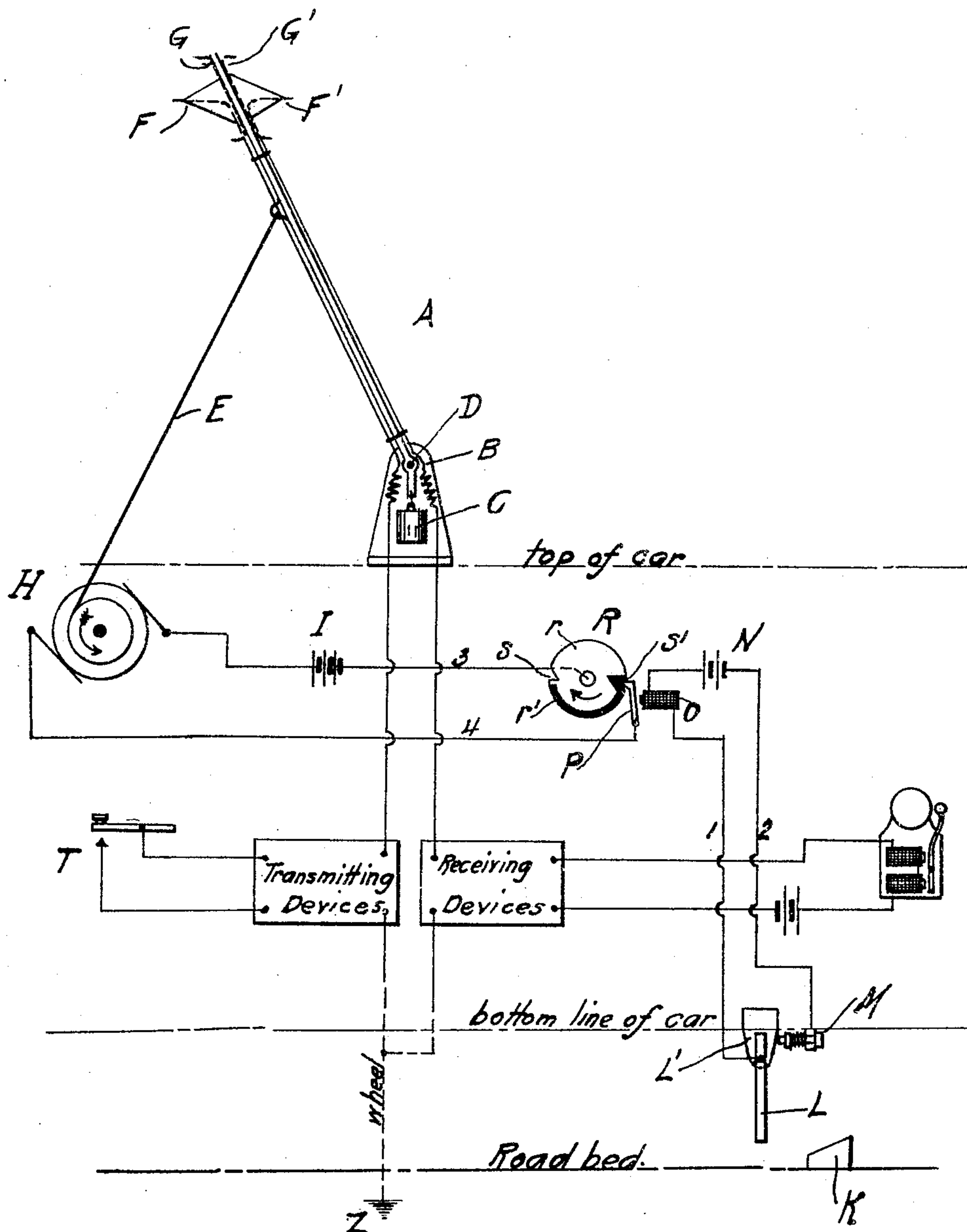


No. 800,658.

PATENTED OCT. 3, 1905.

I. KITSEE.
SPACE TELEGRAPHY.
APPLICATION FILED JUNE 17, 1905.



Witnesses
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SPACE TELEGRAPHY.

No. 800,658.

Specification of Letters Patent.

Patented Oct. 3, 1905.

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To all whom it may concern:

Be it known that I, ISIDOR KITSEE, of the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Space Telegraphy, of which the following is a specification.

My invention relates to an improvement in space telegraphy, and has more special reference to telegraphing from or to moving vehicles, such as railroad-cars.

The greatest drawback of wireless telegraphy on railroads is the presence of the great network of wires adjacent the railroad-tracks, and any transmitting or receiving device of an elevation not higher or even lower than the lines of transmission strung along the road of travel will be greatly interfered with by such transmitting-lines. To devise an effective system of space telegraphy for railroads, it is necessary that the stations on the car should be provided with aerial conductors reaching to a greater height than the network of wires usually strung on poles following such roads.

At the first glance it would seem comparatively easy to provide the roof of cars to be used for wireless stations with an upright reaching to a greater height than the lines of transmission, but bridges, tunnels, and often crossing wires do not permit the employment of any device extending to any great degree above the roof of the car.

It is the aim of my invention to overcome this difficulty, and in the drawing, which illustrates in diagrammatic view my invention, I have shown a simple and preferred form of using moving cars as stations for the receiving as well as transmitting of wireless messages without interference of near-by conductors.

The drawing, as said above, illustrates my invention as applied to the car in a diagrammatic view, the car being indicated in outlines.

A is an arm or pole secured to the roof of the car by the bracket B and held in vertical position by the means C, here illustrated as a weight. This arm or pole is pivoted at D and is provided with the means E, here shown as a rope, for the purpose of pulling the pole to a horizontal or partially-horizontal position, as will later on be more fully described.

F is an aerial conductor for the purpose of transmitting messages to the next car or station. F' represents similar means for the purpose of receiving impulses from other cars or stations. These means may be insulated from each other by the metallic shield G and G'.

H is a motor connected with a source of current, here shown as the battery I. This motor is adapted through its rotation to draw the pole downward.

K is an upright placed on the road-bed near the side of the car.

L is a movable lever attached to the side of the car, preferably with the aid of the bracket L'.

M is a contact.

The movable lever L as well as the contact M are connected to the source of current N, and the electromagnet O through the wires 1 and 2. The electromagnet O is provided with the armature P, adapted to act as a stop for the wheel R. This wheel is as to one half of its periphery conducting and as to the other half of its periphery non-conducting, the conducting part being designated as *r* and the non-conducting part being designated as *r'*. The wheel is also provided with two indents, (designated by the letters *s* and *s'*, respectively.) This wheel is adapted to be rotated by a spring or other means in the direction of the unfeathered arrow. The wheel itself is connected through wire 3 with the source of current I, and the armature P is connected through wire 4 with one terminal of the motor H. The aerial conductor F is connected with the interposition of a transmitting device through the wheel with the ground Z, and the aerial conductor F' is connected with the interposition of the receiving device through the wheel of the car proper to the ground Z.

T is the transmitting-key.

I have not illustrated the car in detail, but have only shown the general arrangement of the devices and their placement as to the car proper.

The *modus operandi* of this form of my invention is as follows: Normally the upright A, with its aerial conductors F and F', reaches to a height greater than the height of the surrounding wires or other conductors; but where the road is intersected by bridges or other devices which would prevent the passage of an elevated device, such as the arm or pole A, I provide the road-bed with the stationary projection or contact and provide the lower part of the car with a movable device, which when brought in contact with the stationary contact will change its position and through this change will close a circuit, and through the closing of this circuit the armature of an electromagnet is drawn

away from the contact-wheel, which thereby
 revolves and produces a contact between the
 armature and its conducting periphery,
 thereby closing a circuit which includes a
 5 motor, around the axis of which a rope or
 wire is carried drawing the pole or arm down-
 ward sufficiently for the clearance of such
 objects as bridges, tunnels, &c. After the
 bridge or tunnel is passed a second stationary
 10 contact connects with the movable lever; but
 through this closing of the circuit the con-
 tact-wheel will revolve in a manner so as to
 bring the armature out of contact with the
 conducting part and in contact with the non-
 15 conducting part of said wheel, thereby open-
 ing the circuit containing the motor, and the
 pole impelled by the weight will now resume
 its former position.

I have not described here the different func-
 20 tions of the aerial conductors, as this will form
 the subject-matter of another application.
 So, also, have I only indicated the transmitting
 and receiving devices by an inclosure.

When this system is used to notify one train
 25 that a second train is in the same section, then
 it is best that the first train shall transmit im-
 pulses to the train following, indicating its
 presence. With this system two or more cars
 can easily communicate with each other and
 30 the conductors or officers in charge can readily
 notify each other of their presence, and a col-
 lision can thereby be avoided.

I did not deem it necessary to illustrate the
 whole system in which a series of cars are
 35 employed. Suffice it to say that a car enter-
 ing on a section will first ascertain if impulses
 are transmitted to it before transmitting im-
 pulses to the car following. Each car can
 also be provided with automatic transmitting
 40 and receiving devices, so as to dispense with
 the services of an extra operator. With this
 system it is not only possible to communicate
 from car to car, but also from moving cars to
 stationary points, and vice versa.

Having now described my invention, what 45
 I claim as new, and desire to secure by Letters
 Patent, is—

1. In a system of space telegraphy, one or
 more moving vehicles provided each with an
 aerial conductor reaching over the top of said 50
 vehicle, and means to decrease the height of
 this conductor automatically at predetermined
 points.

2. In a system of space telegraphy, a mov-
 ing vehicle an aerial conductor reaching over 55
 the top of said vehicle, means to keep said
 aerial conductor in place, means to lower said
 conductor, said means dependent on the clos-
 ing of an electric circuit, said electric circuit
 in operative relation to actuating means, part 60
 of said means carried by said car or cars and
 part of said means distributed along the road
 of travel.

3. In a system of space telegraphy, a mov-
 ing vehicle, a vertical conductor reaching over 65
 the top of said vehicle, means to bring said
 conductor to a more or less horizontal posi-
 tion, said means embracing electromagnetic
 means in operative relation to a circuit adapt-
 ed to be closed, and opened through actuating 70
 means, part of said means traveling with said
 vehicle and part of said means located on the
 road of travel.

4. In a system of space telegraphy in which
 a moving vehicle is used as transmitting and 75
 receiving station, a revolving contact-wheel
 partially conducting and partially non-con-
 ducting, means to close through said wheel an
 electric circuit including means to differen-
 tiate the height of an aerial conductor. 80

In testimony whereof I hereby sign my name,
 in the presence of two subscribing witnesses,
 this 14th day of June, A. D. 1905.

ISIDOR KITSEE.

Witnesses:

EDITH R. STILLEY,
 H. C. YETTER.