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PATENTED MAY 19, 1903.

W. M. BREWER & C. A. ARCHER.

RAILROAD RAIL JOINT.

APPLICATION FILED MAY 19, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

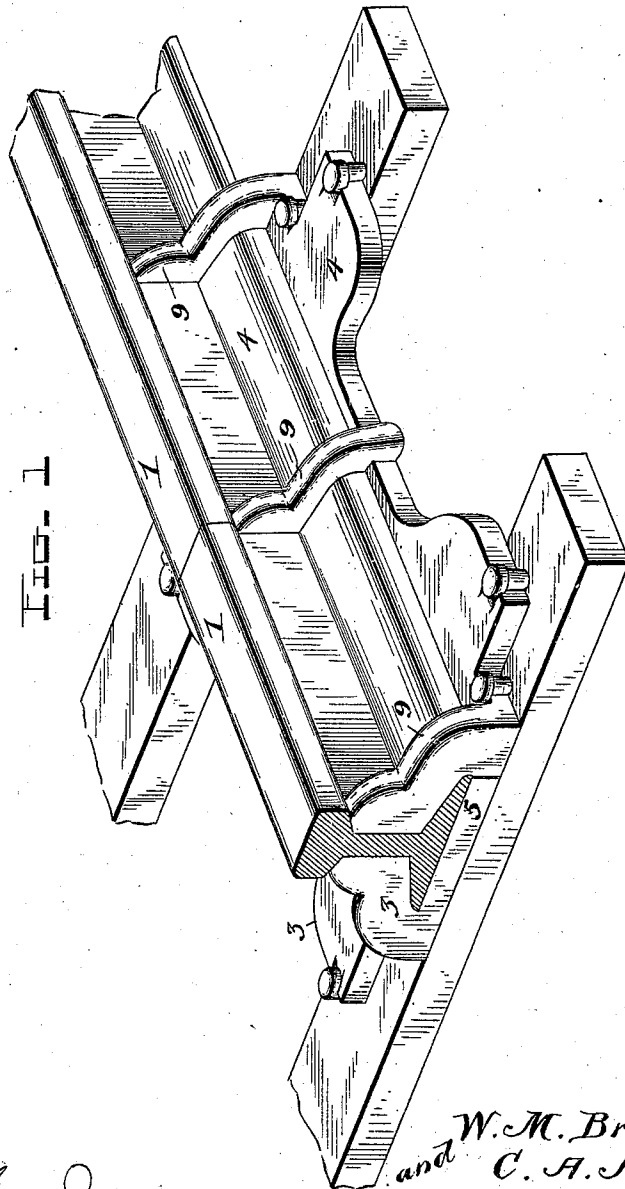


FIG. 1

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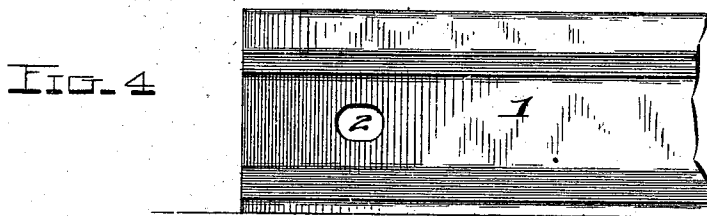
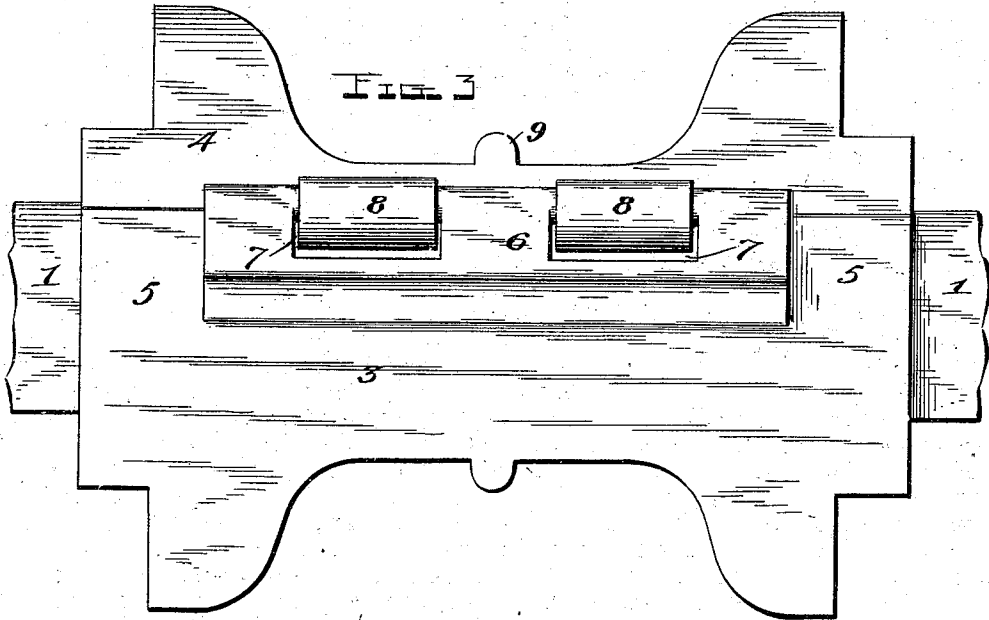
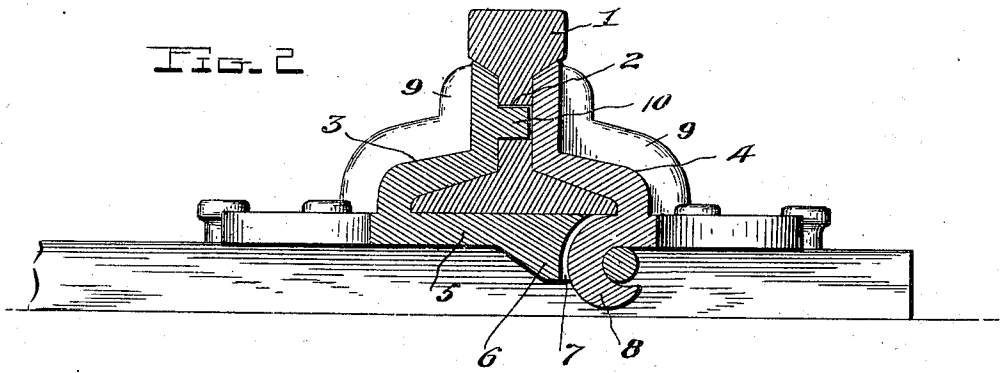
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

WILLIAM M. BREWER AND CHARLES A. ARCHER, OF WARREN, OHIO.

RAILROAD-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 728,196, dated May 19, 1903.

Application filed May 19, 1902. Serial No. 107,981. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM M. BREWER and CHARLES A. ARCHER, citizens of the United States, residing at Warren, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Railroad-Rail Joints; and we do 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 appertains to make and use the same.

The invention relates to railroad-rail joints.

The object of the invention is to provide a joint of this character by the employment of which is obviated the use of bolts, nuts, washers, and fish-plates; furthermore, to provide a joint of this character which shall be simple of construction, durable in use, comparatively inexpensive of production, and which will prevent the "creeping" of rails, as well as their spreading, and also prevent them turning axially, especially at curves, where the axial-turning tendency is encountered, and, furthermore, to provide a joint of this character which will freely allow of the expansion and contraction of the rails.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, said invention consists in certain novel features of construction and combination and arrangement of parts, which will be hereinafter fully described, defined in the appended claim, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of our improved railroad-rail joint, showing the abutting ends of two rails in position. Fig. 2 is a cross-sectional view through one of the rails and two sections of the joint on the line of their hinged connection. Fig. 3 is a bottom plan view. Fig. 4 is a side elevation of one end of the rail, showing the elongated opening therein.

In the drawings, 1 denotes the abutting ends of two railroad-rails, each of which may, if desired, be provided with elongated openings 2.

3 and 4 denote the sections constituting the rail-joint. Each section has its inner face shaped to fit the web of the rail on one side and the upper surface of the base of the rail,

and one of these sections—section 3, for instance—is provided with a horizontally-extending plate 5, upon which the base of the rail is seated. The sections 3 and 4 are preferably separably connected together—as, for instance, by providing the base-plate of the section 3 with a strengthening enlargement 6, formed with apertures 7, which are engaged by hooks 8, extending downwardly from the inner edge of the section 4, thus hingedly connecting the sections 3 and 4—such connection of the sections 3 and 4 taking place on a longitudinal line a distance from the longitudinal central line of the base of the rail and preferably at one edge of the sections are in place about the ends of the rails pressure exerted upon said rails by the passage of the wheels of a train thereover will cause the sections 3 and 4 to tightly embrace the ends of the rails, and by connecting the sections 3 and 4 at a point removed from the central longitudinal line of the rail additional leverage is secured, and thereby the tendency of the rail to turn axially—as, for instance, at curves—is reduced to a minimum and perhaps entirely avoided. Each section of the joint is provided with laterally-projecting flanges, which may be of any suitable shape and of any suitable length to engage one tie or to span over the space between two ties and engage both ties. The drawings in the present instance show the device constructed to engage two ties and to be held in place by the usual spikes. Each section of the joint may also be provided on its outer face with one or more strengthening-ribs 9, and in order to prevent creeping of the rails, which might result upon roads having two tracks, where all trains running in one direction will run upon one track and all trains running in the opposite direction will run upon the other, we provide the rail-joint sections with laterally-projecting studs 10, which project into the apertures 2 of the rails, the apertures being of sufficient size or elongation to permit of a free limited endwise movement of the rails longitudinally to compensate for expansion and contraction.

It will thus be seen that by producing a longitudinal divisible rail-joint the parts may be quickly assembled, and when assembled the

weight to which the rail is subjected in the passing of a train will be employed or utilized to more firmly clamp the sections of the joint to the rail, while at the very instant the train passes the joint the sections of the joint will be relieved of pressure and will not so tightly bind or engage the rail, and therefore will not interfere with its expansion or contraction, but, as above stated, will at the time or period the train is passing over the joint securely clamp the rail and prevent the ends of the rail sinking and moving or shifting endwise. Furthermore, by providing interlocking connections in the form of hooks and apertures so arranged as to adapt the joint-sections to be connected and disconnected by the movement of one section in an arcuate path at an angle to the base of the other section the use of extraneous fastenings for hingedly connecting the sections is obviated, the sections adapted to be more conveniently connected and disconnected than if they were united by a sliding engagement, and such connections, in addition to hingedly or pivotally connecting the sections to adapt them to exert the clamping action on the rails before referred to, themselves act to hold the sections against both lateral and longitudinal movement upon one another, thereby reducing to a material extent the strain upon the fastening-spike. Again, the hooks are not so liable to bind from rust or chip or break as sliding tongues or projections, and hence enable old rails to be more expeditiously removed for substitution of new rails and at the same time obviate the loss of material to be experienced when slidably-connectible

joints are used by the breakage of the interlocking connections in transit.

From the foregoing description, taken in connection with the accompanying drawings, it is thought that the construction, mode of operation, and advantages of our improved railroad-rail joint will be readily apparent without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

A longitudinally-divisible rail-joint comprising two members each adapted to embrace the upper surface of the base of the rail and the web of the rail, one of said members being provided with a laterally-projecting supporting-plate to receive and support the base of the rail, said supporting-plate having apertures, and the other having hooks engaging said apertures, forming a hinge connection whose parts are adapted to be united by an arcuate swing of one section upon the other section, substantially as set forth.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

WILLIAM M. BREWER.
C. A. ARCHER.

Witnesses:

W. B. SWAGER,
E. O. DILLEY.