

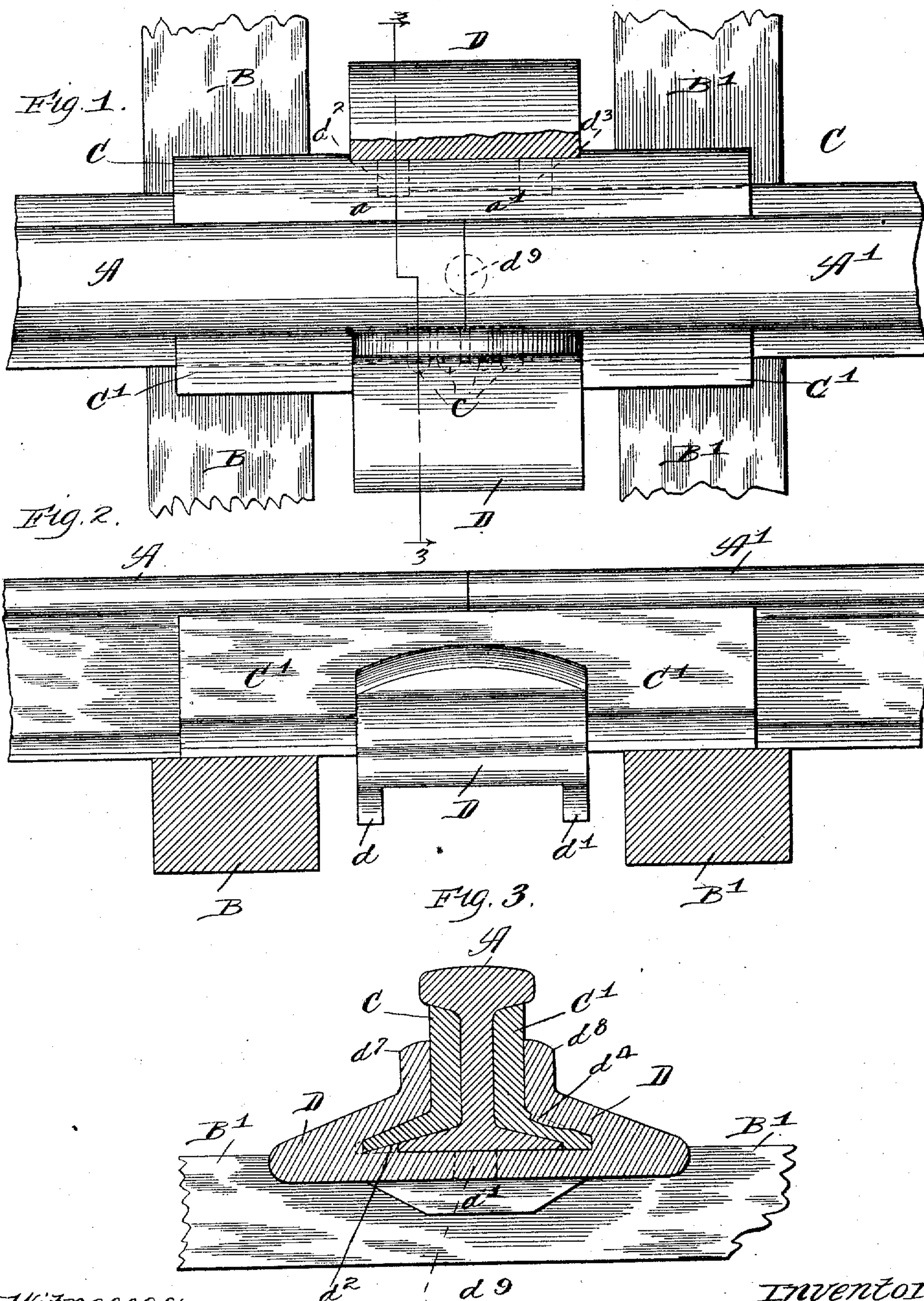
No. 687,952.

Patented Dec. 3, 1901.

L. E. AYRES.
RAILWAY JOINT LOCK.
(Application filed Mar. 18, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

Ray White.

Harry B. White

Inventor:

Lycurgus E. Ayres.

By J. J. Bain Attorney:

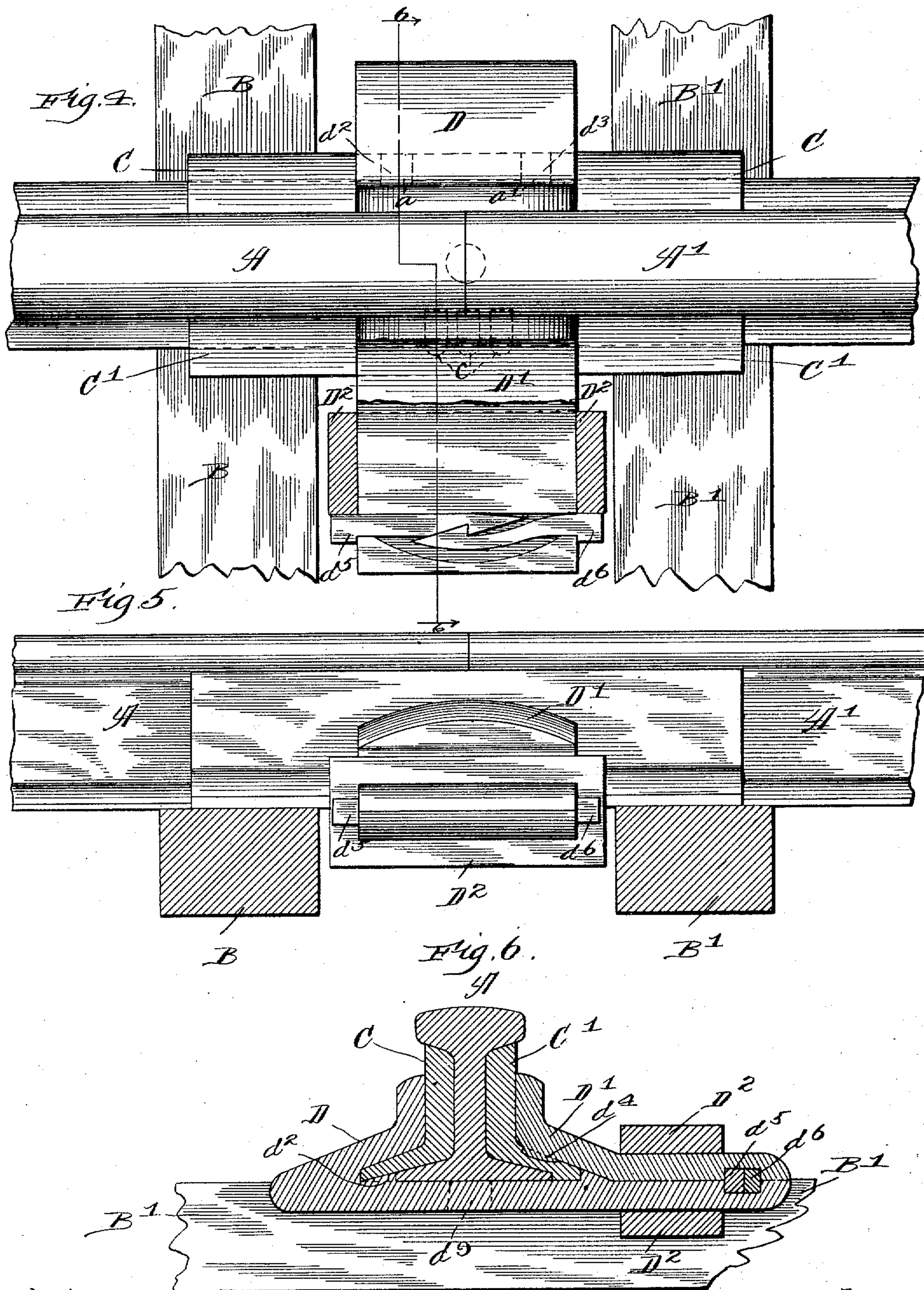
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Inventor:
Lycurgus E. Ayres.
By Jone Dain Attorney.

UNITED STATES PATENT OFFICE.

LYCURGUS E. AYRES, OF MELROSE PARK, ILLINOIS.

RAILWAY-JOINT LOCK.

SPECIFICATION forming part of Letters Patent No. 687,952, dated December 3, 1901.

Application filed March 18, 1901. Serial No. 51,574. (No model.)

To all whom it may concern:

Be it known that I, LYCURGUS E. AYRES, a citizen of the United States, residing at Melrose Park, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Railway-Joint Locks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable persons skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in railway-locks for holding the joints in place near the end of the meeting rails.

The object of my invention is to provide a simple, durable, and efficient means for holding the angle-bars, comprising a railway-joint, in position at or near the ends of the meeting rails, by means of which the ends of the said rails may be supported and held in position as firmly and yet as elastically as if they were a continuation of a single rail.

A further object of my invention is to provide a lock for holding the angle-bars in position that will not be shaken loose by the passing trains, which will remain in position after once having been adjusted, and firmly yet elastically hold the said angle-bars against the side of the abutting ends of the rails, without the objections attendant upon the use of the ordinary bolts so commonly employed for clamping the said angle-bars against the surface of the respective rails.

Another object of my invention is realized in the smooth silent passage of the car-wheels over the joints on which my lock is used and the absence of pounding or hammering upon the ends of the rails when the joints are passed over by the car-wheels, which is ever present in joints held in place by bolts. The ends of both rails when my device is used rest upon a common bed-plate or foundation and they must both move in unison, and since there can be no relative displacement there can be no pounding. The rails are held in alinement by my lock, and this result tends to prevent the spread of the rails, low joints, and other objections common to the ordinary rail-joint.

In the drawings, Figure 1 shows a plan view of a broken-away part of two rails with my lock applied thereto, part of the lock-clamp

being broken away on one side. Fig. 2 is a side elevation of the same. Fig. 3 is a section through line 3 3 of Fig. 1. Fig. 4 is a plan view of a modification. Fig. 5 is an elevation of the same. Fig. 6 is a section through line 6 6 of Fig. 4.

In all of the views the same letters of reference indicate similar parts.

A and A' represent the respective rails.

B and B' are the ties on the respective sides of the abutting ends of the rails.

C and C' are the angle-bars which constitute the rail-joint in part.

D is the clamp of the lock for holding the said angle-bars in position and firmly against the sides of the respective rails.

a and a' are notches made in one side of the base, near the ends of the respective rails.

c represents a series of indentations made in the top surface of the angle portion of the tapered angle-bar.

d and d' are webs on either side of the clamp D for strengthening it. They also serve to prevent the rails from creeping when they come in contact with the ties B and B' on either side of the said clamp.

d² and d³ are lugs raised from the bottom of the clamp or chair D, adapted to engage the notches a and a' in the ends of the respective rails. The notches in the rails are slightly wider than these lugs, so as to permit the expansion and contraction of the respective rails without straining the clamp or chair D, thereby providing a given latitude of movement.

d⁴ is a lug or indentation made in the upper inside surface of the clamp D or D' to engage with the indentations c, which are made in the angle-bar C'. These lugs may all be cast in the clamp when the same is made of cast metal or they may be indented therein when it is made of sheet metal and formed up.

In the modification d⁵ and d⁶ are self-locking keys, adapted to pass through perforations made in the clamp for holding the trap D² in position. d⁷ and d⁸ are vertically-extending portions of the clamp D, adapted to be brought into contact with the respective angle-bars C and C'. d⁹ is a hole made through the bottom of the clamp D and directly under

the space between the two abutting ends of the rails for the purpose of permitting sand, dirt, or the like that may enter the space to fall through this hole and not interfere with the movement due to the expansion and contraction of the rails.

The angle-bar C' is made tapering from one end to the other upon its outer edge and top or indented portion. The opposite angle-bar C may also be made tapering, if desired, although it will be sufficient for my joint that one angle-bar only is made tapering.

In applying the lock to the rails the rails are first separated and the clamp D is slipped over the end of one of the rails. Then the angle-bar C is placed in position within the clamp. Then the angle-bar C' is driven in between the clamp and the side of the rail, when the lug d^4 will engage in one of the depressions or indentations c and retain the parts in position. There is sufficient elasticity in the chair or clamp D to permit the indentations c to pass under the lug d^4 until the tapered angle-bar C' has been driven in sufficiently to hold all of the parts in a fixed but bodily-yielding position, when the lug d^4 will enter one of the indentations c and by this means retain the angle-bars in place.

This joint and lock is made of the fewest possible parts. The elastic yet strongly-clamping chair maintains a constant yet elastic stress to hold the angle-bars in position against the sides of the rails. When the angle-bars properly fit the rails, any additional lateral stress more than is necessary to hold the angle-bars in position does not increase the strength of the joint, but simply increases its rigidity, which without some elasticity is more a factor of weakness than otherwise.

The constant stress upon the parts as applied by the use of my lock produce results that are more reliable, more durable, and more economical than when bolts are used for holding the angle-bars inflexibly in position.

In the modification shown in Figs. 4, 5, and 6 I make the clamp D in two parts, D and D', and hold them together by driving the link or strap D² over the prolonged end and hold the link in position by means of the self-locking keys or wedges d^5 and d^6 . This clamp may be placed in position without it being necessary to slip it on over the end of the rails. The latter clamp is very useful for making temporary repairs—as, for instance, it may be used for joining the ends of broken rails. As the application of the clamp does not require the ends of the rails to be perfo-

rated it may be quickly applied to any portion of the rails.

It is obvious that instead of using the link D² for holding the parts D and D' together any suitable means may be substituted, and the self-locking keys or wedges d^5 and d^6 are not absolutely essential, as other means may also be employed for holding the links in place.

Having described my invention, what I claim as new and useful, and desire to secure by Letters Patent of the United States, is—

1. A rail-joint comprising a clamp made in one piece, folded upon itself at each end, vertically-extending terminals adapted to bear against the side surfaces of the angle-bars, angle-bars between said vertically-extending terminals and the rails, one or both of said angle-bars tapered with respect to their length, indentations or notches upon the upper surface of one of said angle-bars, and a corresponding lug upon the resilient, folded portion of said clamp, adapted to engage therewith, substantially as set forth.

2. A rail-joint comprising a clamp made in one piece folded upon itself at each end, vertically-extending terminals adapted to bear against the side surfaces of said angle-bars between the said vertically-extending terminals and the rails, one or both of said angle-bars tapered with respect to their length, notches in the upper surfaces of one of the said angle-bars, a lug on the clamp adapted to engage therewith, integrally-formed lugs within the opposite side of said clamp adapted to engage in notches in the respective rails, substantially as set forth.

3. A rail-joint comprising a clamp passing under the rails, folded upon itself at one end, the other end extending laterally from the base of the rails, a clamp-piece removably fixed to the laterally-extending portion adapted to confront one side of the rails, angle-bars between the said clamps and said rails, a link adapted to surround the extended ends of the said two-part clamp to hold them together, and a double self-locking key adapted to be inserted in the laterally-extending parts to hold said link in position, substantially as set forth.

In testimony whereof I have signed this specification, in the presence of two subscribing witnesses, this 11th day of March, A. D. 1901.

LYCURGUS E. AYRES.

Witnesses:

FORÉE BAIN,
M. F. ALLEN.