

972,770.

Patented Oct. 11, 1910.

2 SHEETS—SHEET 1.

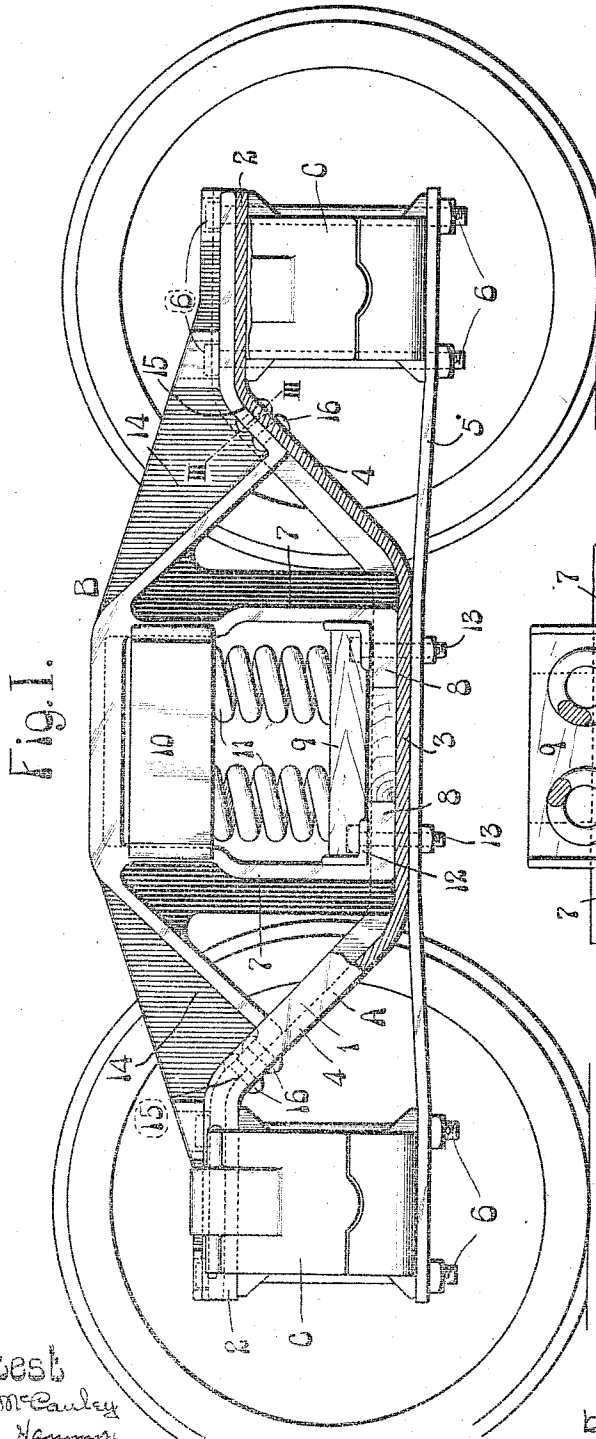


Fig. I.

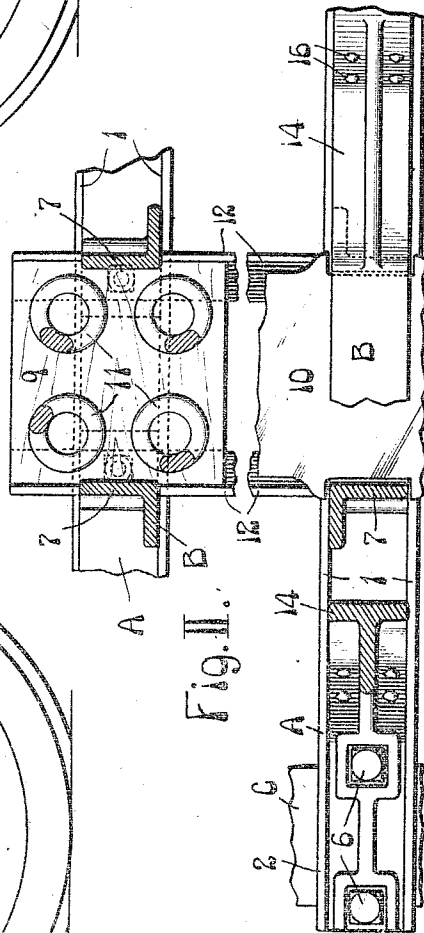


Fig. II.

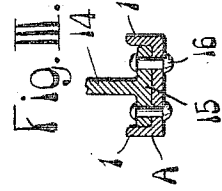


Fig. III.

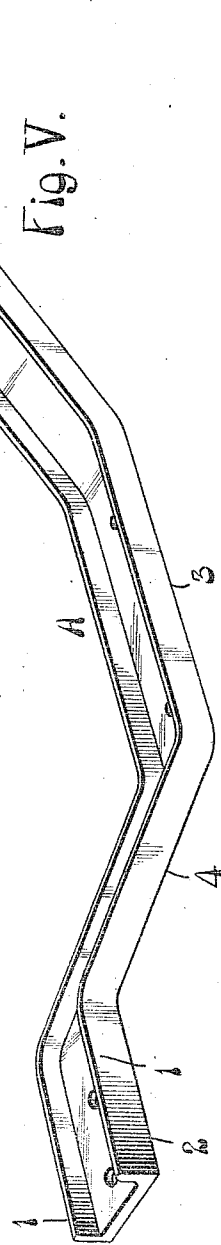
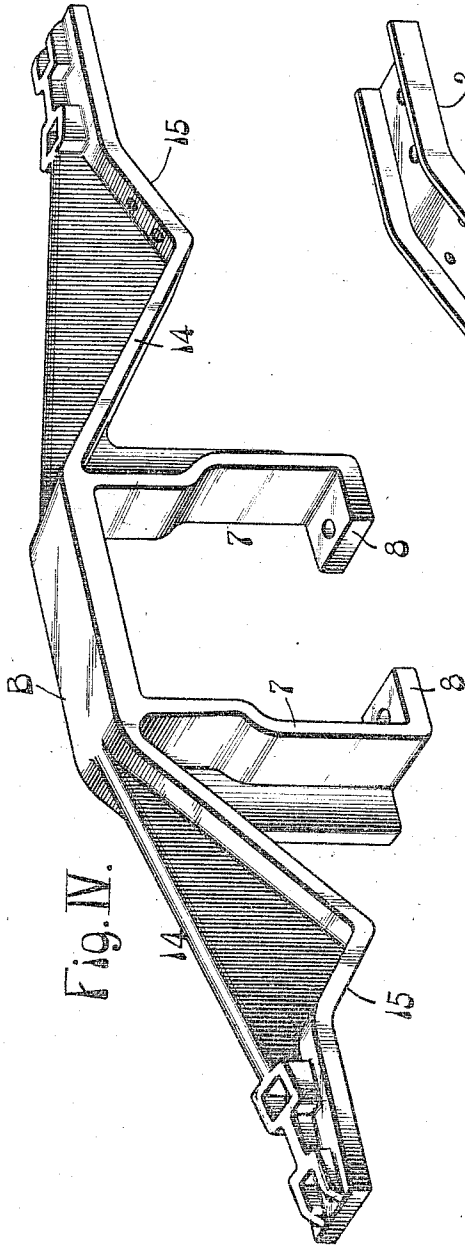
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

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## SIDE FRAME FOR CAR-TRUCKS.

972,770.

Specification of Letters Patent. Patented Oct. 11, 1910.

Application filed July 16, 1910. Serial No. 572,355.

To all whom it may concern:

Be it known that I, WILLIAM D. LOWRY, a citizen of the United States of America, residing in the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Side Frames for Car-Trucks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a built up side frame for car trucks, and has for its object the production of a very strong truck side frame of this kind which may be manufactured at a low cost.

In the preferred form of my invention the compression member of the truck frame is a single steel casting adapted to receive the bolster and springs. As rolled beams of the commercial shapes possess high tensile strength and can be manufactured at a much lower cost per pound than steel castings, I preferably employ a beam of this type as a tension member. This truck frame constructed of a casting and a rolled beam has many advantages over a truck frame composed of a single casting. It possesses maximum strength, the compression member is a very simple casting, and it is not liable to fracture during the process of manufacture, as all of its parts are free to expand and contract without straining any other part of the casting. The compression and tension members are combined together so as to produce a very strong structure, and the complete truck frame weighs considerably less than a truck frame composed of a single casting.

Figure I is a side elevation of a car truck having a side frame embodying the features of my invention. Fig. II is in part a top plan view, and in part a horizontal section, of a portion of the truck shown in Fig. I. Fig. III is a section taken on line III—III, Fig. I. Fig. IV is a perspective view of the compression member. Fig. V is a perspective view of the tension member.

In the accompanying drawings:—A designates a tension member, preferably in the form of a rolled channel beam having its flanges 1 upturned. The tension member has horizontal ends 2, which rest on journal boxes C, a middle horizontal portion 3, and inclined intermediate portions 4.

5 designates the usual tie bar, connecting the journal boxes.

The compression member B is composed of a single casting, provided with upturned flanges on its top face and having its ends arranged between the flanges at the ends of the tension member. The ends of the compression member B are preferably seated on the web of the tension member. Bolts 6, which connect the journal boxes to the tie bar 5 also pass through the end portions of the compression and tension members. The middle portion of the compression member is provided with depending columns 7, forming the side walls of a recess in the under side of the compression member. The lower ends of the columns 7 are arranged between the flanges of the tension member and provided with arms 8 separated from each other and which support a spring seat 9. It will be readily perceived that due to the columns 7 being separated from each other at their lower ends, these columns may partake of any necessary expansion or contraction in casting the compression member and without resultant fracture of the columns, or the part connecting them, which is extremely liable to occur in the production of side frames wherein the columns are integrally connected at their lower ends.

10 designates a bolster having the usual guide lugs that engage the columns 7. Springs 11 are interposed between the bolster and the spring seat 9.

The side frames on opposite sides of the truck are connected together by angle bars 12 that extend across the truck below the bolster. These angle bars 12 project beyond the truck frames, as shown in Fig. II, and receive the spring seats 9, which are preferably wooden blocks arranged between the vertical flanges of said angle bars.

13 are bolts passing through the tension member A and the angle bars 12, column arms 8, and tie bar 5, and connecting all of said parts together. The bolts 13 are especially important in connecting the spring seat supporting arms 8 of the bolster columns of the tension member A between the flanges of which said arms are seated in that they serve to prevent movement of the bolster columns and tension member relative to each other.

In the usual type of built up truck frame, wherein the ends of the compression and tension members are located above the journal boxes, and connected together by bolts, the latter receive very severe shearing strains in service, because the service shocks tend to

slide the ends of the tension and compression members in opposite directions, and this movement must be resisted by the connecting bolts. In my improved truck frame, the bolts 6 are not subjected to such stresses, as the compression member has wings 14 provided with abutments 15 which engage the inclined portions of the tension members, and it will be readily seen that this construction relieves the end portions of the compression member of all compressive stresses. The abutments 15 are preferably secured to the tension members by rivets 16.

I claim:—

1. A truck frame, comprising a tension member having upwardly extending flanges, and a compression member above said tension member having columns seated between the flanges of said tension member.

2. A truck frame, comprising a compression member having columns separated at their lower ends, and a tension member beneath said compression member, the tension member being provided with flanges between which the lower ends of said columns are seated.

3. A truck frame, comprising a compression member having columns separated at their lower ends, a tension member beneath said compression member, the tension member being provided with flanges between which the lower ends of said columns are seated, said columns being provided at their lower ends with arms for supporting a spring seat.

4. A truck frame, comprising a compression member having columns separated at their lower ends, a tension member beneath said compression member, the tension member being provided with flanges between which the lower ends of said columns are seated, said columns being provided at their lower ends with arms for supporting a

spring seat, and means for connecting said arms to said tension member.

5. A truck frame, comprising a compression member having columns separated at their lower ends, a tension member beneath said compression member, the tension member being provided with flanges between which the lower ends of said columns are seated, said columns being provided at their lower ends with arms for supporting a spring seat, and bolts connecting said arms to said tension member.

6. A truck frame comprising a tension member having inclined intermediate portions, and a compression member having abutments engaging the inclined portions of the tension member.

7. A truck frame comprising a tension member having substantially horizontal end portions and inclined intermediate portions, and a compression member having inclined wings provided with abutments engaging the inclined portions of the tension member.

8. A truck frame comprising a tension member having substantially horizontal end portions and inclined intermediate portions, a compression member having inclined wings provided with abutments engaging the inclined portions of the tension member, and means for connecting said abutments to the tension member.

9. A truck frame, comprising a compression member having a pair of abutments, a tension member having inclined portions which extend upwardly from the lower portion of the compression member and pass under said abutment, and means for connecting the ends of the compression member to the tension member.

WILLIAM D. LOWRY.

In the presence of—

E. B. LINN,

A. J. McCAULEY.