

(No Model.)

2 Sheets—Sheet 1.

J. D. TRAMMELL.
RAILROAD RAIL JOINT.

No. 578,789.

Patented Mar. 16, 1897.

Fig. 1.

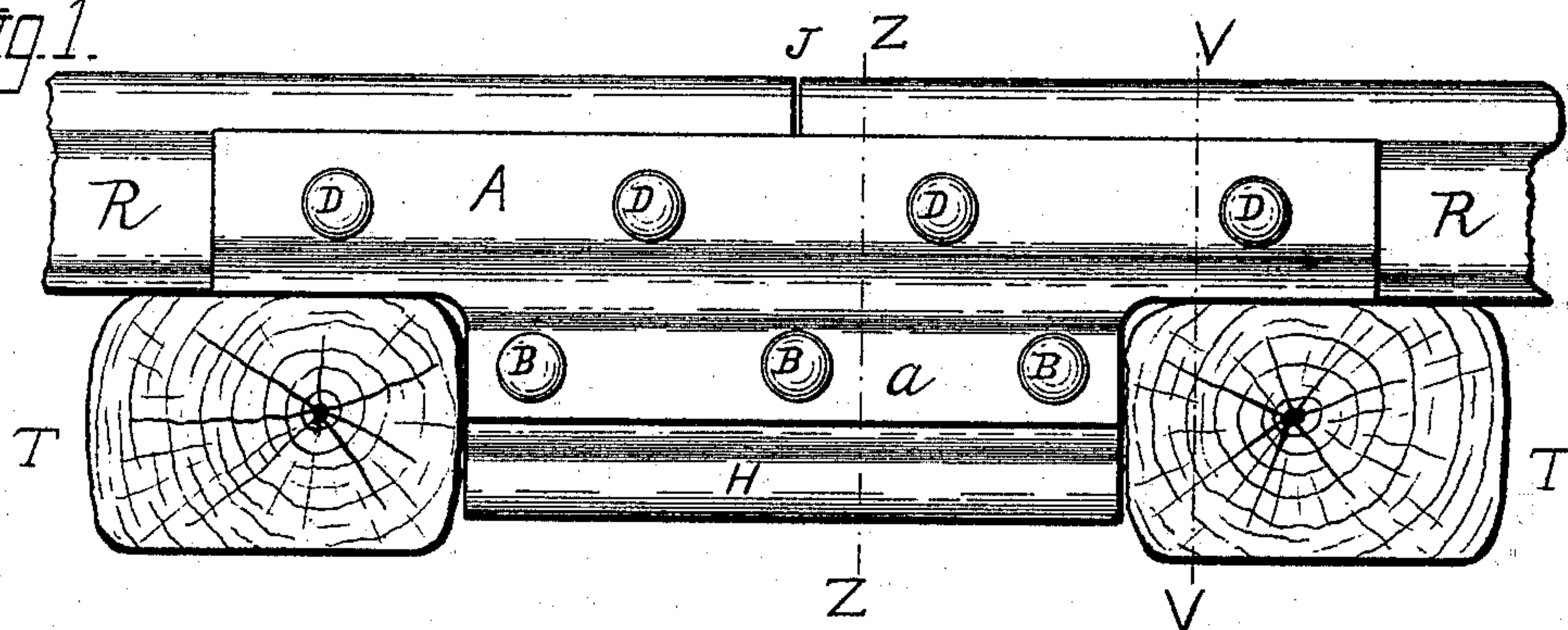
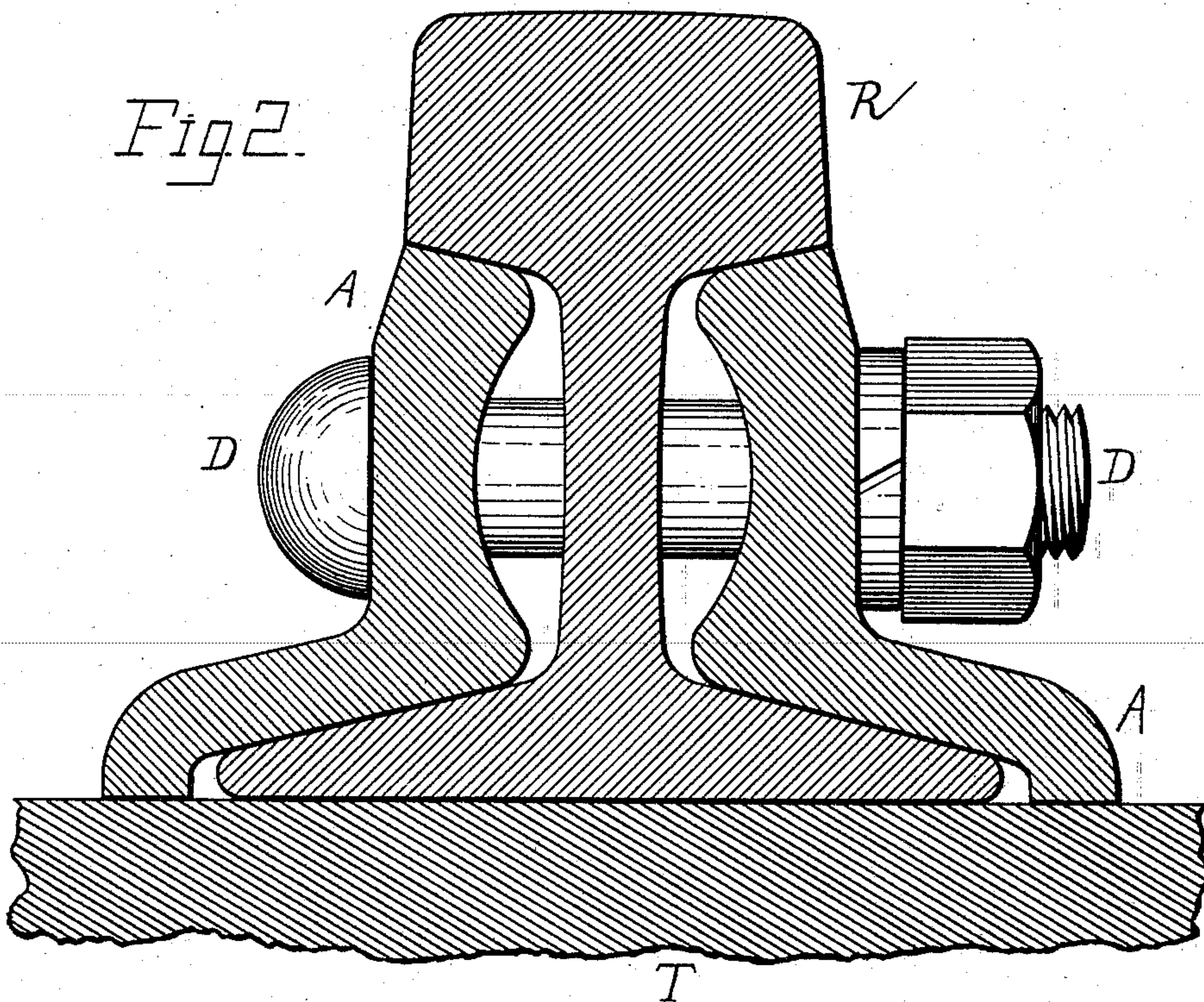


Fig. 2.



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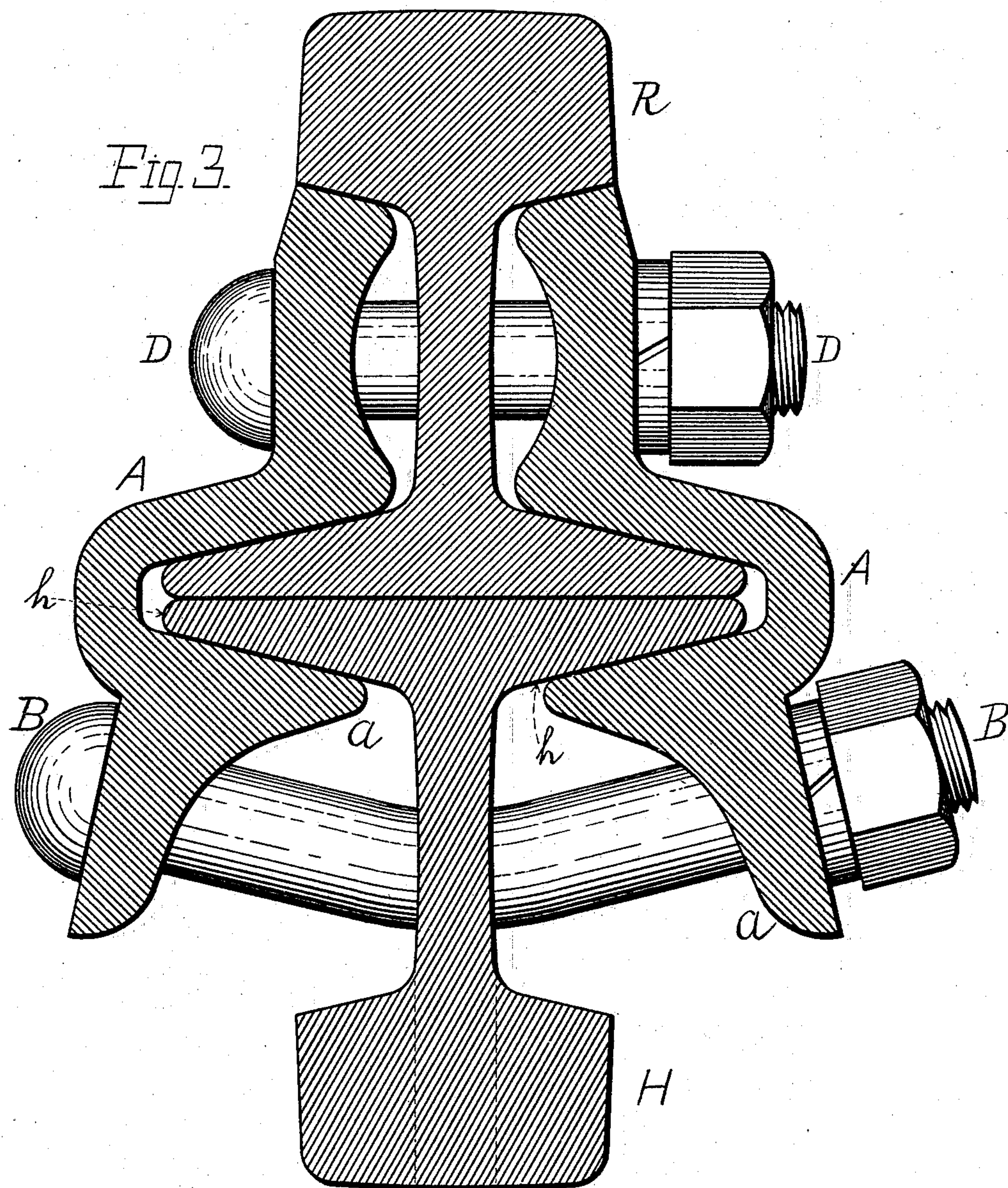
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UNITED STATES PATENT OFFICE.

JEFFERSON D. TRAMMELL, OF PALESTINE, TEXAS.

RAILROAD-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 578,789, dated March 16, 1897.

Application filed August 24, 1896. Serial No. 603,745. (No model.)

To all whom it may concern:

Be it known that I, JEFFERSON D. TRAMMELL, a citizen of the United States, residing at Palestine, in the county of Anderson and State of Texas, have invented certain new and useful Improvements in Railroad-Rail Joints, of which the following is a specification.

My invention relates to that class of railroad-rail joints in which the ends of the main rails meet and are secured together at a point midway between two of the supporting cross-ties; and it consists of a novel combination of a T-shaped splice-rail suspended below the base of the main rails between the cross-ties with opposite angle splice-bars bolted to the main rails and having depending inwardly-projecting jaws below the base of the main rails supporting the opposite lateral flanges of the T-shaped splice-rail and connected with downwardly-curved truss-bolts passing through the vertical member of the splice-rail in such manner as to hold all of the parts firmly together, with the object of preventing more deflection at the joint than at other parts of the main rails and to hold the rail ends in true surface with each other as the loaded wheels pass from one to the other and at the same time preserve the requisite elasticity and admit of the expansion and contraction of the main rails from changes of temperature.

In practice the splice-bars and splice-rail cannot with safety be bolted or clamped more firmly to the main rails than will readily admit of the expansion and contraction of the main rails incident to the ordinary daily changes of temperature, and yet during the instant of passage of the loaded wheels a far greater firmness is desired, and I attain this in the manner hereinafter described.

My invention is clearly shown in the accompanying drawings, which, with letters of reference marked thereon, form a part of this specification.

In the drawings, Figure 1 is a side elevation, on a reduced scale, of a railroad-rail joint constructed in accordance with my invention. Fig. 2 is an enlarged vertical cross-section of the same on the line V V in Fig. 1; and Fig. 3 is an enlarged vertical cross-section on the line Z Z, Fig. 1.

Any or all of the parts may be made either of iron or steel, according to choice of individuals. The essential features of the splice-rail are that its top shall be flat and composed of two equal opposite lateral flanges of any desired width not exceeding the width of the base of the main rails and a central vertical member below the said flanges, and it may be of what is ordinarily called "T" iron or steel, or it may be of a section similar to that of the main rails, in which case old rails otherwise unfit for use or the short ends sawed off as waste in the manufacture of new rails may be advantageously used in an inverted position. In the accompanying drawings I have shown the splice-rail of the latter, while the dotted lines at lower part of the splice-rail, Fig. 3, complete the true form of the T shape.

Like letters of reference refer to like parts in each of the views in which they appear.

In Figs. 1, 2, and 3, R R are the main rails, of the usual form, and they meet at J, Fig. 1, between the cross-ties T T.

H, Fig. 3, is a T-shaped splice-rail flat on top fitting under and parallel with the main rails, having its opposite ends abutting against the cross-ties T T, nearest the joint J, Fig. 1.

A A, Figs. 1, 2, and 3, are the opposite angle splice-bars, having jaws *a a*, Fig. 3, depending from their lower or lateral flanges and projecting under the opposite lateral flanges *h h* of the splice-rail. The upper portions of the angle splice-bars are made to fit in between the head and base of the main rails in the usual manner, while their depending inwardly-projecting jaws *a a*, Fig. 3, are adapted to fit closely under the opposite lateral flanges *h h* of the splice-rail.

D D are bolts of the usual form connecting the upper opposite portions of the angle splice-bars through the main rails, and B B, Fig. 3, are curved bolts passing through closely-fitting holes in the vertical member of the splice-rail, having their upwardly-inclined ends passing out through closely-fitting holes in and connecting the opposite jaws *a a*, depending from the angle splice-bars. The depending jaws *a a* are so formed that their outside flat faces are at right angles to the upwardly-inclined bolt ends on their respective sides

and sufficiently far out from under the other parts of the structure as to admit of easy and rapid application of the ordinary track-wrench to the securing-nuts on the curved bolts B, as well as to admit of speedy examination of these nuts from time to time.

The angle splice-bars are so formed that no part of them may come in contact with any vertical part of the main rails or splice-rail or with the edges of the rail-base or the edges of the flanges of the splice-rail when applied.

All of the parts are so formed that when they are assembled the upper parts of the angle splice-bars fit the main rails as usual, and their depending inwardly-projecting jaws in connection with the truss-bolts B hold the splice-rail firmly up and against the base of the main rails.

When the bolts D have firmly secured the upper portions of the angle splice-bars to the main rails, a screwing up of the curved bolts B, Fig. 3, will slightly spring both of the angle splice-bars opposite the edges of the main-rail base and force the inwardly-projecting portions of the jaws *aa* upward, firmly clamping together, viselike, the lateral flanges of the splice and main rails between said jaws and the lateral flanges of the angle splice-bars, while the downward curve of the bolts B, by reason of the tension brought upon them when screwed up, gives an upward thrust to the vertical member of the splice-rail also. The opposite ends of the bolts B pass through closely-fitting holes in the depending jaws *aa* and are held firmly up, even though the vertical member of the splice-rail should press heavily upon and deflect said bolts at their centers.

Now as the heavily-loaded wheels pass along the main rails there is a wave motion in the rails accompanying each wheel, the lowest part of the rail being under the wheel and the highest part between the wheels, and when these waves reach the joint they tend to take an angular form, pointing first up and then down, by reason of the break of continuity in the main rails. This down angle is the one mainly sought to be overcome. In my invention when the joint is pressed downward under the loaded wheel any tendency to deflect or to take an angular form tends to separate the ends of the splice-rail from the base of the main rails. This tendency is first resisted by the inwardly-projecting jaws *aa* under the lateral flanges of the splice-rail, as well as by the truss-bolts B, supporting the vertical member of the splice-rail, and should any separation take place the immediate effect is that the vertical member of the splice-rail pressing downward upon the center of the suspending truss-bolts B slightly deflects the said bolts, since their ends are firmly suspended. This deflection necessarily draws the two ends of the said bolts nearer together, and with them the depending jaws, to which they are secured. This automatic pulling together of the depending jaws thrusts

their inner projections upward, and with them the splice-rail, and instantly arrests further downward deflection of the main rails.

The bolts B are sufficiently flexible to admit of the necessary deflection within the limit of their elasticity.

The splice-rail H, Fig. 3, fitting closely under the base of the adjacent ends of the two main rails and having its central vertical member supported by the swinging truss-bolts B, while its opposite lateral flanges *h h* and the flanges of the main-rail base are firmly clamped in between the opposite jaws *aa* and the lateral flanges of the opposite angle splice-bars, will hold both the main-rail ends in true surface with each other as the loaded wheels pass from one to the other.

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

1. The combination in a railroad-rail joint of the main rails, the T-shaped splice-rail H, having opposite lateral flanges, the said splice-rail adapted to fit centrally under and parallel with the main rails between the adjacent cross-ties, the angle splice-bars, the upper parts of which are of the usual form, fitting in between the head and base of the main rails, having a portion of their lower or lateral flanges extended outward and downward over and slightly beyond the edge of the base of the main rails and connected near the outer edge of said base with depending, inwardly-projecting jaws adapted to fit under and against and grip the lateral flanges of the splice-rail, and to receive through holes the upwardly-inclined ends of the truss-bolts B, connecting the said opposite jaws in a swinging trusslike form downward through the vertical member of the splice-rail, as and for the purposes specified.

2. The combination in a railroad-rail joint of the T-shaped splice-rail H, fitting under the main rails, having its opposite ends abutting against the adjacent cross-ties, and its opposite lateral flanges, *h h*, supported upon inwardly-projecting jaws depending from the lower or lateral flanges of the angle splice-bars, and its vertical member supported by the truss-bolts B, and the combination clamping and truss bolts B passing through the vertical member of said splice-rail and having their opposite ends curved upward and extending out through holes in the depending jaws, connecting said jaws in a swinging trusslike form downward through the vertical member of the splice-rail, as and for the purposes specified.

3. The combination in a railroad-rail joint of the opposite angle splice-bars bolted to the main rails, each having jaws depending from their lower or lateral flanges, the said jaws projecting inwardly and under the opposite lateral flanges of the splice-rail and adapted to receive and clamp, viselike, the said opposite flanges and the opposite edges of the main-rail base firmly in between the said jaws

and the lateral flanges of the angle splice-bars, and the truss-bolts B, connecting the said opposite jaws in a downward trusslike form through the vertical member of the splice-rail, and the vertical member of the said splice-rail pressing upon the downward curve of said bolts; said bolts having the usual form of head and screw on their respective ends, as and for the purposes specified.

10 4. The combination in a railroad-rail joint of the opposite jaws, *a a*, depending from the lower lateral flanges of the opposite angle splice-bars and projecting under the opposite lateral flanges, *h h*, of the splice-rail, the
15 splice-rail having its opposite lateral flanges supported upon said jaws and the downwardly-curved combination clamping and truss bolts B connecting the said opposite jaws and supporting at their centers the ver-
20 tical member of the splice-rail in a swinging trusslike form, as and for the purposes specified.

5. The combination in a railroad-rail joint of the swinging truss-bolts B, the splice-rail H, centrally under and parallel with the main rails and extending equally under the adjacent ends of the main rails, having a central vertical member and two upper equal lateral flanges, the vertical member of the said splice-rail supported by the swinging truss-bolts, and the opposite jaws, *a a*, depending from the lower lateral flanges of the angle splice-bars and projecting under the lateral flanges of the splice-rail jointly supporting the opposite lateral flanges of the splice-rail and the opposite inclined ends of the swinging truss-bolts, as and for the purposes specified.

In testimony whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

JEFFERSON D. TRAMMELL.

Witnesses:

ALFRED R. HOWARD,
JAMES W. CUNINGHAM.