

(No Model.)

L. BLACKSTONE  
RAILWAY WEAR PLATE AND BRACE.

No. 413,609.

Patented Oct. 22, 1889.

Fig. 2.

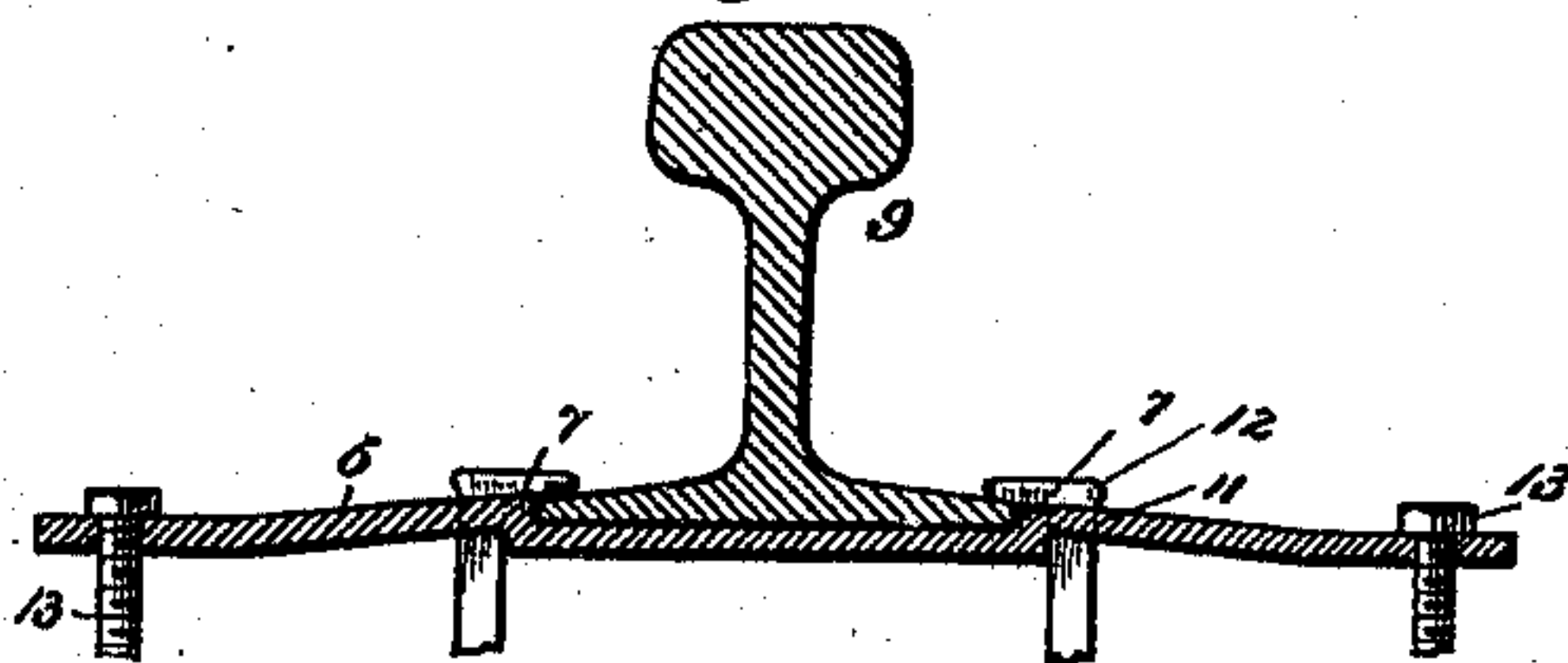


Fig. 1.

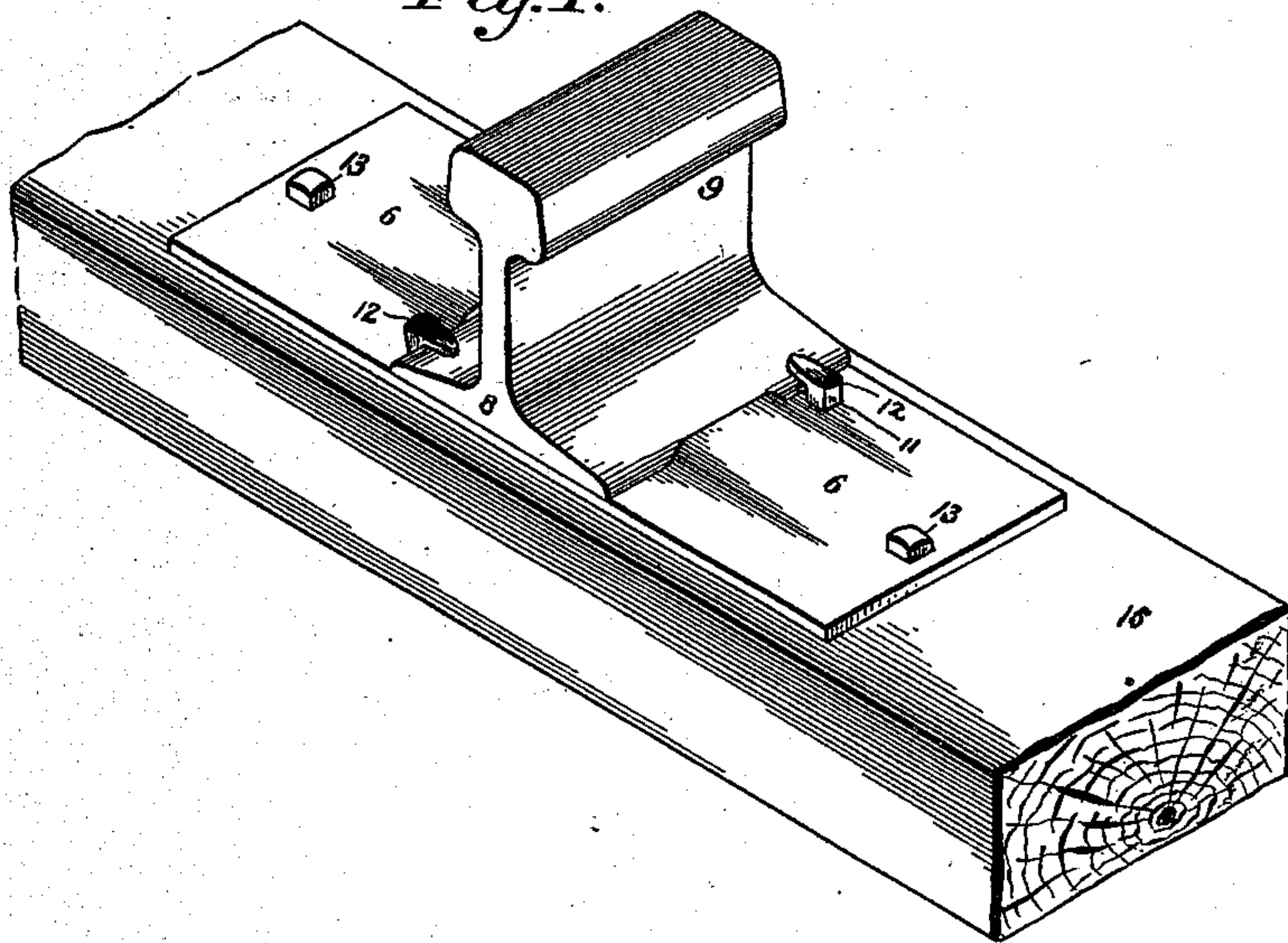


Fig. 4.

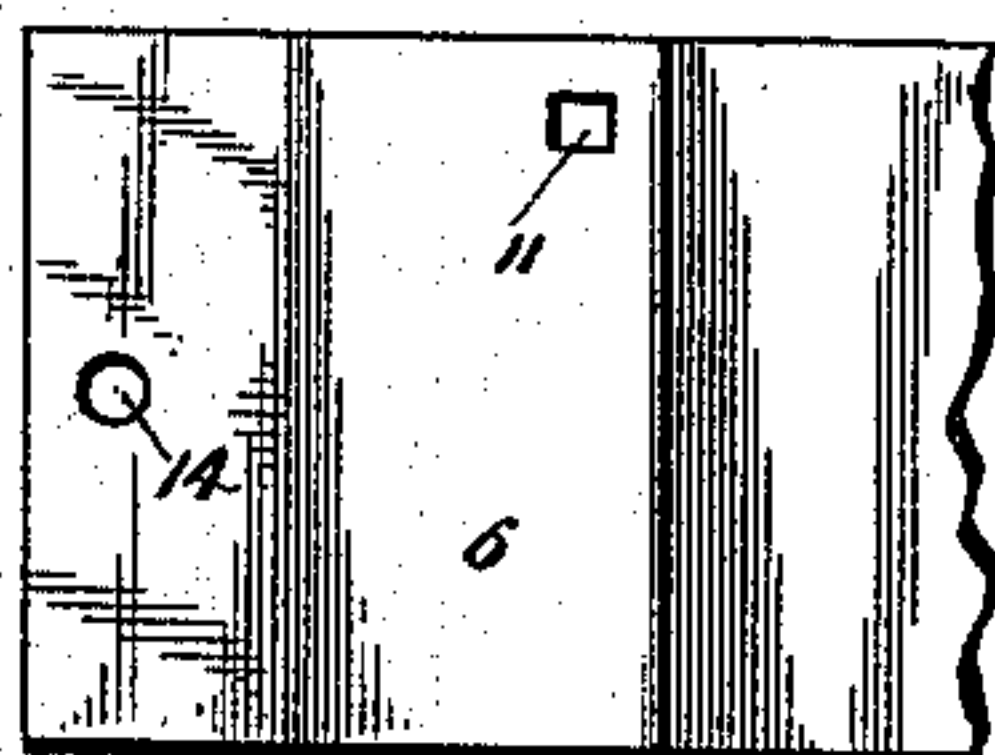
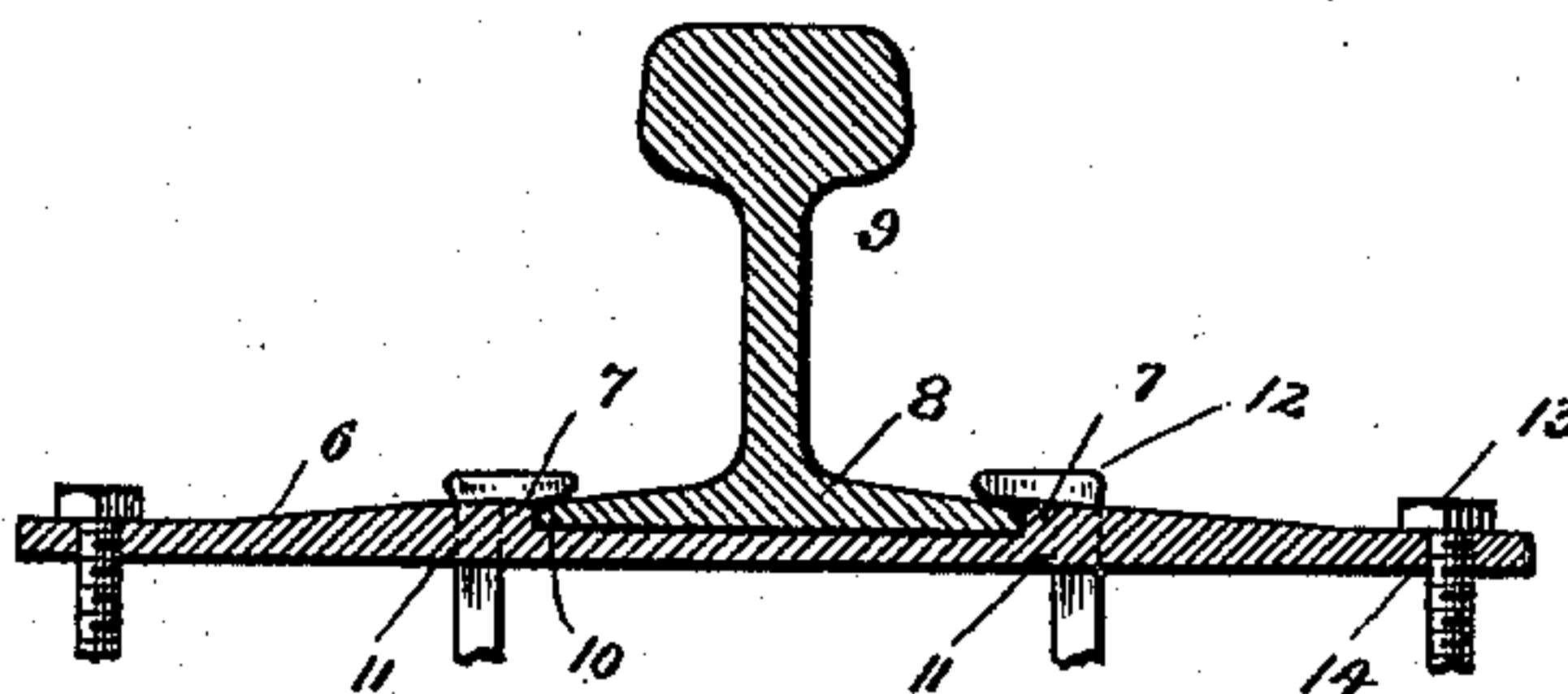


Fig. 3.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## RAILWAY WEAR-PLATE AND BRACE.

SPECIFICATION forming part of Letters Patent No. 413,609, dated October 22, 1889.

Application filed April 25, 1889. Serial No. 308,635. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS BLACKSTONE, a citizen of the United States, residing at Jersey City, county of Hudson, and State of New Jersey, have invented a certain new and useful Combined Railway Wear-Plate and Brace, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a combined wear-plate and brace for railways for preventing the rails from cutting into the wooden cross-ties, and bracing the rails laterally, so as to wholly relieve the rail-spikes of the side-thrust or hammering of the rails, which, if allowed to come into lateral contact with the spikes and to play freely against them, would quickly cut away and destroy the spikes.

The objects of my invention are to provide a device for the combined purposes of relieving the ties and the spikes of the wear from the rails, that will be simple in construction and efficient in service, affording extended lateral bearings for the rail-base, and causing little or no damage to the ties upon which it may be mounted.

To these purposes my invention consists in the novel and peculiar constructions and arrangements of the various parts of the device, all as hereinafter fully described, and then pointed out in the claims.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a perspective view of my improved combined wear-plate and brace (shown as mounted in operative position upon a cross-tie) with the railway-rail seated and secured thereon, the rail and tie both being shown in part. Fig. 2 is a section taken on a plane passing vertically and transversely through the center of the plate and rail shown in Fig. 1. Fig. 3 is a similar view to that shown in Fig. 2 of a plate with the brace-shoulders extending all the way across the same. Fig. 4 is a plan view of a portion of the plate shown in Fig. 3.

In the said drawings like numbers of reference designate like and corresponding parts throughout.

Referring to the drawings, 6 designates the body of my improved plate, across the upper face of which are disposed the two parallel brace shoulders or ribs 7 7, which are suitably raised to form between them a seat of sufficient width to readily receive the flat base or foot 8 of the ordinary railway-rail 9. The shoulders 7 7 are to be engaged by the edges 10 10 of the rail-base, and it is designed to have the shoulders of considerable length in order to afford an extended bearing or contact-surface between the same and the rail-base edges. These brace shoulders or ribs may extend partly across the plate, as shown in Figs. 1 and 2, or they may extend entirely across the plate, as shown in Figs. 3 and 4, the extent of the same being a matter of preference, so long as an extended bearing between the two parts is secured. The rail is firmly braced in its lateral movements by the shoulders, which, being solid, can well withstand the constant hammering or knocking of the rail against them. Moreover, the extended bearing of the rail against the shoulder affords a mutual advantage to the contacting parts, since they will not be so quickly cut away by frictional wear as otherwise.

The plate is formed with suitable openings 11 11 for receiving the ordinary rail-spikes 12 12, the under faces of the head-flanges of which engage the upper face of the rail-base 8, as indicated in the drawings. The spike-openings 11 11 are slightly offset from the line on which the rail-base edges 10 10 make contact with the shoulders 7, as clearly indicated in the drawings, especially in Fig. 4 thereof. This is for the purpose of preventing the side-thrust or hammering of the rail from being received by the spike, the neck of which cannot in this construction be rubbed or cut away by the lateral movement of the rail. Thus, in reference to the rail, the only office of the spikes 12 is to prevent the rail from rising up, the lateral bracing of the rail being left to the shoulders 7 7. By virtue of this construction the life of the spike is de-



5 sirably prolonged, since it is wholly relieved  
 of the lateral frictional rubbing of the rail,  
 and this tends also to prolong the life of the  
 tie, as the spikes do not have to be renewed  
 so often. The spikes 12 also serve to hold  
 the combined wear-plate and brace in place  
 upon the tie; however, I make special pro-  
 vision for fastening the plate to the tie. Such  
 means consists in the bolts 13 13, which pass  
 10 through suitable holes 14 14 in the plate and  
 enter the tie. These fasteners may be spikes  
 or screw-bolts, though in the construction  
 shown I have preferred the latter, for they  
 take a firmer grip into the wood of the tie 15.  
 15 I find that one spike 12 at each side of the  
 rail will be sufficient for each plate, and I  
 locate the same, preferably, diagonally oppo-  
 site, one being near each side of the plate,  
 as shown. The fastening-bolts 13 are shown  
 20 as placed opposite each other, though their  
 situations may be changed as desired.

The plate shown in Figs. 1 and 2 has its  
 shoulders 7 7 punched up from the body of  
 the plate on the central line thereof, and, as  
 25 before stated, the shoulders extend only part  
 way across the plate.

In the form shown in Figs. 3 and 4 the  
 brace-shoulders 7 7 run entirely across the  
 plate.

30 In the practical use of the combined wear-  
 plate and brace, which is to be made of suit-  
 able metal and either cast or struck up, I de-  
 sign to have one secured upon the upper face  
 of, preferably, each cross-tie 15. The base of  
 35 the rail is then to be seated between the shoul-  
 ders 7 7 and spiked down by means of spikes  
 12 12, so as to be held fast to the plates, which  
 are made fast to the ties by the bolts 13 13.  
 This serves to hold the rail securely in posi-  
 40 tion, thereby preserving the gage of the rails,  
 at the same time maintaining the rails in true  
 alignment by preventing them from cutting  
 away and sinking into the tie.

45 The important advantages of the combined  
 wear-plate and rail-brace are that the lateral  
 thrust and rubbing and consequent frictional  
 wear of the rail are not imposed upon the spike,  
 thereby not requiring frequent replacement  
 of the spike. The rails are held truer to  
 50 gage and more securely, and the fiber of the  
 wooden ties is but slightly mutilated, if at all,  
 in mounting the plate thereon, thereby caus-  
 ing practically no damage to the ties and pre-

venting the water from entering and rotting  
 the same.

Having thus described my invention, what  
 I claim as my invention is—

1. A combined railway wear-plate and brace  
 interposed between the rail and tie, and con-  
 sisting of a plate provided upon its face with  
 60 brace-shoulders or ribs receiving the rail be-  
 tween them and engaging the edges thereof  
 for holding the rail against lateral move-  
 ment, the plate formed with rail-spike open-  
 65 ings offset from the line of contact of the  
 rail-base with the shoulders, so that lateral  
 contact between the rail and spikes is pre-  
 vented, whereby cutting away of the spikes  
 is avoided, substantially as hereinbefore set  
 forth.

2. The combination, with a railway-rail and  
 a tie, of a combined wear-plate and rail-brace  
 consisting of a plate interposed between the  
 rail and tie and formed with spike-openings,  
 and provided upon its face with two extended  
 75 parallel shoulders or ribs forming a seat for  
 the rail-base and receiving the entire side-  
 thrust of the rail, the rail-spikes passing  
 through said openings into the tie and en-  
 gaging with their head-flanges the rail-base,  
 80 and fasteners for holding the plate to the tie,  
 whereby the spikes are wholly relieved of the  
 lateral hammering and rubbing of the rails  
 and the rail is prevented from cutting into the  
 tie, substantially as hereinbefore set forth.

3. The combination, with the rail 9 and the  
 tie 15, of the plate 6, placed between the rail  
 and tie and bolted to the latter, and provided  
 with the two parallel shoulders or ribs 7 7,  
 engaging the edges of the rail-base and re-  
 90 ceiving the entire side-thrust of the rail, the  
 spike-openings 11 11, offset from the shoul-  
 ders 7 7, and the rail-spikes 12 12, taking  
 through openings 11 11 and engaging the  
 rail-base with their heads, so as not to receive  
 95 the side-thrust of the rail, but to prevent the  
 same from rising, substantially as and for the  
 purpose set forth.

In testimony whereof I have hereunto set  
 my hand and affixed my seal, in the presence  
 100 of two subscribing witnesses, this 22d day of  
 April, 1889.

LOUIS BLACKSTONE. [L. S.]

Witnesses:

JOHN T. THOMPSON,  
 JAMES H. COX.