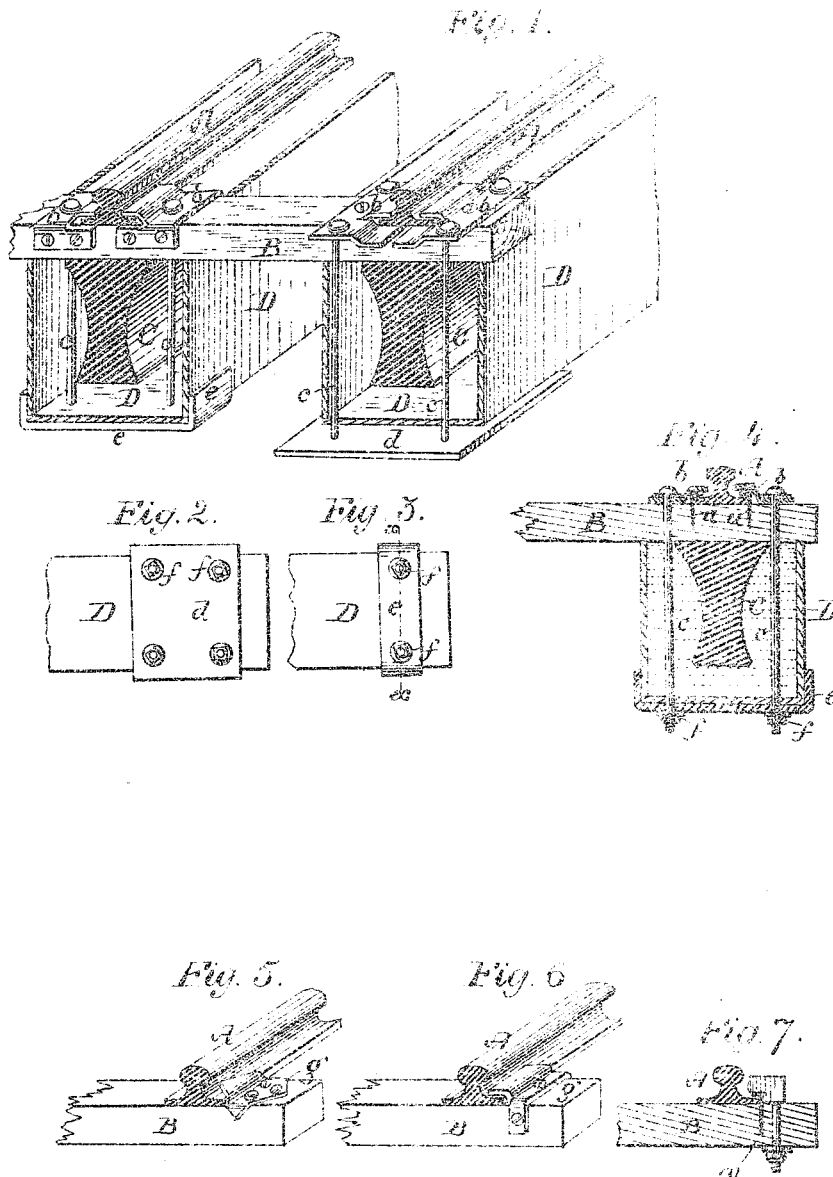


G. P. OSBORNE.  
Safety-Plate for Securing Rail-Spike.

No. 214,182.

Patented April 8, 1879.



Witnesses.  
George P. Osborne

George P. Osborne  
Inventor,  
by M. Bailey  
His Attorney

# UNITED STATES PATENT OFFICE.

GEORGE P. OSBORNE, OF NEW YORK, N. Y.

## IMPROVEMENT IN SAFETY-PLATES FOR SECURING RAIL-SPIKES.

Specification forming part of Letters Patent No. 211,182, dated April 8, 1879; application filed February 25, 1879

*To all whom it may concern:*

Be it known that I, GEORGE P. OSBORNE, of the city, county, and State of New York, have invented certain new and useful improvements in Safety-Plates for use in connection with the holding or fastening spikes of railroad-rails, of which the following is a specification.

My present invention is directed primarily to meeting requirements which arise in the use of sound-deadening appliances in elevated railways, having reference to that means of deadening sound which contemplates embedding or boxing the rail in sound-deadening material.

In another application for Letters Patent, now pending in the United States Patent Office, I have described and claimed such a means of deadening sound.

In all railways, whether elevated or surface roads, the rails are usually held to the sleepers by spikes. Where the spikes are embedded in and covered by sound-deadening material, such as asphalt and the like, as they are when sound-deadening appliances are employed as above suggested, it becomes important and necessary to provide means by which they shall be held more securely in place, and also by which it may be ascertained readily whether the spikes, although concealed from view, are tight and in their proper place, thus not only serving to keep the track in better condition, but also to indicate just where repairs are needed and the exact point where the sound-deadening box shall be opened for the purpose of tightening the spike or spikes that may be loose. To this end I make use of a plate which covers the head of the spike, and is made fast to the sleeper or tie by one or more screws or bolts. In the case of an elevated road on which the sound-deadening arrangement above referred to is used, I use in connection with the safety-plate one or more bolts, which pass through the plate, and, extending downwardly, serve to uphold the box or trough that contains the sound-deadening material.

Under this arrangement the track can be inspected, and its condition be readily ascertained from below. Any displacement of the rail or raising up of the spike will act to draw

up the nut and washer on the lower end of the bolt, so as to indent the bottom of the box, thus indicating that the track at that point is out of order.

My invention, however, can best be explained and understood by reference to the accompanying drawings, in which—

Figure 1 is a sectional perspective view of a part of an elevated railway track with my improvement applied. Figs. 2 and 3 are under-side views of different means for upholding the sound-deadening box or trough. Fig. 4 is a transverse section of the arrangement shown in connection with the left-hand rail in Fig. 1.

I have shown only so much of the track as needed to illustrate my invention.

A are the rails of an ordinary elevated railway. B is one of the ties. C are the longitudinal girders or beams on which the ties rest. D are troughs adapted to contain sound-deadening material. These troughs in practice are continued upward around the rail by the wooden stringers or guard-rails, one on each side of each rail A, which form, in effect, a continuation of the sides of the boxes, and each rail is embedded in sound-deadening material contained in the box, leaving only the tread of the rail exposed. This arrangement, which is made the subject of a separate application for Letters Patent, is omitted in the drawings in order to exhibit more clearly my present improvement.

The rails are held to the ties by spikes *a* in the usual way. In connection with each spike, or with as many of the spikes of each rail as may be found necessary or desirable, I employ a safety-plate, *b*, of wrought-iron or other suitable metal, which overlaps or covers the head of the spike to which it is applied, and is secured in place by suitable means. It may be made of varying form, as shown in the two examples in Fig. 1, and is preferably attached to the tie by screws or bolts. To the safety-plate I connect one or more bolts, *c*, which extend down from the plates and serve to uphold the troughs or boxes D. The troughs or boxes may be upheld by other means in addition to the bolts. The latter, however, pass through plates *d* or straps *e* on the under side of the boxes, and are secured in place by

nuts and washers *f*, which screw on the bolts against the under side of the plates or straps, or against the under side of the boxes in case the intermediate straps or plates are dispensed with. It will be seen that under this arrangement the spikes are held very securely in place. At the same time, in case a spike from the spreading of the rail or other cause should become loose, thus permitting the rail to rise, the bolts *e* would thereby be drawn upward. Their movement would have the effect of drawing up the nuts and washers into the box or the box-supporting plate or strap, thus giving notice to the track inspector that the track at this point is out of order and requires repair. In this way the exact situation of the defect can be ascertained without disturbing the bed which surrounds the rails and covers the spikes.

My invention may be applied with advantage to a road which does not employ a sound-deadening box or trough. In such a case the form of plate shown in perspective, Figs. 5 and 6, can be employed, the plate *g* that covers the spike being held to the tie by screws or

bolts; or a single bolt with a large head serving as a safety-plate may be employed, as indicated in section in Fig. 7, the bolt passing through the tie, and being secured on the under side by a nut and washer screwing on its projecting end, as indicated.

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

In combination with the track and sound-deadening troughs or boxes of an elevated railway, safety plates overlapping or covering the heads of the rail-retaining spikes, and bolts which are connected to and extend from said plates, and are provided with nuts and washers, or their equivalents, which rest against the under side of said troughs or the plates or straps that uphold the same, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand this 24th day of February, 1879.

GEORGE P. OSBORNE.

In presence of—

JOHN H. BRADY,

JOHN W. MARSHALL.