No. 780,869. PATENTED JAN. 24, 1905.

J. DAVIS.

COMBINED RAIL JOINT AND CHAIR.

APPLICATION FILED OCT. 31, 1903.

2 SHEETS—SHEET 1.

Fig. 1.

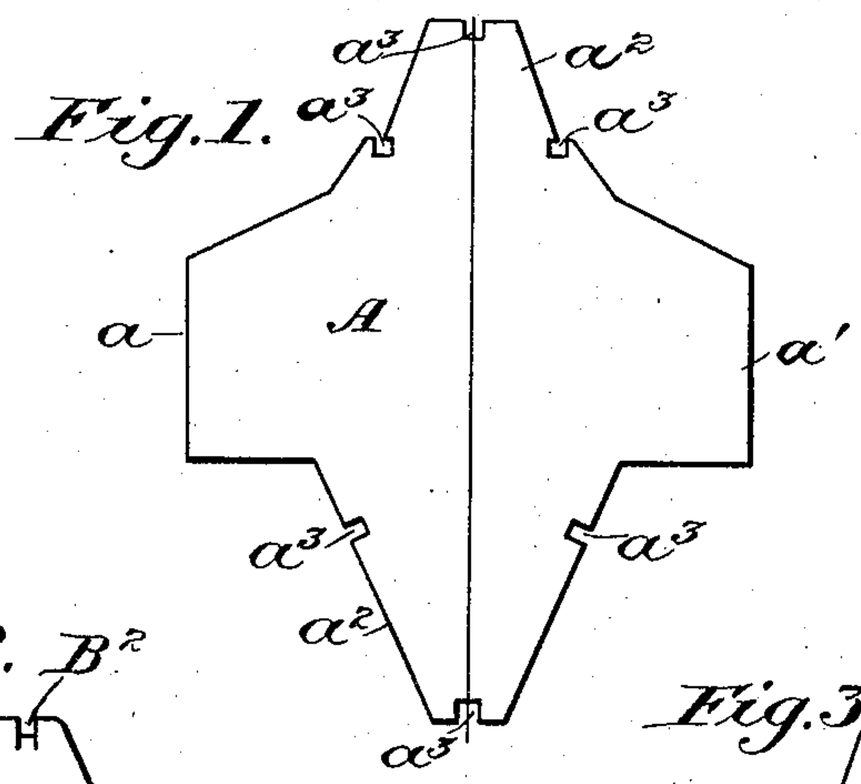


Fig. 2.

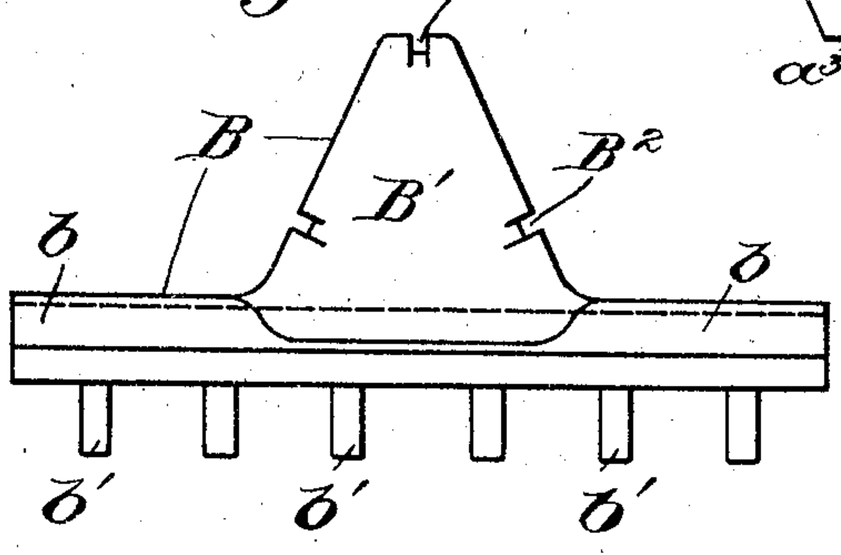


Fig. 3.

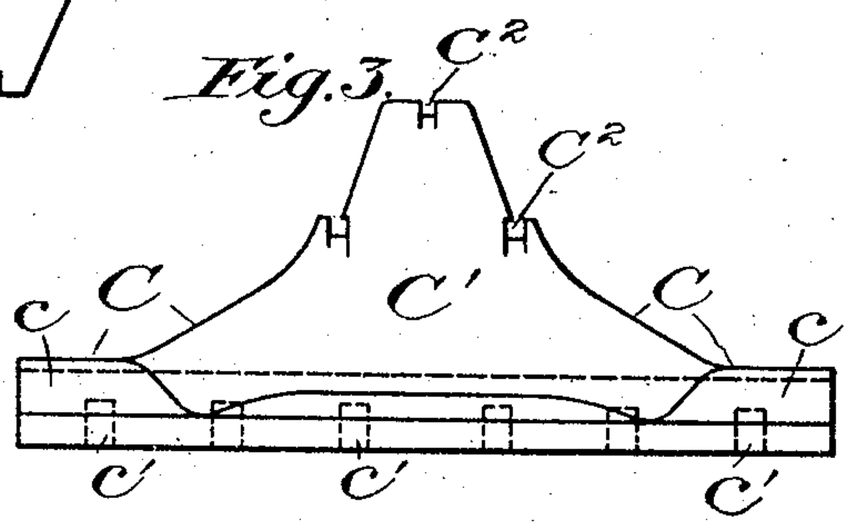


Fig. 4.

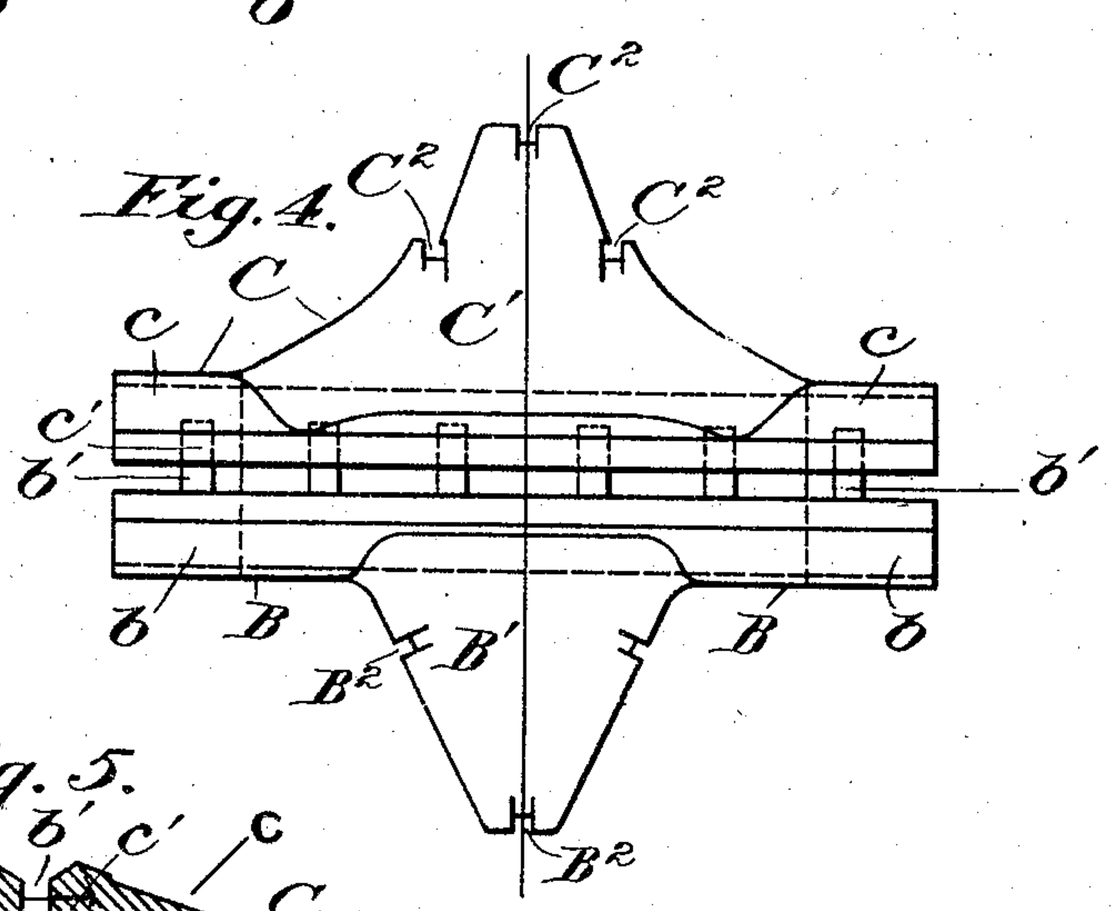
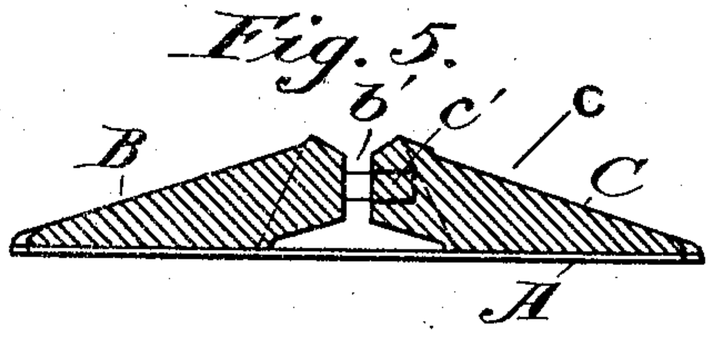


Fig. 5.



WITNESSES: Ed Davis
Chas. S. Harris.

his
Jeff X Davis INVENTOR.
mark

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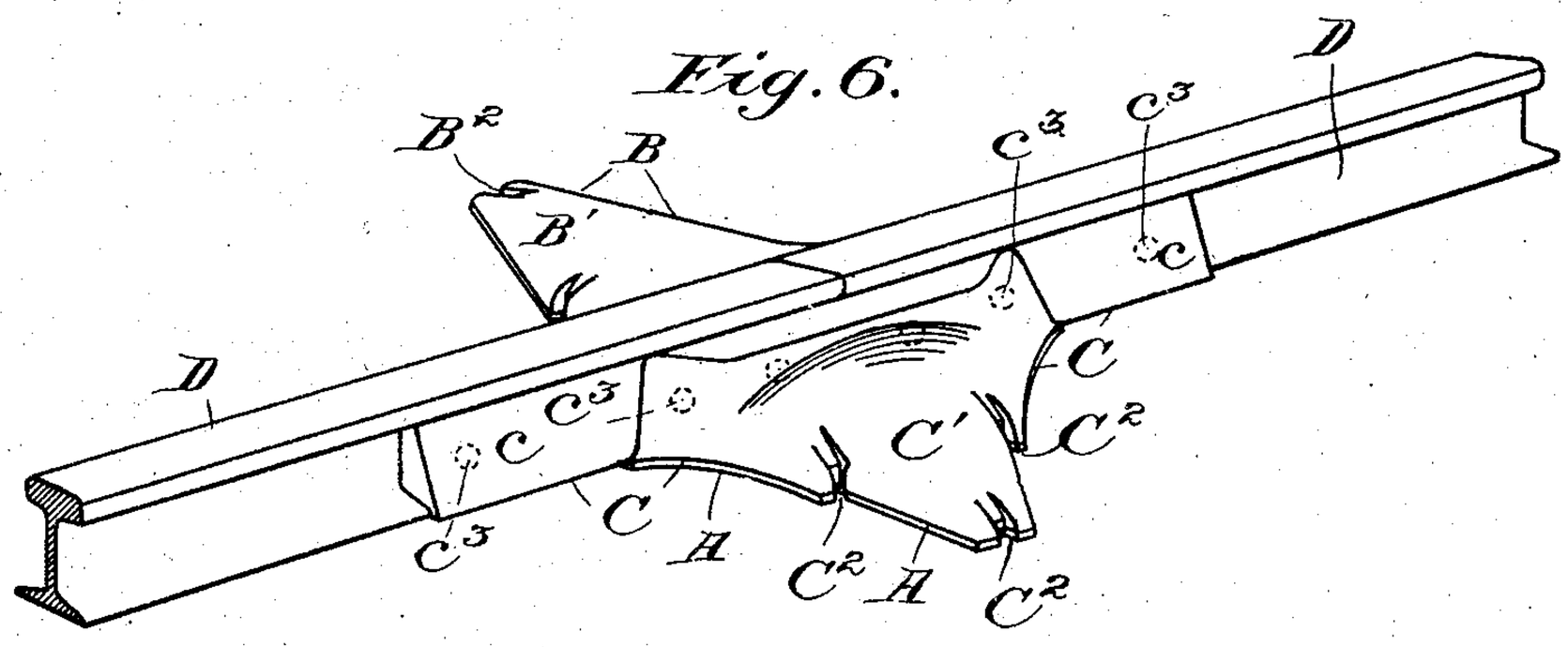
2 SHEETS—SHEET 2.

Fig. 6.



WITNESSES: E. A. Davis
Chas. S. Harris.

Jeff X Davis his mark. INVENTOR.

No. 780,869. Patented January 24, 1905.

UNITED STATES PATENT OFFICE.

JEFF DAVIS, OF GALESBURG, ILLINOIS, ASSIGNOR OF ONE-HALF TO CHARLES O. MAY AND KARL L. KLOTZBACH, OF GALESBURG, ILLINOIS.

COMBINED RAIL JOINT AND CHAIR.

SPECIFICATION forming part of Letters Patent No. 780,869, dated January 24, 1905.

Application filed October 31, 1903. Serial No. 179,266.

To all whom it may concern:

Be it known that I, JEFF DAVIS, a citizen of the United States, residing at Galesburg, in the county of Knox and State of Illinois, have invented certain new and useful Improvements in a Combined Rail Joint and Chair, of which the following is a specification.

My invention relates to combined rail joints and chairs, its principal object being to prevent the rails from spreading, and thereby permitting them to turn and cause accidents to a train passing thereover.

A further object is to provide means for permitting of expansion or contraction of the rails without straining the connections thereof.

A still further object is to prevent "creeping" of the rails after they are laid and fixed in place.

A still further object is to dispense with the use of nuts or bolts in connecting the rails together.

A still further object is to provide means whereby a rail or rails may be readily and quickly laid or taken up.

A still further object is to prevent wear and impair the usefulness of the ties.

A still further and final object is to provide a device which will effectually maintain a smooth joint at the proximal ends of the rails and prevent jarring and jolting of the rolling-stock when passing thereover and to prevent the ends of the rails becoming battered, bent, or distorted thereby.

To these ends and objects my invention consists in novel structural features and combinations of parts, the operations of which devices, separately and in combination, will be found hereinafter fully described and the novel combinations of which devices are specified in the claims of this specification.

In the accompanying drawings, which illustrate a preferred form of my invention, Figure 1 is a top plan outline of the bed or tie plate; Fig. 2, a plan of the inner brace-plate; Fig. 3, a plan of the outer brace-plate; Fig. 4, a top plan of the three above-mentioned plates assembled; Fig. 5, an end elevation, and Fig. 6 a perspective.

Referring to the drawing by letters, the same letter indicating the same part in the different figures thereof, A represents a bed or tie plate; B, the male brace or inner plate; C, the female brace or outer plate, and D D a pair of railway-rails. The plate A is preferably formed of a strong flat piece of metal, preferably cast, and has longitudinal members $a\ a'$ and transverse members $a^2\ a^2$. The members $a^2\ a^2$ are slotted or punctured to form spike openings or holes a^3. The inner plate B is preferably formed of heavy cast metal, has a lateral brace-arm B′, having spike openings or apertures B^2 registering with the apertures or holes a^3 in the plate A on the inner side of the rail, and has also elongated rail brace or reinforce arms b, in which pins b' are cast or otherwise fixed in any desired manner. The plate C is also formed of heavy strong metal and has a lateral brace or arm C′, having spike-apertures C^2 registering with apertures or holes a^3 in the plate A on the outer side of the rail, and has also elongated rail brace or reinforce arms c, having holes c' formed therein registering with the pins b' in the plate B. The rails are of the ordinary construction of I-rail, as shown; but they may be of any preferred construction of rail having a web and have holes in said web at their end portions registering with the pins b' and the holes c' in the respective plates B and C. These holes are slightly elongated in order that the pins aforesaid may have some play therein to provide for expansion and contraction of the rails. The bottom portions of these plates are made to conform in contour to the configuration of the plate A, upon which they rest, as will be hereinafter described.

It being desired to lay a section of road, the ties (not shown) being in place on the road-bed, a plate A is first laid loosely on one of them and in proper position. The abutting or proximal ends of the two rails are then brought into position transversely of the ties and lying on top of the bed-plate A, with their confronting ends spaced a short distance apart to provide for expansion. A plate C is then placed in proper position on the outer

side of the rail, with its arm C′ resting on the plate A and its elongated arms *c* lying against the web of the rail, between the ball and the flange thereof, and the holes c^2 registering with the holes c^3 in the rail. Ordinary rail-spikes are then driven through the registering openings a^3 and c^2 and into the tie and serve to hold the plates A and C securely thereon. Other means than spikes may be used for fixing or securing the plates and the tie together, if preferred. The plate B is next laid in place on the inner side of the rail, with its lateral arm resting on the base or tie plate and its extended or elongated arms lying against the web of the rail, between the ball and the flange thereof; and the pins *b′* inserted into and projecting through the holes in the rail and into the registering openings *c′* in the plate C. Ordinary rail-spikes are then driven through the registering openings a^3 and B^2 and into the tie and serve to hold the base-plate A and the plates B and C securely in place, while the rails will be tightly gripped and held by the last aforesaid plates from spreading or turning. As in the case of the plate B, the spikes aforesaid may be dispensed with and any other preferred or ordinary means be used for securing the plates A and C together and to the tie. The pins will prevent creeping one rail from its fellow.

One of the most serious difficulties with which railway officials have to contend is the jarring and jolting of cars incident to the trucks thereof passing over rail ends, which by reason of the great weight of the rolling-stock passing thereover have become bent, distorted, and sunken into the ties. This difficulty is obviated by the use of the tie or base plate A, which answers not only the purpose of a rail-chair to prevent the rail ends becoming distorted or bent down into the tie, but causes a smooth even track or surface to be presented to the car-wheels and preserves the tie from the elements and from the wear incident to the rail ends jolting, jarring, and being forced thereinto.

Should it become desirable for any purpose to take up a rail, it is readily, easily, and quickly accomplished by withdrawing the spikes from the apertures in the plates B and withdrawing the rail. The same or another rail may be relaid and secured in place by a reversal of the above operation. It will be evident that a great saving of time (which on railways is extremely important) and labor is thus attained and that no bolt, nut, or nut-lock is used in my device. It will be also evident that a great saving of time and labor is attained in laying my device on new constructions and that the "life" of the rails and ties will be greatly lengthened by the use thereof. The plates, and especially the outer one, being doubly secured to the tie, so securely hold the rail that turning or spreading thereof is impossible.

It will be apparent that by lengthening the arms *a′* of the plate A and the longitudinal members of the plates B and C my device will extend over three ties, thus attaining a maximum of rigidity and strength, which is required at the outer rail on sharp curves.

The advantages of the invention will be apparent and the operation will be understood from the foregoing description, it being particularly noted that various changes may be made in the details of construction without departing materially from the general idea involved.

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

1. In a device of the character described, a base or tie plate having arms, apertures in said arms, an inner plate or brace having lateral and longitudinal arms, apertures in the lateral arm registering with the apertures in the base-plate, and the longitudinal arms having pins, another and outer plate having lateral and longitudinal arms, apertures in the lateral arm registering with apertures in the outer arm of the base-plate, and apertures in the longitudinal arms for the reception of the ends of the aforesaid pins, substantially as described.

2. In a device of the character described and in combination, a base-plate, rails, holes in the webs thereof, an inner plate having lateral and longitudinal arms and pins projecting from the longitudinal arms; with an outer brace-plate having lateral and longitudinal arms, apertures in the lateral arms registering with the apertures in the base-plate, and apertures in the longitudinal arms registering with the holes in the rails and adapted for the reception of the ends of the pins aforesaid.

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

his
JEFF × DAVIS.
mark

Witnesses:
E. A. DAVIS,
CHAS. S. HARRIS.