

D. A. HOPKINS.
RAILROAD CHAIR.

No. 30,476.

Patented Oct. 23, 1860.

Fig. 1.

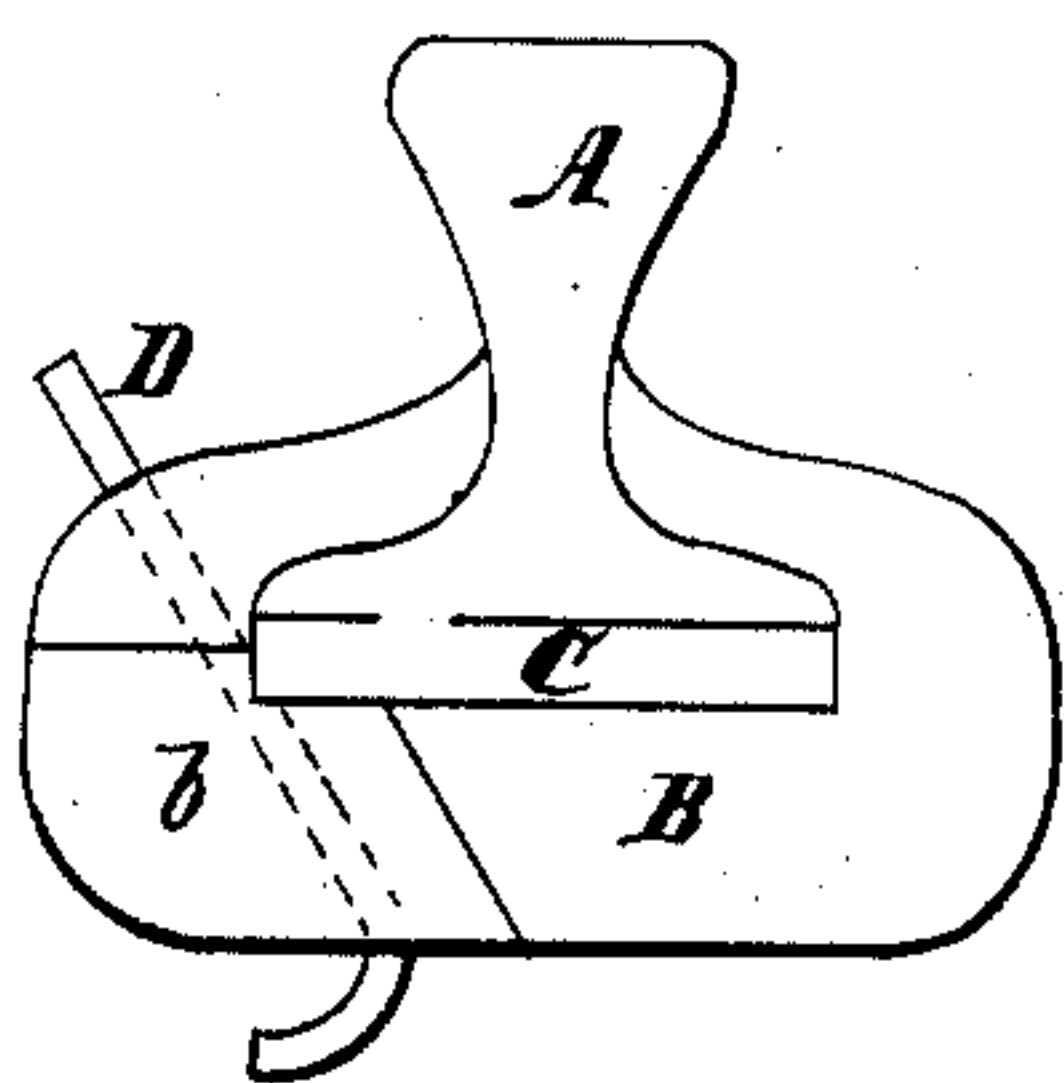


Fig. 2.

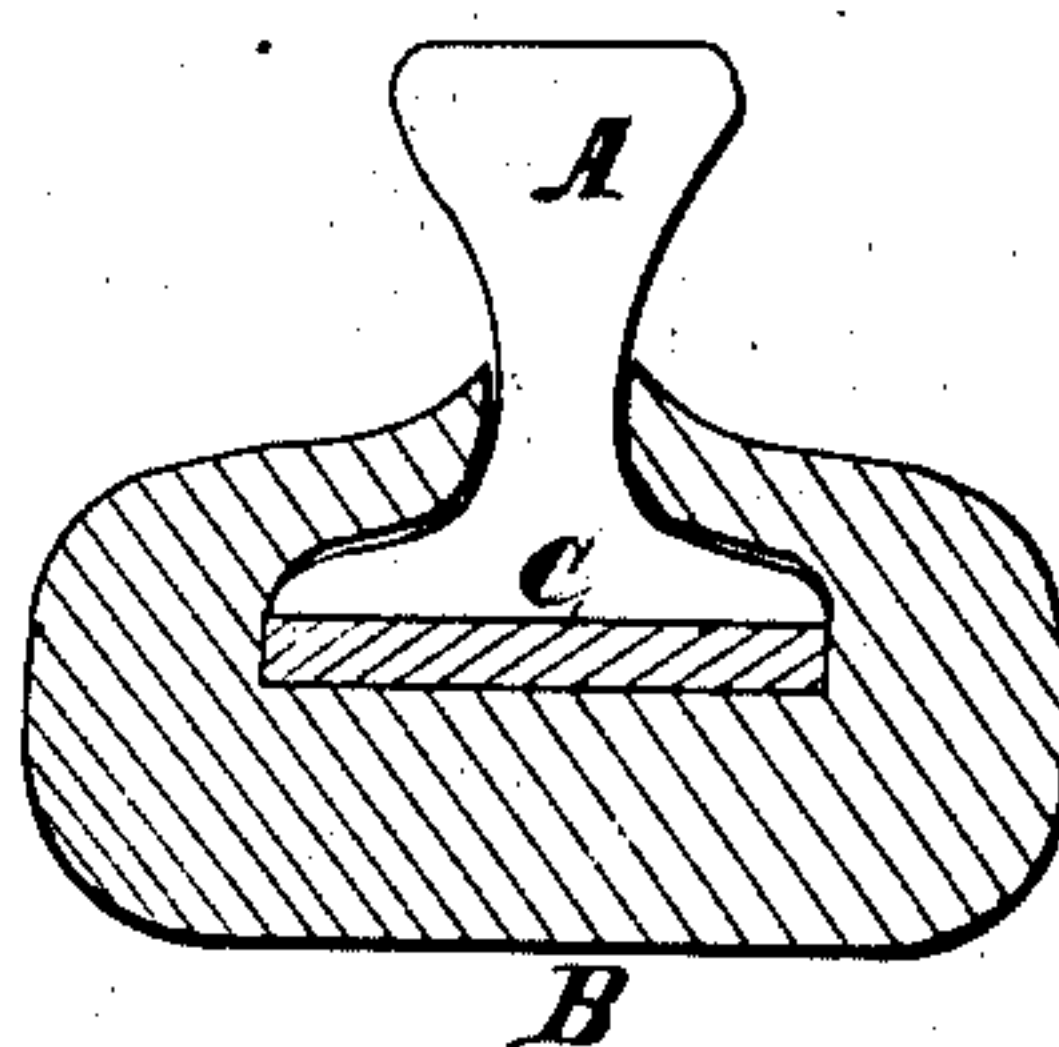


Fig. 3.

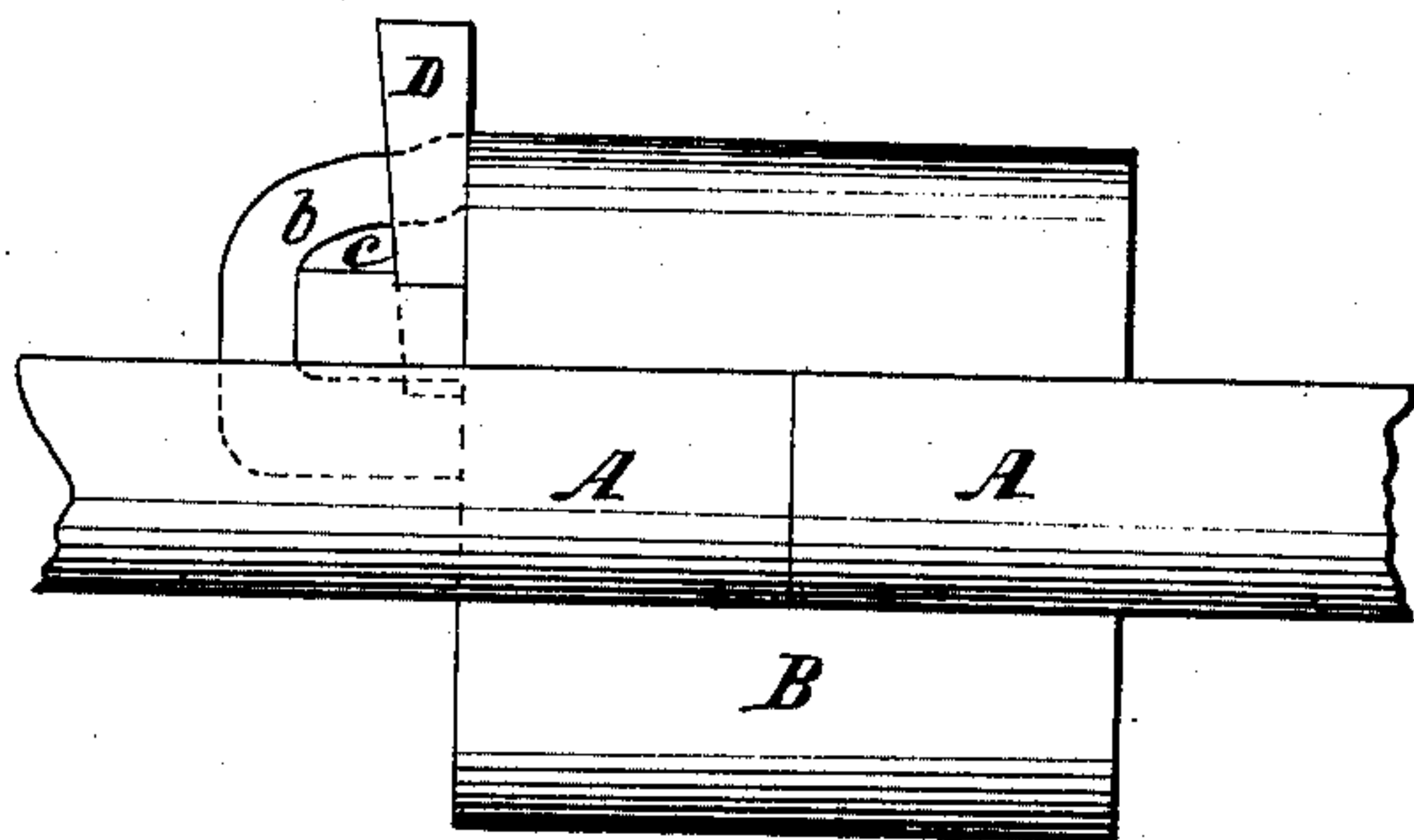
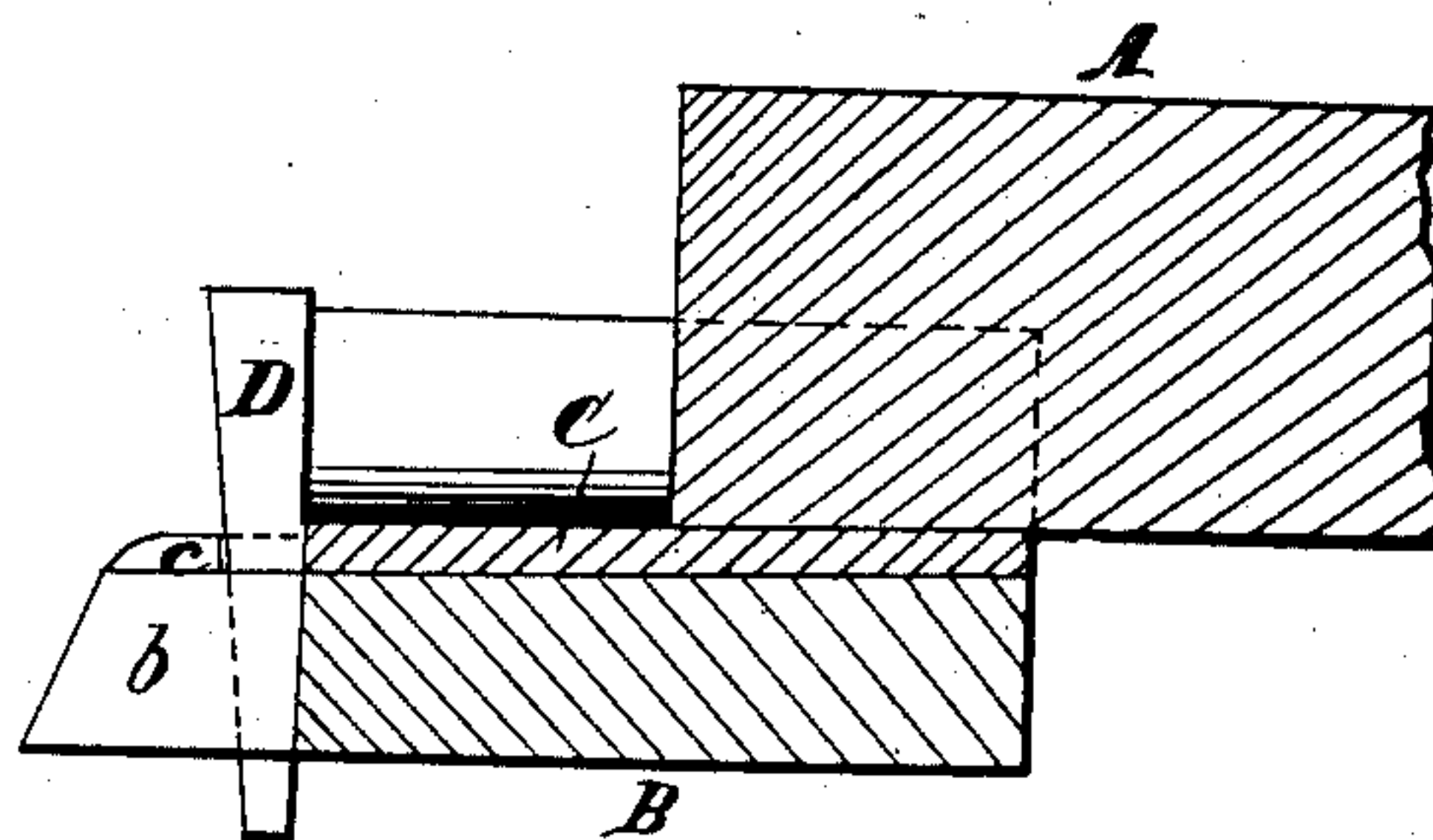


Fig. 4.



Witnesses:

*Jas. H. Bradley
 Jas. Chas. Bates.*

Inventor:

D. A. Hopkins

UNITED STATES PATENT OFFICE.

DAVID A. HOPKINS, OF BERGEN, NEW JERSEY.

RAILROAD-CHAIR.

Specification of Letters Patent No. 30,476, dated October 23, 1860.

To all whom it may concern:

Be it known that I, DAVID A. HOPKINS, of Bergen, in the county of Hudson and State of New Jersey, have invented certain
5 Improvements in Railroad-Chairs, the construction and operation of which I have described in the following specification and illustrated in its accompanying drawings with sufficient clearness to enable competent
10 and skilful workmen in the arts to which it pertains or is most nearly allied to make and use my invention.

My said invention consists in, first, the chair made with a longitudinal key seat or
15 tapered recess below the rail in combination with a wedge or key to fit for the purpose of securing more fully unity of action between the ends of two contiguous rails as hereinafter more fully set forth. Second,
20 the combination with the wedge or key placed under the rails for the purpose of keeping them up in position, of a tapered key driven into the chair in such a position as to bear against the end of the wedge underlying the rails to secure it in position,
25 crowding it forward when desired; and also the mode described of securing said fastening and adjusting key from starting back by means of a curved slot in the chair, through
30 which it is driven, which slot is so made as to turn or bend the end of said key in such a manner as to prevent its ready and free return; third, the cutting away of the
35 lips of the chair at the point where the rails meet as shown and described to prevent the severe concussions to which the rails are liable from tearing asunder the flange which unites the top and bottom portions of the
40 rail, by acting upon the extreme end of the rail, this construction of the lips of the chair removing the effect of these concussions to a point a little removed from the end of the rail as hereinafter set forth.

My invention is represented in the accompanying drawings, as follows: Figure 1 is
45 an end elevation of the chair, one of the rails being shown in position in section, the end of the chair which contains the fastening key being represented toward the observer.
50 Fig. 2 is a vertical transverse section showing the parts beyond the junction of the rails. Fig. 3 is a plan. Fig. 4 is a vertical longitudinal section through the middle of the chair, one of the rails being removed to
55 allow a clearer view of the recess in the lips of the chair above the end of the rail.

It may be proper to remark before further describing my invention that this chair is intended to be placed between the ties, or in other words, that it is not intended in the
60 use of this chair to place a tie immediately under the junction of the rails. The reason of this change from what has generally been practiced is this: It is well known that the end of the rail is from the nature of the case
65 more liable to abrasion and rupture than any other part of it. The effect then of placing a tie immediately under the junction is to supply an anvil upon which the end of the rail may be hammered to pieces
70 by the passing trains, while by placing the ties a little removed from this point, the ends of the rails are relieved, and when secured in the manner I am about to describe furnish a much more satisfactory and
75 smoothly operating bearing than would be otherwise attained.

A A are the ordinary T rails with which most rail roads are at present laid.

B is a cast iron chair made in the form
80 represented, which form I deem the best, though other configurations may perhaps in some instances be admissible. This chair is formed with a recess below the rail to admit the longitudinal wedge or key C by the
85 adjustment of which the rails are secured in the chair with any required degree of tightness to prevent the vertical vibration of one of two adjoining ends of rails without taking its fellow with it, the object being to obtain
90 as nearly as possible the effect of a continuity of the rail with only the small gap between the ends of the rails to allow for expansion. The chair is so made that the key C may be drawn or driven entirely out
95 when desired without removing the rails. It is secured in position and adjustment by means of the fastening key D, which is driven in behind it through a mortise in the elongated portion b of the chair, its in-
100 clined position allowing it to be supported almost exactly opposite the end of the key C by the lip or shoulder c. The slot or mortise through which the key D is driven is curved at the bottom as represented by
105 which the key D as it is driven through said mortise is so bent as to prevent its free return. By this means this key is prevented from slipping back and thereby allowing the
110 wedge C to work loose.

Immediately above the junction of the rails, the lips or flanges of the chair are cut

away or recessed up a trifle to relieve the extreme ends of the rails from the severity of the concussions of the passing trains which might otherwise in some instances tear asunder the flange which unites the top and bottom portions of the rail as the weight of the wheel of the engine or of a car upon the end of one rail causes the chair to exert a downward pressure upon the flanges of the adjoining rail.

By this improvement in the construction of the chair, the severity of this strain is removed a short distance from the extreme end of the rail, and the tendency to rupture thereby reduced.

I am aware that a wedge has been driven in by the side of the rails to secure them more firmly in the chair at their junction. This I do not claim as any part of my invention. I am also aware that a key has been driven transversely through the chair beneath the junction of the rails to hold them up snugly to the lips of the chair, but this arrangement is very objectionable, because it weakens the chair at a point where it requires great strength, and also because the

breadth of the wedge being in this case necessarily limited it cannot support the under side of the rail the entire length of the chair.

The particular improvements which constitute my said invention and which I claim as having been originally and first invented by me are

1. The chair constructed with a longitudinal key seat below the rail in combination with the key C as described.

2. The combination of the wedge C with a tapered key D substantially as shown by which the wedge C is adjusted and kept in place as described, and also the mode of securing the key in place by means of a curve in the end of the mortise through which it is driven as stated.

3. So forming the chair as to leave space immediately at the ends of the rails between their lower flanges and the lips of the chair as set forth for the purposes stated.

D. A. HOPKINS.

Witnesses:

JAS. F. GRIDLEY,
JAS. CHAS. GATES.