(No Model.)

G. F. STARKWEATHER.

GUARD RAIL FOR STREET RAILWAYS.

No. 523,182. Patented July 17, 1894.

Fig. 1.

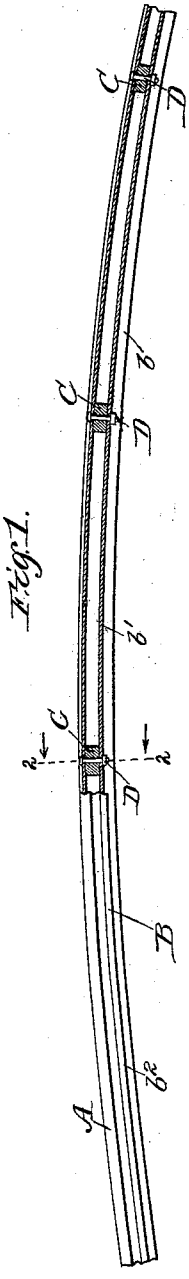
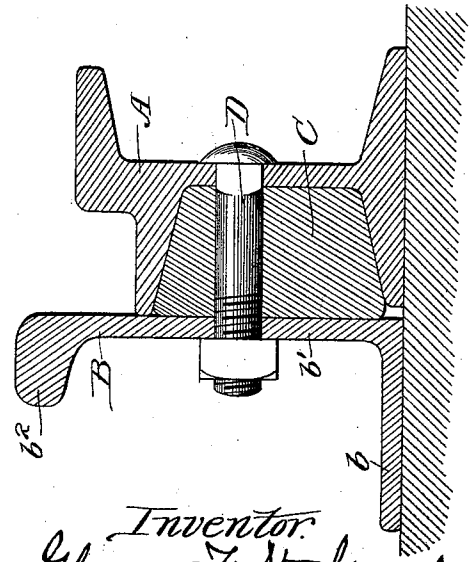


Fig. 2.



Witnesses.
W. M. Rheem.
Wm. F. Emmons.

Inventor.
Gleason F. Starkweather
By Raymond & Veeder Atty's.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GLEASON F. STARKWEATHER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE PAIGE IRON WORKS, OF SAME PLACE.

GUARD-RAIL FOR STREET-RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 523,182, dated July 17, 1894.

Application filed July 21, 1892. Serial No. 440,738. (No model.)

To all whom it may concern:

Be it known that I, GLEASON F. STARKWEATHER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Guard-Rails for Railways, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to guard-rails for railways generally, and it is more particularly designed for use in street railways and furthermore at curved portions of such railways; it being understood that certain features of the invention are applicable to other than street-railways, and also that certain features of the invention are also applicable to other situations than curves.

A primary object of my invention is to produce a guard-rail which shall be of integral form, so as to possess the maximum of strength and simplicity of construction, and which shall, furthermore, not only afford an effective bearing for the wheels of railway vehicles, but also an effective guard and brace for the track-rails, and which shall protect the rails against misplacement by the wheels of road-vehicles passing over the track and guard rails.

A further primary object of my invention is to produce a guard-rail structure which, as a whole and when in operative connection with a track-rail, shall involve the use of but few parts and possess the utmost degree of strength and durability combined with cheapness of construction.

To the above purposes my invention consists in certain peculiar and novel features of construction and arrangement, as hereinafter described and claimed.

The more precise nature of my invention will be better understood when described with reference to the accompanying drawings, in which—

Figure 1 is plan view, partly in horizontal section, of a portion of a railway curve having applied thereto a guard-rail embodying my invention. Fig. 2 is an enlarged transverse section of the same, taken on the line 2—2 of Fig. 1; the direction of view being that indicated by the arrows adjacent to the section-line.

In the said drawings, A designates the track-rail, and B a guard-rail embodying my invention. The track-rail A may be either of the precise form and type shown or of any other preferred form, and while it is desirably a curved rail, suitable for application to a curved section of track, it may be a straight rail. This track-rail is shown as composed of a central web and a base having two flanges protruding at opposite sides of the web, and also as having its head protruding at one side of the web while a flange protrudes from the opposite side of the upper part of the web, a slight distance below the level of the head; this being a desirable form of rail for street-car service, and all of the parts thereof being integral with the web.

The guard-rail B consists of a central vertical portion or web b' having an integral horizontal foot or base b protruding outwardly from one side of its lower part, and having a head or enlargement b^2, integral with the upper part of the web b' and protruding outward therefrom in the same direction as the foot or base b.

The guard-rail B is placed against either the inner or outer side of the track-rail A (according as circumstances may demand) and the plain side of the web b' is placed in contact with the outer edge of the flange which is near the upper part of the track-rail web; the height of the guard-rail being such that its head b^2 shall rise considerably above the level of the track-rail head. Filling blocks or strips C, preferably of wood, but in any event wholly separate from both the track-rail and guard-rail, are interposed between the webs of said rails, and bolts D are passed transversely through the webs of both rails and also similarly through the filling blocks or strips C, so as to securely connect all of said parts together.

From the above description it is clearly obvious that the guard-rail is capable of being readily secured in position and removed when desired, and that at the same time it is very strongly held in position, and is capable of application to a great variety of rails and in

a great variety of situations. Owing to the integral character of the parts of the guard-rail, its horizontal base affords a very effective resisting support against the lateral stresses produced by the railway-vehicle wheels, particularly in rounding curves, and also against the lateral stresses produced by the wheels of ordinary road-vehicles in turning off from the track-rails at curves, after having run upon the tracks as such vehicles frequently do for smoothness of travel. In both instances the filling pieces or strips are effectively shielded from dislocation or injury, and a very simple, strong, inexpensive, and durable structure is afforded.

It is to be observed that the guard-rail extends continuously throughout the entire length of that portion of the track which it is designed to protect, the guard-rail being of course in one or more lengths according to its extent, but that no severance of any part of the track-rail is required, nor any alteration in the form or usual arrangement of such track-rail.

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

1. A guard-rail for railways, consisting of an integral piece vertical on one side from top to bottom, a foot or base protruding horizontally outward from the other side of the web, and a head or enlargement also extending outward from the web at the upper part of the same and substantially parallel with the said foot or base, substantially as set forth.

2. The combination with a track-rail, of a guard-rail placed at one side of said track-rail and comprising an integral piece vertical on one side from top to bottom, a foot or base extending horizontally outward from the other side of the web, and a head or enlargement also extending outward from the web at the upper part of the same and substantially parallel with the said foot or base, a separate block for entirely filling the space between the track and guard-rail, and retaining bolts extending transversely through the guard-rail, track-rail and filling block, substantially as set forth.

GLEASON F. STARKWEATHER.

Witnesses:
FRANK M. STAPLES,
WM. WATSON, Jr.