(No Model.)

2 Sheets—Sheet 1.

C. L. TRAVIS.

RAILROAD RAIL.

No. 510,391. Patented Dec. 5, 1893.

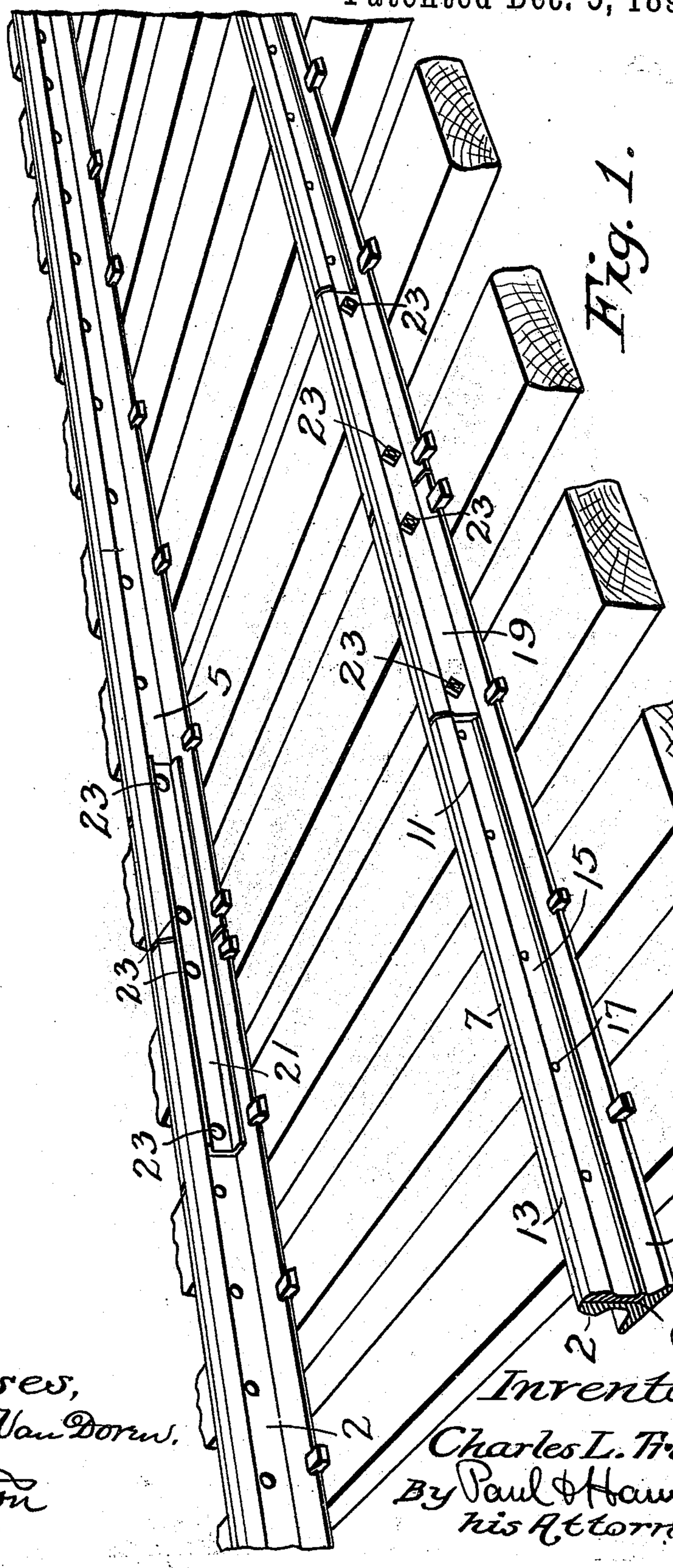

Fig. 1.

Witnesses,
Chas. E. Van Dorn.
F. S. Lyon

Inventor,
Charles L. Travis.
By Paul & Hawley
his Attorneys.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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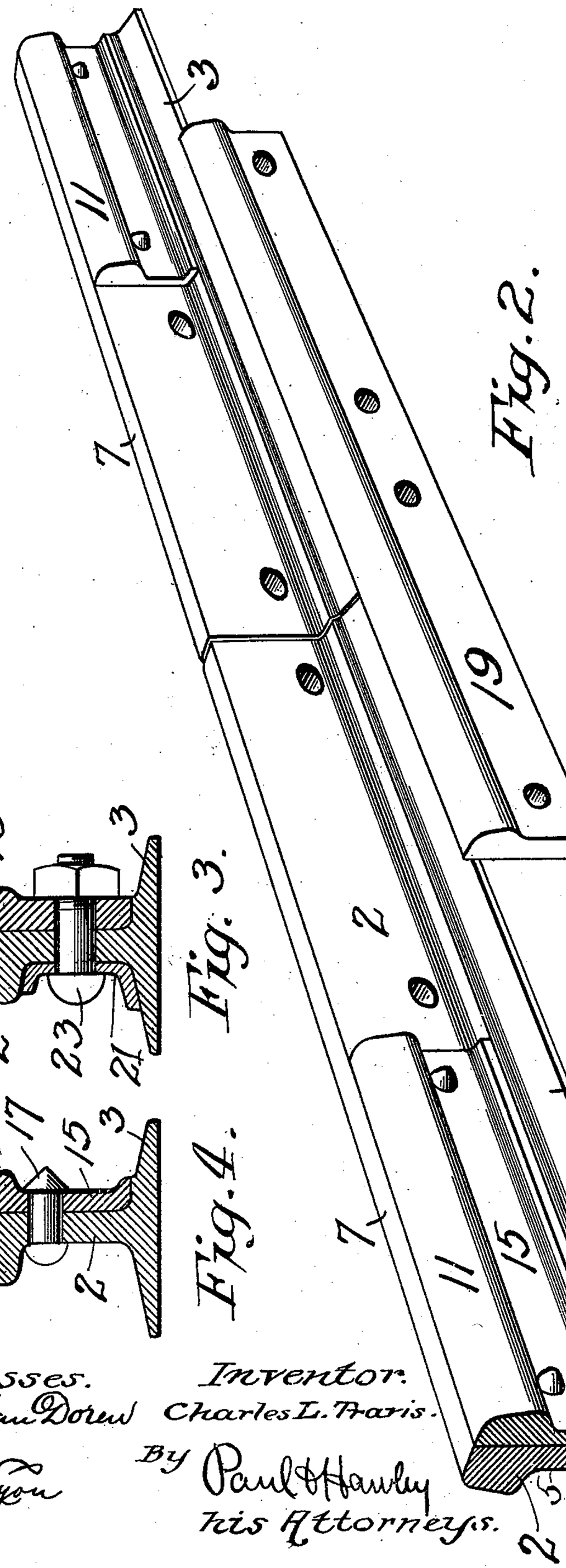

Fig. 2.

Fig. 3.

Fig. 4.

Witnesses.
Chas. E. Van Dorew
F. S. Lyon

Inventor:
Charles L. Travis.
By Paul & Hawley
his Attorneys.

THE NATIONAL LITHOGRAPHING COMPANY.
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES L. TRAVIS, OF MINNEAPOLIS, MINNESOTA.

RAILROAD-RAIL.

SPECIFICATION forming part of Letters Patent No. 510,391, dated December 5, 1893.

Application filed March 14, 1893. Serial No. 465,904. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. TRAVIS, of the city of Minneapolis, county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Railroad-Rails, of which the following is a specification.

This invention relates to improvements in rails designed for use upon railroads of all kinds, and the objects I have in view are to provide a rail which will be very much stronger than the ordinary rail, and which will do away with the usual joints, and when laid will form practically a continuous rail, at the same time allowing for the expansion and contraction as readily as in the present style of rails.

To this end the invention consists generally in a railroad rail, as a new article of manufacture, made up of two parts riveted together, one part of the rail being provided with the usual flange, and with a web that is substantially of the thickness of the present webs, and with a part of the top or tread of the rail; and the other part being provided with the other part of the top or tread of the rail, together with a plate that extends down the web of the first part and rests upon a shoulder on the base thereof. These two parts are riveted together throughout, but the second part above referred to does not extend the full length of the first part, but instead is about four feet shorter so that a gap of about two feet in length is made at each end of the outside of each rail. When the rails are laid a supplemental plate or section is put in to fill the gap between the ends of the second parts or sections above referred to, and this is bolted firmly to the main parts or sections of the rails, the bolts preferably extending through a suitable fish-plate arranged on the inner side of the rails.

The invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of a section of railroad track constructed in accordance with my invention, and showing the manner of joining the parts together. Fig. 2 is a perspective view of portions of two rails, showing the supplemental part removed. Figs. 3 and 4 are detail cross sections.

In all of the drawings 2 represents the main part or section of the rail, which is provided with the usual flange 3, with an upright web 5, and with the partial top or tread 7. This part of the rail is also provided with the shoulder 9 arranged upon one side just above the flange 3. 11 represents the other section, which is also provided with the partial top or tread 13, and with the web 15, and is adapted to fit against the flat side of the web of the other section, the two sections when thus brought together forming a complete rail and being secured throughout their entire length by suitable rivets 17. The section 11 is shorter than the section 2, preferably extending only to within about two feet of each end of the section 2. When the rails are laid they are put down and spiked to the ties in the usual way, and a supplemental section 19 is arranged against the flat sides of the webs of the sections 2, the supplemental section being of sufficient length to fill the gap between the ends of the sections 11. A suitable fish-plate 21 is preferably arranged upon the inside of section 2, and bolts 23 are passed through the supplemental section 19, through the web of the section 2 and throughout the fish-plate 21. The office of this fish-plate is primarily to receive the ends of the bolts and in connection with the supplementary plate or section holds the bolts perpendicular to the rail web, and thereby prevents the rocking of the bolts and the binding of the supplemental section so firmly upon the main section as to prevent expansion and contraction. Suitable provision is made for the expansion of the several rails, as shown in Fig. 2.

The section 19 is preferably made thicker than the section 11 and it may be made of any desired thickness and strength. The lower edge of this section rests upon the shoulder on the main section so that the weight is taken upon this shoulder and not on the bolts.

The forms of the sections are such that

each section may be rolled as readily as the ordinary rail; and the two main sections after being rolled are riveted together firmly throughout their entire length, thereby forming a complete rail. This rail is much stronger than the ordinary rail for the reason that it is considerably heavier in proportion to the tread, base, and height of an ordinary rail, of like dimension, the main section in itself containing nearly as much metal as an ordinary complete rail. Being formed of two sections riveted together, if there are any soft or unequal spots in one section such places will ordinarily come opposite stronger or harder spots of the other section, thereby giving an evenness of quality and consequent reliability which is not present in the common rail. In case of a fracture in either section of the rail the other section will ordinarily sustain the rolling stock until the broken section is discovered and a new rail substituted. If there is any spring or give to the main sections at points near their joints so as to cause them to yield slightly, the weight will immediately be brought upon the supplemental section, and as the supplemental part rests firmly upon the bases of the two approaching rails, and as this section, owing to its increased thickness, as compared with the parts 11, has all of the strength of an ordinary rail and is of sufficient length to transmit the weight to points at a considerable distance from the joint proper, the pressure will be distributed through the rail bases over a very considerable area, the action being to immediately bring the ends of the rails into a straight line and prevent any pounding whatever at the joint; this being the case and all joints being made in this way the result is a track in effect composed of continuous unbroken rails. By placing the ties beneath the several joints or in intermediate positions, what approaches a cantilever action is obtained.

The advantages of this rail are, first, that by this means a rail is formed that is much stronger than the usual rail rolled out in one piece; the rail being formed of two sections riveted together throughout its entire length it excels the ordinary rail in strength and durability. In addition to this, instead of having the usual joints, the supplemental sections, extending across the joints between the main sections, and practically forming continuous rails, the weight of the rolling stock is taken upon the supplemental sections 19 which rest upon the shoulder on the main sections, as soon as the end of the main sections begin to yield the slightest amount, and distributes the weight over considerable distances on the main rails and over three or four ties. It is obvious that as the supplemental section is always on the outside of the rail, there is practically no limit to the amount of metal which may be used in it, to correspond with the peculiar circumstances of its use, such, for instance, as a very soft foundation or bed, or a sparing distribution of ties.

I claim as my invention—

1. As a new article of manufacture, the herein described railroad rail, consisting of the main section provided with a flange, a vertical web, a partial top or tread, a shoulder above the flange and at the base of the web, a second section consisting of a partial top or tread, a plate fitting against the web of the first section with its lower edge resting upon said shoulder, and means for rigidly and immovably securing said sections together, said second section being shorter than the first and neither of its ends extending to the ends of the first or main section.

2. The combination with the main sections, each composed of a flange or base, a vertical web and a partial top or tread, of the second sections, firmly and immovably secured to the main sections respectively, and each consisting of a web and a partial tread or top, said second sections being shorter than the first, so that gaps are left between the ends thereof and the first sections, and a supplementary section also provided with a partial top or tread and with a vertical web, and secured to said main sections between the ends of the second or shorter sections, substantially as described.

3. As a new article of manufacture, a railroad rail consisting of two longitudinal sections riveted together, one of said sections being shorter than the other leaving gaps or notches at each end of the rail so formed.

4. As a new article of manufacture, a railroad rail consisting of two sections riveted together and each provided with a partial top or tread, and one of said sections having a complete flange or base, and the other being shorter than the first, and resting upon the flange thereof and occupying a middle position thereon.

5. The combination with the rails, each consisting of two sections riveted together, one of said sections being shorter than the other, of the supplemental sections arranged between the ends of the shorter sections and covering the joints between the other sections.

6. As a new article of manufacture, a rail made up of two sections riveted together, one section having a thick web and part of the tread or top, said part also having the complete base, and the second part being narrower and thinner and resting upon the top of said base, and said second section being shorter than the first section, substantially as described.

7. A combination in a continuous rail of the main parts thereof, each composed of a section having a complete base a web and a partial top or tread and also having a longitudinal shoulder at the foot of said web, and

a second section shorter than the first and composed of a web and a partial top or tread, the web resting upon the shoulder of the first section and the second section secured to the first, gaps or notches being left between the ends of the shorter section and those of the first and longer section, and a supplementary part secured upon the abutting ends of the main parts of the continuous rail, between the ends of the shorter sections thereof and resting upon the shoulders of the main sections, substantially as described.

In testimony whereof I have hereunto set my hand this 4th day of March, 1893.

CHARLES L. TRAVIS.

In presence of—
A. C. PAUL,
F. S. LYON.