

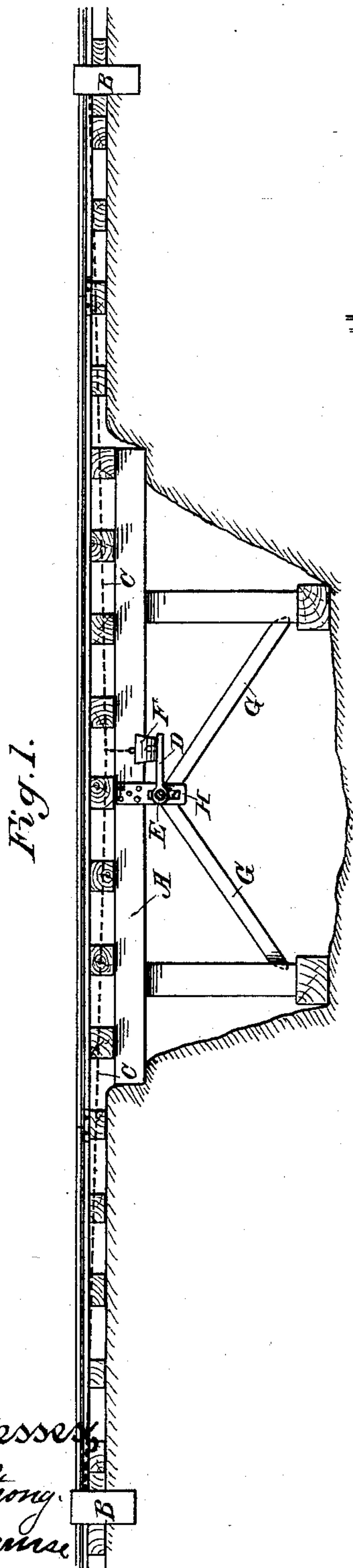
(No Model.)

J. D. QUINN & S. CROSSLEY.

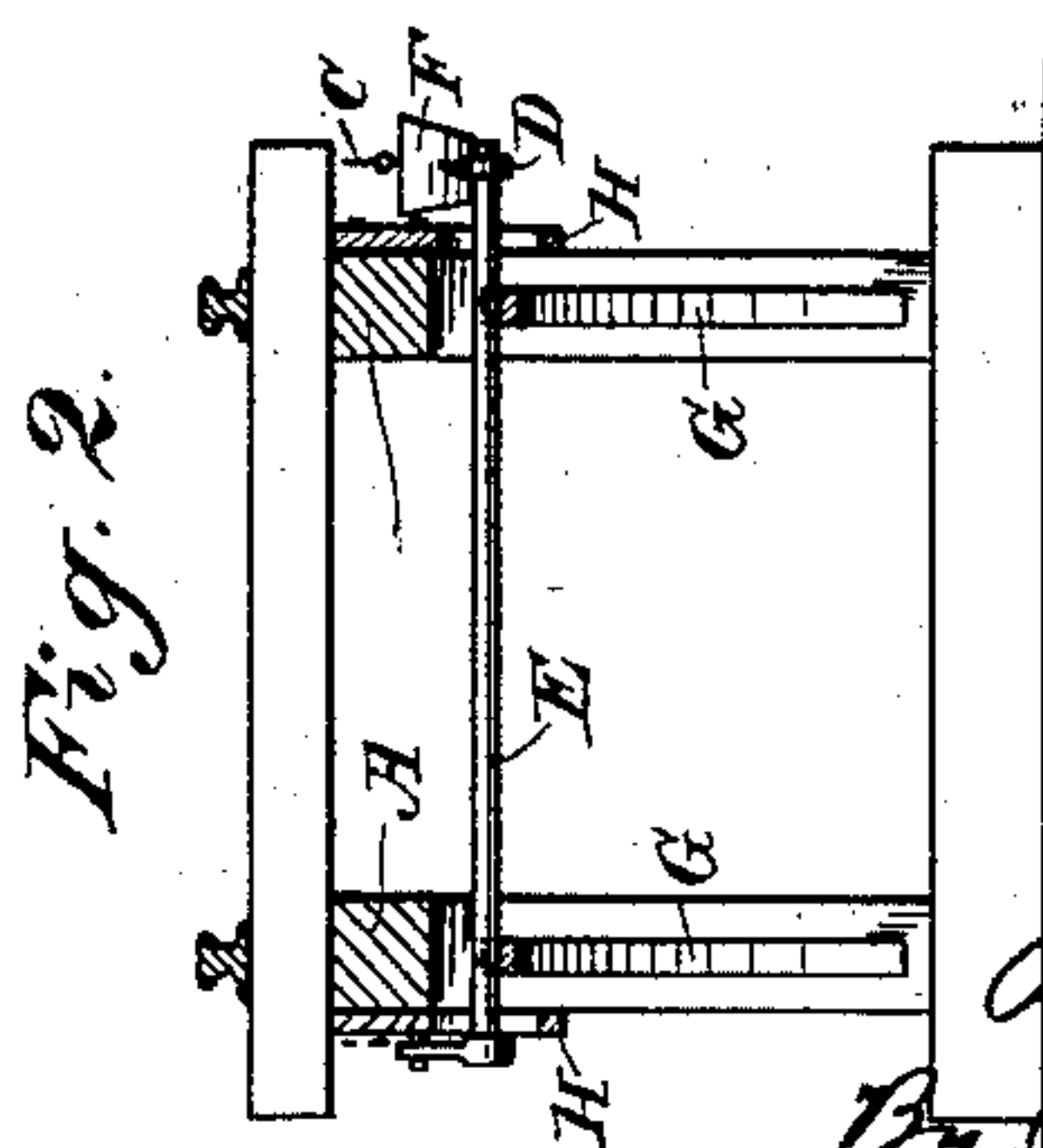
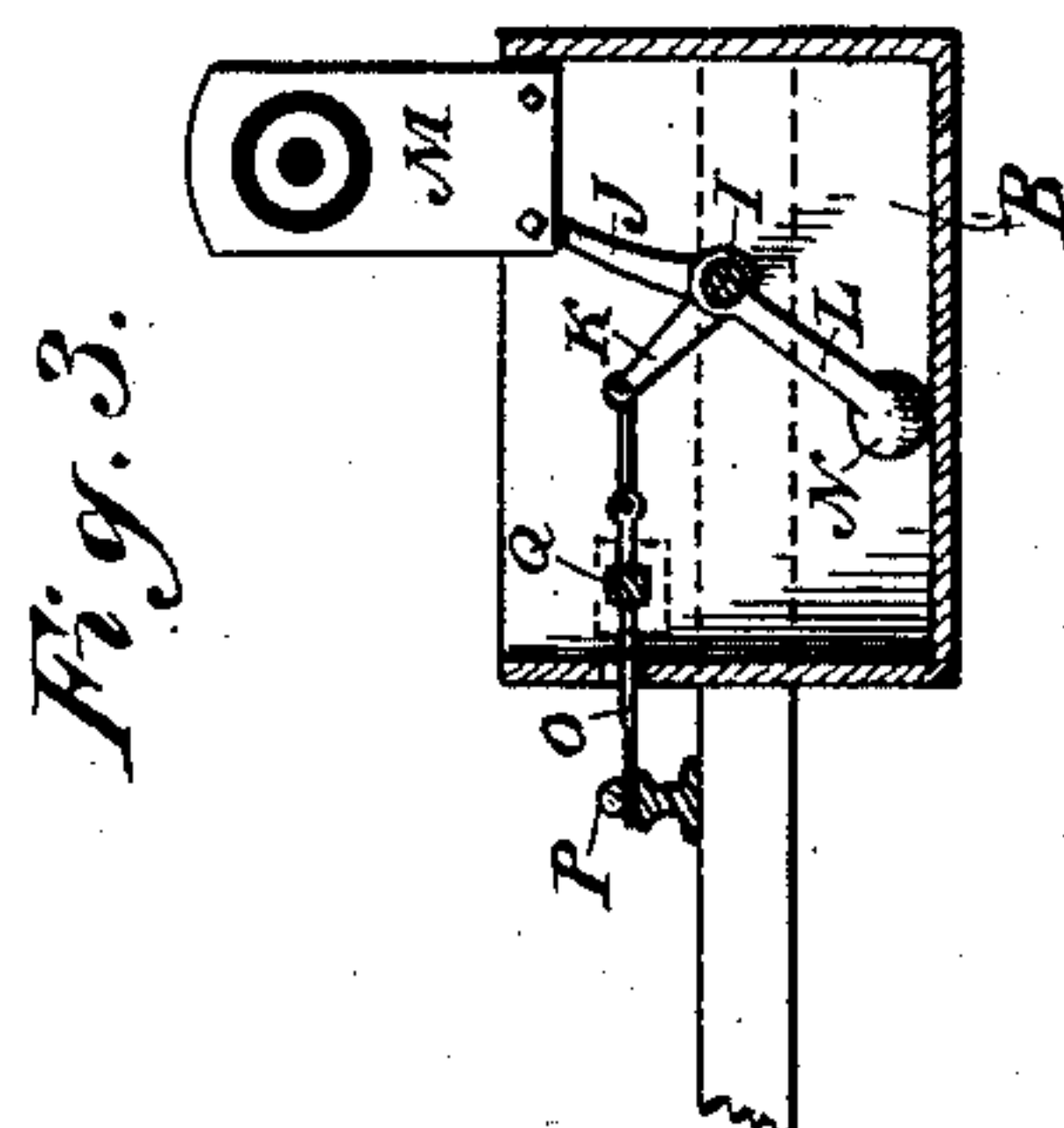
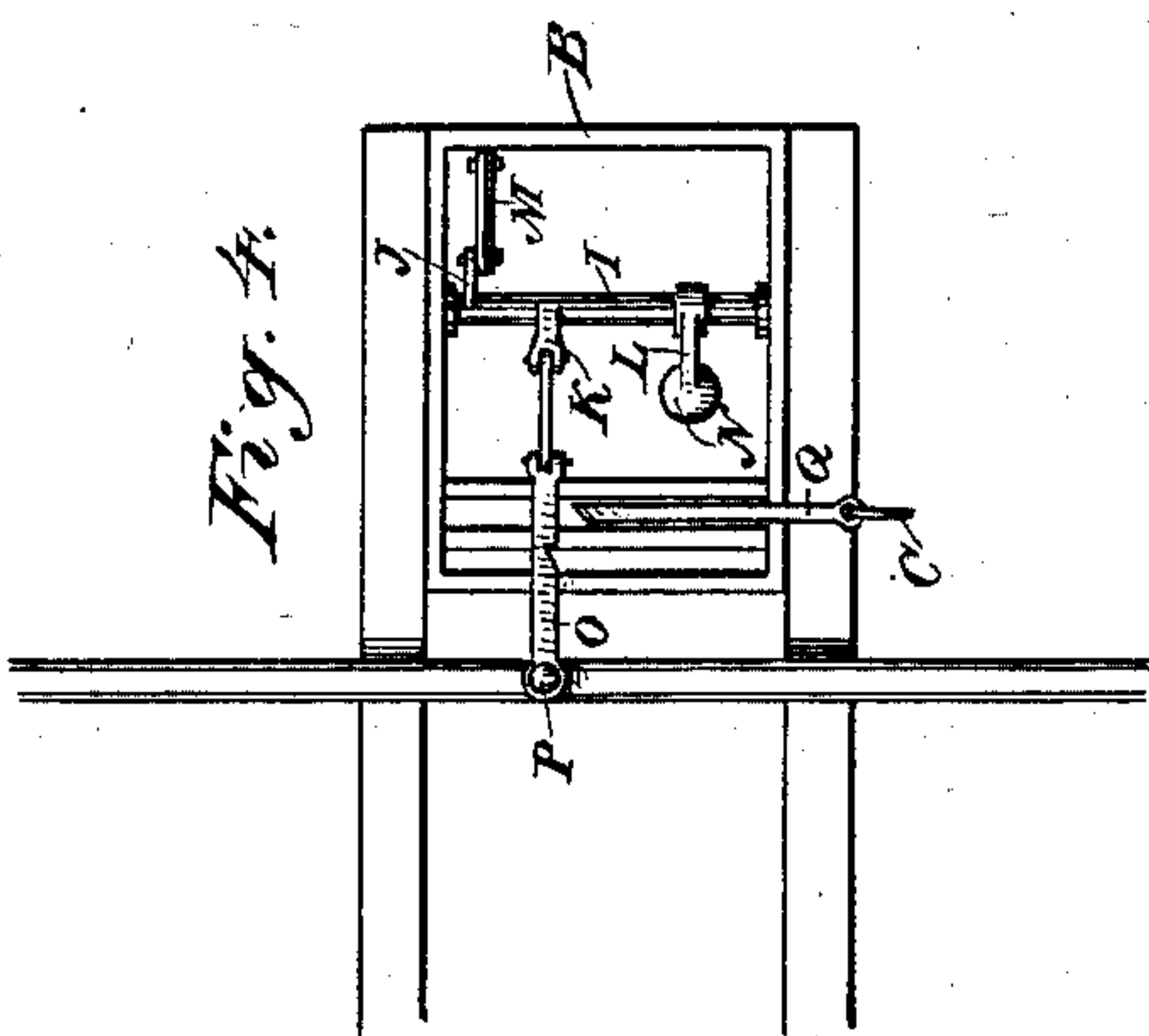
DANGER SIGNAL FOR RAILROADS.

No. 374,373.

Patented Dec. 6, 1887.



Witnesses  
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# UNITED STATES PATENT OFFICE.

JOSIAH D. QUINN AND SAMUEL CROSSLEY, OF DAGGETT, CALIFORNIA.

## DANGER-SIGNAL FOR RAILROADS.

SPECIFICATION forming part of Letters Patent No. 374,373, dated December 6, 1887.

Application filed June 29, 1887. Serial No. 242,915. (No model.)

*To all whom it may concern:*

Be it known that we, JOSIAH D. QUINN and SAMUEL CROSSLEY, of Daggett, county of San Bernardino, State of California, have invented  
5 an Improvement in Danger-Signals for Railways; and we hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to an automatic danger-signal for railways; and it consists of signals or lights situated at a sufficient distance upon either side of the point of danger, and connected by wires with a suitable weight or actuating mechanism which will serve to display the signal to the engineer of an approaching train whenever there is danger or accident at the point.

Referring to the accompanying drawings for a more complete explanation of our invention,  
20 Figure 1 is a side view showing signals upon each approach to a bridge and the actuating mechanism upon the bridge. Fig. 2 is a transverse section taken through the bridge and track, showing the shaft and weight by which the signal is actuated. Fig. 3 is an end view.  
25 Fig. 4 is a top view of the signal-box and mechanism connected therewith.

In the present case we have shown our device as applied to a railway bridge or culvert,  
30 A, and B B are the signal-boxes situated at a sufficient distance upon either side of the bridge or culvert A, so that in case of danger the train may be stopped between the signal-boxes and the bridge.

Wires C extend from each of the signal-boxes to the bridge, and are there connected with a weight, F, which is supported upon an arm, D, of a shaft, E, this shaft being journaled in slotted hangers H upon opposite sides of the  
40 bridge.

G G are light braces, the lower ends of which are supported in notched footings in the bridge-timbers, and the upper ends meet, so as to support and hold the shaft in its position.

The arm D has a small projection or pin to fit a corresponding hole in the bottom of the weight F, so as to prevent the latter from being jarred or shaken off the arm. The opposite end of the shaft has another arm, which  
50 engages a projection, so as to prevent the shaft

from turning as long as it is held in its proper position.

The timbers G are made small and light enough, so that in case of fire they would quickly burn off and allow the shaft to turn  
55 and drop its weight, thus actuating the signals; or if, by reason of a washout or from other cause, the bridge should settle, the timbers would slip from their footings and allow the weight to be dropped. 60

Within the signal-boxes B the shafts I extend across from side to side and have their three arms J, K, and L. Upon the end of the arm J is the signal M, which is thrown up out of the box, so as to be visible whenever the  
65 shaft I is allowed to rotate. Upon the arm L is a weight, N, which is sufficiently heavy to fall whenever the shaft is released, and thus throw the signal up. A horizontally-moving and jointed sliding rod or plate, O, is connected  
70 with the arm K and carries at its outer end a torpedo, P. The arm O has a notch made in one side, which is engaged by a slide, Q, and this arm is connected by the wire C with the weight or actuating device upon the bridge or  
75 other point.

The operation will then be as follows: Any accident occurring which will release the weight F will act through the wires C to withdraw the slide Q, and thus allow the weight  
80 N to rotate the shaft I, so as to force the slide O outward, throwing the signal M up, and at the same time extending the torpedo at P, so that it lies upon the rail of the track. Whenever a train arrives at this point, if a signal has not  
85 been noticed, the torpedo will be exploded, and thus attract attention to the fact of danger at the point where the weight or operating mechanism was placed.

This device is especially useful upon bridges  
90 or culverts, or in deep cuts where there are culverts rendering portions of the road invisible from the approaching train. It is also useful in tunnels and all obscure and dangerous places. 95

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

1. The signal-box having the movable signal and rotating shaft, in combination with the 100



wire extending from the box to the bridge or point of danger, and a weight which is released by any dangerous accident at said point, so as to operate the signal through the wire, substantially as described.

2. A box fixed upon the line of the railway-track, containing the movable signal, the shaft having the arms secured thereto, and a locking device by which it is held so as to conceal the signal, in combination with a wire connected with a pawl or locking device and extending from the shaft to the point of danger, where it is acted upon by a weight which is released in case of accident, substantially as described.

3. A box containing the rotating shaft with its projecting arm and the jointed bar carrying the torpedo and actuated by movement of the shaft, in combination with the slide and locking device and the wire extending therefrom to the weight which is released by any accident, so as to operate the signal, substantially as herein described.

4. A signal-box and the wire extending therefrom to the bridge or point of danger, in combination with the rotary shaft suspended in hangers, having one arm supporting a weight and the second arm by which it is pre-

vented from turning, together with the light braces by which it is held in place, substantially as herein described.

5. The rotary shaft supported in slotted hangers, with the light wooden braces G, and shaft having the weight-supporting arm and the arm by which it is prevented from turning, in combination with wires extending from the weight to the signal-boxes and fixed upon the line of the railroad, substantially as herein described.

6. The rotary shaft with its suspended hangers and supporting-braces, the arm by which it is prevented from turning, and the second arm supporting a weight which is connected by wires with signal-boxes at distant points, said arm being provided with a spur or projection which enters a corresponding opening in the weight and prevents the latter from turning, substantially as herein described.

In witness whereof we have hereunto set our hands.

JOSIAH D. QUINN.  
SAMUEL CROSSLEY.

Witnesses:

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