

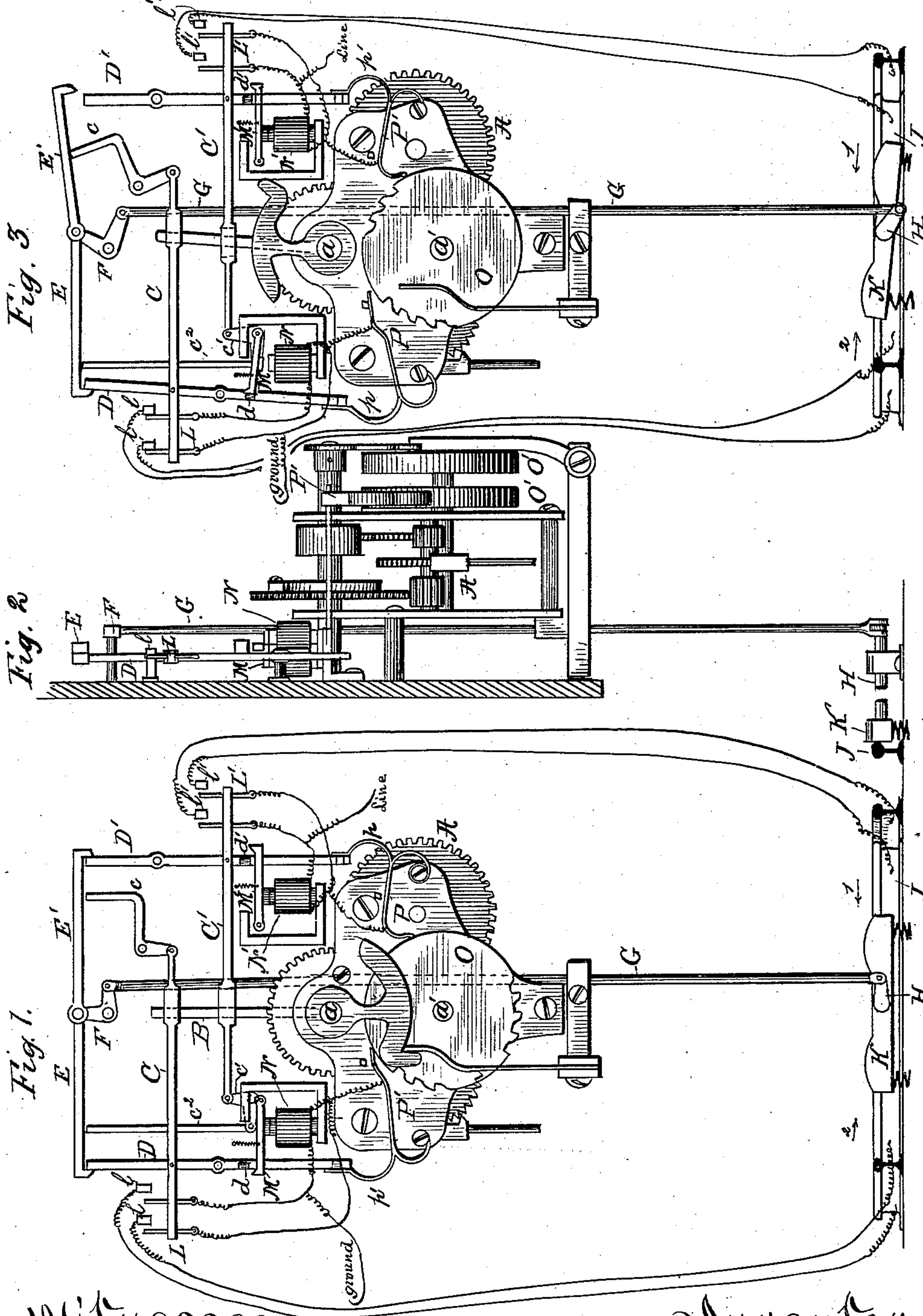
(No Model.)

W. M. PEASE.

ALARM MECHANISM AND APPARATUS FOR OPERATING THE SAME.

No. 312,504.

Patented Feb. 17, 1885.



WITNESSES:
J. A. Smith
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per Lenox Simpson & Co.

UNITED STATES PATENT OFFICE.

WILLIAM M. PEASE, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO LENOX SIMPSON, OF SAME PLACE.

ALARM MECHANISM AND APPARATUS FOR OPERATING THE SAME.

SPECIFICATION forming part of Letters Patent No. 312,504, dated February 17, 1885.

Application filed April 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. PEASE, a citizen of the United States, residing in Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Alarm Mechanisms and Apparatus for Operating Same, of which the following is a full, clear, and exact description.

10 This improvement is intended to be used in connection with a system of automatic electric railroad-train reporting set forth in an application for patent (marked A) filed by me as of even date herewith.

15 The object of the invention is to provide a single alarm mechanism capable of reporting the passage of trains moving upon the track in opposite directions.

The invention consists in the hereinafter-described means for attaining said object.

Figure 1 represents a front elevation of my invention while at rest; Fig. 2, a side elevation of same, and Fig. 3 a front elevation of same while in operation.

25 Similar letters of reference indicate corresponding parts throughout the different views.

The clock-work A of the alarm mechanism is of similar construction to that used in the ordinary fire-alarm boxes, and needs, therefore, no description.

30 *a* represents the main or winding shaft of the clock-work, and *a'* the shaft which bears the circuit-breaking disks.

To the shaft *a* is fixed an upright lever, B, which upon being forced toward the right winds up the clock-work. Fitting upon said lever are transverse slotted bars C C', and pivoted to said bars are upright levers D D'. The lever D is pivoted or fulcrumed below its point of joinder with bar C, while the lever D' is fulcrumed above its point of joinder with bar C'. When the upper extremity of either one of said levers D D' is drawn inwardly, the mechanism will be wound up. Over the tops of levers D D' engage the hooked bars E E', the inner extremities of which are pivoted to the upright arm of a bell-crank, F. The horizontal arm of said bell-crank is attached to the upper extremity of a rod, G, and the lower extremity of the latter is pivoted to a crank borne by the horizontal bar H. Said

bar is provided with bearings, and reaches to the side of a rail, J, which forms one of a pair of rails belonging to the track of the railroad, but insulated therefrom. A lever, K, whose extremities extend a little above the rail J, is secured to the free extremity of the bar H. By this construction it will be seen that if the wheel of a car passing in the direction of arrow 1 strikes lever K, the latter, through the medium of mechanism H, G, F, E, D, and C, will throw the lever B to the right and wind up the clock-work, while a car passing in the direction of arrow 2 will attain the same result through the medium of mechanism H, G, F, E', D', and C'.

Pivoted to the inner end of bar C is a bent lever, *c*, whose free extremity reaches to within a short distance of the under side of hook-bar E'.

Pivoted to the inner end of bar C' is a bell-crank, *c'*, adapted when moved by the bar to force upward a rod, *c''*, whose upper extremity reaches to the under side of hook-bar E. The effect of this construction is to throw the hook-bar E' out of engagement with lever D' when a car passes over the lever K in the direction of arrow 1, and to throw hook-bar E out of engagement with lever D when a car passes in the direction of arrow 2.

Attached to the outer end of bar C, but insulated therefrom, are switch-levers L, and situated to the right of said levers are fixed contact-points *l*.

Attached to the outer end of bar C' are switch-levers L', and to the right of said levers are fixed contact-points *l'*.

Below their fulcrums levers D D' are provided with offsets *d d'*, and situated beneath said offsets, and extending slightly beyond same, are horizontal armatures M M'. The latter are hinged at their inner ends, and are provided with springs adapted to force upward their outer ends. Beneath said armatures are situated electro-magnets N N', which when energized hold said armatures out of engagement with the offset *d d'*.

O O' are two circuit-breaking disks attached to shaft *a'*, and having serrations upon their peripheries corresponding to different numbers.

P P' are the insulated tongues, which act in

conjunction with said disks to break the circuit. Said tongues are attached by springs to the frame of the clock-work, and have arms p p' , extending upward within the path of the lower extremities of the levers D D' . When the lever D is operated, its lower end, acting upon the arm p' , forces the tongue P' away from contact with the disk O' , while when the lever D' is operated the tongue P is in like manner forced away from contact with disk O . The ends of the coil of magnet N are connected by wires with switch-levers L , tongue P' , and the ground, and the ends of the coil of magnet N' are connected with switch-levers L' , tongue P , and the battery-line. The contact-points l are connected by wires with the two insulated rails, as are also the points l' .

The operation of the invention is as follows: A train coming in the direction of arrow 1 depresses lever K , and, through the intervening mechanism, draws the top of lever D to the right. This winds up the clock-work, forces switch-levers L in contact with points l , forces the tongue P' away from disk O' , and lifts hook-bar E' from lever D' . The circuit, which has been hitherto through magnet N , is switched off through the insulated rails and the car wheels and axles. The armature M is thereby released, flies upward, and catching against the offset d locks the lever and clock-work. As long as a single pair of wheels and axle remain upon the insulated rails the magnet N is cut out of circuit and the mechanism continues locked. When the train has passed, the circuit through the rails is broken and the magnet N energized. The armature is thereby drawn downward and unlocks the mechanism and the disks revolve. Each time one of the serrations in the disk O passes the tongue P a break is made in the circuit, and the number and arrangement of these breaks indicate—at the end of the line—the location of the train. If a train passes in the direction of the arrow 2, the disk O' and the tongue P' are brought into operation, and the arrangement of the serrations on said disk being different from (preferably the reverse of) disk

O , the breaks in the circuit are different, and the result is that the position and direction of travel is indicated thereby.

Having thus described my invention, what I claim is—

1. The combination, with lever B , of bar C , lever D , bar E , crank F , rod G , crank-rod H , and lever K , substantially as and for the purposes described.

2. The combination, with lever B , of bars C C' , levers D D' , bars E E' , crank F , rod G , crank-bar H , and lever K , as and for the purposes set forth.

3. The combination, with the lever B and bar G , of the crank F , hook-bars E E' , levers D D' , bars C C' , bent lever c , crank c' , and rod c'' , substantially as and for the purposes set forth.

4. The combination, with lever B , bars C C' , and levers D D' , of the disks O O' , and tongues P P' , provided with arms p p' , substantially as and for the purposes set forth.

5. The combination, with the clock-work provided with lever B and the insulated rails, of the points l l' , switch-levers L L' , bars C C' , lever c , crank c' , bar c'' , levers D D' , provided with offsets d d' , magnets N N' , armatures M M' , hook-bars E E' , crank F , rod G , crank-rod H , and lever K , substantially as described, whereby said clock-work will be wound up and locked by a car passing over said rails in either direction and released after the passage of said car, as set forth.

6. The combination of the insulated rails, the clock-work provided with lever B and disks O O' , the tongues P P' , provided with arms p p' , levers D D' , provided with offsets d d' , bars C C' , levers c c' c'' , switch-levers L L' , contact-points l l' , magnets N N' , armatures M M' , hook-bars E E' , crank F , rod G , crank-rod H , and lever K , substantially as and for the purposes described.

WILLIAM M. PEASE.

Witnesses:

J. A. KURTZ,
J. T. BIDDEE.