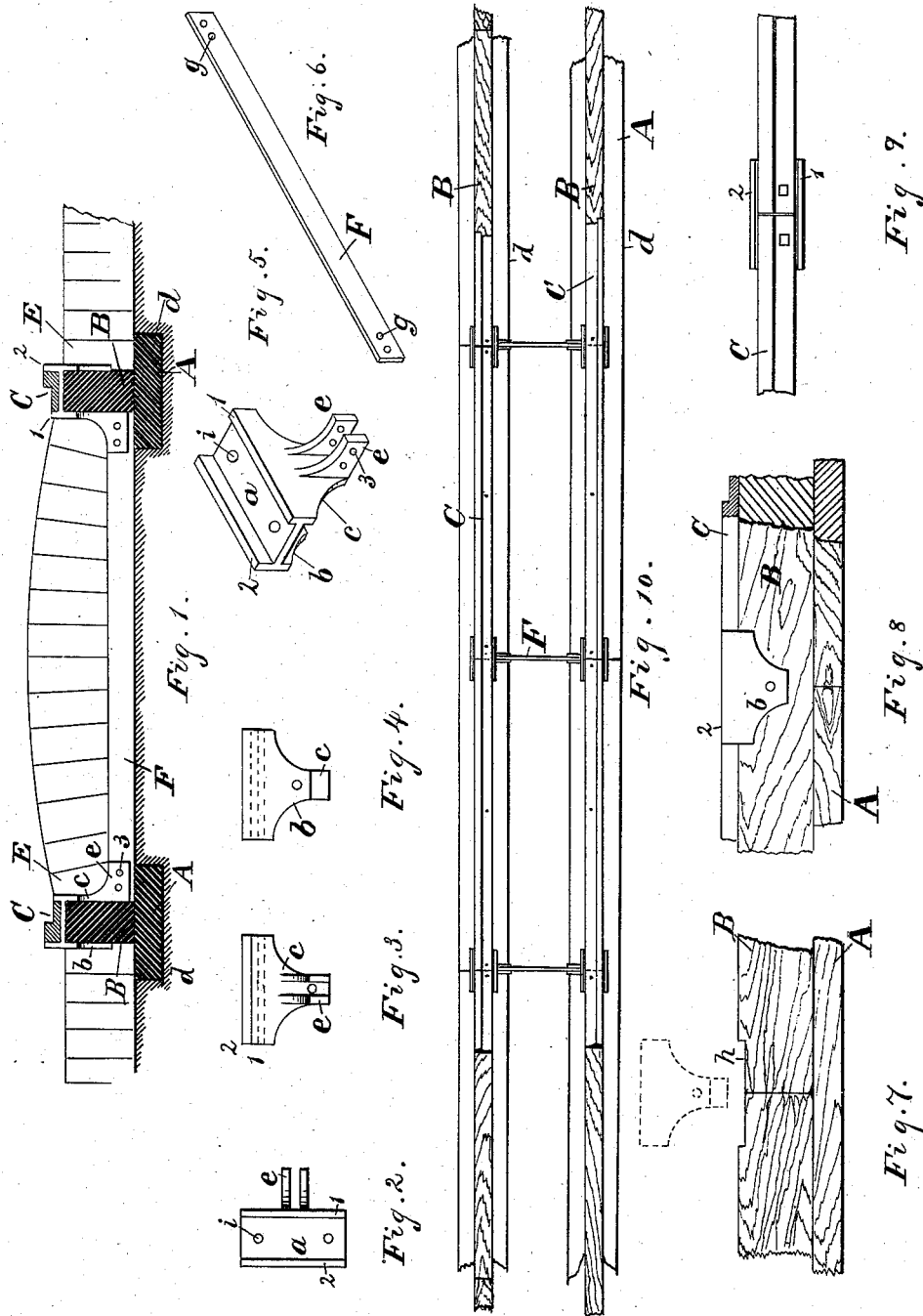


(No Model.)

T. P. S. LEONARD.
STREET RAILROAD TRACK.

No. 261,737.

Patented July 25, 1882.



Witnesses:
W. L. Langley.
A. C. Eader

Inventor:
Thos. P. S. Leonard
By his Atty
Chas. B. Mann

UNITED STATES PATENT OFFICE

THOMAS P. S. LEONARD, OF HIGHLANDTOWN, BALTIMORE COUNTY, MD.

STREET-RAILROAD TRACK.

SPECIFICATION forming part of Letters Patent No. 261,737, dated July 25, 1882.

Application filed February 10, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMAS P. S. LEONARD, a citizen of the United States, residing at Highlandtown, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Street-Railroad Tracks, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improvement in railroad-track for street-cars. The construction will first be described, and the invention then designated in the claim.

In the drawings hereto annexed, Figure 1 is a cross-section of the track and road-bed. Fig. 2 is a top view of the combined rail-chair and stringer-grasp. Fig. 3 is a view of that side of the same which comes on the inner side of the rail. Fig. 4 is a view of that side of the same which comes on the outer side of the rail. Fig. 5 is a perspective view of the rail-chair and stringer-grasp. Fig. 6 is a view of the cross-tie bar. Fig. 7 is a side view of the stringer and foundation-sill. Fig. 8 is an outer side view of the foundation-sill, stringer, and track-rail complete. Fig. 9 is a top view of the track-rail as seen on the street-surface. Fig. 10 is a top view, smaller scale, of a complete track.

The letter A designates the foundation-sill, which in practice consists of a wood plank twelve to fourteen inches broad, about two and a half inches thick, and, say, twenty-two and a half or thirty feet long. This length is to suit an iron rail of the usual thirty feet length.

B designates wood stringer, the cross-section dimensions of which may be five by eight inches. These stringers are placed with the narrow side upon the sill, as shown in Fig. 1, and should be arranged so that their ends will break joint with the ends of the sill-timbers, as shown in Figs. 7 and 8.

The iron track-rail C has the same breadth as the narrow side of the stringer upon which it lies. This arrangement of foundation-sill and stringer, where they are embedded below the street-surface, furnishes a stable and solid bed, not only for the track-rail, but for the stones of the road-bed on each side of the track-rail, which, ordinarily, is the place where

the road gives way first, as may be seen by the ruts adjoining the rail in any street where there is a track. The bed or foundation for the stones on each side of the track-rail consists of the side projecting parts, *d*, of the sills. The stones *E* of the street which adjoin the track-rail rest directly upon these, and therefore cannot sink and form ruts.

In connection with a tie to bind the two parallel track-rails I employ a metal casting adapted to grasp and firmly hold the wood stringer, and also to serve as a chair for the iron rail to set on, and adapted to firmly hold the rail and prevent it from side movement in either direction. This combined chair and grasp consists of a plate, *a*, to rest upon the wood stringer and to serve as a seat for the track-rail. One edge of this plate has an upturned flange, 1, of height equal to the thickness of the inner or thin edge of the rail. The opposite edge has a flange, 2, of about double the height or equal to the thickness of the outer or thick edge of the rail. The rail sets between these two upturned flanges, and is thereby prevented from side movement. From one edge of the lower side of the plate *a* is a downward flange, *b*, which rests against the outer side of the wood stringer, and from the other edge is another flange, *c*, of somewhat greater length, to bear against the inner side of the stringer. Thus, it will be seen, the plate *a*, with flanges *b* *c*, sets astride of the wood stringer, and by fitting it closely may be said to grasp it. Two ears, *e*, project from and at a right angle to the side of the flange *c*. These ears each have one or more holes, 3, for the passage of a bolt, by which the cross-tie bar is secured.

The cross-tie bar F consists of a flat bar, in practice about three-eighths of an inch thick by about three inches in breadth. All these bars are cut to the requisite length, which insures that the two parallel tracks shall be placed apart a uniform distance, thereby securing an accurate "gage." The ends of the cross-tie bar have one or more holes, *g*, and the end enters between the two ears *e* of the combined chair and grasp, and are made fast thereto by a bolt passed through the holes 3 and *g*. The top of the wood stringers have notches *h* cut therein to receive the plate *a* of the com-

bined chair and grasp. By this arrangement the top surface of the wood stringer, each side of the notch, and the top surface of the metal plate *a* are flush, and thereby afford a uniform and continuous surface, on which the iron track-rail may rest. The top surface of the plate *a* has two holes, *i*, through which spikes are driven to fasten it to the stringer; or the spikes may be driven through both the iron rail and plate *a* into the stringer.

A hole may be made through the lower part of the flange *c*, through which a cross-tie rod may be passed. When two opposite castings are thus connected the rod would secure the two parallel tracks from spreading, same as the bar shown in Fig. 6.

As already mentioned, the foundation-sill and stringers should have their ends placed to break joint, and the ends of these timbers in one track should be so disposed with respect to the ends of those in the other track that the ends of one kind of timber in one track shall never come opposite the ends of the same kind of timber in the other track; and so, also, the iron rails should be laid, the ends on one track always coming opposite the center of the rail on the other track.

My plan of track also contemplates that the abutting ends of two adjoining rails shall always rest upon the metal chair, the upward projecting flanges of which, by preventing side movement, will protect the corners of the rails from such wear as they are usually exposed to. The iron cross-tie bars *F* are placed fifteen feet apart, and, being placed with their thin edge upward, they are adapted to fit between the paving-stones (the Belgian blocks, for instance) of the street. The combined chair and grasp may be used with the ordinary wood cross-tie by shaping the ear which projects at a right

angle from the side of the flange *c* so as to adapt it to be spiked fast to the top of a cross-tie.

My track requires less digging up of the street to lay it, and consequently can be laid with less expense. Again, the material costs less than ordinary tracks, and the expense of repair and maintenance is much less. It is very strong and durable. By reason of the broad foundation-sills the track itself cannot settle, neither can the stones of the street-bed which adjoin the track-rail on each side settle into ruts.

I am aware of printed descriptions of car-tracks wherein it is proposed to lay the track-rail on a stringer which rests upon a foundation-sill whose edges project on each side of the stringer, and that one of said descriptions, in which no cross-tie was contemplated, proposed to rest the paving-stones of the street upon the side-projecting edges of the sill.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

In a street-car track, the combination of a track-rail, a stringer on which the rail lies, a casting combining in one piece a chair for the rail and a grasp for the stringer, and having two ears, *e*, projecting at right angles from one side, a thin, flat cross-tie bar placed with its thin edge upward and its end entered between the two ears, and a bolt passed through the ears and the end of the cross-tie bar, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

THOS. P. S. LEONARD.

Witnesses:

CHAS. B. MANN,
JNO. T. MADDOX.