15 3. In an electric railway, the combination with the main or working conductors, of a signal-circuit, an electromagnetic device for controlling said signal-circuit, said device being connected between one of the main or working
20 conductors and two distant contact-plates located in close proximity to the same conductor and which contact-plates are adapted to be electrically and successively connected with the other main or working conductor through
25 the contact devices and circuit connections of a moving vehicle, substantially as set forth.

4. In an electric railway, the combination with the main or working conductors, of a
30 signal-circuit, two electromagnets for controlling said signal-circuit, said magnets being independently connected between one of the main or working conductors and two distant contact-plates located in close proximity to the same conductor and which contact-plates are adapted to be electrically and successively connected with the other main or
35 working conductor through the contact devices and circuit connections of a moving vehicle, substantially as set forth.

40 5. In an electric railway, the combination with the main or working conductors, of a signal-circuit, a switch for controlling said circuit, an electromagnetic device for operating said switch, said device being connected
45 between one of the main or working conductors and two distant contact-plates located in close proximity to the same conductor and which contact-plates are adapted to be electrically and successively connected with the
50 other main or working conductor through the

contact devices and circuit connections of a moving vehicle, substantially as set forth.

6. In an electric railway, the combination with the main or working conductors, of a
55 signal-circuit, a switch for controlling said circuit, two electromagnets for operating said switch, said magnets being independently connected between one of the main or working conductors and two distant contact-plates located in close proximity to the same conductor
60 and which contact-plates are adapted to be electrically and successively connected with the other main or working conductor through the contact devices and circuit connections of a moving vehicle, substantially as set forth. 65

7. In an electric railway, the combination with the main or working conductors, of a
70 signal-circuit connected across said conductors, a switch for controlling the signal-circuit, an electromagnetic device for operating said switch, said device being connected between one of the main or working conductors and two distant contact-plates located in
75 close proximity to the same conductor and which contact-plates are adapted to be electrically and successively connected with the other main or working conductor through the contact devices and circuit connections of a moving vehicle, substantially as set forth.

8. In an electric railway, the combination
80 with the main or working conductors, of a signal-circuit connected across said conductors, a switch for controlling the signal-circuit, two electromagnets for operating said switch, said magnets being independently
85 connected between one of the main or working conductors and two distant contact-plates located in close proximity to the same conductor and which contact-plates are adapted to be electrically and successively connected
90 with the other main or working conductor through the contact devices and circuit connections of a moving vehicle, substantially as set forth.

This specification signed and witnessed this
13th day of February, 1897.

WILLIAM H. JORDAN.

Witnesses:

W. PELZER,

S. O. EDMONDS.