C. W. SMITH & W. J. BOERGER.

DETACHABLE RAIL CUSHION AND FASTENING FOR RAILWAY TIES.

APPLICATION FILED FEB. 23, 1911.

1,006,696. **Patented Oct. 24, 1911.**

Fig. 1

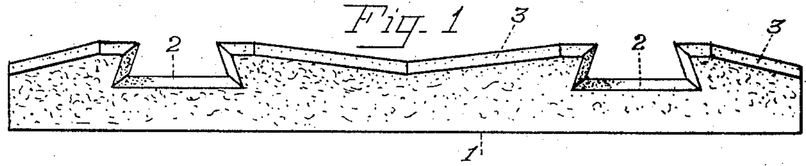
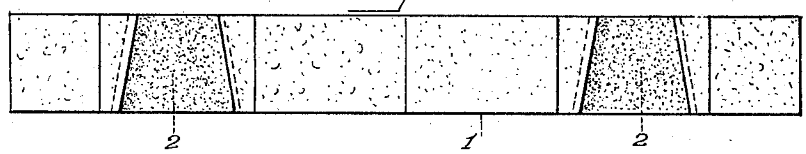


Fig. 2



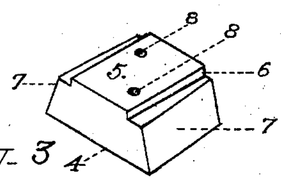


Fig. 3

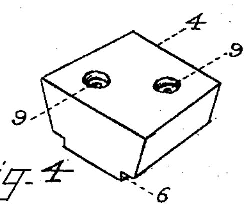


Fig. 4

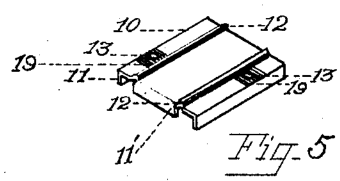


Fig. 5

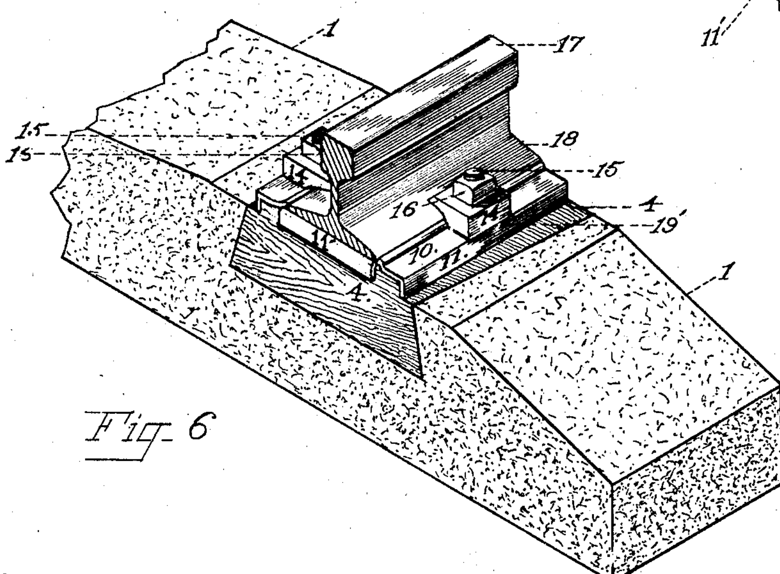


Fig. 6

Witnesses.

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By their Atty. Richard D. Watson.

UNITED STATES PATENT OFFICE.

CLAUD W. SMITH AND WILLIAM J. BOERGER, OF TOLEDO, OHIO.

DETACHABLE RAIL-CUSHION AND FASTENING FOR RAILWAY-TIES.

1,006,696. Specification of Letters Patent. Patented Oct. 24, 1911.

Application filed February 23, 1911. Serial No. 610,436.

To all whom it may concern:

Be it known that we, CLAUD W. SMITH and WILLIAM J. BOERGER, citizens of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented new and useful Improvements in Detachable Rail-Cushions and Fastenings for Railway-Ties, of which the following is a specification.

Our invention relates to detachable rail cushions and fastenings for railway ties, and has for its object to provide a tie body having seats formed therein to receive cushion bearings for the rails, with cushions adapted to be detachably secured in the seats, said cushions being equipped with means to receive and detachably secure the rails to the cushions at a standard gage distance apart, and in a manner to prevent loosening or detachment of the rails from the cushions by the running of trains over the rails. We accomplish these objects by the construction and combination of parts as hereinafter described and illustrated in the accompanying drawings, in which—

Figure 1 is a side view of a tie body adapted to receive rail cushions constructed in accordance with our invention. Fig. 2 is a top view of the same. Fig. 3 is a top view of a cushion block constructed in accordance with our invention. Fig. 4 is a bottom view of the same. Fig. 5 is a top view of a cap plate of the cushion block, and Fig. 6 is a perspective view of all the parts and a section of the rail assembled and seated on a tie (partly broken away).

Similar numerals refer to similar parts throughout the several views.

1 designates a tie body preferably formed of reinforced concrete and having formed therein transverse tapered dove-tailed seats 2, spaced suitable to the gage of the rails and having sloping top surfaces 3 each way therefrom.

4 designates a tapered dove-tailed cushion block formed of wood or compressed fibrous material, and having a raised portion 5 forming shoulders 6, bolt holes 8, countersunk 9—9 to admit the heads of bolts 15 beyond its bottom surface with their threaded ends projecting beyond the surface of the raised portion 5.

10 is a cap plate having raised portions 12 adapted to form side abutments for the rail flanges and prevent their lateral movement and form a gage seat for the rails, flanges 11 adapted to engage the shoulders 6 of the block 4 and prevent lateral movement of the plate 10, flanges 11′ adapted to engage the ends of the block and prevent movement of the plate lengthwise, serrated surfaces 19, and bolt holes 13, registering with the holes of the block, and adapted to receive the bolts 15 when the caps are mounted on the blocks. The blocks 4, bolts 15 and plates 10 when thus assembled are adapted to be driven into the tapering dove-tail seats 2 of the tie 1 and be rigidly held by frictional contact of its bottom and sides therewith. The rail 17 with its flanges 18 fitting against the abutments 12 of the plate is secured thereto by the clamp blocks 14, each having a bolt hole to receive a bolt 15 centrally through it, and having a portion projecting over and fitted to clamp upon the flange 18, a serrated bottom portion 19′ adapted to engage the serrated portions of the plate, and with the nut 16 screwed onto the bolt 15, forming a rail clamp and lock washer for the nut 16. The cushion blocks 4 are preferably formed of creosoted wood with the grain running lengthwise of the tie. The plate 10 is preferably formed of steel plate. The clamp block 14 is of cast or forged steel and the bolts 15 are of carriage bolt form, to prevent their turning in the blocks.

The ties 1 are preferably laid with their tapered seats alternately reversed to prevent the blocks 4 from displacement by the creeping of the rails, and when any block needs replacing by a new one it is only necessary to remove the nut 16 and the clamp 14 and drive out the old block, bolts and plate, and drive in its place a new one with bolts and plate attached, and then clamp and fasten with the clamp and nut as before, which may be done without interfering with or changing the original position of the rail or the tie.

While we have shown and described creosoting wood as a material for the rail bearing blocks, we do not limit ourselves to that material, as a suitable compressed fiber may be used.

Having thus described our invention we claim—

The combination with a tie-body having transverse tapering dove-tailed seats, spaced suitable to the track gage, of a pair of cushion rail bearings fitted and frictionally held, one in each seat of the tie body, each

cushion bearing having a central portion raised above its main body portion forming shoulders transverse the bearing, and being provided with countersunk bolt holes, bolts seated in the holes and projecting upward through the bearings, cap plates mounted on the raised portions of the rail bearings and the bolts, and having flanges engaging the shoulders and ends of the raised portions of the rail bearings, and transverse abutments adapted to receive and engage the flanges of a rail and track gage it, clamp blocks mounted on the projecting end of the bolts and adapted to engage the flanges of the rail, and nuts run on the bolts against the clamp blocks.

In witness whereof we have hereunto set our hands this 21st day of February, 1911.

CLAUD W. SMITH.
WILLIAM J. BOERGER.

In presence of—
F. A. ZAHNLE,
RICHARD D. WATSON.