

L. & W. A. McFADDEN.
RAIL JOINT.
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969,648.

Patented Sept. 6, 1910.

Fig. 1.

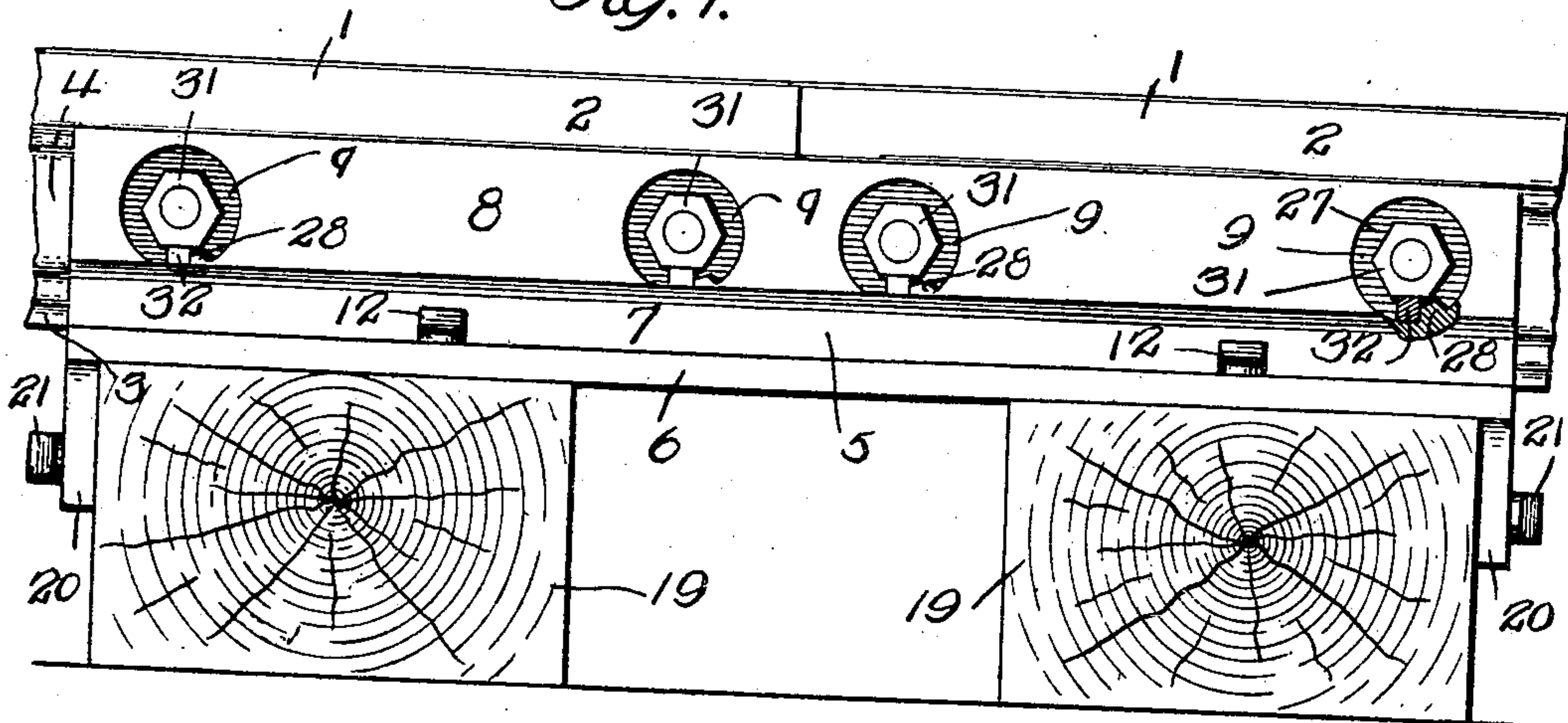
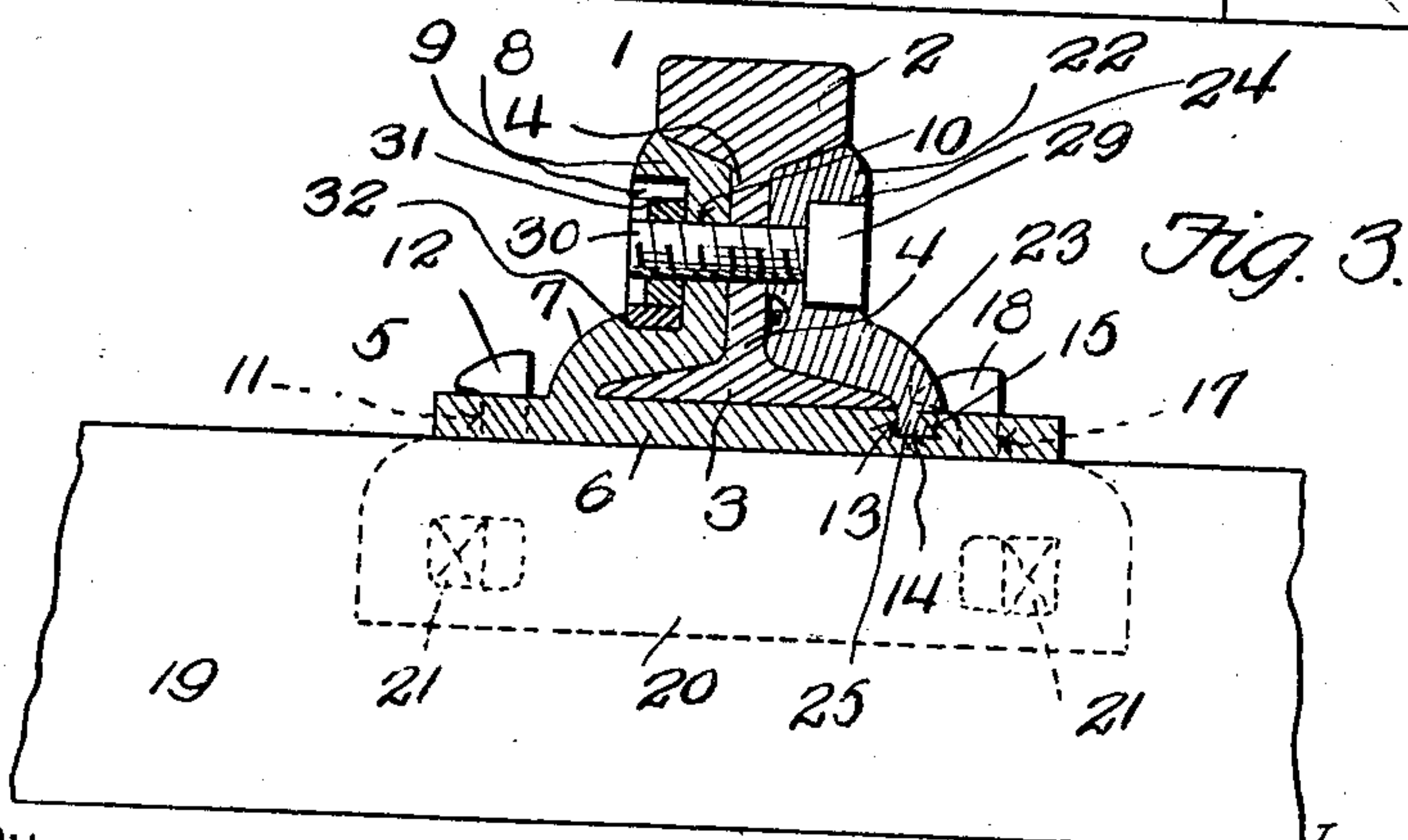
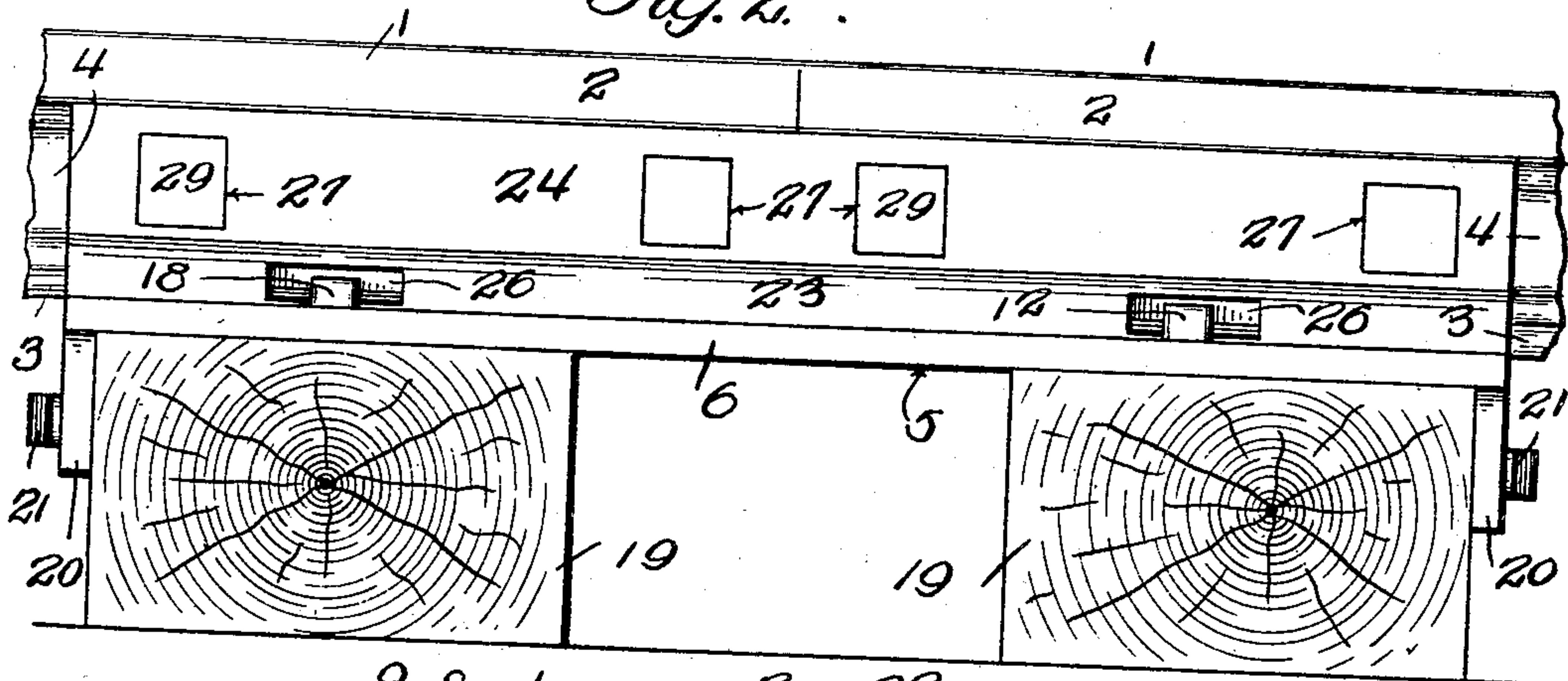


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

LAURENCE McFADDEN AND WILLIAM A. McFADDEN, OF PARKTON, MARYLAND.

RAIL-JOINT.

969,648.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, LAURENCE McFADDEN and WILLIAM A. McFADDEN, citizens of the United States, residing at Parkton, in the county of Baltimore and State of Maryland, have invented new and useful Improvements in Rail-Joints, of which the following is a specification.

This invention relates to improvements in joints for the meeting ends of a pair of railway rails and the primary object of the invention is to provide a device of this character which is of a comparatively simple construction, which may be easily and quickly applied to the rail ends and adjacent ties and which has its parts so constructed and arranged as to effectively prevent lateral movement of the rails or the pounding of the said rails at their points of meeting, thus greatly prolonging the life of the rails and adding to the comfort of the general public.

With the above, and other objects in view, which will appear as the description progresses, the invention resides in the novel construction and combination of elements hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a rail joint constructed in accordance with the present invention. Fig. 2 is a similar view and looking from the opposite side. Fig. 3 is a transverse sectional view of the same.

In the accompanying drawings the numeral 1 designates the meeting ends of a pair of rails. These rails 1 are constructed in the ordinary manner, comprising the heads 2, base flanges 3 and connecting webs 4. The webs 3 are provided with the usual openings adapted for the reception of the retaining bolts whereby the ordinary fish plates are secured thereto.

The numeral 5 designates the chair of our improved device. This chair 5 comprises essentially a base portion 6 which is horizontally straight, and which is integrally formed with an overlying flange portion 7 having a vertically extending portion 8. The upper face of this vertical member 8 is adapted to underlie the ball of the heads 2 of the rail members 1, as clearly illustrated in Fig. 3 of the drawings. The vertical ex-

tension 8 is also of a greater thickness than the remainder of the chair 5, and the said member is provided with a plurality of circular pockets 9 which are centrally provided with reduced openings 10 alining with the openings provided in the webs 4 of the rails. The overlying flange 7 as well as the inner face of the vertical flange 8 are adapted to snugly engage with the faces of the webs and base flanges of the rails, while the base proper of the said rails fits snugly upon the horizontal face of the plate 6. The plate 6 is continued outwardly a suitable distance beyond the overlying flange 7, and this outwardly extending portion is provided with a plurality of openings 11 which are adapted for the reception of spike members 12. The opposite portion of the base also extends a suitable distance beyond the ends of the base flanges of the rail members, the said projecting portion being provided with a plurality of spaced spike openings 17 and being further provided with a longitudinally extending groove 13. This groove comprises a vertical wall which is adapted to aline with the adjacent edge of the base flange and further comprises a horizontally straight portion 14 and an inwardly beveled or inclined portion 15. The numeral 18 designates the spikes which are adapted to engage with the spike openings 17. The chair 5 is of a length equaling at least the distance over two of the rail ties 19 and the ends of the said member 5 are integrally formed with downwardly extending angular plates 20. These plates 20 are provided with spaced openings which are adapted for the reception of suitable retaining members such as spikes 21, and whereby the chair 5 is securely connected with both the upper faces and sides of the ties, so that lateral or longitudinal movement is effectively prevented.

The numeral 22 designates the key member for the chair. This key member 22 comprises an overlying flange portion 23 and a vertical extension 24. The flange 23, as clearly illustrated in Fig. 3 of the drawings, effectively engages the base flanges of the rails while the vertical portion 24 is enlarged and engages both the webs and the ball of the rails. The overlying flange 23 is provided with a longitudinally extending

tongue 25, and this tongue is adapted to engage with the groove 13 provided by the base plate 6 of the chair 5. The tongue 25 has its inner face vertical to aline with the inner wall provided by the groove and its opposite portion arranged at an inclination or beveled to correspond with the inclined portion 15 of the groove. It is to be understood that the tongue 25 extends the entire length of the key member 22 and it will be noted by reference to Fig. 3 of the drawings that the said tongue terminates a suitable distance away from the edge of the overlying flange 23 so that this projecting portion of the said flange may lie firmly upon the base plate 6 of the chair member. The projecting portion of the overlying flange 23 adjacent the spike opening 17 provided in the base plate 6 is cut away longitudinally as at 26 to provide suitable pockets adapted for the reception of the heads of the spikes 18. The vertical portion of the key member 22 is provided with a plurality of non-circular pockets 27, the same being adapted for the headed portions 29 of the bolt members 30, and the circular pockets 9 of the chair member 5 have their lower walls terminating a distance below the point of juncture of the overlying flange 7 and the vertical extension 8, thus providing an outer wall for the lower part of the said pocket. These pockets 9 are each provided with suitable lugs 28 which are arranged a suitable distance from the center of the opening provided within the pockets. The bolts 30 terminate in a line with the vertical flange 8 of the chair 5 and are adapted for the reception of suitable nuts, and in order to sustain the said nuts upon the bolts we provide suitable wedge members 32 which are adapted to be fitted within the pockets 9 below the lower face of the nut 31 and the flange 7, and the said wedge is adapted to firmly contact with the 28, thus providing an extremely simple but thoroughly effective method for preventing the disconnection of the nut from the bolt.

Having thus fully described the invention, what we claim as new is:—

1. In a joint for railway rails, a rail chair, an offset fish plate upon one side of the chair, the vertical wall of said fish plate being provided with a plurality of pockets, the said pockets having central openings, the base flange adjacent the fish plate being provided with a plurality of spike openings, the horizontal face of the base having a longitudinally extending groove provided with an inclined wall, the face of the plate being further provided with spike openings adjacent the longitudinal groove, the ends of the base being provided with depending offsets having spike openings, a key member

for the chair, said key member comprising a vertical portion and an inclined portion, the lower face of said inclined portion having a longitudinally extending tongue which is adapted to be received within the groove of the chair, the outer face of the inclined portion being provided with cut away portions adjacent the spike openings, the vertical portion of the key being provided with a plurality of non-circular pockets having openings communicating with the openings of the fish plate, and removable securing members for the fish plate.

2. In a joint for railway rails, the combination with a chair member, said chair member comprising a horizontally straight portion and having an offset fish plate, the vertical member of the fish plate being provided with a plurality of pockets, the lower walls of said pockets terminating below the juncture of the offset portion of the fish plate, the pockets being centrally provided with openings, the walls of the pockets being each provided with an offset, the ends of the base of the chair being offset, the said base having a longitudinally extending groove, two of the walls of said groove being arranged at right angles to each other, the opposite wall being inclined toward the body of the chair, the base being further provided with spike openings, a key member, said key member comprising a vertical portion and an inclined portion, the inclined portion being provided with a tongue, said tongue having two of its walls arranged at an angle to each other and its opposite wall inclined to correspond with the groove of the chair, the vertical portion of the key being provided with a plurality of non-circular pockets, headed bolts for the pockets, nuts within the pockets of the fish plate of the rail adapted to engage the threaded bolts, and wedges engaging the nuts and the offsets of the said pockets and adapted to be contacted by the wall provided by the inclined portion of the fish plate adjacent its connection with the vertical portion of the said fish plate.

3. In a joint for railway rails, a rail chair, an offset fish plate upon one side of the chair, the vertical wall of said fish plate being provided with a plurality of pockets, said pockets having central openings, the horizontal face of the base having a longitudinally extending groove provided with an inclined wall, the face of the plate being further provided with spike openings adjacent the longitudinal groove, a key member for the chair, said key member comprising a vertical portion and an inclined portion, the lower face of said inclined portion having a longitudinally extending tongue which is adapted to be received within the

groove of the chair, the outer face of the inclined wall being provided with cut-away portions adjacent the spike openings, the vertical wall of the key being provided with
5 a plurality of non-circular pockets having openings communicating with the openings of the fish plate, and removable securing members for the fish plate.

In testimony whereof we affix our signatures in presence of two witnesses.

LAURENCE McFADDEN.
WILLIAM A. McFADDEN.

Witnesses:

WILLIAM M. KING,
WILLIAM J. BURNS.