

UNITED STATES PATENT OFFICE.

KOBY KOHN, OF LINCOLN, NEBRASKA.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 714,919, dated December 2, 1902.

Application filed February 25, 1902. Serial No. 95,598. (No model.)

To all whom it may concern:

Be it known that I, KOBY KOHN, a citizen of the United States, residing at Lincoln, Lancaster county, State of Nebraska, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification.

My invention relates to rail-joints, and has for its object to improve the construction thereof; and it consists in a rail-joint having the features of construction and arrangement of parts, substantially as hereinafter more particularly set forth.

Referring to the accompanying drawings, Figure 1 is a transverse vertical section showing a rail with the parts making the rail-joint in position. Fig. 2 is a perspective view of a fish-plate, and Fig. 3 is a perspective view of a modified form of fish-plate embodying my invention, and Fig. 4 is a cross-section showing a modification.

In my application, Serial No. 86,663, filed December 20, 1901, I have shown and broadly claimed an improved rail-joint construction, one of the distinguishing features of which includes a fish plate or plates having lateral wedge-like flanges, which are adapted to cooperate with flanges on the base-plate or support for the rail; and my present invention relates to the same general character of rail-joints and consists in improvements in the details of construction and arrangement of the parts.

My improved rail-joint is intended to be used in connection with any suitable rail, and, as shown, A represents an ordinary T-rail, having a head 1 with inclined or beveled under faces 2 2 and bottom flanges 3 3 with inclined upper faces, the bottom and head being connected by a web portion A'.

At the point where the adjacent ends of the two rails are joined it is usual to provide some sort of a base to support the ends of the rails, and in the present instance the base C is made up of two separate plates, as C' C², although, of course, my present improvements may be used with a base made up of a single plate, as illustrated in my prior application. These plates C' C² are each provided with a rib or upper extension 7, which extension

is bent laterally to form a flange 8, and this is preferably inclined upwardly from the base of the plate, so that the under portions or bearing-surfaces of the flanges 8 are upwardly inclined, as shown.

So far the construction is substantially the same as in my prior application except as to the direction of the inclination of the flanges 8 and that the base in this instance is made up of two separate plates instead of one channeled plate, and it is apparent that either form of base or any other substantially equivalent form may be used in connection with my improved fish-plates.

The fish-plates B B, as shown, are provided with inclined upper edges *b*, adapted to bear against the faces 2 of the heads of the rails, and with side flanges B', having inclined lower faces *b'*, adapted to bear against the upper inclined faces of the flanges 3 of the rails, and they are held in place by bolts 5, passing through openings in the fish-plates and in the webs A' of the rails. The flanges B' are so formed that when in position they have a wedge-like action tending to secure the base-plates to the bases of the rails. In the form shown in Fig. 2 the flange B' is upset or bent upward to give a wedge-like section throughout a portion of its length, as shown at B², while in the form shown in Fig. 3 there are a series of upset portions B³, separated from each other. The upset portions are, as shown in Figs. 1 to 3, so formed that their upper surfaces incline upwardly toward the fish-plate, the angle of inclination being the same or substantially the same as that of the under or bearing surface of the flange 8. The angle of inclination of the bearing-surfaces of the flanges 8 and the upset portions of the flanges B' is, however, not as great as that of the surfaces *b'*, which engage the inclined faces of the rail-flanges 3, although such inclinations have the same general direction—that is, upwardly. The extremities or legs proper of the flanges are preferably bent downward and curved slightly, as at *b*², although this is not a material feature of the construction. These flanges may be formed in any suitable way, as by casting or pressing the material of the fish-plates into the desired form. It will thus be seen that

one bearing-surface of the flange is inclined upwardly at one angle and another bearing-surface is inclined upwardly at a different angle, so that the bearing-surfaces of the respective portions are in two separate planes.

The advantages due to my present construction are that it requires less metal than in my former construction and at the same time produces the same general effect in securing the parts of the rail-joint together.

When the parts are in the positions shown in Fig. 1, it will be seen that the extremities of the legs or flanges bear upon the flanges 3 of the rails and conform substantially thereto, while the upset portion B³ has a surface conforming substantially to the inner surface of the flanges 8 of the base portions. It will thus be seen that when the screw-bolts 5 or other equivalent devices for holding the fish-plates in position are tightly adjusted a sort of double wedge-like action is produced as the leg portions of the flanges bear on the tops of the side flanges of the rails and the upper parts of the upset portions of the flanges bear on the intumed flanges of the base portions and tend to draw the parts tightly together, and the more tightly the bolts 5 are screwed the stronger is the wedge-like action, tending to hold the parts together.

It is not necessary that the wedge-like portions of the fish-plate shall occupy a position with the upper faces inclined inward and downward. As shown in Fig. 4, they may be nearly horizontal, yet have a wedge-like action, and the parts 8 may be inclined upward, as shown in Fig. 4, while there is a wedge-like effect, as the channels or openings, between the base-flanges of the rail, and the overhanging parts 8 are more contracted at the points *v v* than at the outer portions. If required, the parts 8 may be made thin enough to spring upward to the position shown in Fig. 4, occupying a nearly horizontal position before the fish-plates are applied.

It is to be understood, of course, that the rail-joint is secured to the rail-ties in any suitable manner, (not necessary to be illustrated herein,) and it will be seen also that the improved fish-plates and base-plates can be readily applied to the rails in a manner well understood by those skilled in the art. The fact that the base is in two portions or plates instead of one channeled plate enables the present embodiment of the invention to be

more readily applied to rails already in position.

While I have thus described and shown my improvement in one embodiment or construction, it is to be understood that the details of construction may be varied by those skilled in the art, so as to adapt my invention for use in different positions and connections.

Without limiting myself to the precise construction shown, what I claim is—

1. The combination with the abutting rails of a railway, of a base having flanges, and fish-plates provided with flanges having upset portions to cooperate with the flanges of the base, and exert a lateral wedge-like action upon the flanges of the rail and base, substantially as described.

2. The combination with the abutting rails of a railway, and with a base extending beneath the same and provided with overhanging flanges, of fish-plates provided with lateral flanges, different portions of the flanges being in different planes to cooperate respectively with the flanges of the rails and base and exert a lateral wedge-like action thereon, substantially as described.

3. The combination with the abutting rails of a railway, and with a base extending beneath the same and provided with overhanging flanges, of fish-plates having lateral flanges, the end portions of the flanges being inclined, and other portions being also inclined but at a different angle, said inclined portions cooperating respectively with the flanges of the rail and the base and exerting a lateral wedge-like action thereon, substantially as described.

4. The combination with the abutting rails of a railway, and with a base extending beneath the same and provided with overhanging flanges, of fish-plates having lateral flanges, portions of which have bearing-surfaces in two separate planes, to cooperate respectively with the flanges of the rail and base and exert a lateral wedge-like action thereon, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

KOBY KOHN.

Witnesses:

I. WESSEL,
E. F. SWANBERG.