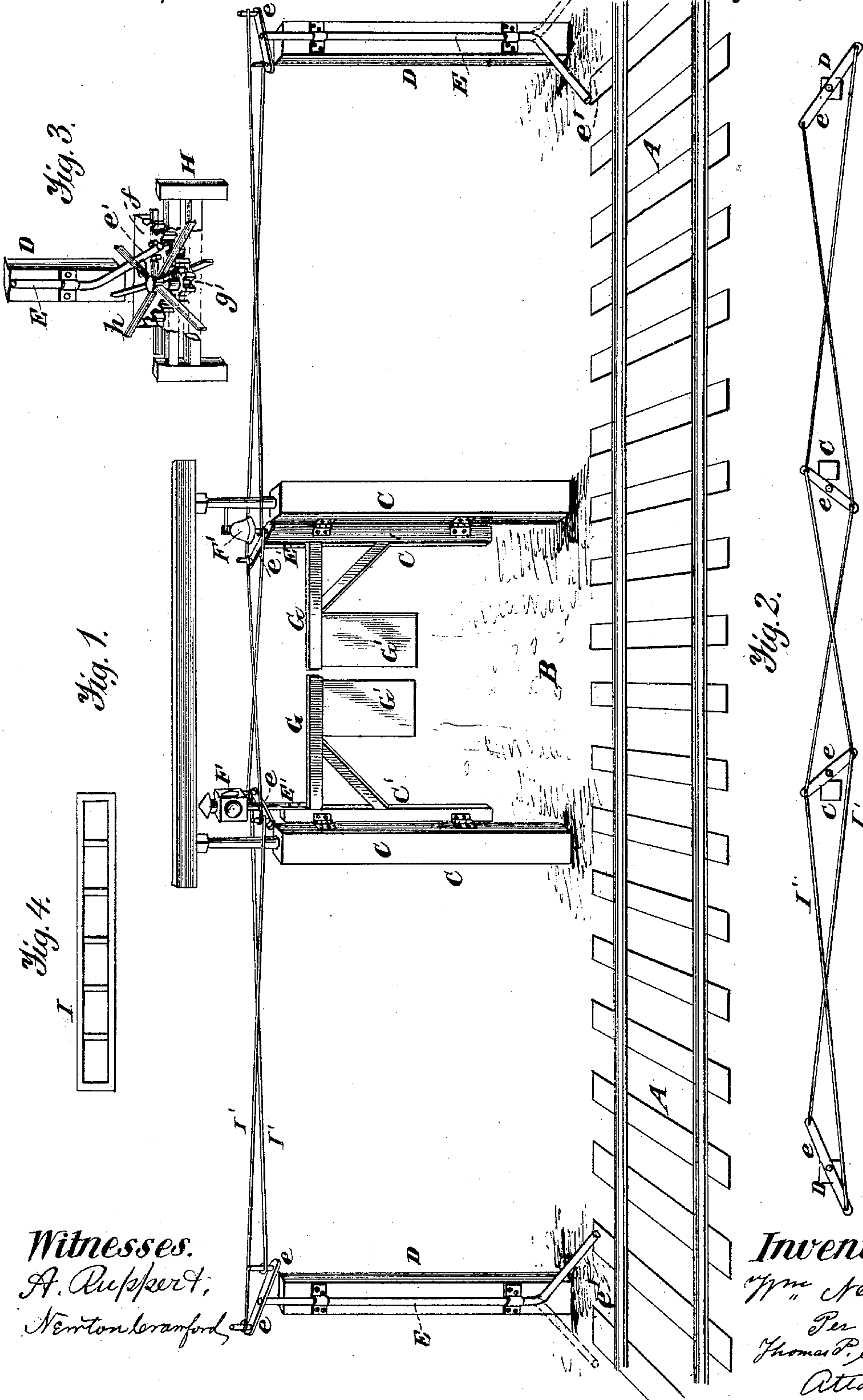


(No Model.)

W. NEILSON.
SIGNALING APPARATUS.

No. 318,015.

Patented May 19, 1885.



Witnesses.
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WILLIAM NEILSON, OF BATH, MICHIGAN.

SIGNALING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 318,015, dated May 19, 1885.

Application filed September 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM NEILSON, of Bath, in the county of Clinton and State of Michigan, have invented an Improved Signaling Apparatus for Railroad-Crossings, of which the following is a specification.

The special object of the invention is to exhibit signals, ring alarm-bells, and close crossing-gates at such times and with such certainty that the drivers of vehicles on the crossing roads cannot fail to be apprised of an approaching train of cars before they have reached the railroad-track.

Figure 1 of the drawings is a perspective view showing the local relation of the various parts by which the gate, bell, or signal may be actuated. Fig. 2 is a plan view showing the relative position of the wires and the cranks which operate them. Figs. 3 and 4 are detail views.

In the drawings, A represents a railroad-track; B, a crossing, and C D a series of posts arranged at the crossing, as well as at an equal distance on either side.

To one side of the outer posts, D, fronting the railroad-track, I pivot in keepers a rod, E, carrying at its top the cross-bar *e*, and at the bottom, in the same vertical plane, a bent arm, *e'*. The cross-bar *e* is made fast at its middle to the top of rod E, and preferably has vertical pins to which are end-fastened wires I' I'. To the posts C C are hinged half-gates G, carrying flags G' on a horizontal bar, and the rods E' E' on the perpendicular bars C' C'. On these rods, as on the rods E E, are placed middle-fastened rods *e e* for the wires I'. On one of these gate-bars C' is also supported a signal-lantern, F, while on the opposite post C is supported, by an arm, the bell F', whose clapper has a downward extension which is readily struck by an upwardly-extending pin whenever the bar *e* is given its quadrantal turn. The arms of these post-rods are all connected by two wires or other flexible connections, which cross each other between the posts, as shown in Fig. 2 of the drawings. The result is that when the outstanding post-rods are vibrated the red light will be displayed, the bell rung, and the flag-gates closed.

If any one of these signals from any cause should fail to operate, it is altogether improbable that two or all three will simultaneously fail.

In order to actuate the outstanding post-rods I provide them with an arm, *e'*, so that a projection from the locomotive may cause it to turn as the train is passing.

I represents a ladder-rack, which may be attached to the side of a locomotive or car, so as to operate a small pinion, *g*, by striking the arms *h* on the same shaft. The pinion *g* then actuates the large sector *f*, which carries between two pins the outward extension of rod E. This modification may have some advantage in not throwing round the rod so rapidly when a train is moving with great velocity. After the engine has passed the first post and exhibited the signals it passes the crossing and carries the other arm forward, thus opening and closing the gates as it moves in either direction.

What I claim as new is—

1. The combination of a locomotive-rack, I, shaft-carrying arms *h*, and pinion *g*, and spur-sector *f*, carrying the vibratory signal-rod E, for the purpose specified.

2. The flag-gate perpendicular bar C', hinged to post C, and carrying signal F, as well as cross-bar *e*, in combination with two crossing wires, I' I', operated as and for the purpose described.

3. The pivoted rods E E, carried by posts D D, having cross-bars *e e* at the top and provided with bent ends *e' e'*, at the bottom, in combination with wires I I, crossing each other between the bars *e* and operated as described, whereby the same train may both open and close the gates, as described.

4. The combination, with a lateral projection on a car or locomotive, of the vertical vibratory rods carrying double cranks and side arm, fixed posts, crossing wires, and double-cranked rods carrying at the crossing-gates a bell, light, and flag-gates, substantially as described.

WILLIAM NEILSON.

Witnesses:

SYLVANUS BACHELDER,
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