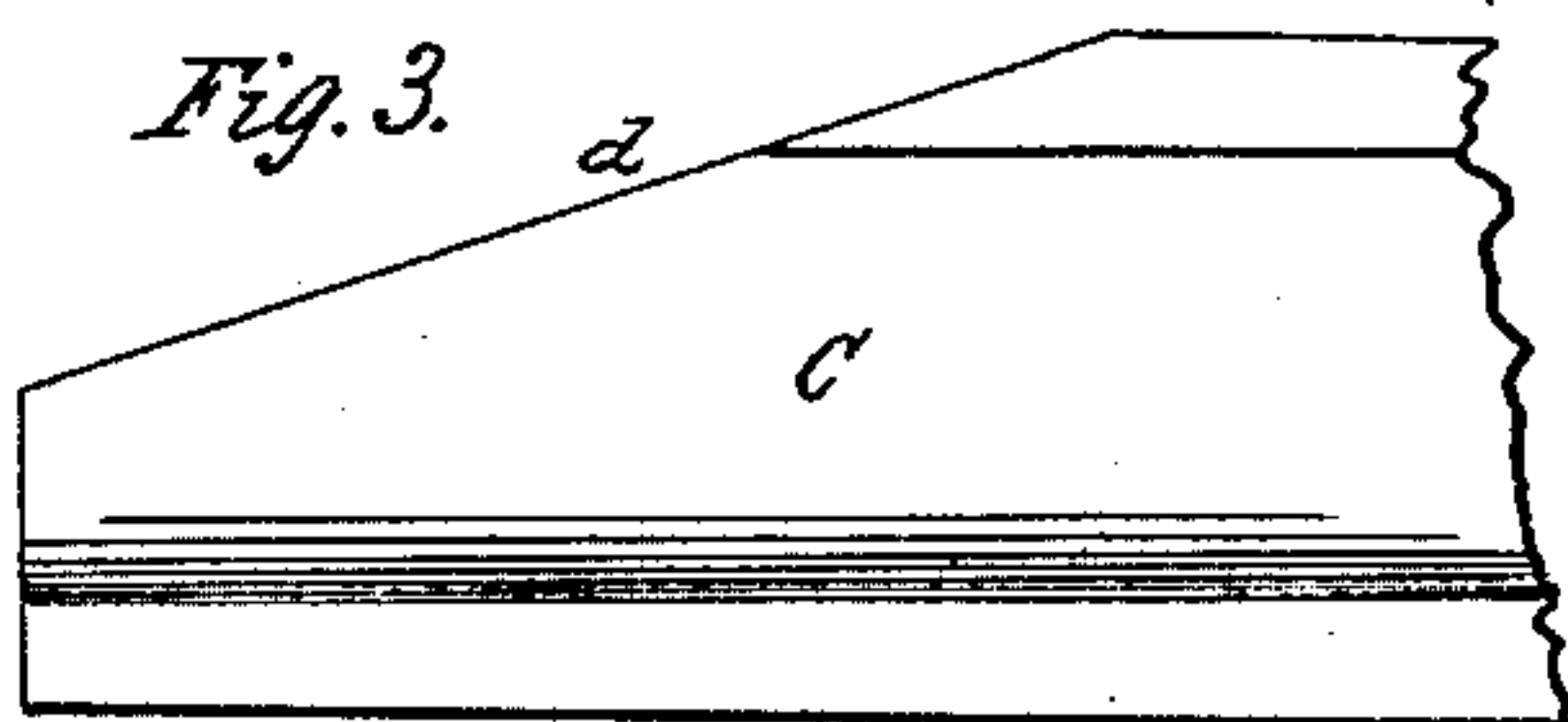
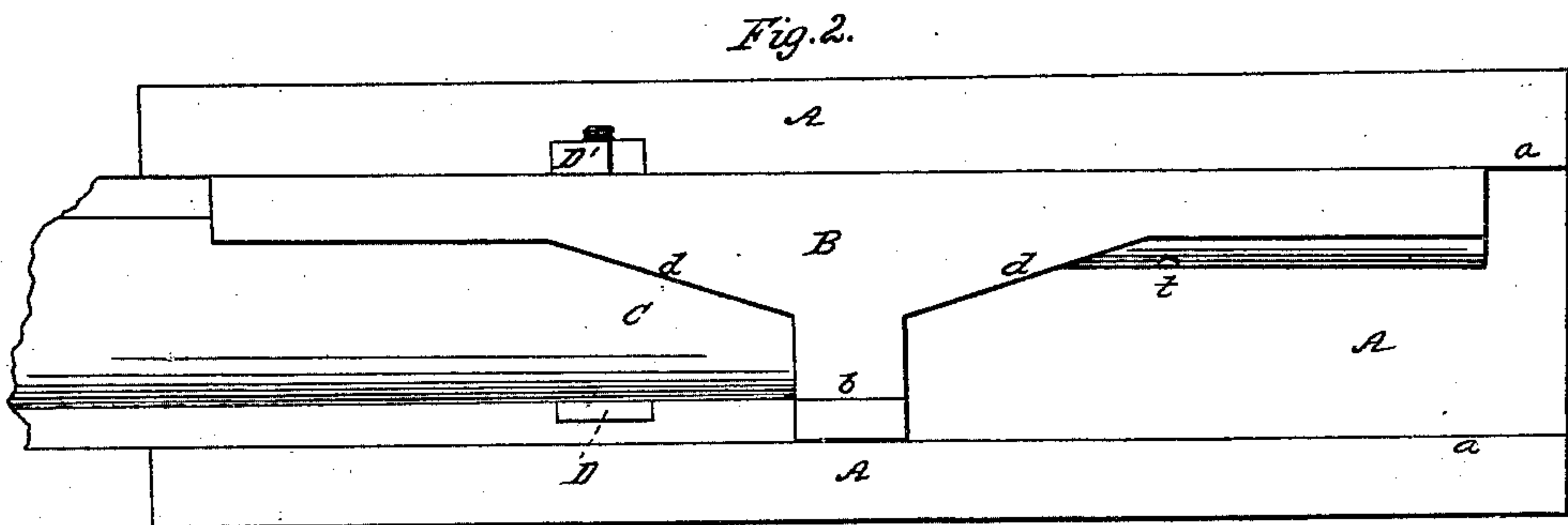
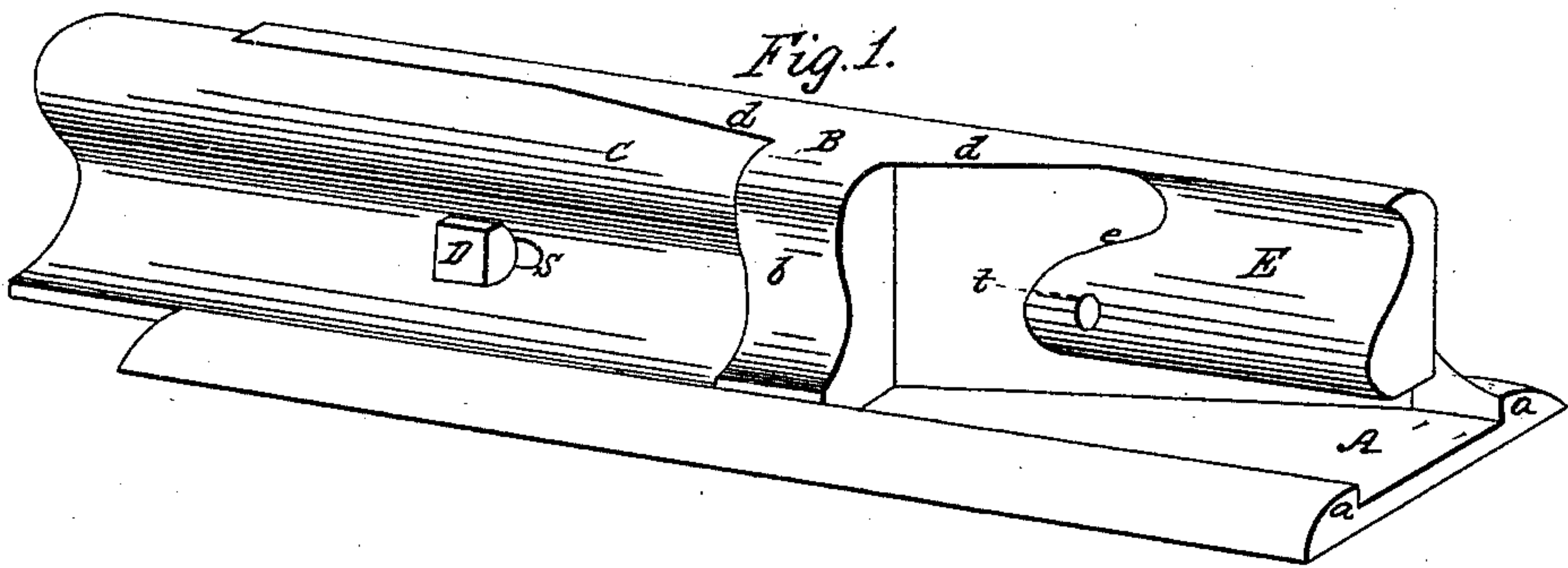


H. W. WARNER.
Railroad Chair.

No. 50,309.

Patented Oct. 3, 1865.



Witnesses:
P. T. Dodge
Geo. Burgess.

Inventor:
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By Smith & Dodge Attorneys

UNITED STATES PATENT OFFICE.

H. W. WARNER, OF GREENFIELD, MASSACHUSETTS, ASSIGNOR TO HIMSELF,
FRANKLIN J. PRATT, AND EDMUND W. RUSSELL.

IMPROVED RAILROAD-CHAIR.

Specification forming part of Letters Patent No. 50,309, dated October 3, 1865.

To all whom it may concern:

Be it known that I, H. W. WARNER, of Greenfield, in the county of Franklin and State of Massachusetts, have invented a new and Improved Chair for Uniting the Ends of the Rails of Railroads; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of my improved chair with the end of one rail in place. Fig. 2 is a plan view of the same. Fig. 3 is a plan of the end of the rail, showing the manner in which it is beveled to fit the chair.

The nature of my invention consists in such a construction of chairs for the ends of railroad-rails as shall not only secure firmly the said ends in place, but shall also afford a firm bridge upon which the wheel shall ride in passing over the joint between the ends, thereby rendering the rails more durable and obviating the unpleasant jolt usually accompanying the passage of the wheel from one rail to another.

That others may understand the construction and operation of my invention, I will more particularly describe it.

A is the bed-plate, which may be secured to the cross-ties in the usual manner, or in any suitable way.

B is the back and bridge piece; C C, portions of the rail; D D, the tie-bolts, which may be made wedge-shaped and provided with a nut, so as to draw the rails snugly up in their seats, if desired. The bed-plate A has the raised ledges *a*, between which the lower flanges of the rail are secured.

The back B has the central projection, *b*, which serves to brace the back, and also to separate the ends of the rails. From a point about opposite the center of the end of the rail the back-piece is sloped laterally and backward, as shown at *d*, in a vertical plane, until the said plane intersects the lines of the surface of the outside of the rail, as shown at *e*, Fig. 1, from which points the form of the back-piece is made to conform to the shape of the rail, as at E, Fig. 1, so that the back-piece B is not only strengthened greatly itself, but it affords a more solid support to the end of the rail.

Near the ends of each rail is a slot, *s*, and corresponding to these slots are the bolt-holes *t*. Through these slots and holes the bolts D are passed, and their nuts screwed up sufficiently

tight to secure the rail firmly to the chair, while the bolt passing through slots will permit the expansion or contraction due to changes of temperature, as from summer to winter.

In order to adapt the rails in common use to this chair it is only necessary that the ends should be beveled by cutting them in the form shown in Fig. 3, so that the beveled end of the rail shall meet and fit the beveled surface *d* of the chair.

In operation my invention is as follows: When the ends of the rails are secured to the chair by the bolts D, if they are laid in hot weather a close joint may be made, and if in cold weather a slight space should be left at the ends, so that the rails may expand without binding. The slots *s* allow the necessary expansion of the rails without tending to loosen the chair from its seat on the cross-tie. As the wheel of the car comes near the end of the rail its tread is gradually received upon the surface of the back-piece, owing to the gradual projection forward of the inclined surface *d*; and before the end of the rail is reached by the tread of the wheel the entire weight of the load is received and sustained by the back-piece B and carried entirely over the joints, without in the least beating the ends down and without any jar.

These chairs may be constructed of wrought or cast iron or steel, either in one solid piece or by welding or casting the bridge-piece B to the bed-plate A, or in any other feasible, convenient, or useful manner.

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

1. In combination with the beveled end rails, C C, the railroad-chair constructed with the corresponding beveled or inclined surfaces *d d*, for the purpose of bridging and gradually breaking the joint between the rails, for the purpose set forth.

2. In combination with the back-piece B, the projection *b*, for the purpose of bracing and strengthening the back-piece.

3. A railroad-chair constructed with the back-piece B, inclined surfaces *d*, brace-piece *b*, and bed-plate A, substantially as described and for the purpose set forth.

H. W. WARNER.

Witnesses:

WENDELL T. DAVIS,
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