

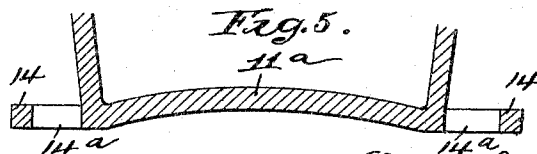
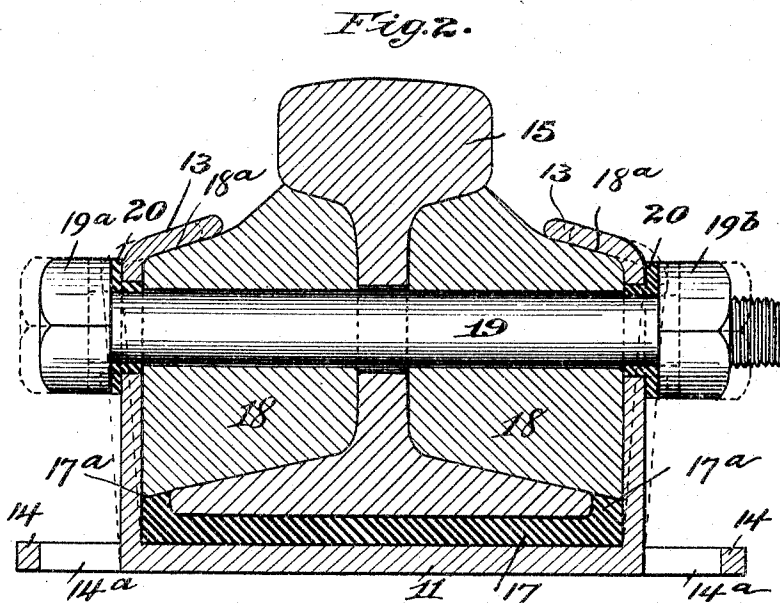
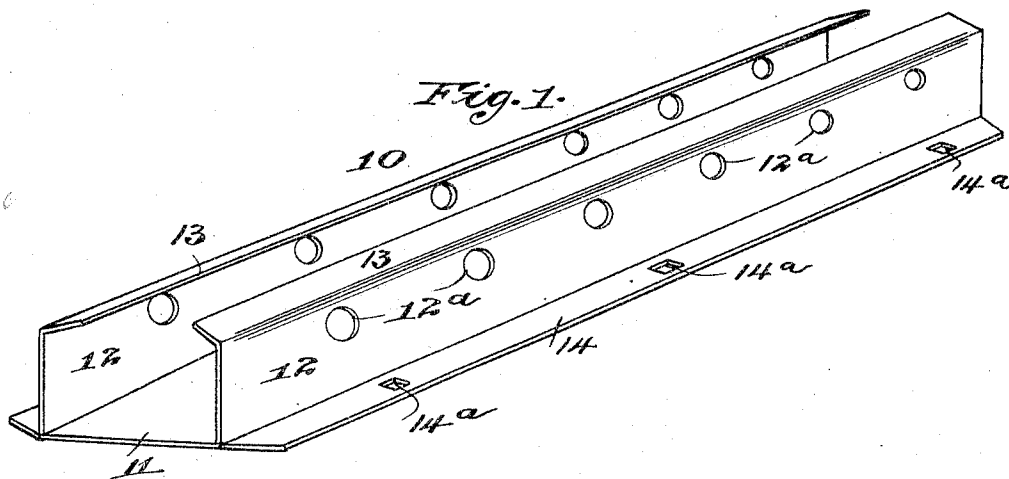
No. 788,776.

PATENTED MAY 2, 1905.

O. F. JORDAN.
RAIL JOINT.

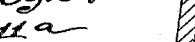
APPLICATION FILED FEB. 11, 1904.

2 SHEETS—SHEET 1.



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Fig. 5.



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2 SHEETS—SHEET 2.

Fig. 3.

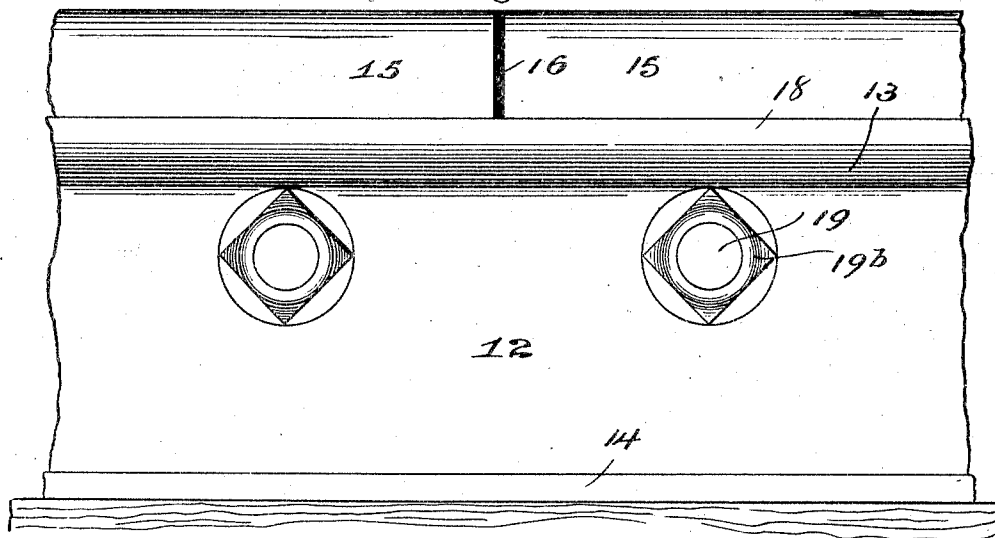
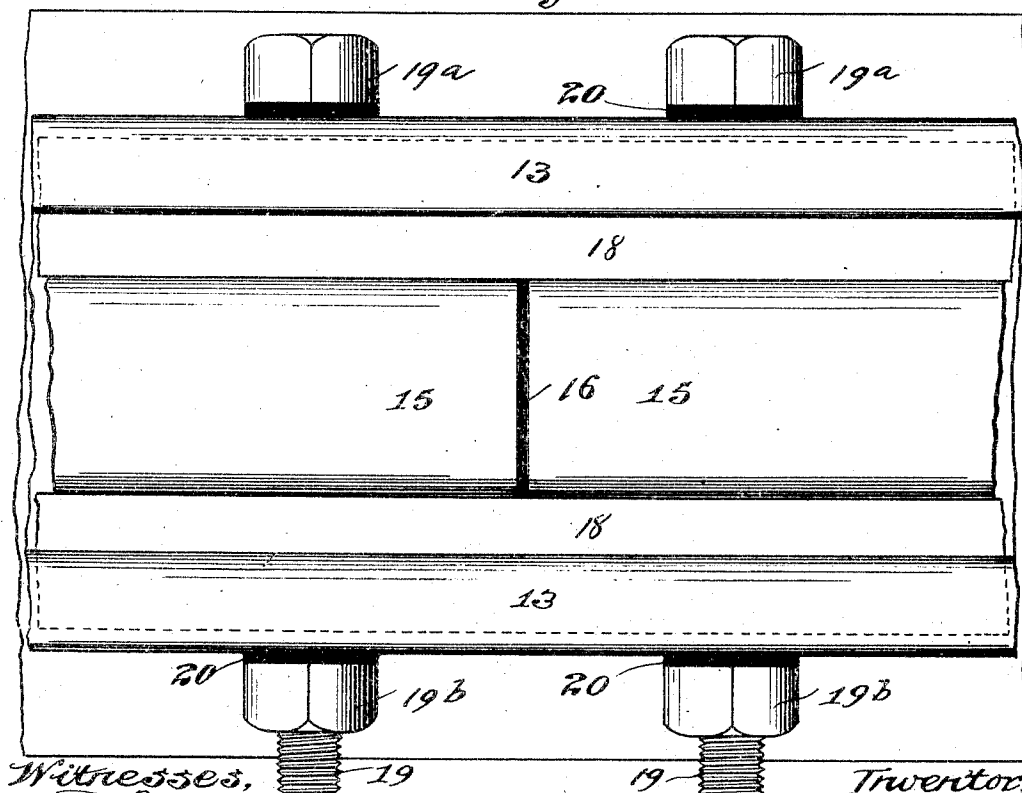


Fig. 4.



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UNITED STATES PATENT OFFICE.

OSWALD F. JORDAN, OF CHICAGO, ILLINOIS.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 788,776, dated May 2, 1905.

Application filed February 11, 1904. Serial No. 193,070.

To all whom it may concern:

Be it known that I, OSWALD F. JORDAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification.

My invention relates to railway-rail joints, and has for its general objects to provide a joint which shall be practically noiseless, which shall eliminate vibration and the working loose of parts, which shall be simple and economical to manufacture, and which shall be capable of easy application and when applied shall unite the meeting ends of the rails snugly and efficiently.

In one form my invention is particularly designed to effect an insulated joint and in that character its object is to effect a perfect insulation, eliminating any possibility of an electric connection through moisture or any other electric conductor creeping in between the parts, as well as to thoroughly incase and hold the insulation against possible dislocation and deterioration through exposure.

To the accomplishment of these and other minor objects which will appear hereinafter my invention consists in a rail-joint having the peculiarities of construction and mode of operation substantially as hereinafter described, and more particularly pointed out in the claims.

In view of the fact that my invention has been primarily designed for use as an insulated joint I have in the principal figures of the accompanying drawings illustrated the same in that character; but it is to be understood that as to certain features of the invention it is equally capable of use in the character of an ordinary or uninsulated rail-joint.

Referring then to the accompanying drawings for an illustration of the preferred mechanical embodiment of my invention, Figure 1 is a perspective view of an integral or one-piece rail-chair constituting the principal mechanical element of the structure. Fig. 2 is a cross-sectional view showing the application of the joint in its insulated character.

Fig. 3 is a side elevational view of the insulated joint represented in Fig. 2. Fig. 4 is a top plan view of the parts shown in Fig. 3, and Fig. 5 is a fragmentary detail view illustrating a structural peculiarity which may advantageously be given to the base of the chair within the purview of the invention.

Referring to the drawings, 10 designates as an entirety a channel-shaped rail chair or shoe which constitutes the principal element of the joint. This element is made one piece or integral throughout and comprises a flat base 11, upwardly-extending sides 12, inwardly and upwardly inclined lips or flanges 13, constituting continuations of the upper margins of the sides 12, and lateral extensions 14, leading off from the lower margins of the sides 12, these latter being provided with a series of spike-holes 14^a. The sides 12 are similarly provided with a suitable number of apertures 12^a, designed to receive the tie-bolts which unite and clamp together the parts of the joint on opposite sides of the rail.

15 designates each of a pair of rails, and 16 designates insulating material inserted between the meeting ends thereof.

17 designates a strip of insulating material interposed between the base of the rail and the base of the chair, this insulation extending upwardly on either side along the edges of the rail-base, as shown at 17^a.

18 designates each of a pair of wooden blocks of symmetrical construction throughout and designed to serve as a non-conducting filling between the side walls of the chair and the web of the rail, said blocks and the web of the rail being, of course, transversely apertured to register with the apertures 12^a to provide for the passage of tie-bolts 19. The heads 19^a and nuts 19^b of these tie-bolts are insulated from the metal of the chair by suitable washers 20 of insulating material. It will be observed that the filling-blocks 18 are shaped to snugly fit the web, the base, and the under side of the head of the rail, and on their upper surfaces are beveled, as shown at 18^a, on a taper corresponding to the degree of inclination of the flanges 13. This

feature is of primary importance to the practical value of the device, as will hereinafter appear.

The parts are assembled at and about the joint between two endwise adjacent rails in the manner clearly indicated in the drawings. The chair 10 is made of wrought or malleable metal, the side walls 12 being formed slightly divergent or outwardly inclined to facilitate the assembling of the parts and the subsequent snug clamping together of the same under the action of the tie-bolts, the side walls being of such thickness of metal as will permit them to bend and draw together. Now it will be observed by a comparison of the dotted and full line positions of the side walls relatively to the filling-blocks 18, as shown in Fig. 2, that the drawing together of the side walls and their inwardly-extending lips or flanges upon the filling-blocks by the tightening up of the tie-bolts effects, by virtue of the described bevel on the upper surface of the filling-blocks and the corresponding inclination of the lips 13, a powerful vertical as well as transverse compressive action, whereby the base of the chair is drawn hard up against the insulation 17 and the base of the rail and at the same time the filling-blocks are forced hard down upon the base of the rail, whereby the latter is very rigidly clamped in every direction, the apertures in the web of the rail being sufficiently enlarged over the diameter of the tie-bolts to permit this action. This rigid clamping of the parts in a vertical as well as a transverse or horizontal direction makes an exceedingly tight and solid joint, which is practically proof against influences tending to loosen the parts and which renders relative vibration between the meeting ends of the rail practically impossible, thus making a virtually noiseless joint in action. The filling-blocks and other insulation being practically incased by the chair are preserved from wear and deterioration due to exposure, and the elimination of any open space or spaces within the outer casing or chair reduces the liability of accidental electrical connection between the rails.

Where the device is used in the character of an ordinary or uninsulated joint, practically the above-described construction is employed, omitting, of course, the insulating parts 16, 17, and 20. It is also noteworthy that the outwardly-springing tendency of the side walls of the rail-chair when clamped upon the filling-blocks acts as a nut-lock on the tie-bolts, thus contributing to the rigidity and solidity of the entire structure.

The vertical clamping effect produced by the coöperative action of the flanges 13 upon the beveled surfaces of the filling-blocks under the transverse strain of the tie-bolts may be heightened by giving to the base of the rail-chair a slightly-cambered forma-

tion transversely, as indicated at 11^a in the detail view, Fig. 5.

I am aware that rail-joints having wooden filling-blocks, as fish-plates clamped together and against the web of the rail by separate outside vertical confining members, are old; but so far as I am aware the employment of an integral or one-piece chair having flexible side walls embracing such intermediate filling-blocks is new with me and especially when combined with coöperating inclined parts effecting a vertical clamping action upon the rail-joints under the transverse strain of the tie-bolts. Hence I do not limit my invention to the particular details herein shown and described, some of which could be variously modified by persons skilled in this art without evading the spirit of the invention or sacrificing any of the benefits thereof.

I claim—

1. In a rail-joint, the combination with an integral or one-piece rail-chair adapted to receive the meeting ends of rails and comprising a base and flexible side walls, of filling-blocks interposed between said side walls and the webs of the rails, and transverse tie-bolts passed through and clamping together said parts, substantially as described.

2. In a rail-joint, the combination with a rail-chair adapted to receive the meeting ends of rails and having a base and flexible side walls with oblique marginal flanges, of filling-blocks interposed between said side walls and the webs of the rails, said filling-blocks having beveled upper surfaces engaging said oblique flanges of the side walls, and transverse tie-bolts drawing together said side walls upon said filling-blocks, substantially as described.

3. In a rail-joint, the combination with an integral or one-piece rail-chair adapted to receive the meeting ends of rails, said rail-chair having a base and flexible upwardly-divergent side walls provided with oblique upwardly and inwardly extending marginal flanges, of filling-blocks interposed between said side walls and the webs of the rails, said filling-blocks having beveled upper surfaces engaging said oblique flanges of the side walls, and transverse tie-bolts drawing together said side walls upon said filling-blocks, substantially as described.

4. In a rail-joint, the combination with an integral or one-piece rail-chair adapted to receive the meeting ends of rails and comprising a base, flexible side walls, and apertured lateral extensions of the base, of filling-blocks interposed between said side walls and the webs of the rails, and transverse tie-bolts passed through and clamping together said side walls, filling-blocks and rail-webs, substantially as described.

5. In a rail-joint, the combination with an

integral or one-piece rail-chair adapted to receive the meeting ends of rails, said chair having a base, upwardly-divergent flexible side walls terminating at their upper margins in inwardly and upwardly inclined oblique flanges and apertured lateral extensions of the base outside of said side walls, of filling-blocks interposed between said side walls and the rails and contacting the webs, heads and bases of the latter, said filling-blocks having beveled upper surfaces en-

gaging said oblique flanges of the side walls, and transverse tie-bolts drawing together said side walls upon said filling-blocks, substantially as described.

15

In testimony that I claim the foregoing as my invention I have hereunto subscribed my name in the presence of two witnesses.

OSWALD F. JORDAN.

Witnesses:

SAMUEL N. POND,
FREDERICK C. GOODWIN.