No. 804,632. PATENTED NOV. 14, 1905.

J. L., J. & C. W. SMITH.

RAIL SPLICE.

APPLICATION FILED MAR. 8, 1905.

2 SHEETS—SHEET 1.

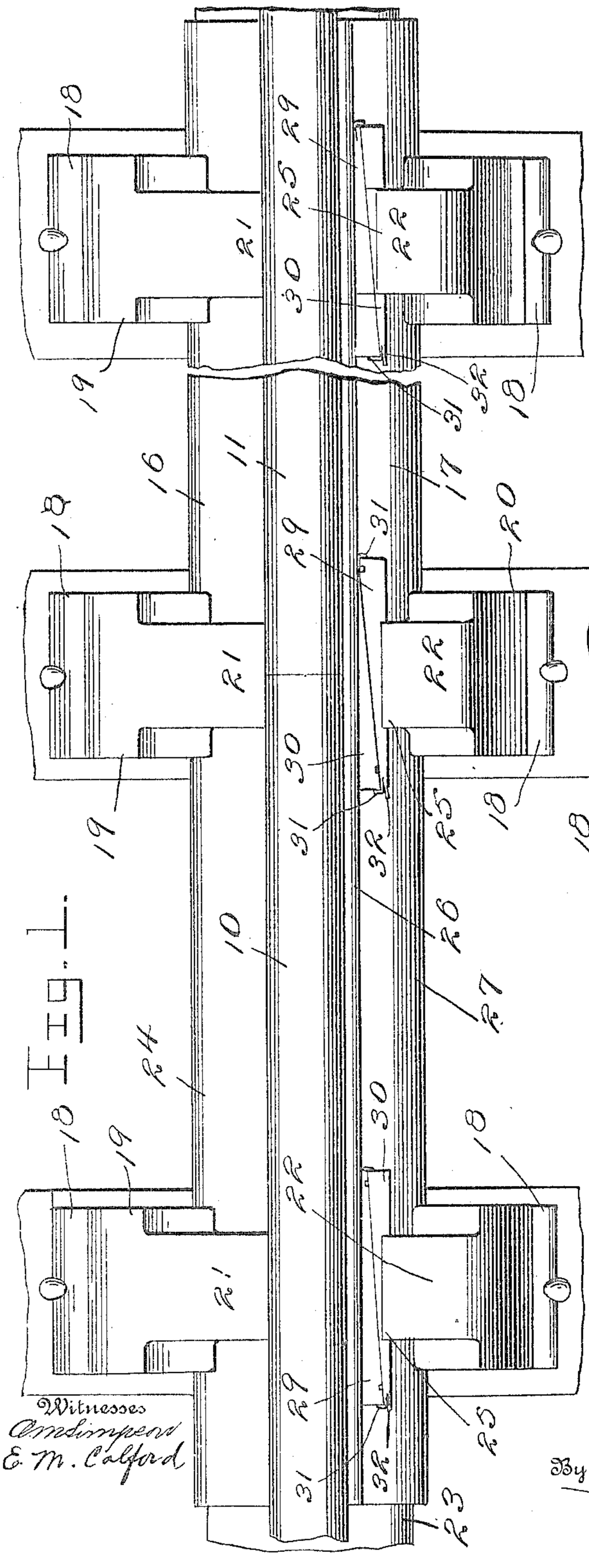

Fig. 1.

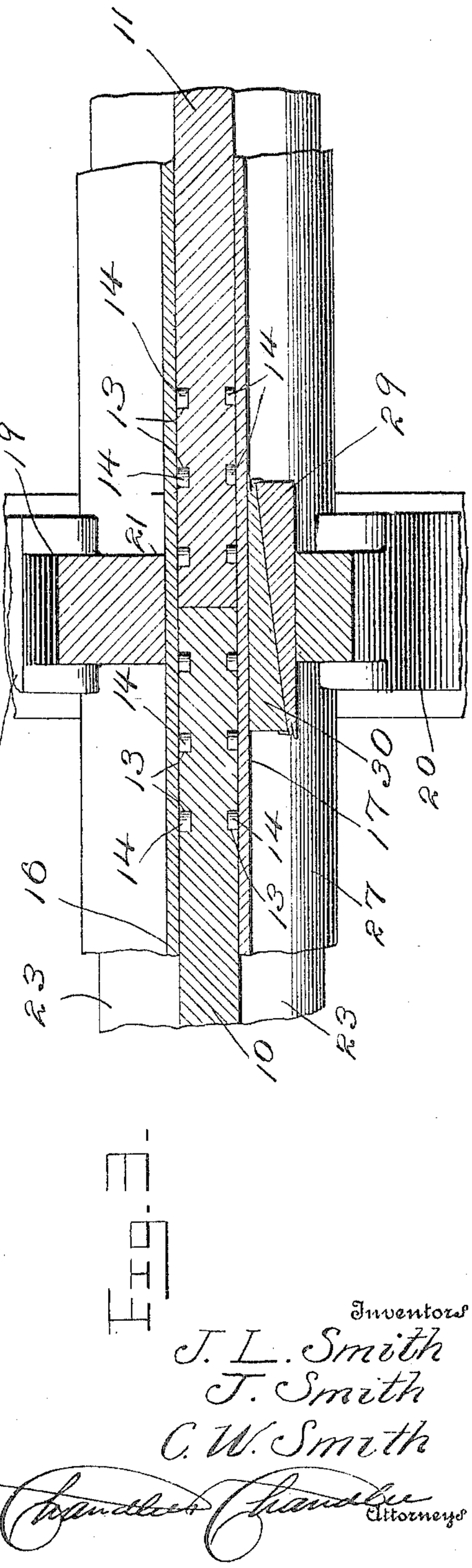

Fig. 2.

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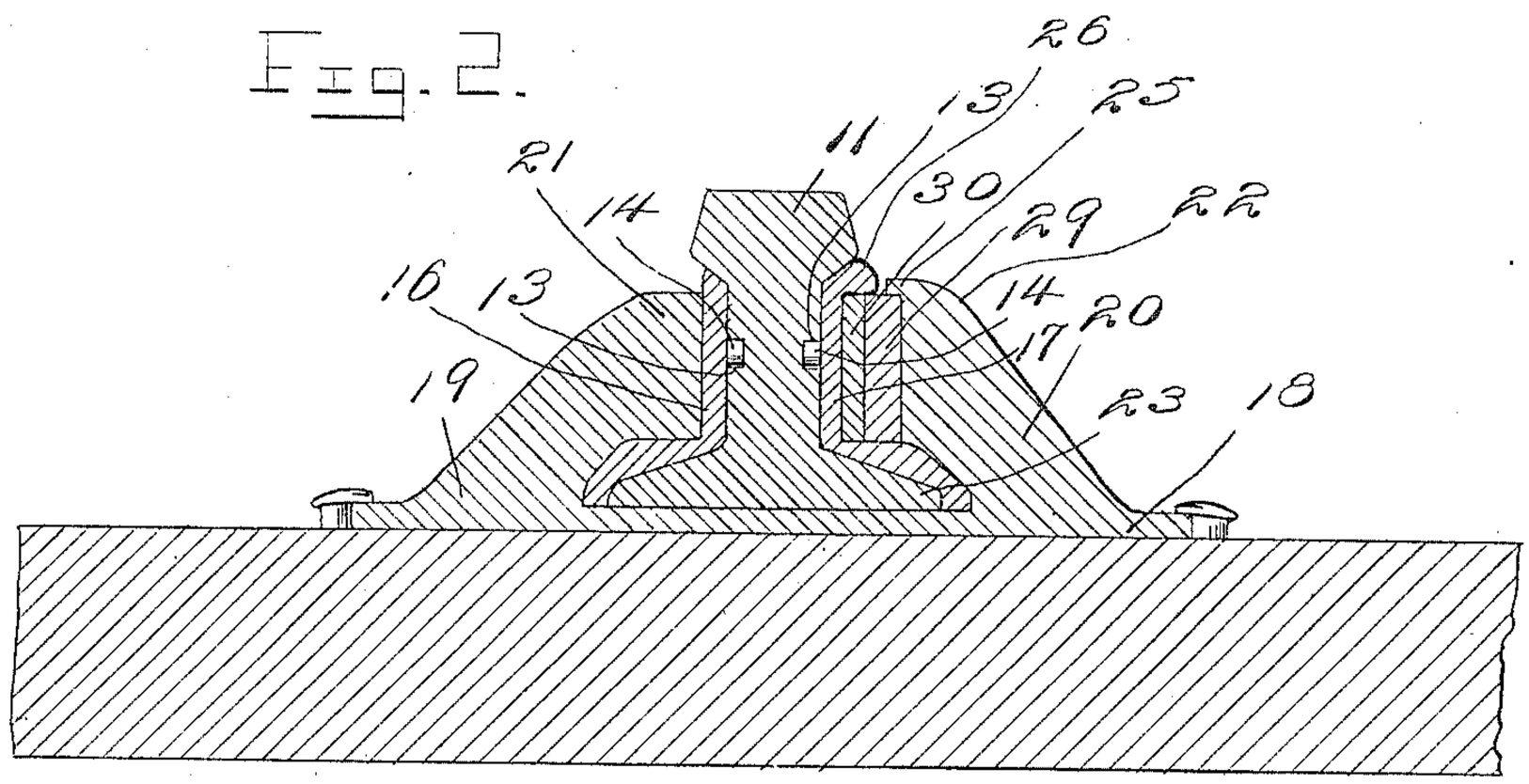
2 SHEETS—SHEET 2.

Fig. 2.



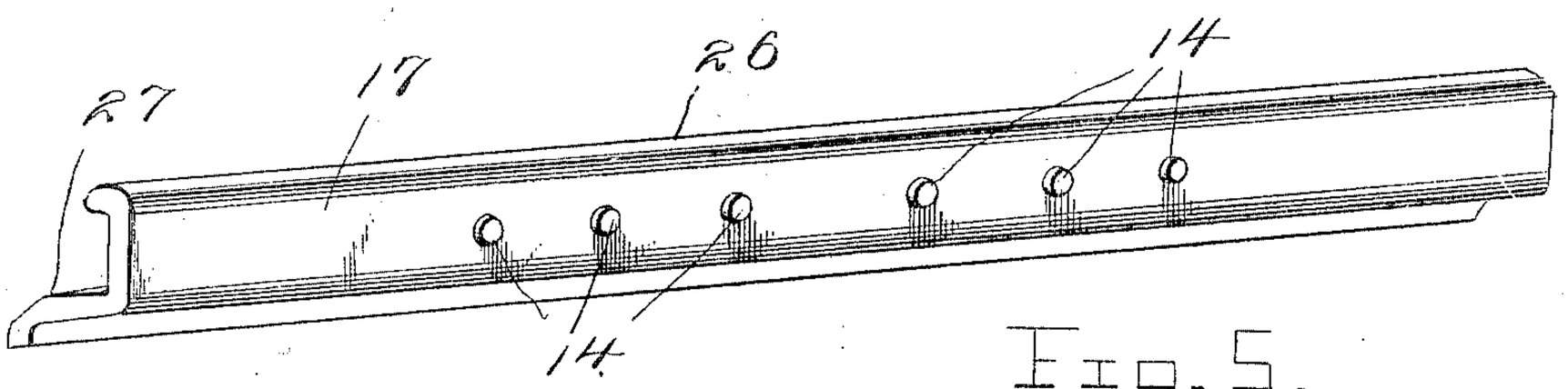


Fig. 5.

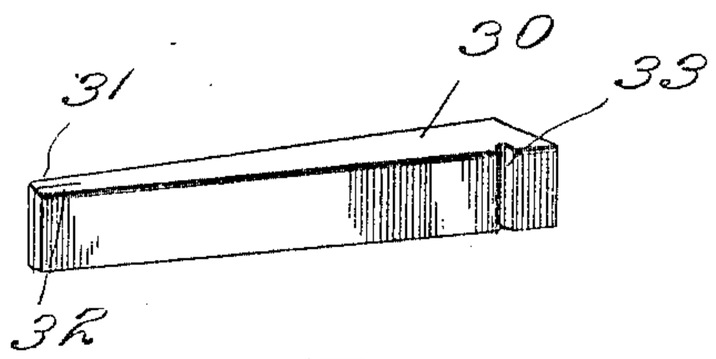


Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN L. SMITH, JAMES SMITH, AND CLARENCE W. SMITH, OF ELGIN, PENNSYLVANIA.

RAIL-SPLICE.

No. 804,632. Specification of Letters Patent. Patented Nov. 14, 1905.

Application filed March 8, 1905. Serial No. 248,981.

To all whom it may concern:

Be it known that we, JOHN L. SMITH, JAMES SMITH, and CLARENCE W. SMITH, citizens of the United States, residing at Elgin, in the county of Erie, State of Pennsylvania, have invented certain new and useful Improvements in Rail-Splices; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to rail-splices; and it has for its object to provide a simple and efficient means for holding the end portions of rails securely between the fish-plates disposed against them and this without the use of the usual bolts.

Other objects and advantages of the invention will be understood from the following description.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a top plan view showing the end portions of rails equipped with the present splice. Fig. 2 is a section taken transversely through the structure shown in Fig. 1. Fig. 3 is a horizontal section taken through the end portions of the rails, a chair with its coöperating wedges, and the adjacent portions of the fish-plates. Fig. 4 is a detail perspective view of one of the wedges. Fig. 5 is a detail view of a fish-plate, showing the pins thereon.

Referring now to the drawings, there are shown the end portions of two rails 10 and 11, which rails are of the usual shape and in practice are disposed with their ends abutting. Formed in the web portions 12 of both rails are recesses 13, which receive pins or lugs 14, that project from the faces of fish-plates 16 and 17, these fish-plates, with their lugs or pins, serving to hold the rails against longitudinal displacement with respect to each other. At each splice there are employed three chairs and coöperating members, these three structures being identical, so that a description for one will suffice for them all. Each chair comprises a flat base 18, adapted to rest directly upon the face of a tie, and from the end portions of the upper face of the base-plate there project upwardly the cut-under members 19 and 20, from the upper face of which extend upwardly and toward each other the fingers 21 and 22. The fingers 21 project inwardly beyond the portions 19, so as to extend over the base-flange 23 of the rail at that side and over also the base portion 24 of the corresponding fish-plate, which base portion of the fish-plate extends outwardly and then downwardly over the base-flange of the rail to contact with the upper face of the base-plate 18 of the chair. The fish-plate at this side of the rail is therefore held between the rail and the members 19 and 21 of the chair. The finger 22 is flush with the inner upper edge of the member 20 at the lower portion of said finger, and at the upper portion of the finger is a flange 25, that projects in the direction of the rail, the fish-plate 17 at the corresponding side of the rail having at its upper edge a longitudinal flange 26, that corresponds to and projects in the direction of the flange 25. The lower portion of the fish-plate 17 (shown at 27) extends over the base-flange of the rail at that side to the upper face of the base-plate 18, so that it is received between the base-flange of the rail and the member 20.

Between the member 22 of each chair and the fish-plate 17 and below the flanges 25 and 26 and resting upon the base of the fish-plate are received a pair of oppositely-driven metallic wedges 29 and 30, which serve to force the rail and the fish-plate 16 bodily in the direction of the finger 21 and member 19, so that the rail, with its two fish-plates, is securely clamped and held. To prevent accidental rearward movement of the wedges, the minor ends thereof are split vertically to form the laterally-spaced fingers 31 and 32. When the wedges are driven into place, so that these terminal fingers project beyond the bases of the opposing wedges, the inner finger, or rather the finger of each wedge that lies adjacent to the opposing wedge, may be bent outwardly against the base of the opposing wedge, and thus prevent longitudinal rearward movement of the wedges. In order that the wedges may be locked when not driven sufficiently far to project each with its minor end beyond the opposing wedge, the mutually-adjacent faces of the wedges may be slotted, as shown at 33, and after the wedges are driven the proper fingers may be bent into engagement with the slot.

It will of course be understood that when it is desired to employ this general principle for splicing a broken rail the pins or lugs may

be omitted from the fish-plates, so that they may fit flat against an unperforated rail-web.

The provision of the flanges 25 and 26 insures against upward displacement of the wedges, so that they are thus held against movement in all directions.

What is claimed is—

1. The combination with a rail and fish-plates disposed thereagainst, of a plurality of chairs provided with upwardly-directed fingers between which the lower portions of the rails and the fish-plates are received and oppositely-driven wedges engaged between a finger of each chair and the corresponding fish-plate, each wedge having terminal fingers adapted to be bent apart into the path of rearward movement of the opposing wedges.

2. The combination with abutting rails having transverse perforations, of fish-plates disposed against opposite faces of the rails and having lugs removably engaged in the perforations, the fish-plate at one side of the rails having a longitudinally outwardly directed flange at its upper edge, a plurality of chairs having upwardly-directed fingers between which the corresponding rails and the fish-plates are received, the finger of each chair adjacent to the flanged fish-plate having a corresponding flange projecting in the direction of the fish-plate, and a pair of opposed wedges engaged between each of said flanged fingers and the adjacent fish-plate and below said flanges, the mutually-adjacent faces of the opposed wedges being vertically slotted, and the wedges having terminal fingers at their minor ends adapted to be bent into engagement with the slots of the opposite wedges.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN L. SMITH.
JAMES SMITH.
CLARENCE W. SMITH.

Witnesses:
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IDA BARNHART.