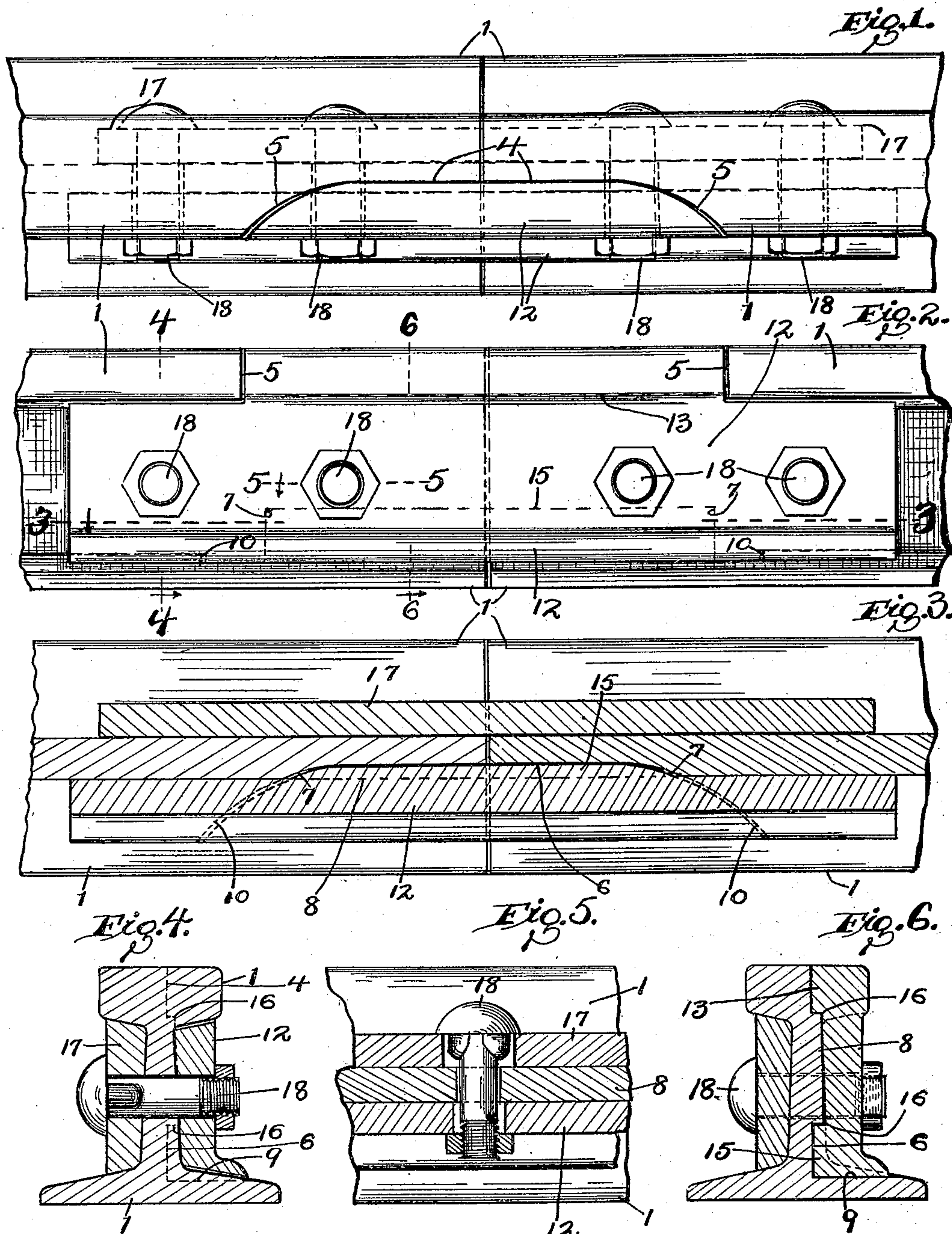


No. 820,229.

PATENTED MAY 8, 1906.

W. MEARS.
RAIL JOINT.
APPLICATION FILED FEB. 19, 1906.



WITNESSES:
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WILLIAM MEARS, OF CLEVELAND, OHIO.

RAIL-JOINT.

No. 820,229.

Specification of Letters Patent.

Patented May 8, 1906.

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To all whom it may concern:

Be it known that I, WILLIAM MEARS, a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Rail-Joints; and I hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

This invention relates to new and useful improvements in railway-joints.

The object of this invention is to provide a joint of this character which will be strong, which will remain permanently secured to the rails after having been placed in position, and which will provide a bridge for the wheels of the train while passing over the abutting ends of the rails, so as to prevent all pounding or jolting of the cars.

A further object of my invention is to provide a joint of this character which will make a perfect contact with the rails, so that the joints may be utilized for conducting the electric current from rail to rail when the rails are used in an electric system.

My invention therefore consists in the features of construction and combination of parts, as described in the specification, pointed out in the claims, and illustrated in the accompanying drawings.

In the accompanying drawings, Figure 1 is a top plan of a rail-joint embodying my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a section on line 3 3, Fig. 2. Fig. 4 is a section on line 4 4, Fig. 2. Fig. 5 is a section on line 5 5, Fig. 2. Fig. 6 is a section on line 6 6, Fig. 2.

Again referring to the drawings, 1 indicates the end portions of two abutting rails. The tread on one side at the end of each rail is cut away, the cut extending for a distance parallel with the side edges of the tread, as at 4, and then curving out, as at 5. The web of each rail is cut away in a similar manner at one side near the base, forming a flat vertical surface 6 on the lower portion of the web and a curved surface 7. The upper portion of the web then forms a tongue 8. The upper surface of the base of the rail at the same side at which the tread is cut away and for approximately the same distance is milled, as at 9, so that the surface thereof is flat and extends parallel with the surface of

the tread of the rail. A shoulder 10 is formed at the end of the flat surface 9. To the ends of both rails at the side at which they are cut away is secured the joint member, which comprises a plate 12, approximately equal in height to the height of the web of a rail, and at the top of the plate 12 is formed a curved tongue 13, which fits into and fills the depression or gap formed by cutting away the treads of the rails. The side face of the tongue 13 is milled where it abuts against the milled surfaces 4 on the treads, so that perfect contact is secured at this point. At the lower end of the plate 12 is formed a similar curved tongue 15, which fits into the depression or gap formed where the webs of the rails are cut away. The side face and bottom of the tongue 15 are milled, so that they lie flat against the milled surfaces on the webs and the milled surfaces on the bases of the rails, respectively. The tongues 13 and 15 are so spaced that they form a groove 16, arranged to receive the tongues 8, formed on the webs of the rails. A fish-plate 17 is arranged on the webs of the rails opposite the plate 12, and bolts 18 are passed through the fish-plate 17, the webs of the rails, and the plate 12, so as to clamp the fish-plate and joint member securely to the rails. The bolt-holes in the fish-plate and joint member are preferably made slightly oval, so that the expansion and contraction of the rails will not tend to shear the bolts.

The advantages of this construction will be readily perceived, because the upper tongue on the joint-plate 12 bridges the gap between the ends of the rails and forms a continuous surface for the wheels of the train, and the lower tongue having a flat bottom which rests on the flat surfaces on the rails has no tendency to slip, as it will only have to withstand direct vertical strains, and therefore very little strain will be exerted on the bolts which secure the joint in position.

What I claim is—

1. The combination with two abutting rails, each rail at its end having its tread and the lower portion of its web cut away forming a tongue on the upper part of the web, of a plate provided with two tongues arranged to receive the tongues on the abutting ends of the rails between them, the upper tongue being arranged to fit into the depression where the treads of the rails are cut away and the lower tongue being arranged to fit

into the depression where the webs of the rails are cut away and means for securing said plate to the ends of the rails.

2. The combination with two abutting
5 rails, each rail at its end having its tread and the lower portion of its web cut away forming a tongue on the upper part of the web and a horizontal surface on the base of the rail, below the tongue, of a plate provided with two
10 tongues arranged to receive the tongues on the abutting ends of the rails between them, the upper tongue being arranged to fit into the depression where the treads of the rails are cut away and the lower tongue being ar-
15 ranged to fit into the depression where the webs of the rails are cut away, said lower tongue having a horizontal lower surface adapted to rest on the horizontal surface on the base of the rails, and means for securing
20 said plate to the end of the rails.

3. The combination with two abutting rails, each rail at its end having its tread and

the lower portion of its web cut away forming a tongue on the upper part of the web and a horizontal milled surface on the base 25 of the rails, below the tongue, of a plate provided with two tongues arranged to receive the tongues on the abutting ends of the rails between them, the upper tongue being arranged to fit into the depression where the 30 treads of the rails are cut away and the lower tongue being milled on its bottom surface and arranged to fit into the depression where the webs of the rails are cut away and rest on the milled surface on the base of the rails, 35 and means for securing said plate to the end of the rails.

In testimony whereof I sign the foregoing specification in the presence of two witnesses.

WILLIAM MEARS.

Witnesses:

VICTOR C. LYNCH,
N. L. McDONNELL.