

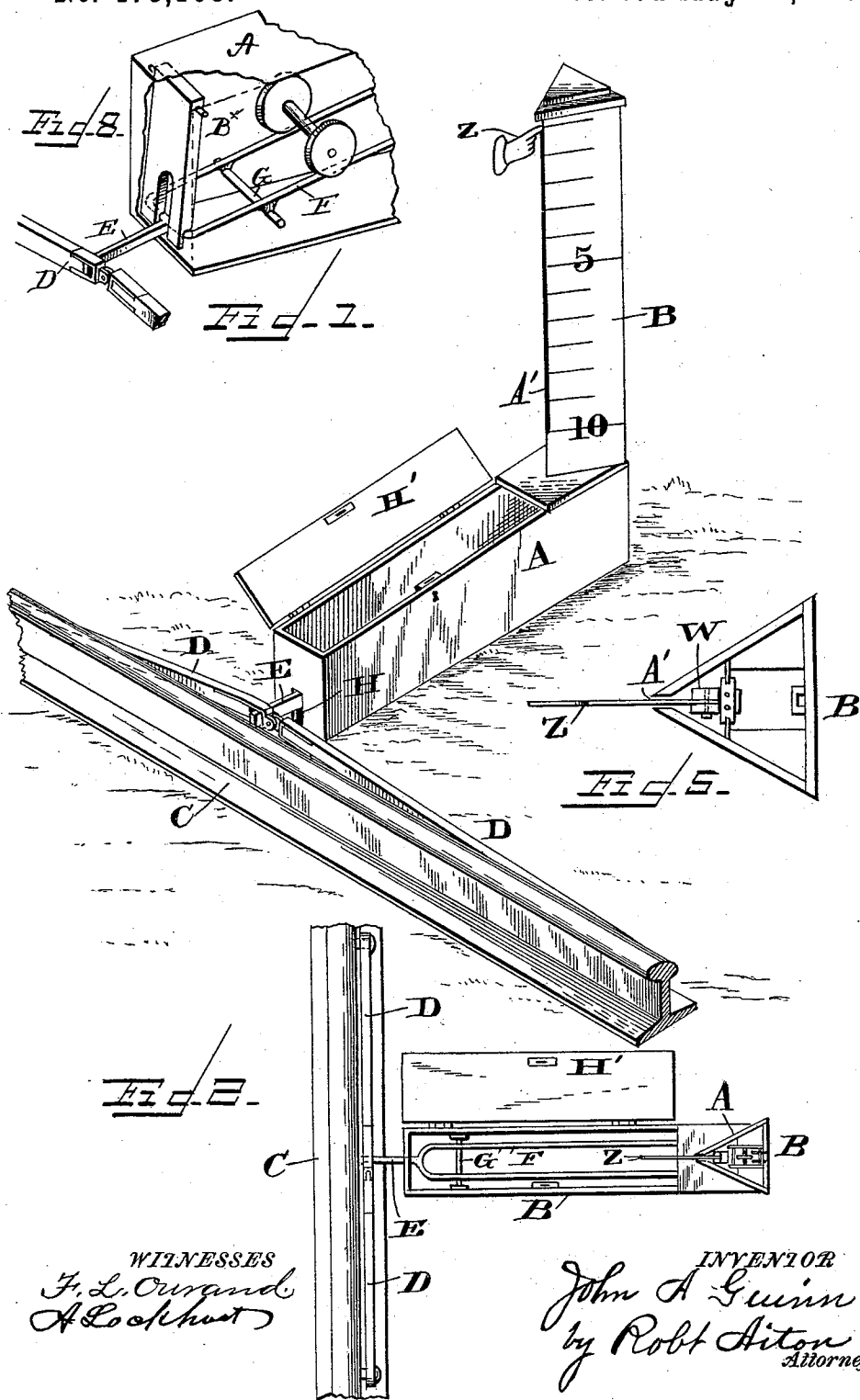
(No Model.)

2 Sheets—Sheet 1.

J. A. GUINN.
RAILWAY TIME SIGNAL.

No. 475,108.

Patented May 17, 1892.

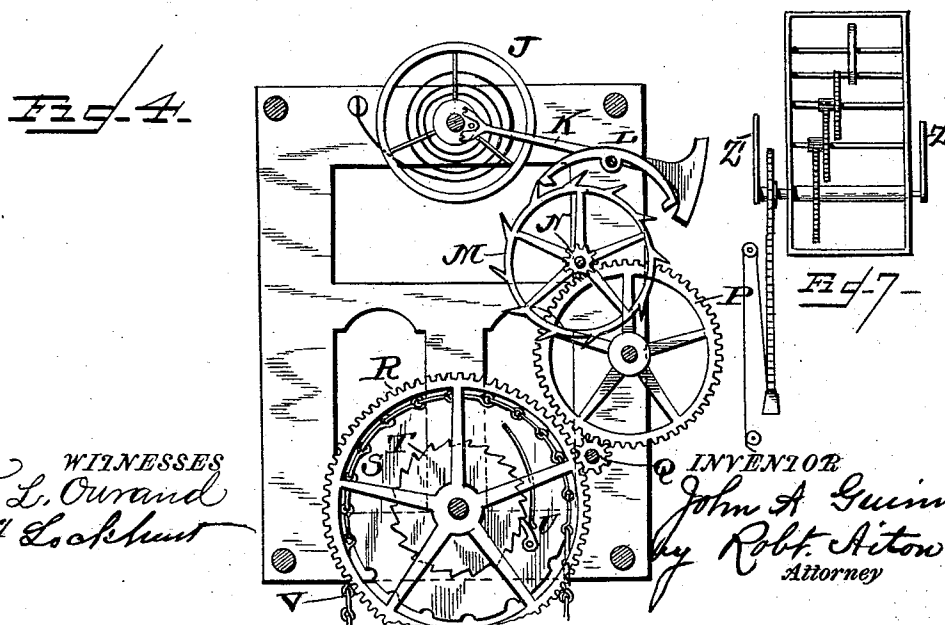
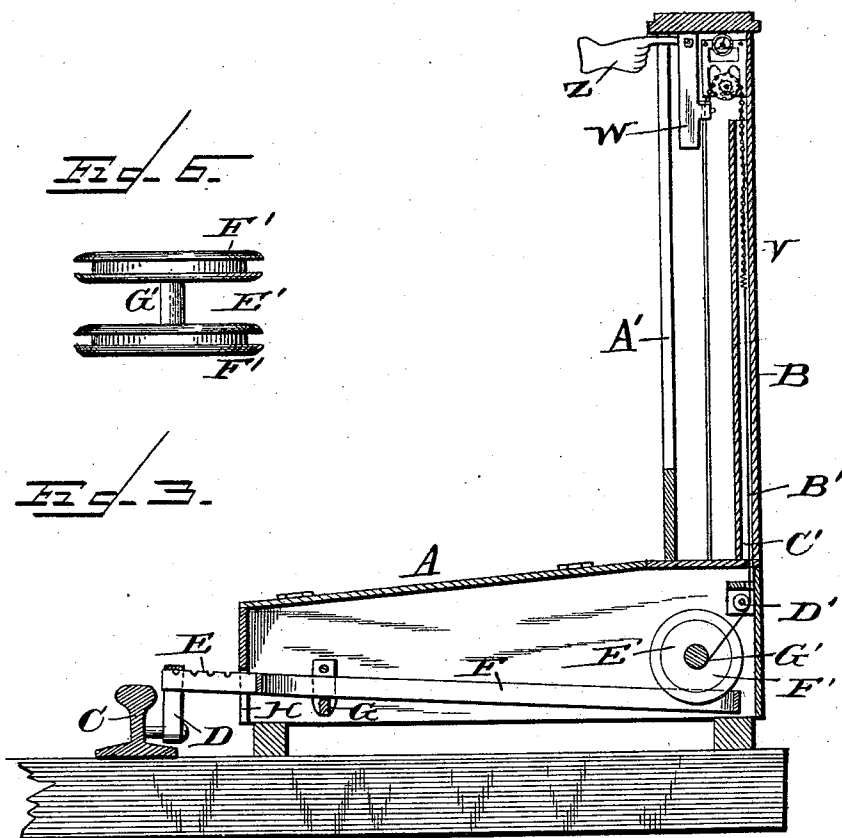


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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

JOHN ALEXANDER GUINN, OF PERRY, IOWA.

RAILWAY TIME-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 475,108, dated May 17, 1892.

Application filed January 21, 1892. Serial No. 418,818. (No model.)

To all whom it may concern:

Be it known that I, JOHN ALEXANDER GUINN, a citizen of the United States, residing at Perry, in the county of Dallas and State of Iowa, have invented certain new and useful Improvements in Railroad Time and Danger Signals; and I 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.

My invention relates to improvements in railroad time-signals, more especially to that class of time-signal designed to indicate to the engineer of a train the length of time that has elapsed since the preceding train passed the signal, whereby a safe distance can be maintained between the trains, and thereby prevent or lessen the danger of a collision or running into the advance train by the rear one.

For this purpose my invention consists of a train of time-gearing, which is operated by a weight carrying an index, and mechanism operated by the contact of a wheel of the railroad-train for resetting said index to its initial point.

It further consists of an operating-blade, a tilting track with roller thereon, and a time mechanism with an index and having its operating-weight, to which said index is attached, raised by the movement of the said roller on said track in the direction of the operating-blade.

It further consists of the combination and arrangement of parts hereinafter described.

In the drawings, Figure 1 represents a perspective view of a time-signal embodying my invention. Fig. 2 represents a plan view of the same, the lid of the standard being removed. Fig. 3 represents a central longitudinal section in elevation of the device. Fig. 4 represents a side view, on an enlarged scale, of the time mechanism of the device. Fig. 5 represents a plan view of the standard with the index, the time mechanism being removed. Fig. 6 represents a top view of the roller employed in resetting the index. Fig. 7 represents a modification of a portion of the device, and Fig. 8 represents a swinging trigger for locking the tilting track of the device.

Similar letters indicate corresponding parts in the different figures.

Referring to the drawings, A designates a box of rectangular shape, and B a hollow standard of preferably triangular shape on one end of the said box.

C designates a railroad-rail, and D blades of metal or other suitable material pivoted at one of their ends to the said rail and having their adjacent ends pivotally connected together and secured to the outer end of the arm E of a track F. The said track F is located within the box A, resting on the cross-bar G, which is secured to the sides of the said box, and its arm E projecting through a vertical slot or opening H in the end wall of the box.

In the upper portion of the standard B is located the time mechanism shown in Fig. 4, said mechanism consisting of the balance-wheel J, the lever K, the pallet L, the escape-wheel M, having on its shaft the pinion N, the gear-wheel P, meshing with the said pinion, the pinion Q, meshing with the said gear-wheel P, the gear-wheel R, meshing with said pinion, and the sprocket-wheels S, and the ratchet-wheel T on the shaft of the said gear-wheel R. The ratchet T is connected with its shaft T', so as to rotate therewith, but the sprocket-wheel is loosely mounted on the said shaft and carries a spring-pressed pawl U, which engages the teeth of said ratchet-wheel, thereby permitting the free movement of the sprocket-wheel on the shaft in one direction and its movement with the shaft in the opposite direction.

To one end of the sprocket-chain V on the wheel S is secured a weighted block W, having a projection X, which is fitted in a vertical groove Y in the standard, so that said block is guided in its rising and falling movements. Connected with the block W and projecting from the standard B is the index Z, which is adapted to move in a vertical slot A in said standard, the side walls of the slot having on their outer faces marks or indices to designate minutes or other portions of time. To the other end of the sprocket-chain V is secured a cord B', which is located in a vertical recess C' in the standard B and, passing downward into the box A and around a pulley D'

in the said box, is attached to a roller E', movable on the track F. The said roller is composed of two grooved wheels F', which run on the rails of the said track F and are connected by a bar G', to which the cord B' is connected.

It will be understood that as a wheel of a train traveling in either direction comes in contact with a blade D it depresses the same, thereby lowering the arm E of the track F, thus raising the other end of the track F, or that on which the roller E' normally rests. This movement causes the said roller to run down the track toward the arm E, unwinding the cord wound on the bar G'; but as the circumference of said bar is much less than the distance traveled over by the periphery of the roller the cord B' is drawn down, and with it the sprocket-chain V, thereby turning the sprocket-wheel S on its shaft and raising the block W, with the index, to the top of the standard or its initial point, where it is held as long as the car-wheel remains on the blade D. When the wheel of the car passes over and off the blade D, so that it bears no longer on the arm E, the rear end of the track F, owing to its weight being greater than the arm end, is lowered, and the roller E runs down the track or away from the arm E, so that it does not draw on the cord and sprocket-chain V, thus permitting the block W, which has been raised, as previously described, to operate the clock or time mechanism. As the block W descends the sprocket-chain V is drawn over the wheel S, drawing up the cord B', so as to remove the slack in the same, and the index Z points out the time by the coinciding marks or figures on the sides of the standard, which is constructed of sufficient height to indicate a sufficient time. In the drawings it is marked for ten minutes, but, as will be readily understood, may be of such height that a greater number of minutes or longer time may be indicated, if so desired. In place of a marked vertical standard and a vertically-moving index a rotating pointer and a circular dial, as shown in Fig. 7, may be employed.

To the lid of the box A is secured a lid G', whereby the box may be kept closed and the removal of the roller therefrom prevented.

Within the box A is secured a swinging trigger B^x, adapted to engage the tilting track and lock the same until the wheel or roller E runs down and unlocks the same by its weight striking against and pushing it from the notch or opening H.

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

1. A railroad time-signal consisting of an operating-blade, a pivoted track connected with said blade, a time mechanism having an operating-weight connected with a roller on said track, said parts being combined substantially as described.

2. A railroad time-signal having an operat-

ing-blade adapted to be pivoted to a railroad-rail, a tilting track having one end connected with said blade, a time mechanism with an index attached to the operating-weight thereof, a standard in which said time mechanism is supported, and a weight on said tilting track having means, substantially as described, connected with it and the operating-weight for raising the latter, said parts being combined substantially as described.

3. A railroad time-signal having an operating-blade, a tilting track, a train of time mechanism provided with an operating-weight, sprocket-wheel loosely mounted on a shaft in said train and connected with a ratchet-wheel on the same shaft by a spring-pawl carried by the said sprocket-wheel, a sprocket-chain on said sprocket-wheel connected with said operating-weight, and a cord connecting said sprocket-chain and roller, said parts being combined substantially as described.

4. A railroad time-signal having a time mechanism with an index, an operating-blade, a tilting track, a weight on said track, and means, substantially as described, connected with said weight and said time mechanism for resetting said index to its initial point without affecting the time mechanism, said parts being combined substantially as described.

5. A railroad time-signal consisting of an operating-blade adapted to be pivoted to a railroad-track, a tilting track connected with said blade, a standard, a time mechanism in the upper part of said standard, having a ratchet-wheel keyed on one of its shafts, and sprocket-wheel loosely mounted on the same shaft and carrying a pawl engaged with said ratchet-wheel, an index projecting from said standard and connected with the operating-weight of the time mechanism, a roller on said tilting track, and a sprocket-chain on the sprocket-wheel, connected at one end with the operating-weight and at the other by a cord with the said roller, said standard having time-gradations on its faces, and said parts being combined substantially as described.

6. A railroad time-signal having a track with a roller thereon for tilting the same and a swinging trigger for locking said track, said parts being combined substantially as described.

7. A railway time and danger signal having a clock mechanism, a tilting-lever, a roller having a cross-bar of reduced diameter, a weight for operating said clock mechanism having an index connected therewith, and a cord and chain for raising said weight, said cord being secured to said roller and said roller operating on said tilting-lever, said parts being combined substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN ALEXANDER GUINN.

Witnesses:

H. A. HOYT,
H. B. LEE.