No. 629,009. Patented July 18, 1899.

C. P. GOETZINGER.

RAIL JOINT.

(Application filed Nov. 7, 1898.)

(No Model.)

Fig. 1

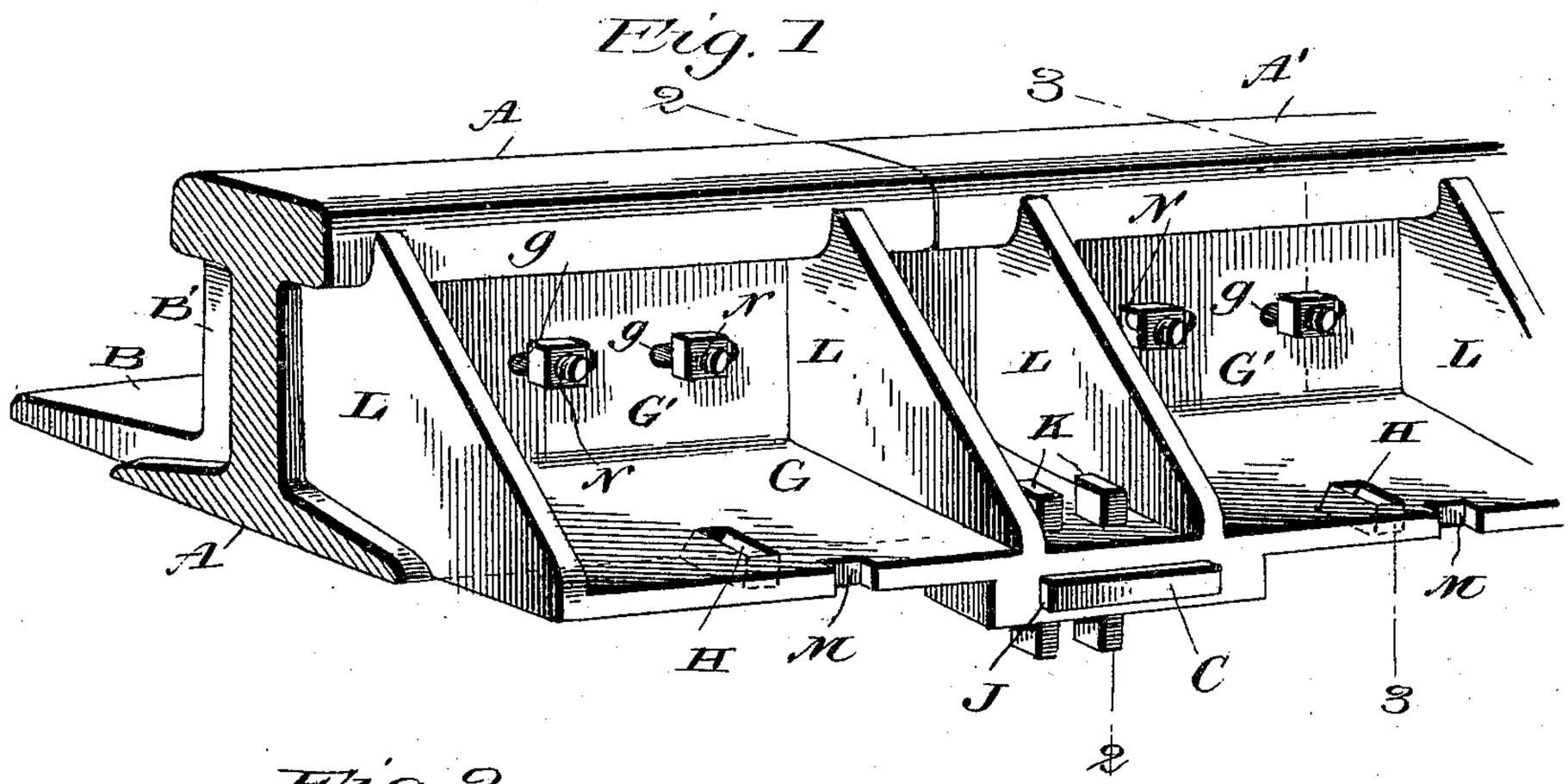


Fig. 2.

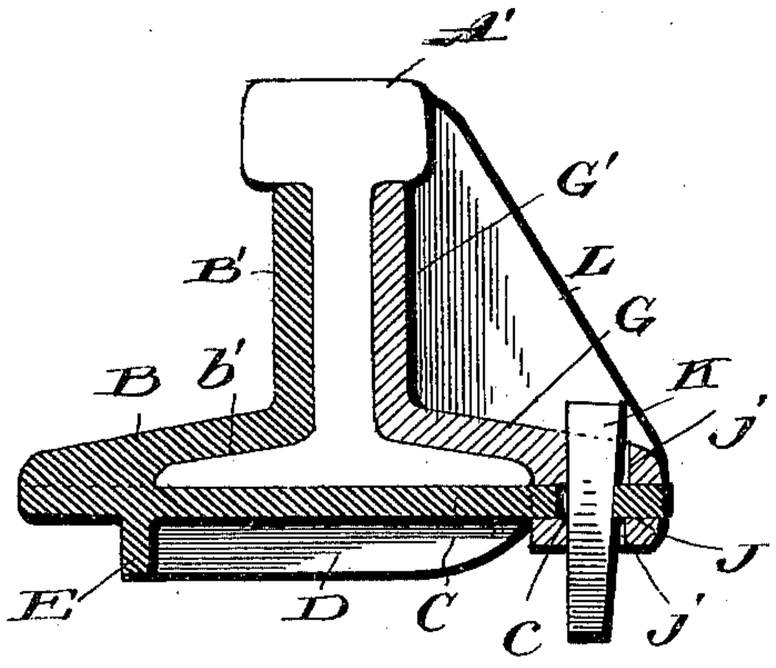


Fig. 3.

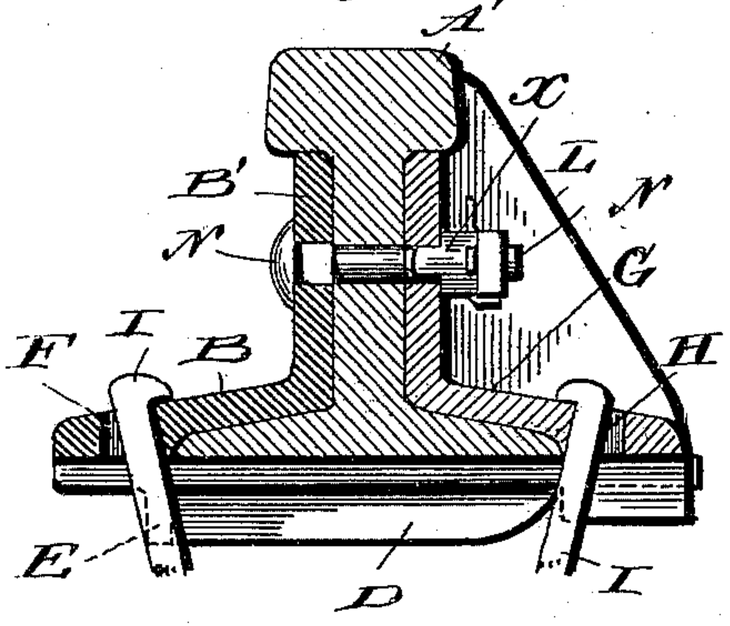


Fig. 4.

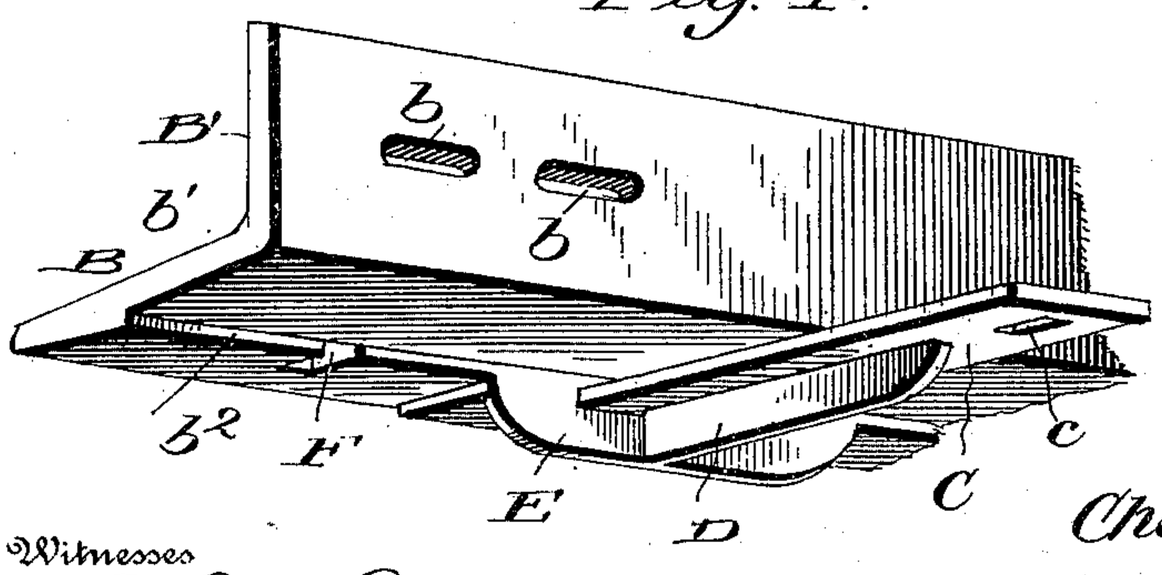
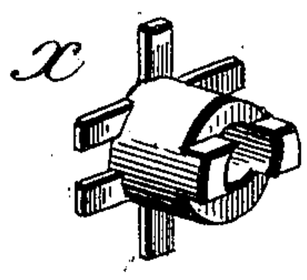


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES P. GOETZINGER, OF DULUTH, MINNESOTA.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 629,009, dated July 18, 1899.

Application filed November 7, 1898. Serial No. 695,718. (No model.)

To all whom it may concern:

Be it known that I, CHARLES P. GOETZINGER, a citizen of the United States, residing at Duluth, in the county of St. Louis, in the State of Minnesota, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification.

This invention relates to certain new and useful improvements in rail-joints; and it has for its objects, among others, to provide an improved form of construction of rail-joints which shall allow for the expansion and contraction of the rail, which shall have means for supporting and bracing the tread of the rail without interfering with the expansion and contraction thereof, and spike-holes so formed that when the spikes are driven in they will draw the plates to the rail and more securely bind the parts in position. I also provide a supporting-plate beneath the joint, which shall not only form a support for the abutting ends of the rails, but while allowing for expansion and contraction shall serve to draw the plates against the rail by means of a key or keys, as will be made apparent as the description proceeds.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The novelty in the present instance resides in the peculiar construction and the combination, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the drawings, and then particularly pointed out in the claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view showing two rail-sections provided with my improvements. Fig. 2 is a vertical cross-section on the line 2 2 of Fig. 1. Fig. 3 is a vertical cross-section on the line 3 3 of Fig. 1. Fig. 4 is an under perspective of a portion of one of the plates, showing the transverse support. Fig. 5 shows one form of nut-locking washer that may be employed.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates one of the rails, and A′ the other. These may be of usual or any preferred form of construction.

B is one of the fish-plates. It is designed, as shown, to extend across the joint between the two rails, and its vertical portion B′ lies flat against the web of the rail, and its upper end engages beneath the tread, as seen best in Figs. 2 and 3. This vertical portion is provided with the openings *b*, which extend substantially parallel with the upper edge thereof, as seen clearly in Fig. 4, and these openings may be oval or otherwise elongated, the shape being immaterial so long as they are of somewhat greater length than the diameter of the bolts, so as to allow for expansion and contraction. The under side of the bottom portion of the plate B is beveled or inclined for a portion of the way, as seen at b', and formed with a shoulder b^2, the inclined face bearing upon the upper face of the flange of the rail, as seen in Figs. 2 and 3, and the shoulder engaging the outer edge of the flange. This plate B is formed with the transverse bar C, the upper face of which is substantially on the plane with the under face of the bottom portion of the plate, as shown, and which bar extends beyond the vertical portion of the plate a sufficient distance to traverse the flange of the rail and pass through a socket made to receive it in the plate upon the opposite side of the rail, as shown in Figs. 1, 2, and 3. This bar is formed near its free end with a hole *c* to receive a key, soon to be explained, and upon its under side, extending lengthwise thereof, is the rib D, which joins to the rib E, extending at right angles thereto upon the under face of the bottom portion of the plate B, as seen best in Figs. 2 and 4. The bottom portion of the plate B is provided with spike-holes F, the wall of which nearest the rail is inclined inward from its upper end downward, as seen best in Fig. 3, so that when the spikes are driven in they force or draw the plate toward the rail, as will be readily understood from Fig. 3.

G is the opposite plate or brace. Its vertical portion G′ is provided with the elongated openings *g*, as seen best in Fig. 1, and its base portion is provided with the spike-holes H, the walls of which nearest the rail are inclined downward and inward, so that when

the spikes are driven in they will draw the brace toward the rail in the same manner as described in connection with the plate B.

I are the spikes which secure the plates in position.

The plate or brace G has its under face constructed similar to that of the plate B for the same purpose so far as the incline b' and shoulder b^2 are concerned, while centrally of its length is provided the socket J, which receives the end of the bar C, as seen in Figs. 1 and 2. Suitable openings j are provided in the base of the plate G and in the bottom wall of the socket for the reception of the key or keys that are employed for locking the bar in its socket, and the hole in the bar has its outer wall inclined inward toward the rail, as seen clearly in Fig. 2, so that when the key K is driven in it will draw the parts toward the rail and more firmly secure them in position, as will be readily understood. One or more keys may be employed, as may be found most expedient. In Fig. 1 I have shown two.

The plate or brace G is formed with the webs or ribs L, as shown, to strengthen the same, and these webs have their upper ends so formed as to engage the under side and the outer edge of the tread of the rail, as seen clearly in Figs. 1, 2, and 3, and more securely support the same.

The plates may be provided with outside notches M, as seen in Fig. 1, for additional spikes to prevent slipping of the braces or plates; but these outside notches may be dispensed with, if desired.

N are the bolts passed through the elongated openings in the vertical portions of the plates B and G and through openings in the web of the rails, as seen best in Fig. 3. These bolts are provided with nuts, and they may be equipped with any suitable form of nut-locking device—such, for instance, as is shown in Fig. 5 at X—but no claim is made herein to such form, as the same constitutes the subject-matter of a separate application filed of even date herewith.

With the parts constructed and arranged substantially as above described the operation will be apparent, especially when taken in connection with annexed drawings, and a detailed description thereof does not seem necessary. It will be readily understood how I provide for expansion and contraction of the rails and how firmly the parts will be drawn together by the spikes and by the key K. The bar C, going as it does beneath the joint in the rails, forms a good support for the ends of the rail-sections and the ribs D and E are embedded in the earth and prevent movement of the braces or plates in either direction.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as new is—

1. In a rail-joint, the combination with a plate having a transverse bar with opening near its free end, of a plate having a socket to receive the end of said bar and openings for the passage of a fastening-key and a key passed through a vertical opening in said socket and through said bar, substantially as specified.

2. In a rail-joint, the combination with a plate having vertical portion with elongated openings and a base portion with transverse bar with opening, of a plate having vertical portion with elongated openings and a socket to receive the end of said bar, and a key passed vertically through the socket and through the opening in the end of the said bar to draw the parts securely together, as set forth.

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

CHARLES P. GOETZINGER.

Witnesses:

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JNO. J. WIGGINS.