

No. 768,229.

PATENTED AUG. 23, 1904.

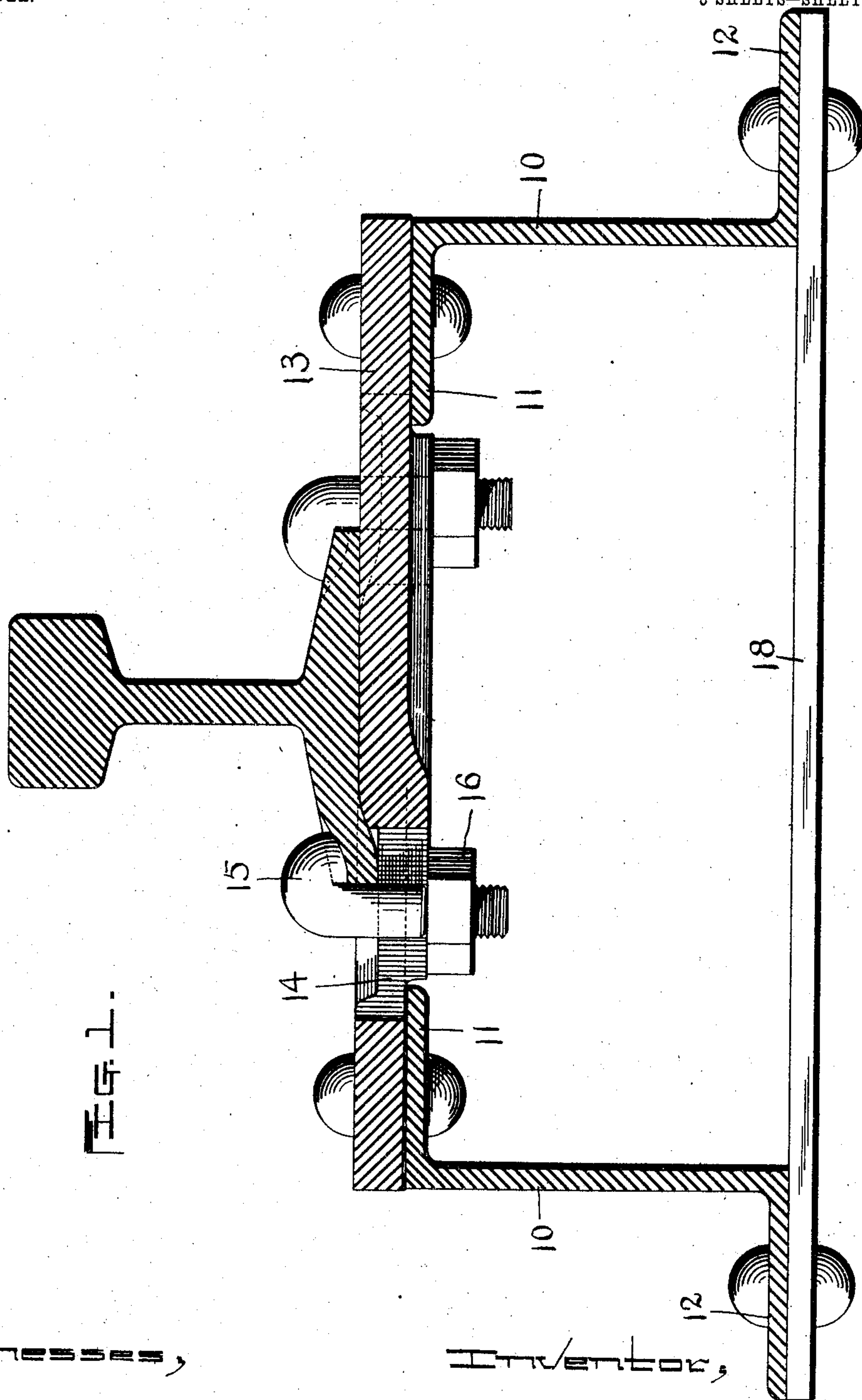
H. R. KEITHLEY.

STRINGER FOR SUPPORTING RAILROAD TRACK RAILS.

APPLICATION FILED NOV. 23, 1899. RENEWED JAN. 6, 1904.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses,

C. Forest Wesson.

M. C. Regan.

Inventor,

H. R. KEITHLEY.

By Southgate & Southgate Attys

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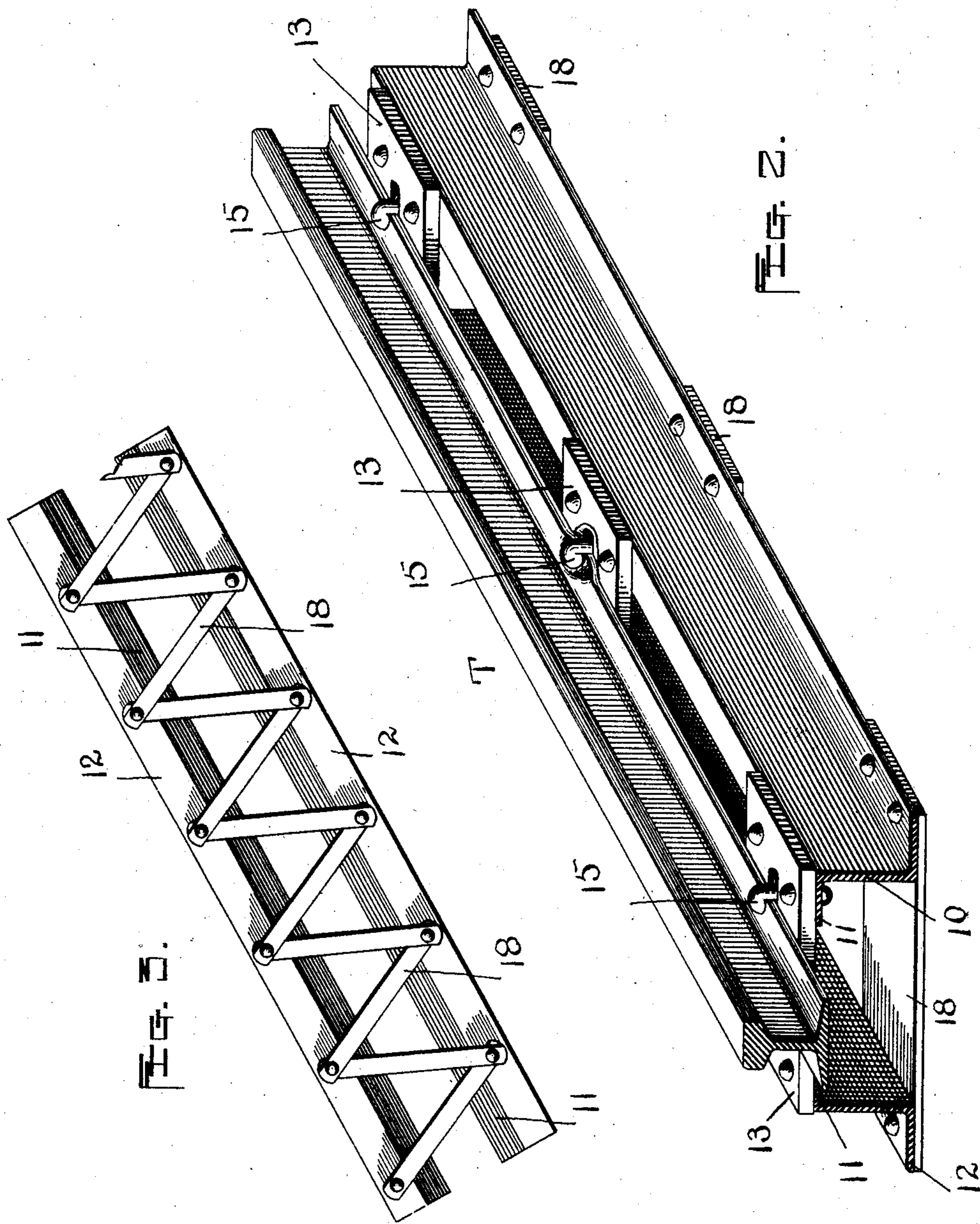
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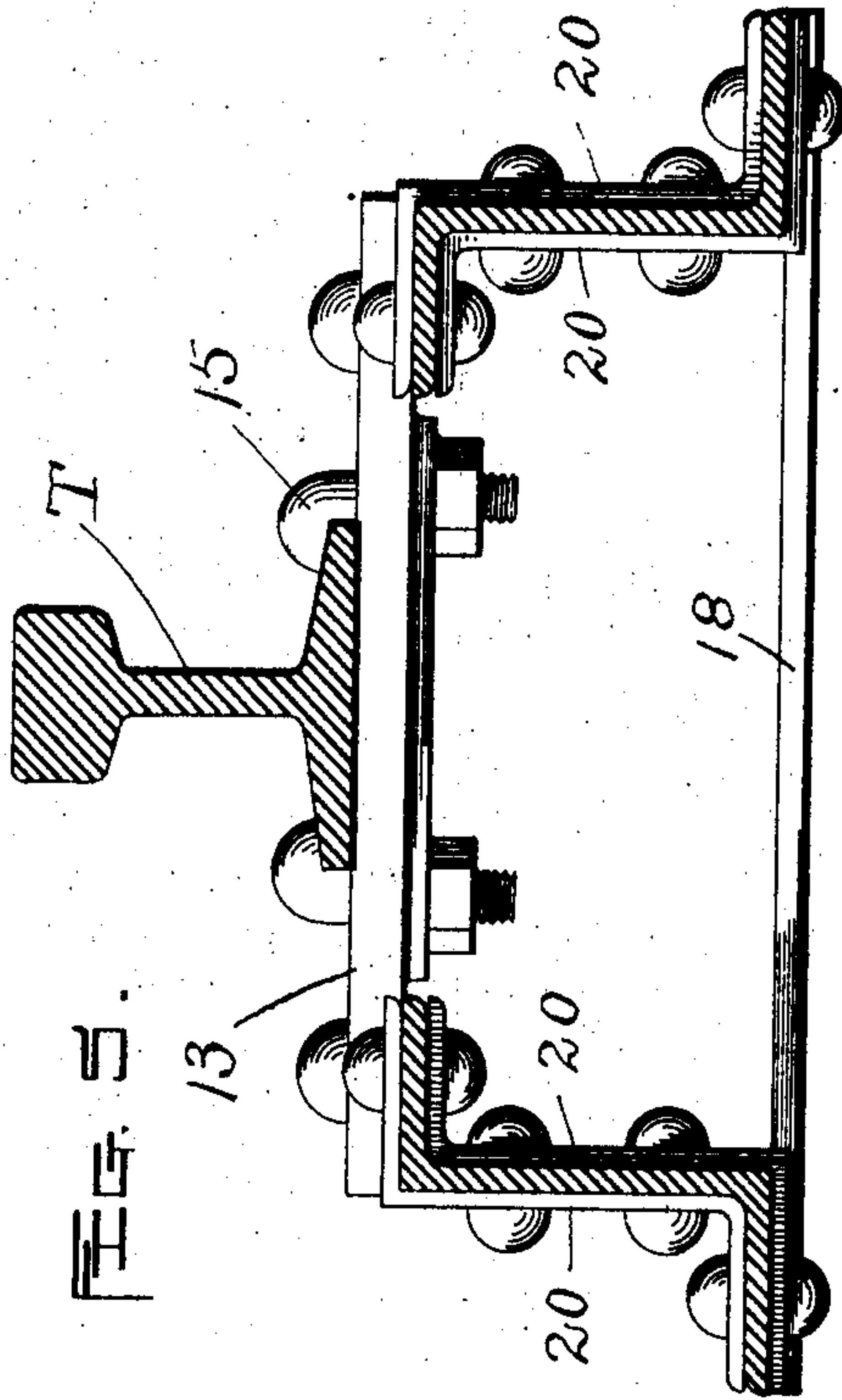
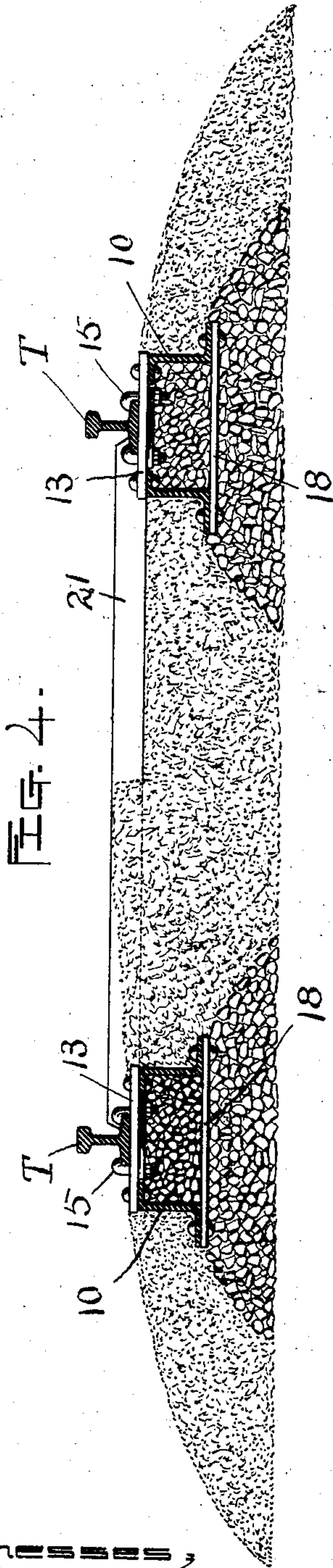
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3 SHEETS—SHEET 3.



Witnesses,

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M. E. Logan.

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UNITED STATES PATENT OFFICE.

HERBERT R. KEITHLEY, OF WILSON, NEW YORK.

STRINGER FOR SUPPORTING RAILROAD-TRACK RAILS.

SPECIFICATION forming part of Letters Patent No. 768,229, dated August 23, 1904.

Application filed November 23, 1899. Renewed January 6, 1904. Serial No. 187,981. (No model.)

To all whom it may concern:

Be it known that I, HERBERT R. KEITHLEY, a citizen of the United States, residing at Wilson, in the county of Niagara and State of New York, have invented a new and useful Stringer for Supporting Railroad-Track Rails, of which the following is a specification.

This invention relates to a steel stringer for forming a longitudinal support for railroad-rails; and the object of the present invention is to provide a simple, efficient, and inexpensive form of stringer in which a smaller amount of metal of equal thickness may be arranged to secure a higher moment of inertia and a larger effective bearing area than in stringers which have heretofore been designed.

To this end a stringer for railroads constructed according to this invention consists of the features of construction and combinations of parts therein as hereinafter described, and more particularly pointed out in the claims at the end of this specification.

In the accompanying three sheets of drawings, Figure 1 is a transverse sectional view showing a rail supported by a stringer constructed according to this invention. Fig. 2 is a perspective view thereof. Fig. 3 is a bottom plan view of the stringer, showing the bottom plates or bars of the stringer latticed. Fig. 4 is a sectional view showing the manner in which the stringers may be connected together and mounted in the road-bed, and Fig. 5 is a transverse sectional view illustrating the construction for splicing or joining successive stringers together.

A stringer for forming a longitudinal support for the rails of a railroad constructed according to this invention comprises two steel side members. Each of these side members has a single upper flange extending from one side thereof and a single bottom flange extending from the opposite side thereof. In their preferred forms the side members of a steel stringer constructed according to this invention are of a substantially Z shape in cross-section.

Referring to the drawings and in detail, the stringer as herein illustrated comprises the side members 10 of a substantially Z shape in

cross-section, having inwardly-extending upper flanges 11 and outwardly-extending bottom flanges 12. The bottom flanges 12 are connected at intervals by cross plates or bars 18, or, if desired, the plates or bars connecting the bottom flanges 12 may be latticed, as shown in Fig. 3. Connecting the upper flanges 11 of the side members are cross-pieces 13. The cross-pieces 13 are slotted, as at 14, to receive the bolts 15, which have nuts 16 threaded thereon to clamp a T-rail on the cross-pieces 13.

One especial feature of advantage in employing stringers constructed according to this invention resides in the fact that each rail may be independently anchored or rigidly secured at its middle part. To accomplish this purpose, one or more of the plates 13 near the center of each rail have depressions or sockets formed to receive and retain kinks or downwardly-extending bends formed in the flanges of the rail-bases, as shown most clearly in Figs. 1 and 2. As shown in these figures a kink or depression in the rail-base is gripped under the head of the spike-bolt 14 and is securely held in the socket or depression formed in the plate 14. This prevents the displacement of the rail by creeping and allows the expansion or contraction of the rail from its center toward its ends. The plates toward the extreme ends of a rail, where the greatest amount of expansion and contraction takes place, need not be anchored to the rail in this manner.

As shown most clearly in Fig. 4, stringers constructed according to this invention may be securely anchored in the broken stone ballast of a road-bed, while the intermediate filling between said stringers may be gravel, sand, or other inexpensive material, and the rails may be connected together at suitable points along their lengths by cross-pieces, as 21.

Stringers constructed according to this invention are preferably made in lengths of about thirty feet, and successive lengths may be secured together end to end by means of Z-shaped splice-plates 20, as shown most clearly in Fig. 5, the splice-plate 20 being arranged to secure practically the same strength and stiffness at the joint as at other points along the lengths of the stringers.

A stringer of this construction can be used to better advantage and with greater economy than constructions heretofore designed for the reason that the Z-shaped side bars have
5 a high moment of inertia and give the greatest available metal section to resist deflection from moving loads and provide sufficient depth so that the stringer may be sunk to a depth of six to eight inches into the ballast,
10 thus securely anchoring it so as to effectively resist displacement from the lifting or wave motion, which might cause the creeping of the rails, and as the opening between the top flanges of the stringers is effectively closed
15 by the bases of the rails the effective bearing area of the stringer upon the stone ballast is equivalent to the total width of its base, which may be from twenty to twenty-two inches.
20 Successive lengths of stringers may be rigidly spliced or joined together, and for curved rails the Z-shaped side members of the stringers may be bent or curved even more readily than ordinary track-rails, and at the
25 same time the slots 14 in the cross-plates 13 will permit the slight lateral adjustment of the rails on the stringers when necessary.

I am aware that changes may be made in the proportions of the parts constituting a
30 stringer constructed according to this invention, and I do not wish, therefore, to be limited to the forms herein shown and described; but

What I do claim, and desire to secure by
35 Letters Patent of the United States, is—

1. As an article of manufacture, a steel stringer built in sections to form a longitudinal support for the rails of a railroad-track,

comprising two longitudinally - extending members substantially Z shape in cross-section which form the sides of said stringer, substantially as described. 40

2. As an article of manufacture, a steel stringer built in sections to form a longitudinal support for the rails of a railroad-track, 45 comprising two longitudinally - extending members Z shape in cross-section which form the sides of the stringer, cross pieces or bars connecting the bottom flanges of the side members, cross pieces or plates connecting 50 the top flanges of the side members, and means for fastening a rail to said cross-pieces, substantially as described.

3. The combination of a stringer built in sections to form a longitudinal support for 55 the rails of a railroad-track, comprising side members substantially Z shape in cross-section and arranged with their upper flanges facing inwardly, and their bottom flanges facing outwardly, cross pieces or plates connecting the side members of the stringer, 60 and rails fastened on said cross pieces or plates to substantially close the opening between the inwardly-facing top flanges of the side members, whereby the effective bearing 65 of the stringer upon the stone ballast of a road-bed is substantially equal to the total width of its base, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing 70 witnesses.

HERBERT R. KEITHLEY.

Witnesses:

JNO. J. BONNER,
THEO. L. POPP.