

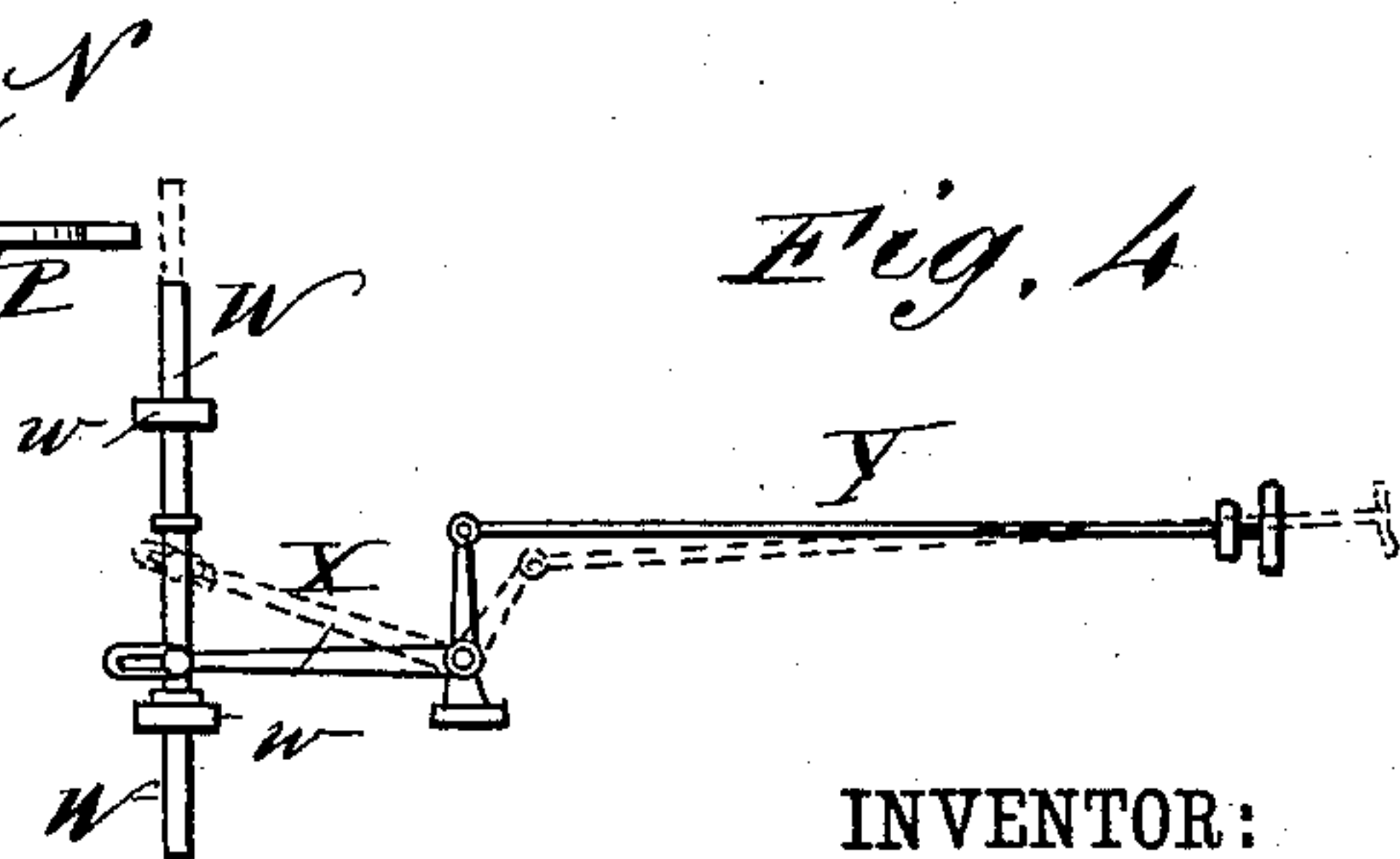
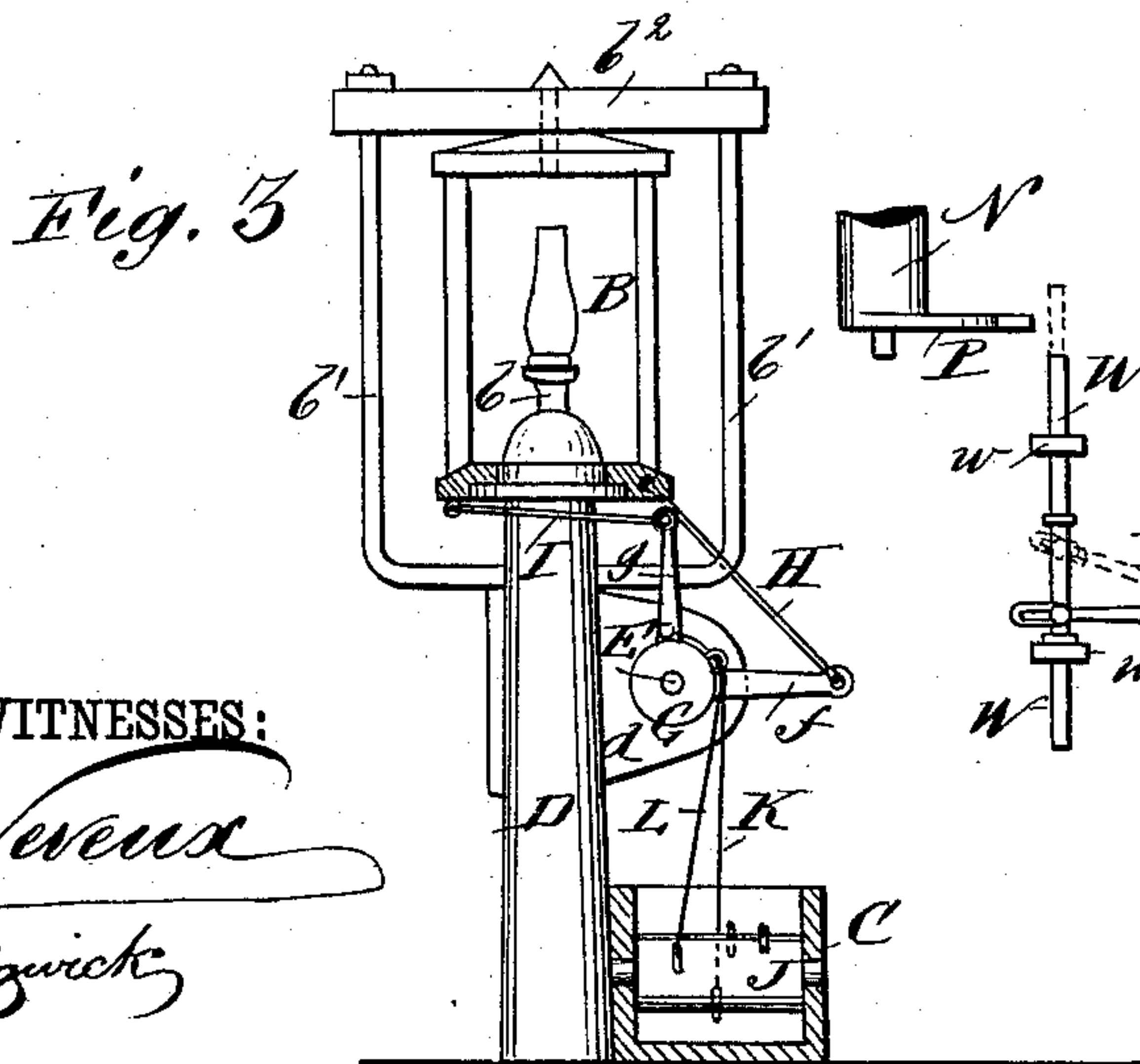
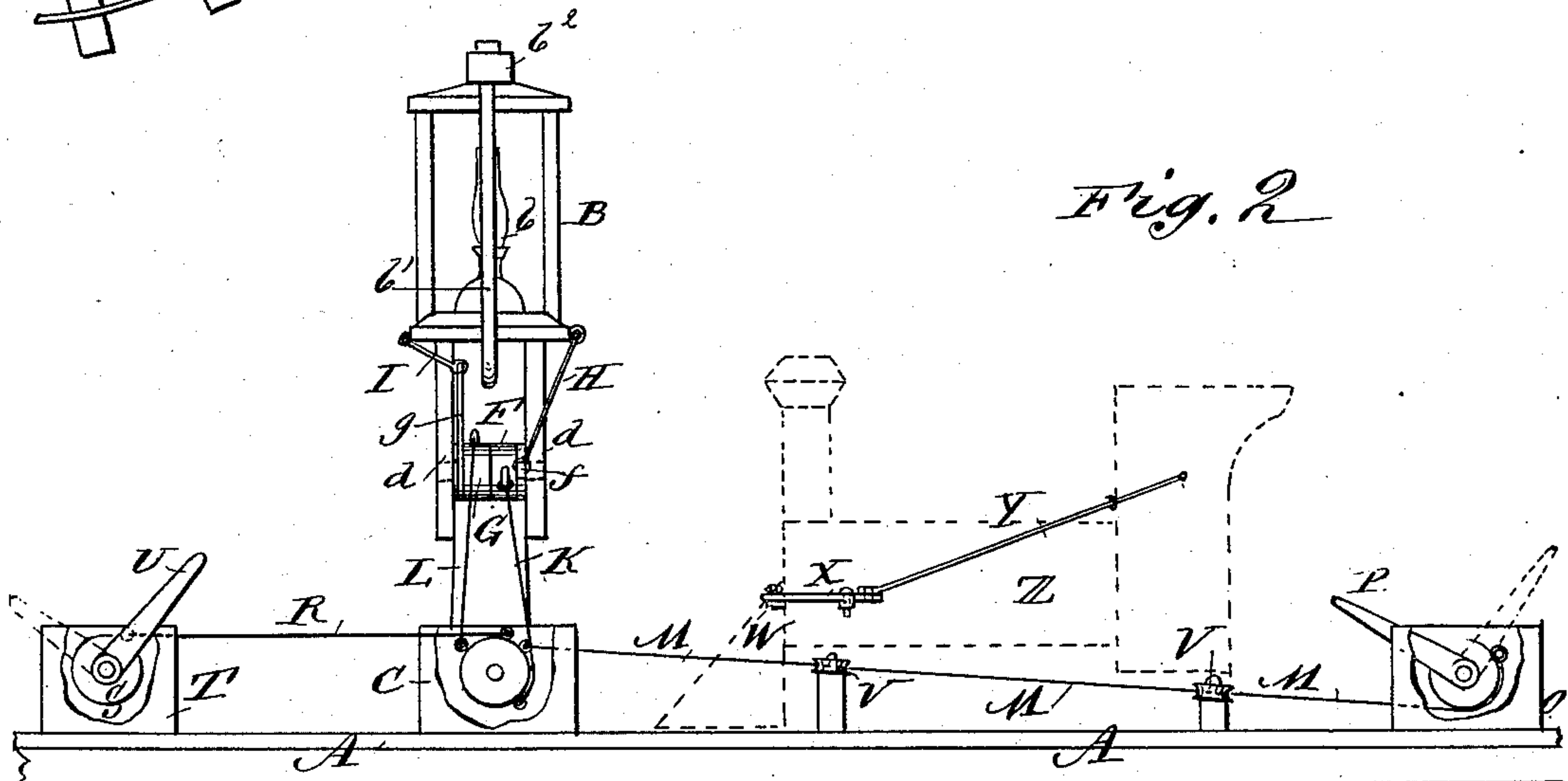
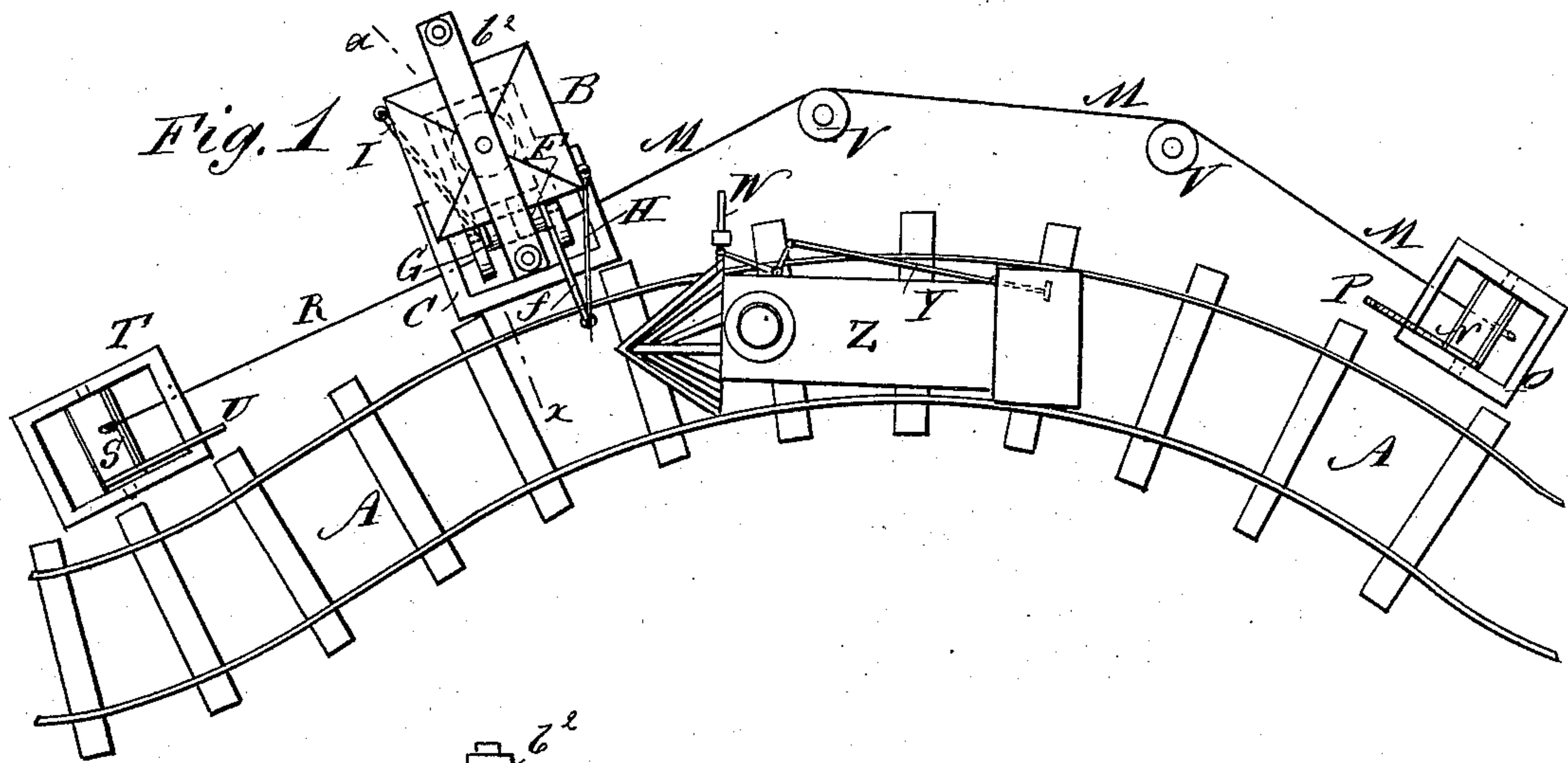
(No Model.)

D. VINTON, Jr., & F. H. VINTON.

RAILROAD SIGNAL.

No. 372,095.

Patented Oct. 25, 1887.



WITNESSES:

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UNITED STATES PATENT OFFICE.

DAVID VINTON, JR., AND FRANK HENRY VINTON, OF WILLIAMSBURG,
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RAILROAD-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 372,095, dated October 25, 1887.

Application filed March 30, 1887. Serial No. 233,026. (No model.)

To all whom it may concern:

Be it known that we, DAVID VINTON, Jr., and FRANK HENRY VINTON, of Williamsburg, in the county of Grand Traverse and State of Michigan, have invented a new and Improved Railroad-Signal, of which the following is a full, clear, and exact description.

Our invention relates to railroad-signals adapted more especially for use at curves of the track, as a warning to engineers or trainmen that a train is on the curve close in front of them, or as a notice that the track is clear at the curve; and the invention has for its object to provide a simple, inexpensive, and effective apparatus of this character.

The invention consists in certain novel features of construction and combinations of parts of the railroad-signal, all as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of our improved railroad-signal and a locomotive-engine having a trip-bar by which the signal is operated and on a curve of the track. Fig. 2 is a side elevation thereof with the roller-casings partly broken away. Fig. 3 is a vertical sectional elevation of the signal proper and its operating mechanism, and Fig. 4 is a detail plan view of the end portion of one trip-roller lever and the engine trip-bar and its lever-connections.

We show our improved railroad-signal arranged at a curve of a railroad-track, A, to signal to trains behind that a train is on the curve; but the invention is not restricted to this use, as it may be employed to advantage at railway-crossings or on straight stretches of the track; but we will particularly describe it as arranged on a curve of the track, to which location it is especially adapted, and as follows:

At one side of the track A the signal proper, B, is supported above a box, C, by a post, D. The signal comprises a box glazed at two opposite sides with red glass and at the other two opposite sides with green glass, and adapted to hold a lamp or lantern, b, and fitted to revolve on top of the post D, which supports the signal

at proper height above the ground. In lugs or plates *d d*, fixed to the post D, a shaft, E, is held, and on this shaft are journaled two rollers, F G, which are provided respectively with rigid arms *f g*, which stand at right angles to each other, and are connected at their outer ends by rods H I, respectively, with diagonally-opposite corners of the revoluble signal B.

In the box C there is journaled a drum or roller, J, which is connected by cords K L, attached at opposite points of its periphery with the peripheries of the rollers F G, respectively, and whereby, as the drum J is turned in one direction, the roller F will be turned to pull the signal one-quarter around to display a red glass or light, and as the drum is turned back again one-quarter around to its first position it will display a green glass or light from the same point of view. The red and green glasses with the lamp adapt the signal for day and night use.

To the drum J is attached one end of a rope or chain, M, which extends along or around the track A a sufficient distance, and is connected at its other end with a roller or drum, N, which is journaled in a box or case, O, and has fixed to it an arm, P, adapted to be struck by a trip-bar on the engine, as presently explained. To the drum J is also connected one end of a rope or chain, R, which extends along the track in the opposite direction from the rope M, and is attached to a roller or drum, S, which is journaled in a box, T, and has a fixed arm, U, also adapted to be struck by a trip-bar on the engine. Either one or both of the ropes M R are or may be guided over sheaves or pulleys V on their way from the signal to their respective rollers, as the curve of the track or other circumstances may require. The drum J and the ropes M R and rollers N S are relatively arranged to cause both of the trip-arms P U to always point or lean either toward or from the signal B.

The trip-bar W is fitted in suitable guides, *w w*, on the engine-pilot to slide laterally or crosswise of the track A, and the bar is attached by a pin and slot connection, or it may be otherwise, with the long arm of an elbow-lever, X, which is fulcrumed on the engine-

frame and is connected to the forward end of an operating-rod, Y, which extends rearward to the engine-cab in reach of the engineer, who by pulling the rod will cause the trip-bar W to be projected, so as to operate the levers P U, and by pushing the rod the trip-bar will be withdrawn, so as not to operate the levers. The engine Z is shown in full lines in Fig. 1 and is indicated in dotted lines in Fig. 2 of the drawings.

The operation of the signal is as follows: When that portion of the railway-track A on a curve or elsewhere and between the levers P U is clear of trains, these levers will lean away from the signal B, as indicated in dotted lines in Fig. 2 of the drawings. Before the engine Z reaches the lever P, the engineer will pull the rod Y to project the trip-bar W, which will then strike the lever P and throw it over to the position shown in full lines, Fig. 1, and at the same time draw on the rope M to turn the drum J and roller F, and draw on rod H to turn the signal B to display a red or "danger" glass or light, the lever U being also swung over toward the signal, as shown in full lines, by the operation of the lever P, as above described. When the engine reaches the lever U, the trip-bar W will strike it and turn it and the lever P back again to the positions shown in dotted lines, and the rope R will be drawn upon to turn the drum J and draw on the rope L, roller G, and rod I to turn the signal back again to show a green or "safety" glass or light to the engineer of the following train. The levers P U will be set at sufficient distance apart or from the signal to give ample time for any train to pass safely from or clear of the curve in the track.

It is obvious that a display of the red glass or light at the signal will notify the engineer of a train that a train is close by or ahead of him on the same track, and thereby give him time to slow up to avoid collision, and thus save life and property which otherwise might be lost.

The signal B may have any approved construction. We show it with base and head plates connected by bars to receive the glass, and with opposite side bars, $b' b'$, fixed at their lower ends in the post D and connected at their tops to a cross-bar, b^2 , in which the upper pivot of the signal has a bearing.

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

1. In a railroad signaling apparatus, the combination of a revoluble signal, B, rods H I, connected thereto at diagonally-opposite corners, rollers F G, journaled on an adjacent support and having arms $f g$, connected to the rods H I, respectively, a drum, J, journaled near the signal B, ropes or chains K L, connecting the drum with the rollers F G, respectively, and ropes M R, connecting the drum with pivoted levers P U, respectively, adapted for operation by a trip-bar on a passing engine or car, substantially as herein set forth.

2. In a railroad signaling apparatus, the combination of a revoluble signal, B, rods H I, connected thereto at diagonally-opposite corners, rollers F G, journaled on an adjacent support and having arms $f g$, connected to the rods H I, respectively, a drum, J, journaled near the signal, ropes or chains K L, connecting the drum with the rollers F G, respectively, rollers N S, journaled at the side of the track and provided with levers P U, respectively, adapted for operation by a trip-bar on a passing engine or car, and ropes or chains M R, connecting the rollers N S with the drum J, substantially as shown and described.

DAVID VINTON, JR.
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Witnesses:

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