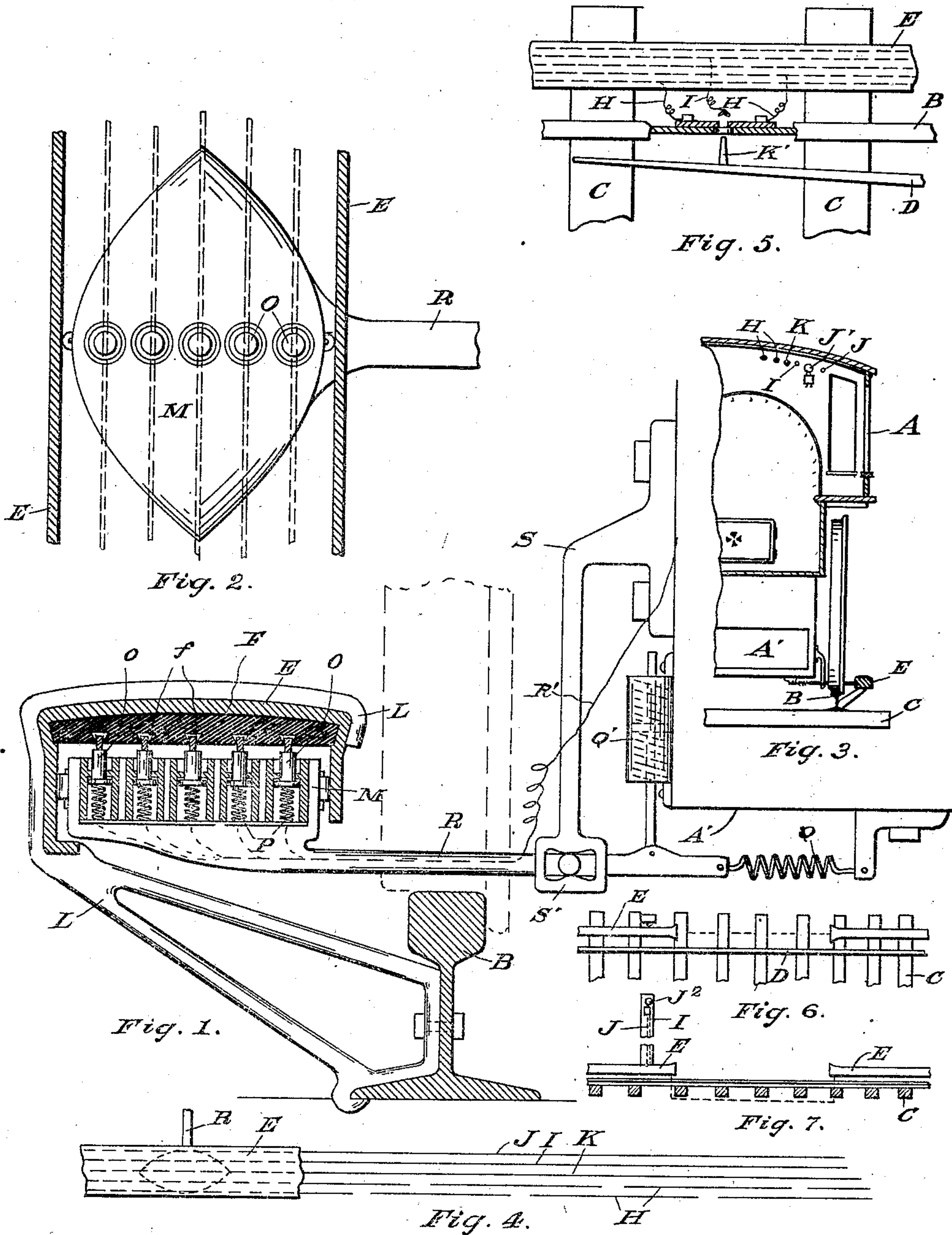


No. 842,574.

PATENTED JAN. 29, 1907.

A. McCANON.  
ELECTRIC DANGER SIGNAL.  
APPLICATION FILED APR. 30, 1906.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

ALEXANDER McCAHON, OF ST. JOSEPH, MISSOURI.

## ELECTRIC DANGER-SIGNAL.

No. 842,574.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed April 30, 1906. Serial No. 314,554.

*To all whom it may concern:*

Be it known that I, ALEXANDER McCAHON, a citizen of the United States, residing at St. Joseph, in the county of Buchanan and State of Missouri, have invented certain new and useful Improvements in Electric Danger-Signals; and I do declare the following to be a full, clear, and exact description of the invention, 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, and to the letters and figures of reference marked thereon, which form a part of this specification.

The object of my invention is to avoid head-end and rear-end collisions and open switches on railroads and accidents at road-crossings by an electric mechanism through which there is constant connection between conductor and conductor, conductor and engineer, station and station, and headquarters.

I accomplish my object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a cross-section of a hood and wires therein, an arm, a trolley, and a rail and its bracket for holding said hood in place. Fig. 2 is a detail top view of the trolley and arm and hood. Fig. 3 is a section view of an engine-cab, broken away, showing the position of wires therein. Fig. 4 is a plan of the wires, the hood omitted, showing their position as to each other. Fig. 5 is a detail of a switch, showing the connecting-wires and a plug. Fig. 6 is a plan of a wagon-road or other crossing, showing the breaking of the hood and continuance of the wires and the road-crossing signal-bell; and Fig. 7 is a side view of said road-crossing and wire and signal-bell.

Similar letters refer to similar parts in the several views.

In the drawings, A is an engine-cab; B, one of the rails of a road; C C, the railway-ties, and D a switch-rail.

E is a steel hood, and F is an insulated lining within said hood provided with dovetail grooves *ff*. These dovetail insulated grooves are for the purpose of carrying dovetail wires. Two of these wires H H are random wires running parallel with each other. Each of these wires is a quarter-mile, half-mile, or whatever length is desired, each of the division-points of wire being opposite the middle of the length of its parallel wire.

I is a continuous return-wire.

J is a signal-wire for road-crossings, and K is a telephone-wire.

Wires H H, J, and K all use return-wire I. Wires H H also serve as switch-wires.

L is a bracket rigidly bolted on rail B, its outer end supporting hood E, spaced slightly away from the rail on a line slightly above the horizontal of the top of the rail, as shown in Fig. 1.

M is a trolley, and O O a plurality of brushes therein. Each of these brushes has a spiral spring P, one end of which has connection with its brush, the other with any suitable battery. Q is a coil-spring having connection at one end with the fire-box A' of an engine or truck of a caboose and at the other end with a trolley-arm R, and R' is a cable of wires. S is a bracket connected with the fire-box and provided at its lower end with a swivel-box S' for carrying arm R. Spring Q serves as a cushion to relieve from the vibrations of the engine. Q' is a double-acting coil-spring adapted to serve the same purpose as spring Q, except that it has a vertical movement, while the movement of the coil-spring is horizontal. While this trolley is shown attached to an engine, it is equally adapted to be attached to the trucks of a passenger-car or caboose.

When this device is placed in connection with the track of a railway, random wires H H being laid in divisions, as hereinbefore indicated and as shown in Fig. 4, two engines approaching each other within a set distance, a circuit is formed between said engines or an engine and a caboose by return-wires. The circuit being thus formed, the electric bells on engines or cabooses are rung as a signal of danger. By changing the plug from wire K into connection with wires H H and I communication as to danger is immediately established between the engines or an engine or a caboose. It should be understood that whenever switch K' is thrown against wire I through wires H H a circuit is formed with an engine or a caboose, as before described. Signal-bell J' is connected with random wires H H, it being connected with wire I through any suitable battery. A circuit being formed with a battery in an engine, the signal-bell J' is rung in the engine. Whenever the switch is thrown open, a circuit is formed between wires H H and wire I with signal-bell J'. Whenever an engine approaches to a set distance from road-crossing bell J<sup>2</sup>, it forms a circuit through wire J into



said bell J<sup>2</sup>, thence through return-wire I, and thence through any suitable batteries in the engine.

What I claim, and desire to secure by Letters Patent, is—

1. In an electric danger-signal the combination with the rails and a switch and engine or car of a railway, of a bracket and a steel hood supported thereby, an insulated lining therein, the dovetail grooves in said lining, a trolley, a plurality of brushes therein, a spiral spring for each having battery connection and a coil-spring having fire-box connection, a trolley-arm connecting at the other end with a bracket and a swivel-box carrying said trolley-arm, a double-acting coil-spring, the random wires parallel with each other, a signal-wire, a telephone-wire and a continuous return-wire, a road-crossing bell having signal - wire connection, substantially as shown and set forth.

2. In an electric danger-signal for railways the combination with railway - ties, rails, switches, and engines, of a bracket rigidly bolted to a rail, a metal hood supported at the

outer end of said rail, an insulated lining within said hood, a trolley and trolley-arm, random and other wires of unequal length in the dovetail grooves the division-point of each wire being opposite the middle of its parallel wire thereby forming a continuous circuit if contacted by an approaching engine or in case a switch is open, substantially as shown and set forth.

3. In an electric danger-signal the combination with the rails of a railway and wires having battery connection, of a bracket rigidly fastened on the rail, a hood supported by said bracket slightly aside from the rail and above the horizontal of the top of same, an insulated lining and the dovetail grooves therein for the wires, substantially as described and shown.

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

ALEXANDER McCAHON.

Witnesses:

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