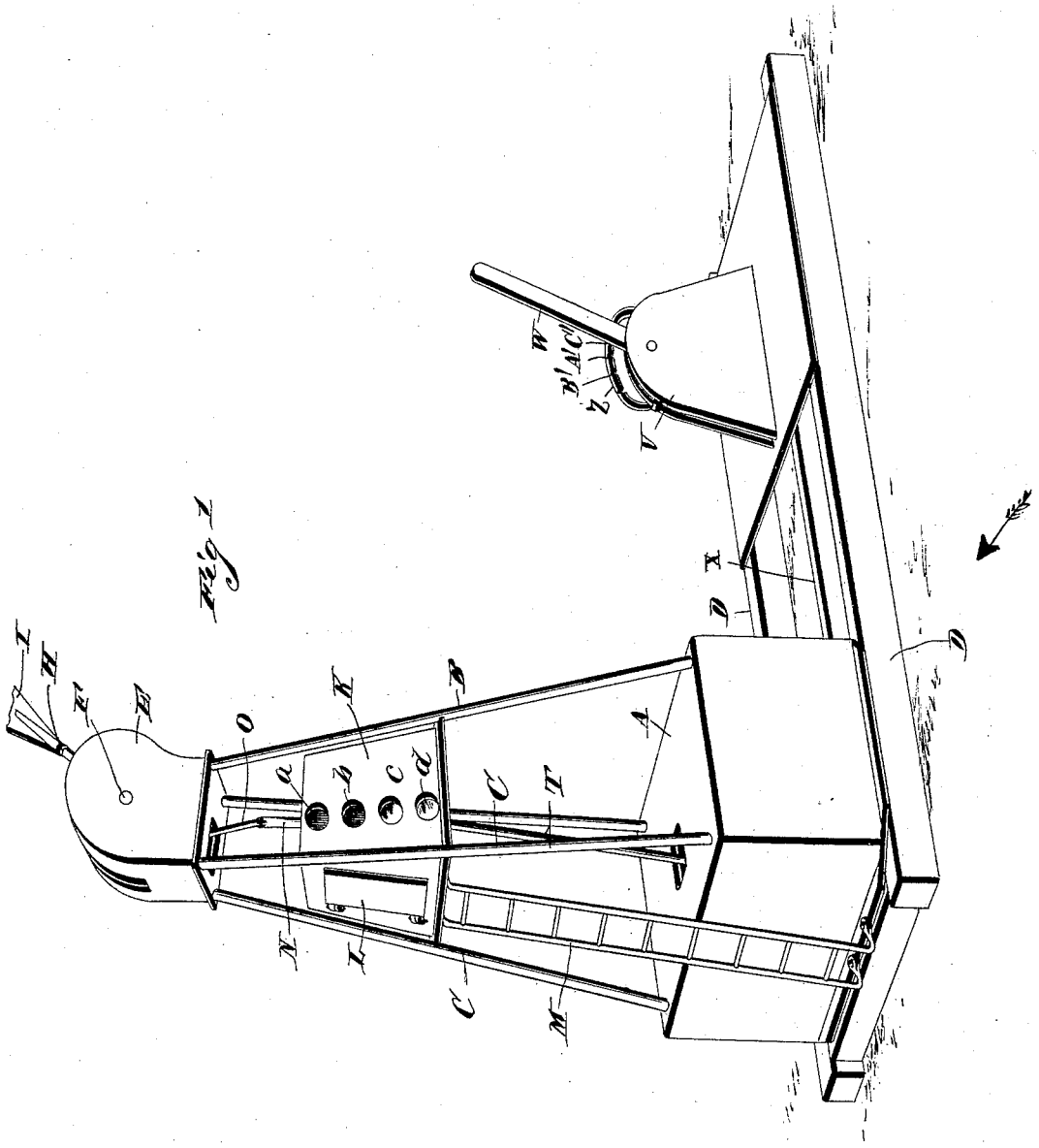
(No Model.) 3 Sheets—Sheet 1.

C. J. WOODWARD.

RAILWAY STATION SIGNAL.

No. 385,742. Patented July 10, 1888.



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(No Model.) 3 Sheets—Sheet 2.

C. J. WOODWARD.

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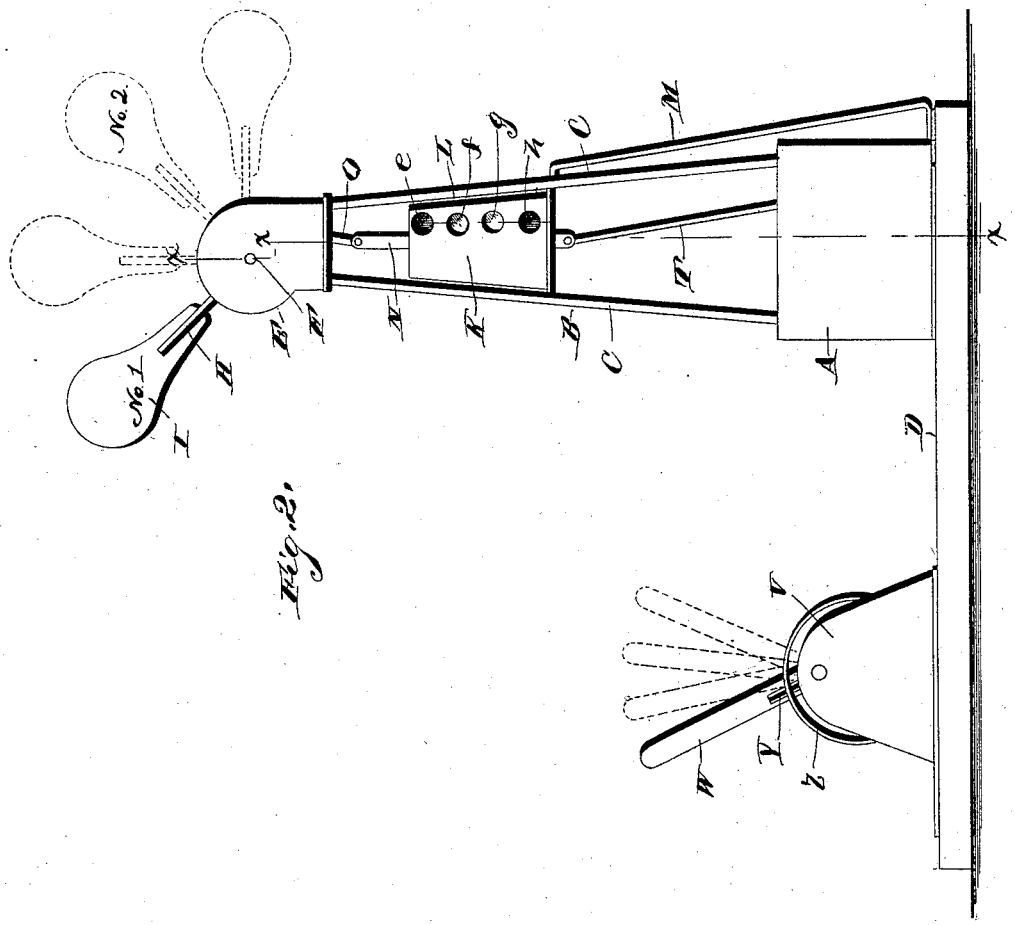

Fig. 2.

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(No Model.) 3 Sheets—Sheet 3.

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RAILWAY STATION SIGNAL.

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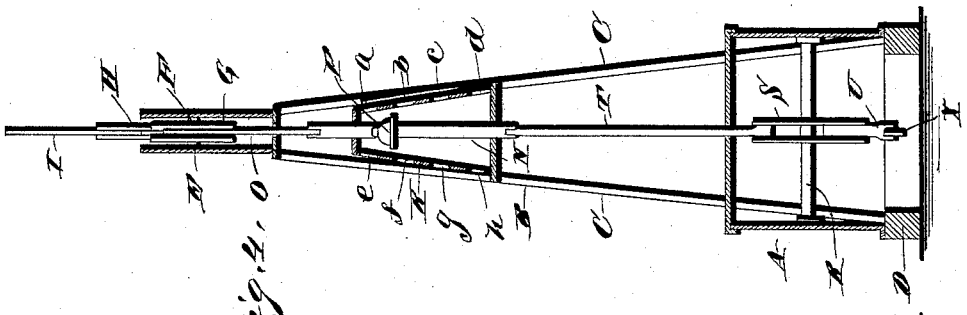

Fig. 4.

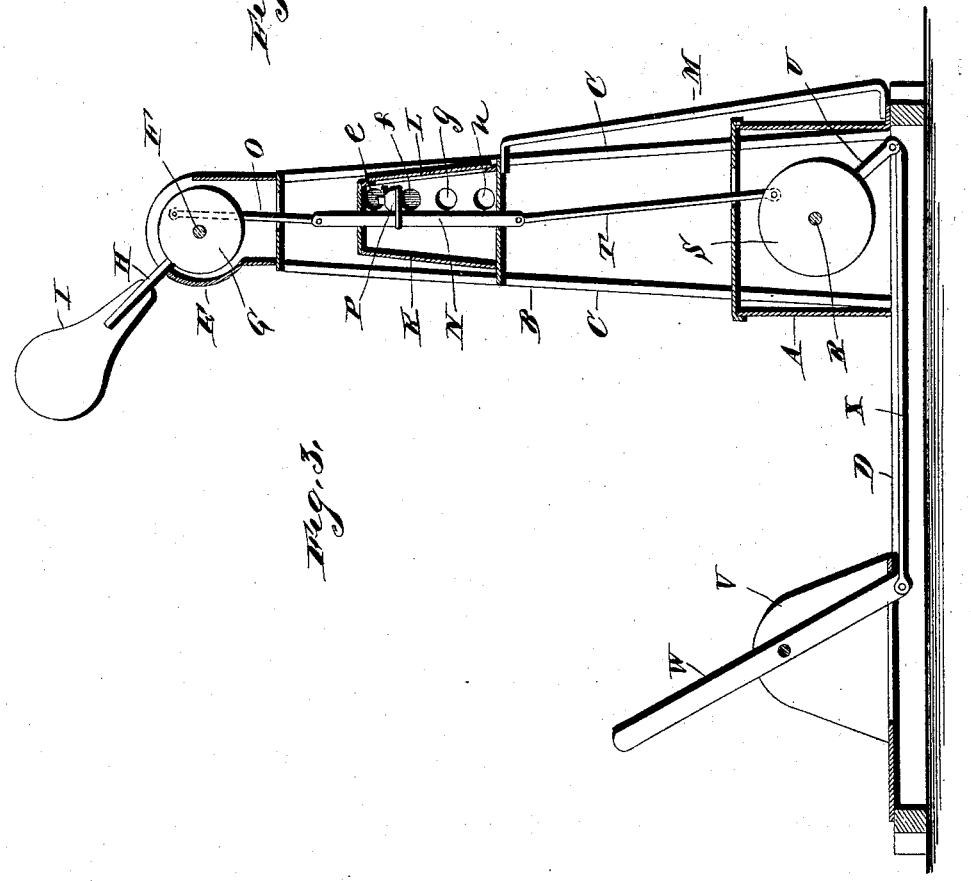

Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES JONATHAN WOODWARD, OF OAK HARBOR, OHIO.

RAILWAY-STATION SIGNAL.

SPECIFICATION forming part of Letters Patent No. 385,742, dated July 10, 1888.

Application filed March 8, 1888. Serial No. 266,887. (No model.)

To all whom it may concern:

Be it known that I, CHARLES JONATHAN WOODWARD, a citizen of the United States, residing at Oak Harbor, in the county of Ottawa and State of Ohio, have invented a new and useful Improvement in Railway-Station Signals, of which the following is a specification.

My invention relates to an improvement in railway-station signals; and it consists in the peculiar construction and combination of devices that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a station-signal embodying my improvement. Fig. 2 is an elevation of the same, showing the opposite side of the signal from that disclosed in Fig. 1. Fig. 3 is a vertical longitudinal central sectional view of my improved railway-station signal. Fig. 4 is a vertical transverse sectional view of the same, taken on the line *x x* of Fig. 2.

A represents an inclosing case, which is located on one side of and in proximity to the railway-track.

B represents a signal-tower having four upwardly-converging corner-posts, C, the lower ends of which corner-posts extend through the case A and are secured to the base-frame D, on which said case is supported. On the upper end of the tower is a circular case, E, in the center of which is journaled a rock-shaft, F. To the said rock-shaft is secured a crank-wheel, G.

H represents a signal-arm which projects radially from said crank-wheel and extends through an opening in the upper side of case, E. To the upper end of said arm is secured a signal-target, I, of suitable construction, and the same is painted red.

K represents a lantern, which is secured between the corner-posts of the tower and is arranged at a suitable distance below the case E. This signal-lantern is provided on one side with a hinged door, L, and is reached from the ground by a ladder, M. In opposite sides of the lanterns, which are visible from the track on opposite sides of the station, are circular openings. Four of these openings are on each of the said sides of the lantern, and said openings are arranged one above the other and in vertical alignment, as shown. The upper opening, *a*, on one side of the lantern, is covered with a pane of red glass; the second opening, *b*, below opening *a*, is also covered with red glass; the third opening, *c*, and fourth opening, *d*, are covered with white or transparent glass. On the opposite side of the lantern the upper opening, *e*, and fourth opening, *h*, are covered with red glass, and the second and third openings, *f g*, are covered with white glass.

N represents a vertically-movable rod, which is guided in openings in the upper and lower sides of the lantern. The upper end of said rod is connected to the crank-wheel G by means of a connecting-rod, O, and on one side of the said rod N is a bracket, on which is supported a lamp, P. The center of the said lamp is arranged in a plane which intersects the centers of all of the openings in the lantern.

R represents a crank-shaft, which is journaled centrally in the case A. To the center of this crank-shaft is rigidly secured a crank-wheel, S, which crank-wheel is connected to the lower end of the vertically-movable rod N by a connecting-rod, T, which extends through a slot in the upper side of case A.

U represents an arm, which projects radially from the wheel S.

V represents a standard, which may be located either within the station or on the platform, as may be preferred, and in which is fulcrumed an operating-lever, W. The said lever has its lower end connected to the radial arm U of crank-wheel S by means of a rod, X, and is provided on one side at a suitable distance above its fulcrum with a rib, Y.

Z represents a curved spring-detent, which is substantially in form of an inverted letter U, has the lower ends of its arms rigidly secured to one side of the standard V, and is provided with a central notch, A′, and notches B′ and C′ equidistant from the central notch, A′, and on opposite sides of the same. The said notches are adapted to be engaged by the rib Y, so as to maintain the operating-lever in a vertical position or when inclined in either direction.

The operation of my invention is as follows: When the lever W is in a vertical position, the target is also in a vertical position, and the vertically-movable rod N is at such an eleva-

tion that the lamp in the lantern is on the same horizontal plane with the centers of the white glasses *c* and *g* on opposite sides of the lantern. This will indicate to engineers approaching the station from either direction that the way is clear, and that they may continue to proceed after passing the station. If it is desired to stop the train approaching the station from the direction indicated by the arrow in Fig. 1, and to permit a train approaching in an opposite direction to proceed without stopping, the lever W will be turned until its rib engages the notch C′, thereby causing the crank-wheel S and the rod T to move the vertical rod N upward, so as to bring the lamp in the same horizontal plane with the red glass *b* on one side of the lantern and the upper white glass, *f*, on the opposite side of the lantern and cause the connecting-rod O and crank-wheel G to incline the target in the direction indicated by number 1 and the full lines in Fig. 2. When it is desired to reverse this arrangement of this signal so that a train approaching the station from the direction indicated by the arrow may be permitted to pass without stopping, and a train approaching from the opposite direction will be signaled to stop, the lever W is inclined until its rib Y engages the notch B′, when the rod N will be lowered so as to bring the lantern between the white opening *d* and the red opening *h* in the lantern, and the target will be inclined to position number two. (Shown in dotted lines in Fig. 2. When it is desired to stop all trains running in both directions, the signal-arm will be turned by the lever to a horizontal position, and the rod carrying the lantern will move the latter between the red glasses *a e*, and thereby duplex a red light on both sides of the lantern.

It will be understood, of course, that the target constitutes the signal by day and the light forms the signal by night.

Having thus described my invention, I claim—

1. The combination of the tower having the lantern provided on opposite sides with the series of openings covered with differently-colored glass, the vertically-movable rod N, extending through the lantern and carrying a lamp or other source of light, the rock-shaft F, journaled in a case at the top of the tower, and having the signal-target and the crank-arm projecting radially therefrom, and the rod O, connecting the crank-arm with the rod N, substantially as described.

2. The combination of the tower having the lantern provided on opposite sides with its series of rigid openings covered with differently-colored glass, the vertically-movable rod N, extending through the lantern and carrying a lamp or other source of light, the rock-shaft F, journaled in a case at the top of the tower and having the signal-target and the crank-arm projecting radially therefrom, the rod O, connecting the crank-arm with rod N, the case at the base of the tower, the rock-shaft journaled in said case and having the crank-wheel, the rod T, connecting said crank-wheel to the rod N, and the lever and connections between the same and the crank-wheel, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

CHAS. JONATHAN WOODWARD.

Witnesses:
C. J. YORK,
R. E. YOUNG.