

1,021,006.

S. SHOEMAKER.
METALLIC RAILWAY TIE.
APPLICATION FILED DEC. 14, 1911.

Patented Mar. 26, 1912.

2 SHEETS-SHEET 1.

Fig. 1.



WITNESSES

H. E. Dietrich
L. Rouville.

Fig. 2.

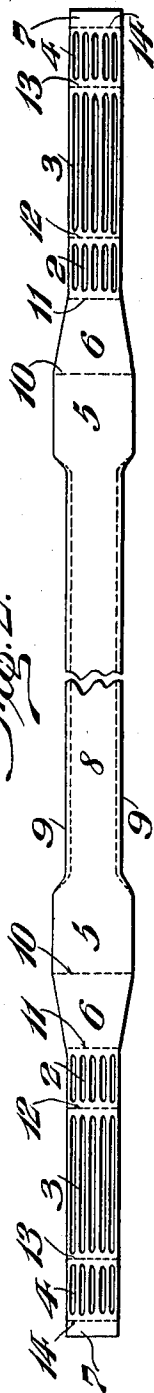


Fig. 3.

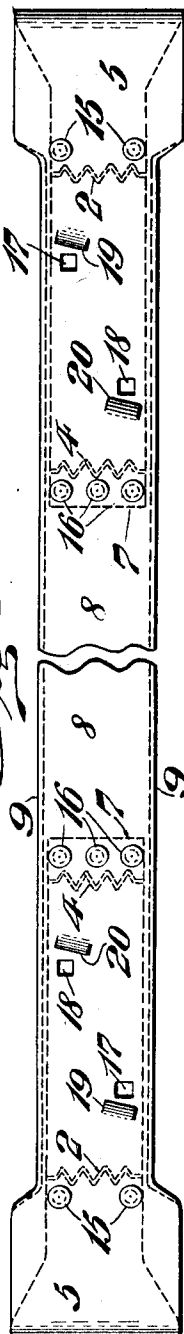
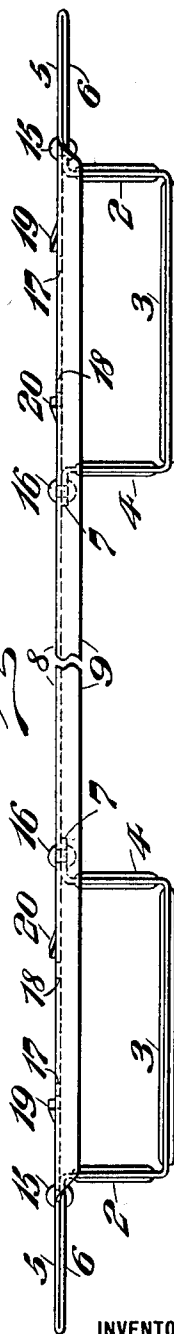


Fig. 4.



INVENTOR

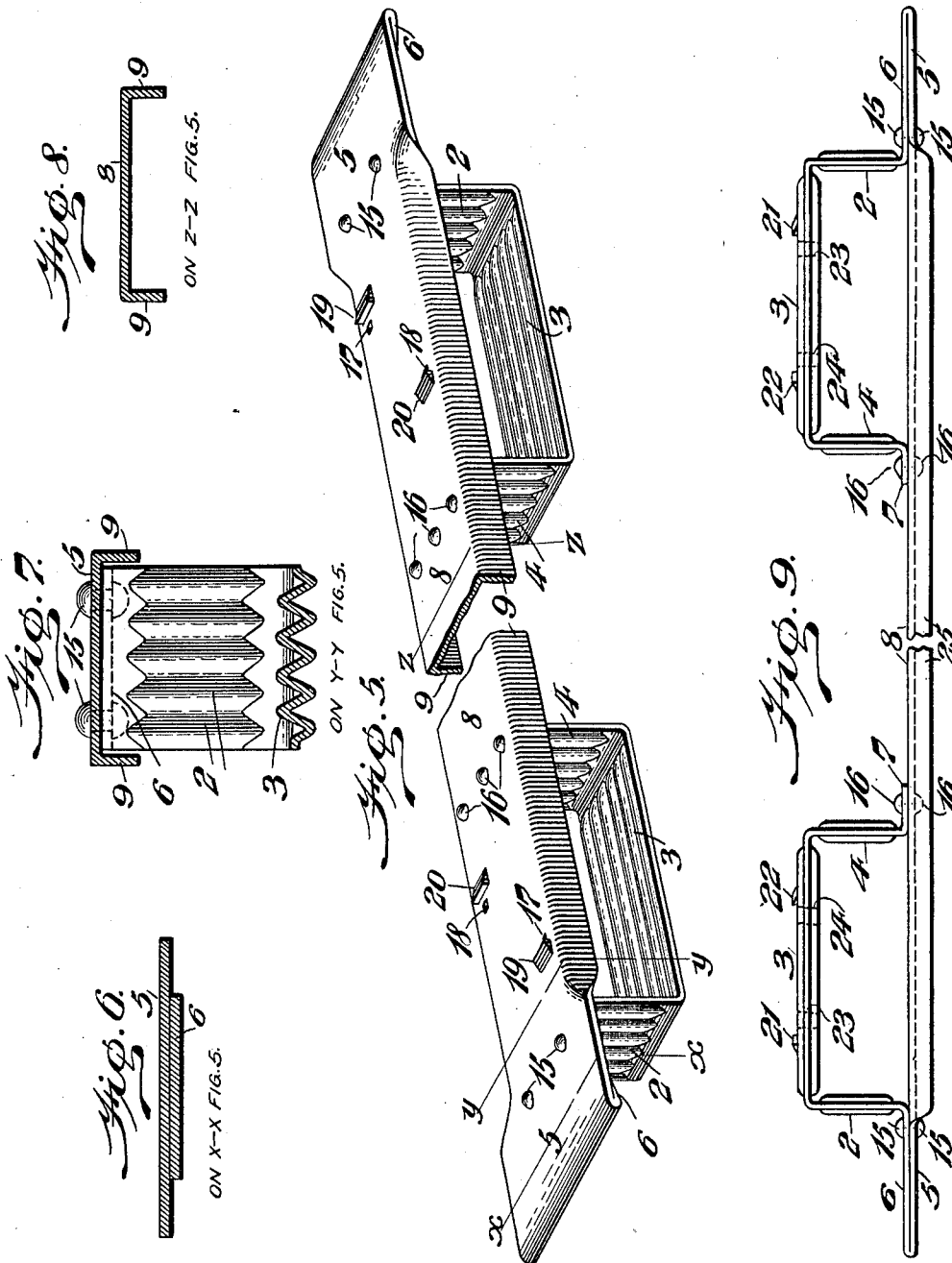
Samuel Shoemaker.
BY *Niederheim & Gaubauer.*
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2 SHEETS-SHEET 2.



WITNESSES

H. E. Dieterich
L. Douville

INVENTOR

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UNITED STATES PATENT OFFICE.

SAMUEL SHOEMAKER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE PENNSYLVANIA STEEL RAILWAY TIE COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF DELAWARE.

METALLIC RAILWAY-TIE.

1,021,006.

Specification of Letters Patent.

Patented Mar. 26, 1912.

Application filed December 14, 1911. Serial No. 665,752.

To all whom it may concern:

Be it known that I, SAMUEL SHOEMAKER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Metallic Railway-Tie, of which the following is a specification.

My invention consists of a novel construction of a metallic railway tie, which is simple in construction, positive in operation, cheap in manufacture, and which will be reliable, efficient and exceedingly durable under all conditions, my novel tie being constructed from a metallic blank, having its body portion preferably slightly narrowed and flanged downwardly and its ends provided with corrugations of different lengths, which are bent inwardly, downwardly, then inwardly on a line substantially parallel with the body of the tie, then upwardly, and finally inwardly to form a flange or terminal contacting with the bottom of the body of the tie, the juxtaposed or contacting surfaces being secured in place by riveting or other means to the under side or bottom of the body of the tie, whereby a very strong and durable corrugated anchoring member is formed at each end of the tie which is adapted to be embedded in the ballast of the road-bed.

The invention in all of its details will be fully understood from the following description and claims considered in connection with the drawings accompanying and forming part hereof, it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to, without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings—Figure 1 represents a plan view of a blank employed in making my novel construction of metallic railway tie. Fig. 2 represents a plan view of the blank after the first step of its manufacture, showing the central body portion flanged downwardly, and the outer extremities corrugated, preparatory to being bent inwardly, downwardly, inwardly, upwardly and inwardly. Fig. 3 represents a plan view of the finished tie. Fig. 4 represents a side elevation of Fig. 3. Fig. 5 represents a

perspective view of Fig. 4. Fig. 6 represents a section on line $x-x$ Fig. 5. Fig. 7 represents a section on line $y-y$ Fig. 5. Fig. 8 represents a section on line $z-z$ Fig. 5. Fig. 9 represents a side elevation of a modified construction.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:—1 designates a blank of steel or other material from which my novel construction of metallic railway tie is produced, said blank being subjected to the following operations, whose sequence, however, may be varied according to requirements.

In carrying out my invention, I take the blank 1, and preferably by suitable pressing or rolling mechanism, I form at each end thereof the corrugations 2, 3 and 4, it being apparent that the portions 5 near the ends of the tie body are of substantially the same width as the original blank 1, the portion 6 being slightly narrowed therefrom down to the width of the portion of the corrugated parts, 2, 3 and 4. The outer extremities 7, of the tie, are left blank to form a flange or terminal which is subsequently riveted to the bottom of the tie as will be explained, the width thereof being substantially the same as the width of the parts 2, 3 and 4. The body 8 of the tie is provided by suitable pressing or rolling mechanism with the downwardly projecting flanges 9 on opposite sides thereof, the extent of which will be apparent from Figs. 4 and 5. I next bend the portions 6 on the line 10 inwardly, as will be understood from Fig. 4, against the bottom of the end portion 5 of the tie body, and then deflect the portion 2 downwardly on the line 11 at an angle to the tie body or into the position seen in Fig. 4. I next deflect inwardly the portion 3 on the line 12, as will be understood from Fig. 4, on a line substantially parallel to the tie body, and next deflect the portion 4 on the line 13 upwardly or at an angle to the portion 3, as will be understood from Fig. 4, and lastly, deflect the portion 7 on the line 14, thereby forming a terminal or flange, contacting with the body of the tie, so that the parts now appear as seen in Figs. 4 and 5, the portions 6 and 14 being secured to the bottom of the body of the

tie by means of rivets 15 and 16 respectively, whose number may be increased or diminished according to requirements.

It will be understood that both extremities of the metal tie blank will be treated in the same manner as already described, the ends thereof being first corrugated and then bent inwardly, downwardly, inwardly, upwardly and inwardly, so that a description of the method of construction of one end, will be sufficient for both.

17 and 18 designate preferably square holes arranged out of alinement near the ends of the body portion 8 of the tie, the same being located in proximity to the abutments 19 and 20 respectively, which latter are formed by suitable pressing or rolling mechanism from the body portion 8 of the tie.

It will be apparent that a metallic railway tie made as described can be cheaply manufactured, since all the parts are preferably integral with the body portion and that the same will be exceedingly durable and effective under all conditions. By making the projecting bottom or anchoring portions 2, 3 and 4, seen in Figs. 4 and 5, corrugated, and securing them to the body portion 8 in the manner described, by riveting or otherwise, a very strong, durable and rigid construction is produced, whereby the tie can be effectively anchored in the ballast of the road-bed. Furthermore, by doubling or folding the portions 5 and 6 upon each other in the manner described, the ends of the tie will be reinforced and not readily distorted, and further by reason of the flanges 9 the tie body will be maintained in a rectilinear line under all conditions. By locating or bending the terminals or flanges 7 in the position seen in Figs. 3 and 4, and riveting the same as described, the outer portions of the body of the tie will be materially strengthened and reinforced, as is evident, it being apparent that the width of the terminal or flange 7 is slightly less than the distance between the flanges 9 of the bottom portion, as will be understood from Fig. 3.

In the construction seen in Fig. 9, I have shown a modified construction, wherein the completed tie, seen in Figs. 3, 4 and 5 is used in a reversed position, the body portion 8 with the side flanges 25 thereof being embedded in the ground or ballast when in use, while the projecting portions formed by the corrugated members 2, 3 and 4 serve as a cushion or chair to support the rail, suitable abutments 21 and 22 being employed in proximity to the rail holes 23 and 24. In the construction seen in Fig. 9, the flanges 25 are deflected in a direction opposite to the flanges 9, seen in Figs. 3, 4 and 5—i. e., in a direction away from the projecting portions formed by the corrugated members.

It will be apparent that the operations

whereby my novel tie is produced from the blank 1, can be effected by suitable pressing or rolling mechanisms, and may be performed in different sequences or simultaneously; that is, the production of the flanges 9 and the corrugations 2, 3 and 4 can be performed simultaneously or successively without departing from the spirit of my invention.

It will be apparent that by the employment of the corrugations in vertical the webs 2 and 4, the same are rendered exceedingly stiff and rigid, as are also the bottom members 3, whereby a very rigid and durable anchoring member composed of the portions 2, 3 and 4, is obtained.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:

1. A railway tie comprising a body having end portions bent inwardly, away from the body, in the direction of the length of the body, toward the body and inwardly, the last-named inwardly bent portions contacting with the body and being riveted thereto.

2. As an improved article of manufacture, a railway tie, consisting of a body, having end portions bent inwardly, downwardly, inwardly, upwardly and inwardly, the inwardly bent portions contacting with the bottom of said body and being riveted thereto.

3. As an improved article of manufacture, a railway tie, consisting of a body, having flanges projecting from the sides thereof and end portions bent inwardly, downwardly, inwardly, upwardly and inwardly.

4. As an improved article of manufacture, a railway tie, consisting of a body, having projecting side flanges, and end portions narrowed and corrugated, each of said end portions being bent inwardly, downwardly, inwardly, upwardly and inwardly, said inwardly bent portions contacting with the under side of said body being secured thereto.

5. As an improved article of manufacture, a railway tie consisting of a body portion, provided with projecting side flanges, and having its end portions bent inwardly, downwardly, inwardly, upwardly and then inwardly, the juxtaposed bent portions contacting with the bottom of the tie body being riveted thereto, and said portions bent downwardly, inwardly and upwardly, in the sequence named, being corrugated.

6. As an improved article of manufacture, a railway tie consisting of a body portion provided with projecting side flanges and having its end portions bent inwardly, downwardly, inwardly, upwardly and then inwardly, the juxtaposed bent portions contacting with the bottom of the tie body, being riveted thereto, and said portions bent

downwardly, inwardly and upwardly, in the sequence named, being corrugated, said body portion having openings in each end thereof out of alinement for the reception of rail fastening devices and abutments on said body portion located also out of alinement and in proximity to said openings.

7. A railway tie comprising a body having end portions bent inwardly, away from the body, in the direction of the length of the body, toward the body and inwardly, the last-named inwardly bent portions contacting with the body and being riveted thereto, and the portions that are bent away from the body and in the direction of the length thereof and toward the body being corrugated.

8. As an improved article of manufacture, a metallic railway tie, consisting of a body having an end portion bent inwardly at 6, downwardly, inwardly, upwardly and inwardly as at 7, said inwardly bent portions 6 and 7 being juxtaposed to the bottom of said tie body.

9. As an improved article of manufacture, a metallic railway tie, consisting of a body having an end portion bent inwardly, as at 6, downwardly, inwardly, upwardly and inwardly as at 7, said inwardly bent portions 6 and 7 being juxtaposed to the bottom of said tie body and abutments 19 and 20 on the top of said tie body.

10. As an improved article of manufacture, a metallic railway tie, consisting of a

body having an end portion bent inwardly, as at 6, downwardly, inwardly, upwardly, and inwardly, as at 7, said inwardly bent portions 6 and 7, being juxtaposed to the bottom of said tie body, and abutments on the top of said tie body, the latter having openings therein, for the reception of rail fastening devices.

11. A metallic railway tie, comprising a body having end portions bent inwardly as at 6, away from the body, in direction of the length of the body, toward the body and inwardly as at 7, said portions 6 and 7 being juxtaposed to said body, and the portions bent away from the body and in the direction of the length thereof, and toward said body being corrugated.

12. A metallic railway tie, comprising a body having end portions bent inwardly as at 6, away from the body, in direction of the length of the body, toward the body and inwardly as at 7, said portions 6 and 7 being juxtaposed to said body and the portions bent away from the body and in the direction of the length thereof, and toward said body being corrugated, the top of said tie body having abutments thereon and openings for rail fastening devices in proximity to said abutments.

SAMUEL SHOEMAKER.

Witnesses:

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C. D. McVAY.