

No. 667,499.

Patented Feb. 5, 1901.

R. B. CHARLTON.  
RAIL JOINT.

(Application filed June 27, 1900.)

(No Model.)

Fig. 1.

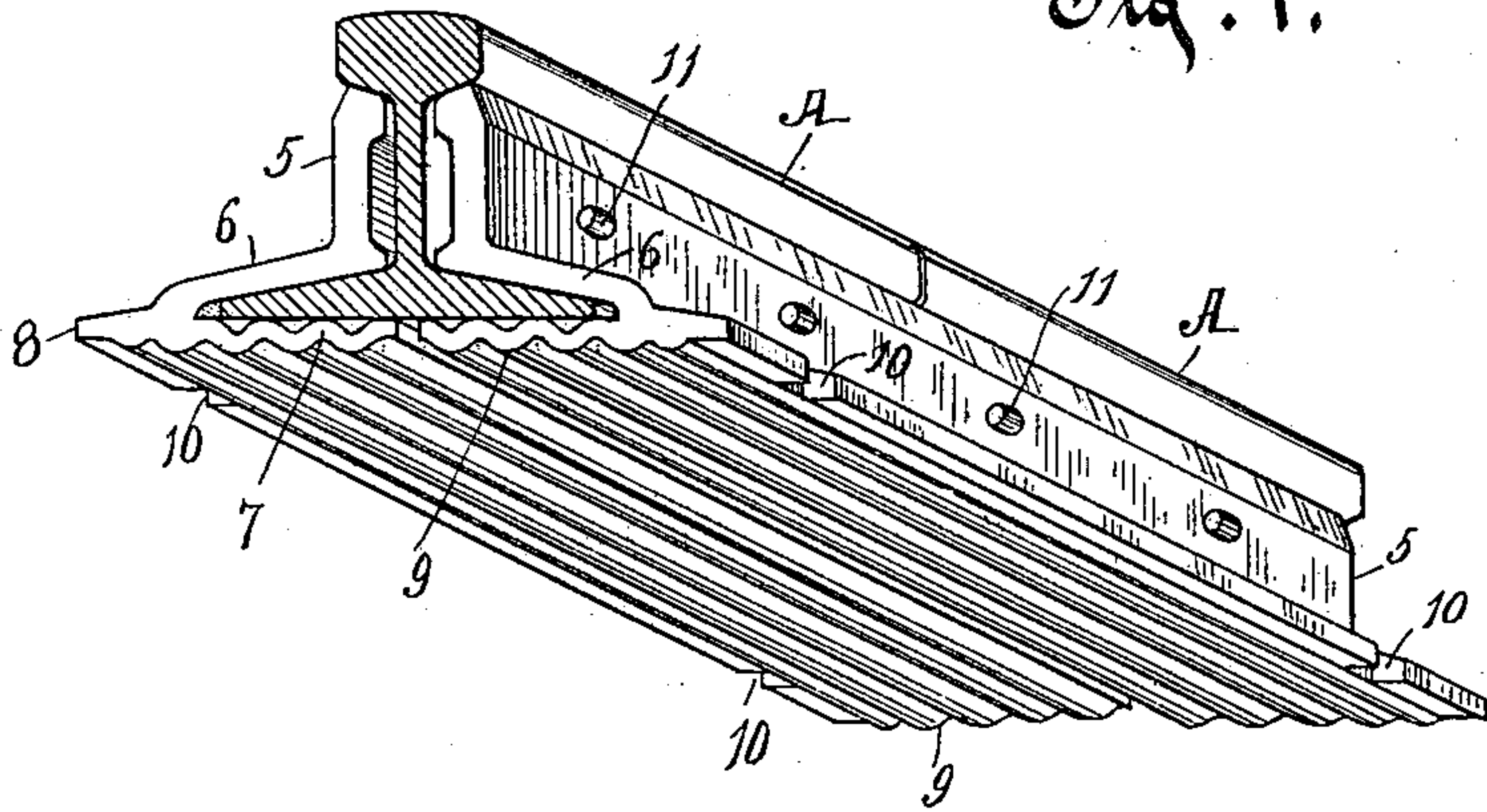


Fig. 2.

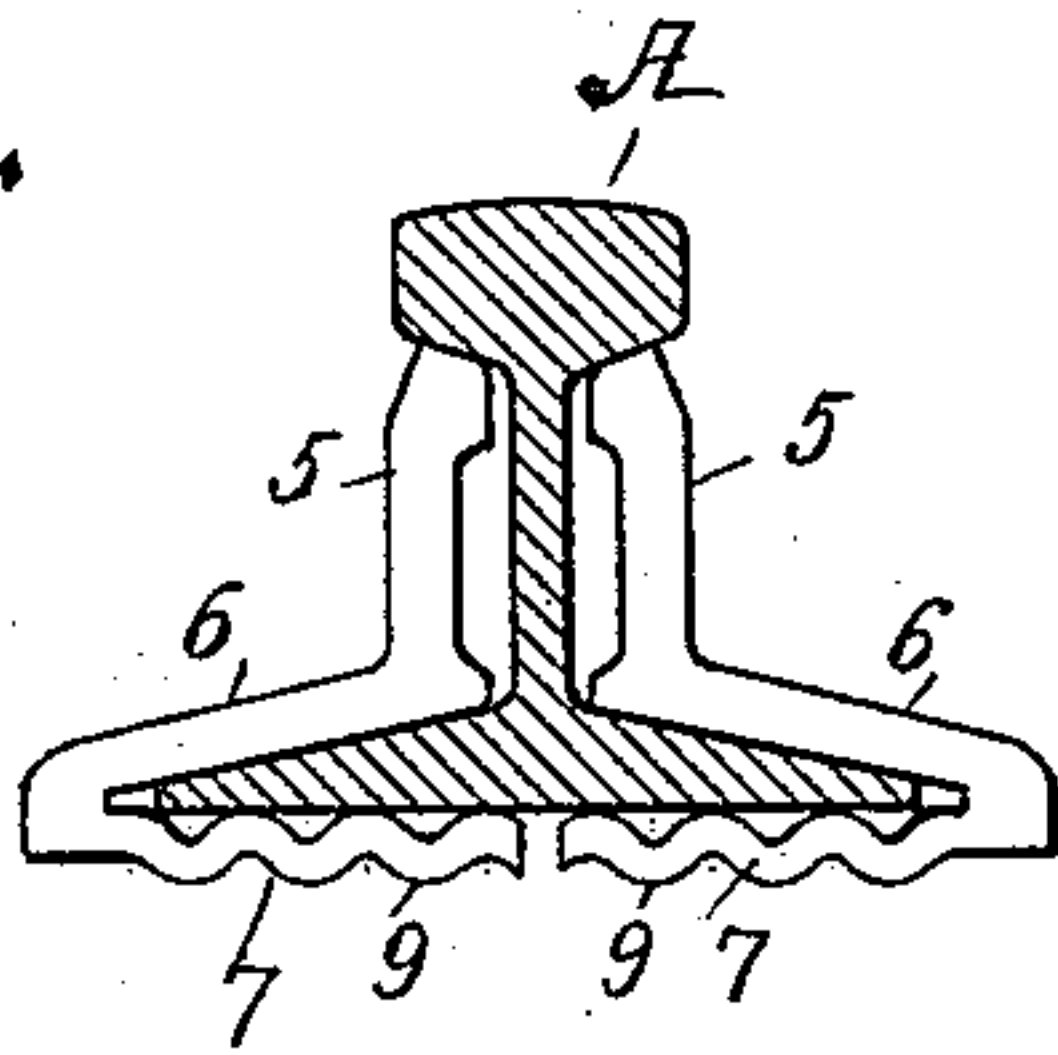
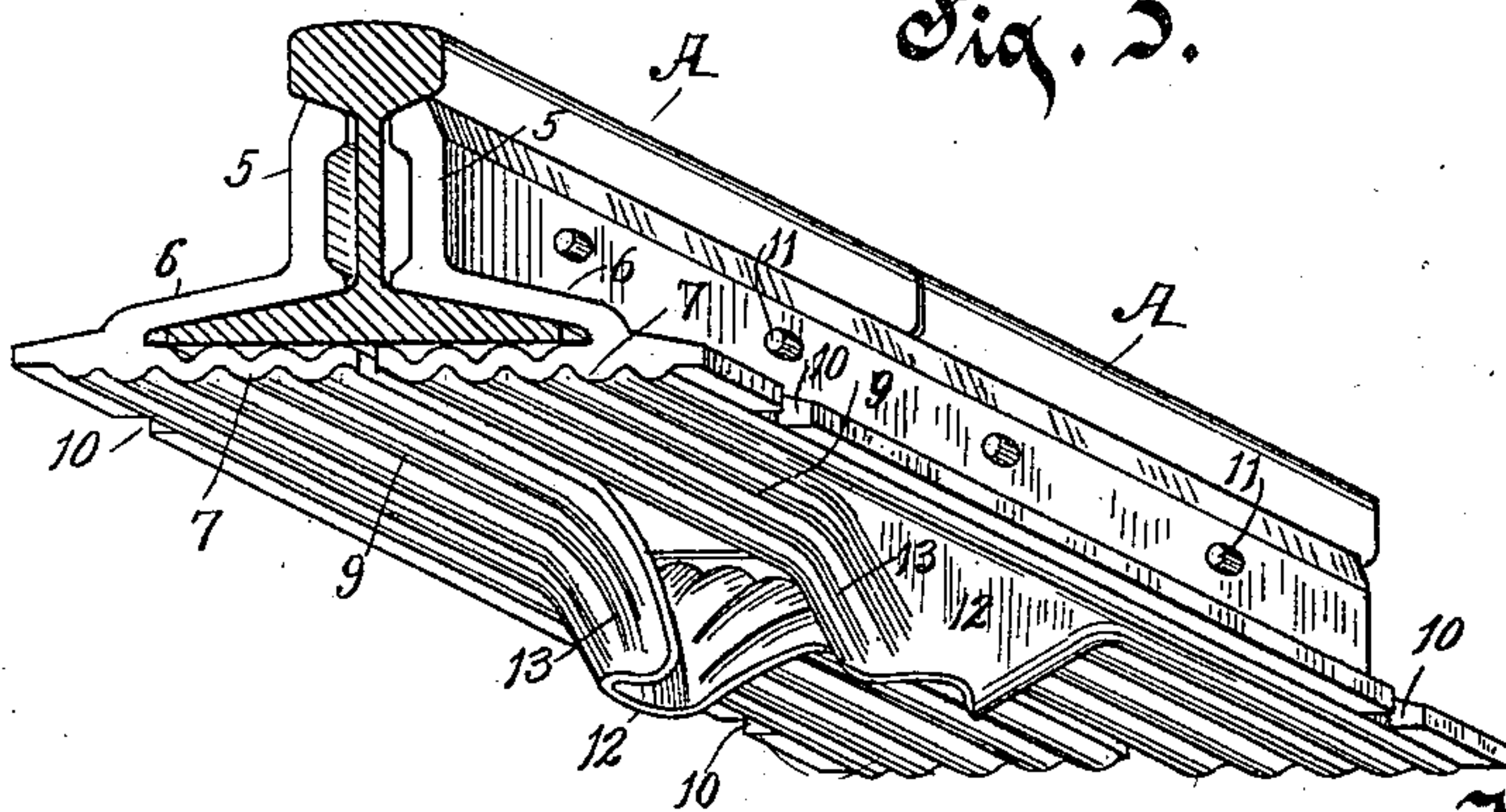


Fig. 3.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 667,499, dated February 5, 1901.

Application filed June 27, 1900. Serial No. 21,706. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD B. CHARLTON, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and  
5 useful Improvement in Rail-Joints, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

The object of my invention is to provide  
10 improved means for connecting the abutting ends of railway-rails, and is chiefly directed to strengthening the joint-plate with a minimum of material and at the same time providing means for increasing the hold of the  
15 rail on the ties against spreading or movement laterally.

The invention consists of the improved rail-joint plate separately and combined, as herein described and claimed, or the equivalents  
20 thereof.

In the drawings, Figure 1 is a perspective view of the abutting ends of fragments of railway-rails, with a pair of my improved rail-joint plates therewith in the positions they occupy when secured to the rails for connecting  
25 them together. Fig. 2 is a transverse section of a railway-rail, showing therewith the ends of a pair of joint-plates of my improved construction in modified form. Fig. 3 is a perspective view of the abutting ends of fragments of railway-rails with a pair of my improved joint-plates therewith in position as  
30 applied to rails for connecting the ends thereof, the joint-plates in this figure being in modified form.

My improved joint-plate is intended to be and is constructed advisably of rolled steel and is integral in its structure. In use two of these plates are employed, one at each side  
40 of the abutting ends of two rails, to which rails the two plates are secured in sets by bolts through the plates and the webs of the rails. In the drawings the bolts that secure the plates to the rails are omitted; but the apertures therefor through the plates are shown,  
45 thus indicating the places where the bolts are inserted.

In the drawings, A A are the fragmentary ends of abutting railway-rails. The rails are  
50 of a form in common use. The rail-plate con-

sists of an upright member 5, of an oblique member 6, continuous from the lower edge of the upright member and projecting outwardly and inclined downwardly therefrom, of an inturnd foot member 7, continuous from the  
55 outer edge of the oblique member, and preferably of a toe member 8, projecting laterally outwardly at the intersection or merging of the oblique member in the foot member. The joint-plate is of considerable length, and  
60 all the members enumerated are as long as the plate. The oblique member 6 is so inclined and finished that its under surface is adapted to fit and rest on the upper surface of the flange or base of the rails A. The up-  
65 right member 5 may extend upwardly to and advisably does fit against the under surface of the head or tread of the rail. The inturnd foot member 7 extends under the flange or base of the rail, and the rail rests thereon,  
70 while the foot and toe members are adapted to rest on a transversely-disposed tie or ties embedded in the earth beneath it. Such ties are commonly of wood, and usually two ties are employed at the abutting ends of rails,  
75 one under the end of each rail, so that the joint-plate near one end will rest on one tie and near its other end will rest on the other tie. The foot member 7 in my improved joint-plate is constructed in corrugated form in  
80 cross-section, forming longitudinal ribs or trusses 9 9. This longitudinally ribbed or trussed construction strengthens the foot member against the downward strain or thrust of the rail under the shock and weight of  
85 trains thereon, thus more completely obviating the breaking of the plate, and at the same time the ribs of the plate being by the weight of the load thereon pressed or sunk into the ties the plates are thereby more securely and  
90 effectually held in place thereon against lateral movement or displacement thereof. The foot member 7 is advisably extended inwardly beyond the vertical plane of the upright member 5, and advisably to such an extent that  
95 its inner edge will come to the vertical plane of the web of the rail or even under the web of the rail when the plate is in position on the rail. The corrugated or ribbed construction of the foot member 7 is also advisably ex-  
100



tended laterally onto the toe member 8 when such toe member is employed. The plate is provided with recesses 10 10 for receiving spikes therein that are driven into the ties.

5 Also apertures 11 11 are provided for bolts to be inserted through the plates and the webs of the rails for clamping them together.

In the modified form shown in Fig. 2 the toe member 8 is omitted. Otherwise the construction is substantially the same as that shown in Fig. 1.

In the modified form of joint-plates shown in Fig. 3 the foot member 7 is bent and thereby turned downwardly, medially forming an elongated and substantially vertically projecting girder 12, the foot member being for this purpose bent downwardly from its inner edge, and the corrugated material of the foot member, which is thus turned down, is flattened out into the girder 12, which by reason of the flattening or straightening out of the corrugations of the foot-member material of which it is formed, is thereby made deeper than the width of that portion of the corrugated foot member was before it was thus turned down and flattened into the vertically-disposed girder 12, thus giving the girder an excess of vertical height over the normal width of the portion of the foot member that was turned down to form the girder. The ends of the girder are connected to the foot member by the corrugated webs 13 13, formed integrally therewith and with the foot member by the bending and turning down of the girder of the foot-plate material. By this construction the girder, being of greater height than the normal width of the foot-member material of which it was formed and being supported by webs provided with ribs or trusses, has an excess of strength over what it would have if it were only of a height equaling the width of the foot-member material of which it was constructed and over what it would have if its supporting-webs 13 13 were flat instead of trussed.

What I claim as my invention is—

1. A joint-plate for railway-rails, comprising integrally, an upright member, an oblique member adapted to bear against the upper surface of the base of a rail, and a foot member continuous of and turned under the ob-

lique member, the foot member, being ribbed or trussed longitudinally on its under surface.

2. A joint-plate for railway-rails, comprising integrally, an upright member, an oblique member adapted to rest on the upper surface of the base of a rail, and a foot member continuous of and turned under the oblique member, the foot member being corrugated or trussed longitudinally.

3. A joint-plate for railway-rails, comprising integrally, an upright member, an oblique member continuous from the lower edge of the upright member and adapted to rest on the upper surface of the base of a rail, a foot member continuous of and turned under the oblique member, the foot member being corrugated longitudinally, and a girder medially of the foot member, the girder being formed of material of the corrugated foot member turned downwardly and flattened out and trussed webs connecting the ends of the girder to the foot member.

4. In combination, the abutting ends of railway-rails, joint-plates one at each side secured to the rails by bolts, each plate consisting of an upright member, an oblique member continuous from the upright member, and a foot member continuous of and turned under the oblique member, the foot member being corrugated into ribs or trusses longitudinally.

5. A joint-plate for railway-rails, comprising integrally, an upright member, an oblique member continuous from the lower edge of the upright member and adapted to rest on the upper surface of the base of a rail, a foot member continuous of and turned under an oblique member, the foot member being corrugated longitudinally, and a girder medially of the foot member, the girder being formed of material of the corrugated foot member turned downwardly from its inner edge and flattened out, the girder exceeding in height the width of that portion of the foot member of which the girder was formed.

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

RICHARD B. CHARLTON.

Witnesses:

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