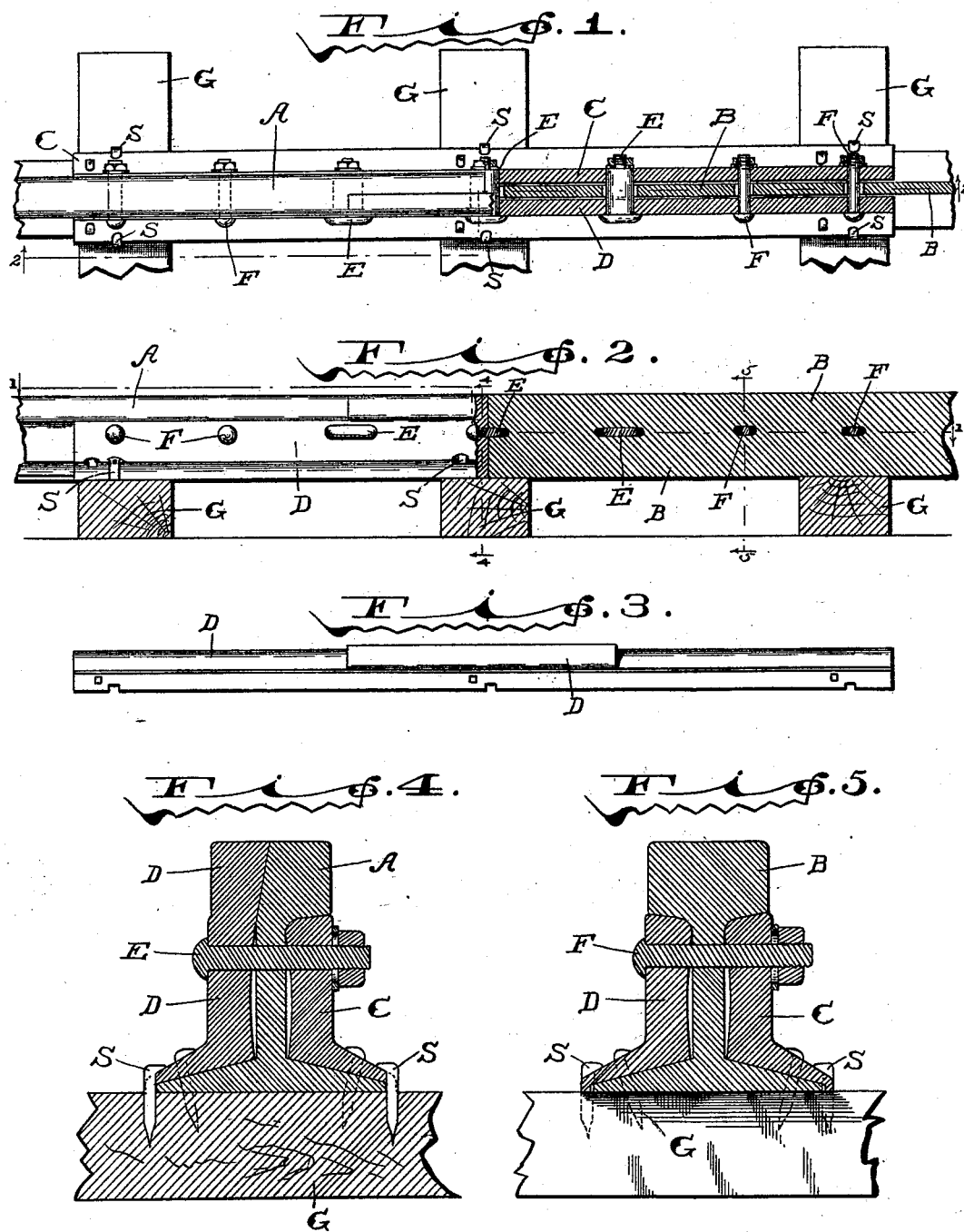


(No Model.)

C. B. HERMAN.  
RAILROAD RAIL JOINT.

No. 523,837.

Patented July 31, 1894.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHRISTOPHER B. HERMAN, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF  
ONE-HALF TO JOHN W. BRADSHAW, OF SAME PLACE.

## RAILROAD-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 523,837, dated July 31, 1894.

Application filed September 26, 1893. Serial No. 486,514. (No model.)

*To all whom it may concern:*

Be it known that I, CHRISTOPHER B. HERMAN, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Railroad-Rail Joints, of which the following is a specification.

A defect in railroad tracks is that the rails where they come together at the joints are usually more or less yielding, and the corners become battered and worn under use, causing a roughness, which is disagreeable to passengers and detrimental to the rolling stock and the rails themselves. The object of my said invention is to produce a railroad rail joint of such a construction that there shall be no space between the ends of the rails of a character to cause any shock as the wheels pass over it, and which shall be strong and rigid and capable of continuously enduring the strain of the heaviest traffic.

A railroad rail joint embodying my said invention will be first fully described and the novel features thereof then pointed out in the claims.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a view partially in top plan and partially in horizontal section of two rail ends and the fish-plates, and other parts forming a railroad rail joint, the same being constructed and secured together in accordance with my invention; Fig. 2, a view partially in side elevation and partly in central vertical section of the same; Fig. 3, a top or plan view of that one of the fish-plates which is of a peculiar construction, and Figs. 4 and 5 transverse sectional views, on an enlarged scale, on the dotted lines 4 4 and 5 5.

In said drawings the portions marked A and B are fragments of two railroad rails; C and D the two fish-plates; E and F the two varieties of bolts by which the fish-plates and rails are united together, and G the cross-ties or sleepers upon which the rails are secured when building a railroad track.

The rails A and B, generally speaking, are or may be of the ordinary and well known form, except that one-half the head of each rail is cut away for a certain distance back

from its end, leaving a space to be filled by a bridge piece on one of the fish-plates, as will be presently described. My invention is designed especially for the heaviest class of construction (although of course, it may be used with rails of any size), and, therefore, I have shown the rails, as well as the other parts, of the shape usually employed in very heavy roads.

The fish-plate C is of substantially the ordinary form and construction, except that, to correspond with the general construction, it is heavier and longer than usual. It is shown located upon the outer side of the rail and as having the nuts of the bolts in contact therewith. It may, of course, be transposed in position with the fish-plate D, by making obvious changes.

The fish-plate D is like the fish-plate C, except that upon its upper edge, in the center, is formed a portion of a shape and size corresponding to the portion of the heads of the rails which is cut away, and adapted to fit in the space in the heads of the rails left by said cutting away, so that when the parts are assembled the structure will be uniform as a whole. This portion bridges the usual rail joint, so that there is no joint which extends entirely across the rail at any point, there being instead three half joints, one at the center, and one at each end of this bridging portion.

The bolts E are flat bolts of considerable width, and are placed in elongated holes directly underneath the three joint places in the structure, so that they extend out into the solid portion of the rails on either side of said joints, bridging said joints completely, and preventing any looseness or vertical movement of them. The ends of these bolts which extend through to the outside of the fish-plate C are the same as ordinary bolt ends, and are screw threaded, and carry nuts, as is usual.

The bolts F are bolts of the ordinary form, and pass through the fish-plates and the webs of the rails, in the ordinary and well known manner. To contribute to the stiffness and rigidity of the structure, I prefer that these bolts and the holes through which they pass should be fitted nicely as to vertical diameter, while they are, of course, elongated lengthwise the rails, as is usual, to provide for ex-

pansion and contraction. Being thus accurately fitted vertically, any strain coming upon the rails vertically, comes directly upon these bolts at once, and is thus transmitted to the fish-plates, and the usual play or looseness between these parts, is thus avoided.

The cross-ties or sleepers G are or may be of the usual and well known form, and the rails and fish-plates are spiked throughout firmly, as is usual, by spikes S. Other similar spikes may be driven down through holes in the fish-plates and in the flanges of the rails, if desired, and thus any possible outward movement of the fish-plates down the inclination of the tops of the feet of the rails is prevented.

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

1. The combination of railway rails, fish-plates, and flat bolts passing through said rails and fish-plates at the points where the rails come together, and extending each way

from said points of union, thereby bridging and directly supporting the joints, substantially as set forth.

2. The combination of the rails A and B the heads whereof are cut away at the ends, as shown, the ordinary fish-plate C, the fish-plate D having a bridge piece formed thereon adapted to fit into the recess at the ends of the rails formed by cutting away their heads, as stated, flat bolts E passing through the rails and fish-plates at the three joint points, and bridging and supporting said joints, and the ordinary bolts F, all substantially as shown and described.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 23d day of September, A. D. 1893.

CHRISTOPHER B. HERMAN. [L. s.]

Witnesses:

CHESTER BRADFORD,  
JAMES A. WALSH.