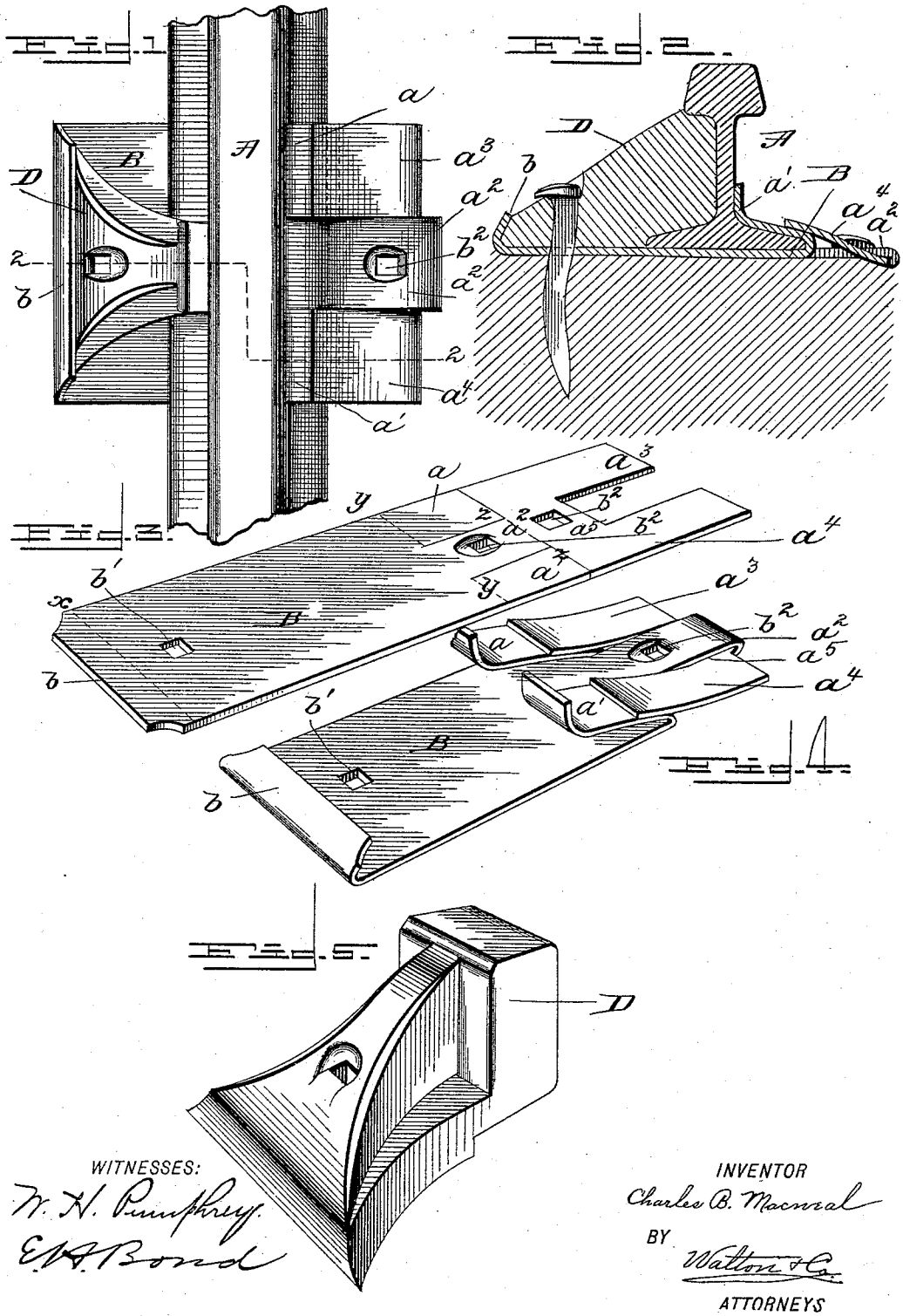
(No Model.)

C. B. MACNEAL.

BRACE AND TIE PLATE FOR RAILWAY RAILS.

No. 492,817. Patented Mar. 7, 1893.



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CHARLES B. MACNEAL, OF PHILADELPHIA, PENNSYLVANIA.

BRACE AND TIE-PLATE FOR RAILWAY-RAILS.

SPECIFICATION forming part of Letters Patent No. 492,817, dated March 7, 1893.

Application filed December 6, 1892. Serial No. 454,235. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. MACNEAL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in a Brace and Tie-Plate for Railway-Rails; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to construct an improved brace and tie plate for railway rails which can be cheaply manufactured and which will securely fasten the rails to the ties, and brace them against lateral pressure. This object I attain in the following manner, reference being had to the accompanying drawings, in which:—

Figure 1, is a plan view showing my improved brace and tie plate secured to the rail. Fig. 2, is a transverse sectional view on the line 2—2, Fig. 1. Fig. 3, is a perspective view of the sheet metal plate before being bent into position for use. Fig. 4, is a perspective view showing the plate bent ready for use, portion *a*, being broken away. Fig. 5, is a perspective view of the wedge.

A is the rail.

B is the plate made of sheet metal to be bent into position, as shown in Fig. 4.

D is a brace in the shape of a wedge which not only locks the rail to the tie plate, but also braces the rail against outward lateral pressure, the brace, as indicated in the drawings, extending up under the head of the rail, as clearly shown in Fig. 2. The tie plate is made of any suitable sheet metal, but preferably steel, and is cut as shown in Fig. 3, having at one end three portions *a*, *a'*, a^2, the central portion a^2, extending beyond the portions *a*, *a'*, and forming a T shaped portion with arms a^3, a^4, the outer end of a^2 being cut away to form a recess a^5. The opposite end of the tie plate has a portion *b*, preferably extending the full width of the tie plate. This portion *b*, is bent on the dotted line *x*, Fig. 3, and turned up to the position shown in Fig. 4, and the two portions *a*, *a'*, are bent up on the line *y*—*y* to the position shown in said figure. The outer portion of a^2 is bent on the line *z*—*z* down and folded underneath the inner portion so that spike hole $b^{2'}$ in the outer portion of a^2, will fall underneath and register with spike hole b^2 in the inner portion of a^2. The arms a^3, a^4, are then sprung or forced past the bent up portions *a*, *a'*, so that the ends of the former will rest upon the latter to strengthen the same and give a slight elasticity to the tie plate. This slight elasticity while not permitting the rails to spring inwardly to any appreciable amount, is still sufficient to counteract, to some extent, sudden and great jars on the tie plate and thus prevent breakage.

As will be noticed on referring to Fig. 2, the wedge brace D is driven between the lip *b*, and the head of the rail, and when forced up into position is secured by a spike which is driven through an opening in the wedge brace plate D and through opening *b'*, in the tie plate, thus locking the wedge to the tie plate, and fastening the tie plate to the tie. Thus it will be seen that I make a very cheap and strong fastening which can be readily applied to the rail, and which can be readily bent into position by ordinary means. It will be understood that I do not limit myself to the particular form of rail used.

I claim as my invention—

1. The combination in a tie plate and brace for railway rails, of the tie plate made from a single piece of sheet metal, having two bent up portions, adapted to bear against the flange of a rail, and a central longer portion of T shaped form, the outer portion thereof adapted to be folded underneath the inner portion, arms of the T shaped portion adapted to bear upon the bent up portions, a bent up lip at the other end of the plate, a brace piece, situated between the lip and the rail, and spike holes in the brace piece and plate for securing the same in position, substantially as described and set forth.

2. The combination in a tie plate and brace for railway rails, of a tie plate consisting of a single piece of sheet metal having two parts of its inner portion bent up to fit over the flange of a rail and a central part intervening the two parts having its end T shaped adapted to be bent down and folded back upon itself and furnished with a spike hole to se-

cure it to the tie, the cross section of the T adjusted to bear upon the two bent up portions, a bent up lip at the outer end of the plate, a brace piece situated between the lip and the rail, and spike holes in the brace piece and plate for securing the same in position, substantially as described and set forth.

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

CHARLES B. MACNEAL.

Witnesses:
EDWIN C. BRYAN,
HARRY DE SILVER.