H. H. CRUISE.

COMBINATION RAIL JOINT AND NUT LOCK.

APPLICATION FILED JUNE 20, 1910.

975,513. **Patented Nov. 15, 1910.**

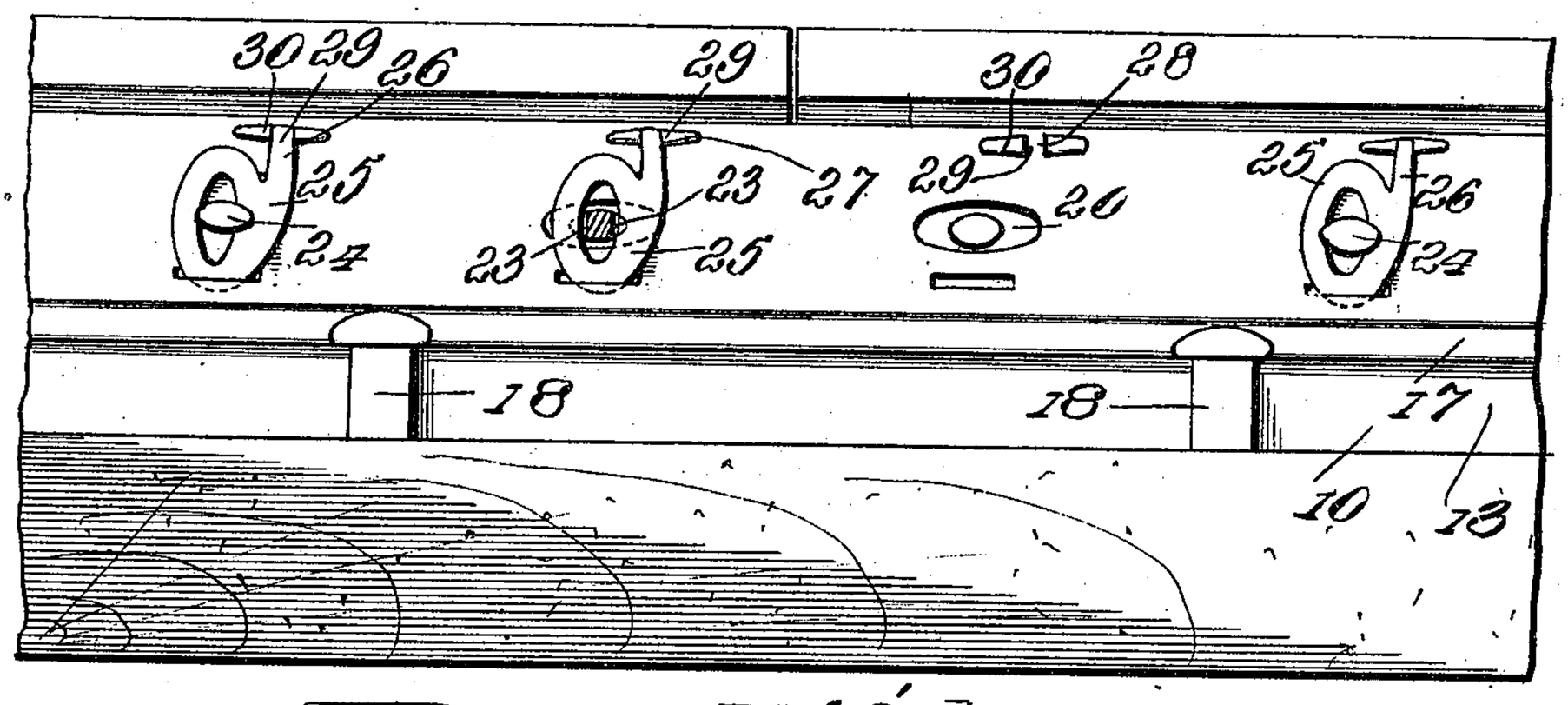


Fig. 1.

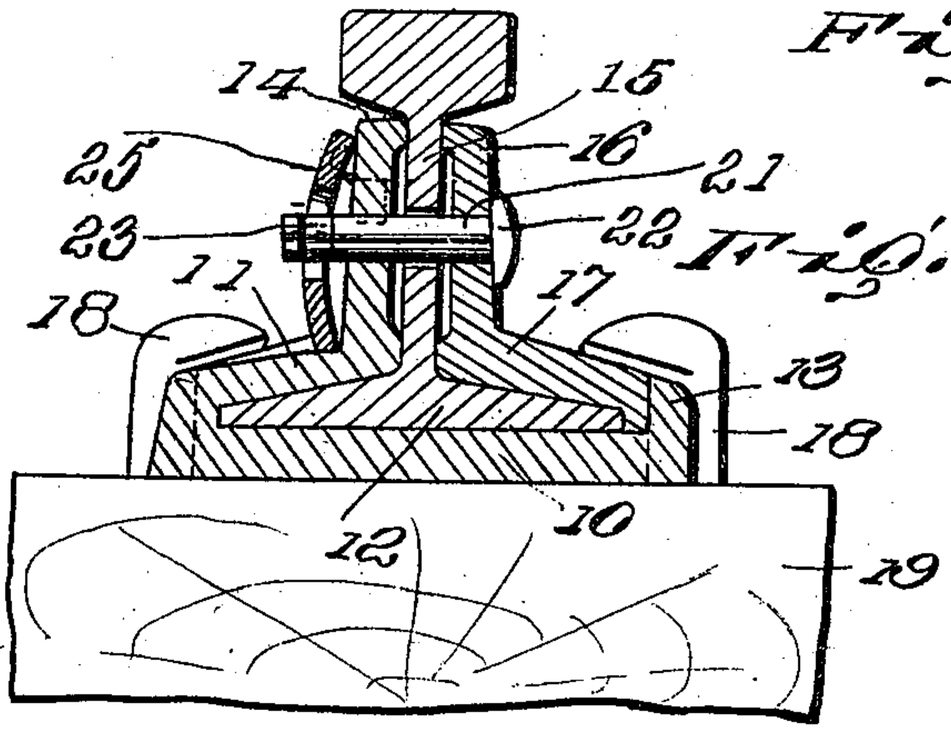
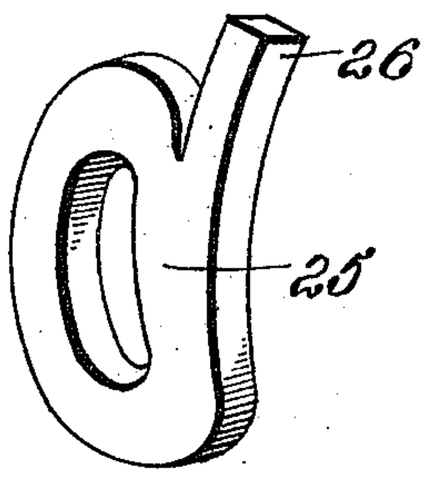


Fig. 2.

Fig. 3.



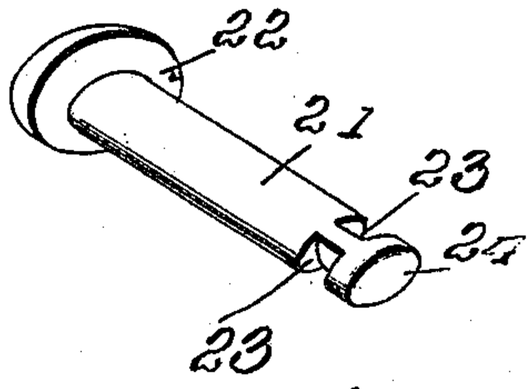


Fig. 4.

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UNITED STATES PATENT OFFICE.

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COMBINATION RAIL-JOINT AND NUT-LOCK.

975,513. Specification of Letters Patent. Patented Nov. 15, 1910.

Application filed June 20, 1910. Serial No. 568,046.

To all whom it may concern:

Be it known that I, HOMER H. CRUISE, citizen of the United States, residing at Starr, in the county of Hocking and State of Ohio, have invented certain new and useful Improvements in Combination Rail-Joints and Nut-Locks, of which the following is a specification.

This invention relates to rail joints, and has for an object to provide a joint adaptable for rails without the employment of bolts or nuts.

The invention has for another object to provide a joint which can be quickly and easily applied, a joint comprising but few interfitting parts, and one which will not become loose incident to the vibration of the rails.

For a full understanding of the invention reference is to be had to the following description and accompanying drawing, in which:—

Figure 1 is a side elevation of the improved joint, parts of the same being broken away. Fig. 2 is a transverse section through the same through one of the locking keys. Fig. 3 is a detail perspective view of one of the locking rings employed. Fig. 4 is a detail perspective view of one of the keys.

Corresponding and like parts are referred to in the following description and indicated in all views of the accompanying drawing by the same reference characters.

Referring to the drawing the numeral 10 designates a base-plate which is provided longitudinally at one edge with an overhanging base-flange 11 to receive therebeneath the base 12 of the rail. An upstanding flange 13 forms the opposite termination of the base-plate 10. The flange 11 carries a side-plate 14 engaging against one side of the web 15 of the rail. A second side-plate 16 engages against the opposite side of the web 15 and carries a base-flange 17 seated upon the upper face of the base 12 and against the flange 13. The base-plate 12 is provided with spaced recesses in its opposite sides for the reception of spikes 18, or the like, employed in securing the joint upon the tie 19. The side-plates 14 and 16 and the webs 15 of the meeting rails are provided with registering apertures which are spaced longitudinally in the members and which are of elongated form as is disclosed at 20 in Fig. 1. The apertures 20 through the webs 15 of the rails are slightly elongated to admit of a free play of the rails when expanded and contracted by changes in temperature.

Keys 21 are passed through the registering openings 20 having their heads 22 engaging against the outer face of the side-plate 16. The outer ends of the keys are slotted in their opposite sides as at 23 to form stops 24 spaced outwardly from the extremities of the bodies of the keys. The keys 21 are flattened and are of substantially elliptical cross-section to engage loosely through the openings 20.

Locking rings 25 engage over the stops 24, the rings being of substantially elliptical or oval form to pass snugly over the stops 24 and to engage in the slots 23 by turning the rings 25 at right angles to their initial positions. The locking rings 25 are longitudinally curved throughout their lengths to present yieldable convex outer faces seating snugly against the stops 24. The opposite ends of the locking rings 25 rest against the outer face of the plate 14 and engage the stops 24 at their central portions to hold the keys 21 in a locked position. The locking rings 25 are each provided with a tangential tongue 26 arranged in substantially parallel relation with the major axis of the locking ring 25 and employed for holding the same from rotation when locked.

The plate 14 is provided with a plurality of horizontal ribs 27 having oppositely sloping ends to form cam bearing faces, and which are recessed as at 28 to receive the tongues 26, and to provide shoulders 29 to engage and to hold the tongues 26 from movement. The ribs 27 may be formed upon the plate 16, if desired, to accommodate the keys 21 when they are inserted through the rail joint from the opposite sides of the rails. It will be seen that the ribs 27 are disposed adjacent the upper edge of the plate 14 in mutual alinement with the openings 20 and in the path of the tongues 26.

In securing the meeting ends of the rails the same are positioned upon the base-plate 10 and engaged between the side-plates 14 and 16. The keys 21 are now passed through the openings 20 when the locking rings 25 are engaged over the stops 24. The locking rings are pressed inwardly at their central portions and are turned at right angles to seat within the slots 23 and against the inner faces of the stops 24. The tongues

26 are carried over the cam faces of the ribs 27 during the rotation of the rings 25 until the tongues 26 snap over the shoulders 29 and into the recesses 28 when the rings 25 are held from further movement.

Having thus described the invention what is claimed as new is:—

1. A rail joint including a pair of side-plates engaging against the opposite sides of the meeting ends of the rails, keys engaging through the plates and rails and having slots formed at their opposite sides and adjacent their outer extremities to form stops thereon, locking rings engaging over the keys and behind the stops and having tongues for holding the same in locked position, and locking ribs formed upon the outer face of the adjacent side-plate for the reception of the tongues of said locking rings to hold the rings from rotation.

2. A rail joint including side-plates for engagement against the opposite sides of the adjoining ends of rails, keys engaging through the plates and the rails and being of substantially elliptical cross-section, the outer extremities of the keys being slotted in their opposite sides to form stops upon their extremities, locking rings of corresponding form engaging over the keys and seating in the slots when turned at right angles, and retaining means carried by one of the side-plates and engaging with the rings for holding the same in a locked position.

3. A rail joint including side-plates engaging against the sides of the rail, keys engaging through the plates and being of substantially elliptical form in cross-section, said keys having stops upon their outer ends, locking members engaging over the keys and against the stops when turned upon the keys, and means carried by the adjacent one of said side-plates to retain the locking members against the stops.

4. A rail joint including clamping plates engaging against the sides of the rail, keys engaging through the clamping plates and the rail and being of flattened form, the keys having slots in their edges and adjacent their extremities to form stops outwardly of the adjacent side-plate, and locking means carried by the adjacent plate and connected to the keys for holding the same in position.

5. A rail joint including clamping plates for engagement against the sides of a rail, spaced keys loosely engaging through the clamping plates and the rail, locking members engaging over the outer ends of the keys and adapted to interlock thereon upon the rotation of the keys, and locking ribs formed upon the adjacent side-plate to interlock with said locking members for holding the same from rotation.

6. A rail joint including a pair of clamping plates for engagement against the sides of a rail, flattened keys engaging through the plates and the rail, locking members engaging over the ends of the keys and against one of the plates to interlock with the keys upon the turning of the locking members at right angles, and ribs formed upon the outer face of the adjacent side-plate for interlocking engagement with said locking member to hold the same in position.

7. A rail joint including a pair of clamping plates for engagement against the sides of the meeting ends of the rails, flattened keys engaging through the plates and the rails and having heads formed upon their outer extremities, convex locking rings engaging over the keys and adapted to seat against the inner faces of the heads upon the rotation of the rings, and locking means carried by the adjacent plate for holding the rings in a locked position.

8. A rail joint including a pair of clamping plates for engagement against the sides of the meeting ends of the rails, keys engaging through the plates and the rails and having heads formed upon their outer extremities, locking rings engaging over the keys and seating against the inner faces of the heads when turned at right angles, and locking means carried by the adjacent one of said plates for holding the rings from rotation.

In testimony whereof, I affix my signature in presence of two witnesses.

HOMER H. CRUISE. [L. S.]

Witnesses:
C. C. CARTER,
F. W. HARDEN.