No. 781,343. PATENTED JAN. 31, 1905.

C. W. ISRAEL.

RAILROAD TIE.

APPLICATION FILED APR. 25, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

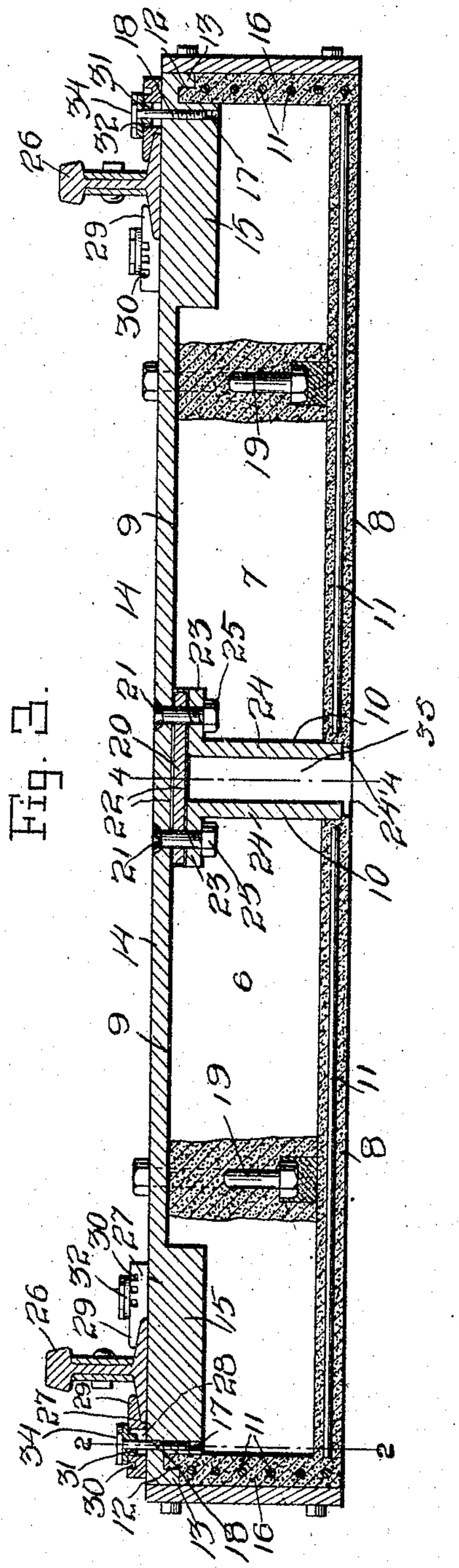
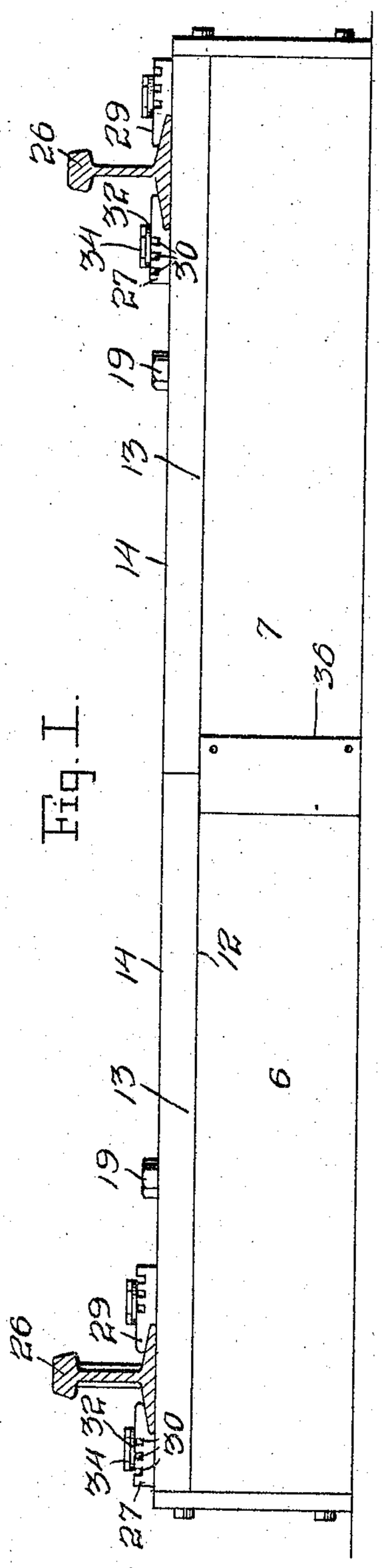


Fig. 2.



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2 SHEETS—SHEET 2.

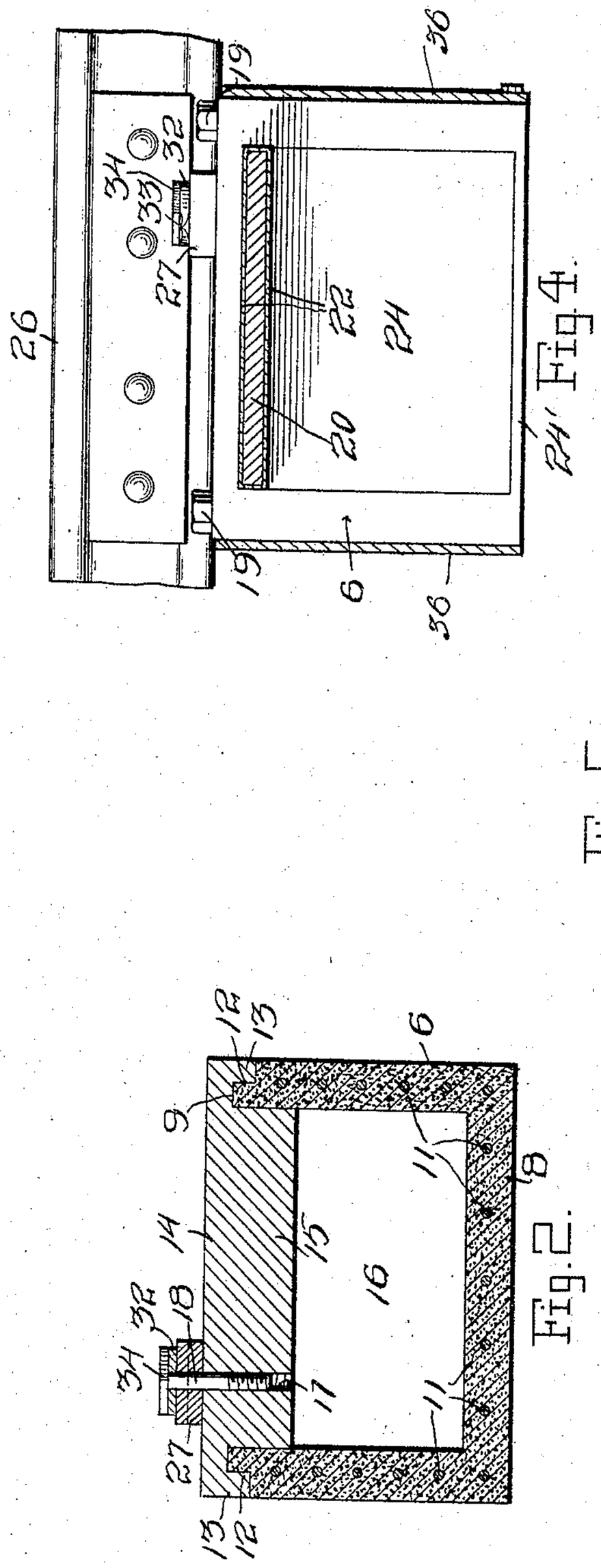

Fig. 4.

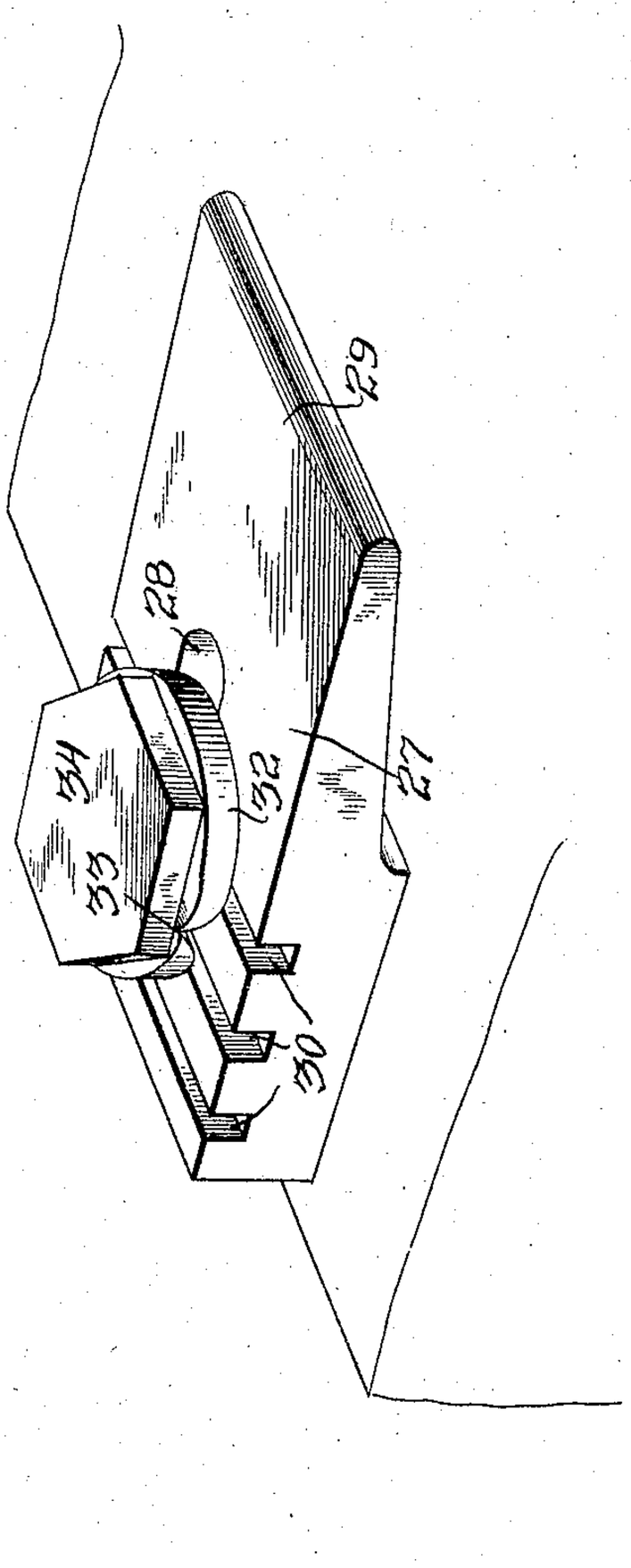

Fig. 5.

Fig. 2.

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No. 781,343. Patented January 31, 1905.

UNITED STATES PATENT OFFICE.

CHARLES W. ISRAEL, OF PARIS, ILLINOIS.

RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 781,343, dated January 31, 1905.

Application filed April 25, 1904. Serial No. 204,794.

To all whom it may concern:

Be it known that I, CHARLES W. ISRAEL, a citizen of the United States, residing at Paris, in the county of Edgar, State of Illinois, have invented certain new and useful Improvements in Railroad-Ties; and I 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 railroads, and more particularly to the ties and means for fastening the rails thereto, and has for its object to provide a tie which will be simple and cheap of construction and which, while being constructed of metal and a plastic substance, will be sufficiently resilient to permit of some bending as the rolling-stock passes over the track.

A further object is to provide means for attaching the rails to the ties which will be so constructed that different sized rails may be used without changing the fastening means.

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 sectional view of a track, showing one of the ties in side elevation. Fig. 2 is a section on line 2 2 of Fig. 3. Fig. 3 is a longitudinal section through the tie. Fig. 4 is a section on line 4 4 of Fig. 3. Fig. 5 is a detail perspective view of the rail-holding mechanism.

Referring now to the drawings, the tie in the present invention consists of two sections 6 and 7, which are identical in construction, so that a description of one will suffice for both. Each of these sections comprises a hollow base portion 8, of plastic material, which is open at the top 9 and one end 10, and this base portion is cast with strengthening-wires 11 in the thickness thereof. The upper edges of the wall of the base portion are provided with a continuous rabbet 12, with which is engaged the downwardly-turned flange 13 of a metallic top plate 14, which has a longitudinal rib 15 depending therefrom adjacent to the closed end 16 of the base portion, and this rib has threaded passages 17 therethrough which communicate with the upper face of the plate 14 and are arranged to receive bolts 18 for the attachment of the rail-holding mechanism, to be described below. The top plate 14 is secured to the base portion 8 by means of anchor-bolts 19.

The top plates 14 of the two sections 6 and 7 are attached to each other by means of a spring-metal plate 20, which is secured to the under faces of the top plates at the open ends 10 of the base portion by means of screws 21, which are engaged with perforations in its top plates. The plate 20 is galvanized and has a thin copper sheathing 22 to prevent rusting, and engaged with the screws 21 below the plate 20 are the laterally-turned end portions 23 of plates 24, which close the inner ends 10 of the sections 6 and 7, the plate 20 and portions 23 being held upon the lugs by nuts 25.

Rails 26 are secured to the upper faces of the top plates 14 adjacent to their outer ends and are held in place by means of blocks 27, having passages 28 therethrough engaged with the bolts 18 and which have laterally-projecting fingers 29, which engage the base-flanges of the rail. The passage 28 in each of the blocks 27 is elongated longitudinally thereof to permit the block to slide on the bolt 18, and the upper face of the block is provided with transverse slots 30, with which are engaged lugs 31, which project downwardly from a split locking washer 32, the locking-point 33 of which engages the under face of the head 34 of the bolt. It will thus be seen that the blocks 27 may be moved toward or away from each other to receive different-sized rails and are held in their different position by the lugs 31, which also prevent rotation of the washer 32, thus holding the bolt 18 in position. Plates 35 and 36 are secured to the sides of the tie, as shown, at the union of the sections 6 and 7, each plate being attached to one of the sections only and overlapping the other section, so that it covers the space between the two sections, but permits of movement of the sections with respect to each other.

From the above it will be seen that when a train passes over the rails the weight at the outer ends of the sections 6 and 7 will cause these ends to descend, this movement being

permitted by the spring-plate 20 and being limited by the lower ends 24′ of the plates 24, which are brought into engagement with each other when the outer ends of the sections are moved downwardly a sufficient distance. There is thus provided a tie having sufficient resiliency to lessen the jar of trains passing over the rails, and easier riding and greater life of the rolling-stock are insured.

In practice modifications of the specific construction may be made, and any suitable materials and proportions may be made without departing from the spirit of the invention.

What is claimed is—

1. A railroad-tie comprising two sections, a spring-plate attached to both sections at their inner ends to permit of vertical movement of the outer ends of the sections, and a plate secured to each section and arranged for movement into engagement with each other when the outer ends of the sections are moved downwardly to limit said downward movement of the sections.

2. A railroad-tie comprising two sections, each including a base and a top plate, a spring-plate secured at either end to an end of the top plate of each section to permit of vertical movement of the free ends of the sections, and depending plates connected with the top plates of the two sections adjacent to their inner ends, said plates being arranged for movement into engagement with each other when the free ends of the sections are moved downwardly to limit said downward movement.

3. A railroad-tie comprising sections, a spring connecting-plate attached to the sections for movement of the sections with respect to each other, and means for limiting the movement of the sections, said sections being arranged for the attachment of rails thereto.

4. A railroad-tie comprising two sections, each including a plastic base and a metallic top portion, a spring-plate secured at either end to an end of the top plate of each section for movement of the sections with respect to each other, means for limiting the movement of the sections, and means for attaching rails thereto.

5. A railroad-tie comprising two sections open at one end, the tops of said sections extending beyond the sides and bottoms thereof at their open ends, said sections being disposed with their open ends toward each other and with the free edges of the outwardly-extending portions of their tops against each other, said tops having perforations therethrough, a spring-plate disposed against the under side of the outwardly-extending portions of the top to permit of movement of the outer ends of the sections, said plate having perforations alining with those of the top, plates having perforated flanges at one end disposed with their flanges against the under side of the spring-plate and with the perforations thereof in alinement with those of the spring-plate and the tops, and bolts disposed in the alining perforations, said flanged plates being arranged to close the open ends of the sections and for movement into engagement with each other when the free ends of the sections are moved downwardly to limit said downward movement.

6. A railroad-tie comprising two sections, a spring-plate secured to both sections for movement of the free outer ends of the sections vertically, and means for limiting said vertical movement in both directions.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES W. ISRAEL.

Witnesses:

CHARLES TROUP,

A. F. LONG.