No. 883,465. PATENTED MAR. 31, 1908.

A. LIPSCHUTZ.

CAR TRUCK SIDE FRAME.

APPLICATION FILED OCT. 22, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

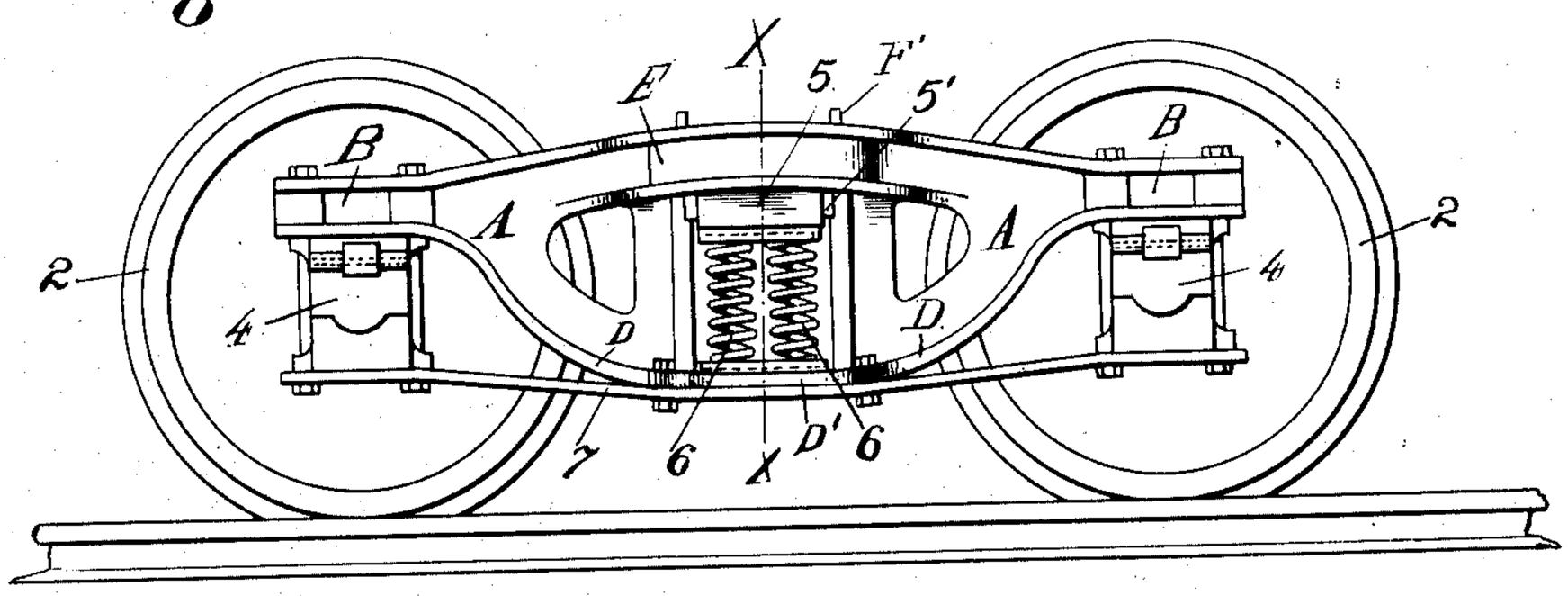

Fig. 6.

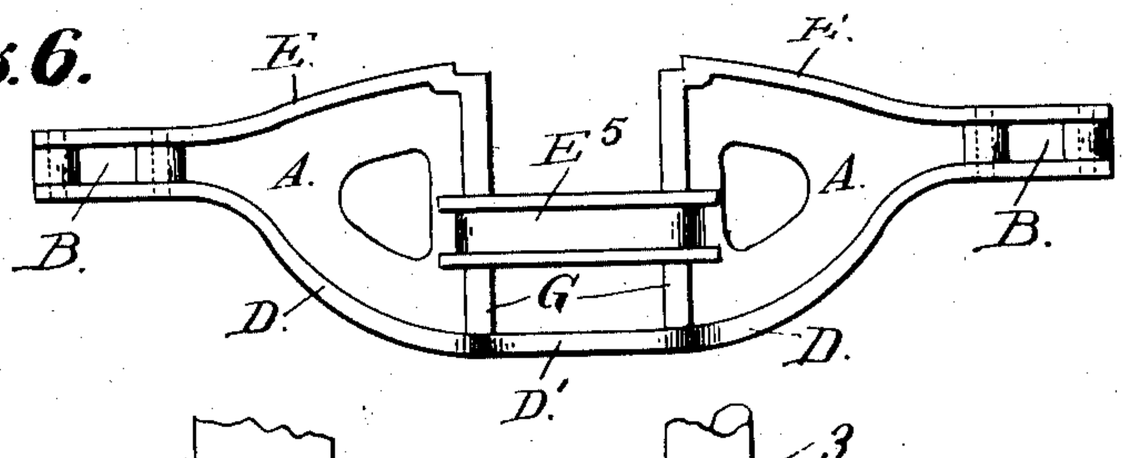

Fig. 2.

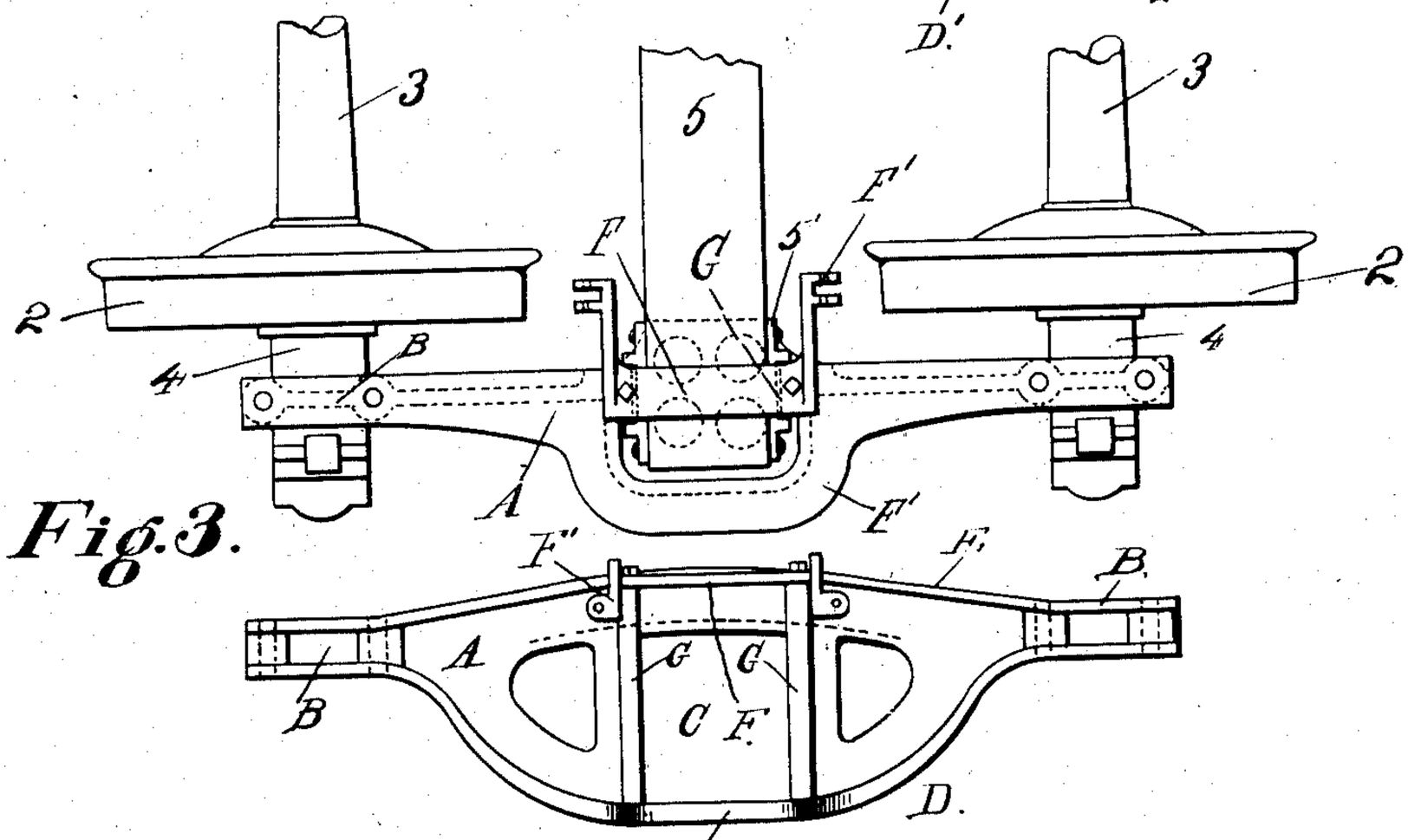

Fig. 3.

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2 SHEETS—SHEET 2.

Fig. 5.

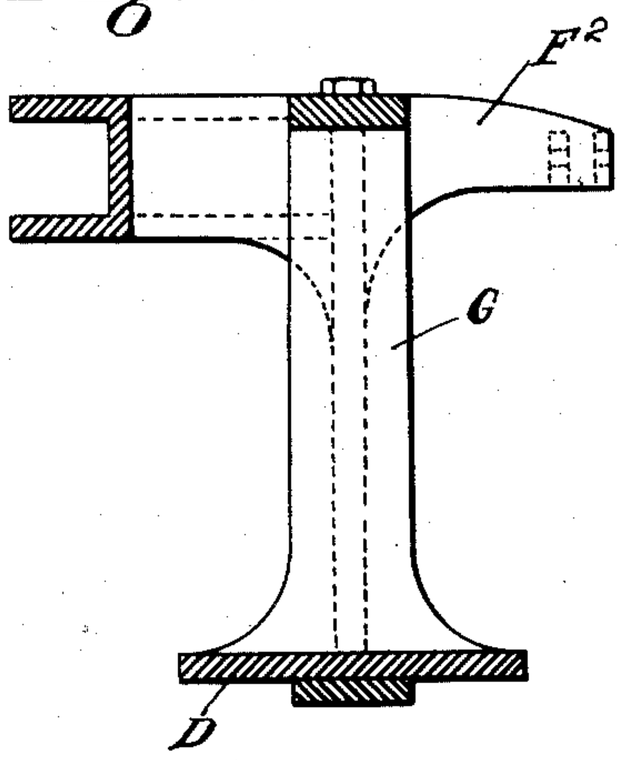
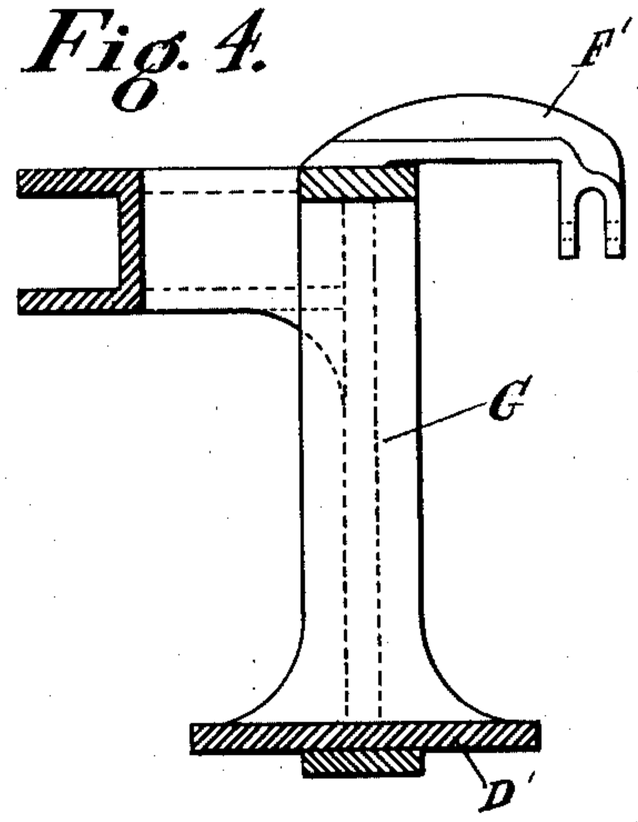


Fig. 4.



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CAR-TRUCK SIDE FRAME.

No. 883,465. Specification of Letters Patent. Patented March 31, 1908.

Application filed October 22, 1906. Serial No. 340,019.

To all whom it may concern:

Be it known that I, ARTHUR LIPSCHUTZ, a citizen of the United States, and a resident of Chicago, Cook county, Illinois, have invented a certain new, useful, and Improved Car-Truck Side Frame, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to railway car-trucks and has special reference to improvements in trucks of that class wherein the journal boxes are rigidly secured in the truck side-frames, and wherein the truck bolster is supported by springs in or upon said side-frames. In a truck of this class the truck bolster is usually of about the same length as the car axles, and its ends extend through or beyond the side frames, the bolster springs being arranged in the vertical planes of the side-frames.

The object of my invention is to improve the construction of the side-frames of car-trucks of the class mentioned, and the particular object of the invention is to provide an improved cast-steel side-frame for car-trucks.

Further and particular objects of the invention are to provide single-member cast-steel side-frames of such character that the bolster may be inserted into the openings of said frames after the frames and journal boxes have been placed upon the truck wheels; further, to provide an improved single-member side-frame which shall be characterized as above and which nevertheless, shall have continuous or uninterrupted top and bottom chordal portions or flanges.

Other objects of my invention will appear hereinafter.

My invention will be more readily understood upon reference to the accompanying drawings, forming a part of this specification, and in which

Figure 1 is a side elevation of a railway car-truck embodying my invention; Fig. 2 is a partial plan view thereof; Fig. 3 is an inner side view of my novel side-frame; Fig. 4 is an enlarged vertical section on the line X—X of Fig. 1, the bolster and springs being removed; Fig. 5 is a similar cross-sectional view, showing a modified form of the side-frame, wherein the brake-hanger brackets are integral with the beam; and, Fig. 6 illustrates a modification of my invention in which the upper middle portion of the frame, which is constructed to avoid the end of the bolster, is located at the point between the upper and lower flanges or portions of the frame.

As shown in the drawings, 2—2 represents the wheels of a car-truck; 3—3 the axles; 4—4 the journal boxes; 5 the bolster, 5′ the bolster guides, secured upon the bolster; 6—6 the bolster springs, and 7, a bottom tie-bar. The parts of the car truck here mentioned may be of any suitable form or construction adapted for employment with rigid side-frames. My novel side-frame comprises a single steel casting, A, having ends, B, that are secured upon the tops of the journal boxes by the usual bolts, which latter also secure the ends of the tie bar, 7. The middle portion of the side-frame or beam is provided with a bolster and spring opening or gap, C, which is open at the top to receive the bolster.

The bottom and the top flanges or chordal portions, D and E of the frame are continuous but said top portion is curved outwardly adjacent to the opening, C, thereby providing space for the admission of the bolster, as is well shown in Figs. 1, 2 and 3. The outwardly curved portion, F′, affords the requisite strength in the upper part of the side frame therefore without closing the top of said frame. The gap between the main portions of the top of the side frame is bridged and closed by a light locking bar, F, bolted upon the top flange. This bar serves to hold the bolster in place after the springs and bolster are assembled in the frame.

As shown in Figs. 2, 3 and 4, I prefer to provide the locking bar with integral brake-hanger brackets, F′, which overhang the inner sides of the frame; but if desired these brackets may be made integral with the side-frame, as shown by F^2, in Fig. 5. The dotted lines in Fig. 2 and full lines in the other figures disclose the vertical transverse thickened portions or flanges, G, which constitute the bolster guides or columns. These are integral with the remainder of the single-piece beam or frame. I prefer that the lower flange, G, of the side frame shall be expanded or widened (see D′) at the middle of the beam, to form a spring-seat. The web portions of the side-frame are preferably thinner than the marginal portions or flanges for

sake of lightness, but for certain uses the side-frame may be of uniform thickness throughout.

It will be obvious that the necessary bracing effect of the outwardly curved or bent middle portion of the beam may be obtained in the manner indicated in Fig. 6, wherein the portion, E^5, occupies a lower position being intermediate the upper and lower end of the column portions. An advantage of this construction resides in the freer access afforded to the ends of the bolster.

In assembling my novel railway car truck, the journal boxes are rigidly secured to the side frames and are placed upon the axles; the side-frames are then tied and braced by suitable members (not shown) of ordinary design, after which the truck is ready to receive the bolster, 5. The springs being placed in position, the bolster is next lowered into the spaces or openings in the side-frames and properly engaged with the guides or columns thereof. The locking bars are then bolted upon the frames to secure the bolster therein and preparatory to the equipment of the truck with brakes.

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

1. The herein described improvement in car trucks comprising a single member side frame, adapted to rest upon the tops of the journal boxes, having bolster column portions and provided with continuous bottom and top chordal portions, the latter curved outwardly at the middle, exposing the upper ends of the column portions, in combination with a locking bar bridging the otherwise open space between the tops of said column portions and brake hanger brackets formed on said locking bar, substantially as described.

2. The herein described improvement in car trucks, comprising a side frame having an opening in its top to receive a bolster, in combination with a locking bar closing the top of said opening and provided with integral brake hanger brackets, substantially as described.

3. The herein described improvement in car trucks, comprising a single member cast steel side frame having ends to rest upon the tops of truck journal boxes and provided with a bolster and spring opening in its middle portion, a bottom flange, a top flange above said bolster and spring opening, and formed to permit a bolster to be dropped vertically into said opening, and an intermediately positioned supplementary flange on the outer side of said frame, substantially as described.

4. The herein described improvement in car trucks, comprising a single member side frame, adapted to rest upon truck journal boxes, and having a bolster and spring opening in its middle portion, said frame being composed of a bottom flange which forms a spring seat, a top flange above said opening and bent or bowed outwardly adjacent thereto to avoid closing the top of the opening, suitable vertical portions forming or framing the sides of said opening, vertical web portions, and an intermediate flange, parallel with said top flange, substantially as described.

5. The herein described improvement in car trucks, comprising a single member side frame, having a bolster and spring opening in its middle portion and composed of a bottom flange, vertical portions rising therefrom at the sides of said opening, a top flange meeting and bowed out adjacent to the upper ends of said vertical portions, a flange below the top flange and parallel therewith, and suitable web portions, substantially as described.

6. The herein described improvement in car trucks, comprising a single member side frame, having a bolster and spring space in its middle portion, and composed of a bottom flange, bolster column portions rising from said bottom flange, a top flange meeting, and bowed outwardly at, the tops of said column portions, an intermediate flange conforming to the shape of the top flange, and suitable web portions, substantially as described.

7. The improvements in car-trucks herein described, comprising a single-member, cast-steel side-frame having a bolster and spring opening in its middle portion, provided with continuous top and bottom chordal portions, in combination with a locking bar secured upon the top of the upper chordal portion, substantially as described.

8. The herein described improvement in car trucks, comprising a single member side frame adapted to rest upon the tops of the journal boxes and to receive a bolster through its top, and yet having continuous top and bottom chordal portions, respectively above and below the bolster space or opening, substantially as described.

9. The herein described improvement in car trucks, comprising a single member side frame adapted to rest upon the tops of the journal boxes, containing a spring and bolster space having continuous top and bottom chordal portions and said space opening through said top chordal portion to receive a bolster, substantially as described.

10. The herein described improvement in car trucks comprising a single member side frame, adapted to rest upon the tops of the journal boxes, having bolster column portions and provided with continuous bottom and top chordal portions, the latter curved outwardly at the middle, exposing the upper ends of the column portions, substantially as and for the purpose specified.

11. The herein described improvement in car trucks comprising a single member side frame, adapted to rest upon the tops of the journal boxes, having bolster column portions and provided with continuous bottom and top chordal portions, the latter curved outwardly at the middle, exposing the upper ends of the column portions, in combination with a locking bar bridging the otherwise open space between the tops of said column portions, substantially as described.

12. The herein described improvement in car trucks comprising a single-member side frame adapted to rest upon the tops of the journal boxes, having vertical column portions and provided with continuous top and bottom chordal portions, the former curved outwardly adjacent to said column portions to expose them and the latter expanded or widened to form a spring seat, substantially as described.

13. The herein described improvement in car trucks comprising a single member side frame having continuous top and bottom chordal portions and provided with a spring and bolster pocket between said chordal portions, which pocket is open at the top, substantially as described.

14. The improvement in car trucks herein described, comprising a single member flanged side frame adapted to rest upon the tops of journal boxes, having a bolster or spring opening in its middle portion, opening through its top and provided with a suitably positioned, outwardly bent, flanged bolster-avoiding portion which braces the middle portion of the frame, in combination with a locking bar closing the gap in the top of the frame, substantially as described.

In testimony whereof, I have hereunto set my hand, this 20th day of October, 1906, in the presence of two subscribing witnesses.

ARTHUR LIPSCHUTZ.

Witnesses:

CHARLES GILBERT HAWLEY,

M. SIMON.