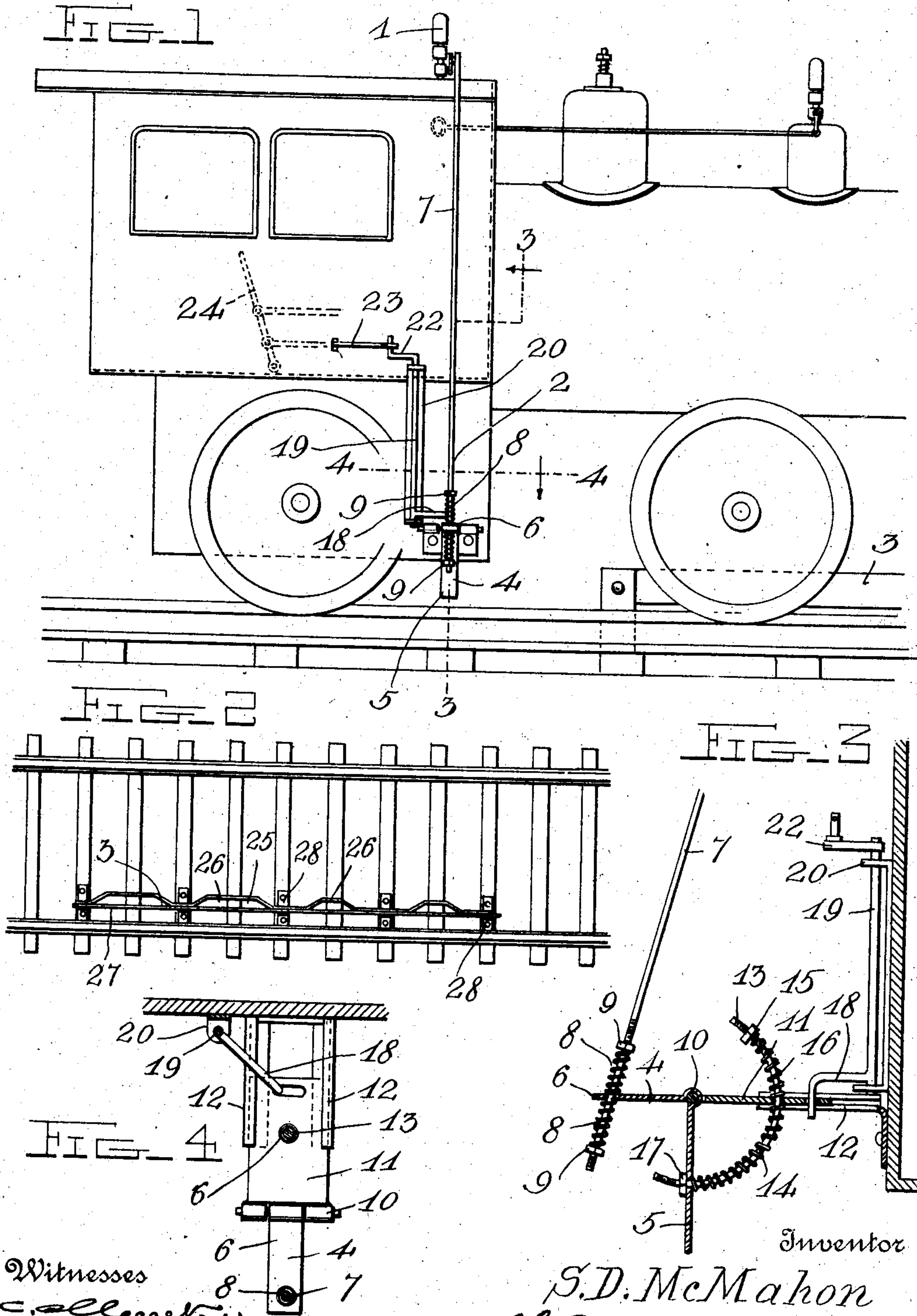


No. 835,032.

PATENTED NOV. 6, 1906.

S. D. McMAHON.  
RAILWAY SIGNAL.  
APPLICATION FILED MAY 14, 1906.



Witnesses  
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# UNITED STATES PATENT OFFICE.

STEPHEN D. McMAHON, OF GENOA TOWNSHIP, DELAWARE COUNTY, OHIO.

## RAILWAY-SIGNAL.

No. 835,032.

Specification of Letters Patent.

Patented Nov. 6, 1906.

Application filed May 14, 1906. Serial No. 316,842.

*To all whom it may concern:*

Be it known that I, STEPHEN D. McMAHON, a citizen of the United States, residing in Genoa township, in the county of Delaware and State of Ohio, have invented certain new and useful Improvements in Railway-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 automatic signals for railways; and it consists in the novel construction, combination, and arrangement of devices herein shown and described.

The object of the invention is to provide a simple and efficient means for automatically operating a signal-whistle upon a locomotive or the like as it approaches a crossing, station, or other point where it is desired to give a signal or warning.

The above and other objects, which will appear as the nature of my invention is better understood, are accomplished by means of the construction illustrated in the accompanying drawings, in which—

Figure 1 is a view of a portion of a locomotive, showing the application of my improvements thereto. Fig. 2 is a detail plan view of a portion of a railway-track, showing the arrangement of the trip for operating the whistle or signal upon the locomotive. Fig. 3 is a detail vertical sectional view taken on the plane indicated by the line 3 3 of Fig. 1, and Fig. 4 is a detail horizontal view taken on the plane indicated by the line 4 4 of Fig. 1.

Referring to the drawings by numeral, 1 denotes a whistle or other signal suitably mounted upon a locomotive or the like, and 2 denotes my improved mechanism for automatically operating the same. This mechanism is actuated by a suitable trip device 3, located along the track over which the locomotive or car passes, and it comprises a bell-crank 4, one arm 5 of which is disposed vertically to coact with the trip device 3 and the other arm 6 of which is disposed horizontally and is suitably connected to the operating-lever of the whistle 1. As shown, this connection consists of a rod 7, which has a cushioned connection with the arm 6 of the bell-crank. This connection preferably consists of passing one end of the rod 7 through an opening in the arm 6, placing a coil-spring 8 upon said rod above and below said arm, and

providing nuts 9 upon the screw-threaded portions of said rod, as clearly shown in Fig. 3. The bell-crank 4 is pivoted at its angle, as shown at 10, upon the outer end of a horizontally-slidable plate or element 11, which is mounted to slide in guides 12, secured upon one side of the fire-box of the locomotive or at any other suitable point upon the latter. These guides 12 are preferably in the form of angle-brackets which have their horizontal portions bent to form guide-grooves to receive the side edges of the plate 11, (shown in Figs. 3 and 4;) but they may be of any other suitable form and construction. The arm 5 of the bell-crank has a cushioned connection with its supporting plate or element 11, formed by providing a semicircular or arc-shaped rod 13, which passes through openings in the arm 5 and the plate 11 and has its curvature concentric with the pivot 10. Upon said rod between said arm and plate is a coil-spring 14, and upon said rod between the upper face of the plate 11 and an adjustable nut 15 upon the threaded upper end of said rod is a coil-spring 16. A second adjusting-nut 17 is provided upon the lower threaded end of said rod upon the outer face of the arm 5, as shown in Fig. 3, so that said springs 14 and 16 cushion the swinging movement of the bell-crank. The supporting plate or element 11 is slidably mounted to permit the device 2 to be swung inwardly and out of the path of the trip device 3 upon the track, so that the whistle will not be sounded when the locomotive is backed. The plate or element is shifted for this purpose by means of a crank-arm 18, provided upon the lower portion of a vertical shaft 19, mounted in suitable bearings in a bracket 20, secured upon the fire-box. This crank-arm 18 has its downwardly-bent end projecting through an opening or slot in the inner portion of the plate 11, as shown in Fig. 4. Upon the upper end of the shaft 19 is a crank 22, which is connected by a link or the like, 23, to the reversing-lever 24 of the locomotive or to any other suitable lever or operating device. It will be seen that when the lever 24 is shifted to reverse the engine or motive power of the locomotive the supporting-plate 11 will be moved inwardly to swing the arm 5 of the bell-crank out of the path of the trip device 3.

The trip device 3, which is adapted to be arranged adjacent to a crossing, station, or other point at which it is desired to sound an



alarm or signal, is preferably in the form of a bar 25, bent to form one or more laterally-projecting cams 26 and secured to a second straight longitudinally-extending bar 27.

5 These bars are supported upon brackets 28, secured upon the cross-ties, either upon the inner or outer side of one of the track-rails. It will be understood that the cams 26 may be of any size and shape, and any number of  
10 them may be provided, so as to vary the length and character of the signal to be sounded. It will be understood that this signal device may be employed upon sub-urban and interurban or street cars propelled  
15 by electricity, steam, or any other power. If desired, an oiler may be provided upon the trip-lever to reduce friction.

The construction, operation, and advantages of the device will be readily understood  
20 from the foregoing description, taken in connection with the accompanying drawings. It will be seen that the device may be used upon any kind of railway-lines, and that the signal usually sounded by the engineer as he  
25 approaches a station or crossing will be automatically given. The whistle or signal 1 is preferably an auxiliary one, so that the engineer may give other signals in the usual manner with the ordinary whistle.

30 While I have shown and described the preferred embodiment of my invention, it will be understood that I do not limit myself to the precise construction herein set forth, since various changes in the form, proportion, and  
35 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.

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

1. A locomotive or the like having a laterally-extending supporting-guide, a laterally-  
45 extending slide movable in and supported by said guide, means to move the slide in either direction in said guide, a bell-crank tappet device pivotally mounted in the slide and having a vertical arm and a horizontal arm, a  
50 cushioning connection between the said tappet device and the slide, a signaling device, and an operating-rod connecting the same and the horizontal arm of the tappet device, substantially as described.

2. The combination with a trip device 55 mounted adjacent to a track, of a locomotive or the like having a reversing element, a signal carried by said locomotive, an operating device for said signal carried by said locomotive and adapted to be actuated by said trip 60 device, and means actuated by said reversing element of the locomotive for moving said operating device to an inoperative position.

3. In combination with a trip device adjacent to a railway-track and having laterally- 65 projecting cams, a locomotive or the like having a signaling device, a laterally-shiftable tappet device for operation by said cams, means to so shift such tappet device, and a connection between the tappet device and the 70 signaling device, to operate the latter.

4. The combination with a signaling device of a locomotive or the like, of a support, a lever pivotally mounted upon the latter and having one of its ends disposed in the path of 75 a trip arranged along a track, a segmental guide engaged with said lever and said bracket, springs upon said guide on each side of said bracket, to cushion said lever, a whistle-operating rod having one of its ends 80 projecting through an opening in the opposite end of said lever, and springs upon said operating-rod, on each side of said end of the lever, to yieldably connect said rod to the latter, substantially as described. 85

5. The combination with a trip arranged along a track and formed with a cam portion, of a support secured upon a locomotive or the like, a bell-crank lever pivoted upon said bracket and having one arm projecting into 90 the path of said trip, a segmental guide disposed concentrically with the pivot of said lever and slidable in openings in said arm of the lever and in said support, coil-springs upon said guide, on opposite sides of said support, adjusting-nuts upon the ends of said 95 guide, and a whistle-operating rod having one of its ends yieldably connected with the opposite end or arm of said bell-crank lever, substantially as described. 100

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

STEPHEN D. McMAHON.

Witnesses:

H. L. MORRISON,  
GEO. WHISNER.