C. B. FOGLI.

RAIL JOINT.

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1,068,639.

Patented July 29, 1913.

Fig. 1.

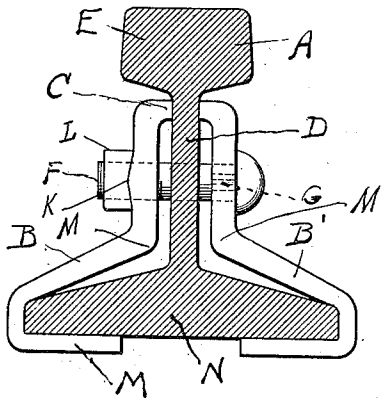


Fig. 2.

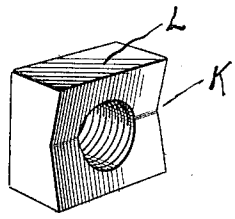


Fig. 3.

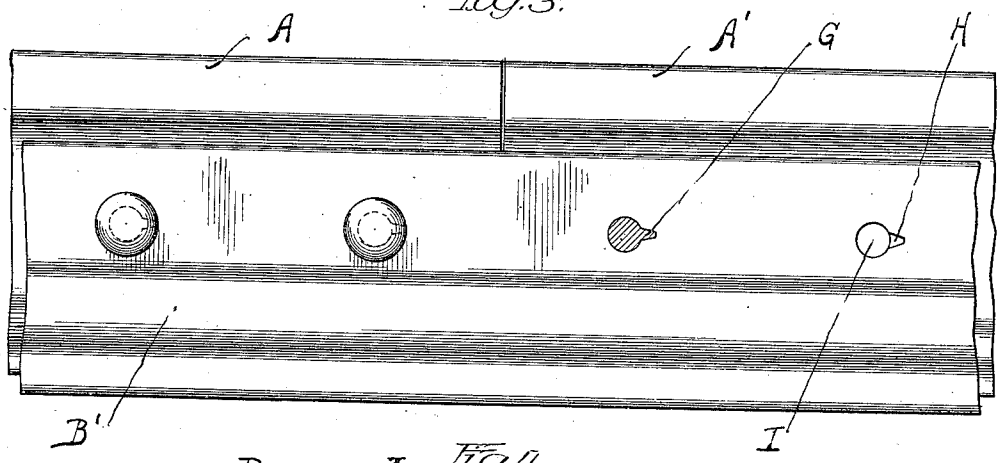
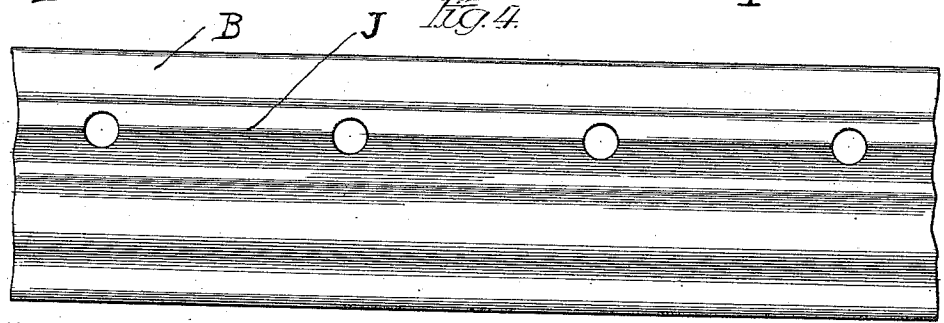


Fig. 4.



Witnesses:
Robert H. Weir
Arthur W. Cabon

Inventor:
Charles B. Fogli
by Lotz and Scheible Attys.

UNITED STATES PATENT OFFICE.

CHARLES B. FOGLI, OF CHICAGO, ILLINOIS.

RAIL-JOINT.

1,068,639. Specification of Letters Patent. Patented July 29, 1913.

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To all whom it may concern:

Be it known that I, CHARLES B. FOGLI, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Rail-Joints, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming part of this application.

My invention relates to rail joints and consists of a novel construction whereby the flexibility of the fish-plates themselves is utilized for locking the nuts on the bolts which fasten the fish-plates to the rails.

It has been customary heretofore to depend for the tightness of the parts comprising a rail joint upon but-locks or locking washers, but these have not proven to be reliable in practice, as the auxiliary locknuts themselves often work loose and many accidents have been caused by the resulting loosening of the joints.

The object of my invention is to produce a simple, cheap and effective rail-joint construction in which no auxiliary locking devices are needed upon the bolts which secure the fish-plates to the rails. I accomplish this object by the construction shown in the accompanying drawings, in which—

Figure 1 is a vertical section through the preferred embodiment of my invention. Fig. 2 is a perspective view of the nut used with the same. Fig. 3 is an elevation of the same embodiment with one bolt removed and another cut off right under the head. Fig. 4 is an elevation of the fish-plate used on the side of the rail opposite to that shown in Fig. 3.

In the drawings, A and A′ are rails held in the desired juxtaposition by fish-plates B and B′ engaging opposite sides of the rails. These fish-plates are preferably made of a spring steel and preferably have flat shoulders C bearing against the upper portion of the web D of the rail close to the head E.

F is a bolt extending through the rail and the fish-plates, this bolt being preferably locked against rotation by a fin G upon the shank of the bolt adjacent to its head, which fin enters a corresponding recess H at one side of the perforation I in the fish-plate B′. The other fish-plate B preferably has a ridge J rolled upon the same, this ridge being adapted to match a V-shaped groove K in the nut L of the bolt F. Both fish-plates are preferably made with flanges M adapted to hook under the flange N of the rail. Each fish-plate is arched away from the web of the rail between the shoulder C, which is above the bolt F, and the points at which it engages the rail below this bolt. When the nut L is being tightened upon the bolt F, the V-shaped groove in the nut will ride up the incline of the ridge J, thereby flexing the arched portion of the fish-plate toward the web D of the rail until the nut is turned so that the ridge J and the V-shaped notch in the base of nut are in alinement. Then the resiliency of the material of which the fish-plate is made will tend to cause this fish-plate to resume its original shape, in doing which it will press the ridged formation J firmly into the correspondingly shaped notch or recess in the base of the nut. Consequently, the resiliency of the fish-plate will lock the nut against rotation without requiring any auxiliary locking means.

In order that the fish plates may be efficiently resilient to an extent to enable the same to be clamped against the rails with sufficient firmness without shearing or distorting the interfitting V-shaped surfaces of the nut and one of said plates, the portions of said plates B and B′ lying above the flanges of rail are disposed at such an angle to the vertical flanges of said plates through which the bolts pass as to leave free spaces between the flanges of the rail and the overlying portions of the plates B and B′ so that said portions and the perforated flanges of said fish-plates are free to yield to the pressure exerted by said bolts. Thus said plates may bend at the elbows M in yielding to such pressure and are thereby rendered sufficiently elastic to be flexed to accommodate them to the rotation of the nuts without destroying the interfitting V-shaped surfaces.

I claim as my invention:

A rail joint construction comprising two fish plates adapted to be disposed on opposite sides of the rail and each comprising a part adapted to be disposed parallel with the rail and having perforations for the passage of bolts, a rib along the upper edge of said part adapted to engage the web of the rail, a flange at the lower edge of said part adapted to be disposed above the flange of the rail, and terminating in an underlapping flange affording a rail chair, said rib and said first-named flange of the fish plate coacting to provide a continuous angular

free space extending from said rib to the outer edge of the rail flange whereby said fish plate is rendered elastic and flexible, bolts adapted to pass through said perforations in said fish-plates and through perforations in the web of the rail for securing said fish plates to the latter; and coacting means on said fish plates and said bolts for preventing rotation of the latter relatively to said fish plates.

CHARLES B. FOGLI.

Witnesses:
ALBERT SCHEIBLE,
R. F. KOMPARE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."