

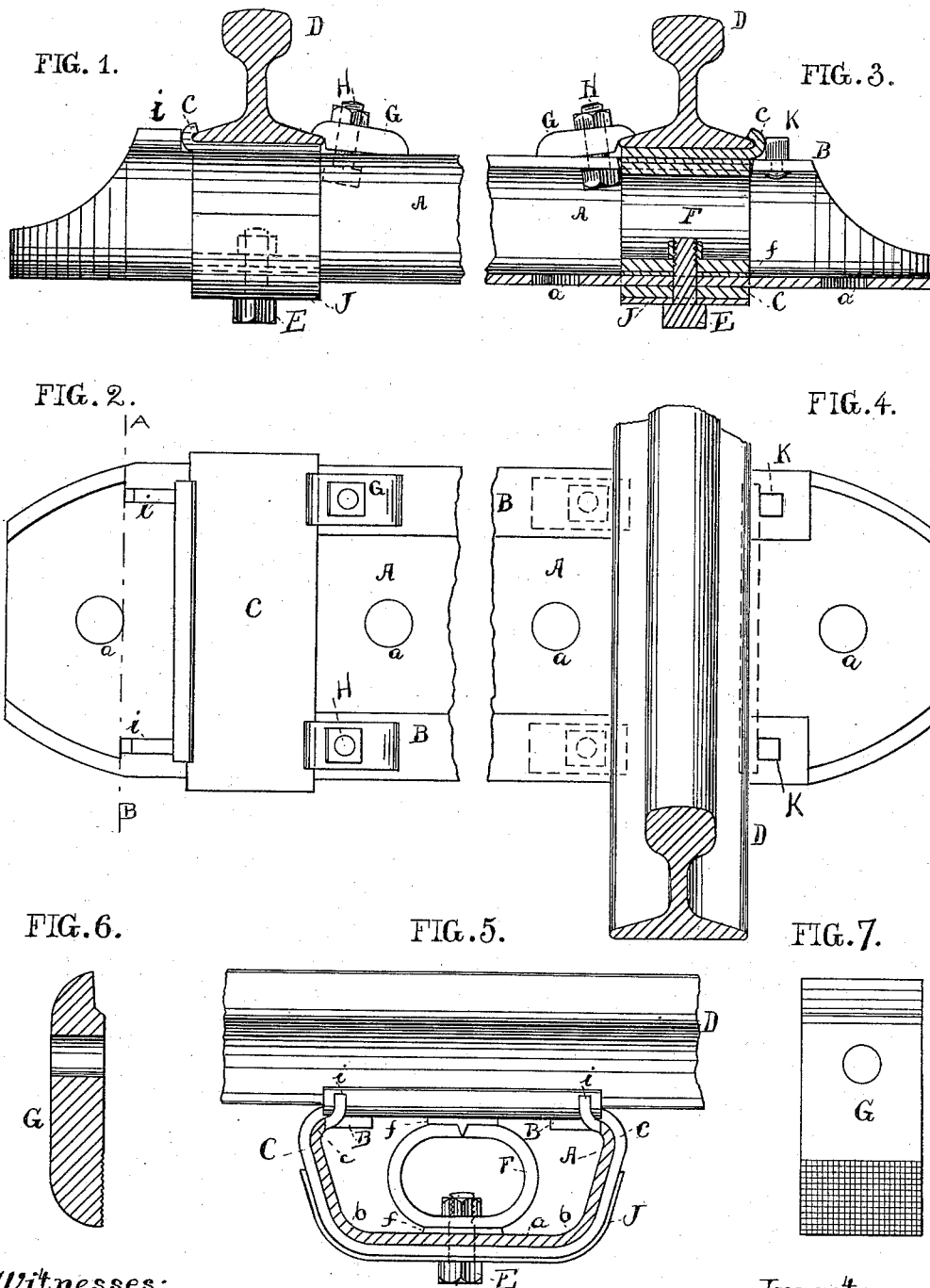
(No Model.)

R. T. WHITE.

METALLIC TIE OR SLEEPER FOR RAILROADS.

No. 385,395.

Patented July 3, 1888.



Witnesses:
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UNITED STATES PATENT OFFICE.

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METALLIC TIE OR SLEEPER FOR RAILROADS.

SPECIFICATION forming part of Letters Patent No. 385,395, dated July 3, 1888.

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To all whom it may concern:

Be it known that I, REYNOLDS T. WHITE, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Metallic Ties or Sleepers for Railroads; 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

15 The object of my invention is to produce a metallic tie or sleeper for steam-railroads to take the place of wooden ties or sleepers now universally in use on steam-railroads, and also have the tie or sleeper of sufficient strength and with as few bolts or rivets to work loose as possible, and with the necessary elasticity or spring to adapt it to the practical use of railroads; and my invention consists of a piece of steel of suitable dimensions, formed or
25 shaped so that it is a spring the entire length and provided with suitable straps or bands to prevent the sides from spreading or flattening down under the heavy loads and constant jar that a railroad-tie is subjected to, and at the
30 same time serving as a gage for the widths between the rails; and I also turn a portion of the outside edge of the straps or bands across the top of the tie upward and form it to receive the bottom outside edges of the rails,
35 and outside but close to the straps I turn up a part of the flange or put a stud in the flange of the tie to prevent the straps and rails from spreading, and suitable clamps are bolted to the flanges to hold the rails in position; and I also place a spring under the
40 rail between the straps and bottom of tie, and secure the spring to the bottom of tie by bolts or rivets, so that the spring will assist the sides of tie in carrying extra heavy loads.
45 A small plate or washer may be placed between spring and main tie to prevent the spring from wearing into main tie, and a similar wearing-plate may be placed on under side of strap. I also cover the bottom of tie with
50 paper or any suitable material to prevent

it from rusting, and the finished tie may be dipped in any rust-protecting material.

Referring to the drawings, Figure 1 is a side elevation of a tie embodying my invention. Fig. 2 is a plan view showing one rail removed. Fig. 3 is a sectional view of Fig. 1. Fig. 4 is a plan view of Fig. 3 with rail shown. Fig. 5 is an end view of Fig. 1. Figs. 6 and 7 are side and bottom views of a rail-clamp, drawn to an enlarged scale.

A is a plate of steel of the usual length of a railroad tie or sleeper bent or formed flat on the bottom *a* to rest on the ground and turned on a suitable curve at the bottom corners, *b*, then straight on a slight outward incline to the upper edges, to give it the necessary elasticity, and then over inwardly to form the flanges *B* to make a level surface and strong corner for the straps *C*, upon which the rails *D* rest.

The straps *C* are made of metal of suitable size and turned over the sides of bent plate *A* and secured to bottom of tie *A* by bolts or rivets *E*, and the two ends of straps *C* may be lapped at the bottom of tie *A*, with suitable holes through straps *C*, tie *A*, washer *f*, and spring *F*, and all securely held in place by bolts or rivets *E*. The outside of straps *C* is turned up at *c* in suitable shape to receive the outside bottom edges of rails *D*. A stud, *K*, is put into flanges *B* at one end of the sleeper, and on the other end a part of the flanges *B* are turned up outside, but close to strap *C*, to prevent the rails *D* from spreading.

F is a plate of steel of suitable size bent or formed to make a suitable spring, and placed under rails *D*, between straps *C* and the inside of the bottom of the tie *A*. A wearing-plate, *f*, may be placed between straps *C*, tie *A*, and spring *F*.

G G are clamps for securing the rails *D* in position on tie *A*, and they consist of pieces of metal roughened at each end, as shown in Figs. 6 and 7, and are secured to flanges *B B* by bolts *H*, the roughened parts bearing against flanges *B* and rails *D*, thus preventing rails *D* from slipping or creeping through tie *A* on curves or downgrades.

To prevent the bottom of tie *A* from rusting by lying on the ground, I cover it with hot tar

or other water-proof substance, and before the tar cools or other water-proof substance sets I cover it with paper, felt, or other suitable material, J, and the other parts may be covered with any suitable water-proof substance.

Tie A may be made any width required and with as many springs F as necessary, and straps C may be made and the ends lapped at the bottom of tie A, and the same, with springs F and bolt E, pass through them, and tie A may be made slightly crowning, or holes *a* may be made through the bottom of tie A to allow the water to run off or through the holes.

Having thus described my invention, what I claim is—

1. A tie or sleeper, A, consisting of a sheet of steel bent to the form shown—that is, flat on the bottom A, rounded at the bottom corners, *b*, then straight, but on a slight outward incline, to the upper corners, *c*, and then turned over inwardly to form the flanges B B—in combination with the bands C, shrunk around the said tie and which carry the rails D, substantially as shown and described.

2. A tie or sleeper made of sheet steel constructed to form a spring its entire length and provided with bands around said tie under the rails to prevent the body of the tie from flattening down, substantially as set forth.

3. A tie or sleeper made of sheet-steel to form a spring its entire length, having bands shrunk around it at or near its ends, in combination with springs secured between the under side of the bands and bottom of the tie, substantially as and for the purposes set forth.

4. The combination of the tie or sleeper A, constructed as described, the straps C, spring F, wearing-plates *f*, and clamps G G, substantially as shown.

5. In combination with a metallic tie or sleeper, A, a layer, J, of paper, felt, or other material saturated with any water-proof substance and secured to the under side of the bearing-surface, substantially as shown and described, and for the purposes set forth.

6. A tie or sleeper, A, having straps or bands C around its outside, and having stud K in flanges B at one end and a part of flanges B turned upward on the other end outside of straps C and rails D, as and for the purposes set forth.

7. A railroad tie or sleeper for steam-railroads having the following elements: a sheet of steel formed to make it flexible, and bands around its outside, with a part of said bands on the top of the tie formed to fit the lower edge of a rail, and springs between said bands and bottom of tie, and studs on one end of the flanges, and a part of the flanges turned up on the other end, all arranged substantially as shown and described, and for the purposes set forth.

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

REYNOLDS T. WHITE.

Witnesses:

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