

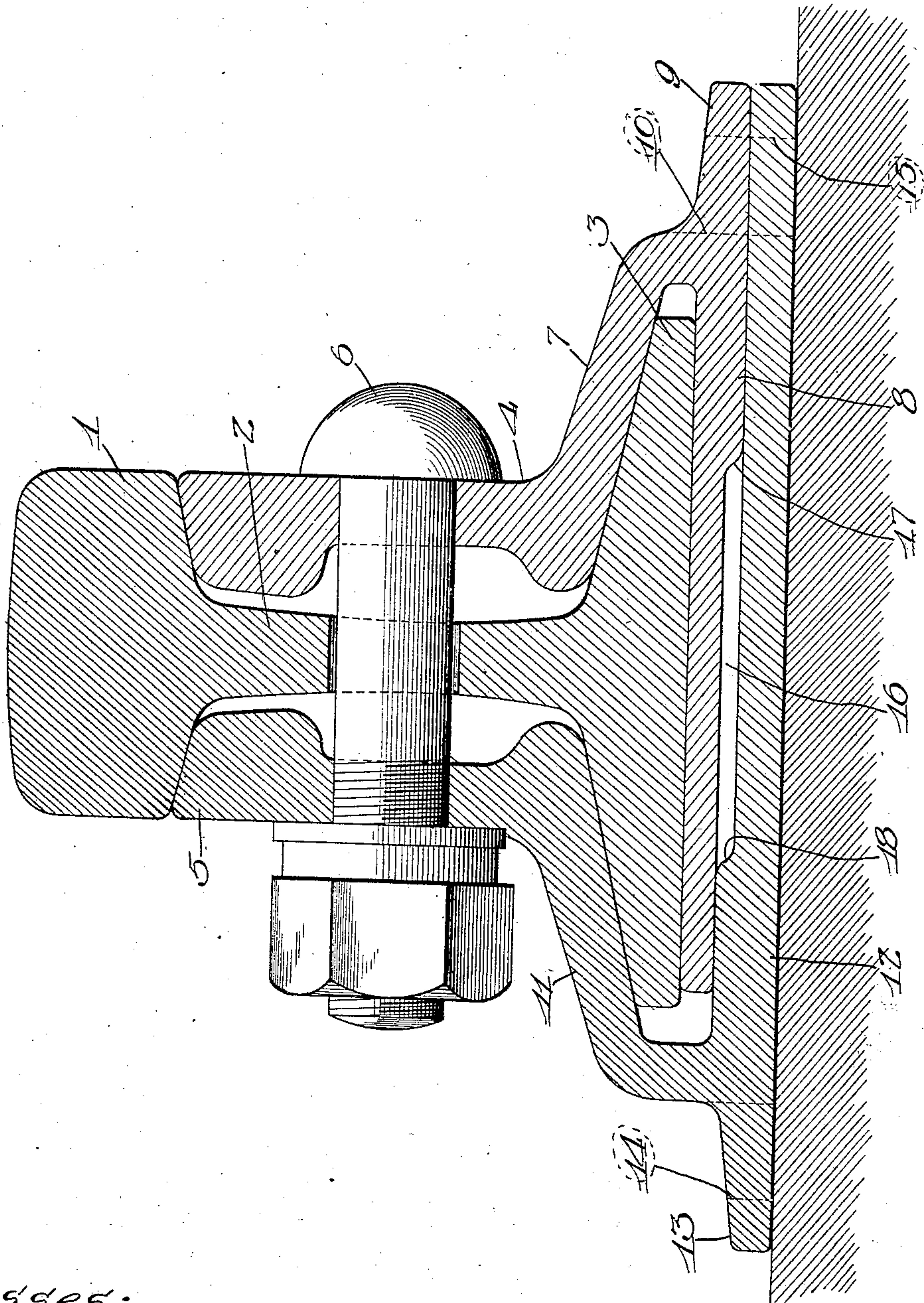
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PATENTED MAY 28, 1907.

A. L. STANFORD.

RAIL JOINT.

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UNITED STATES PATENT OFFICE.

ARTHUR L. STANFORD, OF CHICAGO, ILLINOIS.

RAIL-JOINT.

No. 854,770.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed February 7, 1907. Serial No. 356,182.

To all whom it may concern:

Be it known that I, ARTHUR L. STANFORD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rail-Joints, of which the following is a full, clear, and exact specification.

This invention relates more particularly to that type of rail joints in which the edges of the rail flanges are gripped by V-shaped clamps formed integrally with the side splice bars and which clamps usually embrace the upper and lower faces of the rail flange and form a base on which the flange rests.

It is well understood by those skilled in the art that the objectionable lamination or battering of the head of the rail which, as a rule, takes place a short distance from its ends, is due to excessive rigidity or the unyielding character of the joint. Expedients have been resorted to for obviating this defect in rail joints and providing a means of supporting the rails at their ends which would be free from this rigid character but such improvements, while overcoming one defect, have gone to the opposite extreme of leaving the rail without adequate support.

The primary object of this invention therefore, is to provide the rails with adequate support at their contiguous ends and at the same time have this support of an elastic character which will prevent the sudden blow of the wheel threads from laminating or battering the rail, or in other words, will afford for the rail a limited degree of cushion beyond which the support becomes firm and rigid.

With a view to the attainment of these ends and the accomplishment of certain other objects, which will hereinafter appear, the invention consists of the features of novelty which will be now described with reference to the accompanying drawing and more particularly pointed out in the claims.

The said drawing is a transverse sectional view of a rail and rail joint embodying this invention.

In connection with this invention is shown a rail of standard form having a head 1, a web 2 and a flange 3. Between the head and the upper face of the flange on one side of the rails is interposed a splice bar 4, which is employed as a substitute for the usual fish-plate and on the opposite side is interposed a simi-

lar spline bar 5, the upper and lower faces of these splice bars being made to conform to the lower faces of the head and the upper faces of the flange, and passing through the webs of the rails and both of these splice bars are one or more bolts 6 of the usual or any suitable construction, which serve for the purpose of wedging the splice bars 4, 5, firmly into place between the head and the flange.

Formed integrally with the splice bar 4 is a gripping clamp, which is V-shaped in cross section and comprises two members 7, 8, the former of which has its lower surface resting flat against and arranged parallel with the upper surface of flange 3 on one side, while the member 8 passes under the rail flange parallel therewith and flat thereagainst, and the angularity of the two jaws or members 7, 8, is the same as the angle formed by the upper and lower sides of the rail flange but for a short distance from their point of conjunction they are slightly closer together than the thickness of the extreme edge of the flange, so that, while being capable of receiving or fitting over the flange, there will be ample leeway at the crotch of the jaws for taking up wear between their faces and the face of the flange or insuring a firm grip of the jaws against the flange. This lower jaw or member 8 extends under the rail, preferably substantially throughout its width and at the outer conjoined edges of the two jaws 7, 8, is an outwardly extending flange 9, which is provided with one or more spike holes 10, enabling the flange to be spiked to the ties as usual. The splice bar 5 is formed at its lower edge with a similar clamp comprising two jaws 11, 12, the upper one of which, like the jaw 7, rests squarely against the upper face of the rail flange, while the lower jaw 12 is parallel with and rests against the bottom surface of the jaw 8, the space between the jaws 11, 12 for a short distance from their conjoined edges being slightly less than the combined thickness of the edge of the rail flange and the edge of the jaw 8 at that side so as to afford opportunity for tightening the jaws 11, 12, as before described with reference to jaws 7, 8. The jaw 12 is also formed with a lateral flange 13 having spike holes 14. The jaw 12 also extends under the rail, preferably throughout the entire width of the jaw 8 and may be provided with one or more spike holes 15, registering with spike holes 10 so that the same spike which spikes the flange

9 will also spike this extension of the jaw 12 and will thereby hold both clamps against outward movement even in the absence of the bolt 6. These two jaw extensions which pass under the rail flange constitute for the flange a base throughout its entire width but such a base would be entirely too rigid unless provision were made for slight deflection of the rail directly in line with its most rigid medium, viz., its vertical axis. Therefore this base is recessed transversely of the rail a considerable distance on both sides of this vertical axis. In order to provide this recess, which is shown at 16, the lower face of the jaw 8 is formed with an offset 17 and the upper face of the jaw 12 is formed with an offset 18, these offsets being equal in thickness so that the outer faces, as well as the inner faces of the jaws, will be parallel and capable of sliding together as far as the upper jaws 7, 11 will permit, both offsets 17, 18 being beveled or inclined at their inner edges so that the offset 17, in being driven past the free edge of the jaw extension 12, will not unduly engage therewith and the offset 18 will be prevented from undue engagement with the free edge of the jaw 8. By thus constituting the recess 16, it will be seen that it occurs between the two jaw extensions, leaving the upper jaw extension in direct contact with the bottom face of the rail flange, but in practice this upper jaw extension possesses sufficient flexibility to yield when the rail is subjected to the blow of the treads and thereby prevent lamination or battering of the rail without depriving the rail of adequate support, which is necessary to prevent the rail from becoming permanently bent, which, in course of time, would be the result if provision were not made for assisting it back to its normal position after deflection which is done by the elasticity of the jaw extension 8, held firmly at one side by reason of its integral formation with the jaw 7 and held less rigidly at the other side by the grip of the two jaws 11, 12. When the rail is subjected to the blow of the wheels, the bottom jaw or extension 12 yields at its edges to permit the rail to come down

slightly, and when the pressure is relieved it again resumes its normal straight form.

In order that the invention might be understood by those skilled in the art, the details of an embodiment thereof have been thus specifically described but what I claim as new therein and desire to secure by Letters Patent is:—

1. In a rail joint, the combination with the rail having a head, a web and a flange, of splice bars interposed under the head and each having a clamp formed integrally therewith and gripping one edge of the flange, each of said clamps embodying two jaws arranged above and below the rail flange, the lower jaw of one clamp being extended transversely of the rail and gripped between the flange thereof and the lower jaw of the other clamp and the last said jaw being extended transversely of the rail substantially throughout the entire width of the flange, said bottom jaws and their extensions being provided with a recess between them beneath the rail web.

2. In a rail joint, the combination with the rail having a head, a web and a flange, of splice bars interposed between the head and the flange on both sides of the rail and each having a clamp formed integrally therewith and gripping one edge of the flange, one of said clamps comprising two jaws one of which extends under the rail transversely thereof and has a bottom beveled offset, the other of said clamps comprising two jaws, one of which extends under and embraces the edge of the lower jaw of the other clamp and has a top offset, whereby a recess between the two bottom jaws is formed under the rail web.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 4th day of February A. D. 1907.

ARTHUR L. STANFORD.

Witnesses:

FRANCIS A. HOPKINS,
CHAS. H. SEEM.