

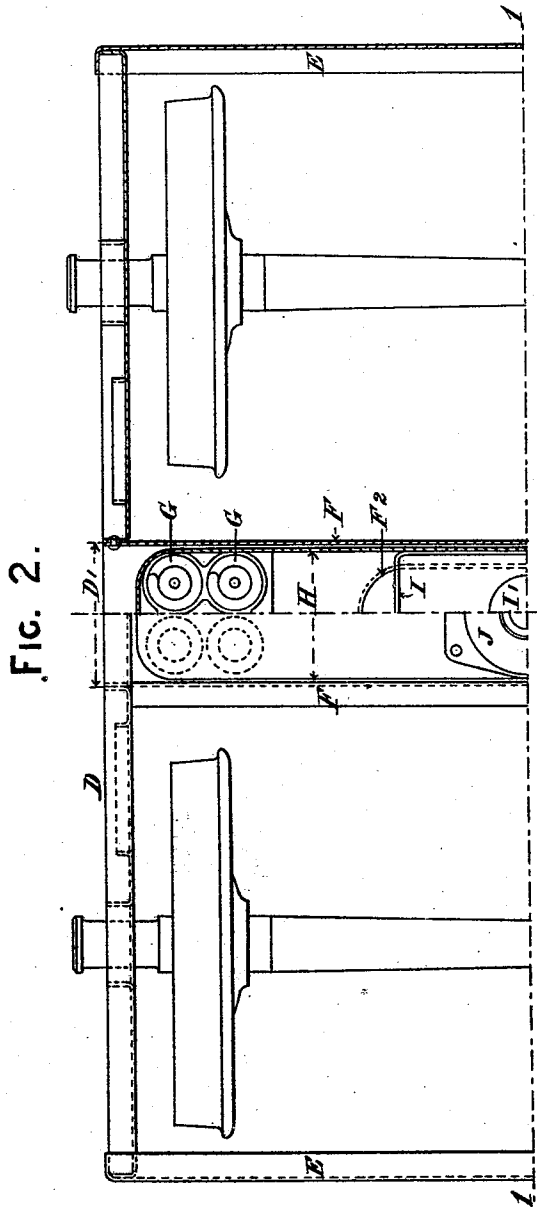
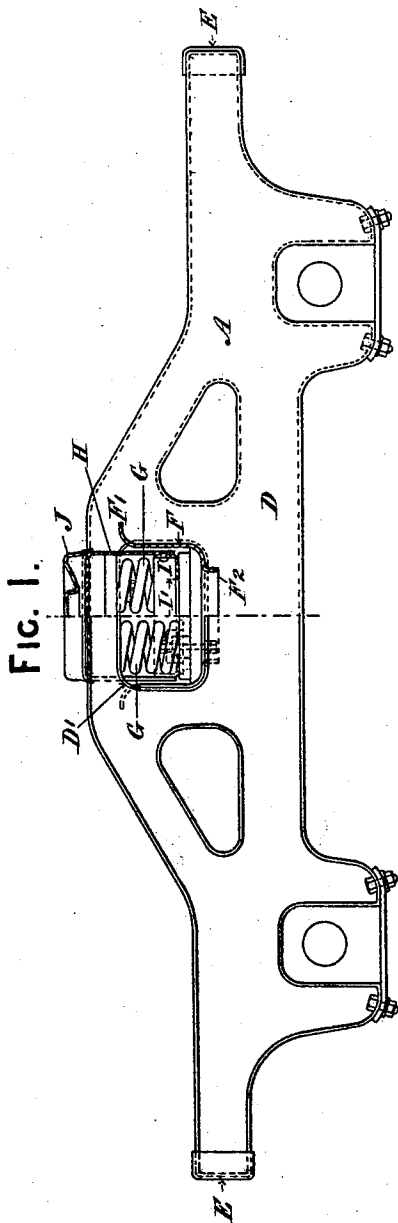
(No Model.)

4 Sheets—Sheet 1.

S. FOX.
CAR TRUCK.

No. 521,709.

Patented June 19, 1894.



Witnesses,
Mrs. E. Craven.

William Sadler

Inventor.
R. W. F. L.

(No Model.)

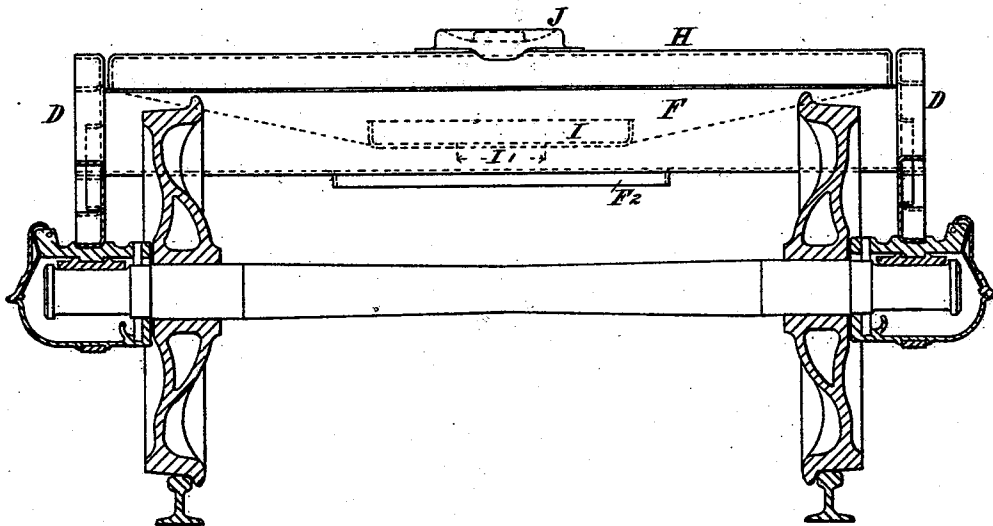
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S. FOX.
CAR TRUCK.

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FIG. 3.



Witnesses
Jas. E. Craven.

William Sadler

Inventor
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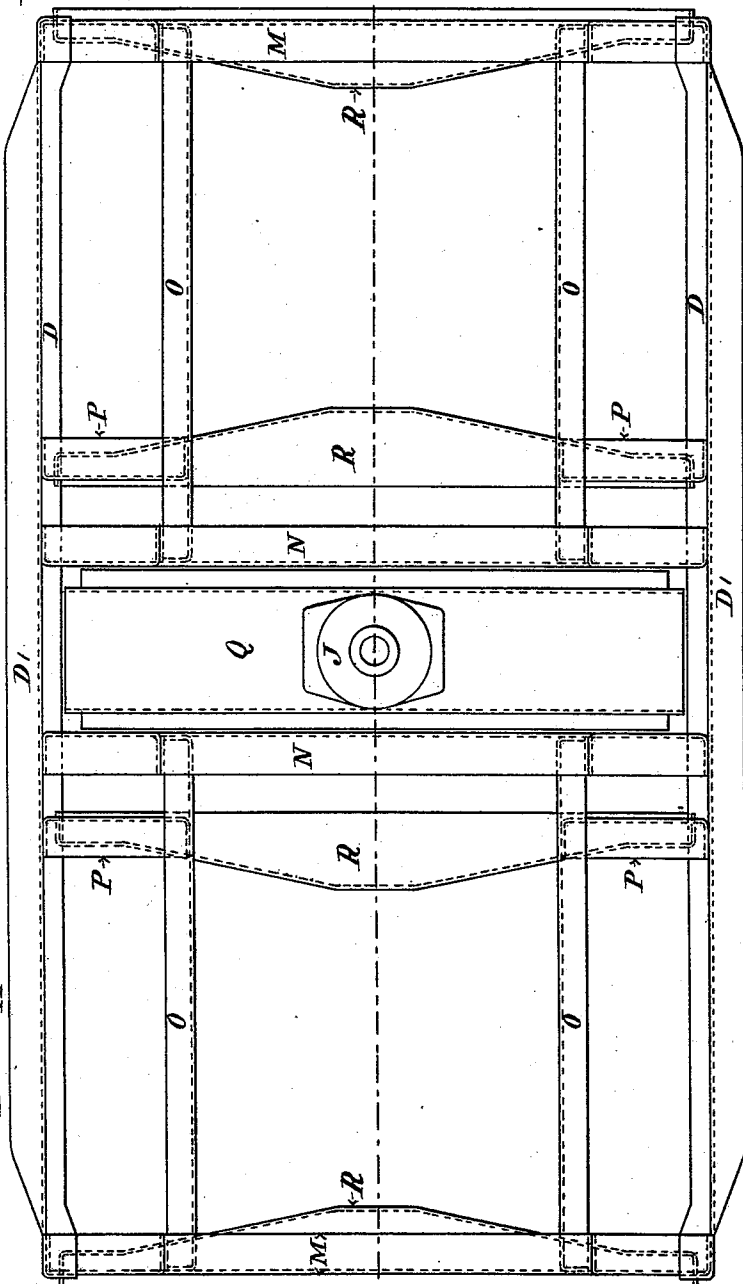
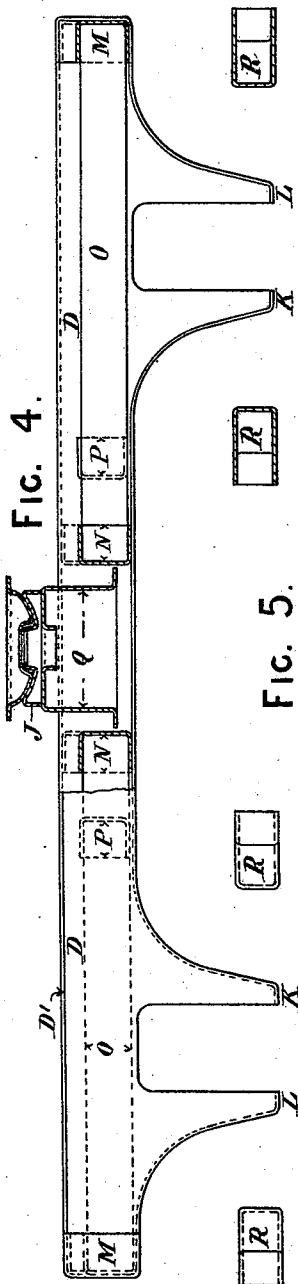
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S. FOX.
CAR TRUCK.

No. 521,709.

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Witnesses.
Thos. E. Craven.
William Sadler

Inventor.
Samuel H. Fox

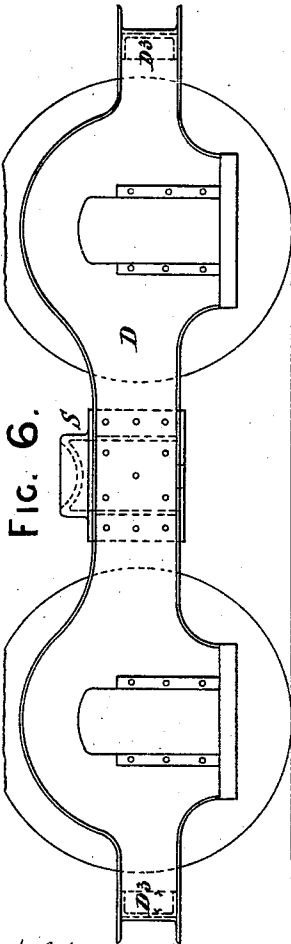
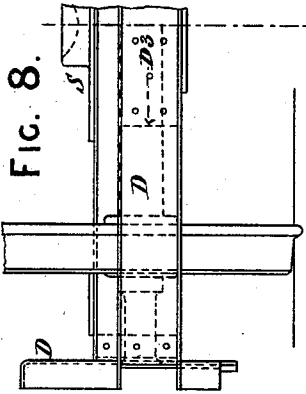
(No Model.)

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S. FOX.
CAR TRUCK.

No. 521,709.

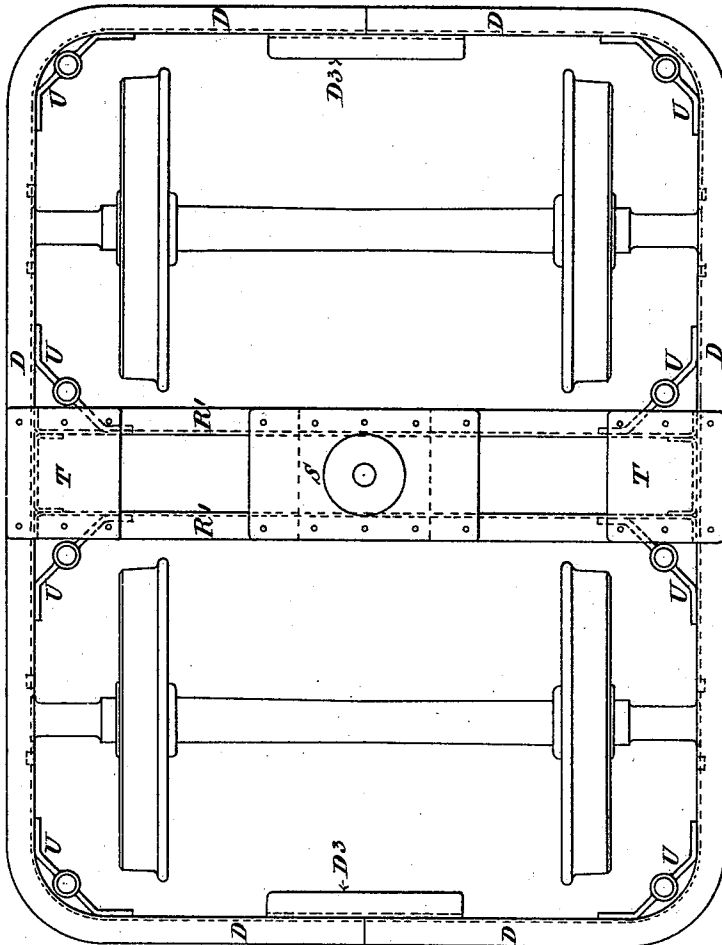
Patented June 19, 1894.



Witnesses.
Thos. E. Craven.

William Sadler

FIG. 7.



Inventor.
S. Fox

UNITED STATES PATENT OFFICE.

SAMSON FOX, OF HARROGATE, ENGLAND, ASSIGNOR TO THE FOX SOLID
PRESSED STEEL COMPANY, OF CHICAGO, ILLINOIS.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 521,709, dated June 19, 1894.

Application filed March 6, 1889. Serial No. 302,160. (No model.) Patented in England July 30, 1888, No. 11,017; in France July 9, 1889, No. 199,490; in Belgium July 10, 1889, No. 86,924; in Italy December 31, 1889, No. 60; in Spain February 1, 1890, No. 10,151, and in Austria-Hungary April 22, 1890, No. 53,984.

To all whom it may concern:

Be it known that I, SAMSON FOX, a subject of the Queen of Great Britain and Ireland, residing at Harrogate, in the county of York, Kingdom of Great Britain and Ireland, have invented new and useful Improvements in the Manufacture and Construction of Bogie-Frames for Railway and other Rolling-Stock, (for which Letters Patent have been granted to me for this invention as follows: in England, No. 11,017, dated July 30, 1888; in France, No. 199,490, dated July 9, 1889; in Belgium, No. 86,924, dated July 10, 1889; in Austria-Hungary, No. 53,984, dated April 22, 1890; in Italy, No. 60, dated December 31, 1889, and in Spain, No. 10,151, dated February 1, 1890, and an application was also made in Russia in November, 1889,) of which the following is a specification.

Bogie frames for rolling stock having heretofore been usually constructed of a combination of timber and metal are necessarily very heavy, and my object being to reduce the weight of rolling stock generally, I construct my improved bogie-frames of light plate metal such as mild steel, and in order to obtain the necessary strength and rigidity required in such structures I form the various parts thereof with flanges by pressing or stamping them in suitably formed male and female dies having the respective configurations as those of the parts to be produced by this process.

The improved bogie frame according to my invention and as designed for a freight car, is illustrated in Figures 1, 2, and 3 of the annexed drawings in which similar letters refer to similar parts throughout all the views.

Fig. 1, is a side elevation with the half A, in section at the line 1. 1. of Fig. 2. Fig. 2, is a half plan with part in section. Fig. 3, is a sectional elevation through or at one of the axle-boxes and horn plates.

The wheel pieces D, or those portions of the bogie frame with the horn-plates, I make in accordance with the specification of Letters Patent of the United States granted to me, No. 341,802, dated May 11, 1886, and improvements thereon in accordance with a specification filed by me January 18, 1888, Serial No. 261,165.

In Fig. 1, above referred to, in addition to the wheel pieces D, being made with horn-plates, they are provided with tie pieces E, for connecting them together at their ends, these tie pieces are also made of plate metal (mild steel preferred) and flanged all round, and arranged to embrace the ends of the said wheel pieces D, and are riveted thereto. In the center of the length of each of the said wheel pieces D, I form an opening D', for the reception of the spring bolster F, this opening is flanged, by preference at the outside of the said wheel pieces D, and the spring bolster passed therein and secured thereto by rivets. The spring bolster therefore takes a bearing directly upon the body of the wheel pieces D, and not merely upon the projecting flange of the said opening that receives it. The spring bolster F, is of trough form, its upper edges F', between the wheel pieces D, are turned outward so as to give lateral strength and rigidity, and the bottom part of it has a flanged opening F² therein for imparting strength in a vertical direction. The said bolster F, at each end contains the springs G, (herein shown of spiral form) upon which the truck bolster H, rests. This bolster I also make of a stamped or pressed metallic plate (mild steel preferred), of trough form, flanged all round by means of male and female dies, the flanges in the middle being deeper than at the ends and connected by a bolster crosstie I, also of trough form by stamping or pressing in male and female dies. I form an opening I', in the center of this part to give access to the king bolt, around which the swiveling of the truck takes place. Upon the said truck bolster H, is mounted the lower portion of my improved center plate J.

Fig. 4, is an elevation partly in section, and Fig. 5, is a plan showing a modification in the construction of the framework of a bogie. The wheel pieces D, in this case are made by the same process as hereinabove referred to and described in my former specification No. 341,802, May 11, 1886. The lower flanging from the bottom of and between the horns K, to K, and from the bottom of the horns at L, to the ends, is on the inside of the body of the said wheel pieces D, and also the upper

flange D', is on the outside thereof and of considerable breadth so as to give lateral strength and rigidity thereto. Flanged tie pieces M, connect the two wheel pieces at the ends. A flanged transom N, attached at each side of a central bolster Q, also connects the said wheel pieces D. Between the said transoms N, N, and each end piece M, M, are flanged longitudinal ties O, O, O, O, and short cross tie pieces P, P, P, P, connecting the latter to the wheel pieces D, D. The central bolster Q, is carried upon springs in a similar manner to that on Pullman car bogies, and upon which is the bottom portion of the central swivel plate.

The whole of the above described component parts are produced by pressing or stamping metallic plates in male and female dies.

My improved brake beams R, are shown in position in Figs. 4 and 5.

Fig. 6, in side elevation, Fig. 7, in plan, and Fig. 8, in half-end elevation, illustrate another form of bogie manufactured from pressed metallic plates in which the wheel pieces D, D, after being pressed to form, have the ends bent and joined together by flanged butt plates D², D³, and rivets, so that the said wheel pieces, looking at them in plan resemble an annular frame. Flanged transoms R', R' are fixed across the center of the said wheel pieces, and upon which is fixed the center plate S. A plate T, is attached at each end of the said

transoms R', R', and upon which the wheel pieces D, D, and diagonal stays U, U, (forming brackets for spring links) attached at each internal angle formed by the bending of the wheel pieces D, D, as above referred to, and at the angles formed by the insertion of the said transoms, maintain the rectangularity of the complete bogie frame.

As will be evident bogie-frames of other forms and the arrangement of their component parts, may be constructed of pressed metallic plates such as mild steel without departure from the nature of my invention.

What I claim is—

The within-described bogie-frame for railways, comprising wheel pieces D provided with horn plates, pieces E connecting the wheel pieces together, a spring bolster F secured to the wheel pieces, a truck bolster H, a cross-tie I, and brake-beams R, each of the parts being composed of metallic plates having pressed flanges formed thereon, and the parts being connected together in the manner set forth to form a truck-frame, substantially as described.

Leeds, February 15, 1889.

SAMSON FOX.

In presence of—

THOS. E. CRAVEN, *F. I. P. A.*,
24 Victoria Chambers, Leeds.
WILLIAM SADLER,
Preston Street, Leeds.