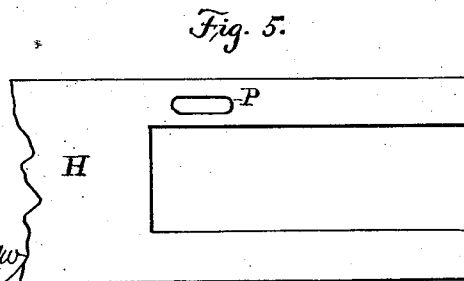
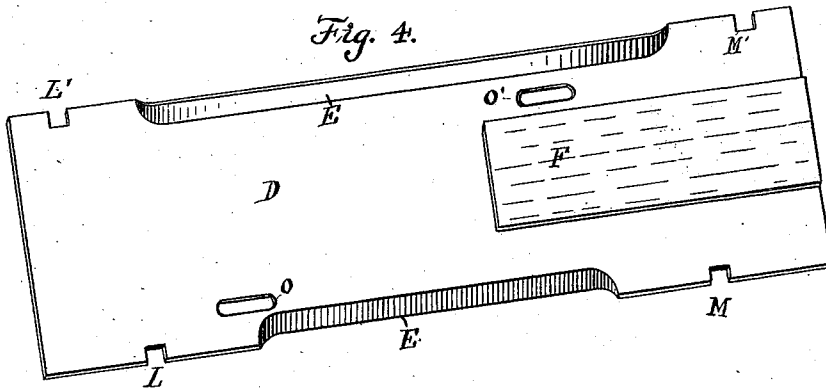
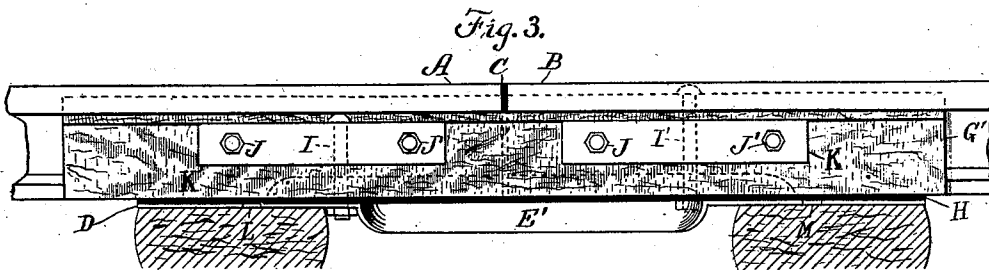
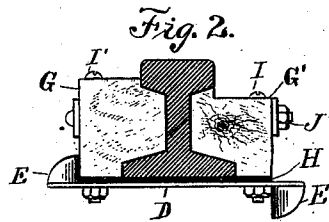
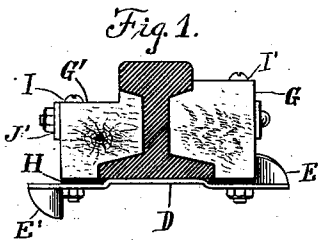


(No Model.)

R. C. SCOFIELD & J. WAYLAND.
INSULATED RAIL JOINT.

No. 567,416.

Patented Sept. 8, 1896.



WITNESSES:

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UNITED STATES PATENT OFFICE.

RICHARD C. SCOFIELD, OF BOONTON, AND JAMES WAYLAND, OF NEWARK,
NEW JERSEY.

INSULATED RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 567,416, dated September 8, 1896.

Application filed July 22, 1896. Serial No. 600,111. (No model.)

To all whom it may concern:

Be it known that we, RICHARD C. SCOFIELD, residing at Boonton, in the county of Morris, and JAMES WAYLAND, residing at Newark, in the county of Essex, State of New Jersey, citizens of the United States, have invented certain new and useful Improvements in Insulated Rail-Joints, of which the following is a specification.

10 This invention relates to rail-joints, the object being to provide a stable and effective coupling between two adjacent rails of a railway-track without forming an electrical connection between them.

15 The invention is designed for use on railways in which one or both sides of the track are formed of a plurality of sections insulated from one another and in which it is necessary to mechanically couple the abutting rails of
20 two insulated sections without permitting an electrical connection between them.

In carrying out the invention we provide a steel bed-plate adapted to rest on adjacent cross-ties of the track and to be spiked fast
25 thereto. The bed-plate is provided with vertical strengthening-ribs formed by stamping or forging the whole from sheet metal, and with one end of its floor upset above the level of the other to permit a sheet of insulating
30 material to intervene between one rail end and the bed-plate. The rail ends are connected by wooden blocks at opposite sides, held in place by bolts through the web of the rails. One of the ribs on the bed-plate extends up-
35 wardly and the other downwardly to permit easy separation of the parts for repairs and easy removal of the insulating material between the rail ends. The insulating-sheet intervening between the bed-plate and the base
40 of the rails is cut to straddle the raised part of the floor of the bed-plate and is sufficiently wide to take the bolts which secure the blocks to the bed-plate, thus preventing shifting of its position and giving ease of withdrawal
45 and replacement.

The several features of novelty of the invention will be hereinafter fully described, and will be definitely indicated in the claims.

In the accompanying drawings, which illustrate the invention, Figures 1 and 2 are sectional elevations of the opposite ends of a

rail-joint made in accordance with our invention. Fig. 3 is a side elevation looking from the right of Fig. 2. Fig. 4 is a perspective view of the bed-plate, and Fig. 5 is a plan of
55 the insulating-plate inserted between one rail and the bed-plate.

A and B represent abutting ends of rails at an insulated joint of a railway-track, between which is inserted a spacing-strip C, of suitable
60 insulating material, such as indurated fiber or other tough insulating substance. Under the rails and resting in grooves in the cross-ties is placed a bed-plate D, made of sheet-
65 steel of suitable thickness, say one-half inch, and provided with vertical strengthening-ribs E E' at the sides between the cross-ties and having one end of its floor raised about three-
70 eighths of an inch above the level of the rest. The entire plate may be forged of the required shape from a sheet of steel. The rib E, which, when the parts are assembled, lies at the out-
side of the track, turns upwardly, whereas the inner one turns downwardly. Thus any
75 tendency of the rails to spread is counteracted and yet the coupling-blocks G G', which secure together the abutting rails, may be easily removed or put in place without dis-
80 turbing the rails. The blocks are made of a strong durable wood impregnated with a suitable waterproofing material or compound to prevent absorption of water.

Beneath the rail ends is placed a plate of insulating indurated fiber H of the same
85 thickness as the raised part of the floor of the bed-plate. The plate is forked at one end, as seen in Fig. 5, the prongs of the forks straddling the raised end of the bed-plate. The insulating-plate is preferably of the same
90 width as the bed-plate, so that it may take the bolts I I', which lock the latter to the connecting-blocks. The bed-plate and the insulating-plate are provided with slots O, O', and P to permit the bolts I I' to pass through and
95 to admit of a longitudinal movement of the rails under expansion and contraction from changes of temperature without bending the bolts. Without this provision the bolts would be bent and the operation of taking apart the
100 joint for repairs would be greatly increased in difficulty. Horizontal bolts J J' thread holes in the rail-webs and lock the blocks and the rails

against lateral displacement. To prevent the bolts sinking into the fiber of the blocks, metal plates K K' are used at the sides. It will thus be seen that the rails are well insulated from one another, and each has a firm and slightly-yielding support to take the hammer-like blow of the wheels on the edges of the joint. The raised part of the floor being integral with the bed-plate gives slightly to the blow and relieves the plate of fiber of the full force of the concussion. Notches L L' M M' are formed in the edges of the bed-plate to receive the spikes which secure it to the cross-ties. These notches have a great advantage over holes in permitting insertion of the workman's tool to withdraw the spikes. The notches are out of line with one another to prevent splitting the tie. It will be seen that great ease of assembling the parts or taking them apart is provided. The insulation between the rail ends may be removed by loosening the bolts and taking off the coupling-block on the inside. A new plate of insulating material may be slid into place from one end of the bed-plate and the latter may be removed readily by withdrawing the spikes and taking off the blocks. These features of renewal are important practical desiderata both on account of the simplicity of the operation and on account of the short time in which the operation may be finished, necessitating no interruption of traffic on the road. The rails do not require to be loosened and the cross-ties need only be disturbed when a new bed-plate is needed.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A rail-joint comprising insulating coupling-blocks at the sides of the rails and a bed-plate for the rail ends having an upwardly-extending rib on one side only.
2. A rail-joint comprising coupling-blocks of insulating material at the sides of the rails, and a bed-plate having strengthening-ribs at the sides, one extending above and the other below the floor, for the purpose described.
3. A rail-joint comprising coupling-blocks of insulating material at the sides of the rails, a bed-plate having one end of its floor provided with a raised integral web to form a

seat for one rail end, and a strip of insulating material between the other rail and the depressed part of the floor of the bed-plate.

4. A rail-joint comprising a metal bed-plate supporting one rail end, coupling-blocks of insulating material, and a plate of insulating material between the bed-plate and the other rail, said plate being bolted to the blocks.

5. An insulated rail-joint comprising a metal bed-plate beneath the rail ends provided with an upwardly-extending rib, an insulating-plate between one rail end and the bed-plate, and coupling-blocks on opposite sides of the rails bolted thereto and to the bed-plate.

6. An insulated rail-joint comprising a metal bed-plate secured to the cross-ties provided with a raised floor to support one rail end, coupling-blocks, and a forked plate of insulating material beneath the rails straddling the raised part of the floor, and bolts securing the parts together.

7. An insulated rail-joint comprising a metal bed-plate beneath the rail ends insulated from one of the rails, and coupling-blocks at the sides of the rails terminating at or above the rail-base.

8. An insulated rail-joint comprising coupling-blocks and a metal bed-plate supporting the rail ends provided with notched edges to receive spikes, the notches being out of line transversely to the bed-plate.

9. An insulated rail-joint comprising coupling-blocks and a metal bed-plate insulated from one of the rail ends and provided with an arched integral web supporting the other rail end.

10. An insulated rail-joint comprising a metal bed-plate secured to the cross-ties and supporting the rail ends, means for insulating the same, coupling-blocks connecting the rail ends, slots in the bed-plate, and bolts passing through the blocks and slots.

In testimony whereof we have hereunto subscribed our names this 20th day of July, A. D. 1896.

RICHARD C. SCOFIELD.
JAMES WAYLAND.

Witnesses:

ROBT. H. READ,
C. R. WATERBURY.