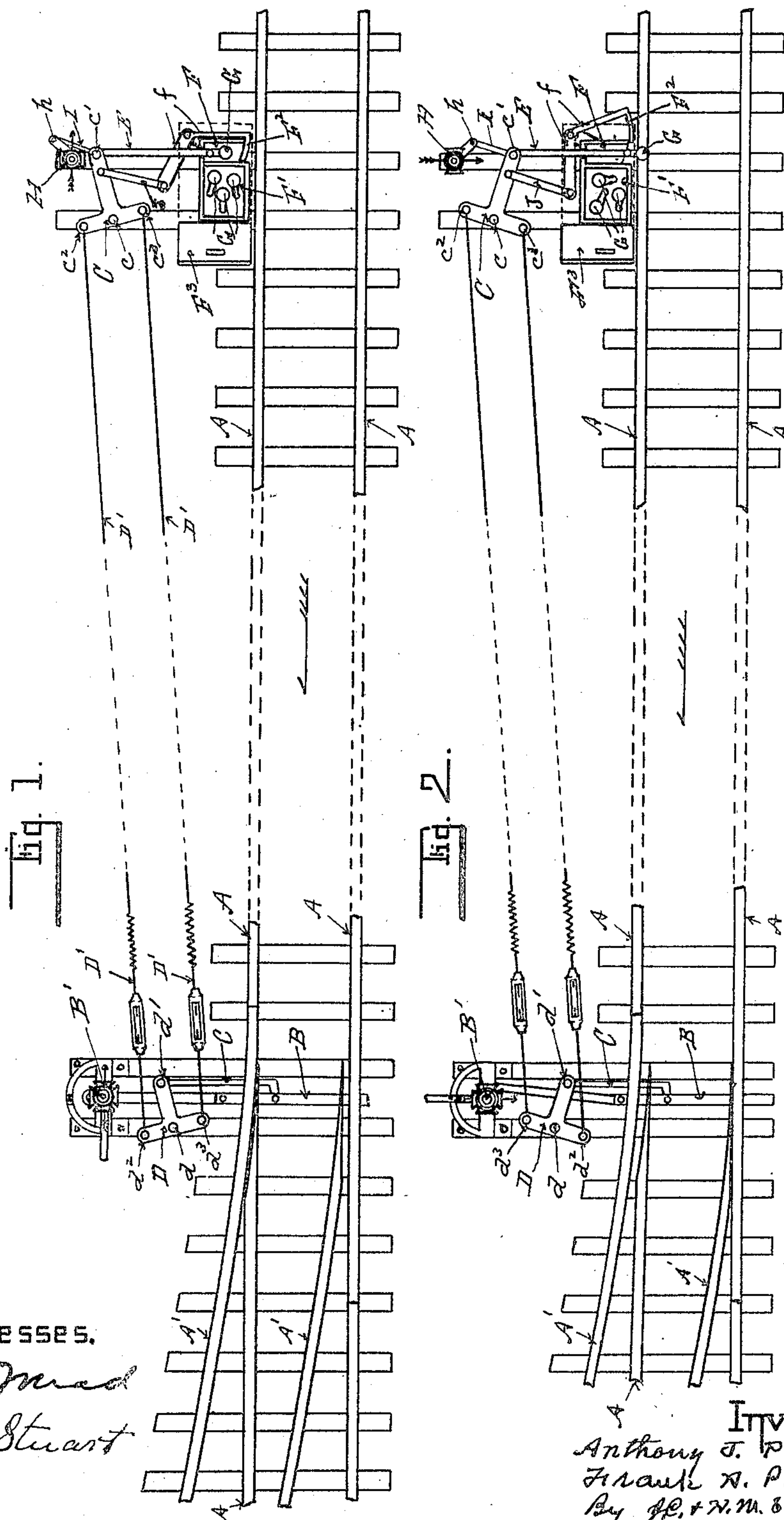


No. 804,337.

PATENTED NOV. 14, 1905.

A. J. PIESZAK & F. H. POOLE.
RAILROAD SWITCH SIGNAL APPARATUS.

APPLICATION FILED JULY 25, 1905.



Witnesses.
G. J. Mac
W. F. Stuart

Inventors
Anthony J. Pieszak
Frank H. Poole
By R. & N. M. Sturgis
attys.

UNITED STATES PATENT OFFICE.

ANTHONY J. PIESZAK AND FRANK H. POOLE, OF DUNKIRK, NEW YORK.

RAILROAD-SWITCH-SIGNAL APPARATUS.

No. 804,337.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Application filed July 25, 1905. Serial No. 271,169.

To all whom it may concern:

Be it known that we, ANTHONY J. PIESZAK and FRANK H. POOLE, citizens of the United States, residing at Dunkirk, in the county of Chautauqua and State of New York, have jointly invented certain new and useful Improvements in Railroad-Switch-Signal Apparatus; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

Our invention relates to railway-switch-signal apparatus; and it consists in placing a signal at a desired distance from a switch to warn a train approaching a switch when the switch is open.

Our invention is hereinafter fully described, and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of portions of a railway track and switch with our improved signaling apparatus attached, showing the switch closed. Fig. 2 is a like view of the same, showing the switch open and the signal in position.

In the drawings, A A represent the main-line rails of a railroad-track, and A' A' the rails of a switch branching off from the main line, and B the ordinary controlling-bar common to all railway-switches, and B' the ordinary target and lamp switch signal, showing white when the switch is closed and red when the switch is open.

To the controlling-bar B we secure a link C or otherwise connect the arm d' of a T-shaped bell-crank lever D therewith. This lever D is secured by a pivot d to a proper supporting-base, preferably upon the same base that supports the switch-operating mechanism, so that when the switch is thrown open the lever D is caused to oscillate upon its pivot d toward the switch, as illustrated in Fig. 2.

At a desired distance—say about a half-mile, more or less, from the switch—we place a signal-station, consisting, preferably, of a light target and torpedo operating apparatus. The apparatus herein shown as embodying our invention consists of a T-shaped bell-crank lever C, secured by a pivot c to a suitable support at the side of the railway-track. The ends c^2 c^3 of the lever C are connected with

the corresponding ends d^2 d^3 of the T-shaped bell-crank lever D, located at the switch, by wires D' or other suitable means, so that as the lever D is caused to oscillate by the opening or closing of the switch the lever C at the signal-station is caused to oscillate in unison therewith.

To the arm c' of the T-shaped lever C we pivot one end of a slide-bar E, the opposite end thereof being supported on a level with or slightly above the top of the railway-rail A by a box F, through a slot in which the bar E slides freely. Removably secured to the outer or free end of the sliding bar E by any suitable means we secure an ordinary railway-torpedo G. From the foregoing it will be readily seen that as the T-shaped lever C is caused to oscillate in unison with the T-shaped lever D by the opening of the switch the sliding bar E will slide toward the railroad-rail A, thereby placing the torpedo secured at the end thereof over the upper surface of the railroad-rail A and hold the same in that position until the switch is again closed, which draws the bar E backward, withdrawing the torpedo G from over the rail A and into the box F, as illustrated in Fig. 1.

We also preferably provide a support for a signal-lamp and target H, which is adapted to rotate a quarter-turn and is provided at its lower end with a crank h , which is connected to the arm c' of the T-shaped lever C by means of a link I, so that as the slide-bar E is moved forward to place the torpedo G over the rail A the signal light and target H are turned so as to show "danger."

The torpedo G when withdrawn from the rail A is inclosed in a box-like structure F, having the end next the rail A open, which opening is adapted to be closed by a gate F² when the torpedo is drawn backward into the box F.

For operating the gate F² we provide an elbow-lever f , which is pivoted to a suitable support, as shown in the drawings. The opposite end of the elbow-lever f is connected with the arm c' of the T-shaped lever C by means of a link J, which serves to open the gate F² when the bar E, with its attached torpedo, commences its movement toward the rail A.

We preferably make the box F with a compartment F' for containing a few extra torpedoes and provide a cover F³ therefor of sufficient size to cover the box F and compartment F' and gate F², so that when the tor-

pedo is withdrawn from the rail A it is completely inclosed and is secured from molestation by locking the cover of the box.

For the purpose of adjusting the wires D' to a proper length and tension to properly operate the signal apparatus we preferably provide them with turnbuckles and springs; but this may be accomplished by any other suitable means, if desired.

In operation when the siding switch is closed, as shown in Fig. 1, the T-shaped lever D will be oscillated thereby away from the track, which through the connections D' will cause the T-shaped lever C at the signal-station to also oscillate away from the track, thereby retaining the torpedo G within the box F and the gate F² closed. Also there will be no danger-signal displayed by the lamp and target H when a lamp and target are used in conjunction with the torpedo at that point. However, when the switch is opened, as shown in Fig. 2, the T-shaped lever D is thereby caused to oscillate toward the track, which through the connections D' causes the T-shaped lever C to also rotate toward the track, thereby, through the bar E, causing the torpedo G to move outward over the rail and remain there until withdrawn by the closing of the switch. When the torpedo is in position over the track, we preferably have a danger-signal consisting of a lamp and target H, of any suitable color displayed; but such additional danger-signal is not essential to the carrying out of our invention. It will be readily understood that with the use of our invention a train approaching an open switch from the direction of the arrows will be warned of the same long before it is in sight of the regular switch-signal light.

We have shown bell-crank levers and wires as a convenient mechanism for connecting the same so that they will operate in unison. It will be obvious to any one familiar with the art to which our invention appertains that many forms of mechanism may be used for connecting the switch mechanism with the signal mechanism, the parts of the switch mechanism and the signal mechanism being modified accordingly therefor. Therefore we do not desire to confine ourselves to the exact construction of mechanism shown, as the gist of our invention is the arranging of the distance-signal mechanism with the switch mechanism so that when the switch is open a torpedo will be thrust upon the track and held there until the switch is again closed, and when the switch is closed the torpedo will be withdrawn. We have also shown a warning-signal light and target, with operating mechanism at the dis-

tance-signal station. This feature, while we consider it desirable, is not an essential feature of our invention, as the torpedo is a sure and infallible signal should it be struck by the locomotive, which will effectually warn the engineer of the open switch with which it is connected.

Therefore, having described our invention so as to enable others to utilize the same, what we claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination of a railroad-switch mechanism, a torpedo-operating mechanism adapted to place a torpedo upon and remove it from the railroad-rail, a box inclosing the torpedo when it is withdrawn from the rail, a gate closing said box, mechanism for operating said gate, and mechanism connecting said switch mechanism and the torpedo and gate operating mechanisms, substantially as and for the purpose set forth.

2. The combination of a railway-switch with a bell-crank lever connected with the operating mechanism of said switch, a signal-station located at a point distant from said switch consisting of a bell-crank lever, a slide-bar pivoted to one arm thereof, a support for the free end of said slide-bar, a torpedo removably attached to the free end of said bar, a danger-signal light and target connected with and operated by said torpedo-operating mechanism, and means for operatively connecting the bell-crank lever at the switch with the bell-crank lever at the signal-station, substantially as and for the purpose set forth.

3. The combination of a railway-switch mechanism, mechanism for operating the same, a signal-station at a point distant from said switch consisting of a torpedo-operating mechanism, means for operating the same, a box for supporting and inclosing the free end thereof, a torpedo removably secured thereto, means for opening and closing said box when the torpedo moves forward and back, a danger-signal light and target connected to said torpedo-operating mechanism and operated thereby, and means for connecting the torpedo-operating mechanism with the switch-operating mechanism whereby the torpedo and signal mechanism are operated in unison with the switch, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

ANTHONY J. PIESZAK.
FRANK H. POOLE.

Witnesses:

EDWARD JAS. WEST,
LEO. J. PFLUGER.