

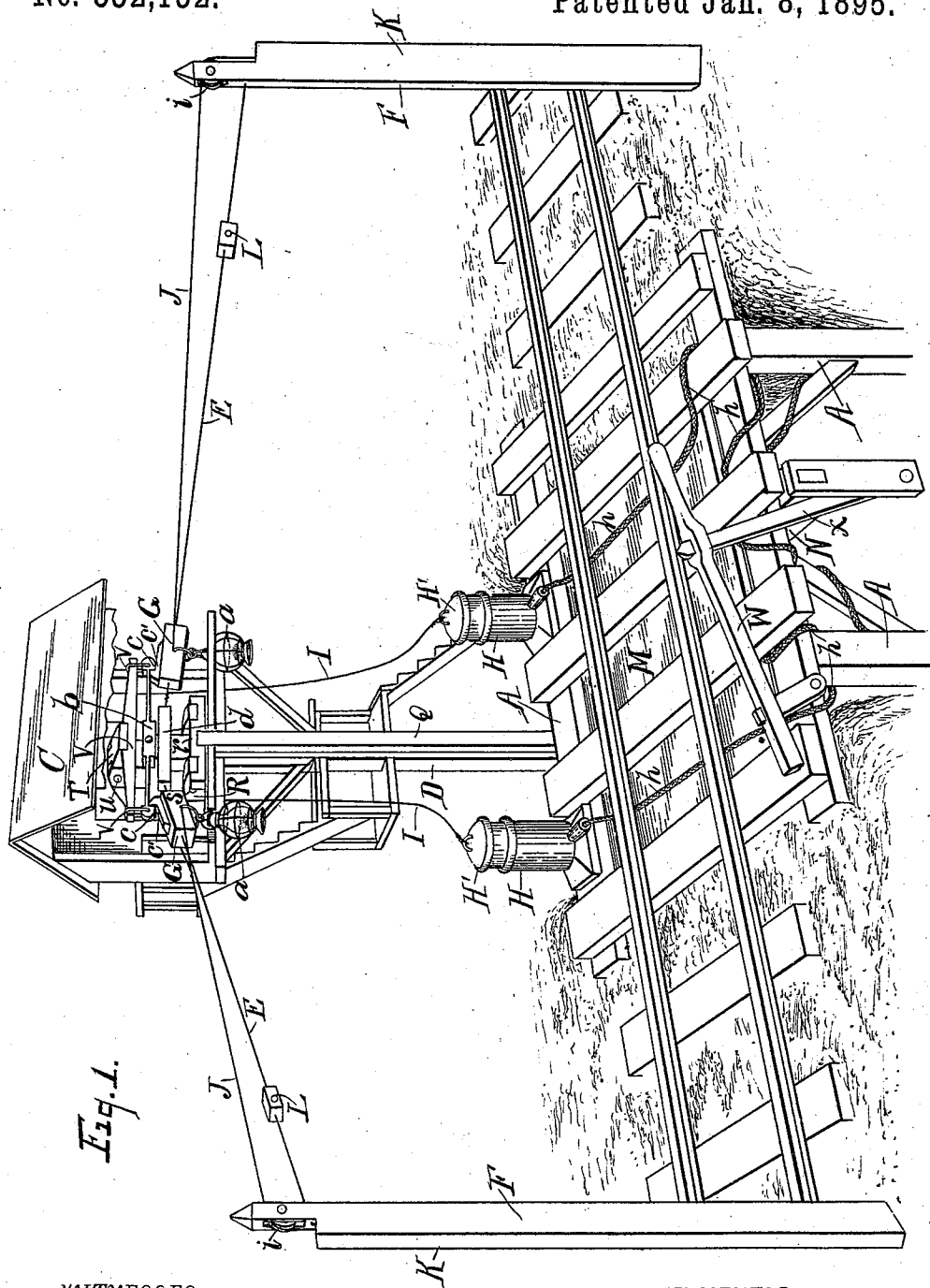
(No Model.)

2 Sheets—Sheet 1.

D. A. GORDON.
DANGER SIGNAL FOR RAILWAYS.

No. 532,152.

Patented Jan. 8, 1895.



WITNESSES
E. K. Roemer.
J. C. Drake.

INVENTOR
Daniel A. Gordon.
R. B. Wheeler & Co.

By

Attorneys.

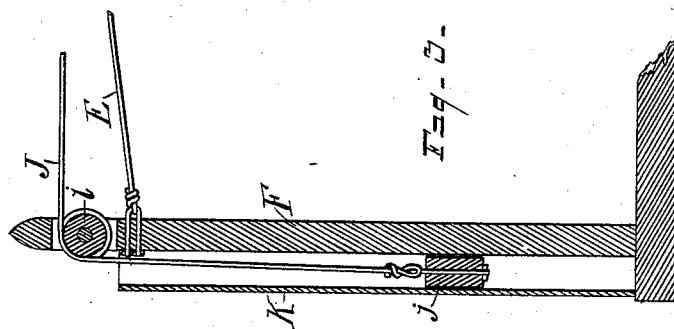
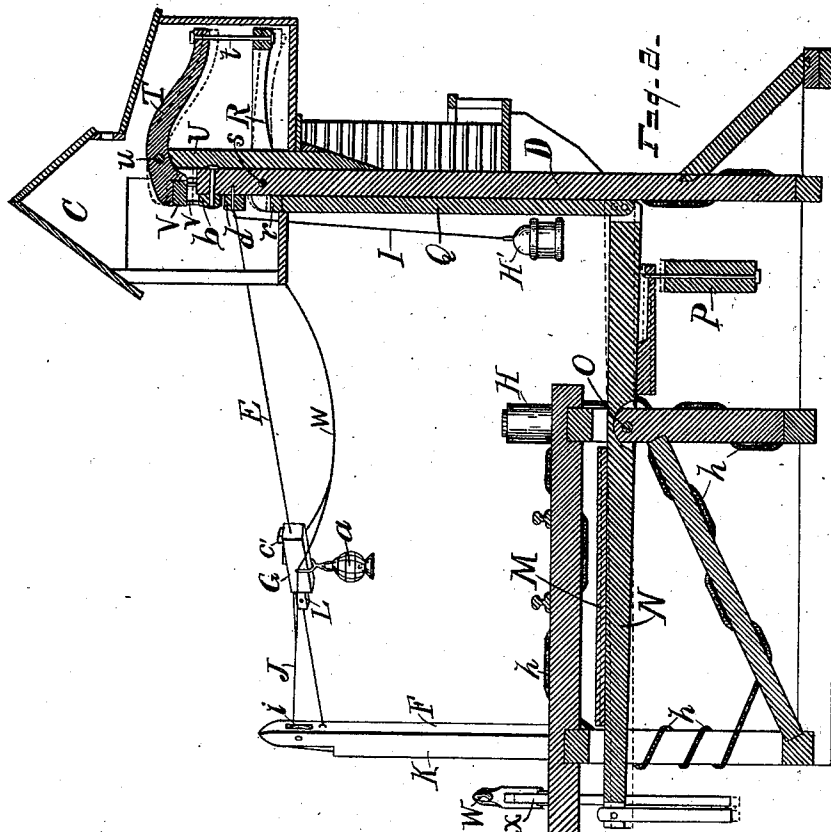
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UNITED STATES PATENT OFFICE.

DANIEL A. GORDON, OF CASSOPOLIS, MICHIGAN, ASSIGNOR OF ONE-HALF
TO BENJAMIN B. WEIR, OF SAME PLACE.

DANGER-SIGNAL FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 532,152, dated January 8, 1895.

Application filed April 27, 1894. Serial No. 509,180. (No model.)

To all whom it may concern:

Be it known that I, DANIEL A. GORDON, a citizen of the United States, residing at Cassopolis, in the county of Cass, State of Michigan, have invented certain new and useful Improvements in Danger-Signals for Railways; 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 of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in danger signals, especially designed for use on railroads, and it consists in a certain construction and arrangement of parts as hereinafter fully set forth and described particularly in the claims.

The invention has for its object to provide means in connection with railroad bridges or culverts, whereby signals may be automatically thrown out, to warn approaching trains, should the track for any reason become unsafe or impassable.

To this end my invention consists in the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a section of railway showing a culvert equipped with my improved signaling device. Fig. 2 is a transverse section thereof. Fig. 3 is a sectional view of one of the cable supporting poles.

Referring to the letters of reference A represents an ordinary bridge or culvert spanning a ravine in the road bed, and supporting the rails of the track thereon.

C is the signal house which is supported at an elevation to the track at one end of said culvert upon the upright D. The upper end of said upright is provided with the cross-head *d*, to which one end each of the cables E, E are attached. Said cables extend in diagonally opposite directions across the track and are secured at their opposite ends to the upper ends of the poles F, F, that are erected and anchored on opposite sides of said culvert at suitable distances therefrom.

G, G, are cars carrying lanterns *a, a*, or other suitable signals, and are mounted to slide upon the cables E, E. Said cars are held in a locked position within the signal house by means of the spring-arm *b* that is secured at its center to the upper end of the upright D. The free ends of said spring arm are provided with detents *c, c*, that engage with detents *c', c'*, mounted on the upper sides of the cars, as clearly shown in Fig. 1.

H, H, are mortars mounted vertically upon the frame work of the culvert beneath the signal house and are adapted to be loaded with a light charge of powder. Said mortars are provided with heavy caps or plugs H', H', to which one end each of the cables I, I are attached, the opposite ends of said cables being attached to the cables E, E, at points between the cars and the ends of the cross head *d*. Extending around and through the frame-work of the culvert and entering each of said mortars at the base thereof, is a fuse *h*, clearly shown in Fig. 1. This arrangement is designed to actuate the signals in case of fire, as follows:—The fuse being rove throughout the culvert will convey the fire from any point thereof to the mortars and ignite the powder therein, the explosion of which forces the plugs out of the mortars and in falling said plugs are caught and suspended by the cables I, I, (see Fig. 2) which, being attached to the cables E, E, the sudden jar and weight of the plugs causes said cables to sag and lower the cars sufficiently to disengage their detents from the spring-arm, when said cars will be drawn out across the track upon the cables E, E, by means of the cables J, J. Said cables extend over the pulleys *i, i*, that are journaled in the ends of the poles F, F, and are attached at one end to said cars and provided at their other ends with weights *j, j*, which are inclosed in casings K, K, secured to said poles, as clearly shown in Fig. 3. L, L, are stop-blocks adjustably mounted upon the cables E, E, and serve to limit the outward movement of the cars and signals.

To provide for operating the signals in case the culvert should become unsafe by reason of washouts or obstructions thereon, I employ the platform M which is located beneath the track and is supported entirely upon one

end of the horizontal lever N. See Fig. 2. Said lever is fulcrumed at O to the frame of the culvert and carries upon its inner end the counterpoise P. Also supported upon the inner end of said lever is a vertically reciprocal bar Q, that is provided at its upper end with the cross-head *r* which engages the forward ends of the yoke-lever R that pass astride the upright D and to which said ends are fulcrumed at *s*. See Fig. 1. The rear end of said lever R is connected by means of the bolt *t*, with the rear end of the lever T. See Fig. 2. Said lever T is fulcrumed at *u* to the support U on the upright D, and carries on its forward end the cross-head V, the ends of which are connected to the ends of the spring-arm *b* by means of the links *v*. See Fig. 1.

By this construction, should the supports of the culvert give way, allowing the track to fall onto the platform, or should the platform become over-weighted by the collection of debris as in case of washouts or floods, said platform would trip the lever N and force the bar Q upward against the forward end of the lever R, causing the rear end of said lever to swing down, and by the bolt *t*, the rear end of the lever T is also drawn down (see dotted lines in Fig. 2) which causes its forward end, carrying the cross-head V and links *v*, to raise the ends of the spring-arm *b* and disengage said arms from the detents of the cars, which are then drawn out upon the cables E, E, by the weights *j, j*, and cables J, J.

w is a cable attached at one end to the car and at the other end to the signal house, by means of which said cars may be returned.

To provide a convenient means for operating the signals by hand when desirable, I employ the lever W which is fulcrumed at one end to the culvert and attached at its other end to the lever N by the bar *x*, whereby, by forcing down upon the lever W, the lever N

may be tripped and the signals thrown out as described.

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

1. In a railway signal, the combination with the track supporting frame-work, of the horizontal lever mounted in said frame-work, the movable platform resting on said lever, the cables suspended over the track, the signals adapted to travel upon said cables, and the mechanism in connection with said lever for displaying said signals by the depression of said platform.

2. In a railway signal, the combination with the track supporting frame-work, of the lever N and means for actuating the same, the elevated housing containing the signal releasing mechanism, the suspended cables leading to said housing, the weighted signal cars adapted to travel upon said cables, and which are normally retained by said mechanism within the housing and means connecting the lever N with said mechanism, whereby the actuation of said lever will release said signals, substantially as set forth.

3. In combination with the track supporting frame having the lever mounted therein, the signal operating mechanism in connection therewith, the suspended cables, the movable car on said cables carrying the signal, said car being adapted to be engaged and disengaged by said mechanism, and the weighted cable attached to said cars to draw them outward when released.

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

DANIEL A. GORDON.

Witnesses:

H. R. GORDON,
R. C. SLOAN.