

No. 612,059.

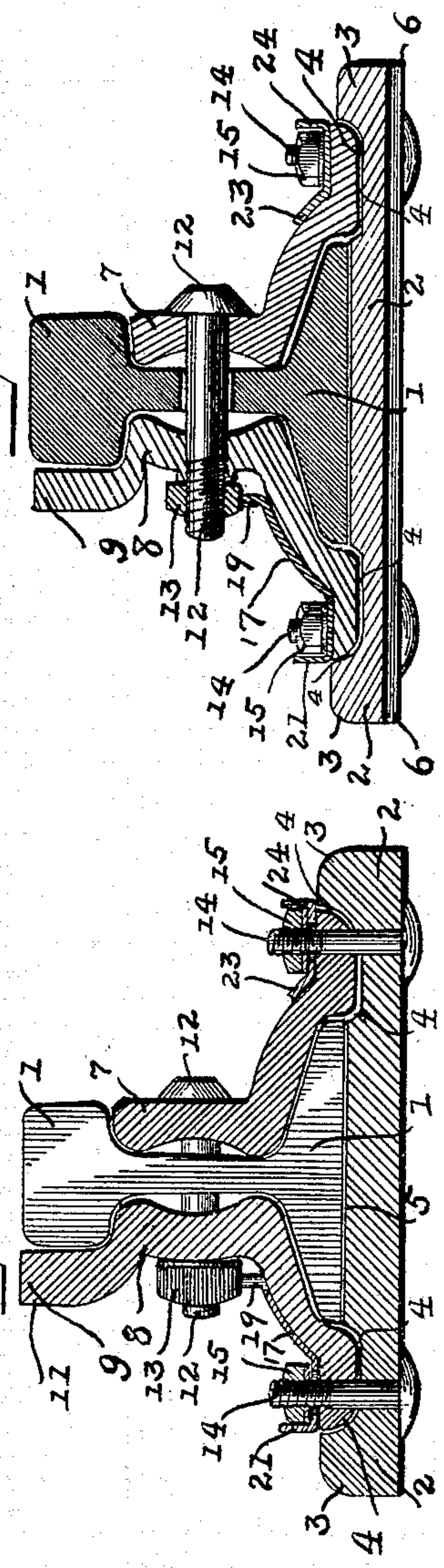
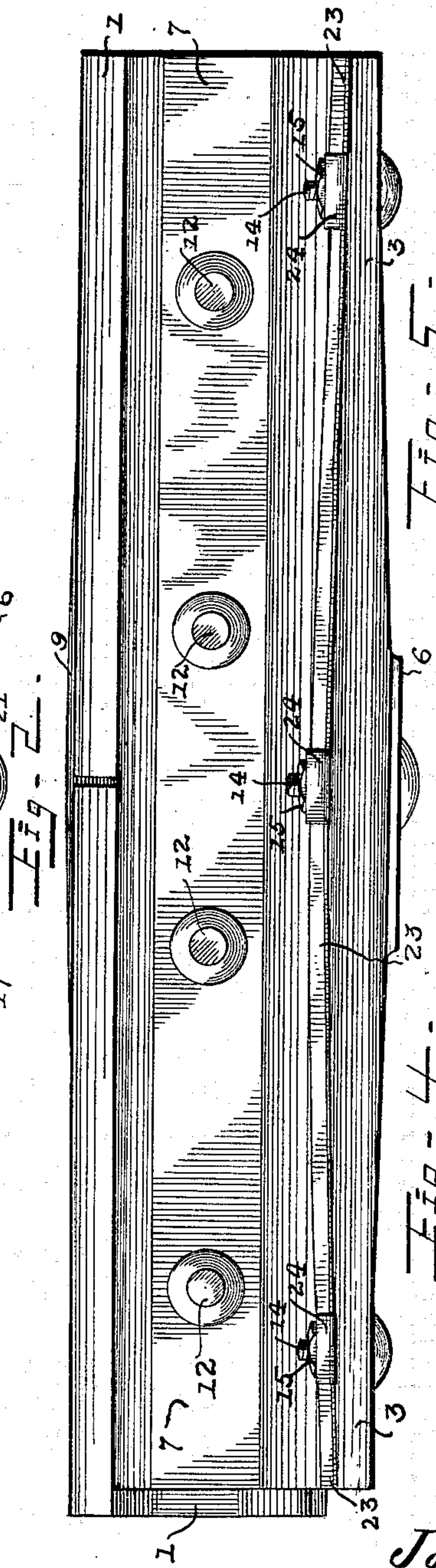
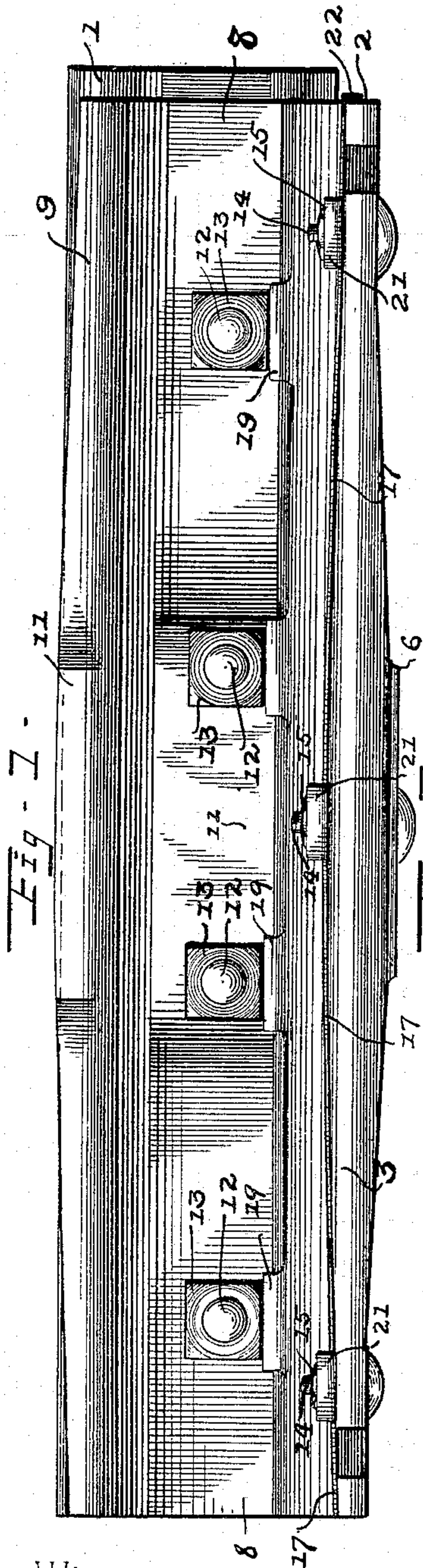
Patented Oct. 11, 1898.

J. ROHLIN.
RAILROAD RAIL JOINT.

(Application filed Sept. 4, 1897.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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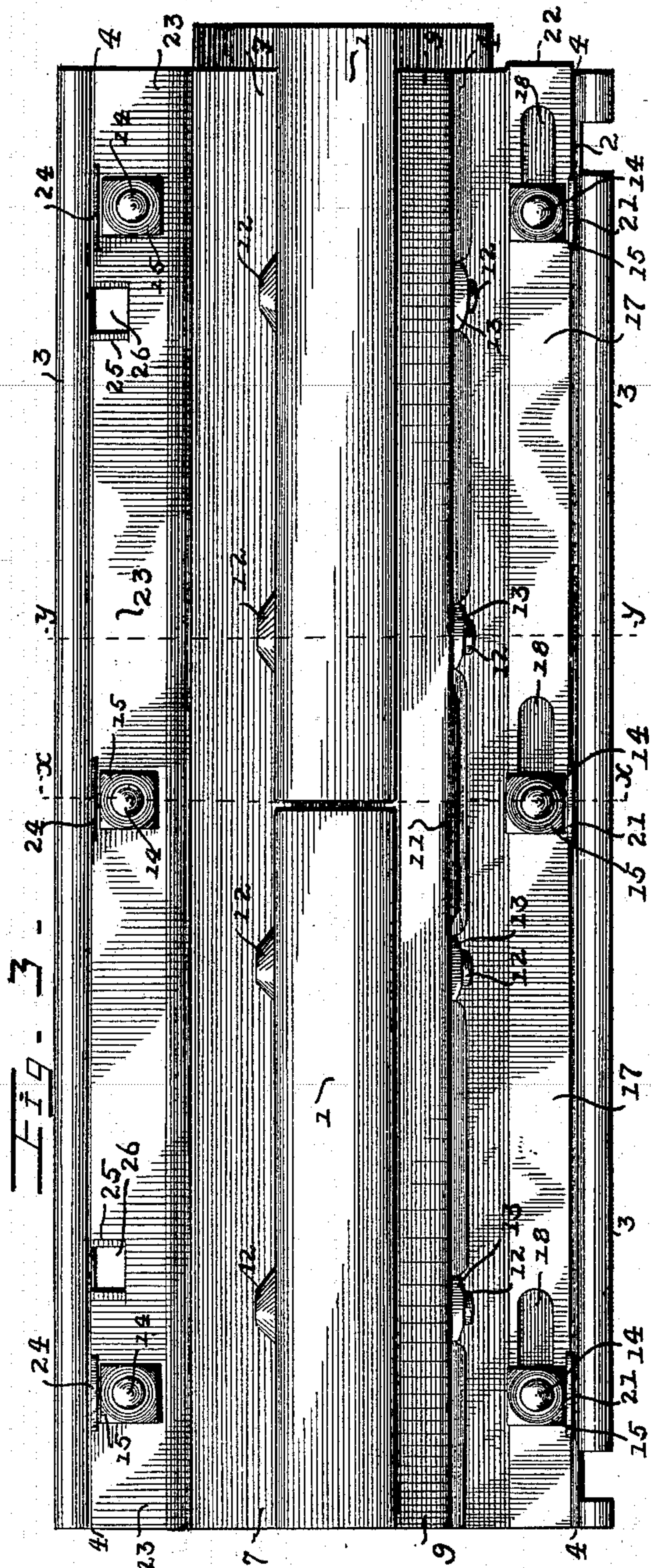


Fig. 3 -

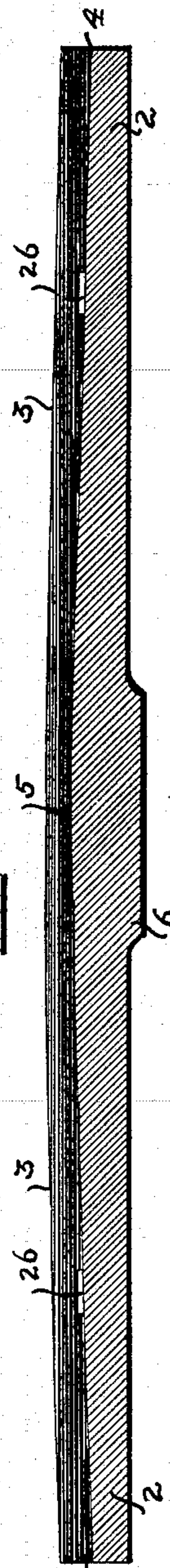


Fig. 5 -

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UNITED STATES PATENT OFFICE.

JOHN ROHLIN, OF EUREKA, KANSAS, ASSIGNOR OF ONE-HALF TO A. E. SHAW,
OF SAME PLACE.

RAILROAD-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 612,059, dated October 11, 1898.

Application filed September 4, 1897. Serial No. 650,626. (No model.)

To all whom it may concern:

Be it known that I, JOHN ROHLIN, a citizen of the United States, residing at Eureka, in the county of Greenwood and State of Kansas, have invented a new and useful Railroad-Rail Joint, of which the following is a specification.

This invention relates to railroad-rail joints, its object being to provide a simple device of this character of improved construction which may be applied to rails now in use and which will afford a strong and secure support and connection for the meeting ends of the rails and prevent the ends of the rails from being battered or mashed by the wheels and also largely decrease the rattling and noise caused by the wheels in passing over the joints.

With this and other objects in view the invention consists of the several details of construction and combination of parts, as will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a rail-joint constructed in accordance with my invention, looking at the outer side of the rail. Fig. 2 is a similar view looking at the inner side. Fig. 3 is a plan view. Fig. 4 is a vertical transverse section on the line $x x$ of Fig. 3. Fig. 5 is a similar view on the line $y y$ of Fig. 3. Fig. 6 is a vertical longitudinal section of the base-plate.

Similar reference-numerals indicate similar parts in the several figures.

The rails are indicated by 1 and the base-plate by 2. The base-plate is provided with a rib or flange 3 at each of its side edges, extending throughout its length, and also with shallow grooves 4 in its upper face at each side adjacent to the ribs in order to form a raised central portion 5 of a width substantially equal to that of the base of the rails. The grooves 4 are intended to receive a portion of the horizontal member of the fish-plates, and the ribs 3 will form abutments for the edges of the horizontal members of the fish-plates. In its normal condition the base-plate is preferably convex on its upper face, as shown in Fig. 6, and this convexity may be made either by bending the plate or by gradually decreasing its thickness from the middle to each end. The plate is also thickened or reinforced on its lower surface at its middle

portion, as indicated at 6. The object of making the upper face convex and reinforcing the plate at its middle portion is to strengthen the plate immediately below the meeting ends of the rails in order to overcome any tendency of the rails to bend downwardly at their ends.

7 indicates the fish-plate or angle-bar for the inner sides of the rails, and 8 the fish-plate for the outer sides. The fish-plate 7 is of the ordinary construction, with its vertical member fitting in between the head and flange of the rail to abut against the web thereof and its horizontal member being supported on the rail and also in the shallow groove 4 on the inner side of the base-plate. The horizontal member of the fish-plate 8 also rests upon the flange of the rail and in the groove 4 on the outer portion of the base-plate, and its vertical member fits between the head and the flange of the rail and engages the web thereof in the ordinary manner. This fish-plate is, however, provided with an upward extension 9, which will be termed a "bridge," and extends from end to end of the fish-plate. The middle portion of this bridge is designed to be flush with or slightly above the top surface of the rails where they meet, and it inclines downwardly from the middle portion toward each end in order to bring its ends below the top surface of the rails, so that they will not be engaged by the wheels when they pass over the rails. The bridge 9 and vertical member of the fish-plate 8 are also reinforced or thickened laterally at their middle portions, as indicated at 11.

12 indicates the horizontal bolts which secure the two fish-plates together and to the rails, and 13 the nuts which secure these bolts in place.

14 indicates the vertical bolts which secure the horizontal members of the fish-plates to the base-plate, and 15 indicates the nuts which secure these bolts in position. The outer edge of the base-plate is provided with a notch at each end for the reception of a spike, by means of which the plate will be secured on this side to adjacent cross-ties.

17 indicates a locking-plate for the nuts 13 and the nuts 15 on the outer side of the rails. This plate is supported upon the horizontal member of the fish-plate 8 and is provided

with elongated openings 18 for the passage of the bolts 14.

19 indicates lateral extensions from the inner edge of the plate 17, and these extensions are folded over upon themselves and bent upwardly in order to project below and engage the nuts 13. The object of folding these projections upon themselves is to stiffen them and permit the use of thin metal for the locking-plate.

21 indicates lateral extensions on the outer edge of the plate 17, and these extensions are bent upwardly at a right angle and are intended to engage the nuts 15 and lock them against turning on the bolts 14. One end of the plate 17 is bent downwardly, as indicated at 22, in order to engage the end of the fish-plate 8, and the elongated openings are so arranged that when this downwardly-bent end 22 is in engagement with the end of the fish-plate the bolts 14 will be at one end of the elongated openings 18, which latter will extend toward the downturned end 22. It will be seen, therefore, that when in this position the plate 17 will be incapable of longitudinal movement in either direction, and the projections 19 and 21 will be in engagement with their respective nuts, and the latter will consequently be locked against turning. In order to release the nuts, the downwardly-bent end of the plate 17 must be elevated sufficiently to disengage it from the end of the fish-plate, and it can then be moved longitudinally to disengage the projections 19 from the nuts 13, it being of course understood that the extensions 21 will be bent down to disengage them from the nuts 15 and that the latter will have to be loosened to permit the plate to move freely.

23 indicates a locking-plate for the nuts 15 on the inner side of the rails, and this plate is provided with perforations for the passage of the bolts 14 and with lateral extensions 24, which are adapted to be bent up at a right angle to engage the nuts 15. The plate is also provided with notches 25, which register with openings 26 in the horizontal member of the fish-plate 7, and these notches and openings are for the passage of spikes or similar devices to secure the base-plate to adjacent ties.

In operation the two fish-plates will be bolted to the rails in the ordinary manner, and the base-plate will then be inserted in position below the rails and the fish-plates and secured to the horizontal member of the fish-plate 7, the locking-plate 23 being also secured in position at the same time. The extensions 24 will then be bent up to engage the nuts 15 and the parts will be firmly secured together on the inner side of the rails. The locking-plate 17 will then be placed in position, with the projections 19 in engagement with the nuts 13, and the bolts 14 will then be passed up through the registering openings in the base-plate and the horizontal member of the fish-plate 8 and secured in position

by the nuts 15. The extensions 21 will then be bent upwardly to engage the nuts 15, and the parts will then be firmly secured together on the outer side of the rail. When the end bolts are tightened up, the ends of the base-plate will be forced up into contact with the rails and the central portion 5 of the plate will be in engagement from end to end with the rails, and the middle portion of the base-plate will thus be given a tendency to spring upward, and therefore form an elastic as well as a very strong support for the meeting ends of the rails.

From the foregoing description it will be seen that I have produced an exceedingly simple, strong, and secure joint which will prevent the meeting ends of the rails from sagging downwardly and will also prevent the wheels from battering or mashing the ends of the rails and also will largely decrease, if not entirely overcome, the rattle and noise caused by the wheels passing over the joints.

While I have illustrated and described the base-plate as having its upper face normally convex in longitudinal section and this is the preferred shape for the purpose of giving elasticity to the joint, certain features of my invention—to wit, the reinforcing or thickening of the base-plate on its lower surface at its middle portion, the raised central portion of the base-plate, on which the rails are supported, and the ribs on the edges thereof—may be employed with equal advantage on base-plates having a normally straight upper face, and hence I do not intend to limit my invention in all its details to a base-plate having an upper face normally convex in longitudinal section.

It will be understood that changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what I claim is—

1. In a rail-joint, the combination with the rails and the fish-plates, of a base-plate having its upper face normally convex in longitudinal section and being provided with a raised central portion extending from end to end and on which the rails rest, and bolts to secure the fish-plates to the rails and base-plate, and force the ends of the latter into contact with the rails, substantially as described.

2. In a rail-joint, the combination with the rails and the fish-plates, of a base-plate having its upper face normally convex in longitudinal section, and bolts to secure the fish-plates to the rails and base-plate and force the ends of the latter into contact with the rails and thereby give the middle portion of said plate a tendency to spring upwardly, substantially as and for the purpose specified.

3. In a rail-joint, the combination with the rails and fish-plates, of a base-plate having

its upper face normally convex in longitudinal section and being thickened or reinforced on its lower surface at its middle portion, and bolts to secure the fish-plates to the rails and base-plate and force the ends of the latter into contact with the rails and thus give the base-plate a tendency to spring upward at its middle portion, substantially as described.

4. In a rail-joint, the combination with the rails and the fish-plates, of a base-plate having its upper face normally convex in longitudinal section, and being provided with ribs or flanges at each edge to form abutments for the edges of the horizontal members of the fish-plates, and having also a raised central portion extending from end to end on which the rails rest, and bolts to secure the fish-plates to the rails and base-plate and force the ends of the latter into contact with the rails, substantially as described.

5. In a rail-joint, the combination with the rails, of a base-plate having its upper face normally convex in longitudinal section and being provided with a raised central portion extending from end to end on which the rails rest, and with a rib or flange at each edge extending from end to end, fish-plates the horizontal members of which seat between said ribs and the raised central portion of the base-plate, and the vertical members of which abut against opposite sides of the rail, and the outer fish-plate having a bridge-piece to lie against the outer side of the heads of the rails and having its middle portion higher than its ends and flush with or above the top surface of the rails when its ends are below it, and bolts to secure the fish-plates to the rails and to the base-plate and force the ends of the latter into contact with the rails, substantially as and for the purpose specified.

6. In a rail-joint, the combination with the rails, the fish-plates, the base-plate, and the bolts and nuts to lock said parts together, of a locking-plate supported upon the horizontal member of the outer fish-plate and having elongated openings for the passage of the vertical bolts which secure the fish-plate to the base-plate, lateral projections on its inner edge bent upwardly to project under and engage the nuts on the horizontal bolts which secure the fish-plate to the rail, said projections being adapted to be engaged or disengaged from said nuts by sliding the plate longitudinally, substantially as described.

7. In a rail-joint, the combination with the rails, the fish-plates, the base-plate, and the bolts and nuts to lock said parts together, of a locking-plate supported on the horizontal member of the outer fish-plate and having elongated openings for the passage of the vertical bolts which secure the fish-plate to the base-plate, lateral projections on its front edge bent upwardly and folded upon them-

selves and adapted to project under and engage the nuts on the horizontal bolts which secure the fish-plate to the rail, and said plate having one of its ends bent downwardly to engage the end of the fish-plate when the said vertical bolts respectively engage one end of the elongated openings, substantially as and for the purpose specified.

8. In a rail-joint, the combination with the rails, the fish-plates, the base-plate and the bolts and nuts to lock the horizontal member of the fish-plate to the base-plate, of a locking-plate provided with perforations for the passage of said bolts, said plate having lateral extensions adapted to be bent upwardly to engage the side of the nuts on said bolts and lock them against turning, substantially as described.

9. In a rail-joint, the combination with the rails, and fish-plates, of a spring base-plate provided with a central raised portion bearing against the lower faces of the rails and forming a fulcrum, and fastening devices adapted to draw the ends of the base-plate against the rails and hold them in such position, substantially as described.

10. In a rail-joint, the combination with the rails, of a base-plate having a raised central portion extending from end to end on which the rails rest, and an upwardly-projecting rib or flange at each edge, and fish-plates the horizontal members of which partly seat in the recesses between the ribs and the raised central portion of the base-plate, and nuts to secure the fish-plates to the rails and to the base-plate, substantially as described.

11. In a rail-joint, the combination with the rails, of a base-plate provided with a raised central portion extending from end to end on which the rails rest, and being reinforced or thickened on its lower surface at its middle portion, said plate having also an upwardly-projecting rib or flange at each edge, and fish-plates the horizontal members of which partly seat in the recesses between the ribs and the raised central portion of the base-plate, and nuts to secure the fish-plates to the rails and to the base-plate, substantially as described.

12. In a rail-joint, the combination with the rails, and fish-plates, of a resilient base-plate having a raised central portion to engage the lower faces of the rails, said base-plate being tapered from the raised central portion to its ends, and fastening devices for holding the ends of the base-plate against the rails, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN ROHLIN.

Witnesses:

A. E. SHAW,
C. A. ROBINS.