R. H. DRIVER & C. A. SMITH.

Railway-Rail Chair.

No. 198,360. Patented Dec. 18, 1877.

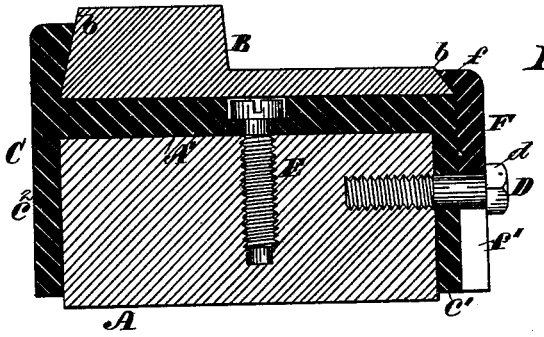

Fig. 1

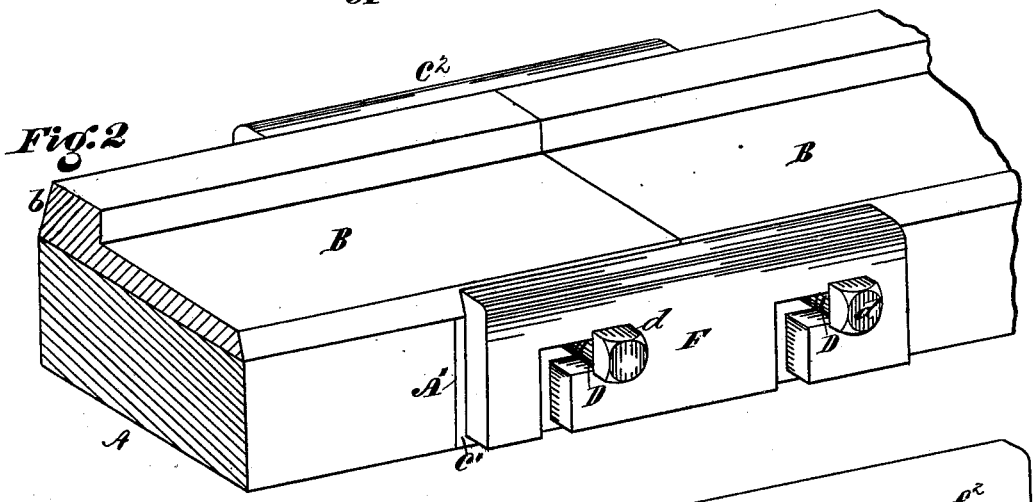

Fig. 2

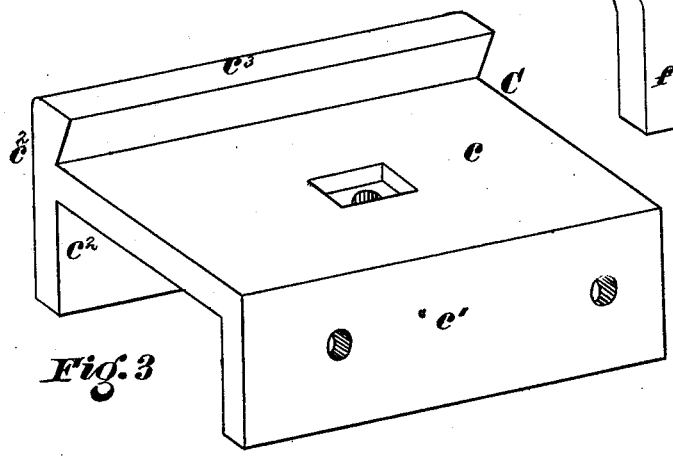

Fig. 3

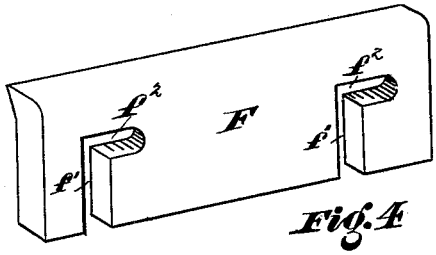

Fig. 4

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UNITED STATES PATENT OFFICE.

ROBERT H. DRIVER AND CHARLES A. SMITH, OF PHILADELPHIA, PA.

IMPROVEMENT IN RAILWAY-RAIL CHAIRS.

Specification forming part of Letters Patent No. **198,360**, dated December 18, 1877; application filed November 1, 1877.

To all whom it may concern:

Be it known that we, ROBERT H. DRIVER and CHARLES A. SMITH, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Railway-Rail Fasteners; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a transverse vertical section; Fig. 2, a perspective of our invention. Figs. 3 and 4 are perspective details of our invention.

The object of our invention is to provide a secure fastening for railway-rails, in which the formation of holes in the rails and the insertion of spikes or equivalent fastenings therein are avoided.

Our invention consists in the novel construction of a combined chair and clamp, which receives and holds the rail firmly in place, as hereinafter fully set forth.

Referring to the accompanying drawing, A designates the sleeper, which may be of wood or of metal. B is the railway-rail, having beveled or inclined sides *b b'*. C is a chair, which rests in a seat or recess, A', cut or formed in the sleeper A. Said chair consists of a horizontal base or plate, *c*, having two vertical sides, c^1 c^2. The side c^1 extends only below the base *c*, while the side c^2 extends both above and below said base, as shown. The upper part or edge of the side c^2 is thickened, as shown, to form a shoulder, c^3, which is beveled on the side next to the rail B. D D are bolts having square heads *d d*, said bolts being screwed into the side c^1 of the chair C. They may also enter the sleeper A; but we prefer to fasten said chair to the sleeper by means of bolts or screws E, which pass vertically through the former into the latter, as shown. F is a plate having a flange, *f*, and slots f^1 f^2. The plate F is fastened to the chair C by the shanks of the bolts entering the slots f^1 f^2, thus forming a clamp for the rail.

The method of application and use is as follows: The sleepers are first formed with the seats or recesses A', the chairs C being then placed therein and fastened by means of the bolts E. The rails B are now laid on the sleepers, their ends meeting on the chair C. The plates F are now slid downwardly upon the bolts D, and then lengthwise, to cause the shanks of said bolts to pass through the slots f^1 f^2 successively until they rest in the inner corners of the latter. The bolts D are now turned until their heads meet and firmly bind against the plates F.

It will be observed that the rails are thus firmly fastened to the sleepers without the formation of any holes in the former, which have the effect of weakening said rails, and without the employment of spikes, which constantly tend to become loose.

The ends of the rails have also a firm base or support to resist the impact or "pound," which results from contact with a rapidly-moving wheel. Said rails are also unrestricted in their fastening as to the longitudinal movement occasioned by contraction and expansion under different temperatures.

Instead of beveling the edges of the rails, they may be rounded, grooved, shouldered, or formed in any equivalent way which will afford a bearing or seat for the flanges c^3 and *f* of the side *c* and plate F, said flanges, of course, being correspondingly shaped to snugly fit to said rails.

The chair C and plate F may be either of cast or of wrought metal, preferably of the former, and may be located not only at the ends of the rails, but at intermediate points.

If desired, the chair C may have an exterior rib or flange to form a seat or rest for the lower edge of the plate F, and thus prevent superincumbent weight from straining or bending the bolts D.

What we claim as our invention is—

1. The chair C, composed of base *c*, depending sides c^1 c^2, and rising beveled flange c^3 on one side only, in combination with a detachable locking or clamping plate, substantially as shown and described.

2. The plate F, having shoulder or flange *f* and slots f^1 f^2, and adapted for application to a rail-chair and rail, substantially as shown and described.

3. The combination of chair C, having base

c and sides c^1 c^2, the latter having flange or shoulder c^3, with bolts D D and plate F, having flange f and slots f^1 f^2, substantially as shown and described.

4. The combination of sleeper A, chair C, bolts D, and plate F with a railway-rail, B, having beveled or equivalently-formed edges, substantially as shown and set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 30th day of October, 1877.

ROBT. H. DRIVER.
CHARLES A. SMITH.

Witnesses:
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