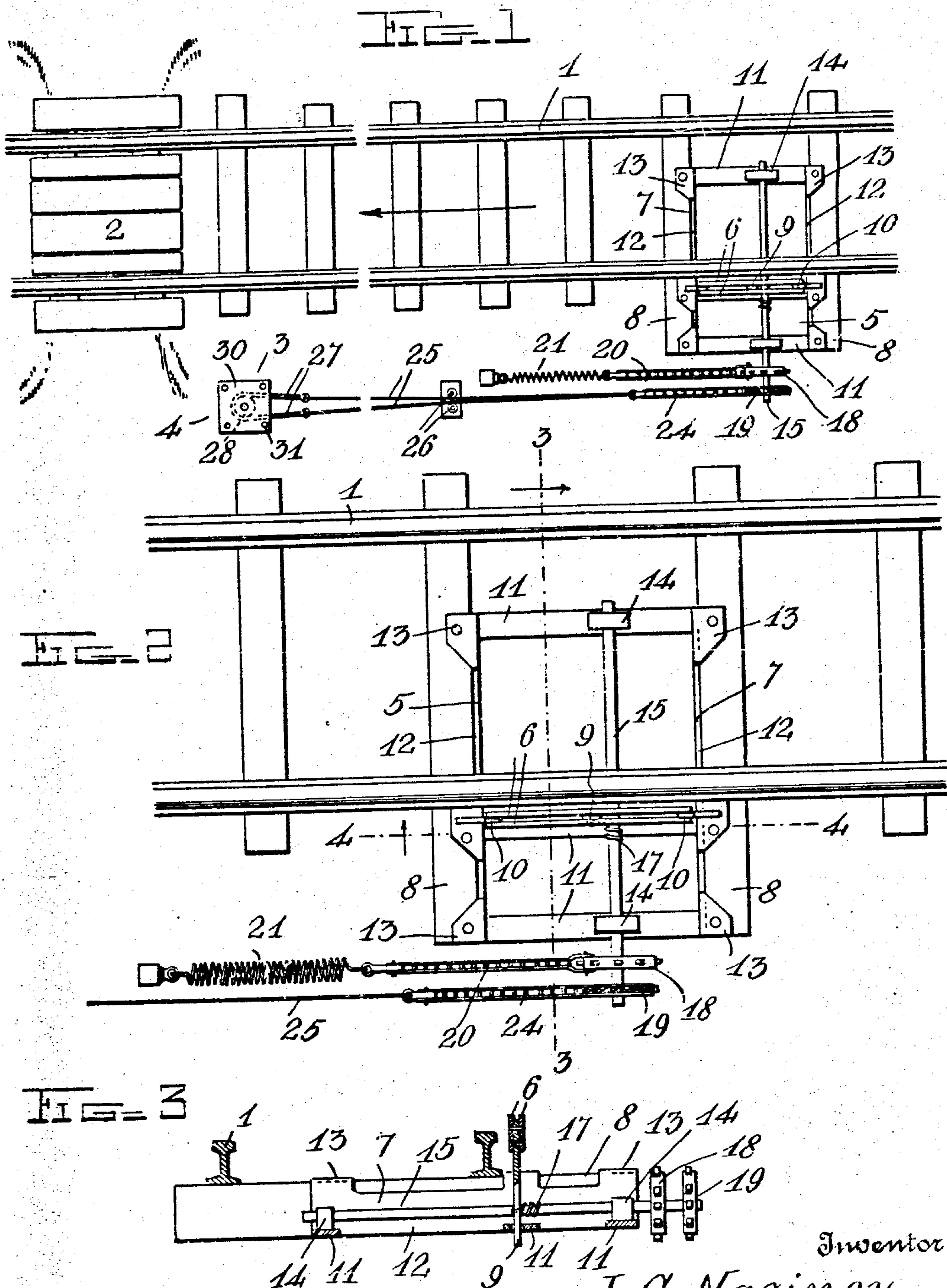


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J. C. NAGINEY.
RAILROAD SIGNAL.
APPLICATION FILED APR. 9, 1906.

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Witnesses

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RAILROAD-SIGNAL.

No. 837,244.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed April 9, 1906. Serial No. 310,821.

To all whom it may concern:

Be it known that I, JOHN C. NAGINEY, a citizen of the United States, residing at Bremen, in the county of Fairfield and State of Ohio, have invented certain new and useful Improvements in Railroad-Signals; and I do 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 signals for the crossings and other dangerous places along steam, electric, or other railways.

The object of the invention is to provide a simple and practical signal device of this character which may be installed at a comparatively small cost and which will be durable and efficient in operation.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of a portion of a railway-track and a street or crossing, showing my improved signaling device applied thereto. Fig. 2 is a plan view, on an enlarged scale, of a treadle or track device which is actuated by the wheels of passing cars or trains and which operates the signaling mechanism. Figs. 3 and 4 are detail vertical transverse and longitudinal sectional views taken, respectively, on the planes indicated by the lines 3 3 and 4 4 in Fig. 2. Fig. 5 is a side elevation of the signaling device. Fig. 6 is a vertical sectional view through the same. Fig. 7 is a horizontal sectional view, the plane of the section being indicated by the line 7 7 in Fig. 6, and Fig. 8 is a detail sectional view showing a weighted lever for holding the cam or treadle elevated or in its normal position.

Referring to the drawings by numerals, 1 denotes a portion of a railroad-track over which cars or trains move in the direction indicated by the arrow.

2 denotes a street, road, or other crossing, and 3 denotes my improved signaling apparatus, which comprises a signaling device or mechanism 4, mounted adjacent to the cross-

ing, and a treadle or trip device 5, mounted adjacent to the track at some distance from the crossing and adapted to be actuated by the wheels of the cars or trains passing over the track 1. This treadle or trip device 5 comprises a double cam 6, which is mounted to slide vertically in a guide-frame 7, secured to two of the cross-ties which have extended ends 8. This double cam may be mounted either upon the outer or the inner side of one of the track-rails, so that it will be actuated either by the peripheries or rims of the car-wheels or by the flanges thereof. As shown, it is mounted upon the outer side of the track-rail and has depending from its bottom a centrally-disposed vertical arm 9 and two outer or end arms 10. The latter project through and slide vertically in guide-openings in a cross-bar or portion 11 of the frame 7, which latter consists of a series of cross-bars 11, connecting longitudinal bars 12, which engage the inner faces of the two cross-ties and their extended ends and have right-angul- 65
ularly-bent attaching-flanges 13, which are nailed, bolted, or otherwise secured to the upper faces of said cross-ties, as clearly shown in Fig. 2 of the drawings.

Journaled in bearings 14 upon the cross-bars 11 is a transversely-extending shaft 15, which has connected to and wound upon it a chain or other flexible connection 17, which latter is also connected to the central arm 9, so that when the latter is moved downwardly by the depression of the cam or treadle 6 said shaft will be rotated, the unwinding of the chain or connection 17 causing its rotation. The outer end of the shaft 16 extends beyond the cross-ties and has secured upon it two sprocket-wheels 18 19. The wheel 18 has attached to and wound upon it one end of a chain 20, the other end of which is attached to one end of the coil-spring 21, which has its other end attached to the post or other support adjacent to the track. The purpose of this spring is to return the parts to their normal position after each operation by the elevation of the cam or treadle 6. Passing around the sprocket-wheel 19 is a short sprocket-chain 24, which has its ends connected by wires or the like 25, passed through suitable guides 26, and connected at their opposite 95
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ends to the ends of a similar sprocket-chain 27, passed around a sprocket-wheel 28 upon the signaling device or mechanism 4.

The signaling device or mechanism 4 comprises an upright frame or tower consisting of a base 29, a top 30, and inwardly and upwardly inclined connecting-rods 31. If desired, the base and top may be formed of cross metal bars which have their ends connected by the rods 31. Disposed centrally in the top and base is a vertical upright 32, which has mounted adjacent to its upper end a lamp or other illuminating device 33 surrounded by a rotary casing 34 upon a hollow sleeve or tube 35 which surrounds and rotates upon the upright 32. In one side of the lamp chamber or casing 34 is a suitable door, which has in it an opening closed by a colored glass, and similar openings in the other three sides of this casing are also covered by colored glasses. Two of the glasses are preferably red and the other two green or white, the glasses of the same color being opposite each other. Upon the sleeve or tube 35 beneath the lamp-casing are oppositely-projecting semaphore or signaling arms 36, which are preferably painted red and have suspended from their outer ends bells or other signaling devices 37. The sprocket-wheel 28 is secured upon the lower portion of the sleeve or tube 35. If desired, a second sprocket-wheel 38 may be provided upon said sleeve or tube to receive a connection which leads from a second trip device mounted adjacent to the track upon the opposite side of the crossing 2 or at any other point, so that the signaling mechanism may be actuated from one or more points simultaneously. It will be seen that when the sleeve 35 is rotated or oscillated the bells 37 will be sounded, the arms 36 waived or oscillated, and the colored lights changed to warn persons upon the street or road of the approach of a car or train on the track 1. It will be noted that each time the cam or treadle 6 is depressed by one of the car-wheels the signaling device will be rotated a quarter of a revolution in one direction and will then be immediately returned by the action of this spring 21.

Instead of employing the spring 21 to return the treadle or cam 6 to its elevated or normal position I may substitute a weighted lever 45, as shown in Fig. 8 of the drawings. This lever is carried by the shaft 16 and is adapted to strike against a post or upright 46, which causes it to rebound and assume its normal or lowered position after each operation, as will be readily understood upon reference to Fig. 8.

From the foregoing description, taken in connection with the accompanying drawings, the construction, operation, and advantages of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as defined by the appended claims.

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

1. The combination with a signaling device adjacent to the crossing of a railroad-track, of an actuating device therefor mounted adjacent to the track and comprising a guide-frame secured to the cross-ties, a cam slidable vertically in said guide-frame, a transverse shaft, a flexible connection wound upon said shaft and attached to said cam, and operative connections between said shaft and said signaling device.

2. The combination with a signaling device adjacent to the crossing of a railroad-track, of an actuating device therefor mounted adjacent to the track and comprising a guide-frame secured to the cross-ties, a cam slidable vertically in said guide-frame, an arm depending from said cam, a flexible connection attached to said arm and said shaft and wound upon the latter, to cause it to be actuated in one direction when said cam is depressed, means for actuating said shaft in the reverse direction, and an operative connection between said shaft and said signaling device.

3. The combination with a signaling device adjacent to the crossing of a railroad-track, of an actuating device therefor mounted adjacent to the track and comprising a guide-frame secured to the cross-ties, a cam slidable vertically in said guide-frame, an arm depending from said cam, a flexible connection attached to said arm and said shaft and wound upon the latter, to cause it to be actuated in one direction when said cam is depressed, means for actuating said shaft in the reverse direction, a spring having one end fixedly mounted and its other end attached to a flexible connection wound upon said shaft to rotate the latter in the reverse direction, and an operative connection between said shaft and said signaling device, substantially as described.

4. A track device of the character described comprising a guide-frame secured to the cross-ties, a cam mounted adjacent to the track-rail, vertical guides upon said cam slidable in said frame, an arm depending from said cam, a transversely-extending shaft mounted in bearings upon said frame, a flexible connection attached to said depending arm and to said shaft and wound upon the latter to actuate it in one direction, and means for actuating said shaft in the reverse direction.

5. A signaling mechanism comprising a frame, an upright mounted thereon and hav-

ing a lamp-holder, a rotary sleeve upon said upright having a lamp chamber or compartment surrounding said holder, colored plates closing the openings in the sides of said chamber or compartment, a signal-arm projecting from said sleeve, and a sounding device upon said arm.

6. A signaling mechanism comprising a frame, an upright mounted thereon and having a lamp-holder, a rotary sleeve upon said upright having a lamp chamber or compartment in its upper portion, colored plates clos-

ing the openings in the sides of said chamber or compartment, a signal-arm projecting from the upper portion of said sleeve, and 15 bells loosely suspended from said arm.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN C. NAGINEY.

Witnesses:

E. L. SAFFELL,
H. W. ENGLE.