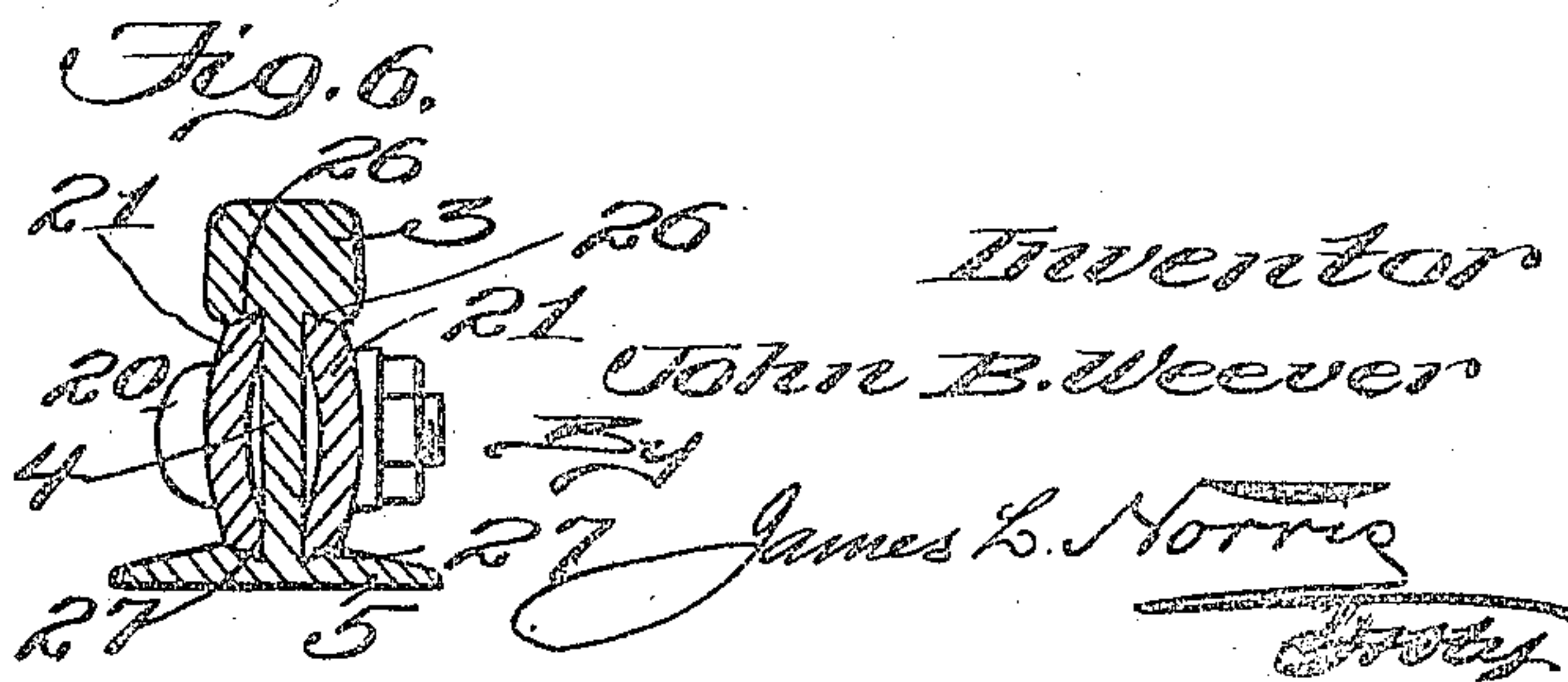
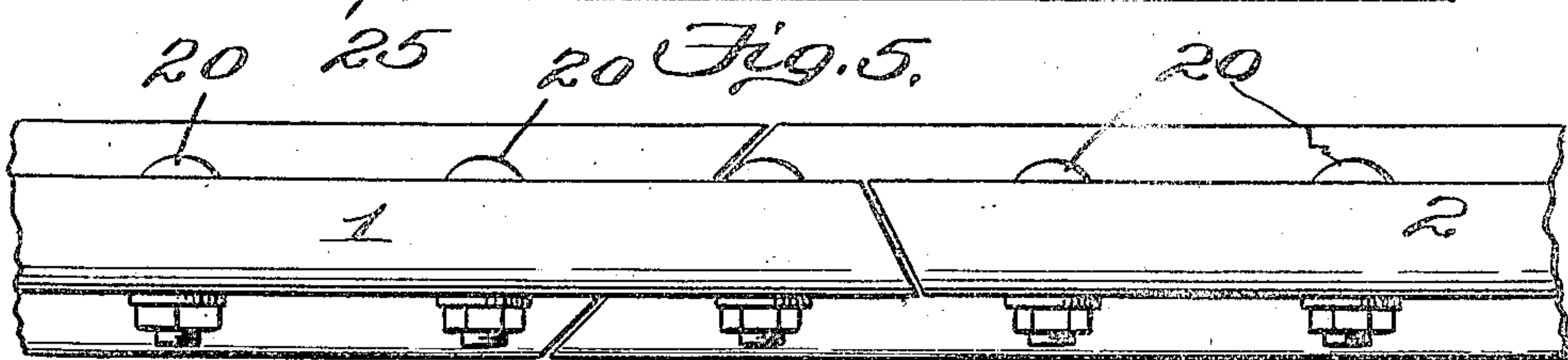
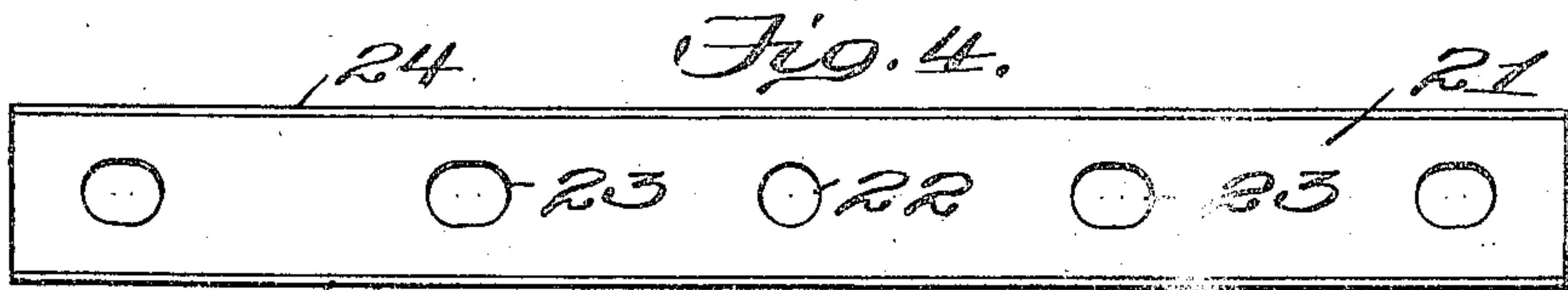
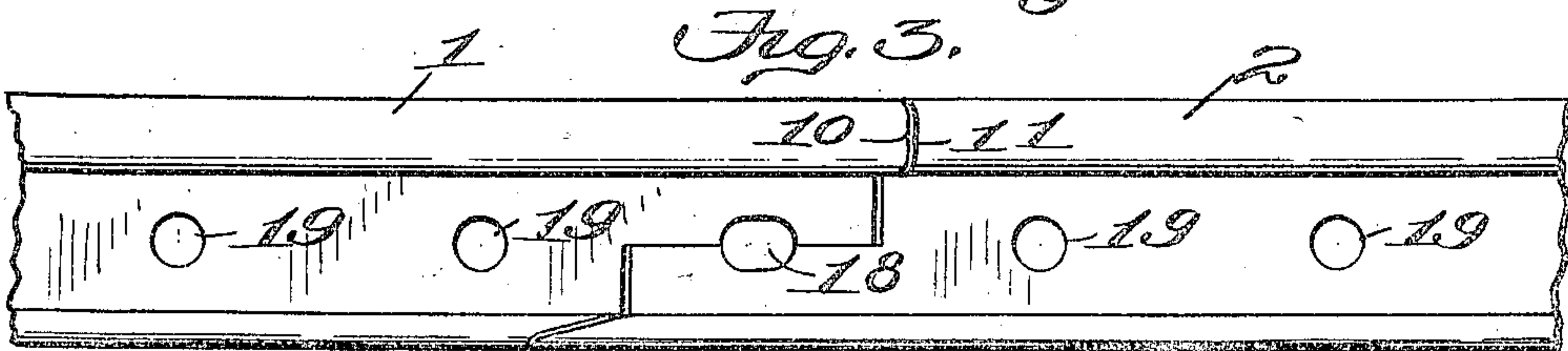
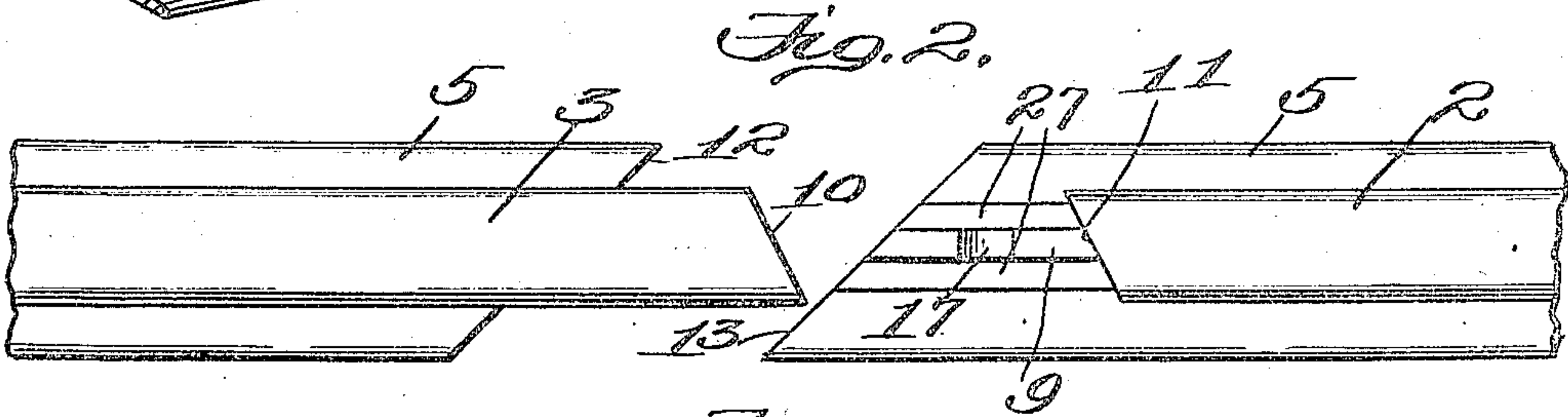
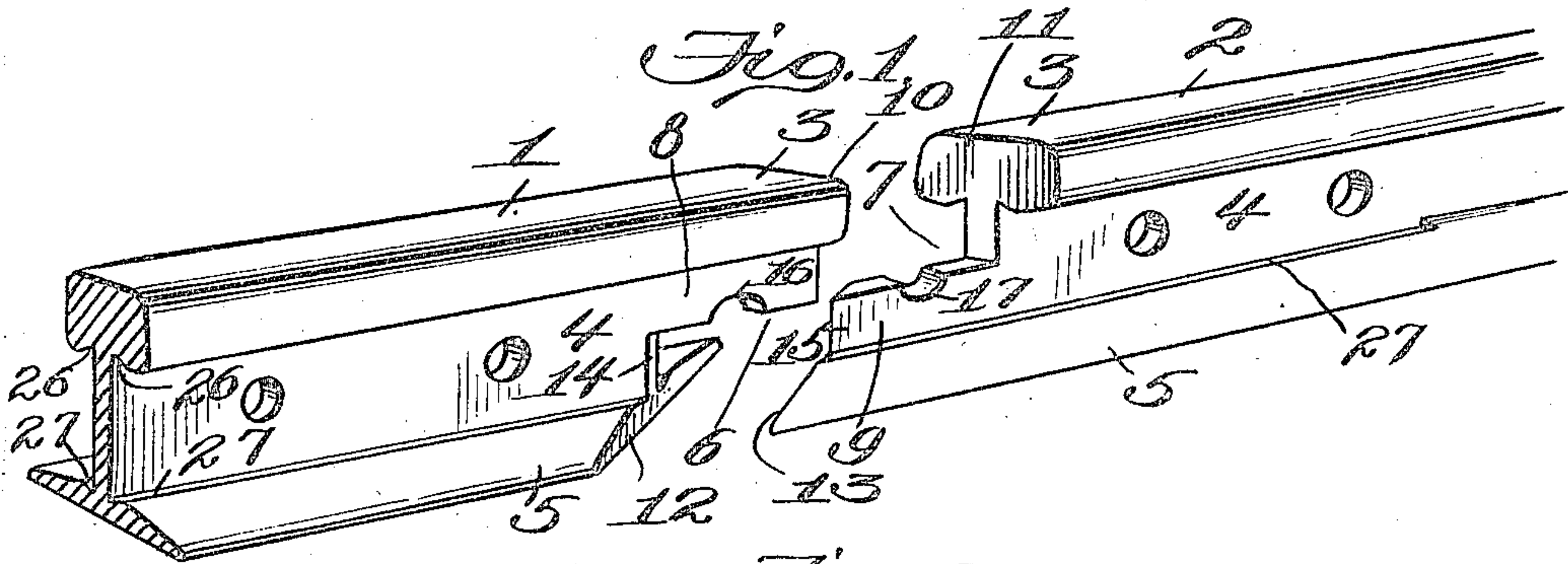


J. B. WEEVER.
RAIL JOINT.
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922,224.

Patented May 18, 1909.



Witnesses:

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JOHN B. WEEVER, OF EVANSVILLE, INDIANA.

RAIL-JOINT.

No. 922,224.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN B. WEEVER, a citizen of the United States, residing at Evansville, in the county of Vanderburg and State of Indiana, have invented new and useful Improvements in Rail-Joints, of which the following is a specification.

This invention relates to rail joints of that type in which the associated rail ends are cut off at oblique angles and wherein also the abutting terminals of the rail heads are likewise obliquely spliced to reduce the noise and ease the movement of car wheels thereover and to obviate wear on the joint by "pounding" and wear of the ends of the rails.

The most essential feature of the joint embodying the features of the invention is that the terminals of the flange portions of the rails in their conterminous relation are situated at a distance from the adjacent ends of the head portions of the rails so as to form a perfect splice joint and avoid direct vertical alignment of the joint between the head portions of the rails with the joint between the flange terminals of the rails and thereby prevent an entire break perpendicularly through the rails at any point and with the result that the joint will be greatly strengthened and adapted to bear imposed weight without liability of the least loose movement. The flange terminals and head terminals of the rails are cut through at opposing oblique angles in addition to the location of the joint between the head terminals, as above noted, and thus produce a stronger resistance to lateral motion or movement of the rail terminals. The angle through the lower half of each rail web and flange is more acute than the angle of the joint formed between the adjacent ends of the rail heads so that the flange may cross the entire width of a tie and pass at all points across the grain of the wood instead of with the grain, giving the flange terminals a more positive support for the superincumbent weight, and preventing splitting of the ends of the ties.

Other secondary structural advantages will be hereinafter more fully specified.

In the drawings: Figure 1 is a perspective view of rail terminals shown separated and embodying the features of the invention. Fig. 2 is a top plan view of the rail terminals or extremities shown separated. Fig. 3 illustrates a side elevation of the assembled rail terminals or extremities as they appear before the fish plates are applied. Fig. 4 is a

detail elevation of one of the fish plates. Fig. 5 is a top plan view of the complete joint. Fig. 6 is a cross-sectional view through the complete joint and particularly showing the mode of assembling the fish plates.

Similar characters of reference are employed to indicate corresponding parts in the several views.

The numerals 1 and 2 designate rail sections or extremities of usual form and having heads 3, webs 4, and base flanges 5. The section or extremity 1 is undercut as at 6 downwardly from about the longitudinal center of the web 4 through the base flange 5, and the section 2 is reversely cut upwardly as at 7 proportionately to the undercut 6, or so that the webs of the two rail extremities when assembled will unitedly have a vertical extent equal to the uncut portion of the web 4 of each rail. By this means an elongated horizontal seat joint portion is provided, the upper reduced part 8 of one web bearing on the lower reduced part 9 of the contiguous web. The ends 10 and 11 of the heads of the rails are cut through at an oblique angle and the base flanges 5 have their ends 12 and 13 likewise cut at oblique angles reverse to and more acute than the angles of the head ends. The rear vertical wall 14 of the undercut 6 of the one rail web 4 is also cut through at an oblique angle exactly coincident with the angle of the end 12 of the adjacent flange 5 and the advance wall 15 of the upwardly opening cut 7 of the other rail extremity is also beveled or has the same oblique angle as the adjacent end 13 of the base flange 5. Extending centrally through the reduced web extremities 8 and 9 are semi-oval recesses 16 and 17 which, when united, or when the reduced webs 8 and 9 are operatively assembled, provide an oval opening 18, as shown by Fig. 3. The webs 4 also have other circular openings 19 extending therethrough and in longitudinal alinement with the opening 18. These openings 18 and 19 are adapted to receive bolts and nut 20 of usual form, as shown by Figs. 5 and 6.

Fish plates having a certain amount of inherent resiliency are used in connection with the joint and designated by the numeral 21. These fish plates are preferably slid into place and engaged by the bolts 20, each plate having a central circular opening 22 and a plurality of oval openings or slots 23 to re-

spectively coincide with the openings 18 and 19. It will be understood that the openings are shaped in the manner specified to compensate for creeping or expansion and contraction of the rails, and in assembling the terminals of the rails having the contours explained the several vertical edges or surfaces will not be in direct contact, but held sufficiently spaced to obviate the least tendency of buckling of the joint portions of the rail terminals. The bolts extending through the webs 4 and engaging the circular openings 19 and the oval or elongated slots 23 will move with the rail sections under expansion and contraction stress, but the bolt passing through the circular openings 22 of the fish plates and the elongated or oval openings 18 at the center of the joint will be moved only when applied or withdrawn, as the portions of the joint shift or move relatively thereto owing to the elongation or oval contour of the opening 18.

As an incidental feature of construction conducive to the reliable association of the fish plates with the opposite sides of the rail sections, the upper and lower edges of each fish plate are formed with reverse bevels 24 and 25 to engage correspondingly beveled grooves 26 and 27 respectively formed in the under portion of each head 3 and in the flange 5 close to the web 4 or at the point of intersection of the web with the flange. The fish plates are also slightly bowed as shown by Fig. 6, and when slid into place and engaged by the bolts 20 will more efficiently perform their desired functions.

It will be understood that the fish plates may be removed and the engaging ends of the rail sections separated for repair purposes, but owing to the particular construction of the ends of the rail sections and especially the angular cut of the flange ends, wear of the ties will be materially reduced. The single bolt passing through the center of the joint operates to keep the fish plates well tightened immediately at the joint. Furthermore, the grooves 26 and 27 to receive the fish plates are just long enough to allow lateral displacement of each plate and to permit the fish plate to slide in one direction only far enough to clear the joint.

Although there may be a slight increase in the first cost of making rails embodying the improved joint hereinbefore explained, there is a great saving in labor and repair work as compared to ordinary rail joints and a marked reduction of wear on rail ends by pounding and on the rolling stock, and accidents are less liable to occur in view of the positive associated relation of the parts of

the joint and the resistance to lateral displacement as well as depression. While the particular form of fish plate shown and hereinbefore referred to is preferable, it will be understood that any fish plate may be used and the number of bolts and bolt openings will be varied in accordance with the length of the plates employed.

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

1. A rail joint having the ends of the rail sections and including the rail heads and flanges cut off obliquely at reverse angles and the adjacent portions of the webs longitudinally cut and removed respectively downwardly through the end of one section and upwardly through the end of the opposite section to dispose the contiguous angular ends of the heads of the rail sections out of vertical alinement in relation to the adjacent angular ends of the flanges of the sections.

2. A rail joint comprising rail sections having the ends of the heads and of the base flanges cut off obliquely at reverse angles and the adjacent portions of the webs longitudinally cut and reversely removed, the joint between the head portions of the rail sections being at a distance from and out of vertical alinement with relation to the joint between the ends of the flanges of the sections.

3. A rail joint comprising rail sections having the ends of the heads and base flanges cut off obliquely at reverse angles and the webs longitudinally cut and reversely removed so that the cut portion of one web will project over the cut portion of the remaining web, the angle of the joint between the base flanges being longer than that between the heads.

4. A rail joint comprising rail sections having contiguous ends cut off obliquely and the joint between the heads at an angle reverse to the joint between the base flanges, the webs of the adjacent rail ends being removed by longitudinally cutting the same and forming downwardly and upwardly opening seats in the two ends of the rail sections, fish plates applied to opposite sides of the rail sections against the webs, and bolts projecting through the fish plates and webs, one of the bolts extending through the center of the joint and the parts of the latter movable on the said bolt.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN B. WEEVER.

Witnesses:

THOS W. LINDSAY,
JOHN HERR, Sr.