

No. 747,345.

PATENTED DEC. 22, 1903.

J. E. ALLISON.  
SIGNALING APPARATUS.  
APPLICATION FILED AUG. 30, 1902.

NO MODEL.

Fig. 1.

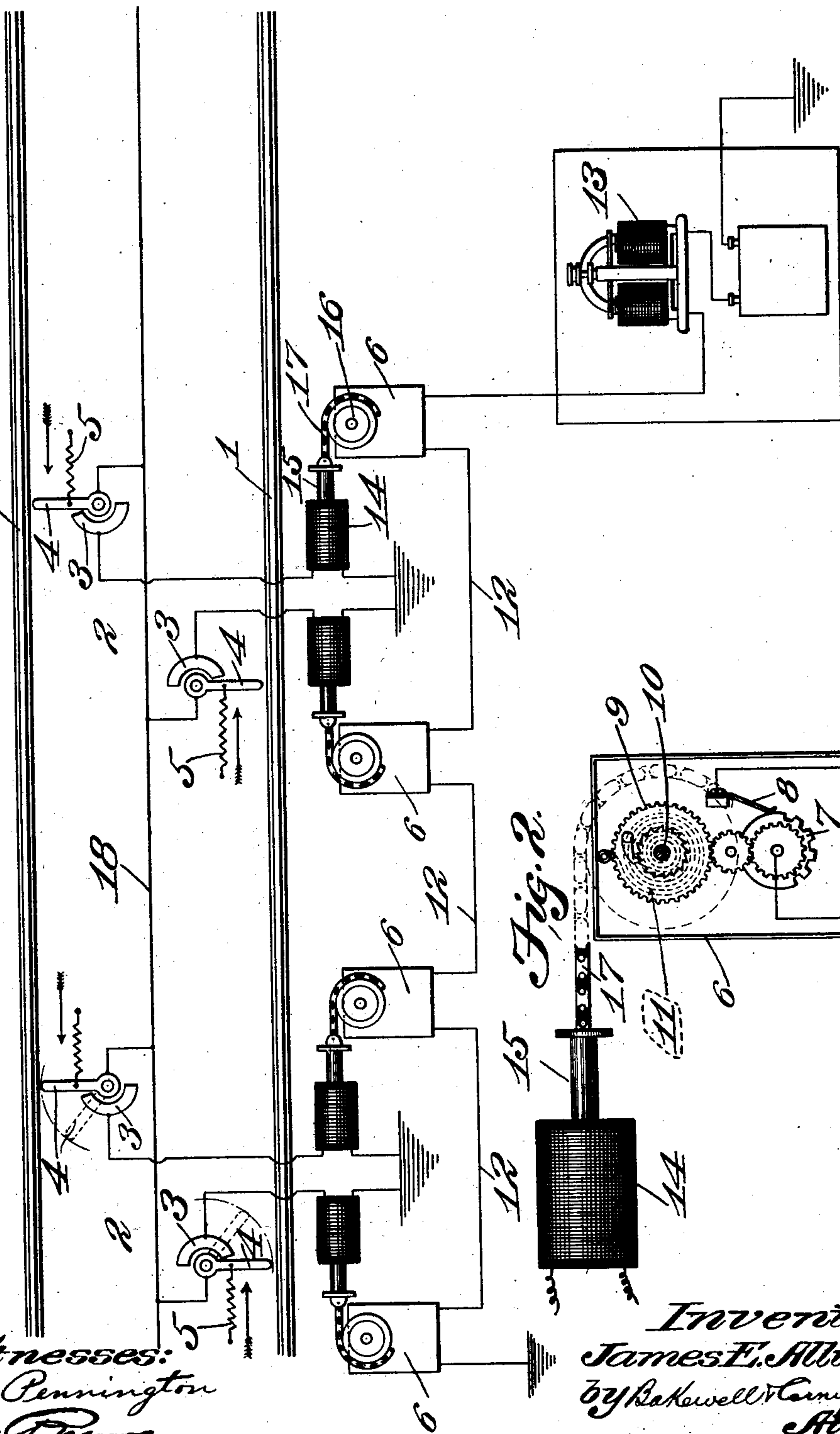
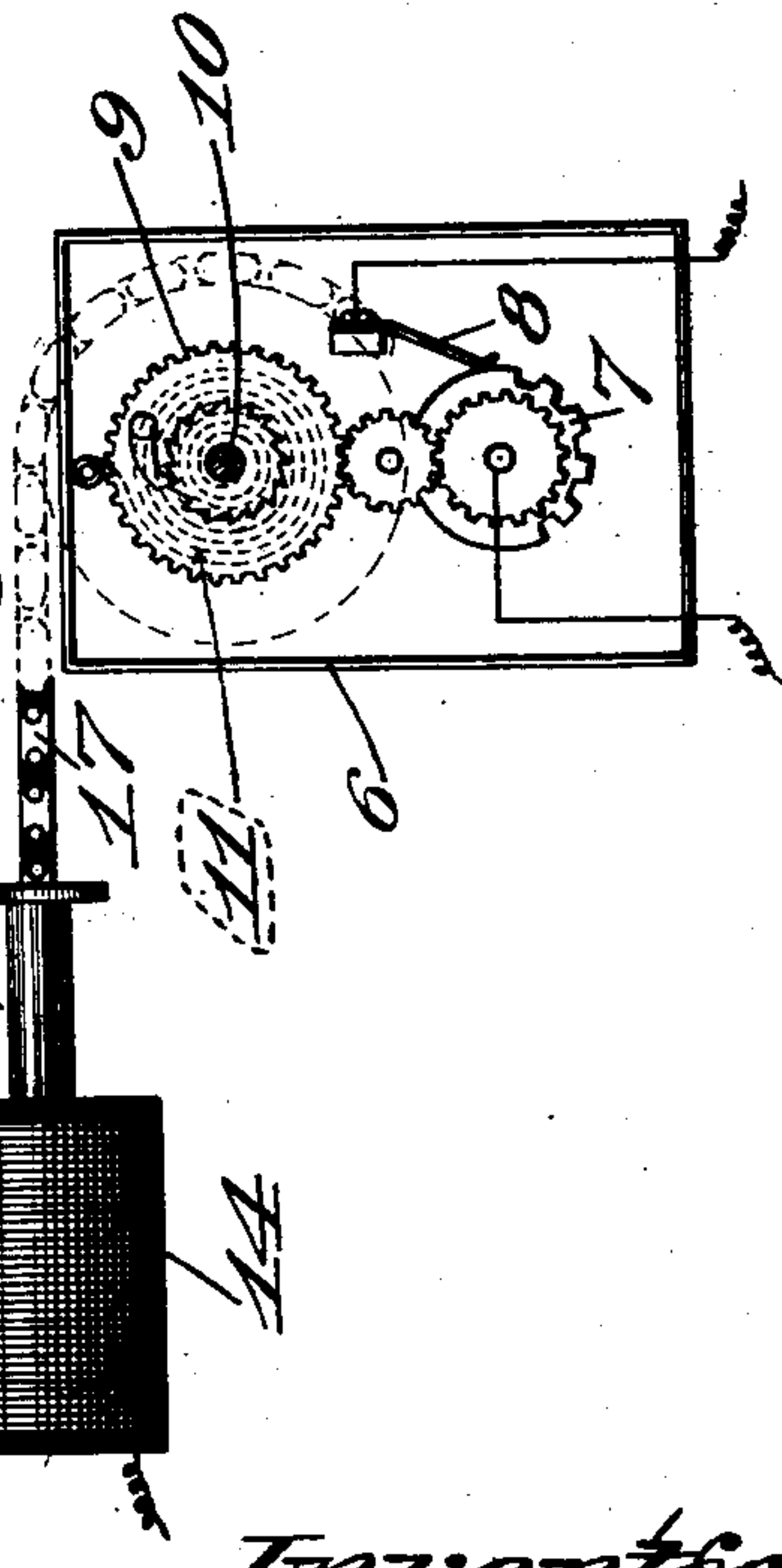


Fig. 2.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

JAMES E. ALLISON, OF ST. LOUIS, MISSOURI, ASSIGNOR TO HIMSELF AND  
GEORGE M. SEELEY, OF ST. LOUIS, MISSOURI.

## SIGNALING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 747,345, dated December 22, 1903.

Application filed August 30, 1902. Serial No. 121,653. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES E. ALLISON, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Signaling Apparatus, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a diagrammatic view, and Fig. 2 is a detail view, illustrating a solenoid and the sending mechanism operated by the core of said solenoid.

My invention relates to improvements in signaling apparatus, and more particularly to apparatus by means of which a car traveling along a track can automatically send signals to the office of the despatcher, each of said signals indicating the position of the car at the time at which the signal is sent.

My object is to provide a simple construction employing parts which can be easily secured and operated, the operation of the apparatus being entirely automatic.

To these ends and also to improve generally upon apparatus of the character indicated my invention consists in the various matters hereinafter described and claimed.

Referring now more particularly to the drawings, 1 indicates a track, and 2 represents a switch, the switches being arranged in pairs and located at various definite points along the track—as, for example, at intervals of about two miles. One switch of a pair at a given point is adapted to be operated by a train bound in one direction, and the other switch of the pair is adapted to be operated by a train running in the opposite direction. Each switch is here shown as comprising a relatively fixed contact-plate 3 and a pivoted contact-arm 4, adapted to cooperate with said plate, said arm being normally held in retracted or inoperative position by means of a spring 5.

Suitably located along the track at or near the point at which a switch is located is a sending mechanism 6, which is preferably of the character of the usual messenger-call—that is to say, said mechanism includes a ro-

tatable contact-disk 7 and a cooperating contact-finger 8, the finger normally resting upon the disk in order to close the circuit including the said parts and the circuit being broken during the rotation of the disk in a manner which is well understood. The disk is driven by a driving-gear 9, supported upon a suitable winding-arbor 10, said arbor being controlled by a spring 11, all as will be clearly understood. There is one of these sending mechanisms for each switch along the track, and these various sending mechanisms are electrically connected by means of a wire 12, the circuit formed by said wire leading to a recording or sounding instrument 13, located in the despatcher's office. Each sending mechanism transmits a distinctive signal, so that when the instrument in the despatcher's office is operated the attendant knows which particular switch has been thrown, and the train is therefore definitely located.

Near each signaling mechanism is a solenoid-magnet 14, whose core 15 is operatively connected to the winding-arbor 10 of the sending mechanism, and in order to effect this connection I have here shown the winding-arbor as provided with a drum or pulley 16, a flexible connector 17 having one end connected to said drum and its other end connected to the core of the solenoid.

The various switch-arms 4 are in electrical connection with the line or trolley wire 18, and the contact-plates 3, with which the said switch-arms cooperate, are respectively connected to the solenoid-magnets 14 and are then grounded. When a train or car approaches a switch, the contact-arm 4 is thrown by some suitable member upon the car, and the circuit is established through the particular solenoid-magnet 14 which controls the sending mechanism for the point which the car or train is passing. When the magnet is energized, the core is moved in a well-understood manner, and through the connection 17 the winding-arbor of the sending mechanism is rotated and the spring is wound. Of course the arm 4 is held in contact with the plate 3 for only a short period of time, and therefore as soon as the spring has been wound the circuit through the solenoid-magnet is broken, and the parts are



left free to operate under the action of the spring. The spring then rotates the contact-plate 7 in a well-understood manner, and the proper signal is transmitted to the despatcher's office.

The various parts of the present apparatus can be easily secured, and the wiring is simple. Furthermore, the action of the apparatus is entirely automatic, the springs of the various sending mechanisms being automatically wound. It will also be noted that the springs of the sending mechanisms are normally not under tension, and they are placed under tension only at the times at which it is desired to send a signal. In this manner unnecessary strain upon the springs and the parts actuated thereby is obviated.

I am aware that many minor changes in the construction, arrangement, and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

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

1. In a mechanism of the character indicated, cooperating signal-sending contact members, one of which is movable with re-

spect to the other thereof, a driving-spring, connection between said spring and said movable contact member, a member connected to said spring for winding the latter upon movement of the former, a magnet, an armature therefor, driving connection between said armature and said spring-winding member, a circuit including said magnet, and a switch in said circuit; substantially as described.

2. In a mechanism of the character indicated, cooperating signal-sending contact members, one of which is movable with respect to the other thereof, a driving-spring, connection between said spring and said movable contact member, a drum connected to said spring for winding the latter upon movement of the former, a magnet, an armature therefor, a flexible connector between said armature and said drum, a circuit including said magnet, and a switch in said circuit; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 27th day of August, 1902.

JAMES E. ALLISON.

Witnesses:

GALES P. MOORE,  
GEORGE BAKEWELL.