No. 721,573. PATENTED FEB. 24, 1903.

H. KUNKEL.

COMBINED RAIL JOINT AND CHAIR.

APPLICATION FILED JULY 2, 1902.

NO MODEL.

Fig. 1.

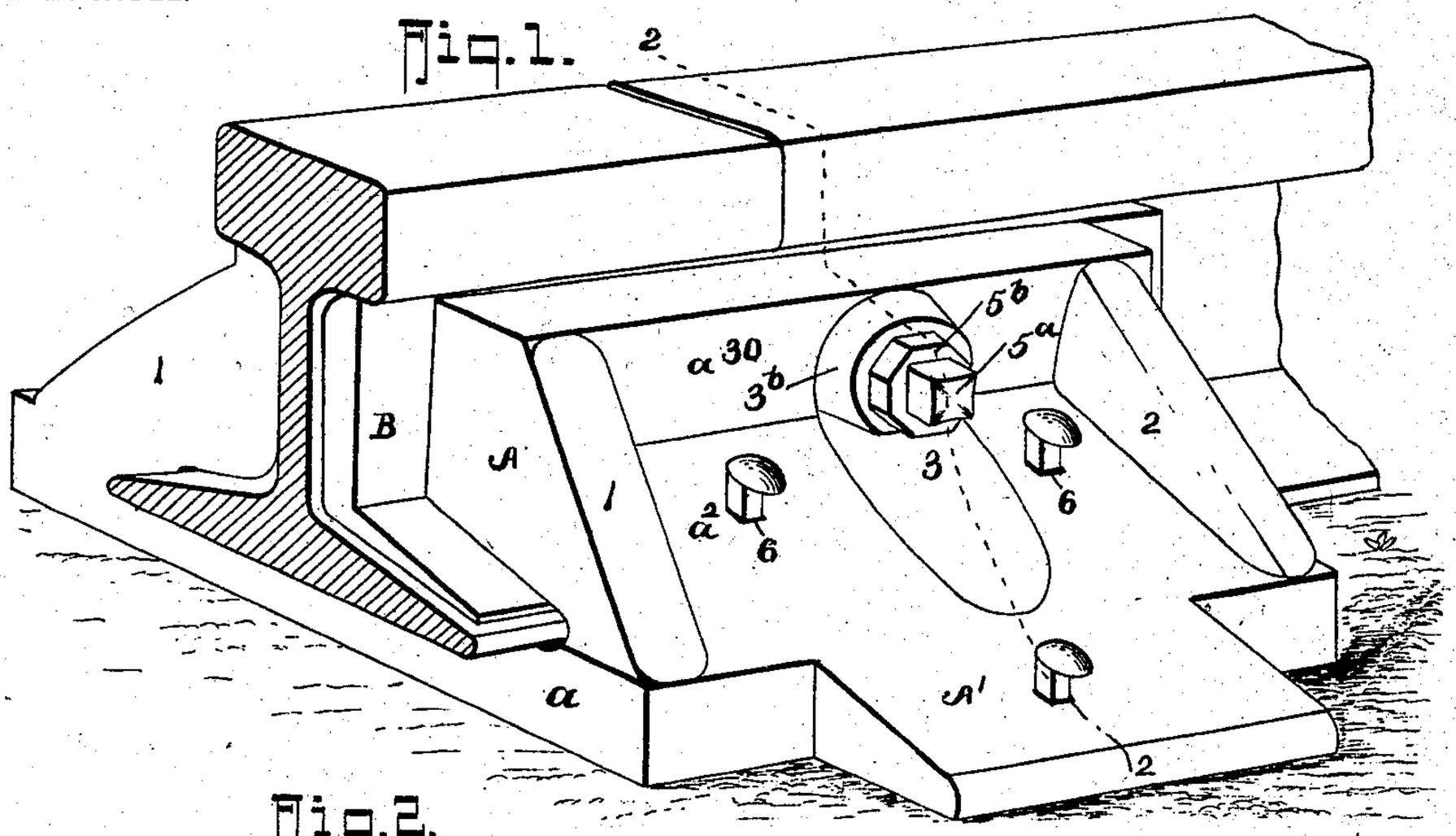


Fig. 2.

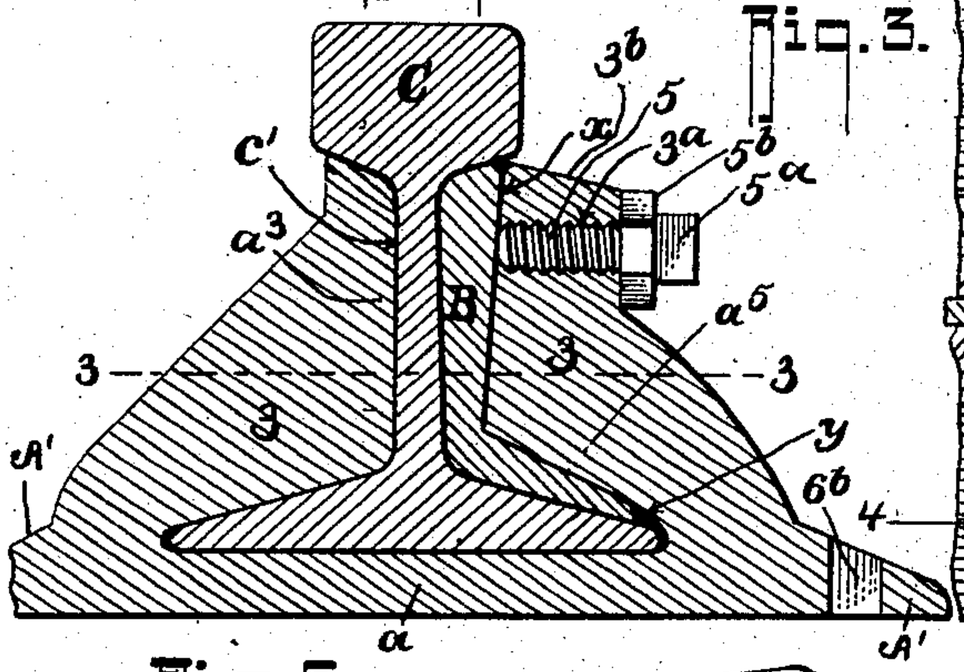


Fig. 3.

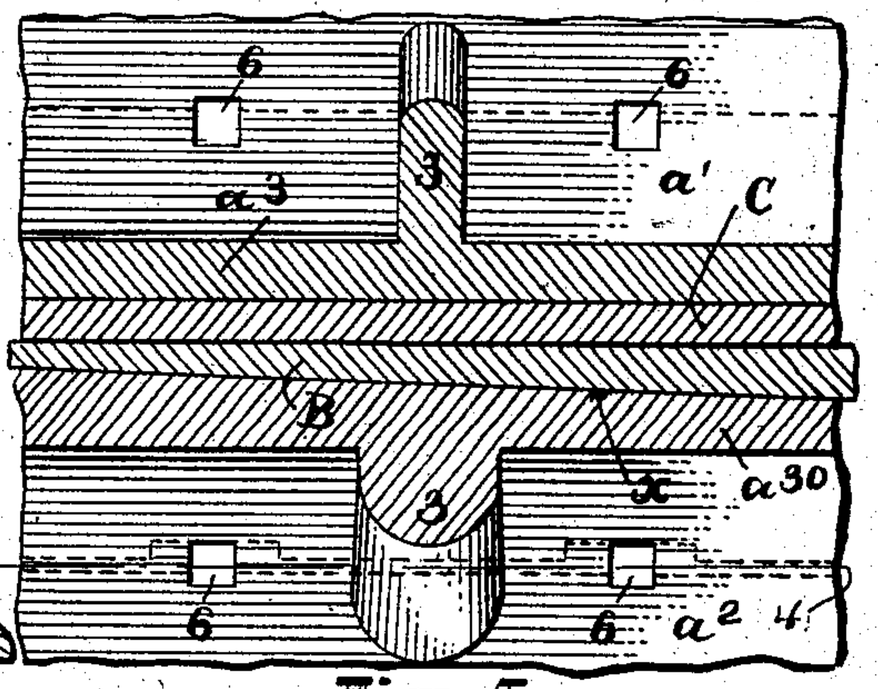


Fig. 4.

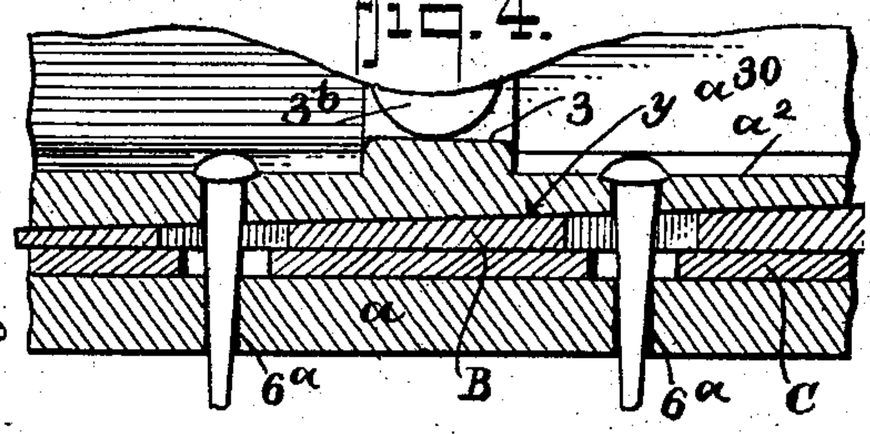


Fig. 5.

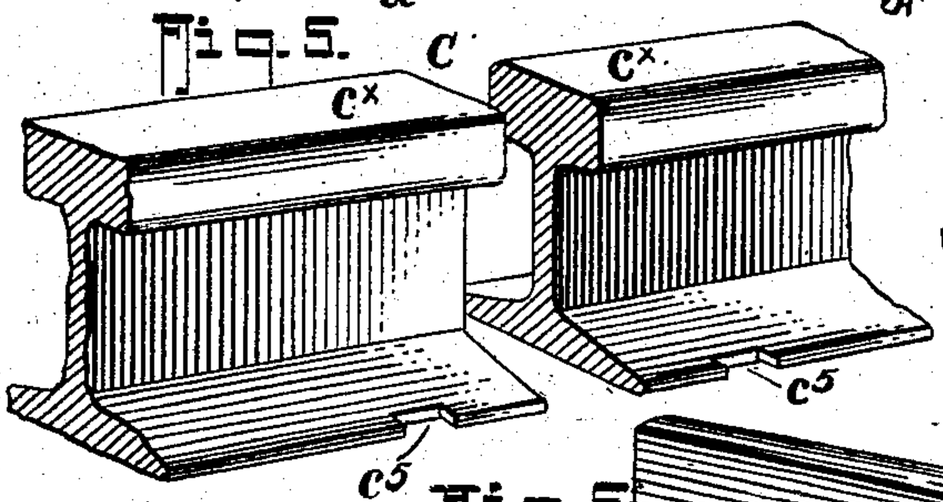
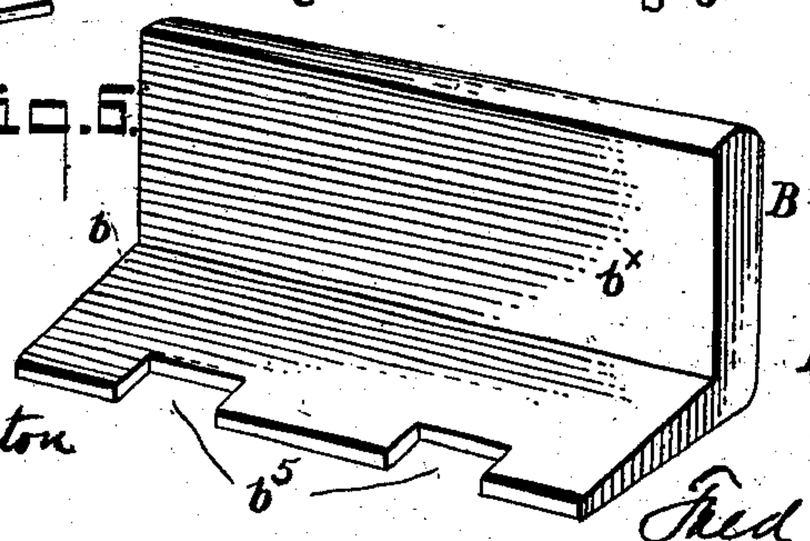


Fig. 6.



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HENRY KUNKEL, OF FRANKLIN, PENNSYLVANIA.

COMBINED RAIL JOINT AND CHAIR.

SPECIFICATION forming part of Letters Patent No. 721,573, dated February 24, 1903.

Application filed July 2, 1902. Serial No. 114,047. (No model.)

To all whom it may concern:

Be it known that I, HENRY KUNKEL, residing at Franklin, in the county of Venango and State of Pennsylvania, have invented a new and Improved Combined Rail Joint and Chair, of which the following is a specification.

This invention more particularly relates to improvements in that type of rail joints and chairs wherein the use of nuts and bolts for securing the rail ends is dispensed with; and the said invention primarily seeks to provide an inexpensive, simple, and stable construction of parts capable of being readily assembled by unskilled labor and which will effectively serve for the intended purposes.

My invention comprehends a novel coöperative arrangement of parts, including a casting that forms the chair portion for the rail and having members for fitting all parts of the rail required to secure it in place, a wedge for binding the rail and chair, and a peculiar arrangement of spike-receiving notches and apertures in the several parts, all of which will hereinafter be fully set out in the detailed description and specifically pointed out in the appended claim, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improvement. Fig. 2 is a transverse section thereof on the line 2 2 of Fig. 1. Fig. 3 is a horizontal section of the same on the line 3 3 of Fig. 2. Fig. 4 is a longitudinal section thereof on the line 4 4 of Fig. 3. Fig. 5 is a perspective view of the adjacent ends of the rail-sections. Fig. 6 is a similar view of the wedge member.

In the practical construction my invention comprises substantially but two parts, a chair A and a wedge member B, which are correlatively so arranged that when fitted to the rail they will effectively provide for a solid bearing for the meeting ends of the rails and a positive joint for the same where the several parts are spiked in a manner presently explained and at the same time also make suitable provision for the expansion and contraction of the rail. For this purpose the chair A is formed of a single solid casting, having a base a to fit under the rail, upwardly and inwardly extending angle portions a' a^2, one of which, a', terminates in a vertical bearing portion a^3, shaped to snugly engage the adjacent faces c' of the web of the rail C, its upper end being formed to snugly seat against the head of the rail, as clearly shown in Fig. 2. The opposite angle-portion a^2 of the chair A also extends over the foot or base flange of the adjacent side of the rail C and includes a vertical portion a^{30}, which portion, however, does not engage the rail-web like the member a^3, but stops short thereof to provide for an intervening space, (indicated by x in Figs. 2 and 3.) Referring more particularly to the latter, Fig. 3, it will be noticed that the face of the member a^{30}, that opposes the adjacent rail-web face, is disposed at an angle to the rail, whereby the space x is made wedge-shaped in a horizontal plane, and the part a^5 of the angle portion a^2 is also held away from the opposing rail flange or base to provide an opening y, which opening is wedge-shaped in a vertical plane, as best shown in Fig. 4, the reason for which will presently appear.

As clearly shown in Fig. 1, the angle or side portions of the chair A have three strengthening-ribs, one at each end, (designated by 1 and 2,) and a central one 3, and the central one 3 of the member a^2 has a horizontally-threaded aperture 3^a, surrounded by a boss 3^b, to receive a clamp-screw bolt 5, provided with a squared turning-head 5^a and a jam-nut 5^b, as clearly shown in Fig. 2.

Each of the parts a' a^2 of the chair A has a pair of spike-apertures 6, that register with similar apertures 6^a in the bottom of the chair, (see Fig. 4,) and the said base at each side has a lateral extension A' A', each of which is also provided with a spike-aperture 6^b. The several spike-apertures 6^a 6^b are of a size to snugly receive the spikes S.

The wedge or key member consists of an angle-plate b, having a vertical portion whose front face $b^\times$ is shaped to snugly fit against the opposing face of the rail-web, the upper end being also arranged to bear against the under side of the rail-head. The inner face of the vertical part b of the key B is straight to bear tightly against the front face of the member a^2, and the front portion of the key B is made to fit the space x between the rail and the member a^2 of the chair.

The wedge or key B has its vertical and

base portions tapered to slide and wedge within the spaces x and y, and the base of the key B has two elongated notches b^5 b^5, positioned to register with the spike-apertures in that side of the chair with which the key engages.

The ends $c^\times$ $c^\times$ of the two rail-sections C have their base or flange portions provided with elongated notches c^5 c^5 to coöperate with the notches b^5 b^5 and the spike-apertures 6 6.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the complete construction of my invention will be readily understood. In assembling the parts the ends of the rails are slipped between the opposite sides a' a^2 of the chair A until they abut. The key B is then inserted in the large end of the spaces x and y and driven home to bring the notches b^5 b^5 with the spike-apertures in the chair and the spike-apertures in the rail-flanges. The several spikes are then driven, which securely holds the parts in a firm and inseparable position, the elongation of the notches c^5 b^5 permitting the usual contraction and expansion of the several parts. By providing the centrally-disposed binding-screw bolt the key B will be positively held from rattling or coming out should for any reason the spaces become loosened and separated from the said wedge or key. Furthermore, the said binding-screw also serves to make the joint or dangerous part of the rail the more secure and safe by rigidly holding the key in position against the meeting ends thereof.

It is apparent that as no bolts, nuts, or fish-plates are used the rails can be quickly and securely fitted in place, and in case of breakage or wear of the rail-section it can be quickly separated from the rail-chair and a new one substituted therefor, or in case of necessity the chair, together with the wedge or key B, can be slid on the rail to the break fitted thereover and the parts made fast by spiking them to a tie placed in position therefor.

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

In a combined rail chair and joint, the combination with the rails C C, having elongated spike-notches; of the chair A, having a base, and side portions a' a^2, the portion a' being formed to snugly engage the base, the web and the head of the rail-face that opposes it, the side a^2 having its rail web and flange opposing faces formed to not engage the rail-surfaces that oppose said faces, said opposing faces of the side a^2 being at an angle or plane of the rail-faces that they oppose, whereby intervening and connected wedge-spaces x and y are provided, said chair having spike-apertures to register with the elongated notches in the rail, the wedge B, consisting of an angle member shaped to slide endwise into the connected spaces x and y, said key having elongated notches in its base member to coöperate with the rail-notches and chair-apertures to receive the spikes, said chair having a threaded socket, and a threaded bolt fitting said socket, and adapted to engage the wedge member B, all being arranged substantially as shown and for the purposes described.

HENRY KUNKEL.

Witnesses:
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