

W. D. FORSYTH.
METHOD OF MAKING CAR PARTS.
APPLICATION FILED DEC. 4, 1913.

1,125,291.

Patented Jan. 19, 1915.

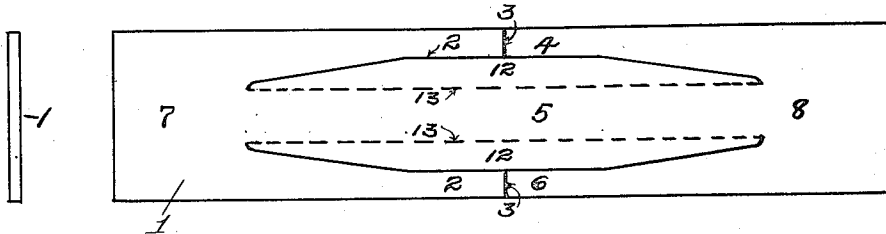


FIG. 1

FIG. 2

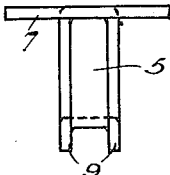


FIG. 3

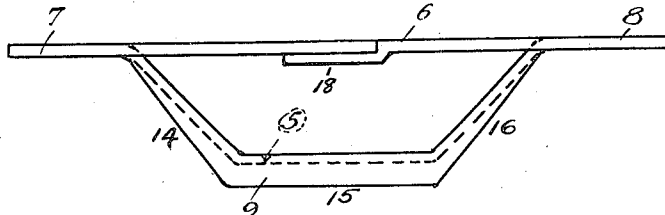


FIG. 4

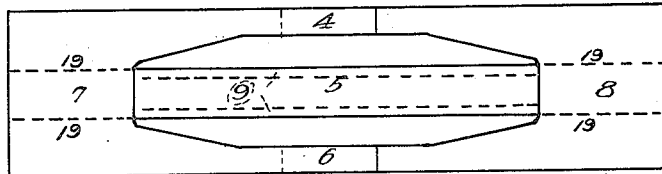


FIG. 5

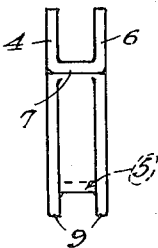


FIG. 6

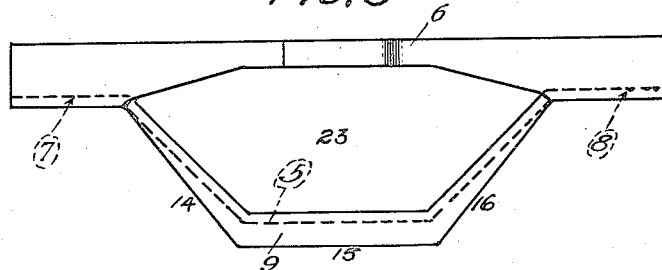


FIG. 7

WITNESSES

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METHOD OF MAKING CAR PARTS.

1,125,291.

Specification of Letters Patent.

Patented Jan. 19, 1915.

Application filed December 4, 1913. Serial No. 804,674.

To all whom it may concern:

Be it known that I, WILLIAM D. FORSYTH, a citizen of the United States, residing at Youngstown, in the county of Mahoning, in the 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 car parts, and particularly to methods of making car parts from a single piece of metal.

The principal object of my invention is to devise a method for cheaply making a strong and light car part from a single piece of metal, preferably from a metal plate.

My invention consists in treating a metal plate by certain operations of slitting, bending and welding, to produce a structure which has the outline of a king-post truss, and which has all of its constituent parts integral.

In the accompanying drawing Figure 1 is an end view of the plate from which the car part is made. Fig. 2 is a plan view of the plate showing the peculiar slittings in solid lines. Fig. 3 is an end view of the plate after the middle section has been expanded. Fig. 4 is a side view of Fig. 3. Fig. 5 is a top plan view of Fig. 4. Fig. 6 is an end view of Fig. 7. Fig. 7 is a side view of Fig. 4 with the edge sections of the plate bent in accordance with the method of making car parts hereinafter set forth.

The car part shown as made according to the invention is made from a metal plate 1. In the metal plate 1 are cut two spaced slits 2 which extend longitudinally of said plate and terminate short of its ends. In the particular construction shown, the slits 2 have 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 edge portions 4 and 6 of the plate 1, that is, the portions between the slits 2 and the longitudinal edges of said plate 1, are cut by slits 3 which extend transversely of said plate 1, and which are preferably located at the middle of said edge portions. The longitudinal marginal portions 12 of the middle portions 5 of the plate 1 are bent down along straight lines 13 extending between the ends of the slits 2 at right

angles to the plane of the plate 1 to form flanges 9 on said middle portion 5.

The middle portion 5 of the plate 1, together with the flanges 9 thereof, is displaced relatively to the end portions 7 and 8 of the plate 1 in a direction perpendicular to the plane of said end portions 7 and 8, as shown in Fig. 4. The displacing of the middle portion 5 draws the end portions 7 and 8 closer together, and to compensate for this shortening of the plate 1, the ends of the edge portions 4 and 6 which are separated by the slits 3 are overlapped and welded or riveted, as shown in Fig. 4. The middle portion 5 is preferably displaced so as to consist of a middle straight portion lying in a plane parallel to the plane of the end portions 7 and 8, and two inclined portions 14 and 16 connecting said middle straight portion 15 with said end portions 7 and 8.

The edge portions 4 and 6 of the plate 1 are bent along parallel longitudinal lines 19 (Fig. 5) which extend through the ends of the slits 3. The edge portions 4 and 6 are bent at right angles to the plane of the plate 1 and project from the end portions 7 and 8 in the same direction. The edge portions 4 and 6 after they are bent, lie in parallel planes, and preferably in the planes of the flanges 9 on the middle portion 5, as shown in Figs. 6 and 7. In the opening between the middle portion 5 and the edge portions 4 and 6 is placed a tie or strut member, not shown, to make a complete truss.

While for the purpose of illustration there is shown a car truck side frame made according to the invention, the invention is not limited to this construction, but may be used to make other car parts, such as brake beams, bolsters, and the like. The cutting, bending and welding operations may be performed by suitable dies, presses or other apparatus, and may be carried out while the plate 1 is hot or cold. The edge portions 4 and 6 and the middle portion 5, which constitute the compression member and the tension member respectively, are integrally connected, and are consequently more strongly connected than if they were separate pieces riveted together. The metal in the plate 1 can be distributed throughout the finished car part as desired, because the

shape of the plate, the shape of the slits and the lines of bending may be varied.

What I claim as my invention is:

1. A blank for making a car part comprising a metal plate having two spaced longitudinal slits therein terminating short of its ends, said plate having therein a slit extending transversely thereof from each of said longitudinal slits to the corresponding edge of said plate.
2. A blank for making car parts comprising a metal plate having two spaced longitudinal slits therein terminating short of its ends, said slits having parallel middle portions and converging end portions, said plate having therein a slit extending transversely thereof from each of said longitudinal slits to the corresponding edge of said plate.
3. The method of making car parts which consists in making two spaced slits in a metal plate extending longitudinally thereof and terminating short of its ends, cutting through the edge portions of said plate between said slits to divide each edge portion into two parts, displacing the portion of said plate bordered by said slits away from the remainder of said plate in a direction substantially perpendicular to the plane thereof, and fastening together the separated ends of said two parts of each edge portion of said plate.
4. The method of making car parts which consists in making in a metal plate two spaced slits extending longitudinally thereof and terminating short of its ends, cutting through the edge portions of said plate between said slits and its edges at a point between the ends of said slits to divide each edge portion into two parts, bending said edge portions at an angle to the plane of said plate to lie in parallel planes, displacing the middle portion of said plate bordered by said slits from the remainder of said plate in a direction perpendicular to the plane of said middle portion, and fastening together the separated ends of said

two parts of each edge portion of said plate.

5. The method of making car parts which consists in making two spaced slits in a metal plate extending longitudinally thereof and terminating short of its ends, said slits being closer together at their ends than at their middles, bending the marginal portions of the middle portion of said plate between said slits at right angles to the plane of said plate to form flanges on said middle portion, making other slits in said plate to extend transversely thereof from each of said first-mentioned slits to the corresponding edge of said plate so as to divide the edge portions of said plate into two parts, bending said edge portions at an angle to the plane of said plate to lie in parallel planes, displacing the middle portion of said plate between said slits from its original plane in a direction perpendicular to its original plane, and fastening together the separated ends of said two parts of each edge portion of said plate.

6. The method of making car parts which consists in making two spaced slits in a metal blank extending longitudinally thereof and terminating short of its ends, making other slits in said blank to extend transversely thereof from each of said first-mentioned slits to the corresponding edge of said blank so as to divide each edge portion of said blank into two parts, displacing the middle portion of said blank bordered by said first-mentioned slits away from the remainder of said blank in a direction perpendicular to the plane of said middle portion, and fastening together the separated ends of said two parts of each edge portion of said blank.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

WILLIAM D. FORSYTH.

Witnesses:

J. F. CALLAHAN,
ASHLEY H. BROCKETT.