

UNITED STATES PATENT OFFICE.

WILLIAM H. CONNELL, OF WILMINGTON, DELAWARE.

FISH-PLATE.

SPECIFICATION forming part of Letters Patent No. 652,248, dated June 26, 1900.

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To all whom it may concern:

Be it known that I, WILLIAM H. CONNELL, a citizen of the United States of America, residing in Wilmington, in the county of New Castle, in the State of Delaware, have invented a certain new and useful Improvement in Fish-Plates, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part thereof.

My invention relates to fish-plates, and has for its object to provide a fish-plate by which a firm and strong union can be made between adjoining railway-rails.

The nature of my improvement will be best understood as described in connection with the drawings, in which it is illustrated, and in which—

Figure 1 is a view of a rail-joint formed with my fish-plates, and Fig. 2 a side elevation thereof.

A A indicate ties upon which the fish-plates rest. Their top surfaces, corresponding to those of the other ties upon which the rails are directly supported, are indicated at *a*, and, as shown, they are cut away or recessed at *a'* to an extent corresponding to that to which the fish-plates project below the rails.

B B indicate the rails.

C C indicate my new fish-plates, which are preferably formed of a rolled section of iron or steel, having faces *C'* *C''*, adapted, as shown, to rest against the head and base of the rail, respectively. Outside of and below the face *C''* the fish-plate is recessed, as shown at *C'''*, to clear the outer edge of the bottom flange, and an inwardly-extending bottom flange *C''''* is formed to extend inward beneath the base of the rail and form a broad support for the joint, said flange resting on the ties, as shown, and extending to or so nearly to a perpendicular line drawn from the face *C'* that strains pressing down on said face have little or no tendency to tilt the fish-plate. Preferably, also, I form an outwardly-extending flange *C'''''* at the base of the fish-plate, so as, in connection with flange *C''''*, to give it a broad firm seat on the ties.

D D, &c., indicate the bolts used to secure the fish-plates to the rails and passing through the bolt-holes *C''''''*, D' D' being the nuts.

E E, &c., are spikes used to secure the fish-

plates to the ties A and preferably driven into notches in the flange *C''''*, as shown.

I form my fish-plates with their rail-abutting faces *C'* and *C''* connected with each other and with a substantially-vertical web *C''''* by limbs or arms *C'''* *C''''*, angling to each other like the limbs of the letter A, and I form the bolt-holes *C''''''* through the web at the apex of the A, as shown, so that the parts when assembled assume the "A-truss" form, as shown in Fig. 1, and I find it advantageous to so proportion the metal in the fish-plates as to give them a resistance to a bending strain equal to that of the rail-section and to give them the rail-like section shown as both simple for construction and as best disposing of the necessary metal.

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

1. A fish-plate having a web, as *C''''* substantially vertical from top to bottom, bearing-faces *C'* *C''* adapted to bear against the head and bottom flanges of the rail, and a base, as *C'''''*, extending inward from the bottom of the vertical web and adapted to extend beneath the bottom flange of the rail and serve as a support for the joint.

2. A fish-plate having a web, as *C''''* substantially vertical from top to bottom, bearing-faces *C'* *C''* adapted to bear against the head and bottom flanges of the rail, and a base as *C'''''* extending inwardly and outwardly from the bottom of the vertical web and adapted to extend beneath and beyond the bottom flange of the rail and serve as a support for the joint.

3. A fish-plate having a substantially-vertical web, as *C''''*, bearing-faces *C'* *C''* adapted to bear against the head and bottom flanges of a rail, and a base extending inward from the bottom of the substantially-vertical web and adapted to extend beneath the bottom flange of the rail, and having its faces *C'* *C''* connected by arms *C'''* *C''''* springing at diverging angles from the web and bolt-holes formed through the web at the apex of the angle formed by said arms.

WM. H. CONNELL.

Witnesses:

CHAS. F. MYERS,
D. STEWART.