

H. A. OSBORN.
 AUTOMATIC RAILWAY DANGER SIGNAL.
 APPLICATION FILED MAR. 27, 1911.

1,056,051.

Patented Mar. 18, 1913.
 3 SHEETS-SHEET 1.

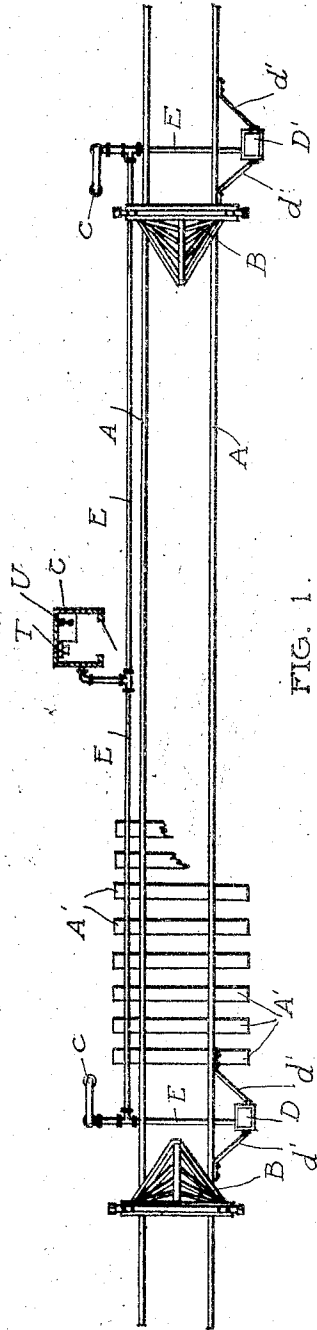


FIG. 1.

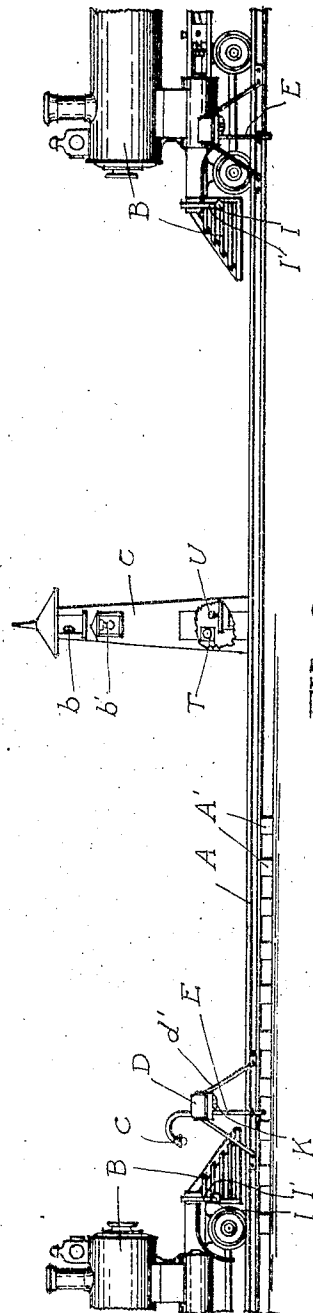


FIG. 2.

Witnesses:
 John Gordon
 Frank Frytag

Inventor:
 Homer A. Osborn
 By Eugene Ayres,
 Attorney

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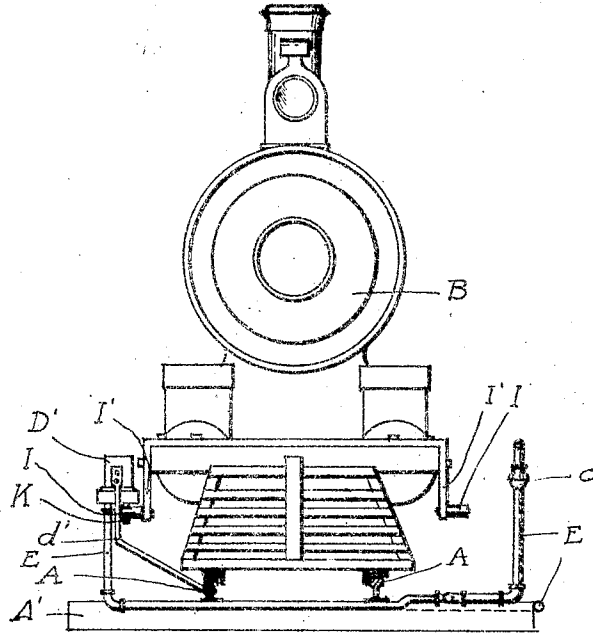


FIG. 3.

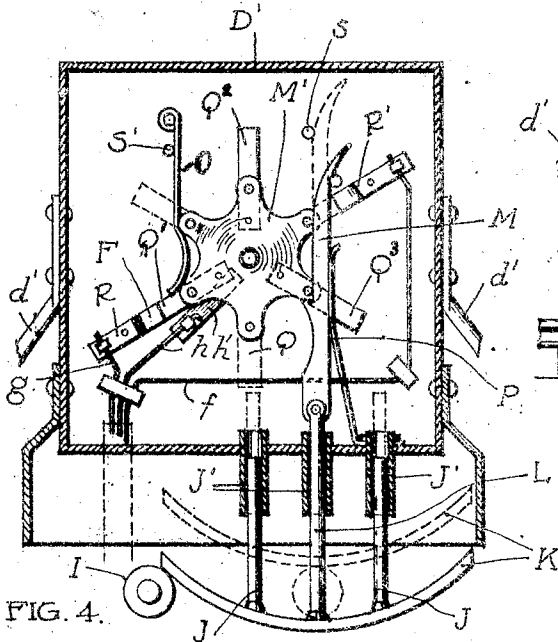


FIG. 4.

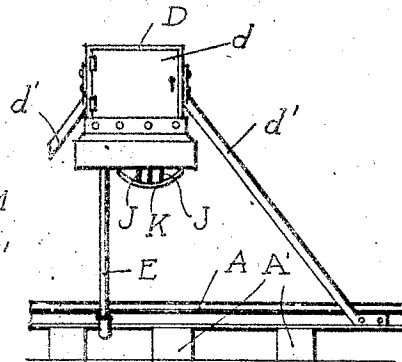


FIG. 5.

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3 SHEETS—SHEET 3.

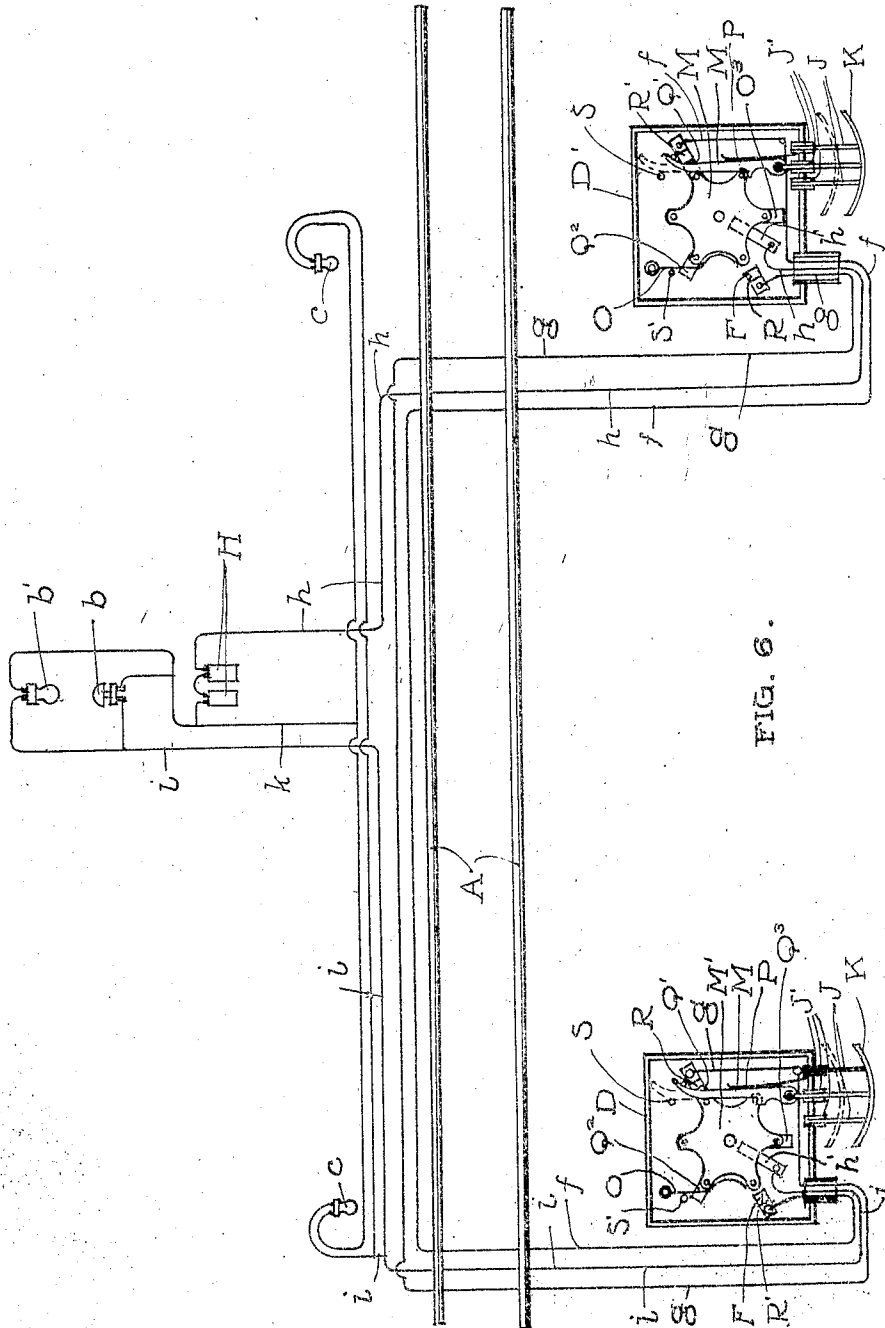


FIG. 6.

Witnesses

Frank Freytag

Frank Freytag

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Homer A. Osborn

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UNITED STATES PATENT OFFICE.

HOMER A. OSBORN, OF ST. JOSEPH, MISSOURI, ASSIGNOR OF ONE-FIFTH TO WILLIAM E. GORTON, ONE-FIFTH TO THOMAS COURTNEY, ONE-FIFTH TO REUBEN E. CREEL, AND ONE-FIFTH TO GEORGE H. WYATT.

AUTOMATIC RAILWAY DANGER-SIGNAL.

1,056,051.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Application filed March 27, 1911. Serial No. 617,052.

To all whom it may concern:

Be it known that I, HOMER A. OSBORN, a citizen of the United States of America, residing at the city of St. Joseph, in the county of Buchanan and State of Missouri, have invented certain new and useful Improvements in Automatic Railway Danger-Signals, of which the following is a specification.

The object of my invention is to provide an automatically operated device which, in connection with small rollers or wheels carried on locomotives and with electrical connections is adapted to give signals of danger at stations or switch boxes, wagon road crossings and other points, at a distance ahead of locomotives or trains coming from either direction including those that may be run out on switches.

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

Figure 1 is a plan of a block showing one engine therein; Fig. 2 is an elevation of the same showing a tower and two electric switch boxes; Fig. 3 is a front elevation of a locomotive showing a small wheel or roller on each side thereof, one roller being shown in its relation to an electric switch box; Fig. 4 is a vertical section of a switch box showing a switch therein and connecting mechanism; Fig. 5 is an outside elevation of the switch box, closed, braces rigidly fastened to a track, an operating rim, its rod and guides and the conduit by which wires are carried up into connection with the switch, and Fig. 6 is a diagram of the arrangement and connection of the wires in a block having two electric switches and a tower, the conduit in which the wires are housed having been removed.

Similar letters refer to similar parts in the several views.

In said drawings A A are the tracks of a railway and A' A' the ties thereof.

B B are locomotives thereon and C is a tower at the side of a track. This tower is preferably constructed of a size sufficient to accommodate train crews or section men and to have installed therein batteries, telephone and telegraph signal instruments, an alarm bell b and light b' having electrical connection.

D and D' are electric switch boxes placed

alongside a track preferably at opposite ends of a block and at intermediate points if desired, each box being provided with a hinged door d. Said electric switch boxes are rigidly attached to rail A by braces d' d'. A conduit E for wires has connection between said switch boxes alongside the track within which the necessary wires are securely housed from being tampered with and from any damage.

R and R' are contact points. As shown in Fig. 6 f and g are two wires that connect said contact points R and R' in electric switch box D to contact points R and R' in box D'. Wire h extends from a brass brush h' on the switch in box D' to the zinc side of the battery. Said brushes h' h' are in continuous sliding contact with the backs of their respective circuit controlling wheels. Wire i extends from said brass brush h' on the switch in box D to one side of the bell, light and the two block lights c c at the side of the track, which block lights are installed in elevated positions at or near the electric switch boxes. Wire k extends from a carbon side of the battery to one side of the bell, light and two block lights at the side of the track.

J J are guides attached to a metal rim K which is preferably cast in the form of a segment of a circle; these guides operate through apertures J' J' in the switch box, as shown in Fig. 4.

L is a rod which is attached at one end to the center of rim K its other end being attached to the bottom of operating pawl M which operates circuit controlling wheel M' by which contact is alternately made. O is a pawl that works in circuit controlling wheel M' to hold the same in position. P is a pressure spring that holds operating pawl M in place. Q', Q² and Q³ are contact bars fastened to circuit controlling wheel M' and which is operated by the combined movement of said circuit controlling wheel, rod L and operating pawl M which form contact alternately with contact points R and R'. S is a pin to release said operating pawl at any given point where it may be necessary to operate said circuit controlling wheel M', and S' is a pin which holds pawl O in place. I I are rollers or wheels supported on each side of a locomotive by arms I' I', or similar means. One of said

rollers is adapted to pass underneath and engage with said rim K automatically and to simultaneously elevate said rim; rod L is at a sufficient height to operate said operating pawl M and said circuit controlling wheel M' thus producing contact alternately with contact points R and R' and obtaining an electric current which passes through the wires in the conduit, rings the bell in the tower, and operates the lights in the tower and at the switch stations.

The operation of my system is as follows: When a roller I of an engine strikes a rim K and rod L has been raised a sufficient height to operate pawl M, as hereinbefore set forth, the movement revolves circuit controlling wheel M' and places it in position. The current then passes from the carbon side of the battery through wire *i* and contact point brush *h'* in electric switch box D through the plate (not shown) on the back of said circuit controlling wheel M' through contact point Q² in contact point R' in said electric switch box D through wire *f* to contact point R' in electric switch box D' through contact point Q' in contact point R' in said electric switch box D' through plate (not shown) on the back of circuit controlling wheel M' in electric switch box D', thence through contact point brush *h'* in switch box D' through wire *h* to the zinc side of the battery. If the engine goes on through, and roller I hits rim K on electric switch box D', it breaks the circuit at contact points Q' and R' and puts contact point Q² in contact point R in electric switch box D'.

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

1. In an automatic railway danger signal a circuit controlling wheel having a plurality of points; a corresponding number of pins riveted in said points, a brush making sliding contact on said wheel, three equally spaced contact points on said circuit controlling wheel, two diametrically opposed stationary contact points cooperating therewith, an operating pawl, a movable rod having engagement with said operating pawl to move the circuit controlling wheel to connect the stationary contacts alternately with the contacts on said circuit controlling wheel, a pawl to hold the circuit controlling wheel in position when moved to point of contact, a spring to hold the operating pawl in position

to catch a pin and a guide to release the operating pawl from the pin at any desired point.

2. In an automatic railway danger signal a water proof box, a circuit controlling wheel therein, pins riveted in said circuit controlling wheel, a brush making sliding contact on the circuit controlling wheel, electrical contacts controlled by said circuit controlling wheel, an operating pawl, a pawl to hold the circuit controlling wheel in position when the same is moved to a contact making position, a spring to hold the operating pawl in position to catch a pin, a guide to release the operating pawl at any point desired, a circular rim, a rod connecting said rim and operating pawl, guide rods attached to said rim and stationary guides for said rods.

3. In an automatic railway danger signal, a water proof box, an electric controlling wheel therein, a brush making sliding contact on the back of the controlling wheel, an operating pawl, a pawl to hold the circuit controlling wheel in position when the same is moved to a contact making position, a spring to hold the operating pawl in position to catch a pin, a guide to release the operating pawl at any point desired, a rod attached to the operating pawl, a circular rim attached to the rod, guide rods attached to the rim, and stationary guides for the rods.

4. In an automatic railway danger signal a circuit controlling wheel, a plurality of pins riveted in said wheel, a brush making sliding contact on said wheel, an operating pawl engaging the pins on said wheel, and strips carried by said wheel, stationary contacts engaged thereby, a movable rod connected with said operating pawl to move the circuit controlling wheel, a semi-circular rim attached to said rod, guides for said rim, a pawl to hold the circuit controlling wheel in position when moved to contact making position, a spring to cause the operating pawl to catch a pin and move the circuit controlling wheel and a guide to release the operating pawl from the pin at any desired point.

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

HOMER A. OSBORN.

Witnesses:

WILLIAM A. PINER,
EDWARD HULL.