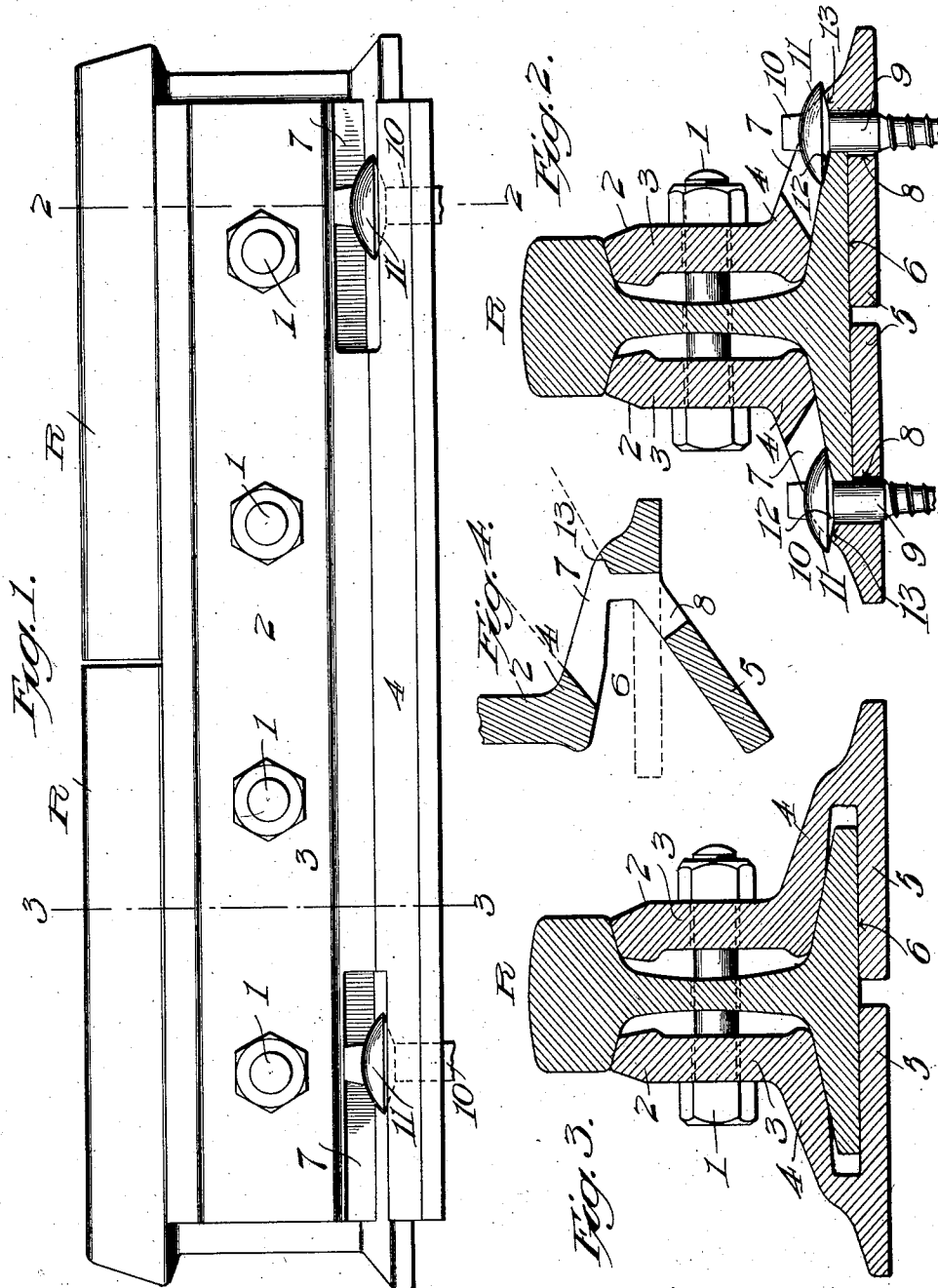


P. J. DALTON.
RAIL JOINT FASTENING.
APPLICATION FILED AUG. 26, 1910.

1,011,415.

Patented Dec. 12, 1911.



WITNESSES

J. H. Mochaber
R. C. Braddock

INVENTOR

Philip J. Dalton

M. D. T. K. Haupter
Attorney

UNITED STATES PATENT OFFICE.

PHILIP J. DALTON, OF JOLIET, ILLINOIS, ASSIGNOR TO THE RAIL JOINT COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

RAIL-JOINT FASTENING.

1,011,415.

Specification of Letters Patent.

Patented Dec. 12, 1911.

Application filed August 25, 1910. Serial No. 578,906.

To all whom it may concern:

Be it known that I, PHILIP J. DALTON, a citizen of the United States, residing at Joliet, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Rail-Joint Fastenings, of which the following is a specification.

This invention relates to the subject of rail joints, and more particularly to the fastening means for securing the rail joints of the track to the ties.

To this end the invention contemplates a simple, but thoroughly practical and strong, fastening means so combined with the rail joint parts as to provide for securing the rail joints of a track to the ties in a thoroughly secure and permanent manner. In this connection the invention particularly has in view improved means to increase the efficiency of the screw-spike or lag screw as a track fastening, and to render the screw-spike of special utility as a fastening in connection with a rail joint of the continuous type.

In its preferred application, the present invention has for its object to provide a construction wherein a screw-spike may be employed in such a manner as to permit the head thereof to take a direct bearing upon the flange of the rail, thus enabling the latter to be held down more firmly and positively than would be the case if the spike bore upon the joint bar either directly or through the medium of fastening clips. Also, it is proposed by the present invention to provide means whereby the screw-spike can be placed in proper position with the shank thereof abutting and engaging the edge of the rail flange, thus insuring the maintenance of proper line to the track.

With these and other objects in view, which will more readily appear to those familiar with the art as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

The essential features of the invention, involved in carrying out the objects above indicated, are necessarily susceptible to a wide range of structural modification, according to the conditions under which the invention is applied to use, without departing from the spirit or scope thereof, but a preferred and practical embodiment of the

invention is shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a rail joint of the continuous type, the same being modified to conform to the present invention and the use of the screw-spike as a track fastening. Fig. 2 is a vertical cross-sectional view on the line 2—2 of Fig. 1, the line of section including the fastening spikes and the spike openings in the joint bars. Fig. 3 is a similar view on the line 3—3 of Fig. 1 to illustrate the preserving of the structural characteristics and functions of the continuous type of joint bar. Fig. 4 is a detail cross-sectional view of one of the modified joint bars illustrating the preferable method of cutting out the spike-head opening to provide the necessary clearance for the spike head, and produce the outer abutment shoulder which provides the engagement between the spike head and the joint bar.

Like references designate corresponding parts in all of the figures of the drawings.

As indicated, the invention claimed herein possesses special utility in connection with the continuous type of rail joint, and, as shown in the drawings, a joint of this character includes in its construction the service rails R, the usual joint bolts 1, and the oppositely arranged continuous joint bars 2. Each of the joint bars 2 is rolled into the usual angle bar formation, that is to say, the same embodies an upright member 3 whose upper edge engages the under side of the rail head, and at the lower edge of which member is formed the inclined outwardly extending foot flange 4 overlying and bearing on the upper side of the rail flange and having formed integrally therewith the inwardly extending rail-supporting base-plate 5 underlying and bearing against the rail base. This structure provides between the flange 4 and the base-plate 5 a receiving pocket or space 6 for the rail flange.

The several elements above indicated are characteristic of the continuous type of bar, and the essential functions thereof are fully preserved by the present invention, but a distinctive feature of the latter resides in providing each joint bar, in its foot flange 4 above the rail flange, with a suitable number of spike-head openings 7. As shown in the illustrated embodiment of the invention, the spike-head openings 7 are preferably in

the form of longitudinally disposed elongated slots located at the end portions of the bar. While in the preferred construction the spike-head openings appear at each end of the joint bar and extend back from the ends of the bar toward the edge of the tie, it will, of course, be understood that the said openings may be located at intermediate points in the length of the joint bar, that is, wherever it is desired to place the screw-spikes.

In addition to the provision of the foot-flange 4 of each joint bar with the spike-head openings, the bar is further provided, within the vertical plane of each of said openings and of the receiving pocket or space 6 for the rail flange, with a spike-hole 8 piercing the base-plate 5 of the joint bar and adapted to receive the threaded shank 9 of the screw-spike 10. This screw-spike includes in its construction a head-member 11 arranged at the upper end portion of the shank 9 and preferably formed at its under side with a beveled or conical bearing face 12, whose angle substantially corresponds to the angle of the upper side of the rail flange and to the angle of an inclined outer abutment shoulder 13, which is provided upon the joint bar at the outer edge of the spike-opening 7. According to this construction it will be observed that the spike-head 11 lying within the spike-head opening 7 takes a direct metallic solid bearing against the upper side of the rail flange and also against the abutment shoulder 13, with the result of securing a practically perfect bearing for the screw-spike at all necessary points. Furthermore, the arrangement described permits the shank of the spike to engage and abut against the outer edge of the rail flange, with the result of securing the function hereinbefore pointed out.

By way of explanation of the preferable methods of cutting out the spike-head openings 7, and the spike holes 8, it may be noted that in the rolling process by which the continuous type of joint bar is usually formed, the base plate or section 5 is "rolled open," that is, bent down as shown in detail in Fig. 4 of the drawings, and afterward folded up or "closed" to its final position, as indicated by the dotted lines in Fig. 4. When the base-plate or section 5 is "open," as shown by the full lines in Fig. 4, the foot-flange 4 can be readily slotted along the lines of cut indicated by the dotted lines in Fig. 4 to form the slot 7, and also the base plate 5 is slotted to provide the hole 8. In this slotting operation, the slot or hole 7 which is cut preferably flares outwardly and upwardly, as may be readily seen from the divergence of the dotted lines, with the result of producing the shoulder 13 with the proper angle to its bearing face which is engaged by the spike-head. It is by reason

of this construction that the head of the screw-spike obtains the firm and even bearing referred to, namely, at one side on top of the rail flange, and at the other side on the shoulder 13 of the joint bar.

I claim:

1. In a rail joint fastening, the combination of a rail joint having a bar provided therein above the rail flange with an opening, and also with an abutment shoulder, and a fastening device having a head member lying within said opening and respectively engaging the rail flange and said shoulder.

2. In a rail joint fastening, the combination of a rail joint having a bar provided therein above the rail flange with an opening, and also with an abutment shoulder, and a fastening device having a head member lying within said opening and respectively engaging the rail flange and said shoulder, said device also having engagement with the outer edge of the rail flange.

3. In a rail joint fastening, the combination of a rail joint having a bar provided with a foot flange overlying the rail flange and with a base plate underlying the rail base, the foot flange having an opening therein and the base-plate having a hole in the vertical plane of the opening, and a fastening device having a shank portion extending through said hole, and a head member lying within the opening and engaging the rail flange.

4. In a rail joint fastening, the combination of a rail joint having a bar provided with a foot flange overlying the rail flange and with a base plate underlying the rail base, the foot flange having an opening therein and the base-plate having a hole in the vertical plane of the opening, and a fastening device having a shank portion extending through said hole, and a head member lying within the opening and respectively engaging the rail flange and the joint bar.

5. In a rail joint fastening, the combination of a rail joint having a bar provided therein above the rail flange with an opening and at the outer edge of the latter with an abutment shoulder, and a screw-spike having its head respectively engaging the rail flange and said shoulder.

6. In a rail joint fastening, the combination of a rail joint having a bar provided with a foot flange overlying the rail flange, and with a base plate underlying the rail base, the foot flange having a spike head opening, and the said base-plate having a spike-hole, and a screw-spike whose shank engages the rail flange and extends through the spike-hole, and whose head bears directly on the upper side of the rail flange.

7. In a rail joint fastening, the combination of a rail joint having a bar provided

with a foot flange overlying the rail flange,
and with a base plate underlying the rail
base, the foot flange having a spike head
opening and an inclined abutment shoulder
5 at the outer edge of the opening, and the
said base-plate having a spike-hole, and a
screw-spike whose shank engages the rail
flange and extends through the spike-hole,
and whose head respectively bears directly

on the upper side of the rail flange and on 10
said shoulder.

In testimony whereof I hereunto affix my
signature in the presence of two witnesses.

PHILIP J. DALTON.

Witnesses:

H. E. WOOD,

JOHN H. GAMSEY.

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