W. D. FORSYTH.

METHOD OF MAKING CAR PARTS.

APPLICATION FILED JULY 30, 1914.

1,125,300.

Patented Jan. 19, 1915.

Fig. 1.

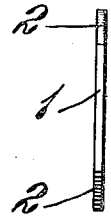


Fig. 2.

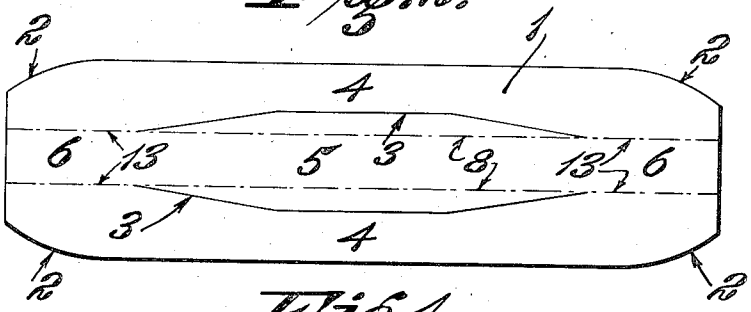


Fig. 3.

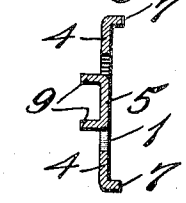


Fig. 4.

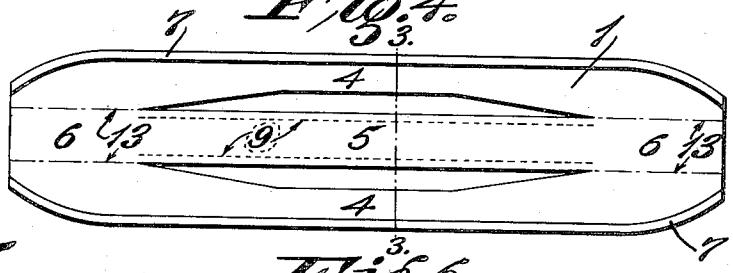


Fig. 5.

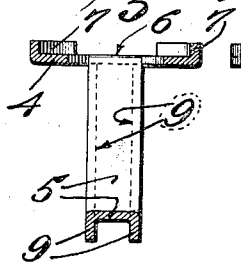


Fig. 6.

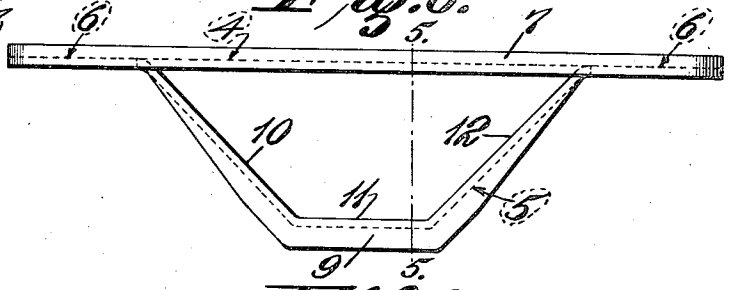


Fig. 7.

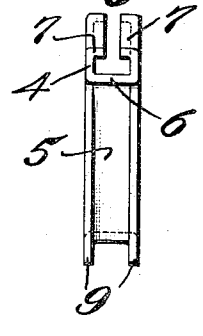
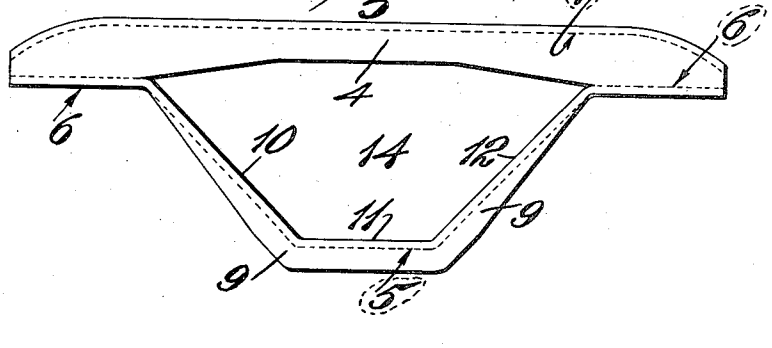


Fig. 8.



Witnesses:

Edgar T. Turner

N. W. Preston

Inventor:

William D. Forsyth,

by Cornet & Cornet,

his Attys.

UNITED STATES PATENT OFFICE.

WILLIAM D. FORSYTH, OF YOUNGSTOWN, OHIO, ASSIGNOR TO RAILWAY PRODUCTS CORPORATION, OF BUFFALO, NEW YORK, A CORPORATION OF NEW YORK.

METHOD OF MAKING CAR PARTS.

1,125,300. Specification of Letters Patent. Patented Jan. 19, 1915.

Original application filed December 4, 1913, Serial No. 804,676. Divided and this application filed July 30, 1914. Serial No. 854,021.

To all whom it may concern:

Be it known that I, WILLIAM D. FORSYTH, a citizen of the United States, and a resident of Youngstown, in the county of Mahoning and State of Ohio, have invented new and useful Improvements in Methods of Making Car Parts, of which the following is a specification.

My invention relates to the parts of railway cars, such as bolsters, truck side frames, brake beams, and the like.

The principal object of my invention is to provide a method of making a car part from a metal plate which will be easy and cheap to practise, and which will produce a light and strong car part.

In the accompanying drawing which forms part of this specification, and in which like reference characters refer to like parts throughout the several views, Figure 1 is an end elevation of the blank from which a car part is made according to my invention, said blank being in the form of a slitted metal plate; Fig. 2 is a plan view of the blank shown in Fig. 1, showing the slits therein; Fig. 3 is a cross-section on the line 3—3 on Fig. 4; Fig. 4 is a plan view of the blank after flanges have been formed along its edges and certain parts have been displaced from its plane; Fig. 5 is a cross-section on the line 5—5 on Fig. 6; Fig. 6 is a side elevation of the blank after the middle portion thereof between the slits has been stretched and displaced from the remaining portions of the blank; Fig. 7 is an end elevation of the blank after its side portions have been bent up to form the finished truss member; and Fig. 8 is a side elevation of the finished truss member.

In making the car truck side frame shown in the accompanying drawing, the blank 1 is formed by cutting off the corners of an oblong metal plate along straight or curved lines 2, as shown in Fig. 2. After the corners of the blank 1 are cut off, spaced slits 3 are made in said blank. These slits 3 extend longitudinally of the blank 1 and terminate short of its ends. These slits 3 are shown as having their middle portions parallel and their end portions converging; but they may be curved or otherwise shaped according to the proportions of the finished car part desired. The intermediate portion of the blank 1 is divided by the slits 3 into three longitudinal portions consisting of two side portions 4 and a middle portion 5. The side portions 4 and the middle portions 5 are integral with the end portions 6 of the blank 1.

The longitudinal edge portions of the blank 1 are bent along lines parallel to its longitudinal edges to form flanges 7 projecting from said blank in the same direction. The flanges 7 may be formed before the blank 1 is slitted, in order that the flanging operation will not spread the slits. The longitudinal edge portions of the middle portion 5 are bent along parallel lines 8 passing through the ends of the slits 3 to form flanges 9 which project from the blank 1 in a direction opposite to the direction in which the flanges 7 project. The middle portion 5 of the blank 1, together with its flanges 9, is stretched and displaced from the plane of the end portions 6 in a direction perpendicular to the plane of said blank, as shown in Fig. 6, that is, perpendicular to its own plane. The middle portion 5 of the blank 1, after it has been stretched and displaced, as described, has a middle straight portion 11 which is in a plane substantially parallel to the plane of the end portions 6 of the blank 1, and two straight portions 10 and 12 which incline upwardly from the ends of said middle straight portion 11 to the end portions 6. The middle portion 5 of blank 1 is of uniform width, and the flanges 9 thereon are widest throughout its middle region.

After the middle portion 5 of the blank 1 has been displaced, as described, (Fig. 6), the side portions 4 with the flanges 7 thereon are bent along parallel lines 13 which extend longitudinally of the blank 1, so that the flanges 7 project toward each other, as shown in Figs. 7 and 8. These operations described give the truss member its finished form in which there is an open-

ing 14. In the opening 14 is fixed a tie or strut member, not shown, to make a complete king-post truss.

The construction of the car part is claimed in my application Ser. No. 804,676, filed December 4th, 1913, of which this application is a divisional.

The method hereinbefore described produces a truss member which constitutes the tension and compression members of a king-post truss and is adapted for a car part. The different bending or pressing operations of the method may be performed by suitable dies, presses or other apparatus, and while the plate is cold or hot.

In practising the method, the shape of the original plate, the shape of the slits and the lines of bending may be varied so that the metal may be distributed throughout the finished truss member as desired. The truss member shown as made according to the invention is designed for a car truck side frame, and the metal is distributed in said truss member according to the stresses existing in a side frame. In the case of bolsters, brake beams or other car parts, however, other conditions may require a different distribution of metal than that shown; but the necessary changes can be easily made.

What I claim as my invention is:

1. A blank for making a car part comprising a plate, said plate being cut by two spaced slits extending longitudinally thereof and terminating short at its ends, said slits having their ends closer together than their middle portions, said plate being narrowest at its ends and of full width near the ends of said slits.

2. A blank for making a car part comprising a plate, the longitudinal edge portions of said plate being bent to form flanges along the longitudinal edges of said plate, said plate being cut by two spaced slits extending longitudinally thereof and terminating short of its ends, said slits having their ends closer together than their intermediate portions, the longitudinal edge portions of the middle portion of said plate included between said slits being bent along straight lines between the ends of said slits to project from the plane of said plate at right angles thereto, whereby integral projecting flanges are formed on said middle portion of said plate included between said slits.

3. A blank for making a car part comprising a plate cut by two spaced slits extending longitudinally thereof and terminating short of its ends, said slits having their ends closer together than their intermediate portions.

4. A blank for making a car part comprising a plate cut by two spaced slits extending longitudinally thereof and terminating short of its ends, said slits having their ends closer together than their middle portions, the longitudinal edge portions of the middle portion of said plate included between said slits being bent along lines between the ends of said slits to project from the plane of said plate at right angles thereto, whereby integral projecting flanges are formed on said middle portion of said plate included between said slits.

5. The method of making car parts which consists in cutting two spaced slits in a plate, said slits extending longitudinally of said plate and terminating short of its ends, bending the longitudinal edge portions of the middle portion of said plate included between said slits to form flanges along the longitudinal edges of said plate, displacing said middle portion included between said slits from its plane in a direction perpendicular to its plane, and bending the side portions of said plate along lines extending longitudinally of said plate to lie in parallel planes.

6. The method of making car parts which consists in bending the longitudinal edge portions of a plate to form flanges along the longitudinal edges of said plate, cutting two spaced slits in said plate, said slits extending longitudinally of said plate and terminating short of its ends, bending the longitudinal edge portions of the middle portion of said plate included between said slits to form flanges thereon, displacing said middle portion included between said slits from its plane in a direction perpendicular to its plane, and bending the side portions of said plate along lines extending longitudinally of said plate to lie in parallel planes.

7. The improvement in the method of making car parts, which consists in flanging the longitudinal edges of a plate, cutting two spaced slits in said plate, said slits extending longitudinally of said plate and terminating short of its ends, bending the side portions of said plate along lines extending longitudinally thereof to lie at substantially right angles to the original plane of the plate, and then displacing the middle portion of said plate included between said slits from the remainder of said plate in a direction perpendicular to the plane of said plate.

8. The method of making car parts which consists in bending the longitudinal edge portions of a plate to form flanges along the longitudinal edges of said plate, cutting two spaced slits in said plate, said slits extending longitudinally of said plate and terminating short of its ends, said slits having their ends closer together than their intermediate portions, bending the longitudinal

edge portions of the middle portion of said plate included between said slits along lines between the ends of said slits to form flanges on said middle portion, displacing said middle portion included between said slits from its plane in a direction perpendicular to its plane, and bending the side portions of said plate along lines extending longitudinally of said plate to lie in parallel planes.

Signed at Pittsburgh, Pennsylvania, this 25th day of July, 1914.

WILLIAM D. FORSYTH.

Witnesses:

JAMES F. CALLAHAN,

AMOS H. EVANS.