J. SENIOR & H. R. BOOTS.

RAIL JOINT.

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967,678.

Patented Aug. 16, 1910.

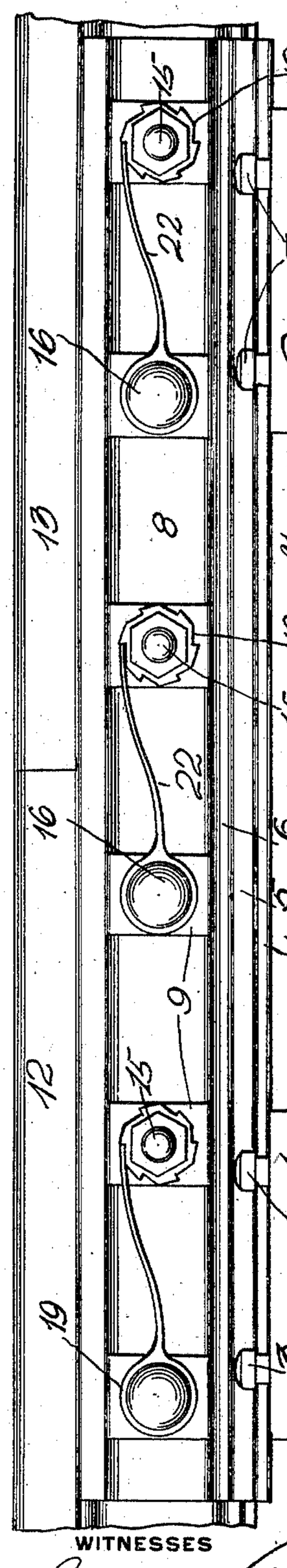

Fig. 1.

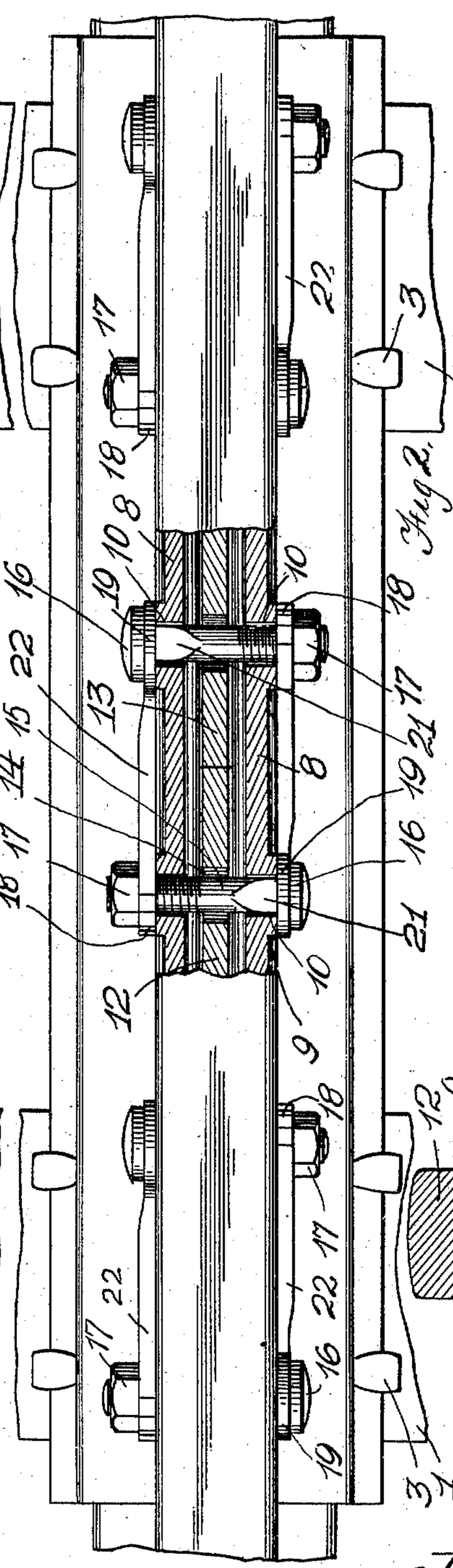

Fig. 2.

Fig. 4.

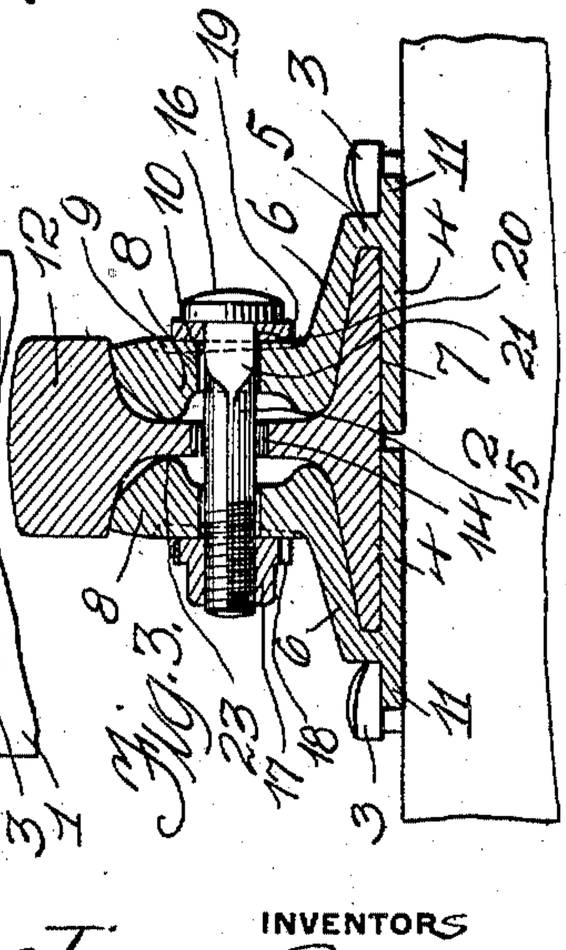

Fig. 3.

WITNESSES

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UNITED STATES PATENT OFFICE.

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RAIL-JOINT.

967,678. Specification of Letters Patent. **Patented Aug. 16, 1910.**

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To all whom it may concern:

Be it known that we, JAMES SENIOR and HERBERT R. BOOTS, citizens of the United States of America, residing at North Sewickly township, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to rail joints and the object thereof is to provide a rail joint in the manner as hereinafter set forth for connecting together the opposing ends of a pair of rails and at the same time provide when occasion so requires for the expansion and contraction of the rails.

Further objects of the invention are to provide a rail joint which shall be comparatively simple in its construction and arrangement, strong, durable, efficient in its use, readily set up in operative position with respect to the opposing ends of a pair of rails and further embodying means to prevent the loosening of the clamping elements of the joint thereby preventing separation of the other elements of the joint and furthermore the loosening of the joint.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown one form of the embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views: Figure 1 is a side elevation of a pair of opposing rails showing the adaptation thereto of a rail joint in accordance with this invention, Fig. 2 is a sectional plan, Fig. 3 is a cross sectional view, and Fig. 4 is a detail illustrating a stop member employed to prevent the loosening of a clamping member.

Referring to the drawings in detail, 1 and 2 denote ties upon which is mounted a rail chair, which is secured in position by hold-fast devices 3, as shown, spikes. The rail chair is formed of two oppositely-disposed sections and as each of the sections is of the same construction, but one will be described, the description of one applying to the other. Each of the sections of the rail chair comprises a rectangular base plate 4 having its upper face at a point removed from its outer longitudinal edge formed integral with a vertically-disposed abutment 5 of the same length as the length of the plate 4 and which terminates in an upwardly inclined and inwardly-extending plate 6 of the same length as the plate 4 and which in connection with the plate 4 and abutment 5 provides a pocket 7 for one side of the bases of a pair of rail sections. The plate 6 at its inner end terminates in a vertically-disposed fish plate 8 which has its outer face provided with vertically-disposed spaced reinforcing portions 9. The fish plate 8 is furthermore provided with a series of openings 10 which project through the reinforcing portions 9. The arrangement of the abutment 5 at a point inwardly of the outer longitudinal edge of the plate 4 provides a flange 11, which is engaged by the hold fast devices 3, the heads of the devices 3 engaging the abutment 5.

The reference characters 12 and 13 denote opposing rails and said rails are mounted in the sectional chair, the bases of the rails engaging in the pockets 7, as clearly shown in Fig. 3 and are mounted upon the plates 4, these latter being so positioned as to be spaced from each other when the chair is set up. Each of the webs of the rails is formed with a series of enlarged openings 14 which are adapted to aline with the openings 10 of the fish plates 8.

Extending through each set of alining openings 10 and 14 is a threaded bolt 15 provided with a head 16. The bolts are alternately disposed with respect to each other and each carries on its threaded end a clamping nut 17 provided with rigid teeth 18. The nut 17 is adapted to abut against the reinforcing portions 9 of the fish plates, whereas the heads of the bolts have interposed therebetween in the reinforcing portions 9, a disk 19 provided with a squared opening 20, which conforms to the squared portion 21 at the headed end of the bolt 15. By such an arrangement the disk 19 is prevented from rotating upon its respective bolt. Projecting from the disk 19 is a resilient stop arm 22, which engages with the toothed portion 18 of a nut 17 to prevent

back rotation thereof. The stop arms 22 are alternately disposed with respect to each other and the same arrangement is had with respect to the nut 17. The openings 14 through which extend the bolts 15 are of such diameter as to allow for the necessary contraction and expansion of the rails when occasion so requires.

When the rails are supported by the chair, the fish plates 8 are of a height as to engage the lower face of the head of the rails 12 and 13, as clearly shown in Fig. 3, and each of the fish plates is provided with an inwardly-extending portion 23, which abuts against the webs of the rails.

What we claim is:—

1. A rail joint comprising the combination with a pair of rails, of a chair for supporting said rails and embodying longitudinally-extending flanges and integral fish plates provided with openings, means engaging with said flanges for securing the chair in position, alternately disposed headed bolts extending through the openings of the fish plates and through the rails, alternately-disposed clamping nuts mounted upon said bolts and provided with toothed portions, disks carried by the bolts and interposed between the heads thereof and fish plates and having squared openings to prevent rotation of the disk, and resilient stop arms alternately disposed with respect to each other and integral with said disk and engaging the toothed portions of the nuts to prevent back rotation thereof.

2. A rail joint comprising the combination with a pair of opposing rails, of a rail chair supporting said rails and provided with a pair of integral fish plates arranged in parallelism with respect to the webs of the rails and provided with openings, alternately-disposed headed bolts extending through said openings and rails, and provided with squared portions, alternately-disposed clamping nuts mounted upon said bolts and engaging the fish plates and provided with toothed portions, disks having squared openings, said disks mounted upon the squared portions of the bolts and interposed between the heads of the bolts and the fish plates, and stop arms projecting from the disks and alternately disposed with respect to each other and engaging the toothed portions of the nuts to prevent back rotation of these latter.

3. A rail joint comprising the combination with a pair of opposing rails, of a pair of fish plates extending in parallelism with respect to the rails and provided with openings, alternately disposed headed bolts extending through said openings and rails, alternately disposed clamping nuts mounted upon the bolts and engaging with the fish plates and provided with toothed portions, disks mounted upon the bolts and interposed between the heads thereof and the fish plates, and alternately-disposed stop arms projecting from the disks and engaging with the toothed portions of the nuts to prevent back rotation of these latter.

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

JAMES SENIOR.
HERBERT R. BOOTS.

Witnesses:
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K. H. BUTLER.