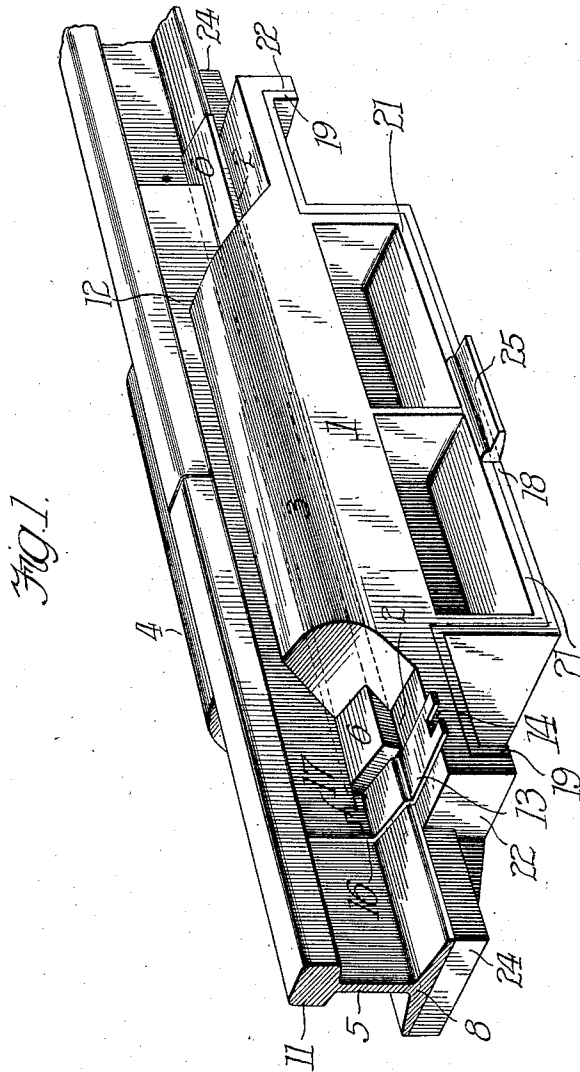


C. C. LAMB.
RAIL JOINT.
APPLICATION FILED APR. 10, 1911.

1,025,408.

Patented May 7, 1912.

2 SHEETS—SHEET 1.



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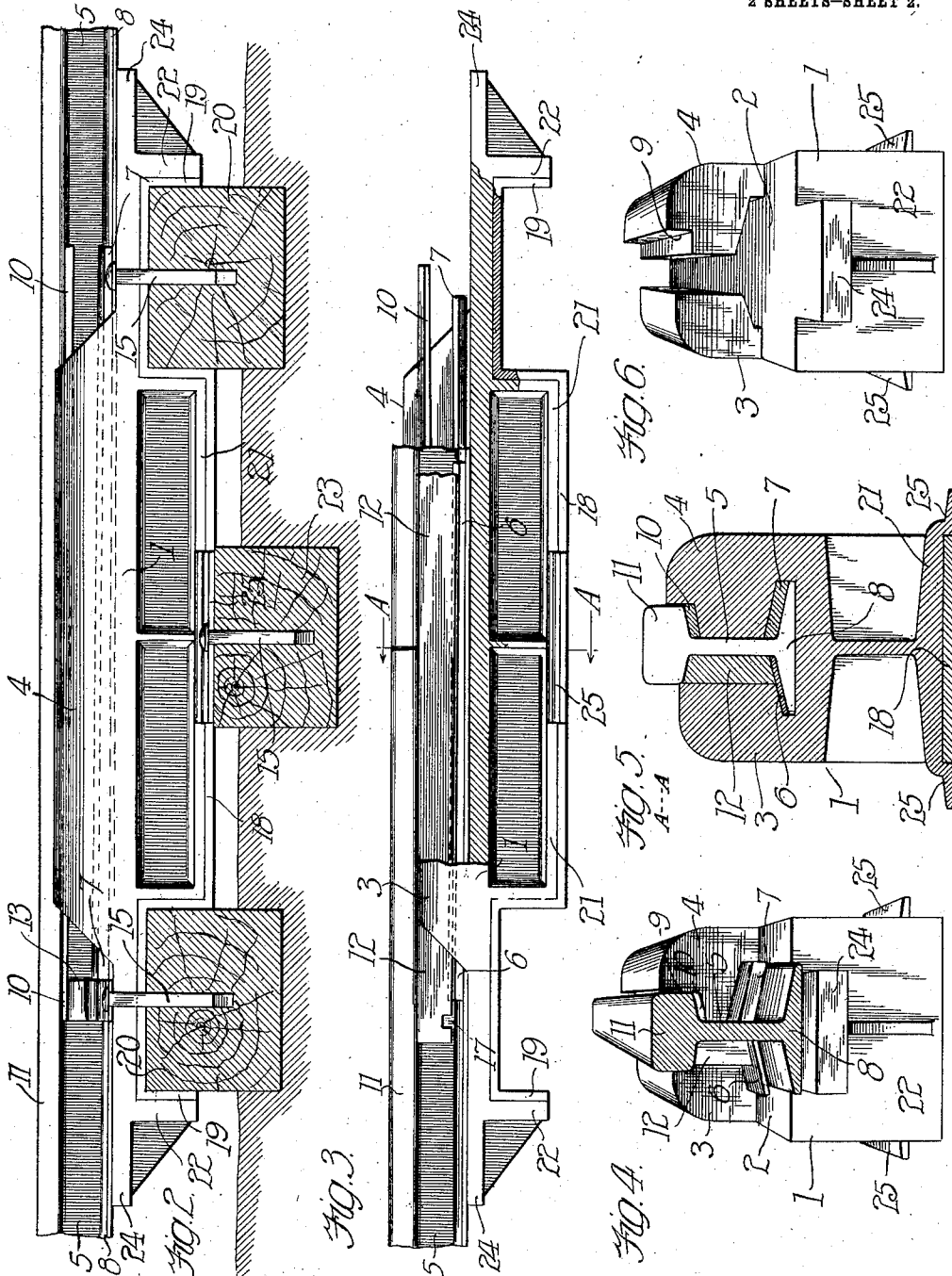
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UNITED STATES PATENT OFFICE.

CHARLES CALVERT LAMB, OF JOLIET, ILLINOIS, ASSIGNOR OF FORTY-NINE ONE-HUNDREDTHS TO WILLARD M. McEWEN, OF CHICAGO, ILLINOIS.

RAIL-JOINT.

1,025,408.

Specification of Letters Patent.

Patented May 7, 1912.

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To all whom it may concern:

Be it known that I, CHARLES CALVERT LAMB, a citizen of the United States of America, and a resident of Joliet, Will county, State of Illinois, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification.

The main objects of this invention are to provide an improved form of rail joint or splice capable of forming a rigid connection at and between the ends of adjoining rails substantially equal to or greater in strength than any part of the rails intermediate of the joints; to provide improved means for securing the ends of the rails against relative movement in a vertical plane during travel of rolling stock thereover, and thereby overcome the excessive wearing and battering of the ends of the rails attendant upon the usual splice bar joint; to provide improved means to prevent the spreading of the rails at the joint; to provide improved means for fastening the rails together without requiring the drilling of holes in the rails or the use of bolts and nuts; and to provide improved means for guarding against malicious disjoining of the rails.

An illustrative embodiment of this invention is shown in the accompanying drawings, in which—

Figure 1 is a perspective of a rail joint constructed according to this invention, showing the rails secured thereto. Fig. 2 is a side elevation of the same, showing one method of mounting the rail joint on the ties. Fig. 3 is a side elevation of the rail joint, parts of the construction being broken away to more clearly illustrate the arrangement of the keys. Fig. 4 is an end perspective of Fig. 1. Fig. 5 is a sectional elevation of the device, taken on the line A—A of Fig. 3. Fig. 6 is an end perspective of the joint, with the rails removed.

In the construction shown in the drawings, the rail joint 1 has a longitudinal slot 2 formed therein between the side parts 3 and 4. The parts 3 and 4 are of relatively different heights, so that when the rails are in position the part 3, which is on the inner side of the joint, is spaced a considerable distance below the top of the rail 5, so as not to interfere with the flange on the wheel as it moves along the rail. The slot 2 is

formed considerably larger than the rail 5, whereby tapered keys or wedges may be inserted between the rails and the adjacent walls of the parts 3 and 4. The keys 6 and 7 are usually the first keys inserted, and are driven in from opposite ends of the member 1 on opposite sides of the rail 5. These keys bear between the upper surface of the base portion 8 of the rail and the adjacent walls of the parts 3 and 4 respectively.

The part 4 has a keyway 9 formed therein, into which the key 10 is driven in the direction opposite that from which the key 7 is driven, and bears between the under side of the rail head 11 and the adjacent walls of the part 4 forming the keyway 9. The key 12, which is preferably the last key to be inserted, is driven in on the same side of the rail as the key 6, but from the opposite end, and bears between the web of the rail 5 and the adjacent wall of the member 3, and between the under surface of the rail head 11 and the key 6.

The keys are secured against accidental disengagement or loosening by means of the plates or locks 13 which are located at opposite ends of the member and on respectively opposite sides, in position to abut against the rear ends of the keys 6 and 7. The plates 13 each have a notch or aperture 14 at one end, which is adapted to receive a spike as it is driven into the tie, so as to hold the transversely disposed part 16 of the plate firmly against the web of the rail. The part 16 has a tongue 17 which is adapted to engage a notch in the keys 10 and 12.

The girder 18 formed of wrought iron may be used in conjunction with the member 1. The girder 18 is offset at its ends and is provided with depending flanges 19, whereby it is adapted to fit over the ties. The girder being formed of wrought iron, and the member 1 being cast, the girder increases the carrying capacity of the combined structure over what it would be were the girder 18 omitted.

The joint 1 is constructed with an integral depending bridge or brace 21 extending longitudinally along the under side of the member 1 and adapted to fit into the girder 18 between the offset end portions thereof. Transversely disposed depending flanges 22 are formed integrally on the member 1 adjacent to its ends and spaced away

from the ends of the brace 21 a distance substantially equal to the length of said offset portion of the girder.

A tie 23 may, if desired, be located under the girder 18 substantially in vertical alinement with the joint of the rails, so as to afford additional support to the construction intermediate of the ties 20. The extensions 24 at opposite ends of the member are provided so as to afford a greater bearing surface for the rails 5 beyond the joint. Centrally disposed flanges or shoulders 25 are formed integrally on opposite sides of the brace 21, which are adapted to be engaged by the heads of the spikes driven into the tie 23.

In using this rail joint, the ties 20 and 23 are preferably buried a sufficient distance below the level of the other ties along the roadbed to compensate for the thickness of the member 1 and girder 18 between the surface bearing upon the ties 20 and 23 and the bottom of the slot 2, so that the bottom of the slot 2 will be in substantial alinement with the upper surface of the ties along a roadbed.

The operation of the device is as follows: As the laying of the track proceeds, the girder is placed in position on the ties 20, and 23, if the latter is used. The member 1 is then slipped onto one end of the rail 5, previously laid, with the low part 3 of the member inward, and then placed in position on the girder 18. The end of the adjoining rail is then slipped into the slot 2, and the rails secured to the joint by the driving in of the keys. The keys are inserted successively, preferably in the order in which they have been described, and driven up firmly. The locks 13 are then placed in position to abut against the rear ends of the lower keys 6 and 7, and permit the tongues 17 to engage the notches in the upper keys 10 and 12. A spike 15 is then placed in each of the notches 14 and driven into the ties 20 until the head of the spike secures the lock in position on the member 1 and secures said member in position on the ties. Spikes 15 are also driven into the tie 23, so that the head of the spike engages with the shoulders 25. In placing the rails in the member 1, the joint may be made as close as desired under the existing conditions. If on a track already laid, the ends of the rails are so badly worn as to ordinarily need replacing, this device may be used, and it will then not be necessary to replace the rail. In that case the ends of the worn out rails may be cut off, and a section of new rail inserted into the slot 2 between the ends of the old rails, the parts being then secured to the member 1 by the keys. This new section of rail will thereby be held firmly between the ends of the old rails and in accurate alinement therewith.

Although but one specific embodiment of this invention is herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention as defined by the following claims.

I claim:

1. A device of the class described, comprising a member having a longitudinal slot therein adapted to receive the ends of adjoining rails, means for securing said rails in said slot, and a girder adapted to rest on ties at its ends and support said member.

2. A device of the class described, comprising a member having a longitudinal slot therein adapted to receive the ends of adjoining rails, means for securing said rails in said slot, a girder adapted to rest on ties at its ends and support said member, said member being formed of cast material and said girder being formed of wrought metal, substantially as described.

3. The combination with ties and rails, of a member having a longitudinal slot therein adapted to receive the ends of adjoining rails, means for securing said rails in said slot, a depending brace extending longitudinally along the under side of said member, transversely disposed depending flanges adjacent to the ends of said member and spaced away from the ends of said brace so as to form transverse slots, and a girder adapted to support said member, said girder having offset portions adjacent to its ends adapted to fit into said transverse slots and to receive said ties.

4. A device of the class described, comprising a member having a longitudinal slot therein adapted to receive the ends of adjoining rails, a plurality of keys adapted to be inserted between adjacent parts of said rails and member, and a plate secured on said member in position to engage the adjacent ends of said keys and adapted to secure the keys against accidental displacement.

5. A device of the class described, comprising a member having a longitudinal slot therein adapted to receive the ends of adjoining rails, a pair of keys adapted to be inserted between adjacent parts of said rails and member, said keys being inserted from respectively opposite ends of said member, a plate secured on said member in position to abut against the rear end of one of said keys, and a part on said plate adapted to engage the adjacent end of the other key.

6. A device of the class described, comprising a member having a longitudinal slot therein adapted to receive the ends of adjoining rails, a pair of keys adapted to be inserted between adjacent parts of said rails and member, said keys being inserted from respectively opposite ends of said member,

a plate having an aperture in one end, means adapted to engage said aperture for securing said plate on said member in position to abut against the rear end of one of said
5 keys, and a transversely disposed tongue on the opposite end of said plate adapted to engage an adjacent part of said other key.

Signed at Joliet this 27 day of March 1911.

CHARLES CALVERT LAMB.

Witnesses:

HENRY SIMS,
D. C. McNAMARA.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."