

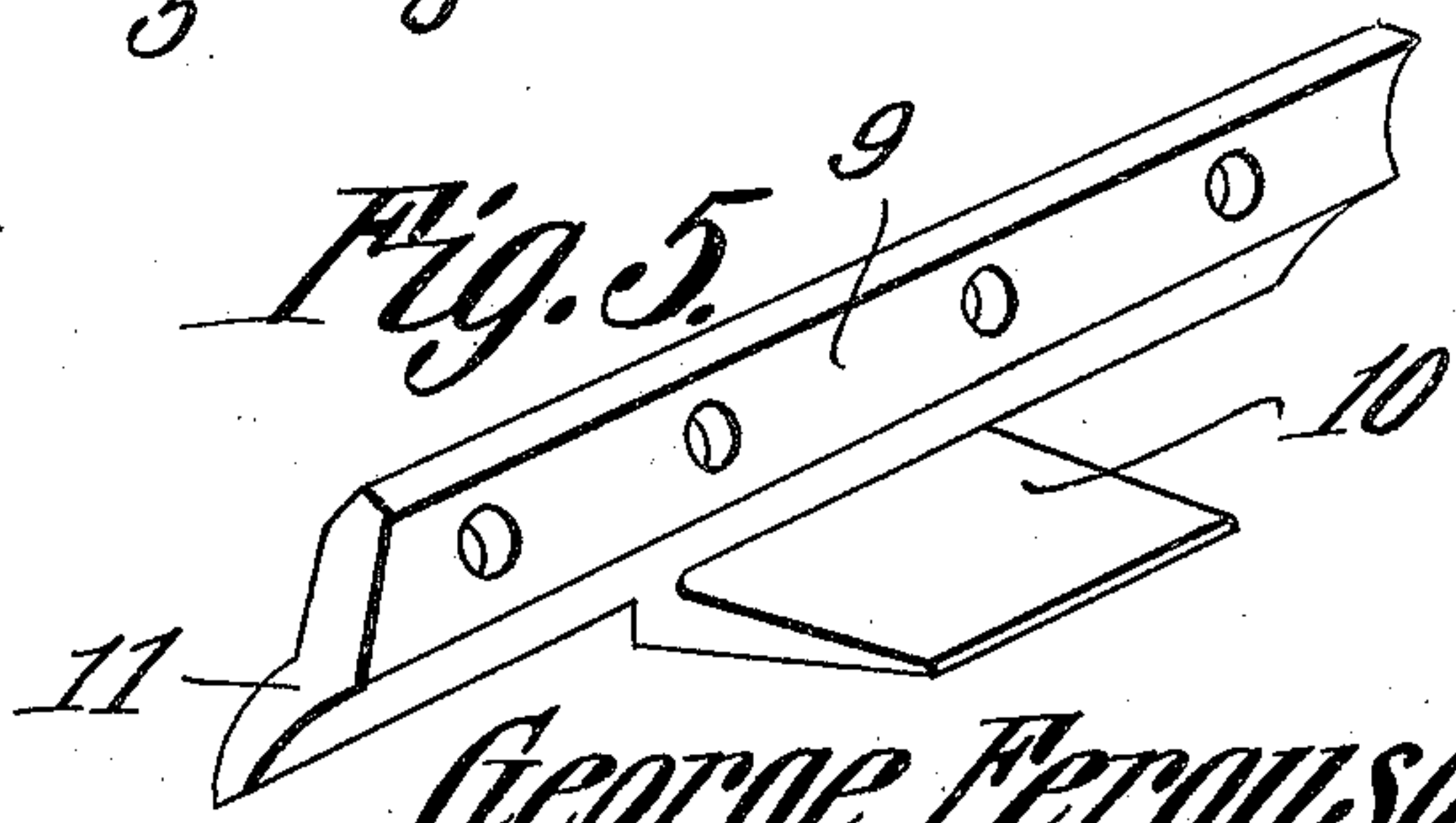
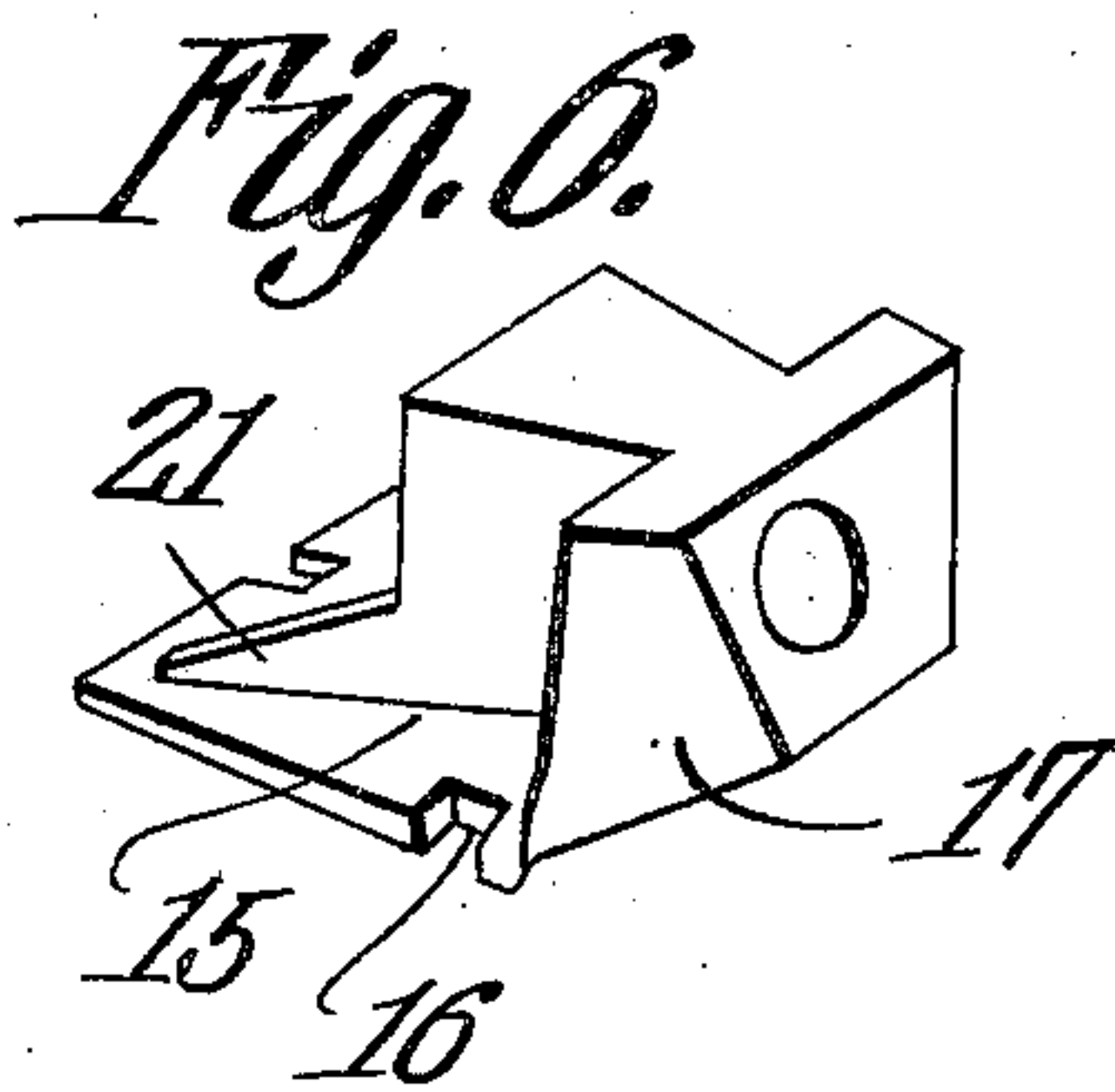
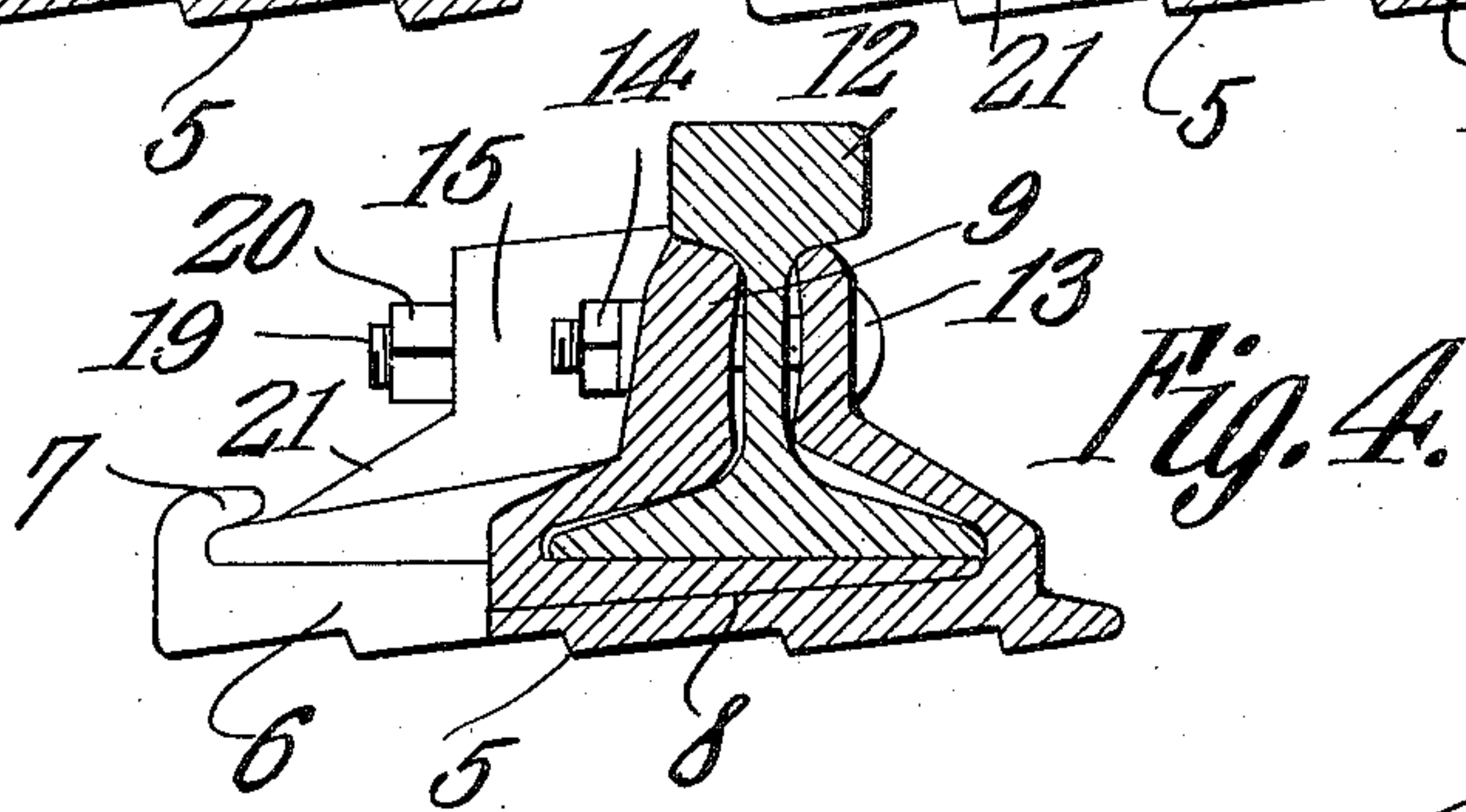
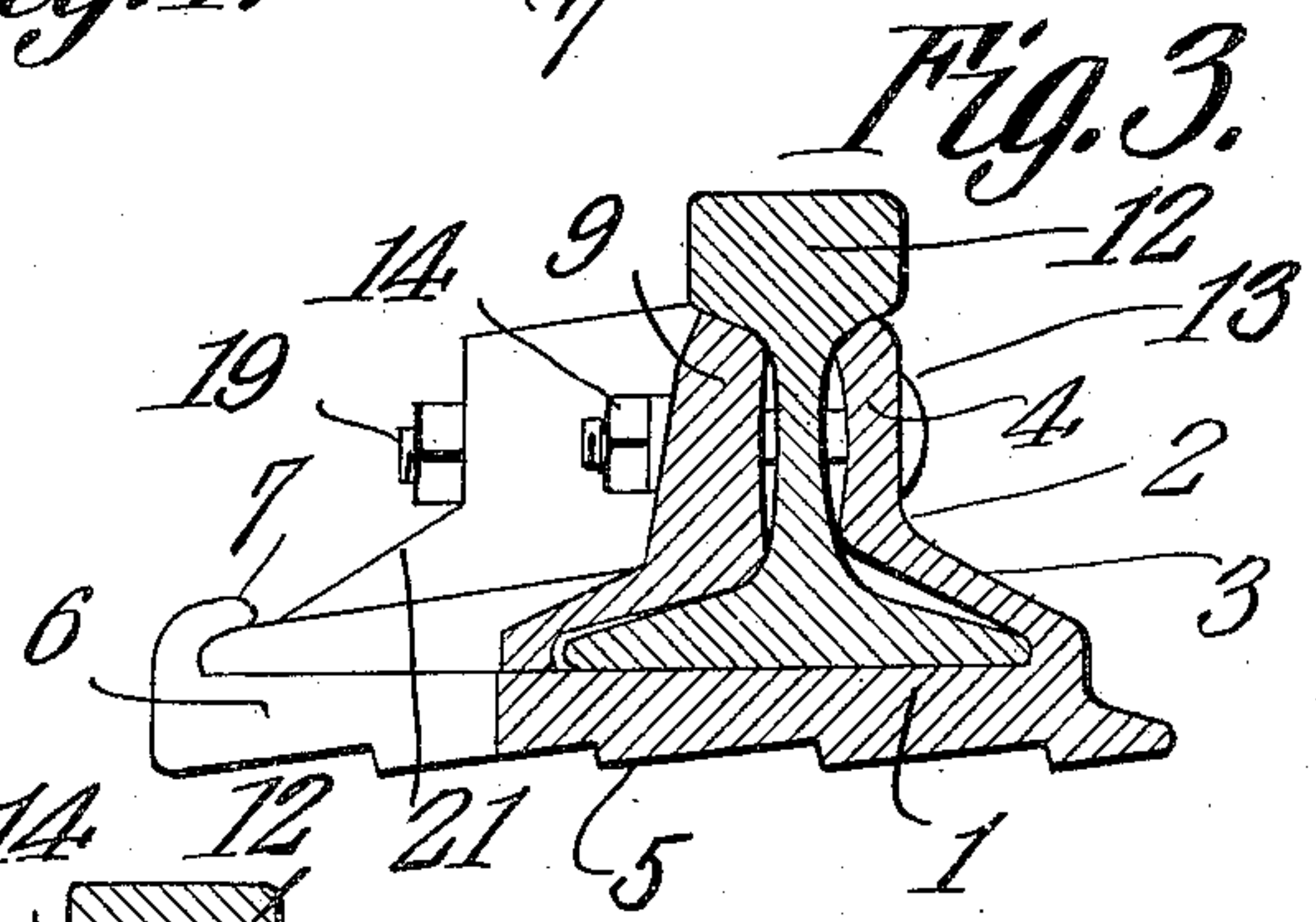
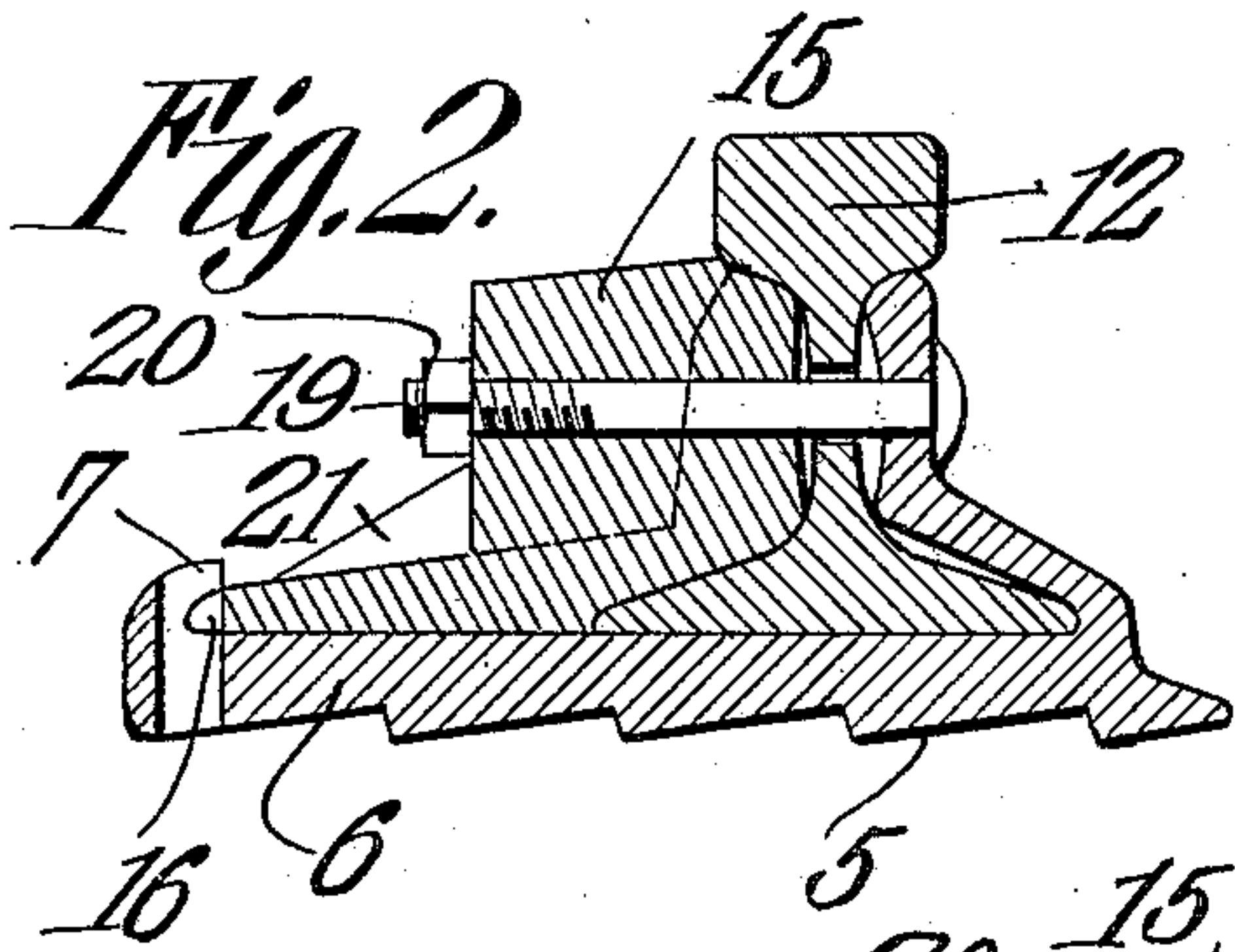
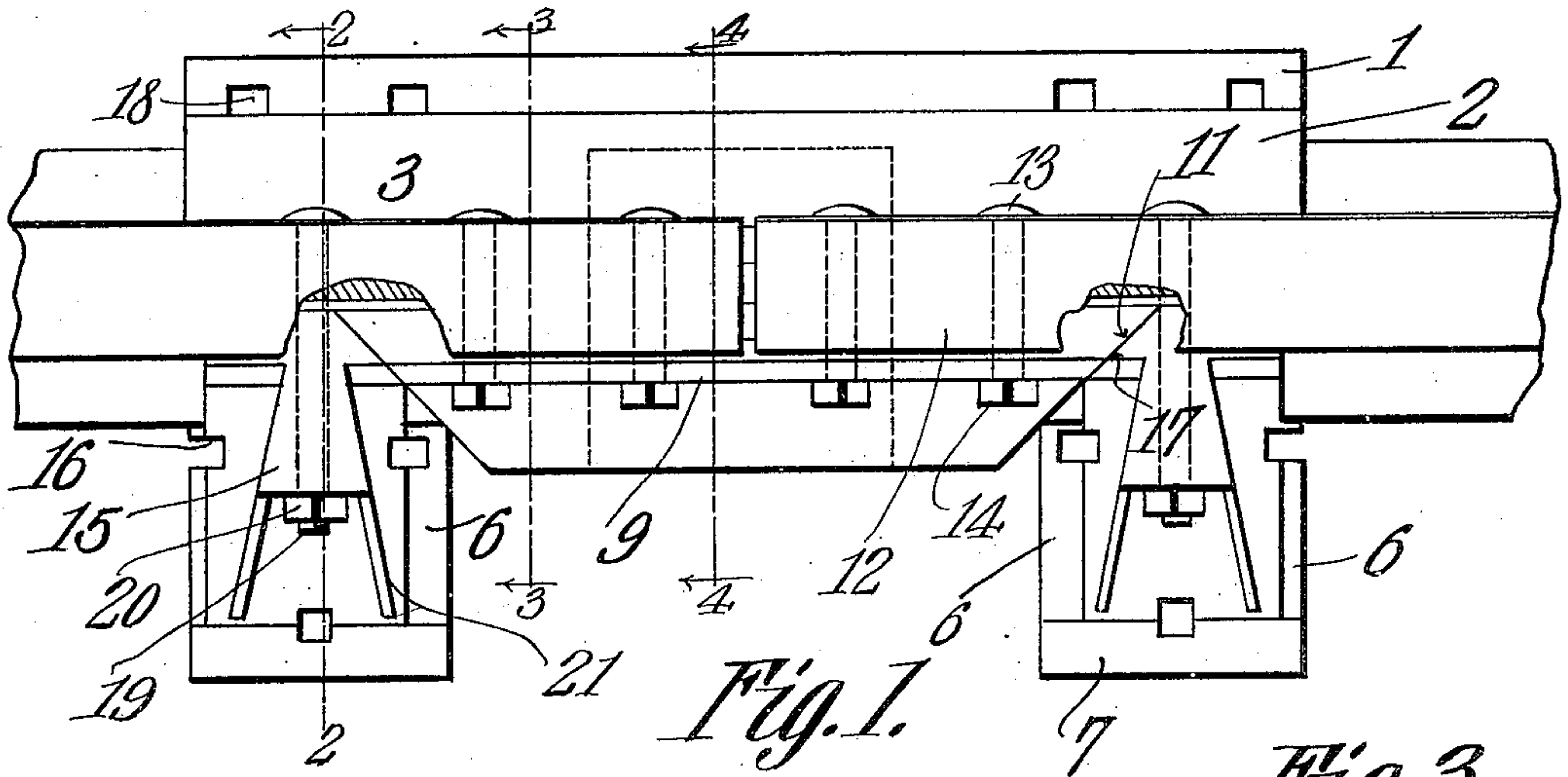
G. FERGUSON.

RAIL JOINT.

APPLICATION FILED AUG. 7, 1908.

934,720.

Patented Sept. 21, 1909.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE FERGUSON, OF GEORGETOWN, KENTUCKY.

RAIL-JOINT.

934,720.

Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed August 7, 1908. Serial No. 447,462.

To all whom it may concern:

Be it known that I, GEORGE FERGUSON, a citizen of the United States, residing at Georgetown, in the county of Scott and State of Kentucky, have invented a new and useful Rail-Joint, of which the following is a specification.

This invention has relation to rail joints and it consists in the novel construction and arrangements of its parts, as hereinafter shown and described.

The object of the invention is to provide an effectual joint for the ends of meeting rails and is especially adapted to be used in railway construction.

A further object of the invention is to provide means for connecting the parts together whereby should the securing bolt be broken as the result of derailment of the rolling-stock, the parts will still retain their interlocked position and hold the rails in proper alinement.

With these and other objects in view, the joint consists primarily of a chair which is adapted to rest at its end portions upon adjacent ties, with its intermediate portion bridging the space between the ties. Said chair is provided along the entire area of its under surface with a series of serrations or shoulders which are adapted to enter into the material of which the ties are composed, and also into the ballast lying between the ties, and which serves as means tending to prevent lateral movement of the chair with relation to the track bed. The said chair is provided at its end portions with laterally disposed sections which are adapted to lie upon the surfaces of the ties beyond the outer side of the track rails, and the said chair is provided at its inner edge with a flange, the base portion of which is inclined and the edge portion of which is substantially vertical and adapted to bear against the web of the track rails or the heads and the bases of the rails as desired. The extremities of the said laterally disposed portions located at the ends of the chair are provided with flanges which are upwardly and inwardly disposed. A fish-plate is adapted to bear against the outer sides of the abutting rails and is provided at its lower edge with a wedge which is adapted to fit under the abutting ends of the rails, and which has a tendency to hold the said ends of the rails in proper alinement and prevent the same from bending down and becoming

what is known as "tucked in" as an incident of wear. The ends of the said fish-plates are beveled or chamfered, and securing bolts are adapted to pass through the said fish-plates and also the webs of the abutting rails and the vertically disposed portion of the flange of the chair. Blocks are adapted to fit upon the end sections of the chair and are provided with chamfered surfaces adapted to engage the beveled ends of the fish-plates. The bases of the said blocks are adapted to fit snugly under the flanges provided at the ends of the said chair sections, while the inner faces of the said blocks are adapted to bear against the sides of the track-rails. Securing bolts pass transversely through the said blocks, the webs of the track rails and also the vertically disposed portions of the flange of the chair.

In the accompanying drawing Figure 1 is a top plan view of the rail joint part broken away. Fig. 2 is a transverse sectional view of the joint cut on the line "2-2" of Fig. 1. Fig. 3 is a transverse sectional view of the joint cut on the line "3-3" of Fig. 1. Fig. 4 is a transverse sectional view of the joint cut on the line "4-4" of Fig. 1. Fig. 5 is a perspective view of the fish-plate used in the joint, and Fig. 6 is a perspective view of one of the blocks used in the joint.

The assemblage of parts going to make up the joint includes the chair 1, which is provided at its inner edge with the flange 2, which in turn is provided with the inclined base section or portion 3, and the substantially vertical edge portion 4. The entire under surface of the area of the chair 1 is provided with a series of serrations or shoulders 5, which are adapted to enter the material of which the ties are composed, or which are adapted to engage the ballast which lies between the ties of the track-bed. The base of the chair 1 is provided at its end portion and at its outer edge with the laterally disposed sections 6, which in turn are provided at their outer ends with the upwardly and inwardly extending flanges 7. The intermediate portion of the upper surface of the base of the chair 1 is recessed as at 8 (shown in detail in Fig. 4).

The fish-plate 9 is provided at its lower edge with the wedge portion 10, which is adapted to enter the recess 8, provided at the base of the chair 1. The ends of the fish-plates 9, are beveled as at 11. The

track-rails 12, 12, abut, at their ends, in the usual manner, and the bases of the said rails fit under the inclined sections or portions 3, of the flange 2, of the chair 1, while the portion 4, of the said flange fits against the vertical webs of the said rails and also bears against the under side of the edge thereof. The bases of the rails rest upon the upper surfaces of the base of the chair 1, while the extremities of the said rails extend over the recess 8, provided in the upper surface of the base of the said chair 1. The fish-plate 9 is adapted to bear against the outer surfaces of the webs of the rails 12, and also against the under portion of the heads of the said rails, and the wedge portion 10, located at the lower edge of the said fish-plate 9, is adapted to fit in the recess 8 of the chair 1, and therefore bridges whatever space may occur between the ends of the rails 12. The track-bolts 13, pass transversely through the vertical portion 4, of the flange 2, of the base 1, also through the webs of the rails 12, and through the said fish-plates 9. The nuts 14, are screw-threaded upon the ends of the said bolts 13, and bear against the outer side of the fish-plate 9.

The bases of the blocks 15, rest upon the upper surfaces of the section 6, provided at the end portion of the chair 1, and the outer edges of the bases of the said blocks fit snugly under the flanges 7, located at the outer extremities of the said section 6. The inner faces of the blocks 15 bear against the webs of the rails 12, while the upper inner edges of the said blocks bear under the outer portions of the heads of the said rails 12. The edges of the bases of the blocks 15 are provided with recesses 16, which are adapted to register with similar recesses or perforations provided in the section 6 of the chair 1, and which are adapted to receive track-spikes or other suitable securing devices (not shown.) The ends of the blocks 15 are chamfered as at 17, and the said chamfered surfaces are adapted to bear against the beveled ends 11, of the fish-plate 9.

The base of the chair 1 is provided with the openings 18, which are located at that side of the chair opposite to the edge thereof from which the sections 6 protrude, and the said openings 18 are adapted to receive securing devices such as spikes (not shown). The securing bolts 19 pass transversely through the vertical portion 4, of the flange 2, of the chair 1, and also through the webs of the rails 12, and the upper portions of the blocks 15, and are held in proper position by means of the nuts 20, which are screw-threaded upon the ends of the said bolts, and bear against the outer side of the said blocks 15. The upper portions of the blocks 15 are provided with the strengthening webs 21, which are converged toward each other and toward the rails 12.

In assembling the parts, the end portions of the chair 1 are placed upon the end portions of adjacent ties, and the sections 6 of the said chair 1 are located over the outer extremities of the ties, while the intermediate portion of the chair 1 bridges the space between the said ties. When weight is applied to the chair 1, the serrations or shoulders 5 are embedded in the material of which the ties are composed, and also the said serrations or shoulders or the portions thereof which occur between the ties are embedded into the ballast or other material going to make up the road-bed.

The track-rails 12 are placed upon the chair 1, in the manner as shown and described, and the parts are assembled as indicated, and when so positioned the parts are held in interlocked position by the securing devices which pass transversely through the opening 16, in the block 15, and the registering opening in the section 6, of the chair 1. Consequently, should any of the bolts 13 or 19 part or be broken in consequence of a derailment or other accident, the parts of the rail-joint cannot separate so long as the securing devices are located in the recesses above mentioned. This is due to the fact that the blocks 15 cannot move laterally away from the rails 12, so long as the bases of the said blocks are under the flanges 7, located at the outer ends of the sections 6, of the chair 1; and, by reason of the fact that the said securing devices pass through the registering recesses 16, provided in the said blocks, the said blocks cannot move laterally with relation to the track rails 12. As the chamfered surfaces 17 of the blocks 15 overlap the beveled ends 11, of the fish plate 9, the said fish-plate cannot move laterally away from the track rails 12, and the said fish-plate 9 is retained against longitudinal movement with relation to the chair 1 by reason of the wedge portion 10, which fits snugly within the recess 8 provided in the upper surface of the said chair 1. By reason of the fact that the said blocks 15 are strengthened by the webs 21, the said blocks are not liable to be broken should they be encountered by the wheels of a derailed car or other object moving along the track.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A rail joint comprising a chair adapted to rest at its end portions upon the ties of the track and bridging the space between the said ties, said chair having at its edge a flange adapted to bear against the sides of the track-rails, a fish-plate adapted to bear against the opposite sides of the track rails and having a wedge shaped portion adapted to enter a recess provided in said chair, and blocks mounted upon the chair

and having chamfered surfaces adapted to bear against beveled ends provided at the extremities of the fish-plate, and securing devices passing transversely through the said blocks and said chair.

2. A rail joint comprising a chair provided at one edge with a flange adapted to bear against the sides of the track rails, the said chair being provided intermediate its ends with a recess, a fish plate adapted to bear against the opposite sides of the track rail and having a wedge portion fitting into said recess in the chair, and means secured to the chair at the ends thereof and engaging with the ends of the fish plate for holding the same in place against the rail and fixed with relation to the chair.

3. A rail joint comprising a chair provided at one edge with a flange adapted to bear against the sides of rails, the said chair being provided with a recess intermediate of its ends, a fish plate adapted to bear against the other sides of the track rails and

having a wedge portion fitting in the said recess in the chair, and fish plate securing blocks carried at the ends of the chair.

4. A rail joint comprising a chair provided at one edge with a flange adapted to bear against track rails to be coupled, the said chair being provided intermediate of its ends with a recess, a fish plate adapted for disposal against the opposite side of the said rail and provided with a portion fitting in the recess, the ends of the fish plate being beveled, and blocks secured upon the chair one at each end thereof and engaging with the beveled ends of the fish plate to hold the same against the rails.

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

GEORGE FERGUSON.

Witnesses:

J. WILLIE HALL,
L. P. BRADLEY.