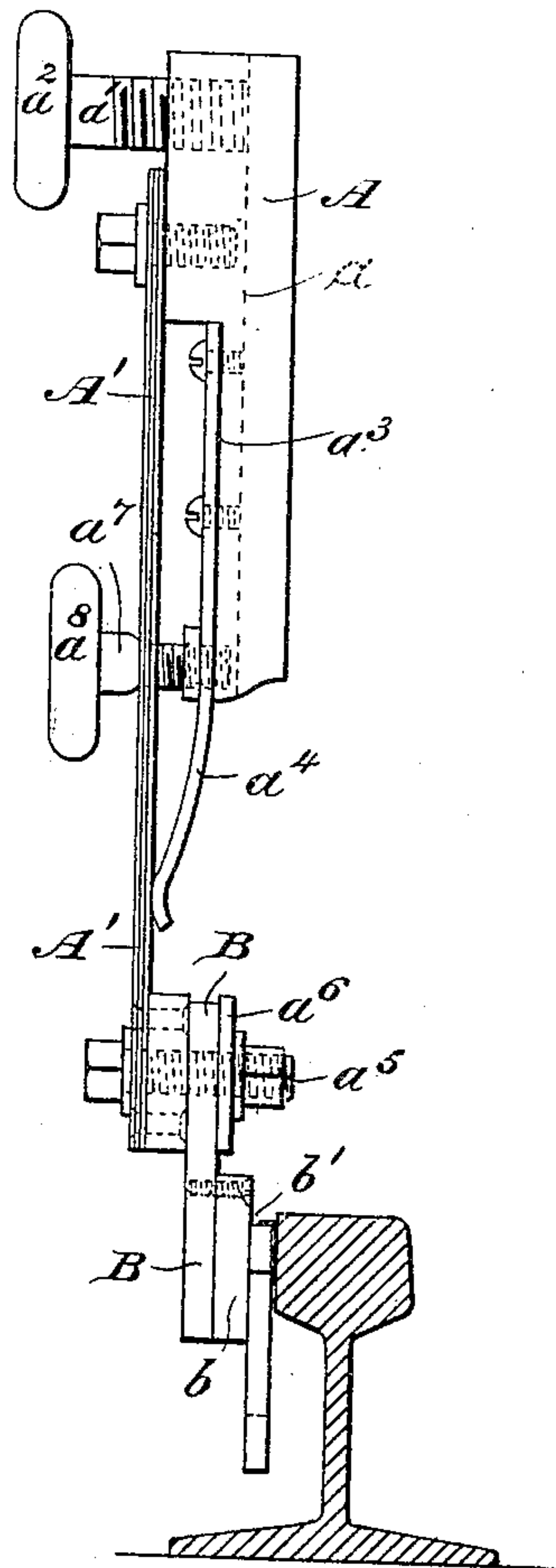


APPLICATION FILED NOV. 25, 1904.

Patented Apr. 27, 1909.

2 SHEETS--SHEET 1.



A. E. Merkel.
C. M. Norling.

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919,350.

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2 SHEETS—SHEET 2.

Fig. 4.

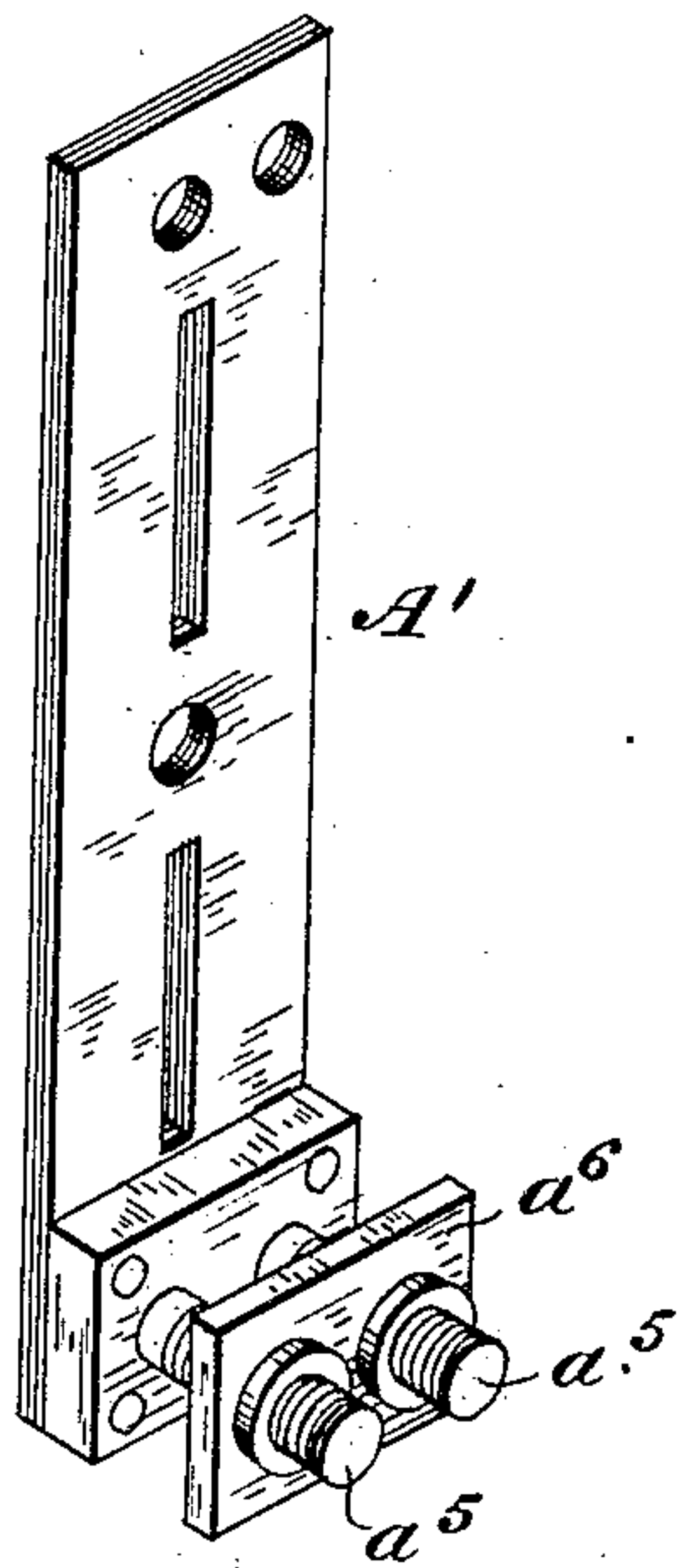


Fig. 5.

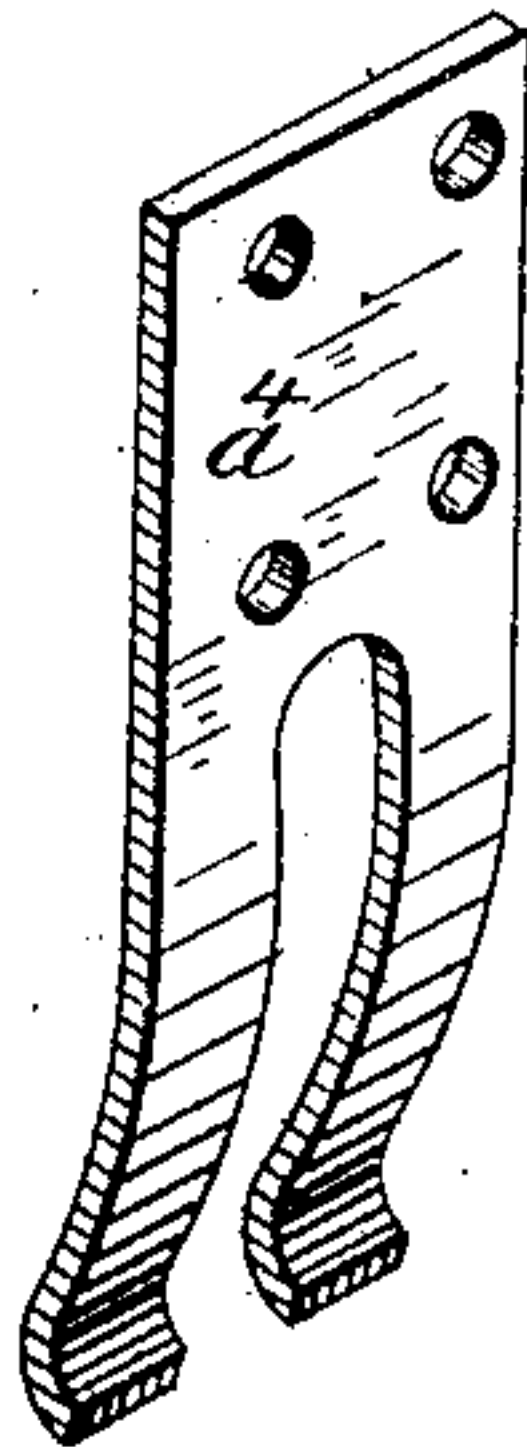


Fig. 6.

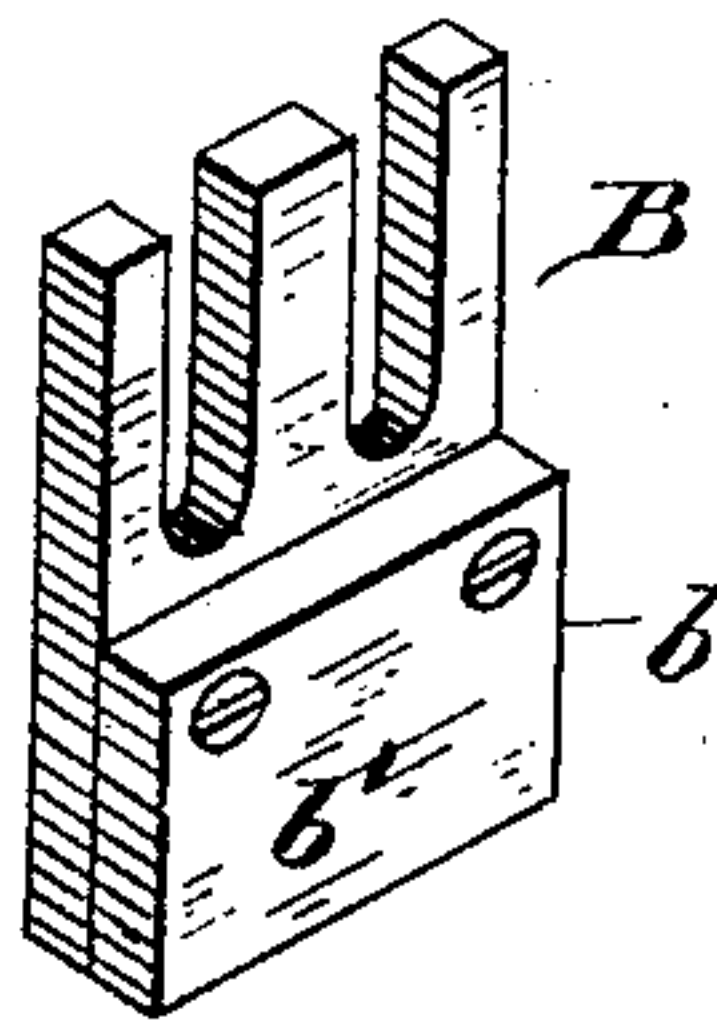


Fig. 7.

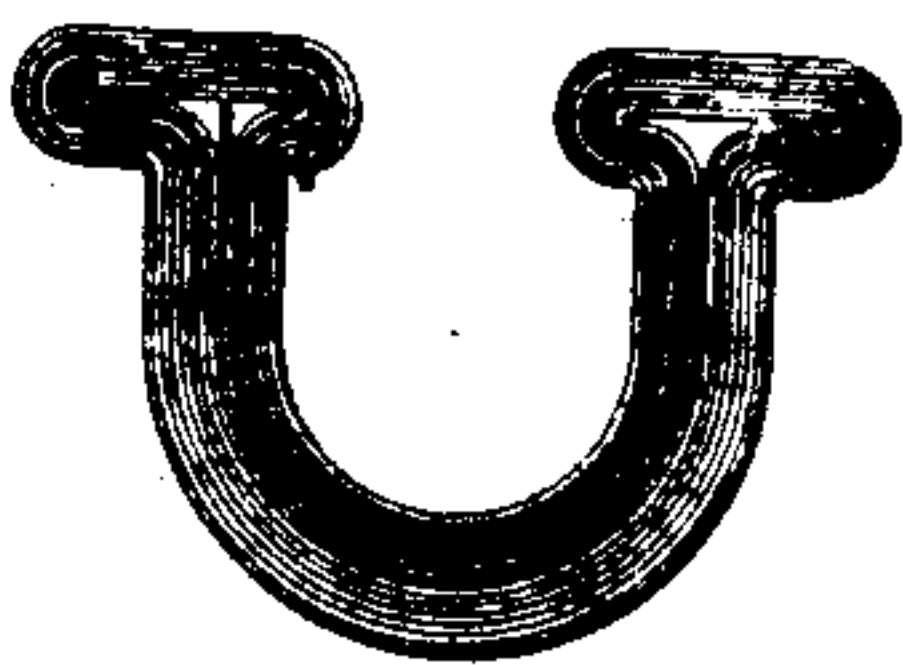


Fig. 8.



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UNITED STATES PATENT OFFICE.

ALBERT B. HERRICK, OF CLEVELAND, OHIO, ASSIGNOR TO THE ELECTRIC RAILWAY IMPROVEMENT COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

CLAMPING AND HEATING DEVICE.

No. 919,350.

Specification of Letters Patent.

Patented April 27, 1909.

Application filed November 25, 1904. Serial No. 234,162.

To all whom it may concern:

Be it known that I, ALBERT B. HERRICK, a citizen of the United States, resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Clamping and Heating Devices, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to means for effecting a homogeneous mechanical juncture between metal bodies and particularly to means for clamping and heating a rail bond to two abutting rails for the purpose of soldering or brazing the same to the latter.

The object of the said invention is to provide mechanism whereby such clamping and heating may be effected in an economical and efficient manner.

Said invention consists of means hereinafter fully described and particularly set forth in the claims.

The annexed drawings and the following description set forth in detail certain means embodying the invention, such disclosed means however, constituting but one of the various mechanical forms in which the principle of the invention may be used.

In said annexed drawings:—Figure 1 represents a plan view of a device embodying my invention, showing also a portion of two abutting rails. Fig. 2 represents a side elevation of the same partly broken away, two abutting rail ends and a rail bond in position, being also shown therein. Fig. 3 represents an end view of such device in connection with a bond, and a section of the rail. Figs. 4, 5, and 6 represent perspective detail views of parts of said device. Figs. 7 and 8 respectively represent a side elevation and an end view of a bond such as is used in connection with my said invention to join the ends of such rails.

The process of bonding rails which is used in connection with the invention about to be described is fully set forth and claimed in my co-pending application filed November 25, 1904, Serial No. 234,161, and need hence be but briefly described herein. Said process consists in placing the bond in contact with the adjacent ends of the rails to be joined, a suitable brazing or soldering medium being first interposed between the bond and such

rail ends, a block or similar support having a high electrical resistance is then brought to bear upon the bond to hold it firmly against the rail, and, finally an electric current is passed through block and bond. The means for effecting this process consists of the following device:

A rigid support A is provided with an undercut bearing *a* adapted to receive a similarly formed member, not shown, that is mounted upon mechanism attached to a suitable carriage such as a car so as to allow the said support to be swung upon the arc of a circle and also moved toward and from a vertical plane passing through and parallel with the rail. This mechanism will be made the subject matter of a separate application for U. S. Letters Patent and need not be further described herein.

In the upper part of the support A is threaded a screw *a'* provided with a hand wheel *a''* by means of which the said support may be clamped to the member upon which it slides, the bore in which such screw *a'* is threaded intersecting the undercut bearing *a* as is indicated in Figs. 1 and 3. By this means it can be readily seen that the support and parts attached thereto may be secured in various positions upon the member on which it is mounted.

Secured upon a surface *a³* formed by a depression cut in support A and intersecting the lower end thereof are two yielding members or stops *a⁴*, *a⁴*, which curve outwardly, as shown. These stops are bifurcated as shown in Fig. 5 and have their lower ends projecting downwardly from the lower end of the support A. Secured to the upper part of the support A are two flexible laminated conductors *A'*, *A'* of flat plate-like construction, as shown, to the lower end of each of which is secured in a suitable manner as by bolts *a⁵*, *a⁵* and a washer *a⁶* a slotted carbon-holder B. To the inner face of each of these holders is secured a rectangular block of carbon *b* having a free contact surface *b'*, as shown in Fig. 6. Intermediately of its extremities each conductor *A'* is formed with a smooth bore through which projects a screw *a⁷* provided with a hand-wheel *a⁸*. The inner end of this screw passes between the bifurcations of the contiguous spring stop *a⁴* and is threaded into the support A, as shown in Fig. 3. By means of this manually operated screw the flexible conductor *A'* may be

flexed so as to bend inwardly thereby tilting the carbon *b*, as described in my above-mentioned application of process of bonding rails.

5 By having the stop *a*⁴, against which conductor A' rests, of flexible construction as described, the lower end of such conductor and attached carbon is not only tilted when screw *a*⁷ is drawn up but is also moved in-
10 wardly toward the rail. This construction hence permits the two carbons to be properly adjusted against the sides of two abutting rails when their sides are not in exact alignment, as will be readily understood.

15 In utilizing the above mechanism for carrying out my said process the support A is suitably connected with a source of electrical energy, thereby introducing the conductors A' and carbons *b* into an electrical circuit.
20 when a bond is interposed between such carbons and the rails and contact established between them, as shown in Fig. 3, the said support, conductors, and carbons being connected electrically with each other in series.

25 Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the means herein disclosed, provided the means stated by any one of the following
30 claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

35 1. In a device for bonding rails, the combination of a support, a flexible conductor member secured at one end thereto, means for flexing said member to tilt the free end thereof, and a high resistance medium mounted upon such free end.

40 2. In a device for bonding rails, the combination of a support, a flexible conductor member secured at one end thereto and movably resting against the same at another point removed from such end, means located
45 intermediately of such end and point of rest for drawing said member toward said support, and a high resistance medium mounted upon the free end of said member.

50 3. In a device for bonding rails, the combination of a support, a yielding stop member attached thereto, a flexible conductor member secured at one end to said support and resting against stop member, means for
55 adjusting the position of the free end of said member, and a high resistance medium mounted upon such free end.

60 4. In a device for bonding rails, the combination of a support, a yielding stop member attached thereto, a flexible conductor member secured at one end to said support

and resting against said stop member, a screw mounted in said support and engaging said conductor member intermediately of its point of attachment and said stop member, and a high resistance medium mounted
65 upon the free end of such conductor member.

5. In a device for bonding rails, the combination of a support fixed relatively to the rails to be bonded, a flexible conductor member secured at one end to said support,
70 a high resistance medium mounted upon the free end of said conductor member, and means for adjusting the position of the free end of said member to secure a rail-bond between the resistance medium borne thereby
75 and such rails, said conductor member, resistance medium, and rails being interposed in an electrical circuit.

6. In apparatus of the character described, the combination of a support, a
80 conductor member secured at one end thereto, means for moving the free end of said conductor member, a holder removably clamped to such free end, and a block of high resistance material affixed to said
85 holder.

7. In apparatus of the character described, the combination of a support, a conductor member secured at one end thereto,
90 means for moving the free end of said conductor member, clamping bolts in such free end, a slotted holder removably secured by said bolts and depending below such free end, and a carbon block affixed to said
95 holder.

8. In a device for bonding rails, the combination of a support, a flexible conductor member secured at one end thereto, means for flexing said member to tilt the free end thereof, a holder removably clamped to said
100 conductor member, and a block of high resistance material affixed to said holder.

9. In a device for bonding rails, the combination of a support, a yielding stop member attached thereto, a flexible conductor
105 member secured at one end to said support and resting against said stop member, means for adjusting the free end of said conductor member, clamping bolts in such free end, a slotted holder removably secured by
110 said bolts and depending below such free end, and a carbon block affixed to said holder.

Signed by me, this 21st day of November, 1904.

ALBERT B. HERRICK.

Attested by—

E. M. NORLING,

A. E. MERKEL.