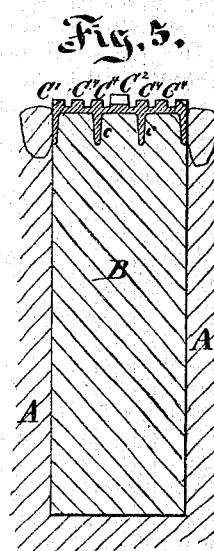
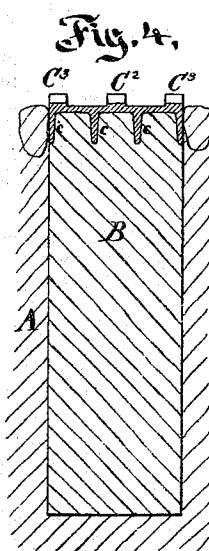
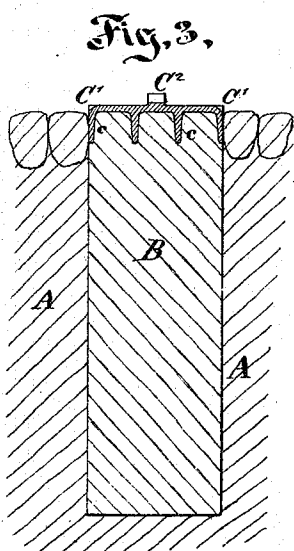
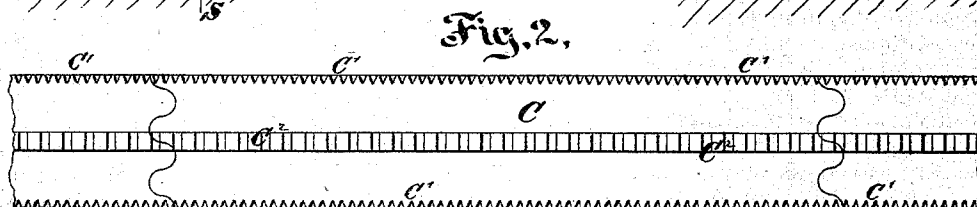
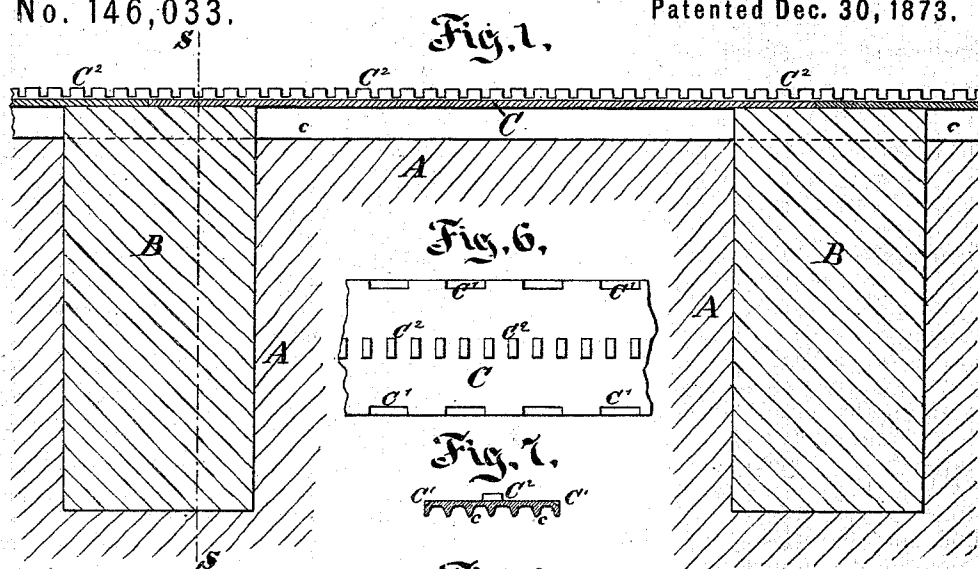


S. D. TILLMAN.
Plates for Tramways.

No. 146,033.

Patented Dec. 30, 1873.



Witnesses,
A. Koermann
Geo. L. Ewin

Inventor,
S. D. Tillman
 by his atty
J. D. Stetson

UNITED STATES PATENT OFFICE.

SAMUEL D. TILLMAN, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN PLATES FOR TRAMWAYS.

Specification forming part of Letters Patent No. **146,033**, dated December 30, 1873; application filed August 4, 1873.

To all whom it may concern:

Be it known that I, SAMUEL D. TILLMAN, of Jersey City, in the State of New Jersey, have invented certain new and useful Improvements in Tramways, adapted especially for use in connection with street-pavements; and I do hereby declare that the following is a full and exact description thereof.

My invention relates to a way for the ordinary vehicles used in cities and large towns, of metal, preferably rolled, and consists in a wide wrought-metal plate, of any required width, length, or thickness, these being graduated according to the strain or loads which are likely to pass over them, the nature of the ground and velocities of the travel, and the convenience of manufacture and laying. These plates I propose to make, in general, thinner than is common for such kind of work, and to add strength to them by providing two or more deep webs on their under side, running longitudinally therewith. The ends of these plates are waved, as shown in Fig. 2, so as to avoid a straight joint, or the joints may be made by means of small rectangular projections and recesses alternating on each rail. The edges of the plates are notched, so as to facilitate the mounting of the wheel upon the plate when it approaches at an acute angle. The upper surface of these plates may be corrugated longitudinally, or provided with longitudinal ridges, as shown in the drawings, for the purpose of guiding the wheels; and these raised portions, or ridges, may be notched or indented, so as to afford a foothold for the horses. When my plates are made by rolling, the plate, webs, ridges, and indentations will be accomplished at the same time. The highly-heated plate will be passed through suitable ridged and notched rolls, thus accomplishing this object. The webs on the under side of the plate add great strength to the plate, support the center as well as the sides, furnish a uniform bearing strength along the whole surface, and are relied on as the distinctive and novel feature of this invention.

Figure 1 is a longitudinal section. Fig. 2 is a plan view. Fig. 3 is a transverse section on the line *s s*, Fig. 1. Fig. 4 is a cross-section. Fig. 5 is a cross-section. Fig. 6 is a plan view. Fig. 7 is a cross-section, showing the iron part alone.

A is the earth, which may be previously

prepared, if desired, with broken stones, or other material not liable to be affected by moisture and frost. B B are blockings or piles, so shaped at the top as to receive the webs of the plate, hereafter described, and afford a proper and sufficient support for the tramway. C is the plate, preferably formed by rolling, of wrought-iron, provided on its under side with two or more longitudinal webs, *c c*. The edges of the plate C are notched or indented, as shown by C¹, Figs. 2 and 6, to facilitate the mounting of the wheel. The upper surface of plate C may be provided with ridges C² C³, or corrugated, as preferred. These ridges or corrugations may be notched or indented at so little distances apart that the smallest wheel will not sink therein, the object being to lighten the rail and afford foothold for the horses. The blockings B may be placed at any desired distance apart, or in absolute contact. The plate C may be of any desired width. I prefer, however, that it should be about one foot wide, more or less. This will allow a difference of nearly two feet in the width or range of the vehicles passing over them, which will be ample for all ordinary cases.

These plates may be made in segments of a circle when the track is to be curved, and in such cases the ridges or corrugations running longitudinally on the upper side of the plate are of great importance in guiding the wheel along such curvature.

A patent covering this invention was granted to me in England, dated August 25, 1870, numbered 2,340.

I do not claim any arrangement for strengthening a rail by means of side flanges, nor do I claim a rail for street-cars or vehicles of any sort with flanged wheels; but—

What I do claim, and desire to secure by Letters Patent of the United States, is—

The wide plate C for tramways, provided with a series of webs, *c*, running longitudinally underneath, and arranged, as specified, relatively to the plate and each other, so that a uniform bearing-strength will be obtained.

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

SAMUEL D. TILLMAN.

Witnesses:

THOMAS D. STETSON,
C. C. LIVINGS.