

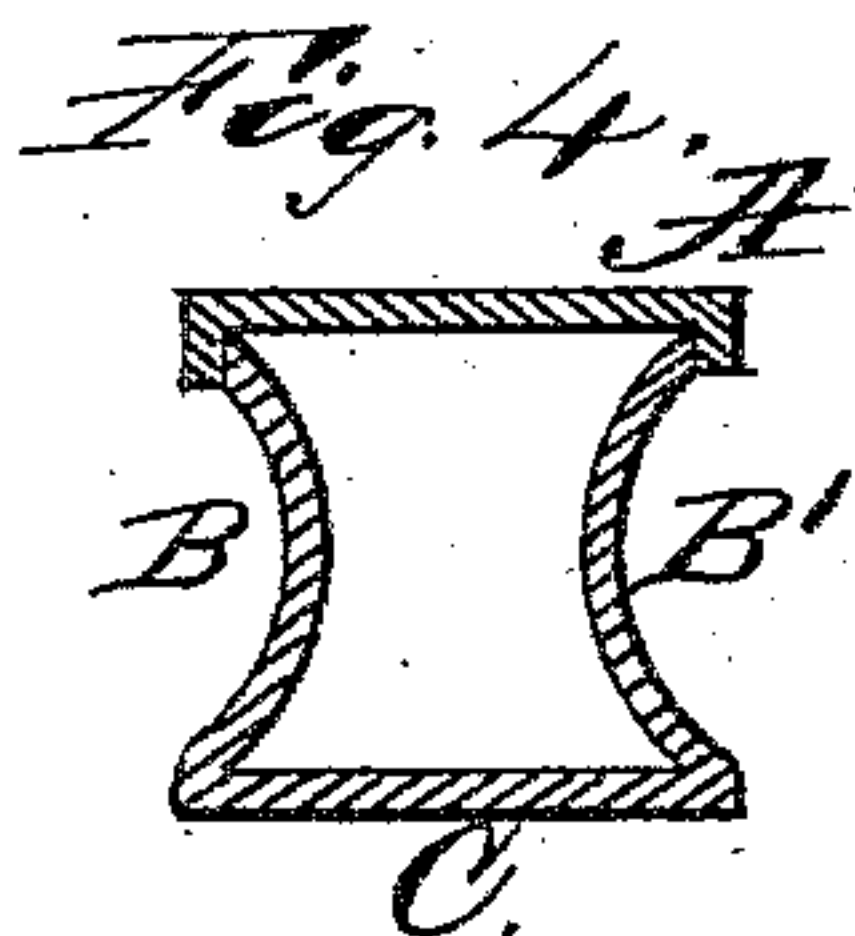
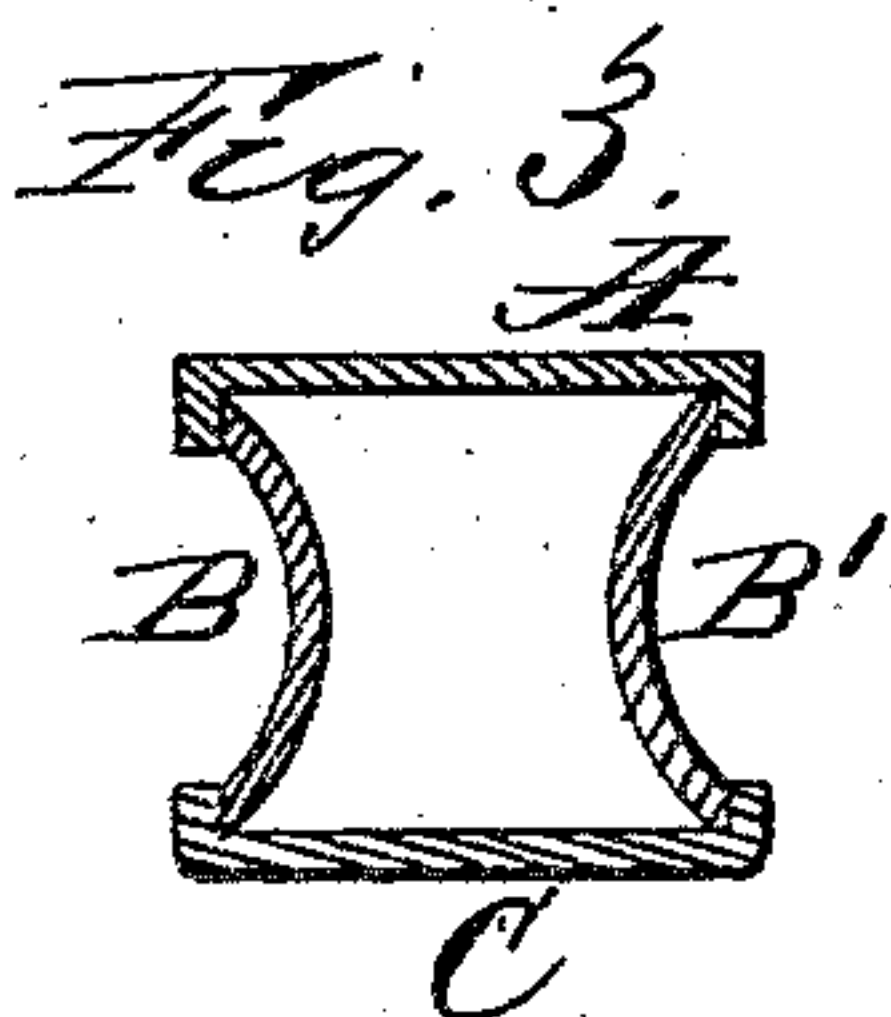
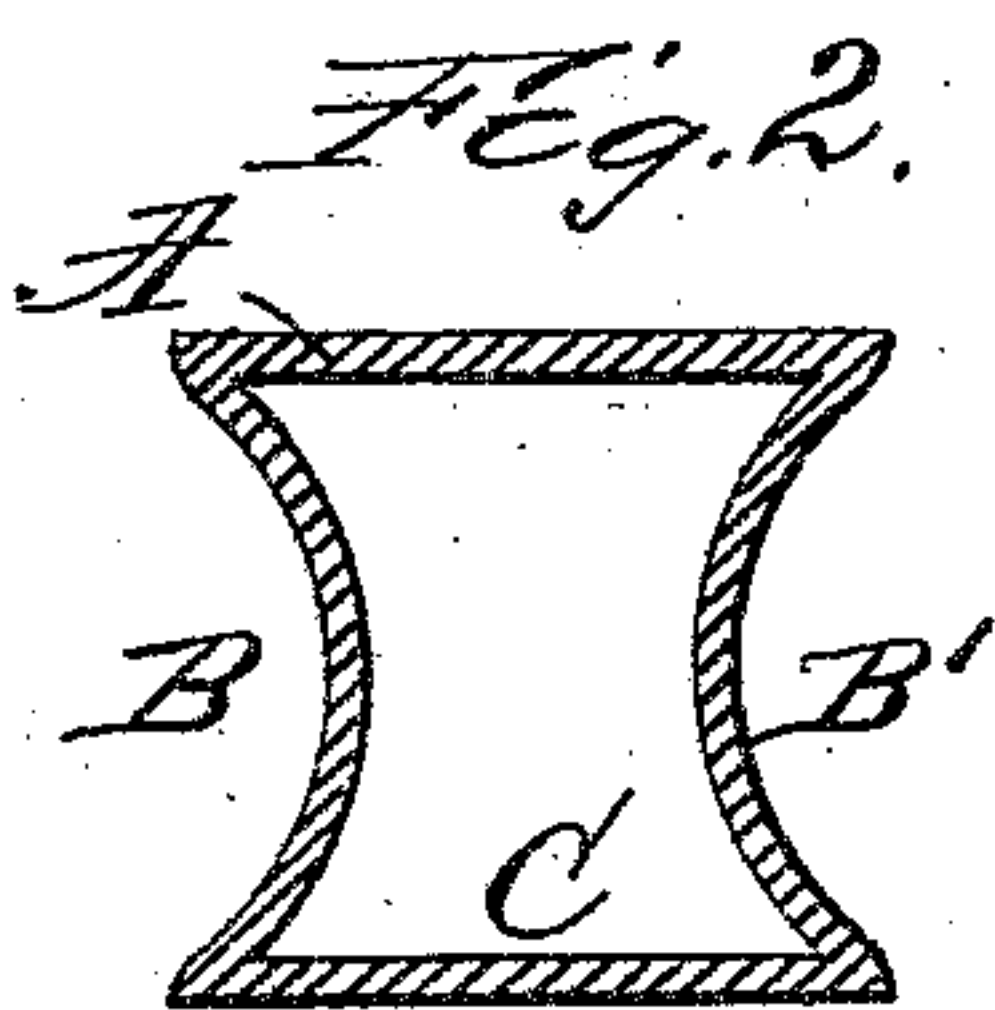
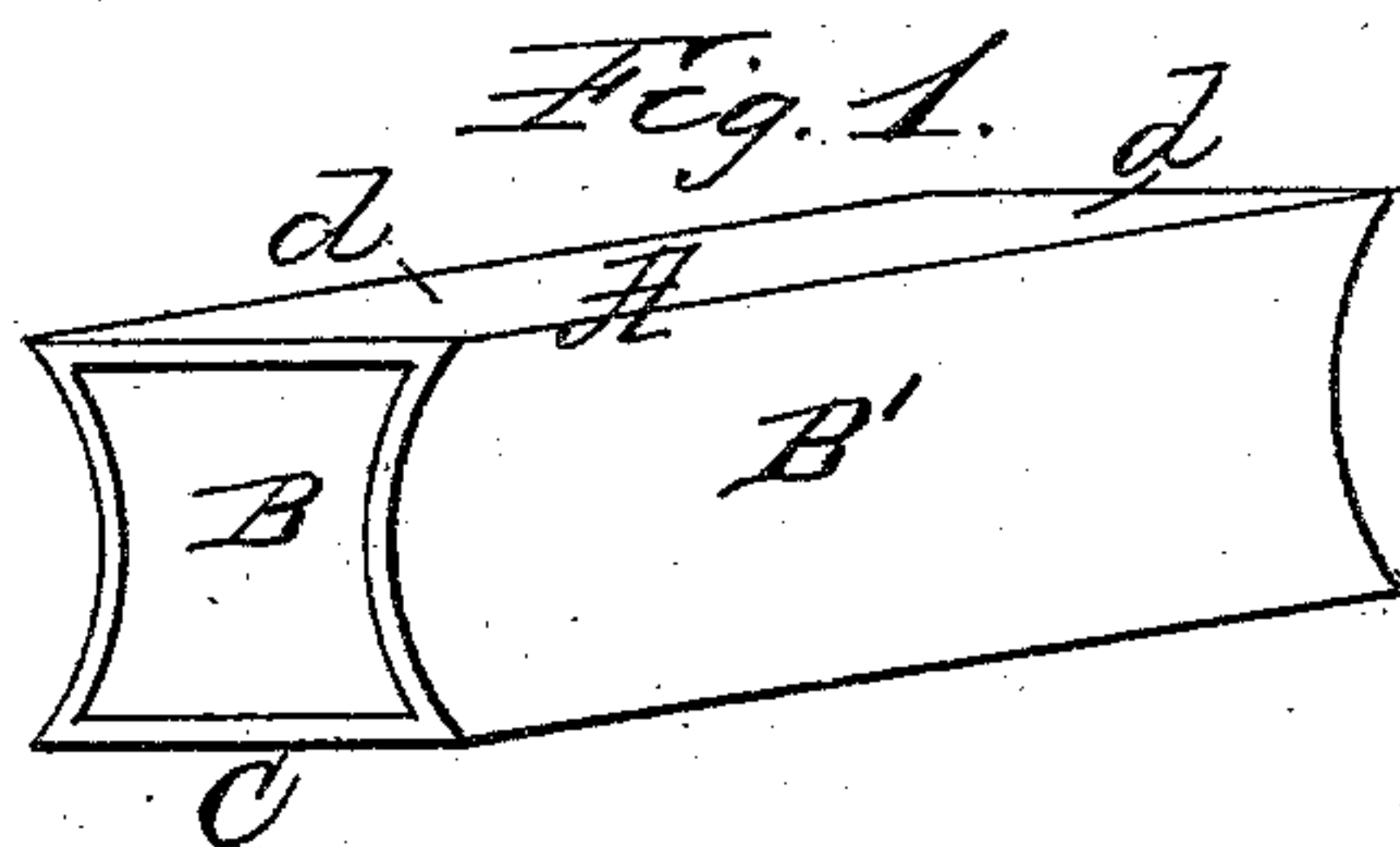
(No Model.)

W. T. CARTER.

RAILWAY TIE.

No. 296,725.

Patented Apr. 15, 1884.



Witnesses.  
John E. Elmendorf  
Joseph Sullivan.

Inventor.  
William T. Carter.  
by G. F. Fellingbush  
his Atty.

# UNITED STATES PATENT OFFICE.

WILLIAM T. CARTER, OF NEWARK, NEW JERSEY.

## RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 296,725, dated April 15, 1884.

Application filed October 31, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM T. CARTER, of Newark, county of Essex, State of New Jersey, have invented a new and useful Improvement in Railway-Ties, of which the following is such full, clear, and exact description as will enable others skilled in the art to which it most nearly appertains to make and use the same, when taken in connection with the accompanying drawings, in which—

Figure 1 is a perspective view. Fig. 2 is a cross-section. Fig. 3 shows a modification. Fig. 4 shows another modification.

Heretofore and before this my invention ties for railways have been made of metal and in various forms; but this my invention relates to ties made of metal, so that they are hollow and have a spring or elasticity not found in the heretofore known metal railway-ties.

Ties made according to this my invention are formed so as to have curved sides B B', connecting the top and bottom, whereby a spring or elasticity is given to the ties. The top A is formed flat to receive the rail placed thereon, and the base C is also made flat, or nearly so, so that it will not turn in the ground after being placed in position; or it may be formed with a convex under surface or beveled corners, as shown in Fig. 3. I may make these ties in one piece of cast metal properly annealed, or one piece of sheet metal bent to the proper shape, and fastened at the meeting edges. If preferred, the ties may be made of two or more pieces, as shown in Figs. 3 and 4. In Fig. 3 the tie is made of four pieces—a top and bottom piece and two side pieces—and in Fig. 4 the tie is made of two pieces, one piece forming the

top A, and another piece forming the sides and bottom B B' C. When more than one piece is used in making the ties, they are united by grooves and tongues, or rivets, or bolts, or in any other appropriate manner. The side pieces may be of one material or kind of metal, and the top and bottom of a different kind; or they may be all of the same, as found more advantageous for the service to which they are to be subjected.

The ties are provided with appropriate holes, as *d d*, on the top for bolts or screws to fasten the rails to the ties. The sides of the tie being concave, the earth and ballast will more firmly hold it in place and give greater stability to the structure in which these ties are used.

The whole tie may be made of sheet iron or steel, or part of sheet iron or steel and part of cast-iron. It will be found advantageous to make the bottom C of cast-iron and the sides B B' of steel.

I do not wish to limit myself to the use of iron and steel in the manufacture of this tie, as papier-maché, vulcanized fiber, or like material may be used, in whole or in part.

What I claim as new, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, a hollow railway-tie having concave sides, as specified and set forth.

2. The combination, in a hollow railway-tie, of the curved and concave sides and flat top or bearing surface, as specified and set forth.

WILLIAM T. CARTER.

Witnesses:

JOHN E. ELMENDORF,  
JOSEPH J. SULLIVAN.