

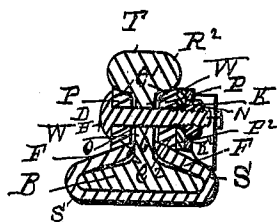
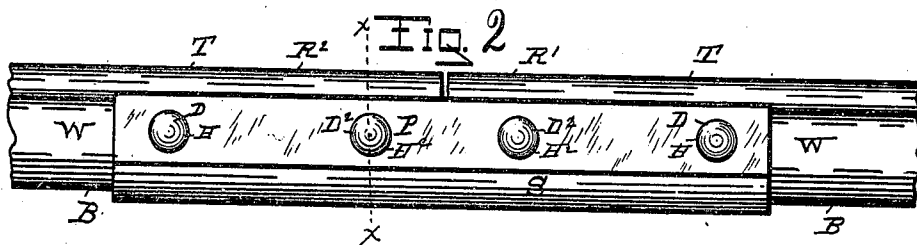
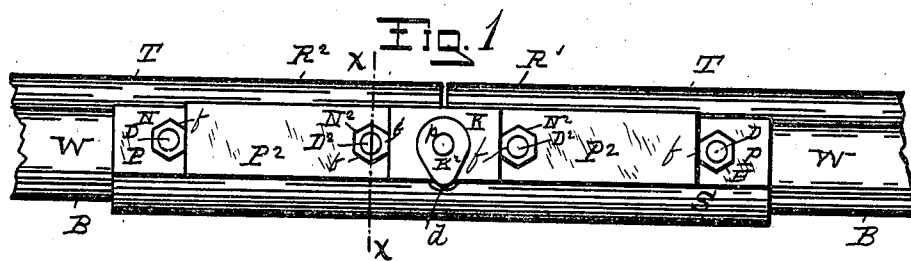
(No Model.)

G. W. EDDY.

FISH PLATE CONNECTION FOR RAIL JOINTS.

No. 463,419.

Patented Nov. 17, 1891.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE W. EDDY, OF WATERFORD, NEW YORK.

FISH-PLATE CONNECTION FOR RAIL-JOINTS.

SPECIFICATION forming part of Letters Patent No. 463,419, dated November 17, 1891.

Application filed January 25, 1889; Serial No. 297,502. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. EDDY, of the village of Waterford, county of Saratoga, State of New York, have invented new and useful Improvements in Fish-Plate Connections for Rail-Joints, of which the following is a specification.

My invention relates to that class of devices which are used to make a connection between the abutting ends of the rails, producing a railway-track; and it is the object and purpose of my invention to give to such a connection by construction an elastic condition in a direction that will not weaken its binding strength.

Accompanying this specification to form a part of it there is a sheet of drawings containing four figures illustrating my invention with the same designation of parts by letter-reference used in all of them.

Of the illustrations, Figure 1 shows a side elevation of a rail-joint made by the use of my improvement. Fig. 2 shows a side-elevation of the same parts that are shown at Fig. 1, but with the opposite sides of the parts turned toward the sight. Fig. 3 shows a section taken on the lines *x x* of Fig. 1 and 2. Fig. 4 shows a section of the shoe, illustrated as separated from the connection with the position of the side flanges of the shoe when sprung down by the application of the fish-plate proper indicated by a dotted line.

The several parts of the mechanism thus illustrated are designated by letters of reference, and the functions of the parts are described as follows:

The letters *R'* *R*² designate the rail ends where they abut to make the connection.

The letter *T* designates the tread of the rail, *W* the waists thereof, and *B* the base of the rails, all of which are of the usual and ordinary form of construction.

The letter *S* designates the shoe, having a form that is adapted to receive the base of the rail ends, and this shoe is constructed with side flanges *F*, that are made to curve up and around the laterally-extended sides of the rail-base to be in contact with the waists thereof, but not in contact with the upper surfaces of the base where it laterally subtends the rail-waists at each side of the rails.

The letters *P* designate the fish-plates proper,

of which there is one at each side of the joint, and each of which are made with a top inwardly and downwardly beveled edge *e'*, and an upwardly and inwardly beveled bottom edge *e*², the top beveled edge of which is adapted to engage with the under surface of the overhanging tread and the bottom beveled edge to engage with the shoe-flange *F* at each side of the connection.

The letters *D* designate bolts having heads *H* and threaded ends provided with nuts *N*, and *D*² bolts having headed ends *H*² and threaded opposite ends provided with nuts *N*², said nuts *N*² as well as the nuts *N* having angular faces *f*.

The letter *P*² designates a supplemental fish-plate, made shorter than the fish-plate proper and adapted to be applied exteriorly to the latter between the nuts *N* on the bolts *D*².

The letter *K* designates a key-plate that is attached to the supplemental fish-plate *P*² on the outer face of the latter, and the letter *K*² designates a key that is pivoted to the key-plate at *p*. Both the supplemental fish-plate and the key-plate and key are arranged on that side of the joint at which the nuts *N* and *N*² are used. The key *K*² is adapted to be turned down on its pivotal connection, so as to rigidly engage with the side of the shoe where turned up and over the side of the base to form the flange *F* and rest within the depression *d* formed therein.

The parts thus constructed are connected as follows: The rail ends are entered through the opposite ends of the shoe *S*, so as to bring them as near together as is desirable when the bolts *D* are passed through the holes *O* made in the rail-waists and coincidently in the fish-plate proper with the nuts *N* of the bolts screwed up so as to bring the fish-plates proper within the rail-waists at each side, and so that the lower edge *e*² of each of the said plates will engage with the upper surface of the inturned edge of one of the flanges *F*, and so as to crowd the latter (against its recoil force) toward the top surface of the sides of the base. After this is done the bolts *D*² are passed through the holes *O* made in the rail-waists, the fish-plate proper, and the supplemental fish-plate *P*², when the nuts *N*² are screwed on, so as firmly to connect the supple-

mental fish-plate to the fish-plate proper where adjacent and the rails to the two latter, with the ends of the supplemental fish-plate abutting against the angular faces *f* of the nuts 5 *N*² when the key-plate *K* and the key *K*² are then applied to keep the latter from turning. After the parts have been arranged as thus described, then the key *K*² is turned down so as to engage with the shoe where passing 10 around the sides of the base. As thus constructed and arranged the connection made between the shoe, the fish-plate proper, and the rails as occurring between the engaging lower edge of the fish-plate proper and the 15 yielding edges of the flanges made upon the shoe side is in a slight degree elastic when pressure is applied to the rail-treads and sufficiently so to prevent the battering of the rail ends, which will occur where the connection 20 is perfectly rigid.

The key *K*², when turned down to engage with the shoe where passing around the side of the base, secures the parts as against the effect of lateral strain, but admits of the vertical adjustment of the parts where occurring 25 between the slightly elastic engagement of the fish-plates proper with the shoe-flanges without loosening. The shoe *S* is made of elastic

metal to adapt it for the purposes before described. 30

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

In a fish-plate connection for rail-joints, the combination of the shoe *S*, made with the 35 elastic flanges *F*, the fish-plate proper *P* *P*, made with bolt-passages in lateral alignment with bolt-passages made in the rail ends, and each having the upper beveled edge *e*' and the lower beveled edge *e*² and arranged within 40 the opposite sides of the rail-waists, the supplemental fish-plate *P*², made with bolt-passages in lateral alignment with bolt-passages in the rails and constructed with the key-plate *K* and pivoted key *K*², and the bolts 45 *D* *D*², having heads *H* and provided with nuts and threaded ends, substantially in the manner as and for the purposes set forth.

Signed at the city of Troy this 8th day of November, 1888, and in the presence of the 50 two witnesses whose names are hereto written.

GEORGE W. EDDY.

Witnesses:

N. E. HAGAN,

CHARLES S. BRINTNALL.