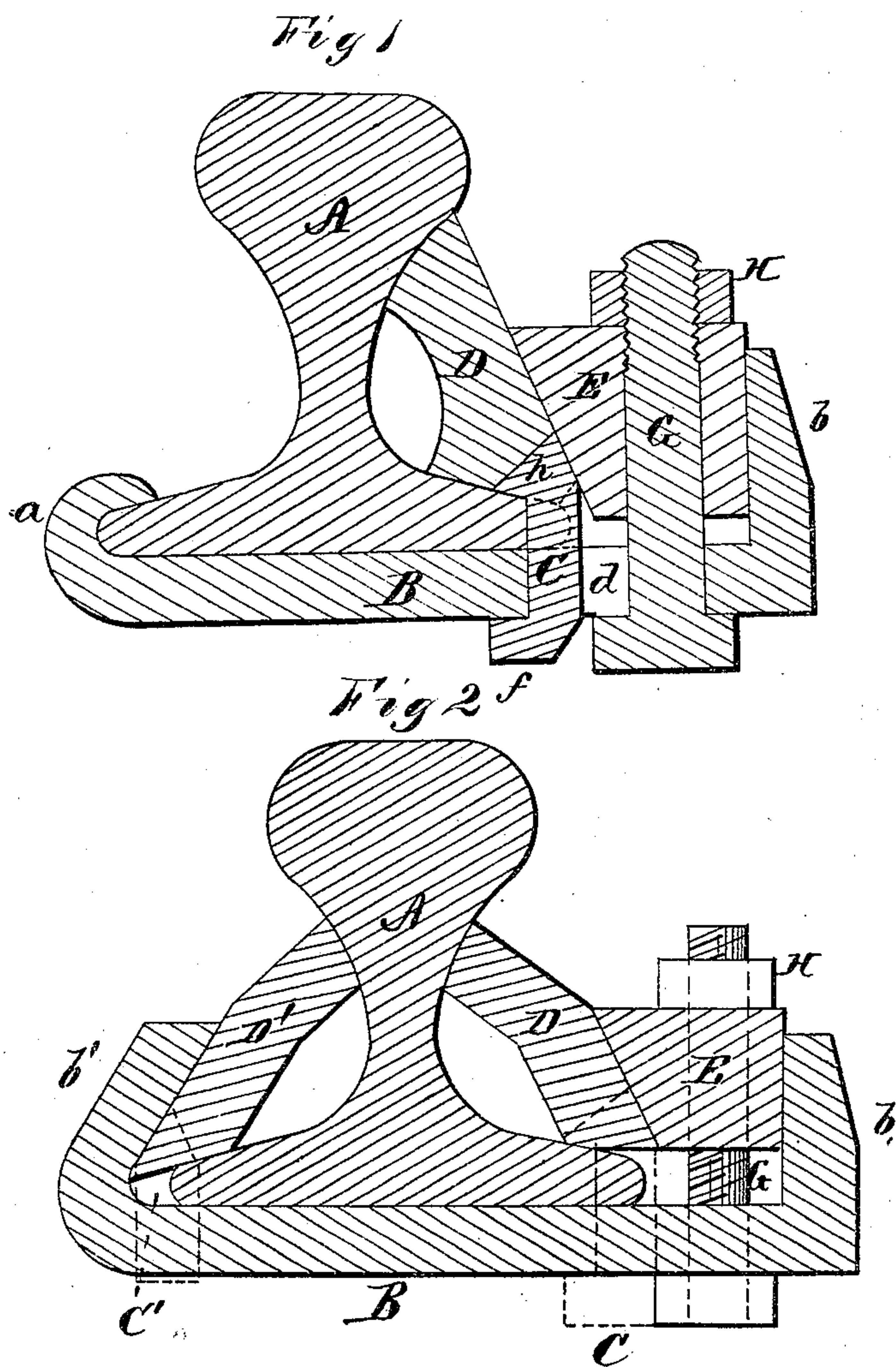


W. G. DUNN.
Railway Rail-Joints.

No. 148,431.

Patented March 10, 1874.



WITNESSES.
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By

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UNITED STATES PATENT OFFICE.

WILLIAM G. DUNN, OF ST. PAUL, INDIANA, ASSIGNOR OF ONE-HALF HIS
RIGHT TO FRANCIS M. HOWARD, OF SAME PLACE.

IMPROVEMENT IN RAILWAY-RAIL JOINTS.

Specification forming part of Letters Patent No. 148,431, dated March 10, 1874; application filed
February 4, 1874.

To all whom it may concern:

Be it known that I, WILLIAM G. DUNN, of St. Paul, in the county of Decatur and in the State of Indiana, have invented certain new and useful Improvements in Railroad-Chairs; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of an adjustable railroad-chair, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a section vertically through my railroad-chair; and Fig. 2 is a similar section, showing a modification of the same.

A represents an ordinary T-rail, of any suitable construction. B is the chair, which fits under the bottom of the rail, and is formed with a hooked flange, *a*, along one edge, to catch over the edge of the base of the rail on one side, as shown in Fig. 1. The other side of the chair extends a suitable distance beyond the rail, and is provided with a vertical flange, *b*, projecting upward. In this part of the chair are two or more elongated slots, *d*, through each of which is passed a key, C, constructed substantially as shown, with a head, *f*, at its lower end, and a hook, *h*, formed at its upper end. The key C is inserted from the top through the slot *d*, the head *f* passing under the chair, and the body of the key enters notches or slots made in the base of the rail, with the hook *h* extending upon the base. In the hollow of the rail A is placed a short rail or fish-bar, D, which is made beveled on the outside to accommodate itself to the action of the wedge E. The short rail D is notched to admit the upper ends of the keys C C, thereby preventing its displacement by expansion or contraction of the main rail, and serving, in

connection with the keys and chair, to prevent the displacement of the whole combination by expansion or contraction of the rails. The wedge E, which is placed between the rail D and flange *b* of the chair, is rectangular on three sides and beveled on the fourth. G is a bolt passed up through the slot *d* of the chair, and through a hole in the wedge E, and fastened by a nut, H, on top. The keys C C, being by their peculiar shape capable of being inserted from the top, are locked in at the bottom by the heads of the bolts G, and in return lock the bolts, so that they cannot turn when the nuts are being wrenched.

In Fig. 2 I have shown a modification of this device, which consists simply in forming an inclined flange, *b'*, along the inner side of the chair in lieu of the hooked flange *h*, and using a short rail, D', with keys C', on this side, as well as on the outer, but without any wedge and bolts.

The chair, by means of the wedge E and bolts G on the outside of the track, firmly locks both rails or plates D D into the hollow of the main rails, and itself to the bottom of the main rails, thereby forming a complete arch or truss at the joint. The rails or bars D D' do not fill the hollow of the main rails, but bear against them near the top and at the bottom. Any downward motion of the main rails would at once result in drawing the chair more firmly to its bearing at the bottom of the rails, and throwing the tension across the chair from flange to flange, and the joint could not go down, consequently, without severing the chair. The rails or plates in the hollow are at the same time co-supporting.

This result is obtained whether one or two of the short side rails are used, the second one being only put in to add strength.

The advantages of the chair are, therefore, the arching of the joint; also, an arbitrary alignment of the rails, and that the combination is adjustable, and therefore capable of taking up any slack occasioned by wear.

Having thus fully described my invention,

what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a railroad-chair, of the wedge E, keys C, and bolts G, substantially as and for the purpose herein set forth.

2. The combination, with the rails A, of the flanged and slotted chair B, the keys C, one or more short keys, D, wedge E, and bolts

G, all constructed substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of December, 1873.

Witnesses:

WM. G. DUNN.

JOHN PALMERTON,

JAMES RYAN.