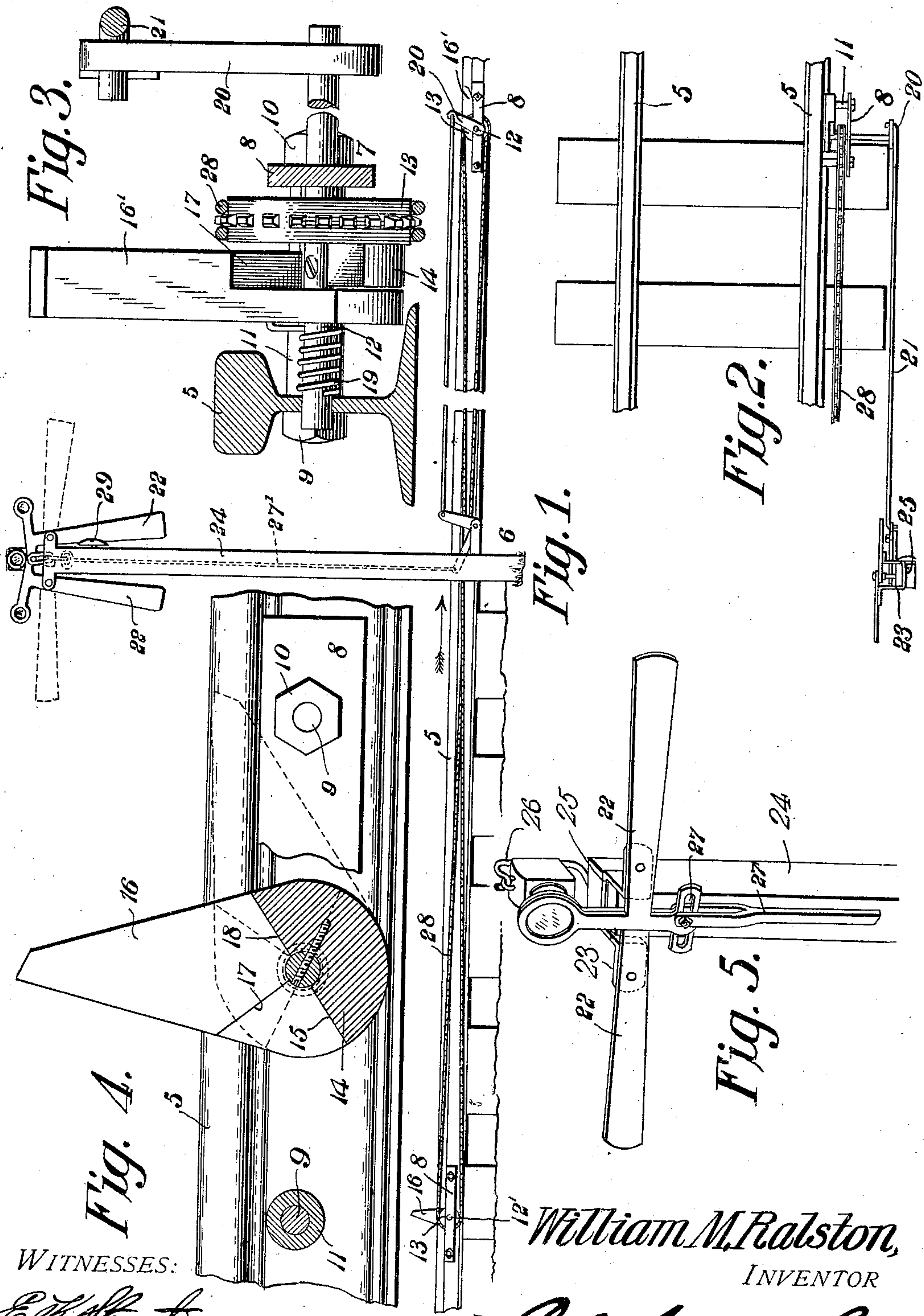


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PATENTED JAN. 8, 1907.

W. M. RALSTON.
RAILWAY SIGNAL.
APPLICATION FILED SEPT. 21, 1906.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM M. RALSTON, OF FOSTORIA, OHIO.

RAILWAY-SIGNAL.

No. 841,046.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed September 21, 1906. Serial No. 335,626.

To all whom it may concern:

Be it known that I, WILLIAM M. RALSTON, a citizen of the United States, residing at Fostoria, in the county of Seneca and State of Ohio, have invented a new and useful Railway-Signal, of which the following is a specification.

This invention relates to railway-signals, and has for its object to provide a comparatively simple and inexpensive device of this character particularly designed for use at street or road crossings for notifying pedestrians and other persons of the approach of a train.

A further object of the invention is to provide a plurality of spaced tappets pivotally mounted on the road-bed and actuated by the car-wheels or pilot for moving the semaphore-arm to operative and inoperative position.

A further object is to form the tappets in such a manner that when the train is traveling in one direction the tappets will be actuated to display a danger-signal at the semaphore-arm and when the train is traveling in the opposite direction—as, for instance, on a siding—to permit the tappets to be depressed without affecting the signal.

A still further object of the invention is to generally improve this class of devices so as to increase their utility, durability, and efficiency.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, and illustrated in the accompanying drawings, it being understood that various changes in form, proportions, and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings, forming a part of this invention, Figure 1 is a side elevation of a railway-signal constructed in accordance with my invention. Fig. 2 is a top plan view of a portion of the same. Fig. 3 is a transverse sectional view. Fig. 4 is an enlarged longitudinal sectional view taken through one of the supporting-brackets. Fig. 5 is a perspective view of the upper end of the semaphore.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved signal is principally designed for use at street or road crossings for

notifying pedestrians of the approach of a train and by way of illustration is shown in position on one side of a track 5 adjacent the crossing 6.

Extending laterally from one of the rails 5 are spaced supporting-brackets 7, each consisting of a horizontally-disposed bar 8, supported in spaced relation to the web of the adjacent rail by means of threaded bolts 9, which pierce the rails 5 and are provided with clamping-nuts 10, which bear against the bars 8, as shown.

Mounted for rotation on the bolts 9 are suitable sleeves or rollers 11, and journaled in the bars 8 and in the web of the adjacent rail 5 between said rollers are stub-shafts 12 and 12', to which are secured sprocket-wheels 13.

Secured to or formed integral with the sprocket-wheels 13 are segmental plates 14, the ends of which are inclined or beveled, as indicated at 15, and constitute stops for the tappets 16 and 16'. The tappets 16 are loosely mounted on the stub-shafts 12 and 12' are each provided with a tapered portion which normally extends above the tread-surface of the rail and in the path of movement of the train for the purpose hereinafter referred to. The lower or pivoted end of each tappet is cut away to form a pair of inclined shoulders 17 and 18, adapted to engage the inclined walls of the plate 14 for limiting the pivotal movement of said tappets, there being a coiled spring 19, one end of which is secured to the adjacent stub-shaft, while the opposite end thereof is secured to the inner face of the tappet for normally and yieldably holding the inclined face 18 of said tappet in engagement with the adjacent shoulder on the segmental plate 14.

The stub-shaft 12' is extended beyond the adjacent horizontal bar 8 and is provided with a crank-arm 20, to which is operatively connected a rod 21 for actuating the semaphore-arms 22. The semaphore-arms 22 are pivotally mounted on a bracket 23, secured to the free end of a post or standard 24, embedded or otherwise secured in the ground at a point adjacent the track 5. The central portion of the bracket 23 is offset, as indicated at 25, and seated in a slot in the upper end of the standard 24, there being a hook 26 secured to the free end of the standard for supporting a lantern or similar device, as shown. The inner or pivoted ends of the semaphore-arms are slotted, as indi-

cated at 27, for the reception of a pin carried by the bifurcated end of the rod 27', whereby when a downward pull is exerted on said rod the semaphore-arms will be moved to danger position, and when the rod is moved upwardly the arms will be moved to indicate a clear track ahead. The sprocket-wheels 13 are connected by a sprocket-chain 28, so that when one of the tappets is operated a corresponding movement will be imparted to the other.

The operation of the device is as follows: Should a train approach in the direction indicated by the arrow in Fig. 1 of the drawings, the car-wheels or pilot will engage the tappet 16 and rotate the sprocket-wheels; thus depressing the crank-arm 20 and moving the semaphore-arms to danger position. As the train passes the crossing the car-wheels will engage the tappet 16' and through the medium of the crank-arm elevate the rod 27', so as to move the signal to indicate a clear track. The tappets 16 and 16' are so positioned on the stub-shafts that when one of said tappets is in elevated position above the tread-surface of the adjacent rail the opposite tappet will be in depressed position, and vice-versa. When the train is traveling in the opposite direction—as, for instance, onto a siding—the car-wheels will engage the tappet 16, which latter being loosely mounted on the adjacent stub-shaft will rotate on said shaft until the shoulder 17 engages the adjacent inclined end of the plate 15 and in which position the tappet 16 will be depressed below the tread-surface of the adjacent rail. As soon as the pressure of the car-wheel is removed from the tappet 16 the action of the coiled spring 19 will automatically return the tappet to vertical or operative position above the tread-surface of the rail, thus permitting free movement of the tappet without affecting the signal. A suitable bell or other audible signal 29 is preferably mounted on the standard 24 for sounding an alarm when the semaphore-arms are moved to danger position.

From the foregoing description it is thought that the construction and operation of the device will be readily understood by those skilled in the art, and further description thereof is deemed unnecessary.

Having thus described the invention, what is claimed is—

1. In a railway-signal, the combination with a track, of a danger-signal, brackets extending laterally from the track and provided with stub-shafts one of which is extended laterally beyond the adjacent bracket and provided with a crank-arm, a rod extending between the crank-arm and the signal, and tappets mounted on the stub-shafts and actuated by the car-wheels for moving the signal to operative and inoperative position.

2. In a railway-signal, the combination with a track, of a danger-signal, brackets extending laterally from the track, stub-shafts journaled in the brackets, sprocket-wheels secured to the stub-shafts and connected by a sprocket-chain, tappets loosely mounted on the stub-shafts and free to move in one direction and locked from movement in the opposite direction, said tappets being actuated by the car-wheels for moving the signal to operative and inoperative position.

3. In a railway-signal, the combination with a track, of a danger-signal, brackets extending laterally from the track, stub-shafts journaled in the brackets, tappets mounted on the stub-shafts, springs connecting the stub-shafts and tappets, respectively, for yieldably supporting the tappets in operative position, and a connection between one of the stub-shafts and the signal for operating the latter.

4. In a railway-signal, the combination with a track, of a danger-signal, brackets extending laterally from the track, stub-shafts journaled in the brackets, sprocket-wheels secured to the stub-shafts and provided with segmental plates, tappets loosely mounted on the stub-shafts and provided with inclined shoulders adapted to engage the adjacent ends of the plates for limiting the movement of the tappets, springs forming a yieldable connection between the stub-shafts and the adjacent tappets, said tappets being actuated by the car-wheels for moving the signal to operative and inoperative position.

5. In a railway-signal, the combination with a track, of a danger-signal, brackets extending laterally from the track and provided with spaced rods having rollers journaled thereon, stub-shafts journaled in the brackets between the rollers, sprocket-wheels secured to the stub-shafts and connected by a sprocket-chain, a segmental plate secured to each sprocket-wheel, tappets loosely mounted on the stub-shafts and having oppositely-disposed inclined faces adapted to engage the adjacent ends of the plates for limiting the lateral movement of the tappets, and a connection between one of the stub-shafts and the danger-signal for moving the latter to operative and inoperative position.

6. In a railway-signal, the combination with a track, of a danger-signal, bars spaced laterally from one of the track-rails, rods piercing the adjacent track-rail and having their ends threaded and provided with clamping-nuts adapted to engage said bars, rollers mounted on the rods, stub-shafts journaled in the bars and adjacent web of the rail, respectively, sprocket-wheels secured to the stub-shafts and connected by a sprocket-chain, one of said stub-shafts being extended laterally and provided with a crank-arm, a rod connecting the crank-arm and danger-

signal, and tappets yieldably supported on the stub-shafts and actuated by the car-wheels for moving the danger-signal to operative and inoperative position.

5 7. In a railway-signal, the combination with a track, of a standard mounted adjacent the track, a bracket carried by the free end of the standard and having its intermediate portion offset and secured to said standard, a
10 pair of semaphore-arms pivotally mounted on the bracket and having their inner ends provided with elongated slots, brackets extending laterally from the track, stub-shafts journaled in the bracket, sprocket-wheels
15 secured to the stub-shafts and connected by a sprocket-chain, one of said stub-shafts be-

ing extended laterally and provided with a crank-arm, a rod having its lower end operatively connected with the crank-arm and its upper end engaging the slots in the inner
20 ends of the semaphore-arms, and tappets yieldably mounted for lateral movement on the stub-shafts and actuated by the car-wheels for moving the semaphore-arms to
25 operative and inoperative position.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM M. RALSTON.

Witnesses:

E. HUME TALBERT,
SAMUEL N. ACKER.