

J. A. BODKIN.
 INSULATED RAIL JOINT.
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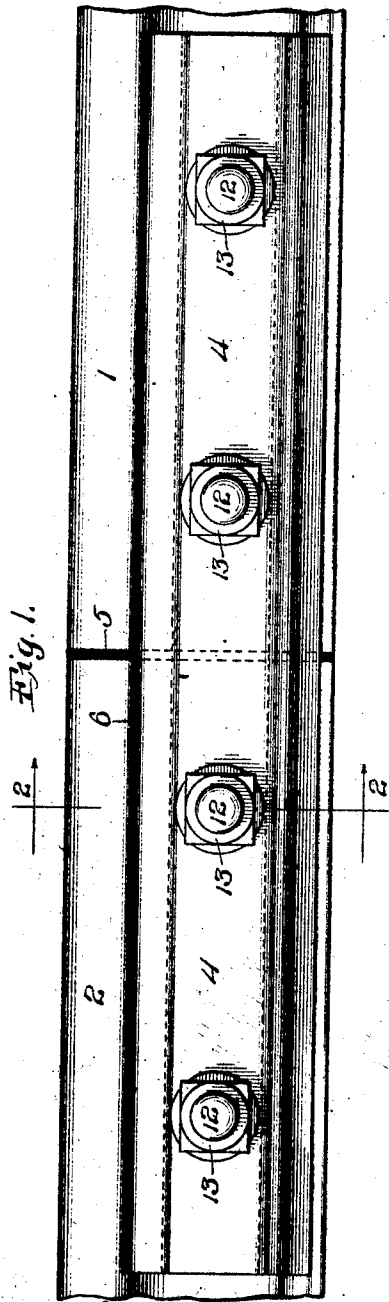


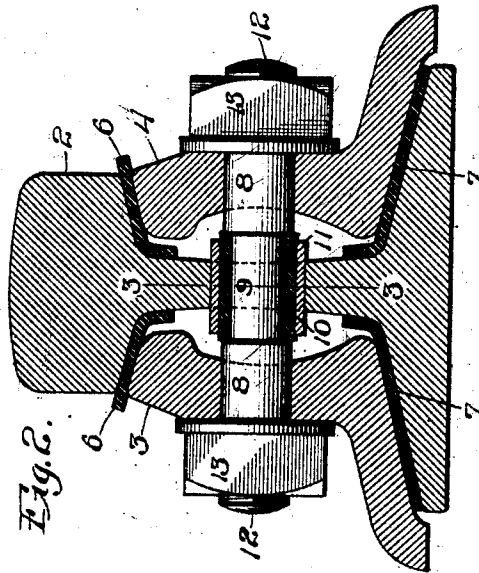
Fig. 3.



Fig. 4.



Fig. 2.



WITNESSES

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INSULATED RAIL-JOINT.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN A. BODKIN, a citizen of the United States, residing at New York, county of New York, State of New York, have invented a certain new and useful Improvement in Insulated Rail-Joints, and declare the following to be a full, clear, and exact description of the same, such as it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention has for its object to produce an insulated rail joint which will be efficient, simple and cheap.

A further object of my invention is to produce an insulated joint without employing insulation between the bolts and the splice bars and without making it necessary to enlarge the usual bolt holes in the webs of the rails.

A further object of my invention is to produce a simple and novel insulated bolt which may be used in various different kinds of insulated joints.

The various features of novelty whereby my invention is characterized will hereinafter be pointed out with particularity in the claims; but, for a full understanding of my invention and of its various objects and advantages, reference may be had to the following detailed description taken in connection with the accompanying drawing, wherein:

Figure 1 is a side view of a joint arranged in accordance with my invention; Fig. 2 is a section on line 2—2 of Fig. 1 on an enlarged scale; Fig. 3 is an elevation of one of the bolts; and Fig. 4 is a section on line 3—3 of Fig. 3.

Referring to the drawings, 1 and 2 represent two meeting rail ends and 3 and 4 are splice bars of any usual or suitable construction. The rail ends are separated from each other by a post 5 of insulating material, as is usual in insulated joints. Each of the splice bars is insulated from the two rails by means of plates or slabs of insulating material, 6 and 7. The members 6 are placed between the upper edges of the splice bars and the rail heads, and the members 7 are placed between the splice bars and the base flanges of the rails. The insulation

between the splice bars and the rails may take any usual or preferred form, however.

As rail joints are now constructed, it is necessary either to insulate the fastening bolts from the splice bars or else enlarge the usual bolt holes in the webs of the rails. Enlarging the bolt holes in the splice bars to accommodate insulating bushings, weakens the splice bars materially. This is also true of an increase in the size of the bolt holes in the webs of the rails. In accordance with my invention I insulate the bolts in such a manner that the disadvantage of neither of the old forms is retained. To this end I provide each of the fastening bolts 8 with a reduced neck 9 at a point between the ends. An insulating bushing 10 is seated upon each of the reduced necks, the thickness of the bushings being such that the over-all diameter is little greater than the diameter of the main portions of the bolts. The bushings are preferably split longitudinally so that they may be sprung into position on the bolts. The necks in the bolts are so located that when the joint is assembled the insulated portion lies within the webs of the rails. On account of the contraction and expansion of the rails there is danger that the insulating bushings will be worn through so as to permit the rails to come into metallic contact with the bolts. To prevent such wearing of the bushings I prefer to fit over them thin metal sleeves 11 which add little to the effective diameter of the insulated portion, while protecting the insulation from the rails. The bolts may take any usual form, that illustrated being one in which screw-threads 12 are provided at both ends. After the bolts have been placed in position in the joint, nuts 13 are screwed upon the ends thereof and the splice bars are drawn tightly beneath the heads and onto the base flanges of the rails. By providing screw-threads at both ends of the bolts, the bolts as a whole may be adjusted transversely of the rails so as to locate the insulated portions most effectively.

By insulating the bolts in the manner illustrated and described, I overcome the necessity for enlarging the bolt holes either in the splice bars or in the rails and therefore the maximum strength of these parts is maintained. Furthermore the insulation

may be assembled upon the bolts at the factories with the assurance that there will be no disarrangement and no possibility of having the insulation improperly applied by the track workers. My improved insulation for the bolts possesses another advantage in that it permits any ordinary joint to be insulated, if desired, without making it necessary first to enlarge the holes in the rails; and consequently the insulation of a joint is effected quickly and at a small expense.

While I have illustrated and described only a single preferred form of my invention I do not desire to be limited to the particular structural details thus illustrated and described; but intend covering all forms and arrangements which come within the terms employed in the definitions of my invention constituting the appended claims.

I claim:

1. An insulated bolt for rail joints having a reduced neck between the ends thereof and a bushing of insulating material seated upon said neck.

2. An insulated bolt for rail joints having a reduced portion and insulating material surrounding said reduced portion, the size of the reduced portion with its insulation being such as to permit the same to pass through the usual bolt holes in the webs of rails.

3. An insulated bolt having a reduced neck between its ends, a bushing of insulating material seated upon said neck, and a protective sleeve of metal surrounding said bushing.

4. An insulated bolt for rail joints having a reduced neck between its ends, a bushing seated upon said neck, the bushing being split longitudinally to permit it to be sprung in place.

5. An insulated bolt for rail joints having a reduced neck between its ends, a bushing seated upon said neck, the bushing being

split longitudinally to permit it to be sprung in place, and a metal sleeve fitting closely above said bushing.

6. An insulated bolt for rail joints screw-threaded at both of its ends and having a reduced neck between the screw-threaded portions, and a bushing of insulating material seated upon said neck.

7. An insulated bolt for rail joints screw-threaded at both of its ends and having a reduced neck between the screw-threaded portions, a bushing of insulating material seated upon said neck, and a metallic sleeve fitting over said bushing.

8. A rail joint comprising the meeting rail ends, splice bars insulated from the rail ends, and bolts passing through the splice bars and through the webs of the rails, said bolts having reduced necks at the rail webs, and insulated bushings on said reduced necks.

9. A rail joint comprising the meeting rail ends, splice bars insulated from the rail ends, and bolts passing through the splice bars and through the webs of the rails, said bolts having reduced necks at the rail webs, insulated bushings on said reduced necks, and metal protective sleeves fitting upon said bushings.

10. A rail joint comprising the meeting rail ends, splice bars insulated from the rail ends, and bolts passing through the splice bars and through the webs of the rails, said bolts having reduced necks at the rail webs, and insulated bushings on said reduced necks, the insulation between the splice bars and the rails stopping short of the bolt holes in the rail webs.

In testimony whereof, I sign this specification in the presence of two witnesses.

JOHN A. BODKIN.

Witnesses:

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RAY J. WILLSEY.