

No. 797,470.

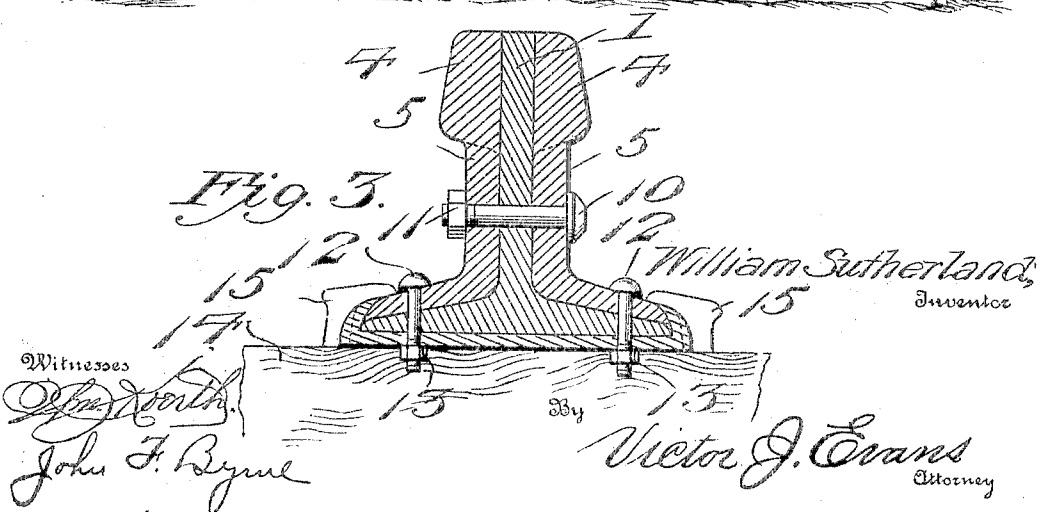
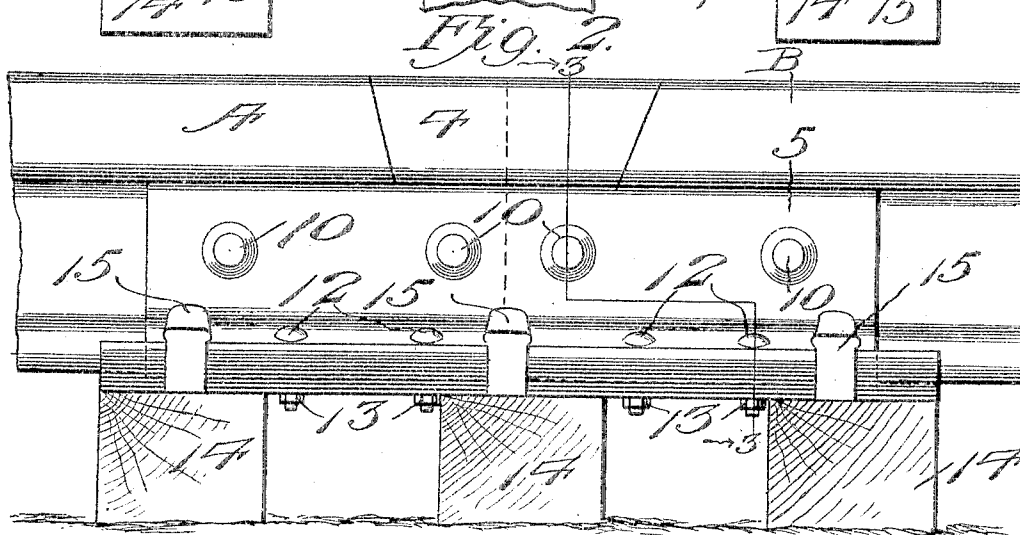
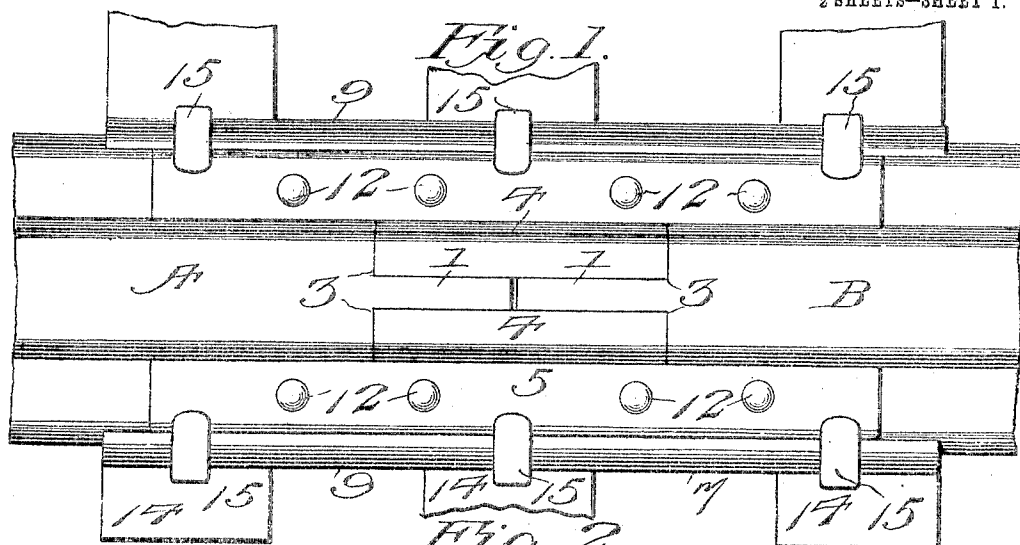
PATENTED AUG. 15, 1905.

W. SUTHERLAND.

RAIL JOINT.

APPLICATION FILED DEC. 28, 1904.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 4.

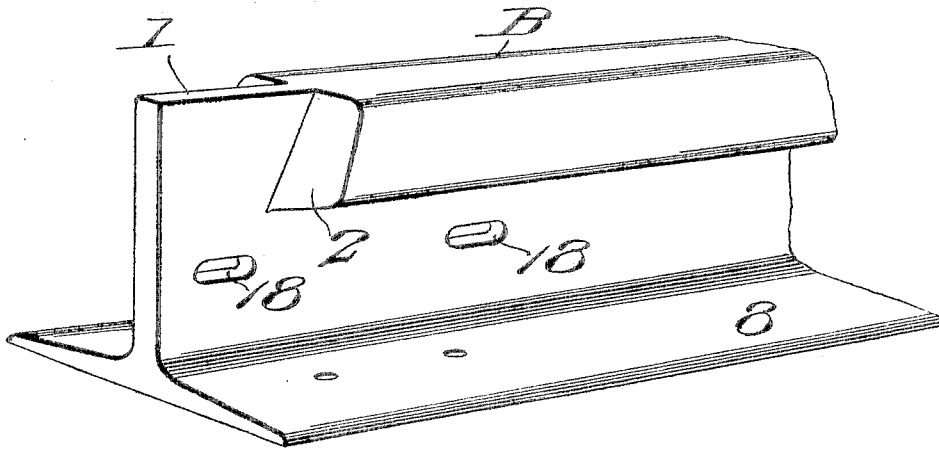


Fig. 5.

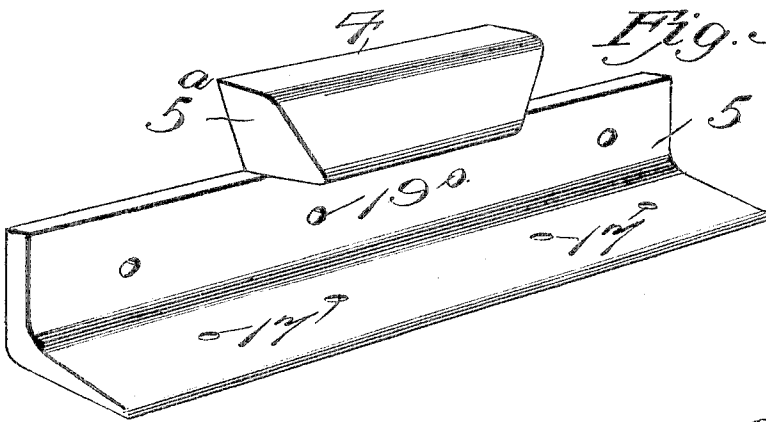
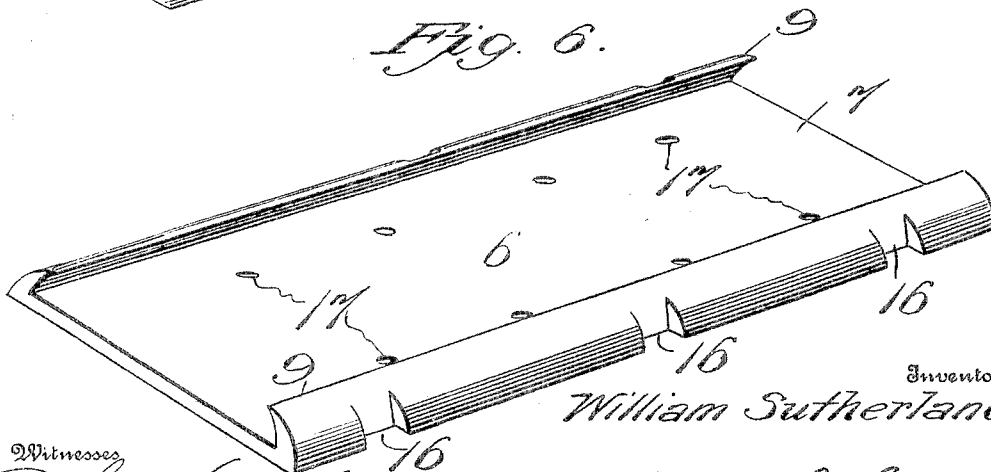


Fig. 6.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM SUTHERLAND, OF STATEN ISLAND, NEW YORK.

RAIL-JOINT.

No. 797,470.

Specification of Letters Patent.

Patented Aug. 15, 1905.

Application filed December 28, 1904. Serial No. 238,680.

To all whom it may concern:

Be it known that I, WILLIAM SUTHERLAND, a citizen of the United States, residing at Staten Island, in the county of New York and State of New York, have invented new and useful Improvements in Rail-Joints, of which the following is a specification.

My invention relates to rail-joints; and its primary object is to provide a novel and useful device of this character adapted to unite the meeting ends of two adjacent rails in such a manner that all liability of the rail ends becoming separated or sagging is obviated.

A further object of the invention is to provide a rail-joint which is so constructed that the treads of the rails are made practically continuous at the meeting-points of the adjacent rail ends, whereby the pounding incident to the separation of the rails is avoided.

The invention consists in the novel features of construction, combination, and arrangement of parts hereinafter more fully described, claimed, and illustrated in the accompanying drawings, which disclose the preferred form of my invention, and in which—

Figure 1 is a top plan view of two railroad-rails united by means of my improved joint. Fig. 2 is a side elevation thereof. Fig. 3 is a sectional view on the line 3 3, Fig. 2. Fig. 4 is a detail perspective view of a fragmentary portion of one of the rails. Fig. 5 is a detail perspective view of one of the fish-plates, and Fig. 6 is a detail perspective view of the chair of the rail-joint.

Referring to the drawings by reference characters, A and B designate railroad-rails having their treads cut away on either side of the webs 1, as fully illustrated in Fig. 4. The ends of the treads are inclined upwardly, as shown at 2, Fig. 4. The cutting away of the treads of the rails A and B provides spaces 3 on either side of the webs 1, with inclined end walls for the reception of tread portions 4, carried by the fish-plates 5. The tread portions 4 have their ends inclined downwardly and inwardly, as at 5, to correspond to the inclination of the ends of the treads of the rails.

6 designates a chair provided with a base 7, upon which are adapted to rest the bases 8 of the rails A and B. The base 7 is provided with terminal edge flanges 9, curved inwardly to project over the edges of the bases 8 of the rails.

The fish-plates 5 are angular in cross-section and have rigidly secured to the edges of

the vertical portions thereof the tread-pieces 4. The edges of the horizontal portions of the fish-plates 5 are adapted to be interposed between the inwardly-curved portions of the flanges 9 and the top portions of the bases 8 of the rails. Bolts 10 are adapted to pass through the vertical portions of the fish-plates 5 and the webs 1 of the rails and have mounted thereon nuts 11, thus firmly securing the fish-plates to the rails. Bolts 12 or other suitable fastening means are passed through the horizontal portions of the fish-plates 5, the bases of the rails, and the base 7 of the chair 6, and have secured thereto nuts 13, thereby firmly securing the chair in applied position.

The rails are mounted upon ties or sleepers 14, as is usual, and in order to prevent the rails from spreading spikes 15 are used. The flanges 9 of the chair are provided with recesses 16 for the reception of the spikes 15, whereby the heads of the spikes may engage over the flanges 9 to compensate for any strain that may be brought to bear upon the flanges to move them outwardly from engagement with the edges of the horizontal portions of the fish-plates 5.

The horizontal portions of the fish-plates 5 and the base 7 of the chair 6 are provided with alining perforations 17 for the passage of the bolts 12, and the web 1 of the rails and the vertical portions of the fish-plates 5 are provided with alining openings 18 and 19, respectively, the openings 18 of the webs 1 being elongated to permit of the usual contraction and expansion of the rails. The openings 18 and 19 are provided for the passage of the bolts 10.

It is apparent that by securing the tread portions 4 to the fish-plates and that by cutting away the treads of the rails A and B for the reception of the tread portions 4 the continuity of the treads of the rails is preserved and the pounding usually incident to the spaces intervening the adjacent ends of the tread portions is obviated.

From the foregoing description, taken in connection with the accompanying drawings, the construction, operation, and advantages of my improved rail-joint will be readily apparent without requiring any further extended explanation. It will be seen that the device is simple of construction, that said construction permits of its manufacture at small cost, and that it is exceedingly well adapted for the purpose for which it is designed.

Various changes in the form, proportions,

and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus fully described the invention, what is claimed as new is—

A rail-joint having the treads of each of the meeting ends of the rail-sections cut away on opposite sides to form recesses when the ends of the sections are brought together, the ends of the treads being provided with inclined walls, and fish-plates having formed on their upper edges parts of treads which are mounted in said recesses, said parts of treads having inclined ends which are arranged flush against the inclines of the treads of the rail-sections, the vertical parts of the fish-plates extending down the sides of the web of the sections and under the tread, and having their flanged por-

tions mounted on the flanges of the base of the rails, a chair having opposite longitudinal edge flanges, the base of the rail being mounted on the base of the chair with the flanges of the chair inclosing the edges of the fish-plates and those of the base-flanges of the rails, means for securing the flanges of the fish-plates and flanges of the bases of the rails to the base of the chair, means secured to the edge flanges of said chair and to the road-bed, and means for securing the vertical portions of the fish-plates to the webs of the rail-sections, substantially as specified.

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

WILLIAM SUTHERLAND.

Witnesses:

ABRAM E. DEPUY,
ERNEST MILLER.