

S. HIPKINS, Jr. & J. W. RIGSBY.
Railroad Rail Joint Fastenings.

No. 166,379.

Patented Aug. 3, 1875.

Fig. 1.

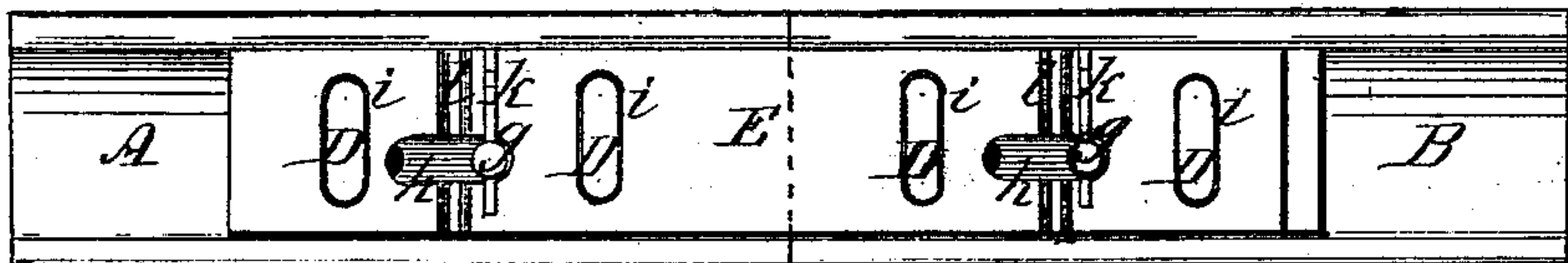


Fig. 2.

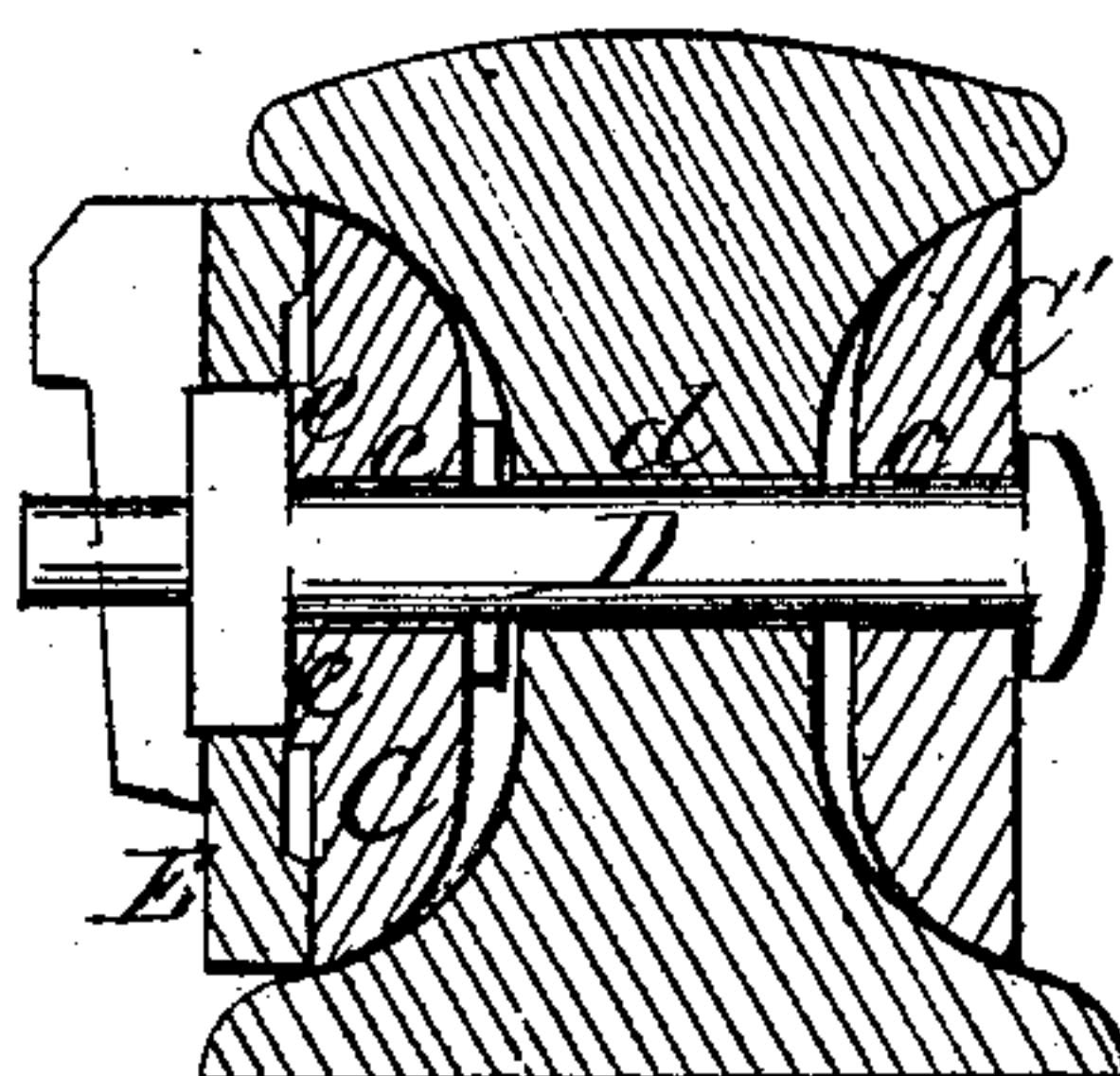


Fig. 3.

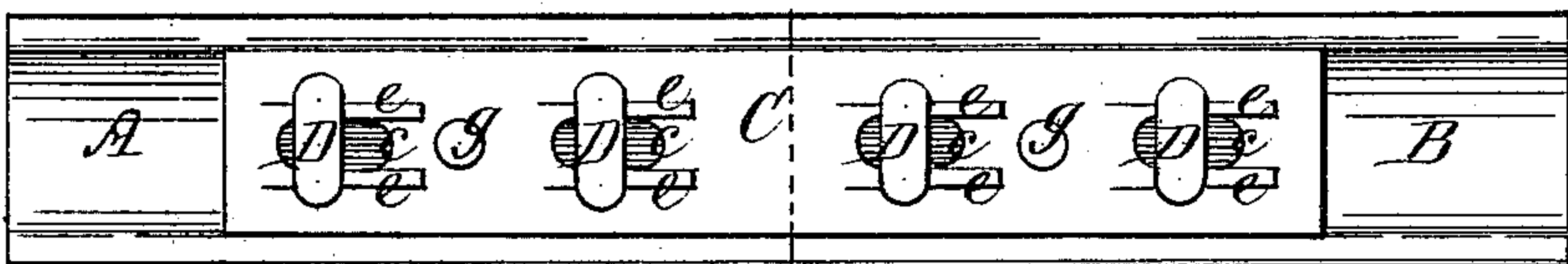


Fig. 4.

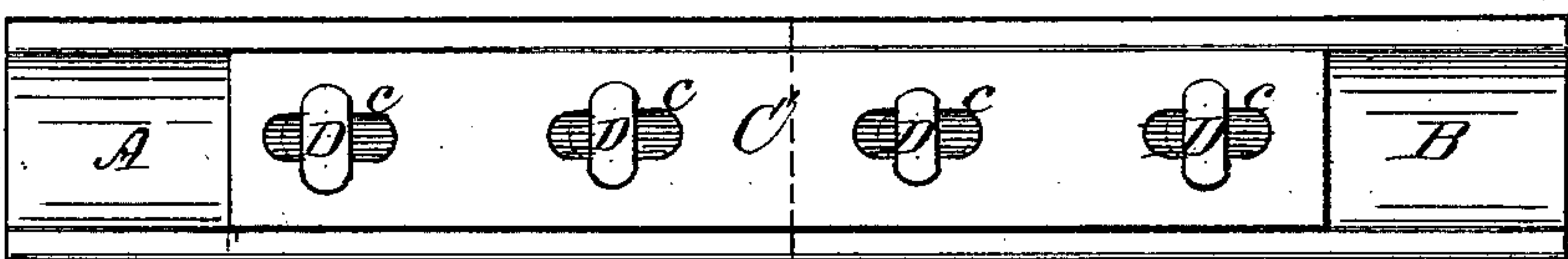


Fig. 5.

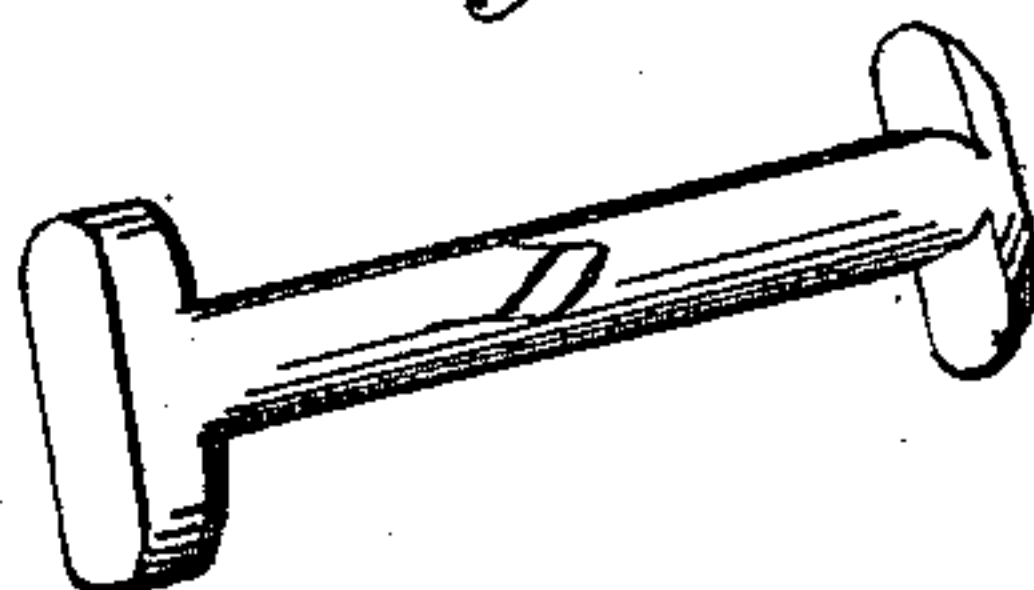
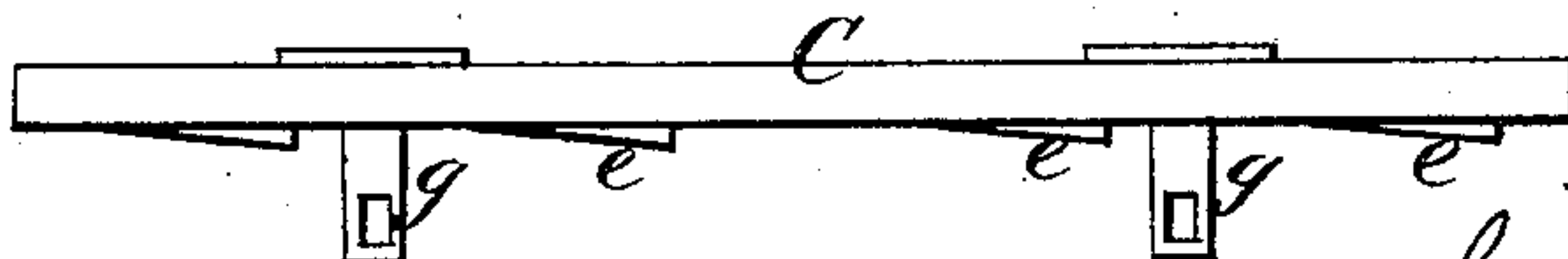


Fig. 6.



Witnesses:

J. H. Rutherford
H. C. Medford

Inventors:

Stephen Hopkins
John W. Rigby
By Johnson & Johnson
their Attys

UNITED STATES PATENT OFFICE.

STEPHEN HIPKINS, JR., AND JOHN W. RIGSBY, OF WHEELING, W. VA.

IMPROVEMENT IN RAILROAD-RAIL-JOINT FASTENINGS.

Specification forming part of Letters Patent No. **166,379**, dated August 3, 1875; application filed July 8, 1875.

To all whom it may concern:

Be it known that we, STEPHEN HIPKINS, Jr., and JOHN W. RIGSBY, of Wheeling, in the county of Ohio and State of West Virginia, have invented certain new and useful Improvements in Railroad-Rail Joints; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

Our invention relates to devices for securing together the adjacent ends of railroad-rails, so as to form a firm joint; and its object is to provide a fastening which may readily be removed, replaced, and tightened, and with little liability to wear loose from the jar or concussion of passing trains.

The invention consists in the combination and construction of the fish-plate, having certain inclines and elongated holes for accommodating certain peculiarly-constructed bolts, whereby the rail-joint is firmly secured, but still permitted to contract and expand, as well as all the other parts, without derangement.

In the accompanying drawings, Figure 1 is an outside view of my device complete as applied to a railroad-rail. Fig. 2 is a vertical cross-section thereof. Fig. 3 is a view of our device with the outer plate removed, and showing the inclines upon the fish-plate. Fig. 4 is a view of the inner side of the device, showing the heads of the bolts. Fig. 5 is a view of one of the locking-bolts detached; and Fig. 6, an edge view of the fish-plate, showing the face inclines.

The adjacent ends of the rails A and B are united by fish-plates C C', overlapping said joints upon each side, and occupying the concavity upon the sides of the rail or web of the rail. The plates are provided with a series of elongated slots, *c*, and the end of each rail along its web has also several corresponding slots, *d*, whereby the bolts D are permitted to pass through the fish-plates and rail, and, when turned one-quarter-way round, secure the fish-plates securely against the sides of the rail at the joint thereof. These bolts are double T-headed, or have a T-head upon

each end, and as this head is narrow it can be readily passed through the slots in the fish-plates and rail from either side, and when turned in either direction one-quarter of a revolution, the parts become clamped without other means. A supplemental clamping means is provided by forming an incline, *e*, upon the outer surface of the outer fish-plate C above and below each elongated slot, so that the bolts, when placed through the slots and turned, as described above, are made to bind the parts with an additional gripe and security, by either driving this fish-plate to the left, which forces the inclines under the outer heads of the bolts, or by driving the bolts themselves to the right. The former mode is preferred, as it can easily be accomplished by a few blows of a hammer upon the right-hand end of the fish-plate that carries the inclines. It is, of course, obvious that the reverse of this movement is the mode of releasing the parts. In the outer fish-plate are two holes, which carry bolts *g*, the heads of which rest upon the inner side of the plate, and against the web of the rail, or may be countersunk into the fish-plate to prevent them from turning. Now, when the parts above referred to are all in position, as shown in Figs. 3 and 4, and the fish-plates secured by the inclines under the bolt-heads, the key-plate E is passed over the bolt-shanks *g*, the latter passing through suitable elongated slots *h*, made longitudinally in the plate. This plate E is also provided with transverse elongated slots *i*, which receive the T bolt-heads and hold them vertically from turning. The bolt-heads can be inserted into these slots, and held, as above described, either before or after the wedging or driving in of the inclines. Suitable keys *k* pass through the slotted ends of the bolts *g*, and rest in any one of the series of upright serrations or notches *l* in the key-plate, the latter serving as a lock to prevent the bolts from turning.

From the foregoing it will be seen that the parts can be readily attached or detached without trouble, that they are not liable to get out of order by becoming loose or otherwise, and that the device is cheap of manufacture and simple.

The various elongated slots permit contrac-

tion and expansion of the rails, and facilitate adjustment of the parts in applying the device. The number of bolts, slots, and other parts can be increased or diminished without departing from the spirit of our invention. The outside key-plate, with bolts and keys, may also serve as a lock-nut in case of using screw-bolts. In such case the holes in the third plate would be made to suit the nuts, whatever form may be adopted, so that this third plate may be used both as a tightener and as a means for preventing the nuts from turning when screw-bolts are used instead of the double-headed bolts. The outside plates can be used outside of wood.

We claim—

1. The combination of the slotted rails A B, the fish-plates C C', the elongated slots *c*, inclines *e*, and the double T-headed bolts D, as described.

2. The combination of the rails A B, the fish-plates C C', the elongated slots *c*, inclines *e*, double T-headed bolts D, and the key-plate E, provided with its elongated slots and bolt-holes, as described.

3. The key-plate E, provided with the vertical and horizontal slots *i k* and the face-grooves *l*, and combined with the double-headed bolts D, upon which and the fish-plate said key-plate is secured by the bolts *g* and the keys *k*, as described.

In testimony that we claim the foregoing we have affixed our signatures in presence of two witnesses.

STEPHEN HIPKINS, JR.
JOHN W. RIGSBY.

Witnesses:

W. J. BODLEY,
PETER DOLALAN.