W. S. DAVIS.

RAILROAD RAIL-CHAIRS.

No. 183,145. Patented Oct. 10, 1876.

Fig 1

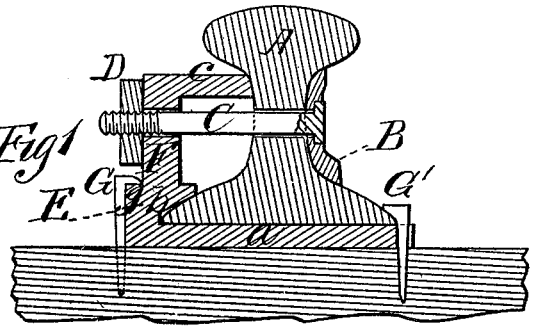


Fig 2

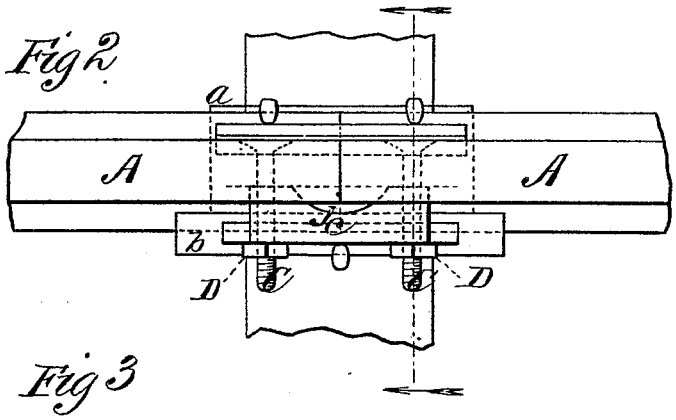


Fig 3

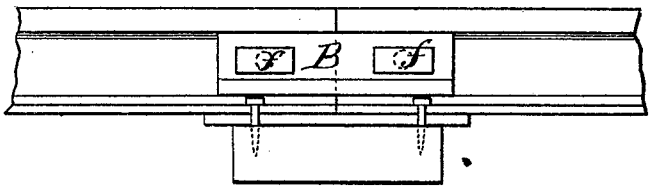


Fig 4

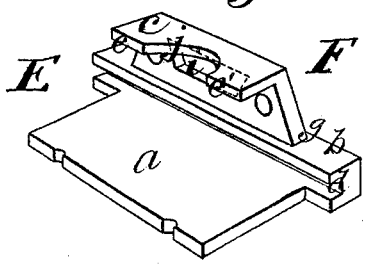
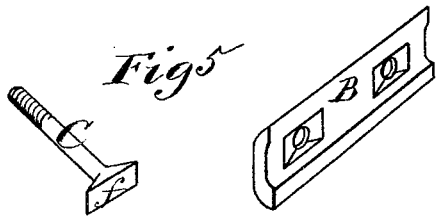


Fig 5



WITNESSES

Villette Anderson.

F. J. Masi

INVENTOR

Warren S. Davis

E. W. Anderson

ATTORNEY

UNITED STATES PATENT OFFICE.

WARREN S. DAVIS, OF BRADFORD, VERMONT.

IMPROVEMENT IN RAILROAD-RAIL CHAIRS.

Specification forming part of Letters Patent No. **183,145**, dated October 10, 1876; application filed April 8, 1876.

To all whom it may concern:

Be it known that I, WARREN S. DAVIS, of Bradford, in the county of Orange and State of Vermont, have invented a new and valuable Improvement in Railroad-Chairs; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a transverse vertical section of the chair and rails. Fig. 2 is a top view of the same. Fig. 3 is a side view; and Figs. 4 and 5 are detail views of parts.

This invention has relation to improvements in railroad splice-chairs; and it consists in the arrangement and novel construction, in connection with a fish-plate, the clamping bolts and nuts, and the spikes, of a railroad splice-chair, whereby very useful and reliable results are obtained, as will be hereinafter more fully set forth and claimed.

In the annexed drawings, the letter A designates the two rails of a railroad-track, in connection with which I propose to illustrate my invention. B represents the fish-plate; C, the clamping-bolts; D, the nuts; and E, the chair.

This chair consists of a base-plate, *a*, having on its outer edge an enlargement, *b*, of rectangular form, provided at its junction with the base-plate with a groove, *d*, adapted to receive the edge of the base of the rail. F represents a flange rising vertically from the enlargement *b*, near its outer edge, and provided with a flange, *c*, parallel to base-plate *a*. This flange *c* is in the nature of a bridge, and is cut away at that portion *j* directly over the joint of rails A, by which means two bearings, *e e'*, are formed, one on each side of the joint, as shown in Fig. 4.

Bolts C are provided with oblong heads *f*, which are received into correspondingly-shaped recesses in the fish-bar B, where the said bolts are passed into and through registering-perforations in the said plate, the web of the rail, and the flange F of the chair. The bolts are thus prevented from rotating during the setting up of the nuts D. The vertical flange F, between the bolts C, is cut away, an opening, *i*, being formed therein, the object of which is to allow air and sun-light to penetrate the rails and bolts, and thus to cause the speedy drying of moisture which may have penetrated thereto, and thereby preventing rust.

By placing flange F a slight distance from the edge of the enlargement *b* of plate *a*, a shoulder, *g*, is formed, which will receive the head of a spike, G, driven into the sleeper or cross-tie, and thus hold this edge of the chair down thereto. The inner edge of the chair is pinned down to the rail by means of spikes G', which pass through apertures in the edge of the base-plate *a*, and are driven into the sleeper with their edges against and over the edge of the base of the rail.

It is well known to those having charge of railroad-tracks that the rails first become uneven or concaved at their joints. The remedy is to remove these rails and forge them into proper shape, when they may be again placed into position. It is, however, morally impossible to make two rail ends of exactly the same shape. The one will always be a little thicker than the other, and, if one face is flush, the other will be uneven, the surface of one rail being out of plumb with that of the other. To remedy this defect, and at the same time to prevent vibration of the chair, I have devised a chair having the flange *c*, with its notch *j*, bridging the rail-joint, by which means bearings *e* are had. Each side of the joint and the chair is made steady and immovable when nuts D are set up.

The cutting away of the notch *j* and of the opening *i* in flange F causes a great saving in the weight of metal used, allows perfect ventilation, and yet does not in any degree weaken the chair, which may be made of malleable or cast iron, as I may elect.

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

1. The railroad-chair E, consisting of the base-plate *a*, the grooved enlargement *b*, open vertical flange F, and bridge-flange *c*, adapted to straddle the rail-joint, substantially as specified.

2. In combination with the rails A, fish-plate B, bolts C, and nuts D, the chair E, having raised vertical flange F, with opening *i* and horizontal bridge-flange *c*, with notch *j*, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

W. S. DAVIS.

Witnesses:
O. H. KIMBALL,
PHINEAS CHAMBERLIN.