No. 629,860. Patented Aug. 1, 1899.

J. KLINE.

COMBINED RAIL JOINT AND METALLIC CROSS TIE.

(Application filed May 22, 1899.)

(No Model.)

Fig. 1.

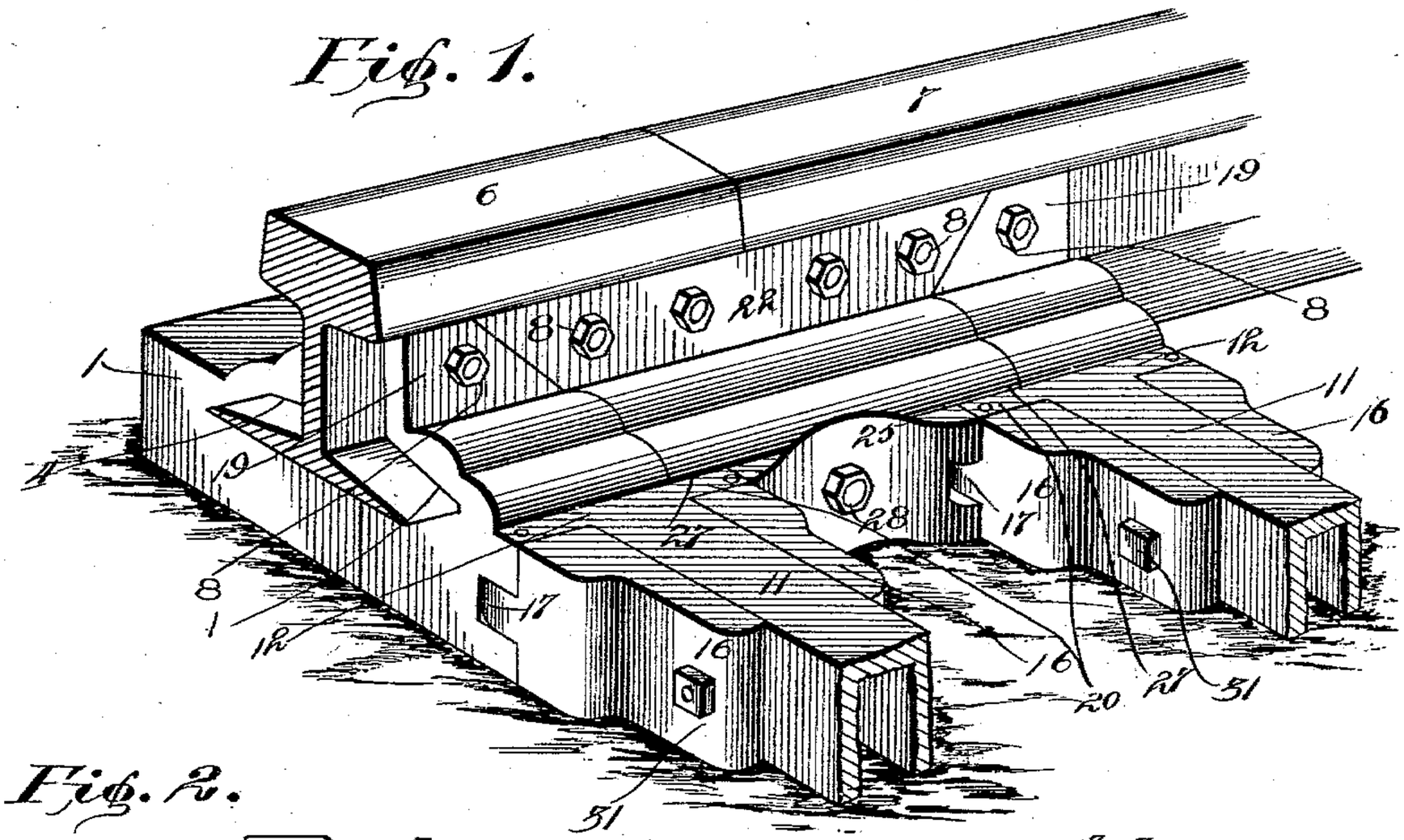

Fig. 2.

Fig. 4.

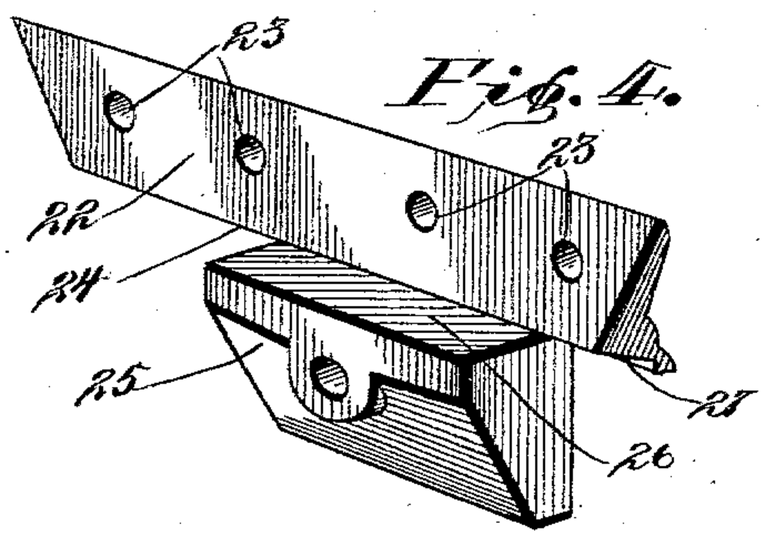

Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

JOHN KLINE, OF MIFFLINVILLE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO ELEAZER SCHWEPPENHISER AND HIRAM G. GRUVER, OF SAME PLACE.

COMBINED RAIL-JOINT AND METALLIC CROSS-TIE.

SPECIFICATION forming part of Letters Patent No. 629,860, dated August 1, 1899.

Application filed May 22, 1899. Serial No. 717,753. (No model.)

To all whom it may concern:

Be it known that I, JOHN KLINE, a citizen of the United States, residing at Mifflinville, in the county of Columbia and State of Pennsylvania, have invented a new and useful Combined Rail-Joint and Metallic Cross-Tie, of which the following is a specification.

This invention relates to combined rail-joints and metallic cross-ties, and has for its object to provide improved means for connecting the ends of the ties with the fixed or stationary member of the rail-joint, the ties also being adapted to form a part of the rail-joint.

To these ends the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of the improved rail-joint, showing portions of adjacent ties. Fig. 2 is a vertical transverse sectional view taken between the adjacent ends of the rail-sections. Fig. 3 is a sectional view taken horizontally on the line *x x*, Fig. 2. Fig. 4 is a detail perspective view of the detachable fish-plate or member of the rail-joint.

Corresponding parts are designated by like reference characters in all the figures of the drawings.

Referring to the accompanying drawings, 1 designates the stationary member of the rail-joint, provided at opposite ends with the lateral base extensions 2, extending entirely upon the outer side of the member and adapted to form a firm support therefor. Extending the entire longitudinal length of the stationary member is an integral upstanding fish-plate 3, located intermediate of the width of the member and undercut, as at 4, at the inner lower side of the fish-plate, so as to provide a longitudinal ledge or flange 5, upon which the opposite rail-sections 6 and 7, respectively, are adapted to be seated, the undercut portion 4 of the fish-plate being adapted to snugly receive the flanges of the rails. Suitable bolt-openings are provided through the fish-plate for the reception of the bolts 8, whereby the rail-sections are connected to the rail-joint. Located near opposite ends of the stationary member and extending outwardly transversely upon the inner face thereof in line with the respective base extensions 2 are the opposite integral angular shoulders 9, each of which is provided with a pair of outwardly-extending threaded bolts or pins 10, whereby the respective cross-ties 11 are adapted to be connected to the stationary member of the rail-joint. Each of these cross-ties is provided at its opposite ends with a transversely-enlarged head 12, provided in its outer end with a recess or socket 13, having bolt-openings 14, extending through the rear wall of the socket and at opposite sides of the cross-tie. By reference to Fig. 3 it will be perceived that the shoulders 9 of the fixed member are adapted to be snugly received within the sockets provided in the ends of the cross-ties, and the respective bolts or pins 10 extend through the bolt-openings 14. Suitable nuts 15 are provided upon the ends of the bolts or pins which project beyond the rear face of the head 12 and are adapted to be set thereagainst, so as to firmly connect the cross-ties with the stationary member. By reason of the shoulders 9 being angular and fitting snugly within the similarly-shaped sockets 13, provided in the ends of the cross-ties, the latter are effectually prevented from having an axial movement, whereby the parts are prevented from becoming loosened by the action of a train passing over the track.

In order that the nuts 15 may be locked against accidental loosening, I provide opposite caps 16, each of which is hinged, as at 17, to the outer rear corner of the respective heads 12 and provided with a socket 18, opening out through the inner end of the cap and through the inner face thereof. These caps are adapted to be swung inward upon their hinges and against the opposite lateral faces of the cross-ties, whereby the nuts 15 are snugly received within the sockets 18, and said nuts are thereby prevented from being accidentally turned. The caps 16 and the ties 11 are provided with transversely-alined openings 29 and 30, respectively, which are adapted to receive a suitable bolt 31, whereby the caps are locked in place.

Each of the enlarged heads 12 of the respective cross-ties is provided with an upstanding ear 19, located at the outer side of the head,

so as to leave the opposite side of the head exposed to provide a shoulder 20. By reference to Fig. 1 it will be seen that the lower inner face of the ear 19 is undercut, as at 21, so as to receive the flange of the rail-section and clamp the same firmly against the fish-plate of the stationary member of the rail-joint. Each ear is provided with a bolt-opening, as shown, to receive one of the fastening-bolts 8.

It will be understood that in the construction of the present rail-joint two cross-ties are employed in conjunction with the stationary member, whereby a space is left between the respective ears 19 of the cross-ties, and to bridge this space I provide a detachable fish-plate 22, as shown in detail in Fig. 4. This fish-plate is provided with suitable bolt-openings 23 for the reception of the fastening-bolts and is undercut, as at 24, upon its lower inner face, and pendent therefrom is an integral block or shoulder 25. The upper inner face 26 of this block is adapted to form a seat for the adjacent ends of the rail-sections, and the opposite ends of the fish-plate project beyond the sides of the block, so as to form shoulders 27, which are adapted to be seated upon the opposite shoulders 20 of the heads of the cross-ties. As an additional fastening for the detachable fish-plate a bolt 28 is provided extending transversely through the block or shoulder 25 and the base of the stationary member intermediate of the base extension 2. By reference to Fig. 3 it will be noted that the block or shoulder 25 completely fills up the space between the heads of the cross-ties, so that a seat continuous throughout the entire length of the joint is provided for the support of the flanges of the rail-sections.

What I claim is—

1. In a device of the class described, the combination with a stationary rail-joint member having an upstanding fish-plate, and a flange or ledge adapted to support the rail-sections, of cross-ties having at the ends thereof upstanding ears and adapted to be connected to the stationary member so that the ears may coöperate with the fish-plate of the latter member, and a detachable fish-plate fitted between the ends of the cross-ties and bridging the space therebetween, substantially as shown and described.

2. In a device of the class described, the combination with a stationary rail-joint member having an upstanding fish-plate, and a longitudinal ledge or flange adapted to support the rail-sections, of adjacent cross-ties, each tie being provided at its opposite ends with a transversely-enlarged head, an upstanding ear provided upon the head, and a detachable fish-plate located between the ears of the respective cross-ties and provided with a pendent shoulder fitting snugly between the heads of the ties and forming a continuous seat for the flanges of the rail-sections, in conjunction with the heads of the ties and the longitudinal flange of the stationary member, substantially as shown and described.

3. In a device of the class described, the combination with a stationary rail-joint member having an upstanding longitudinal fish-plate, and a longitudinal flange or ledge adapted to support the rail-sections, of adjacent cross-ties having transversely-enlarged heads adapted to be connected to the base of the stationary member and provided with upstanding ears adapted to coöperate with the stationary fish-plate, and a detachable fish-plate adapted to be fitted between the ears of the adjacent cross-ties and provided with a pendent block or shoulder intermediate the ends of the fish-plate, said block being adapted to fit snugly between the heads of the adjacent cross-ties and the ends of the detachable fish-plate resting upon the heads of the cross-ties, substantially as shown and described.

4. The combination with a stationary rail-joint member, having a laterally-projecting threaded pin or bolt provided with a nut, of a tie provided with an opening adapted to receive the threaded pin or bolt, and a cap pivoted or hinged to the tie and adapted to embrace the nut, substantially as and for the purpose set forth.

5. The combination with a stationary rail-joint member, having laterally-projecting threaded pins or bolts provided with nuts, of a tie provided with a transversely-enlarged head having openings extending therethrough and located at opposite sides of the tie, caps pivoted or hinged to the opposite sides of the head of the tie and provided with sockets adapted to receive the nuts of the respective pins or bolts, and a fastening device passing transversely through the tie and the opposite caps, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN KLINE.

Witnesses:
J. H. HETTER,
L. E. HETTER.