(No Model.)

F. J. POWERS.

RAIL JOINT.

No. 346,826. Patented Aug. 3, 1886.

Fig. 1.

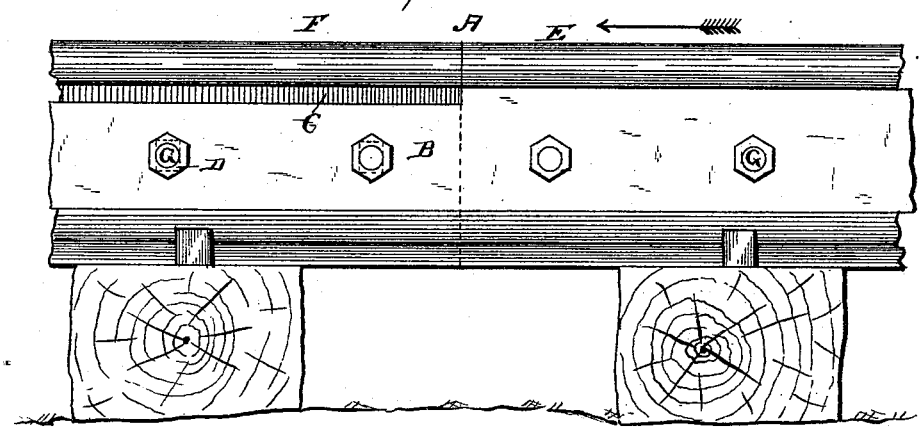
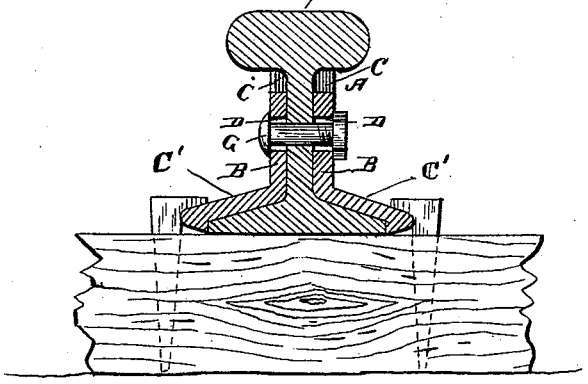


Fig. 2.



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UNITED STATES PATENT OFFICE.

FRANCIS JOSEPH POWERS, OF CRESSON, PENNSYLVANIA.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 346,826, dated August 3, 1886.

Application filed April 30, 1886. Serial No. 200,703. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS JOSEPH POWERS, a citizen of the United States, residing at Cresson, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Rail-Joints, of which the following is a specification.

My invention relates to an improvement in railroad-rail joints; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a rail-joint embodying my improvements. Fig. 2 is a transverse sectional view of the same.

This invention is adapted for use only on railroads employing a double track, and the object of my invention is to prevent the heads of the rails at the joints from being mashed and worn out by the pounding action of the wheels of passing trains.

A represents a railway-chair, composed of the fish-plates B, having the outwardly-extending bottom flanges, C, which rest upon the lower flanges of the rails. The upper sides of the fish-plates B are recessed, as at C, at one end, extending in the direction in which the trains move. Through the said fish-plates B are made transverse openings D.

E F represent the rails, which are secured between the fish-plates by means of transverse bolts G, which extend through the openings in the fish-plates and through corresponding openings in the shanks of the rails, thereby forming a rail-joint. One end of the chair rests on a cross-tie, *a*, and the other end of the chair rests on a cross-tie, *b*, the chair spanning and bridging the space between the said ties. The openings D in the fish-plates, through which the bolts pass to secure the end of the rail F, are made sufficiently large to permit the said bolts to be moved vertically therein. From this construction it will be understood that the upper edges of the fish-plates at one end bear against the under sides of the head of the rail E, but that the upper edges of the said fish-plates at the opposite end, being recessed, as at C, are normally at some distance below the lower sides of the head of the rail F.

The arrow shown in Fig. 1 indicates the direction in which the train is moving.

The operation of my invention is as follows: When the wheels of the train leave the rail E, they strike upon the upper side of the end of the rail F, and thereby force the latter downwardly until the under sides of its head bear against the bottoms of the recesses C, thus permitting the rail F to yield when the wheel strikes it, and preventing the end of the said rail from being mashed and broken in a comparatively short time by the pounding action of the wheels, which results when the rails are jointed inflexibly together in the ordinary way.

In the rail-joint commonly constructed the fish-plates are subjected to a severe vertical concussion at the joint between the rails, which frequently results in breaking the fish-plates at this point and throwing the train from the track.

My invention permits one end of the rail to move vertically under the action of the wheels, and thus prevents the severe concussion thereof from taking effect upon the fish-plates, as will be very readily understood.

Having thus described my invention, I claim—

1. The combination, with the rails E and F, of the fish-plates bearing on opposite sides of the meeting ends of the rails, the said fish-plates having the recesses C in their upper edges at one end, and the rail F being movable vertically, for the purpose set forth, substantially as described.

2. The combination, with the rigid rail E and the vertically-movable rail F, of the fish-plates secured to the said rail and having their upper sides recessed at one end, as at C, to permit vertical movement of the rail F, for the purpose set forth, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

FRANCIS JOSEPH POWERS.

Witnesses:
F. P. MOYER,
J. D. SNYDER.