(No Model.)

P. PEARSON & J. ROBINSON.

RAILWAY RAIL JOINT.

No. 494,223. Patented Mar. 28, 1893.

Fig. 1.

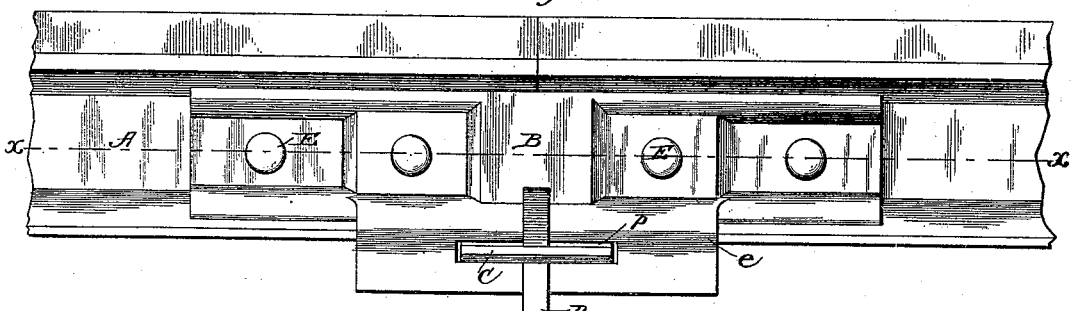


Fig. 2.

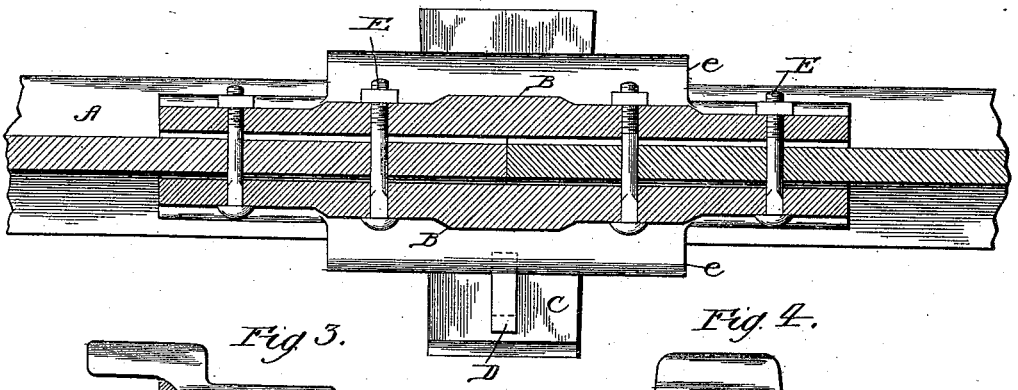


Fig. 3.

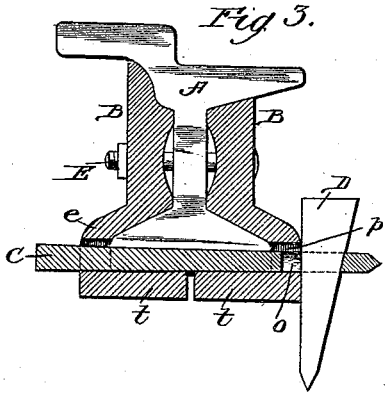


Fig. 4.

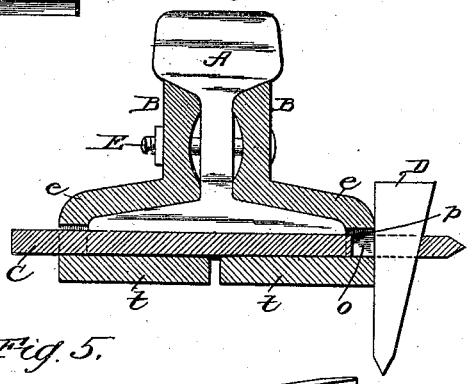
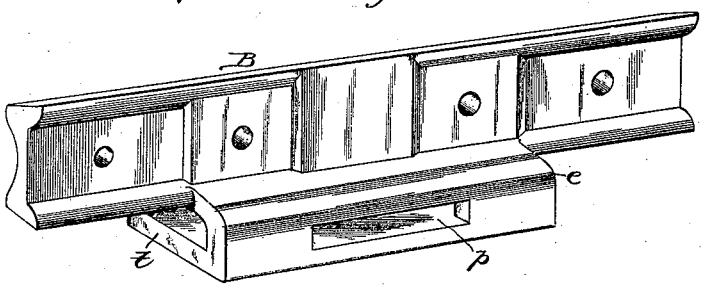


Fig. 5.



Witnesses;
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UNITED STATES PATENT OFFICE.

PAUL PEARSON AND JAMES ROBINSON, OF CHICAGO, ILLINOIS.

RAILWAY-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 494,223, dated March 28, 1893.

Application filed September 21, 1892. Serial No. 446,452. (No model.)

To all whom it may concern:

Be it known that we, PAUL PEARSON and JAMES ROBINSON, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Railway-Rail Joints; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in railway rail-joints of the kind in which fish plates are attached to opposite sides of the meeting ends of the rails, and adapted to give the required stability and alignment thereto. We attain these objects in a simple and desirable manner by the means set forth in the following specification and claims, reference being had to the accompanying drawings, in which

Figure 1 is a side elevation of our improved joint-plate and the ends of the rails. Fig. 2 is a longitudinal section on the line *x. x.* of Fig. 1. Fig. 3 is a transverse section at the ends of the rails. Fig. 4 shows the joint plates applied to the ordinary T rail. Fig. 5 is a perspective view of our improved joint plate.

Referring to the drawings, A designates the rails, B the joint plates, the web or body of which is adapted to fit between the head and bottom flange of the rail and to form a solid connection or bearing therewith. The said web or body of said plate has a uniform thickness along its bearing edges, but a reduced thickness between the edges for a portion of its length, being thinnest at the ends, the reduction being made by means of shoulders or steps, the several thicknesses having parallel surfaces, which are perforated for the securing bolts and adapted to form level seats for the heads and nuts of said bolts, as shown in Fig. 2, giving a paneled appearance to the outside of the plate, and the greatest amount of metal at the center of the joint, which is a desirable feature. The said joint plate has an approximately horizontal projection *e* formed integral upon its lower edge, and which extends for a considerable portion of the length of said plate upon either side of the center. Said projection is bent downward past the edge of the rail fitting thereto and is again bent up parallel with the bottom of the rail, forming a flange *t*, which extends horizontally underneath the rail, but not in contact therewith. The said projection *e*, of said joint plate has a rectangular perforation *p* through its downward bent portion. The upper face of said perforation is slightly above the bottom line of the rail, and the lower face of said perforation on a plane with the upper side of the flange *t*, underneath the rail, the space between the flange and rail being somewhat less than the width of the perforation.

C, is a broad wedge plate adapted to be driven or forced into said perforation *p* and between the flange *t*, and bottom of the rails. Said wedge plate has a slot *o*, through the thin end, into which a wedge key D, is inserted. The said wedge key is adapted to draw the said wedge plate into a solid bearing between the flanges and bottom of the rails, and at the same time to bring the joint plates firmly against the bottom edges of the rails.

E, are bolts which pass through the joint plates and web of the rails, and which are adapted to bolt the whole solidly together and in the usual manner.

In the drawings we have shown a key driven through a slot in the end of the broad wedge plate for securing the wedge plate and binding the several parts together, but it is evident that a screw formed upon the small end of the wedge plate with a nut and washer would accomplish the same purpose. We do not, therefore, desire to limit ourselves to the exact construction or proportion of the parts as here shown. From the foregoing description it will be seen that a rail-joint thus formed is adapted to give great lateral and vertical stiffness and support to the ends of the rails, and in the most economical manner.

Having described our invention, we claim—

1. The combination with the rails of the fish plate B, the sectional area of which is reduced from the center to the ends by means of successive steps or shoulders adapted to form even or level seats for the heads and nuts of the securing bolts, and provided with the lateral projection *e* and the perforated downward bent portion formed integral with said plate and adapted for the insertion of the wedge plate C substantially as and for the purpose specified.

2. The combination with the rails of the fish plate B provided with the successive steps or shoulders formed thereon and the lateral extension *e* and perforated downward bent portion adapted for the insertion of the wedge plate C and the upward bent horizontal flange *t* formed integral with said fish plate and the bolts E adapted to secure said fish plate to the rails substantially as and for the purpose specified.

3. In a rail joint the combination with the rails of the fish plates provided with the successive steps or shoulders formed thereon and adapted to form even or level seats for the heads and nuts of the securing bolts, and provided with lateral extensions formed integral with said fish plates, and which are bent downward past the edges of the rails, and are bent up at a right angle thereto to form flanges which extend horizontally underneath the rails, said downward bent portions perforated for the insertion of a wedge plate and said wedge plate perforated for a taper key and adapted to be drawn to a solid bearing between said flanges and bottom of said rails by said taper key and the bolts adapted to bolt said fish plates firmly to said rails substantially as and for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

PAUL PEARSON.
JAMES ROBINSON.

Witnesses:
WALTER LEE,
IDA LIGIBLAD.