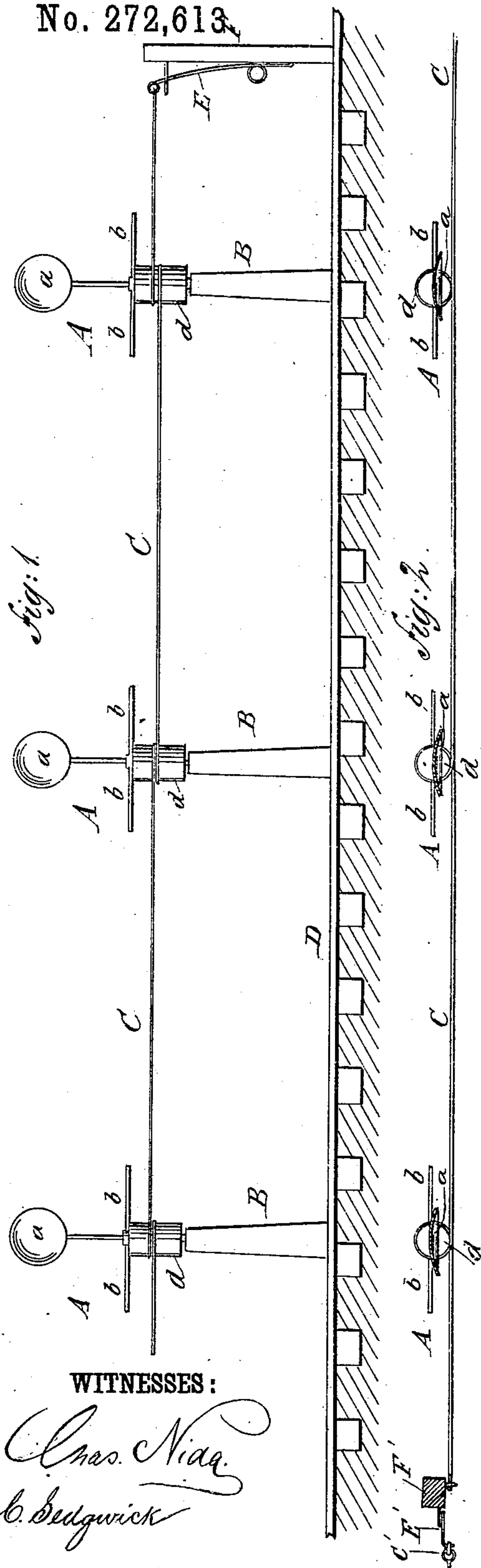


(No Model.)

N. ALLEN.
RAILROAD SIGNAL.

No. 272,613

Patented Feb. 20, 1883.



WITNESSES :

Chas. Nida.
C. Sedgwick

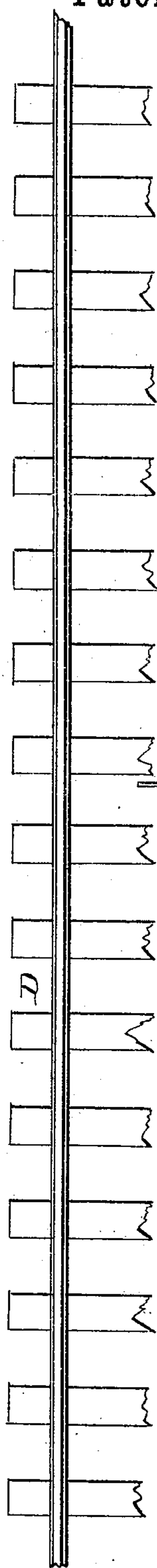


fig. 3.

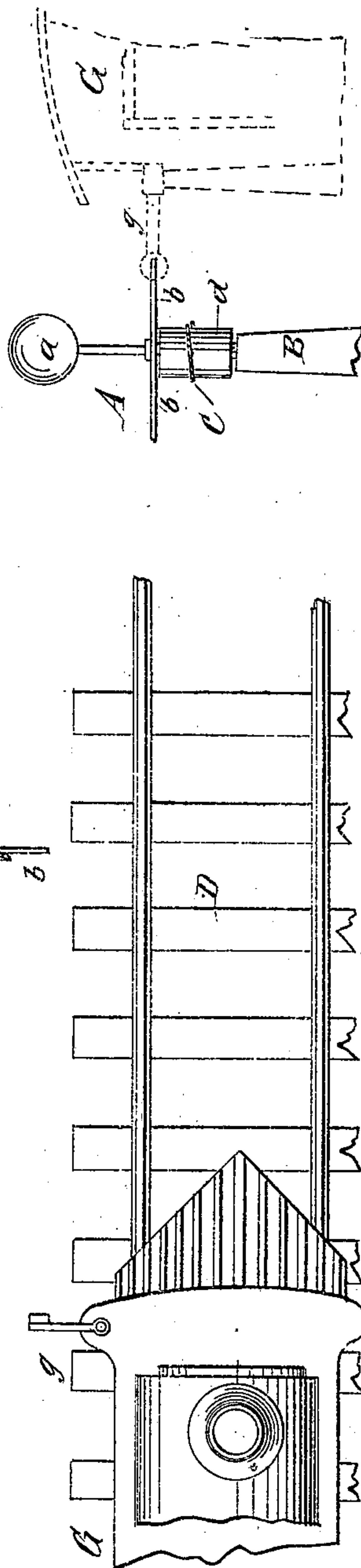


fig: 4.

INVENTOR:

W. Allen

BY

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

NORMAN ALLEN, OF ROCKAWAY BEACH, NEW YORK.

RAILROAD-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 272,613, dated February 20, 1883.

Application filed March 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, NORMAN ALLEN, of Rockaway Beach, in the county of Queens and State of New York, have invented a new and Improved Railroad-Signal, of which the following is a full, clear, and exact description.

My invention relates to improvements in railway-signals; and it consists in the peculiar construction and arrangement of parts, as hereinafter fully described.

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

Figure 1 is a front elevation of my signals, looking across the railroad-track as they appear when in normal position. Fig. 2 is a plan view of the same, showing the proximity of the signals to the track. Fig. 3 is a plan view of the signal and track, showing the signal set, and an engine with a torpedo-arm swung out to position approaching the signal; and Fig. 4 is a front elevation of the same, the engine being shown in dotted lines.

A represents the signals, which are pivoted upon the posts B, which are set suitable distances apart and a suitable distance from the track D, as shown clearly in Figs. 1 and 2, and C represents the wire or cord or small wire rope for operating the signals. One end of the rope or wire C is attached to the spring E, which is secured to the post F, and from thence it is passed around the drums *d* of the signals, between the post F and another post, F', similar to the post F, situated a half-mile (more or less) from the latter, and is secured to the post F' in such manner as to permit of its movement when actuated to set the signals to "danger." From the spring E' of the post F' will lead the wire or rope C', which, in like manner, will be passed around the drums of the next series of signals and attached to another post, and so on throughout the length of the road, whereby each section is worked independently of the others. The signals are constructed, as shown in the drawings, of the drums *d*, having arms *b b* and reflectors *a* sustained above them; but this arrangement may be varied.

The operation is as follows: When the rope C is drawn upon it turns the drums *d*, and the whole signaling apparatus of that section, so

as to bring the arms *b b* at a right angle with the track and the face of the reflectors in the opposite direction from the place from which the alarm is given, and the reflectors will be brought in view by day and will reflect the head-light of the locomotive by night, and also, during foggy weather, a torpedo on the arm *b* of the signal or the arm *g* of a locomotive will be exploded. I am aware, however, that the latter feature is common, and it forms no part of my invention. By pulling upon any one of the wires or ropes C C' at any point between any of the posts the signals of that section will be set, as will be clearly understood.

The signals are by preference made of the aforesaid drums *d*, concaved reflectors *a*, and the horizontal arms *b*, which are secured to and upon the drum *d*, and serve not only as means of giving warning at night, but also as levers for setting the signals.

It will be observed from Figs. 3 and 4 that these arms *b* are shown only of such length as to reach near the track when the signals are set. When they are made of this length the locomotive G will be provided with the pivoted arm *g*, which, when swung out to the position shown in Fig. 3, will strike the arms *b* of the signals; but in case the pivoted arm *g* is not used the arms *b* will be made of such length as to be struck by the locomotive for giving the warning to the engineer.

The arm *g* will be provided with means for holding a torpedo, and with a spring of sufficient tension near its pivoted end to cause the explosion of the torpedo when the arm *g* strikes the arm *b*, but not strong enough to rotate the arm *b*, said arm *g* swinging around on its pivot under the pressure of the arm *b*. When arm *g* is not employed, and the arms *b* are made longer, so as to be struck by the locomotive, they are restored to the position of "danger" by an operator on the engine. In general, the arms *b* are worked by an operator on the track.

At night, in clear weather, the reflectors *a*, when the signals are set, will reflect the head-light of the locomotive so as to be readily seen by the engineer, and thus give the warning. By this means it will be seen that, in case of any accident or delay of a train upon the road, by turning one of the signals by the arms or lever *b*, or by other means, the signals in either direction may be set for a sufficient dis-

tance along the line from the standing train to avoid all danger of collision.

5 In case the signals are to be used on a single-track railroad, the reflectors *a* will be double reflectors, so that they will present a reflecting-surface in both directions when set in position, and the ends of the wires of each section will be attached to springs, so as to allow the arms *b* to be turned in either direction.

10 I am aware that signals to trains, consisting of mirrors arranged along the track, and reflecting the rays of the locomotive head-light, have heretofore been employed. I am also aware that swinging signal-arms, operated by
15 a passing locomotive, are not new; and I am also aware that a series of disks pivoted to posts along the railroad, so as to rotate perpendicu-

larly in their planes, and so connected by wires to each other and levers arranged by the side of the track that a passing train operates them, 20 have been heretofore employed, and I therefore lay no claim to such inventions.

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

25 The combination, with the signal *A*, formed with the drum *d*, arms *b*, and reflector *a*, of the posts *B*, *F*, and *F'*, wires or ropes *C* *C'*, and the springs *E* and *E'*, substantially as described.

NORMAN ALLEN.

Witnesses:

H. A. WEST,
C. SEDGWICK.