

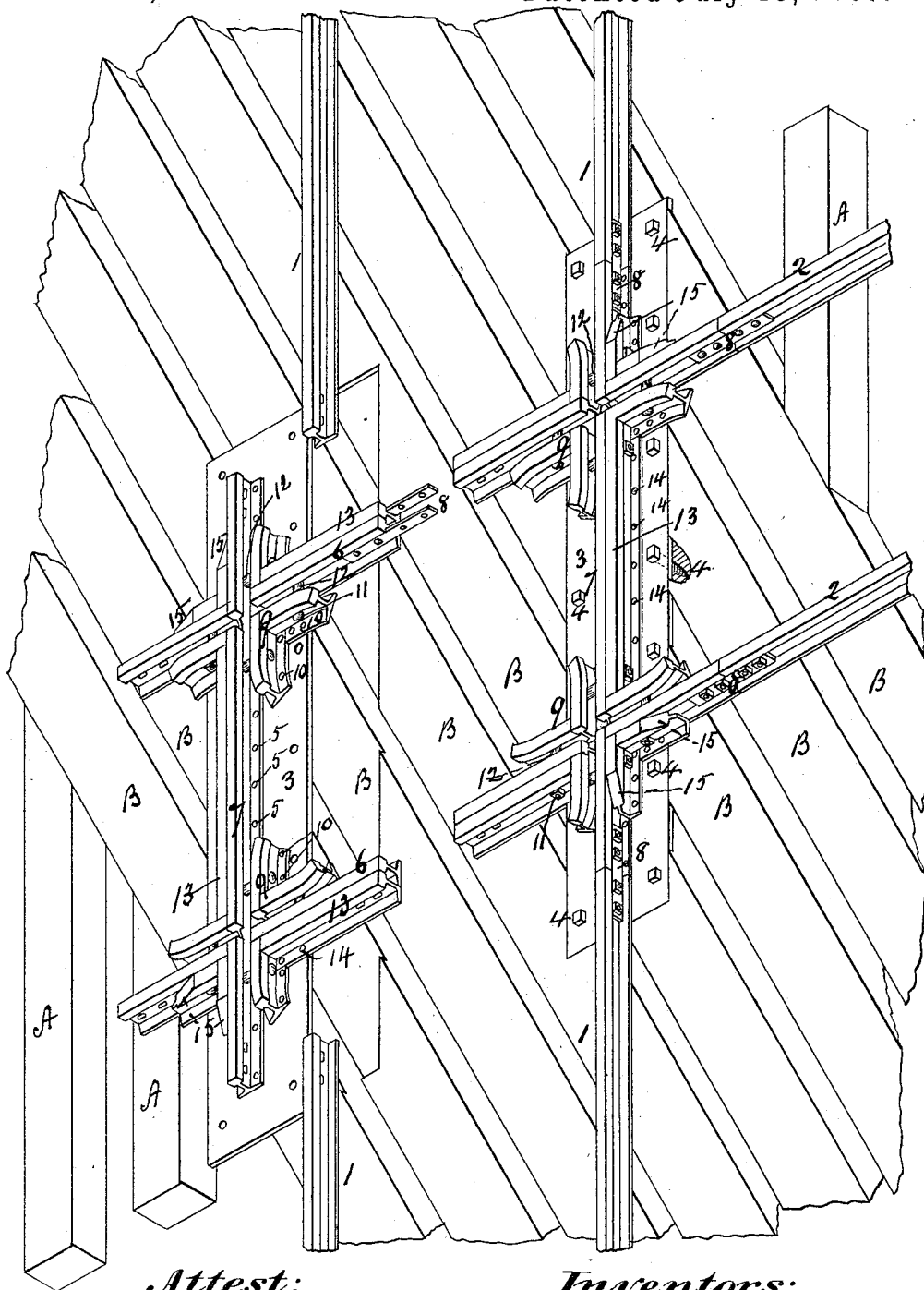
(No Model.)

D. L. BURNETT & L. DE LISLE.

RAILWAY CROSSING.

No. 366,922.

Patented July 19, 1887.



Attest:

Mortimer F. Taylor
M. Fortin

Inventors:

Dan L. Burnett
Leon De Lisle

UNITED STATES PATENT OFFICE.

DANIEL L. BURNETT AND LEON DE LISLE, OF FLORISANT, MISSOURI.

RAILWAY-CROSSING.

SPECIFICATION forming part of Letters Patent No. 366,922, dated July 19, 1887.

Application filed April 29, 1887. Serial No. 236,587. (No model.)

To all whom it may concern:

Be it known that we, DANIEL L. BURNETT and LEON DE LISLE, citizens of the United States, residing at Florisant, in the county of St. Louis and State of Missouri, have invented certain new and useful Improvements in Railway-Crossings; and we hereby declare the following to be a full, clear, and exact description of the same.

The drawing illustrating our invention is a perspective view of a crossing, one section being displaced the better to show the construction and manner of connecting the several parts.

Railway-crossings as now commonly constructed have their cross-rails and guard or guide rails supported by "filling-blocks" or "packing-blocks," as they are commonly termed, and the several rails are secured to the cross-ties by means of spikes. This construction is objectionable, because of the liability of the flange of the car-wheel being broken by striking the filling-blocks, and also from the tendency of the guard or guide rails to spread or become displaced by the breaking of either rail or bolts, or by the loosening of the spikes. The spreading of the rails and the fracture of rails, bolts, and wheel-flanges are of common occurrence at all times, but more frequently occur in frosty weather. It is also the practice in laying the ties for a railway-crossing to arrange them the same as at other parts of the track—that is, transverse or at right angles to the line of rails—and as a consequence the rails of the crossing are not well supported against lateral thrusts, as it is desirable they should be.

The objects of our present invention are to dispense with filling-blocks, so as to avoid injury to the car-wheels; to so secure the cross-rails and guard or guide rails that the spreading or displacement thereof will not occur under any ordinary wear and tear; to support the crossing-rails and guard or guide rails by such an arrangement of the ties that the crossing will resist lateral thrust from either direction equally well and will not be materially affected by expansion and contraction due to changes of temperature, and to provide a supplemental support for the passing wheels, so as to obviate the sagging and hammering incident to old wheels and wheels whose treads are much worn.

To accomplish these several objects the cross-ties are preferably arranged diagonally, so as to support both tracks. Outside supplemental rail sections (or twin rails) are used at the crossings, over which the outer or unworn peripheral surface of the wheel passes. The rails are riveted to and supported on bed-plates which are secured to the cross-ties by lag-screws, and other minor features of construction are adopted, all as will hereinafter more fully appear.

We will now proceed to describe the preferred form of our invention more fully, so that others skilled in the art to which it appertains will be enabled to apply the same.

In the drawing, A indicates the ties of one of the tracks at points outside of or beyond the crossing, which ties are placed in the usual manner, or at right angles to the track, and the ties of the other track are of course placed in like manner.

B indicates the ties of the crossing. These ties are preferably placed diagonally or angling, as shown, so as to support and bind all the crossing rails or sections, the object of which is to sustain the crossing against lateral or racking motion, and obviate the evils consequent on the expansion and contraction of the devices from changes of temperature. This is an important feature, as it is not practicable in crossings to allow long distances between joints, and thus compensate for expansion and contraction, as can be done in other parts of the track.

1 1 and 2 2 indicate the rails of the intersecting tracks. The inner ends of said rails are also, by preference, supported on the diagonally-arranged ties B, which support the crossings.

3 indicates bed-plates, which should be of such length as to extend beyond the crossing, so as to support the inner ends of the track-rails. We have found a width of two and one-half (2½) feet, and a thickness of three-quarters (¾) of an inch to answer admirably for these bed-plates.

The bed-plates 3, if desired, may be let into the ties to prevent lateral and longitudinal displacement, and should be secured by lag-screws 4, placed at intervals of four (4) or six (6) inches, (more or less.) To said bed-plates 3 the rail-sections constituting the crossings

are secured by rivets or bolts 5 at short intervals. Owing to this method of securing the bed-plates and rails of the crossings, the rails are much better supported, which is desirable, 5 as short lengths are used for crossings, and in case of fracture there is little chance of displacement of the pieces.

6 6 and 7 7 indicate the cross-rail sections forming the quadrilateral of the crossing, and 10 said cross-rail sections are arranged on and across the bed-plates 3 at the proper angles and gage, so as to leave the proper intervals for the wheel-flanges, all as is well understood by railroad engineers. They are secured to the 15 line-rails of their respective tracks by fish-plates 8, or in any other suitable manner, and to the bed-plates 3 by rivets or bolts, as hereinbefore specified. At the several inner angles of the crossings are arranged the guard 20 or guide rails 9, which are secured to the bed-plates 3 by rivets or bolts 10, in like manner as the rails, and are bound to the rails 6 6 and 7 7 by bolts 11 and stretcher and brace sleeves 12, which not only support the rails and guard- 25 rails against spreading, but divide up and diseminate the strain. This construction and connection of the guard-rails not only dispenses with the commonly employed filling-block, but decreases the wear and injury to 30 the wheel-flanges, and to that extent lessens the damage to the passing train and to the crossing.

On the outside and in close proximity to the cross-rails 6 6 and 7 7, forming the quadrilateral or crossing, are supplemental rail-sections 13, which are secured to the bed-plate by 35 rivets 14 at short intervals, and are supported by the bolts 11 of the guard-rails, and, if desired, by additional bolts, which may be used 40 to connect them with cross-rails 6 and 7. These supplemental rails 13 are of the same, or substantially the same, height as the rails 6 and 7, and receive the outer and unworn tread of the passing wheel, thus counteracting any 45 tendency of the wheels to sag or hammer in passing the crossing. It is of course well understood that the constant wear of the wheel-tread is on the part next to the flange, and that the wheel-tread distant from the flange 50 will in ninety-nine cases out of a hundred be perfect long after the tread next to the flange is worn down.

In order to facilitate the mounting of the wheel on the supplemental rails 13 without jar

or hammering, which might occur if the inner 55 tread of the wheel was much worn, it is desirable to slope or bevel the outer ends of the supplemental rails, as indicated at 15. As this portion of the wheel-tread distant from the flange passes over the supplemental rail 60 13 the wheel cannot sag or drop, nor can it materially hammer or injure the crossing.

In addition to the advantages pointed out in the body of the specification, our improved crossing will possess greater strength, stability, and durability than any crossing now in use or known to us. 65

Having thus described the nature and advantages of our invention, what we claim, and desire to secure by Letters Patent, is— 70

1. The combination, with a railway-crossing, of diagonally-arranged ties, substantially as and for the purposes specified.

2. The combination, with a railway-crossing, of supplemental (or twin) rails arranged 75 to the outer side of the crossing-rails, substantially as and for the purposes specified.

3. The combination, with a railway-crossing, of supplemental (or twin) rails having sloping ends, substantially as and for the purposes specified. 80

4. The combination, in a railway-crossing, of diagonally-arranged ties, bed-plates arranged thereon, and cross-rails riveted to the bed-plates, substantially as and for the purposes specified. 85

5. The combination, in a railway-crossing, of diagonally-arranged ties, bed-plates secured thereto by lag-screws, and cross-rails riveted at short intervals to the bed-plates, 90 substantially as and for the purposes specified.

6. The combination, in a railway-crossing, of diagonally-arranged ties, bed-plates secured thereto by lag-screws, cross-rails riveted to the base-plates, supplemental rails arranged 95 to the outer side of the cross-rails, guard-rails, and bolts and brace or stretcher sleeves for connecting the guard, cross, and supplemental rails, substantially as and for the purposes specified. 100

In testimony whereof we affix our signatures, in presence of two witnesses, this 21st day of April, 1887.

DANIEL L. BURNETT.
LEON DE LISLE.

Witnesses:

ALBERT NEWTON,
FRED JOHNSON.