

(No Model.)

O. T. BEDELL.
RAIL JOINT BRIDGE.

No. 598,844.

Patented Feb. 8, 1898.

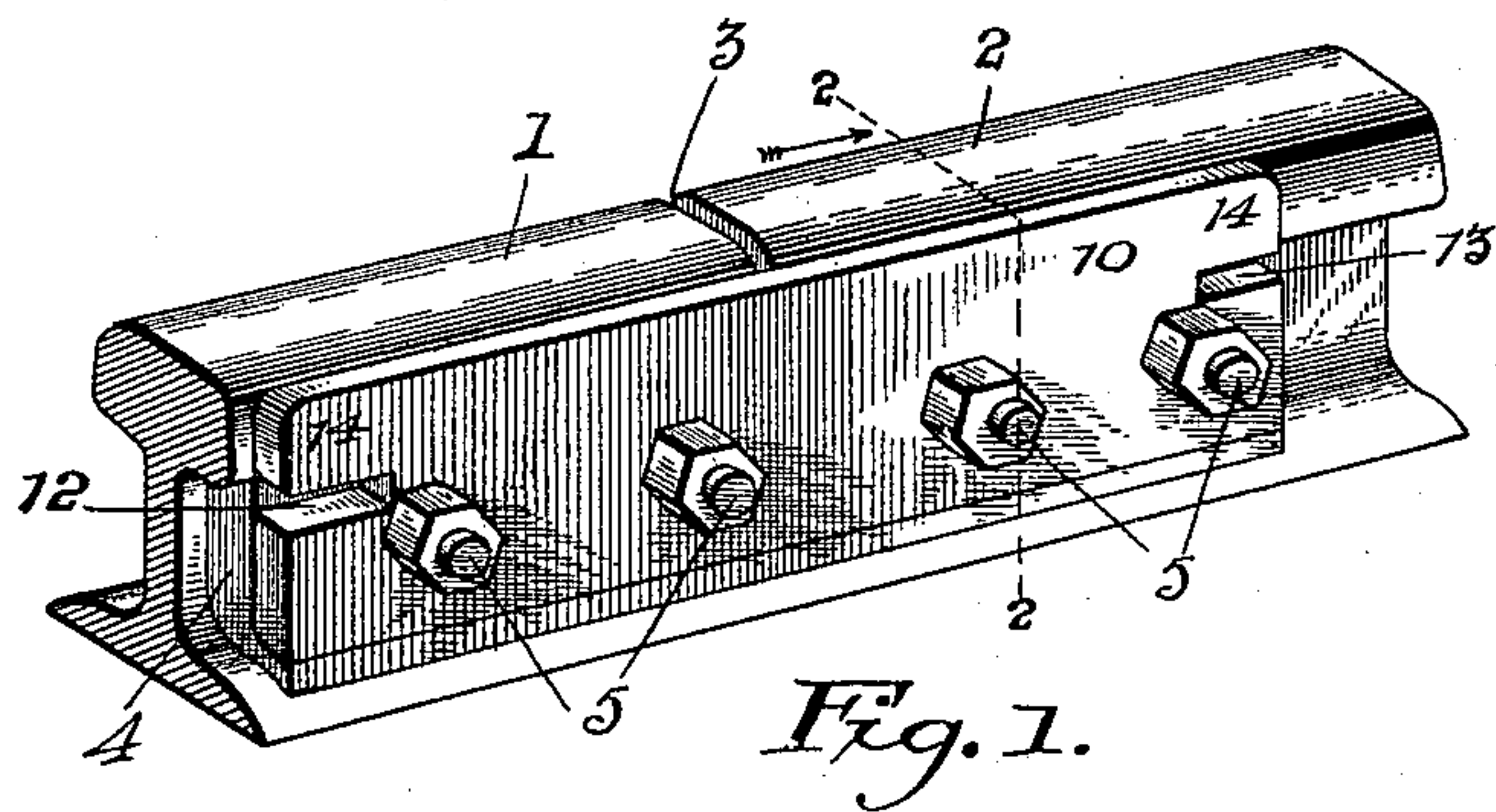


Fig. 2.

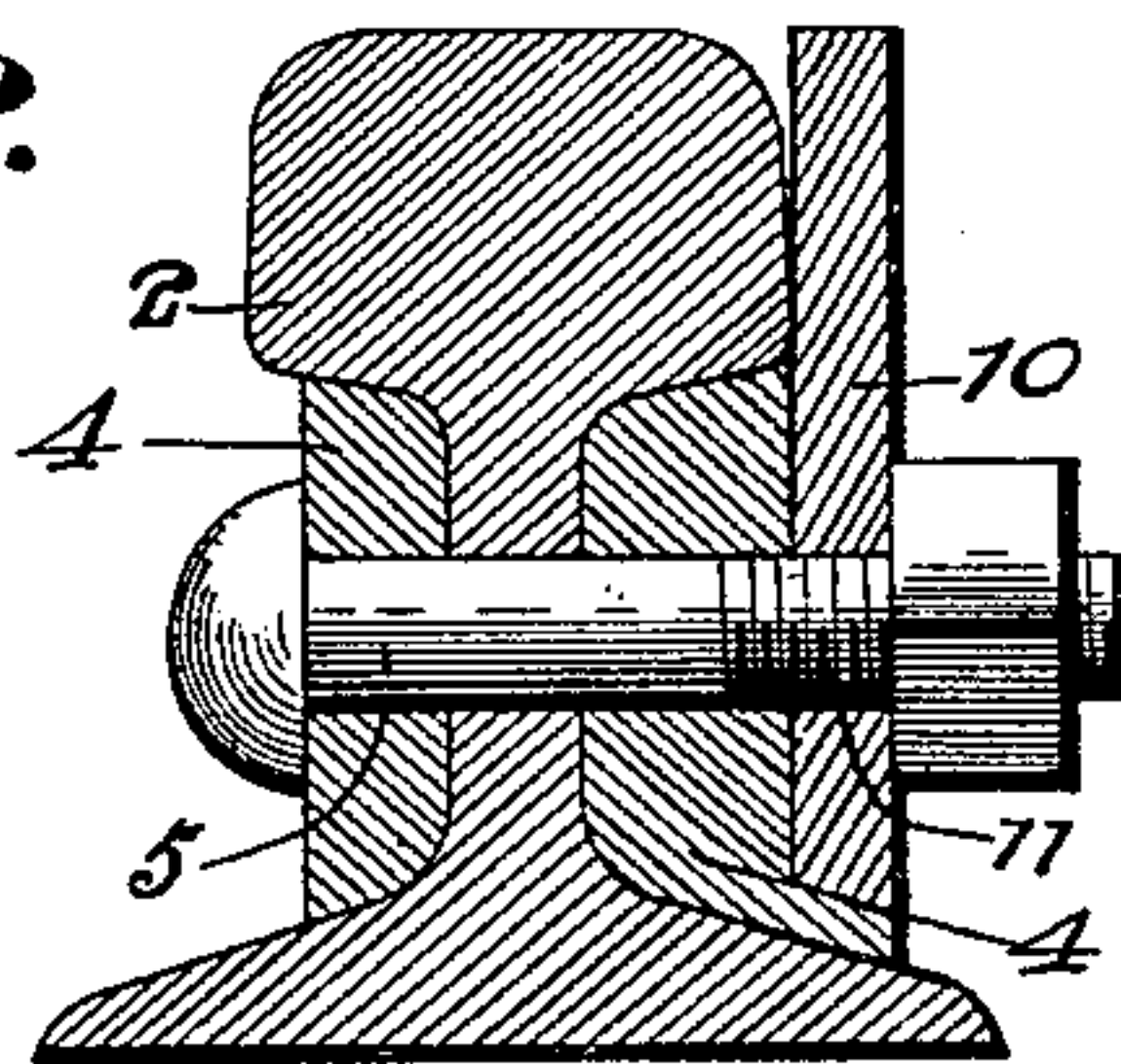


Fig. 3.

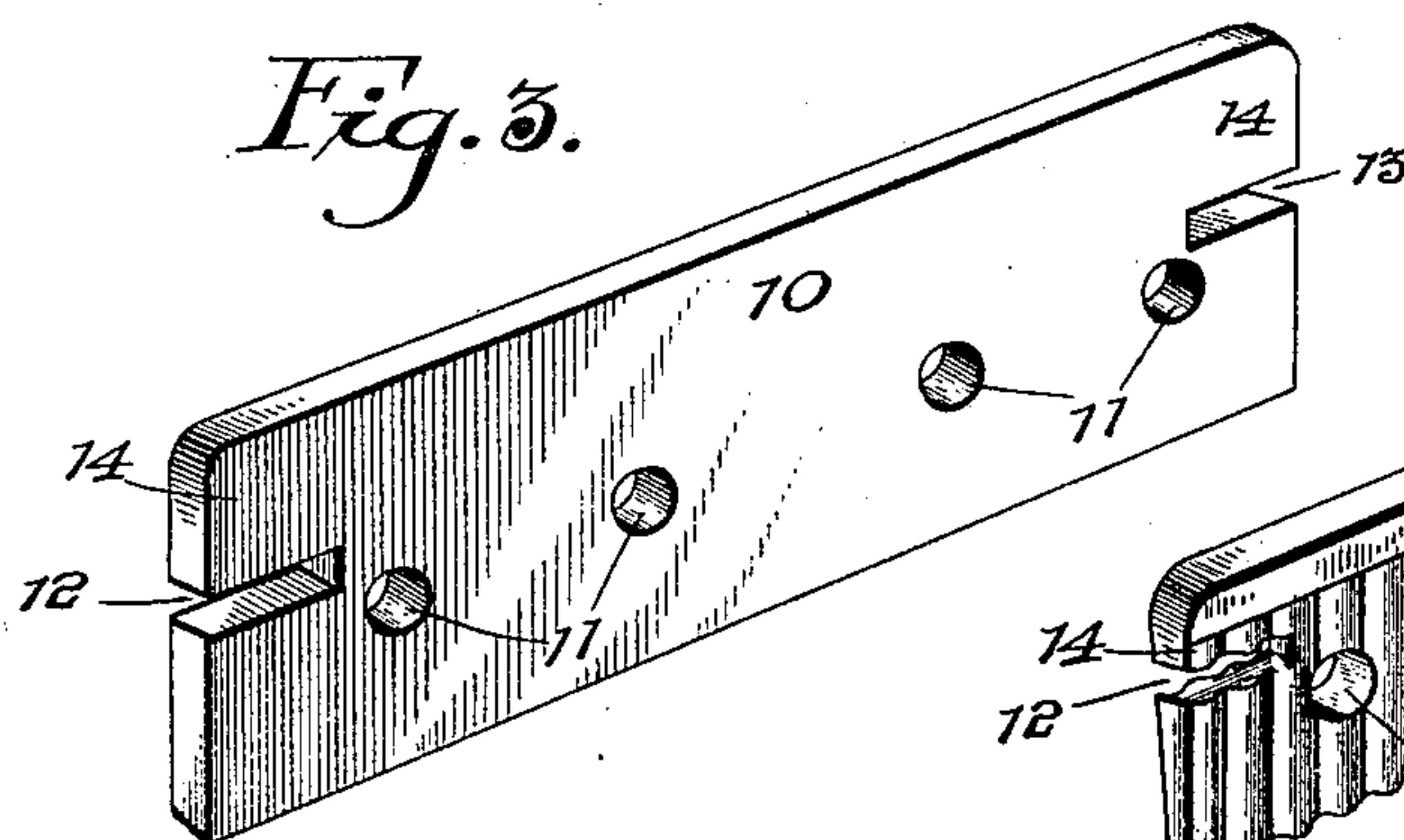
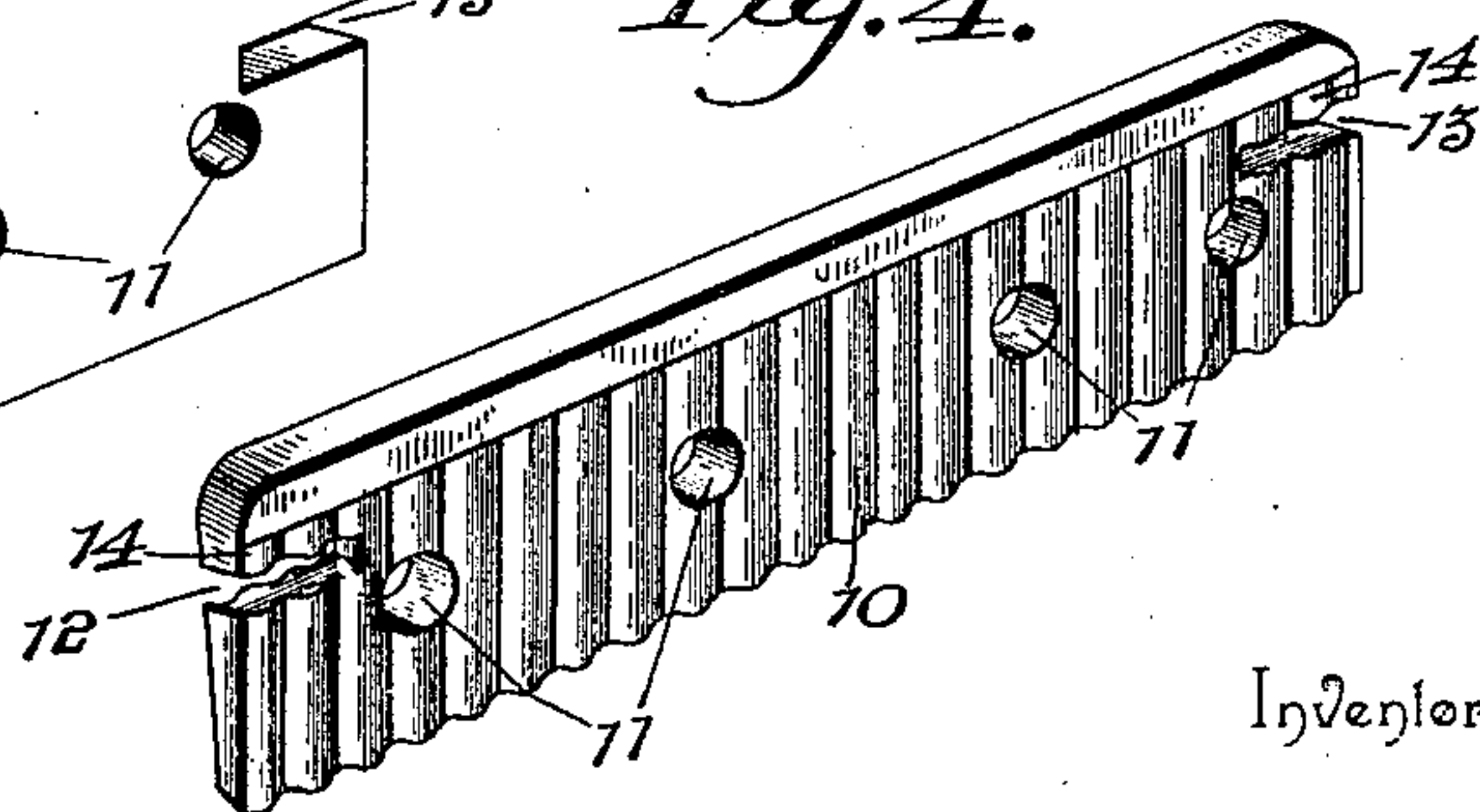


Fig. 4.



Inventor

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Witnesses

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UNITED STATES PATENT OFFICE.

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RAIL-JOINT BRIDGE.

SPECIFICATION forming part of Letters Patent No. 598,844, dated February 8, 1898.

Application filed June 19, 1897. Serial No. 641,506. (No model.)

To all whom it may concern:

Be it known that I, OTIS T. BEDELL, a citizen of the United States, residing at Cairo, in the county of Greene and State of New York, have invented a new and useful Rail-Joint Bridge, of which the following is a specification.

My invention relates to a rail-joint bridge designed to afford protection to the ends of the rails where they meet at the joint, as well as to relieve the vibration on the wheels and running-gear of a car, and to lessen the noise when a car travels over the rail-joint; and the object of my present improvement is to give to the rail-joint bridge a certain degree of resiliency with a view to reducing the impact and jar as much as possible and to construct the bridge in a novel way to adapt it for use on the common rail-joints, in which the rails rest upon wood or metal ties, thus enabling the bridge to be used in connection with the ordinary fish-plate and the usual rail-fastening bolts without any modification in said parts.

To the accomplishment of these ends the first part of my invention consists in the combination, with the rails, the usual fish-plate, and the ordinary fastening-bolts of a bridge consisting of a metallic plate applied laterally to the fish-plate and fastened to the joint by the bolts which unite the fish-plate and rails together, said bridge-plate having its top edge arranged flush with or extending slightly above the top edges of the rails.

The invention further consists in the combination, with a rail-joint, of a bridge-plate provided with longitudinal slots which extend outward to and open through the ends of said plate and form at the ends thereof resilient wearing-surfaces upon which the wheel-treads are adapted to ride when passing over the joint of the rails; and the invention further consists in the peculiar construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand my invention I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of an ordi-

nary rail-joint with my improved bridge or protector applied thereto. Fig. 2 is a vertical cross-sectional view through the joint and the bridge on the plane indicated by the dotted line 2 2 of Fig. 1. Fig. 3 is a detail perspective view of the bridge detached from the joint. Fig. 4 is a detail perspective view of a modified construction of the bridge-plate.

Like numerals of reference designate corresponding parts in all the figures of the drawings, referring to which—

1 2 designate the ordinary rails, which abut together or substantially abut to produce the joint 3, across which is placed the usual fish-plate 4, all the parts being united together by the through-bolts 5. These elements are of the common construction used in laying a railway-track; but as is well known to those skilled in the art the rails are subject to expansion and contraction, so as to expose the end edges thereof, more or less, to the action of the wheels of the cars when passing over the joint 3. The wheels in passing over the joint pound against the exposed ends of the rails, the result of which is to batter the ends out of shape, to make the joint rough and uneven, to induce great wear on the wheel-treads and running-gear of a car, and to make a great deal of noise and vibration. Heretofore it has been proposed to overcome these objections by the provision of a bridge, which is made as an integral part of the fish-plate; but this is objectionable in that it requires the replacement of ordinary fish-plates on the track of a railway, and as the bridge is exposed to considerable friction and wear due to the wheels riding thereon in crossing the joint considerable expense is involved in renewing the fish-plates and bridges when they shall have become worn to such an extent as to require renewal. I overcome these objections by the provision of a bridge which may be used on the joint in connection with the ordinary fish-plate and which is fastened in place by the same bolts that connect the fish-plate to the jointed rails. To this end I provide a bridge 10, consisting of a single length or bar of metal of appropriate length to span the joint and of suitable thickness to resist and withstand the wear and strain of the wheels when they pass over the joint. My

improved bridge is provided with a series of bolt-holes 11, preferably four in number, and said bridge is applied laterally against the exposed face of the fish-plate and in a manner to have the bolt-holes 11 therein register or coincide with the bolt-holes in the fish-plate, whereby the bolts 5 may be passed through the bridge 10, the fish-plate 4, and the rails 1 2 to unite all the parts firmly and solidly together.

The bridge 10 is of such depth or width that its lower edge is adapted to rest upon the foot-flange of the rails 1 2 or fish-plate to support the bridge in a measure against the weight and strain which is placed vertically thereon when the wheels travel over the joint and ride upon the top edge of the bridge. To adapt the bridge to properly bear upon the foot-flange of the rails or upon the flange of the fish-plate, I may chamfer or bevel the lower edge of the bridge to cause it to have a snug seat upon the foot-flange.

In case the bridge is used in connection with metal ties I provide the bridge with recesses which open through the lower edge of said bridge to enable the same to be fitted properly to the rail-joint-fastening means. The upper edge of the bridge lies flush or substantially flush with the top face of the rails at the joint thereof. I may make this upper edge of the bridge in a straight horizontal line and arrange the bridge to have its top edge flush with the face of the rails, or said top edge may be curved or crowned slightly in the direction of its length, so as to have the center of the top edge of the bridge slightly above the corresponding edge of the rail, while at the ends this top edge droops slightly to afford a gradual ascent and descent to the wheel-treads in passing over the joint.

One of the leading features of my improved bridge consists in a novel construction thereof whereby a certain extent of resiliency is imparted to the top edge of the bridge at the ends thereof. It will be readily understood that the ends of the bridge are exposed somewhat to the "hammering" action of the wheels when they pass over the rail-joint, and to reduce the impact of the wheels upon the bridge as much as possible, as well as to obviate jar, vibration, and wear upon the parts, I have constructed the upper part of the bridge at the ends thereof with resilient sections. These resilient sections are produced in the bridge by cutting away the metal substantially along the median line of the bridge at the ends thereof, thus producing slots 12 13, which extend longitudinally of the bridge and which open outward through the ends thereof.

These slots or cut-away portions leave the ends of the bridge at the upper edge or head thereof unsupported by the metal below the slots and produce the resilient members or sections (indicated at 14) at the ends of the bridge. These resilient sections are exposed to the impact of the wheel-treads when they ride upon the bridge in traveling across the joint, and said sections are adapted to yield or give slightly, whereby the impact of the wheel-treads is reduced to a minimum and vibration and jar is almost wholly avoided when the wheels cross the joint.

The bridge may be made of uniform thickness throughout its depth, but when the bridge is exposed to heavy traffic and to great strain and wear I make the bridge of tapering cross-sectional form and arrange the same to present its thickened edge uppermost to present the strongest edge to the wheels. I may also corrugate the bridge to impart increased rigidity and strength thereto.

My improved bridge can be readily applied to rail-joints after the track has been laid or it can be used in constructing new sections of track. It is very cheap, as it costs no more than the ordinary fish-plate. It protects the fish-plate in a measure, and when worn it can be removed and replaced with ease and at small cost.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is--

1. The combination with a rail-joint, of a bridge-plate bolted laterally to said joint to have its upper edge substantially flush with the top edge of the rail, the ends of said bridge-plate being free and formed with yieldable unsupported members, substantially as described.

2. The combination with a rail-joint, of an end-slotted bridge united laterally to the joint with its slotted ends unsupported, as and for the purposes described.

3. A bridge for rail-joints consisting of a length or bar of metal provided with longitudinal slots which leave the metal at the upper end edges of the bar unsupported and thereby form resilient, or yielding, sections at the ends of said bar, for the purposes described, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

OTIS T. BEDELL.

Witnesses:

DANIEL P. BENNETT,
ALFRED BENNETT.