

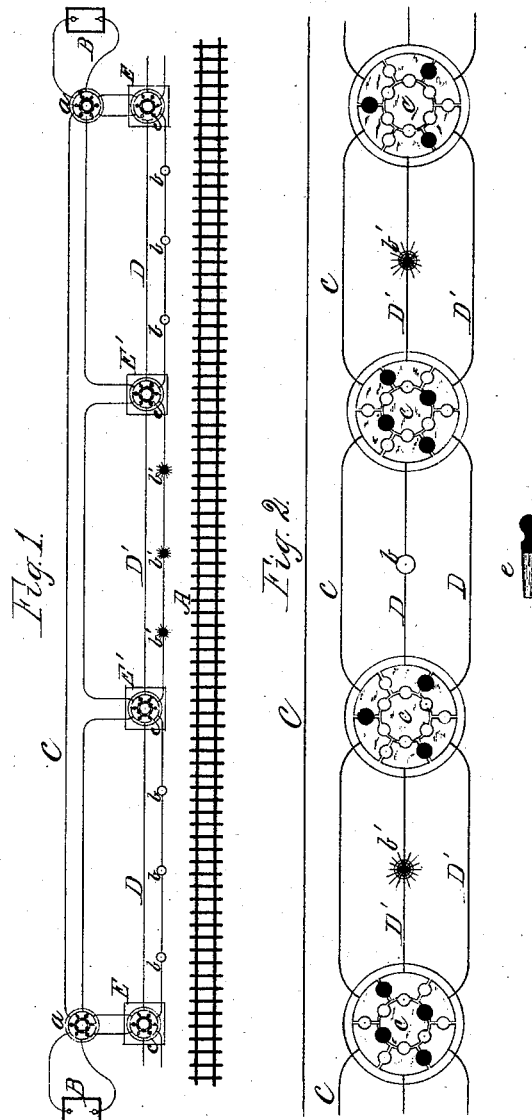
(No Model.)

G. E. FULLERTON.

SYSTEM OF COMMUNICATION WITH MOVING TRAINS.

No. 302,475.

Patented July 22, 1884.



Witnesses.
Geo. H. Runk
Wm. A. Clark

Inventor.
George E. Fullerton,
By Justus M. S. John,
His Atty.

UNITED STATES PATENT OFFICE.

GEORGE E. FULLERTON, OF PARIS, IOWA.

SYSTEM OF COMMUNICATION WITH MOVING TRAINS.

SPECIFICATION forming part of Letters Patent No. 302,475, dated July 22, 1884.

Application filed December 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. FULLERTON, a citizen of the United States, residing at Paris, in the county of Linn and State of Iowa, have
invented certain new and useful Improvements in Electric Railway-Signals, of which the following is a specification.

This invention relates to a system of communication with railway-trains between stations; and the object of it is to warn such trains of impending danger and prevent collisions or other accidents.

The invention consists in the application of electric lights to this purpose, and in a suitable arrangement of batteries or dynamos, principal and secondary circuits, switches, and lamps, as will be hereinafter more fully described. The means by which this is accomplished are illustrated in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a theoretical diagram of a section of track with my device attached, and Fig. 2 is an enlarged view showing connections.

A represents a section of track extending between two important stations. For convenience they may be division-stations, and the power employed at these localities for other purposes may be used in the generation of the electrical current necessary to operate the lamps. At these main stations are placed dynamos B B, connecting with a main circuit, C, extending from one terminal point to the other and through the intermediate offices E' E''. Connection may be made or broken at either end by means of switches *a a*. Between the intermediate stations, E' E'', are placed secondary circuits D D', which may be connected with the principal circuit by means of switches *c c*. Along these secondary circuits, at suitable distances, are placed electric lamps *b b'*, of any desired style, it being designed that their illumination shall be visible both day and night.

The mode of operation will now be easily understood. In Fig. 1 of the drawings only that section of track between two of the stations E' E'' is illuminated; but it will be perceived that more than one such section of track may be so lighted, if desired, by making the proper connections at the several stations. In practice it is however seldom, if ever, necessary to use more than one of the secondary

circuits, and these only in case of danger. The principal circuit is supposed to be always charged, or in a condition to be charged in a few moments. In the former case, the operator at an intermediate station, apprehending danger to a train that has already passed his office, connects the circuit between his station and the next with the main circuit, when the current passes through the intermediate lamps, and warns the train and prevents impending collision or other accident. In the latter case he telegraphs to the dynamo-station, when the circuit is at once charged and the same result accomplished.

In practice, as will be seen from the drawings, it is only necessary to have separate circuits, as shown, the connection being made between the principal and any one of the secondary circuits, and between the principal circuit and the active dynamo, in any well-known manner, by suitable switches located at the several stations.

In order that the exact nature of the danger may be communicated to the moving train or trains a system of sudden flashes, varied in number and duration, may be employed. These signals are such as may be easily devised and understood, and need not be specifically described herein, as they are not necessarily a material part of the invention.

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

The herein-described system of signaling moving trains between stations, comprising a main circuit leading from a suitable source of electricity, a series of secondary circuits extending from station to station along the road, and provided with electric lighting devices located at any desired number of points between the termini of said secondary circuits, and two or more switches located at each station, whereby the secondary circuits can be connected with and energized from said main circuit in either or both directions from an intermediate station, and thereby display signals at any point or points between stations.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE E. FULLERTON.

Witnesses:

J. M. ST. JOHN,
SAMUEL M. ENDICOTT.