No. 860,925. PATENTED JULY 23, 1907.

A. LIPSCHUTZ.

CAST STEEL SIDE FRAME FOR CAR TRUCKS.

APPLICATION FILED OCT. 22, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

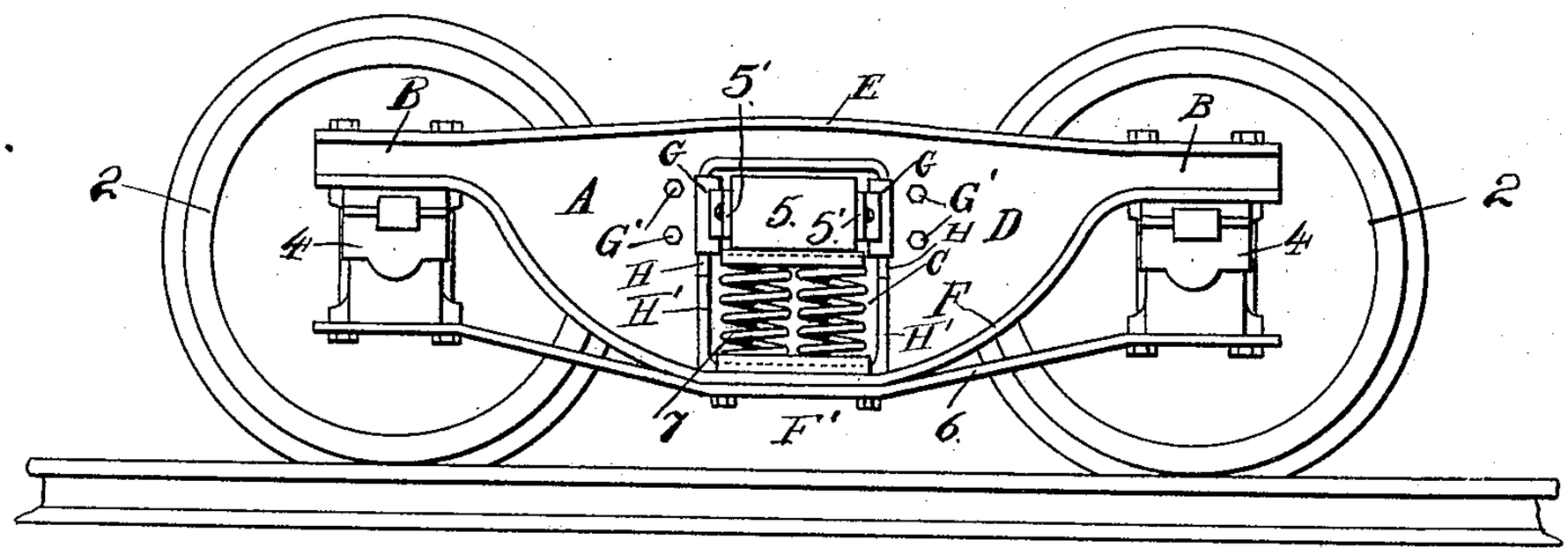
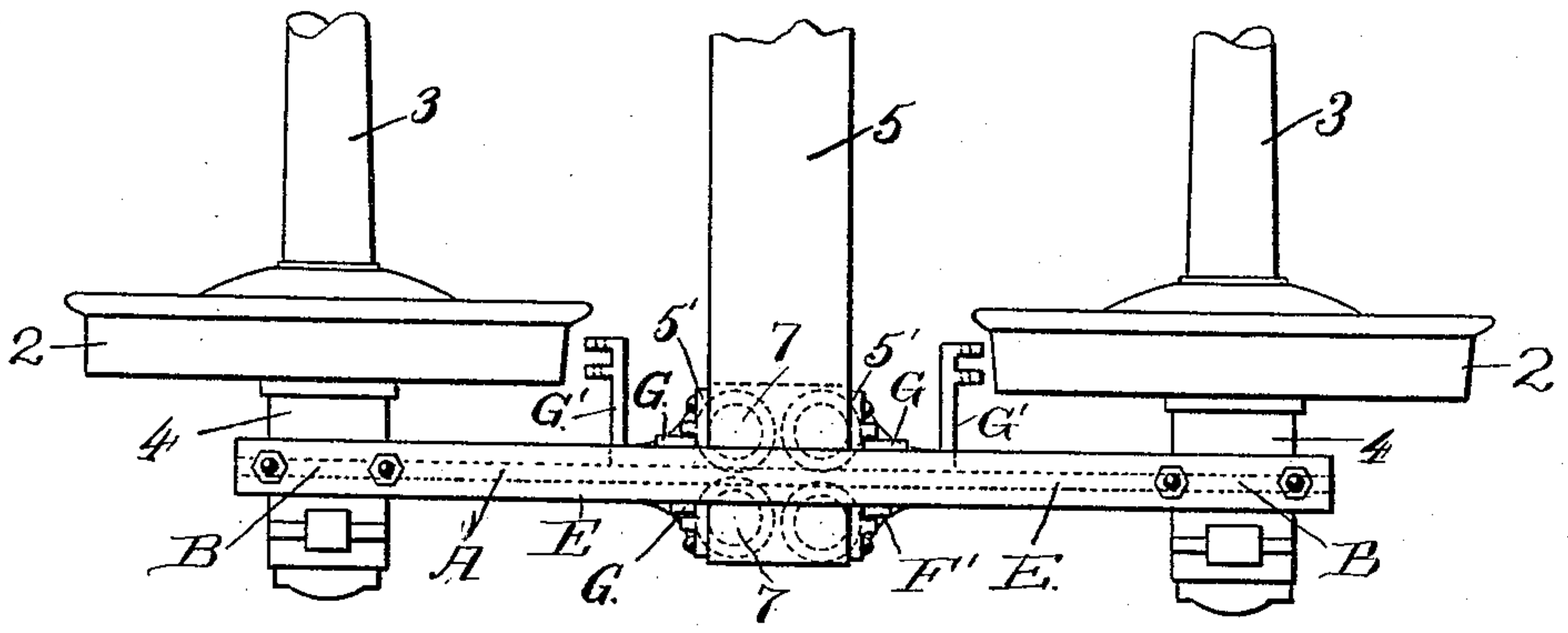


Fig. 2.



WITNESSES.

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2 SHEETS—SHEET 2.

Fig. 3.

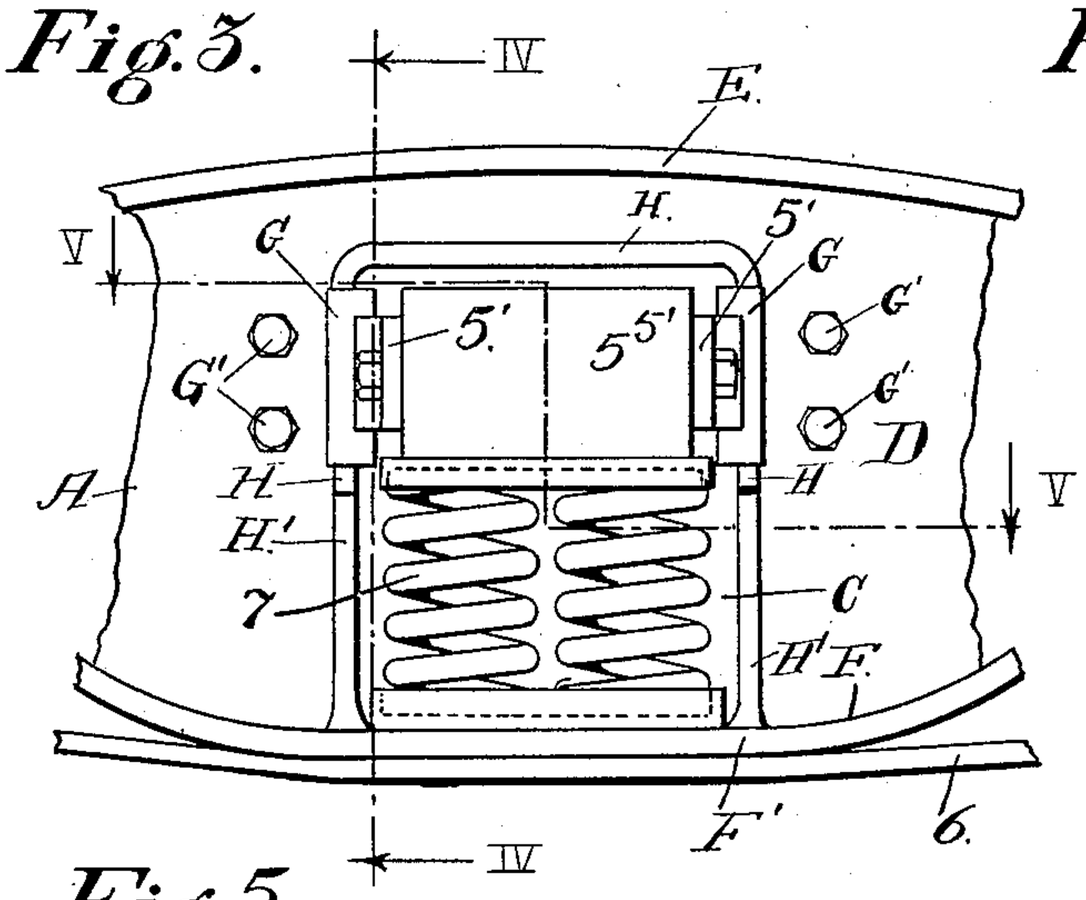


Fig. 4.

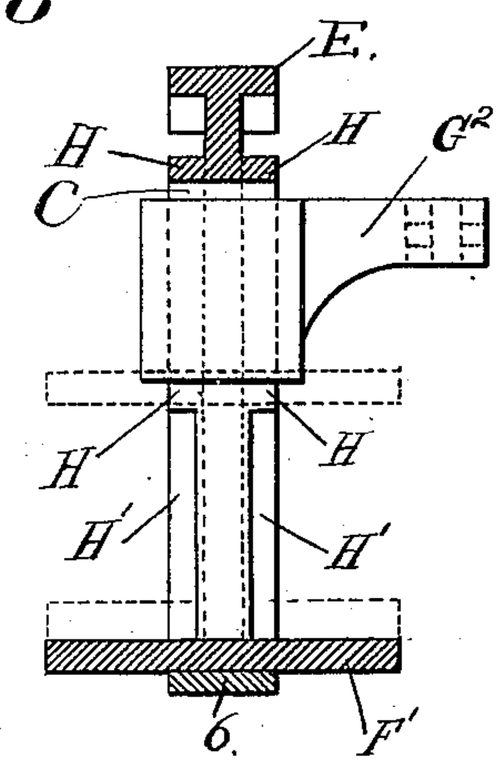


Fig. 5.

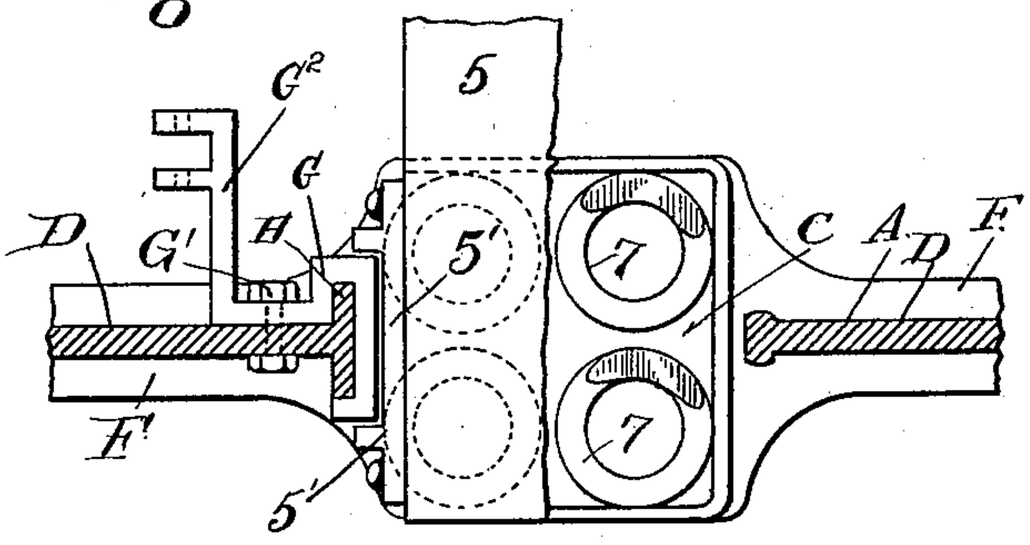


Fig. 6.

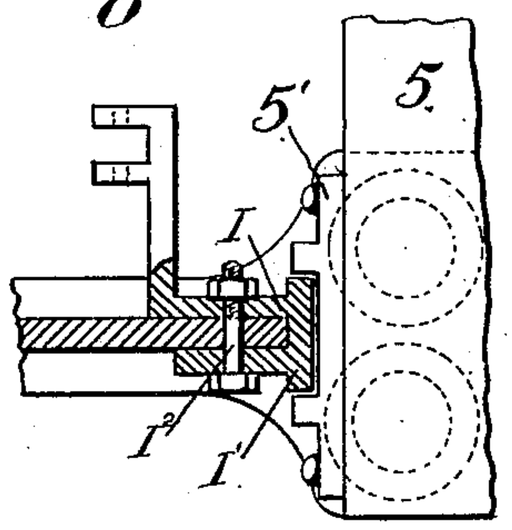


Fig. 7.

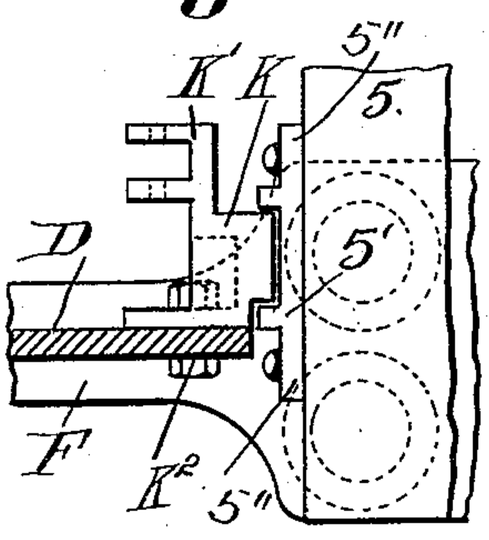


Fig. 8.

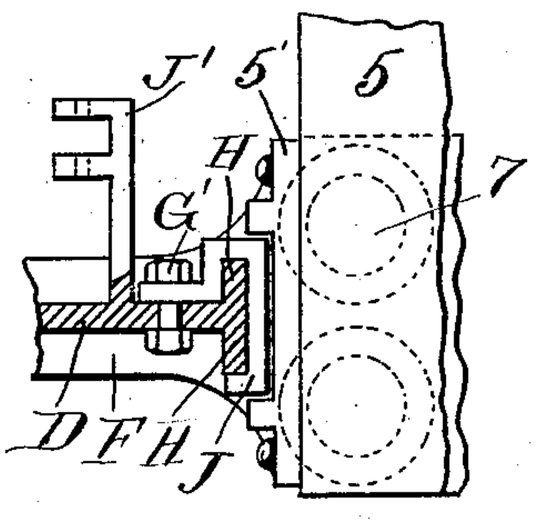
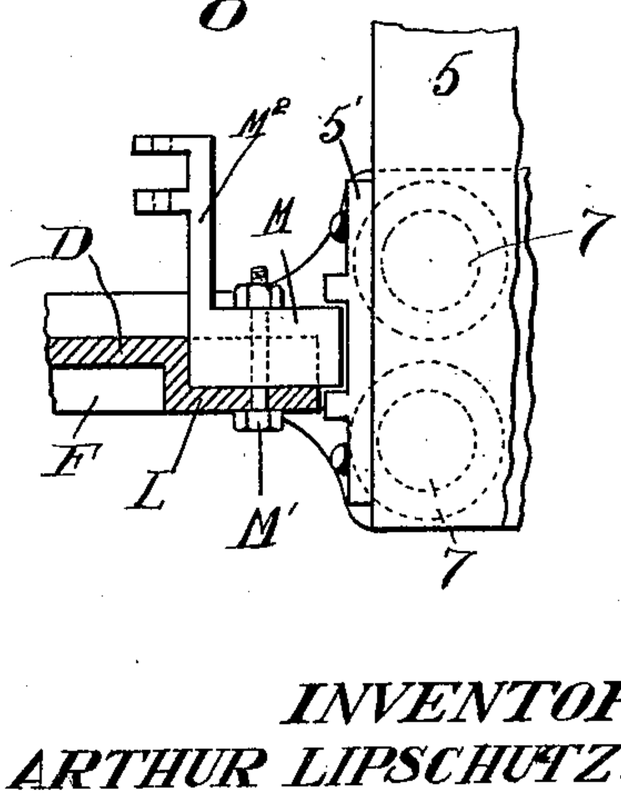


Fig. 9.



WITNESSES.

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CAST-STEEL SIDE FRAME FOR CAR-TRUCKS.

No. 860,925. Specification of Letters Patent. Patented July 23, 1907.

Application filed October 22, 1906. Serial No. 340,018.

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 certain new and useful Improvements in Cast-Steel Side Frames for Car-Trucks, 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 consists generally in a railway car truck and particularly in the improved side-frame for such truck, all as hereinafter described, and particularly pointed out in the claims.

The invention will be more readily understood by 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 enlarged side view of the middle portion of my novel side frame; Fig. 4 is a vertical section thereof, on the line IV—IV of Fig. 3; Fig. 5 is a horizontal section on the line V—V of Fig. 3; Fig. 6 is a view like unto Fig. 5, illustrating a bolster guide or column block of modified form; and Figs. 7, 8 and 9 are like views, disclosing guide blocks of still other form.

As shown in the drawings, 2—2 represent the wheels of a car truck; 3—3, the axles, and 4—4 the journal boxes. 5 represents the truck bolster, and 5′—5′, the bolster guides, forming a part of the bolster. The parts of the truck here mentioned may be of any suitable form and construction adapted for employment with rigid side-frames.

My novel side frame comprises a single steel casting, A, having ends, B, that are adapted to rest upon the tops of the journal boxes, and at the middle provided with an opening, C, which latter is at all points or heights of greater width than the bolster, 5, including its guides, 5′. I prefer that the side-frame shall partake of the form of an irregular but symmetrical flanged beam, and as here shown it comprises a web portion, D, and top and bottom flanges or chordal portions, E and F; the middle of the beam is of considerable depth, as required to accommodate the bolster and the bolster springs, while the ends are of much reduced height. The ends of the beam are secured upon the journal boxes by the usual box or pedestal bolts. It will be understood that the dip or drop of the middle portion of the beam may be as little or as great as required, to adapt the trucks to cars of various heights. A tie bar or bars, 6, of suitable form, may be employed to tie or brace the journal boxes at the bottom, or the beam, A, may itself be formed to brace said boxes.

As stated, the rectangular opening, C, in the middle of the beam is of greater width than the bolster and its guides. My purpose in thus constructing the side frame is to facilitate the assembling and the dismemberment of the truck, and it will be obvious that as the bolster may be inserted or threaded endwise through the side-frame, it is unnecessary to delay the assembling of the truck until the bolster has been placed, or to first remove the side frames from the journal boxes, preparatory to the removal of the bolster. It is not even necessary to remove the bolster springs, 7, from the side-frames. In other words, certain means which I employ for guiding the bolster in the side-frames are of such character that the full opening of the side-frame above the springs is at all times available for the insertion or removal of the bolster; hence, the bolster may be readily placed in or removed from the truck after or while the side frames are rigidly secured together and upon the journal boxes; the bolster guiding means referred to comprise short blocks, G—G which are removably secured in the upper part of the side-frame opening. These fit the bolster guides and constitute the actual guide-columns of the side-frames although as hereinafter described the side frame has its own integral column-portions. As shown in Figs. 3, 4 and 5, I prefer to provide the frame or beam, A, with side flanges or projecting ribs or column portions, H—H framing the upper part of the opening, C. These flanges or column portions do not extend to the bottom of the beam; instead, notches or recesses, H′, are provided therein at the lower part of the opening to admit the guide blocks, G. Each guide-block comprises a small,

angular casting, shaped to fit the cross-sectional form of the column portions, H, of the side-frame. (See Figs. 4 and 5.) When the bolster and the springs have been placed in approximate position within the side-frame, the blocks, G, are inserted at the lower part of the opening and are then raised or slid upwardly into interlocked position with the flanges or column portions, H, in which position they enter the guides, 5′, of the bolster. Little labor is involved in thus securing the bolster by means of the guide blocks or separable columns. Each guide-block, G, is secured to the web on the side frame by two bolts, G′, and each block carries a brake-hanger bracket, G^2, formed integrally therewith. Thus in one operation the bolster is secured in place and the side-frame is prepared to receive the brake-beam hangers.

A non-essential and yet desirable feature of my side-frame resides in the widened lower flange, F′, of the beam which adds to the strength of the beam and provides a perfect spring-seat.

A substantial equivalent of the column block, G, above described, may be had, and the employment of the flanges, H, may be avoided by forming the guide or column block in the manner shown in Fig. 6. This block, I, has an inner portion, I′, of sufficient width to fit the bolster-guide 5′ and its outer portion is bifurcated to fit the web portion D of the side-frame to which it is secured by a bolt, I^2. Here, as before, the brake hanger bracket is an integral part of the guide-block. Fig. 8 illustrates a form of my side-frame in which the guide-block J and the hanger bracket J′ are separate parts, the latter, J′, being integral with the side-frame. In Fig. 7 I have shown my invention in a form adapted for employment with bolsters having guides 5″ which are not in alinement with the side-frame. In this case the guide-block, K, and the hanger-bracket, K′, are applied to one side only of the side-frame, being secured by suitable bolts, K^2. Fig. 7 illustrates another form of the guide-block applied to the inner side of the beam or side-frame, but occupying a central position. In this case the web portion D of the frame is provided with a guide-block pocket or recess, L in its inner side adjacent to the large bolster opening. The block, M, fits the pocket and is secured by a bolt, M′. Here, as before, the device lends itself to ready combination with the brake-hanger bracket, M^2.

As various modifications of my invention will readily suggest themselves to one skilled in the art, I do not limit the invention to the specific constructions herein shown and described.

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

1. The improvements in car-trucks herein described, comprising a side-frame made of one piece of metal, adapted to rest upon the tops of the journal boxes and provided with an opening, to contain the bolster and springs, said opening being at all points of greater width than the bolster and its guides, in combination with bolster-guide blocks separably secured in the upper part of said opening, and vertically slidable into place after the bolster has been positioned substantially as described.

2. The improvement in car-trucks herein described, comprising a side-frame made of one piece of metal, having an opening in its middle part to receive a bolster and springs, and provided with bolster-guide-block supporting portions in combination with guide-blocks detachably secured to and straddling respective portions of said frame and projecting into the upper portion of said opening, bolts securing the blocks against vertical movement, and suitable brake-hanger brackets integral with said blocks and extending from the inner side of said frame, adjacent to the opening therein, substantially as described.

3. The improvement in car trucks, herein described, comprising a frame, made of one piece of metal, having an opening in its middle part to receive a bolster and springs and provided with bolster-guide-block supporting portions, in combination with guide-blocks straddling respective portions, detachably secured thereto, and projecting into the upper part of said opening, substantially as described.

4. The improvement in car trucks herein described, comprising a side frame, made of one piece of metal, containing a bolster and spring opening, provided with column portions and having continuous top and bottom chordal portions, said opening being, at all points, of greater width than a bolster and its guides, in combination with bifurcated bolster-guide blocks detachably fixed upon respective column portions, substantially as described.

5. The improvement in car-trucks herein described, comprising a side-frame made of one piece of metal, adapted to rest upon the tops of the journal boxes and containing a bolster and spring opening and provided with column portions, in combination with bolster bifurcated guide-blocks arranged in the upper part of said opening and interlocked with said column portions, and bolts also securing the blocks upon said frame, substantially as described.

6. The improvement in car-trucks herein described, comprising a side-frame made of a single piece of metal containing a bolster and spring opening, and having column portions in combination with short bifurcated bolster guide blocks slidably interlocked with said column portions and projecting into the upper part of said opening, substantially as described.

7. The improvement in car trucks herein described comprising a side-frame made of a single piece of metal, provided with a bolster and spring opening, and having short column portions bordering the upper part of said opening, in combination with short bolster guide blocks fixed upon said column portions, substantially as described.

8. The improvement in car trucks herein described comprising a side-frame made of a single piece of metal, provided with a bolster and spring opening and having short column portions bordering the upper part of said opening, in combination with short bolster guide blocks interlocked with said column portions and bolts securing the same in place thereon, 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.