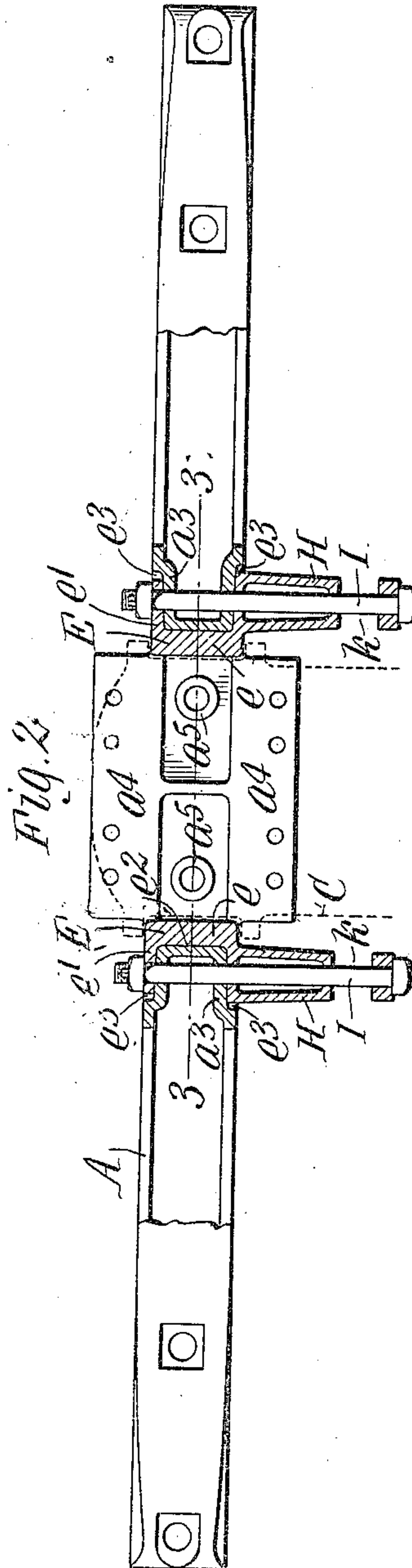
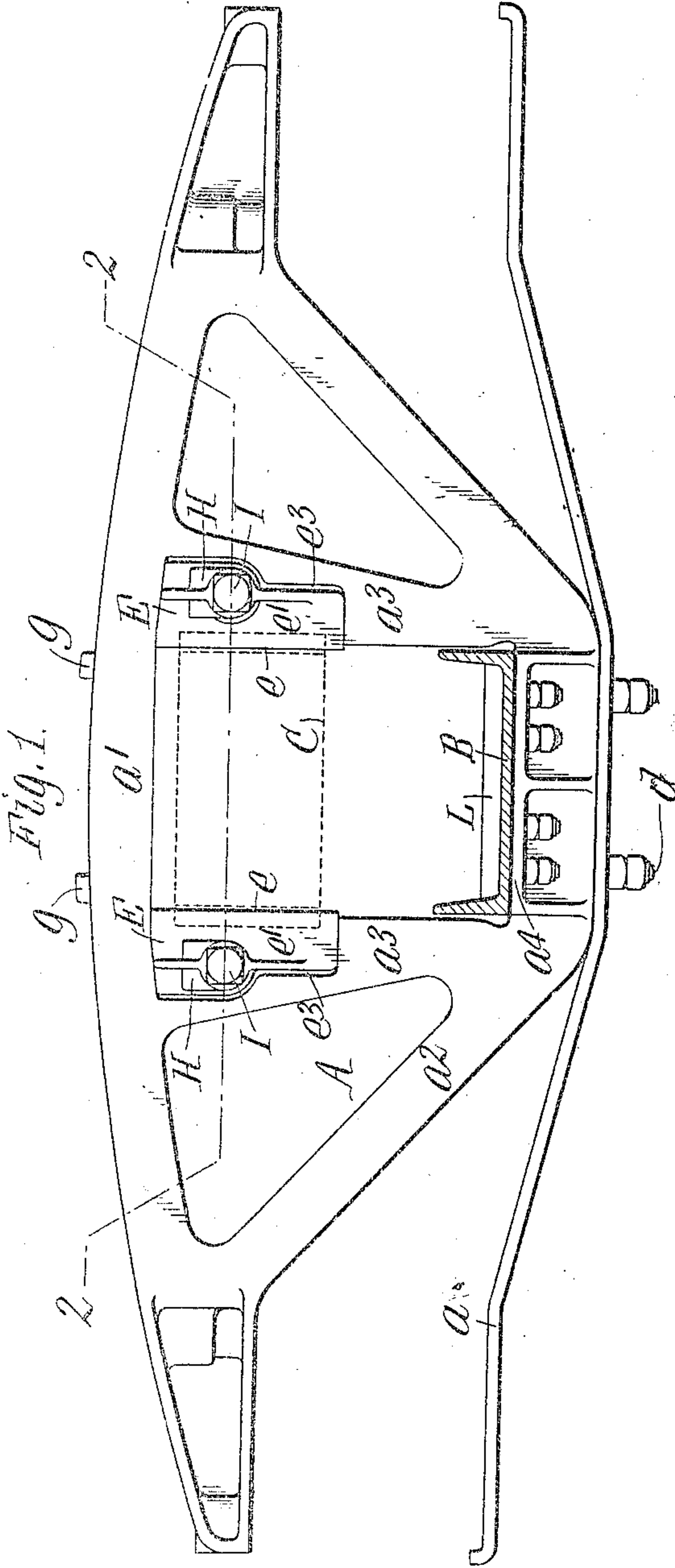


W. F. RICHARDS.  
CAR TRUCK FRAME.  
APPLICATION FILED MAY 2, 1908.

966,123.

Patented Aug. 2, 1910.

2 SHEETS—SHEET 1.



Witnesses:  
E. A. Volk.  
A. G. Diamond.

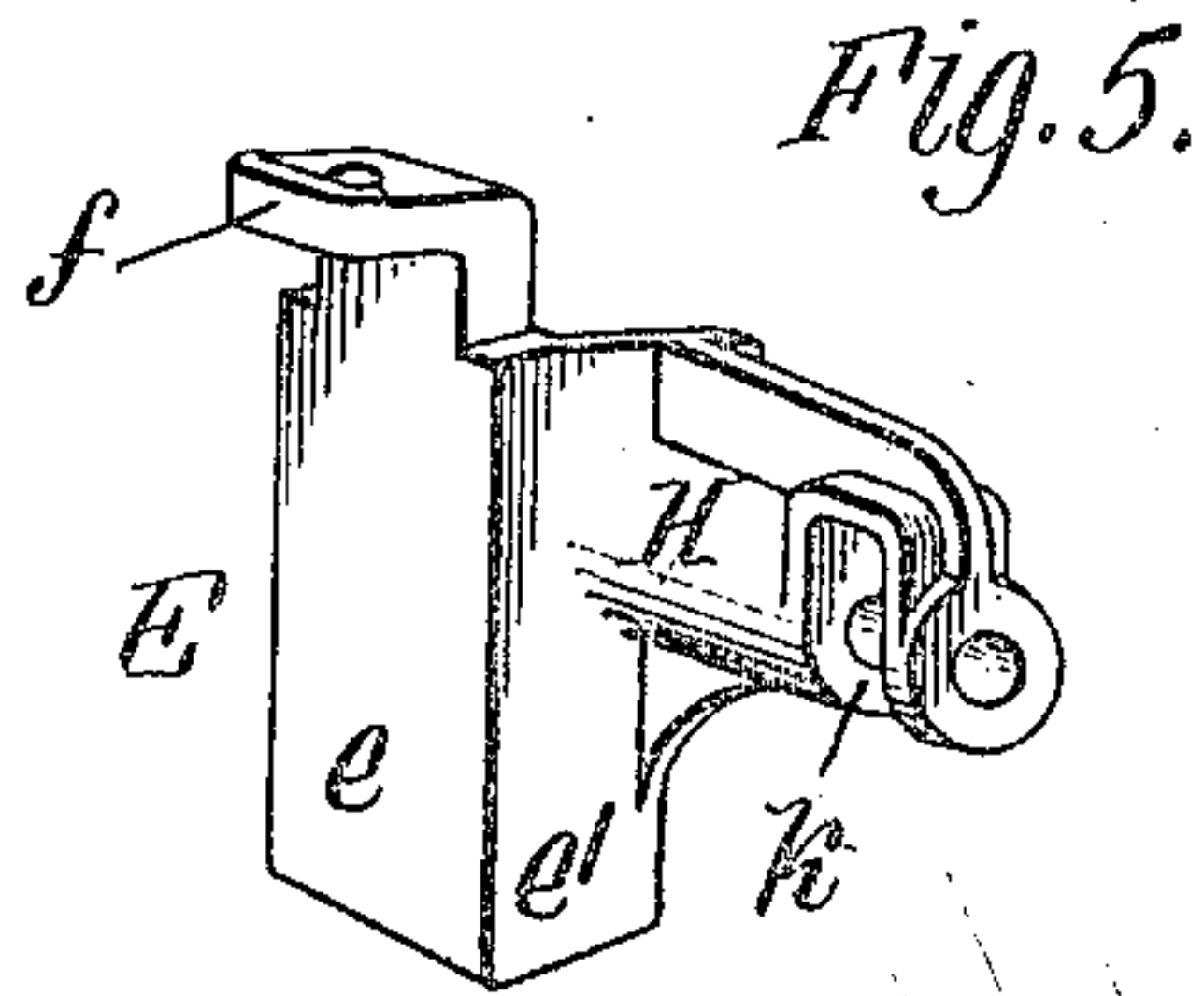
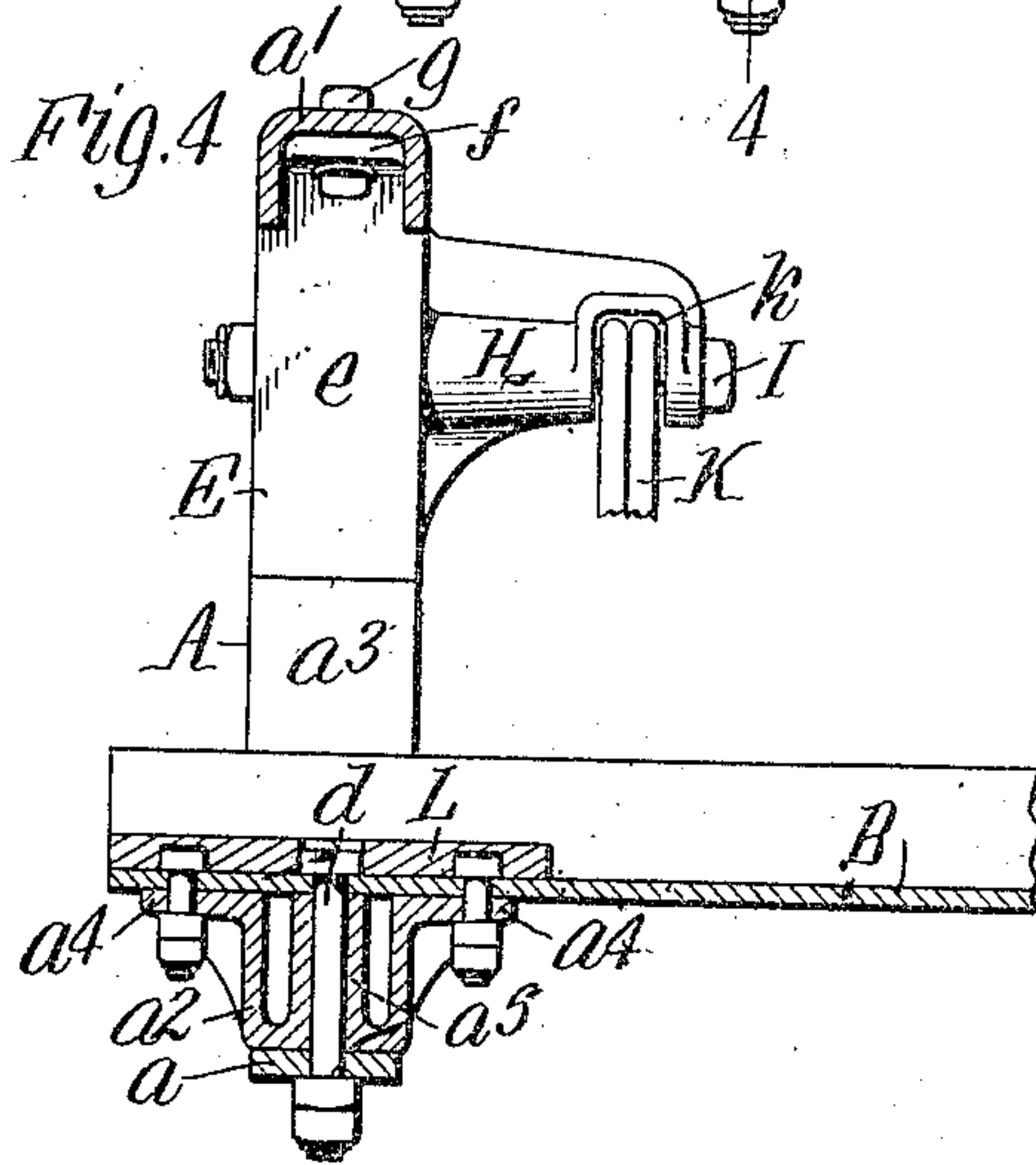
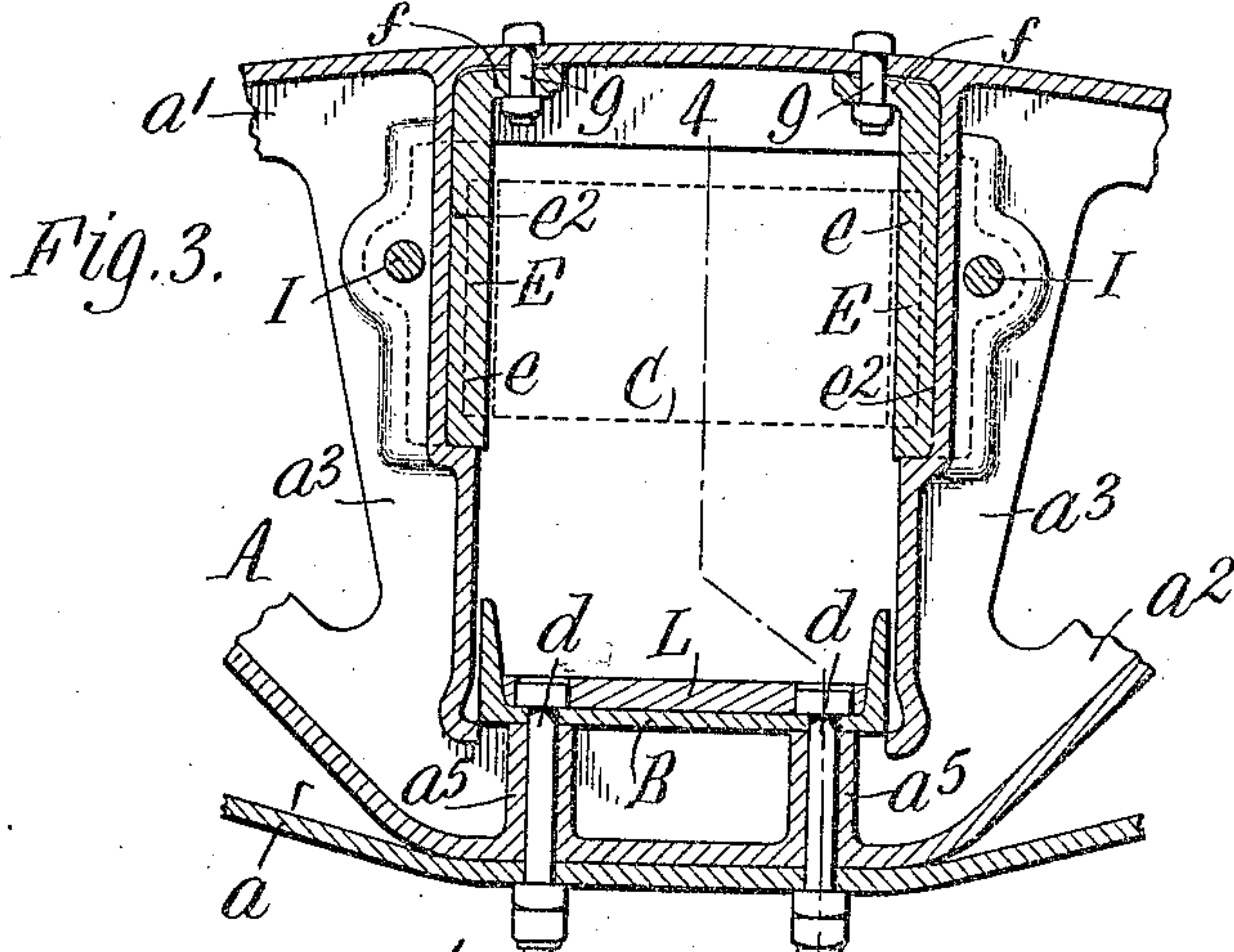
Inventor,  
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E. A. Volk  
A. S. Dimond.

Inventor.  
W. F. Richards  
by Wilhelm P. K. H. H. H.  
Attorneys.



# UNITED STATES PATENT OFFICE.

WILLARD F. RICHARDS, OF LANCASTER, NEW YORK, ASSIGNOR TO GOULD COUPLER COMPANY, OF NEW YORK, N. Y.

## CAR-TRUCK FRAME.

966,123.

Specification of Letters Patent.

Patented Aug. 2, 1910.

Application filed May 2, 1908. Serial No. 430,486.

*To all whom it may concern:*

Be it known that I, WILLARD F. RICHARDS, a citizen of the United States, residing at Lancaster, in the county of Erie and State of New York, have invented a new and useful Improvement in Car-Truck Frames, of which the following is a specification.

This invention relates to railway car trucks of that sort in which side frames have bolster openings permanently closed all around, and are constructed to allow the ordinary bolster having permanently attached column guides to be inserted endwise into the bolster opening.

The objects of this invention are to produce a light, but strong, rigid and durable cast-steel truck frame of this type; also to provide guides of a novel construction for connecting the bolster to the side frames and guiding it in its vertical movements, and fasten them to the side frames in a novel manner which insures a rigid and reliable attachment but enables them to be readily detached to permit a bolster with integral guide lugs to be inserted endwise into the bolster opening of the side frame; also to form the bolster guides with supporting brackets for the brake beam hangers and to secure them to the side frames by the same bolts which form the pivotal supports from which the beam hangers are suspended; also to form the bolster guides and side frame so that the parts as cast will fit tightly without requiring them to be machined or especially finished; also to improve the side frame construction of trucks of this sort in the respects hereinafter described and set forth in the claims.

In the accompanying drawings, consisting of two sheets: Figure 1 is a sectional elevation of a railway car truck frame embodying the invention, showing the inner side of the side frame. Fig. 2 is a plan view of one side frame, partly in horizontal section, in line 2—2, Fig. 1. Fig. 3 is a fragmentary longitudinal sectional elevation of the truck frame in line 3—3, Fig. 2. Fig. 4 is a transverse sectional elevation thereof, in line 4—4, Fig. 3. Fig. 5 is a perspective view, detached, of one of the bolster guides and brake hanger brackets.

Like letters of reference refer to like parts in the several figures.

The truck is of that type in which the two side frames are fixed at their ends to the

car journal boxes and are rigidly connected between the ends by a spring plank or cross-piece and have upright guides for the ends of the bolster which are yieldingly supported by springs.

A represents the side frame, and B the spring plank, transom or cross-piece which rigidly connects the side frames centrally. The bolster C is indicated by broken lines in Figs. 1, 2 and 3. Each side frame preferably consists of a trussed frame or casting A which rests at its opposite ends on the journal boxes, and a tie bar  $a$  which is secured centrally to the depressed central portion of the casting A with its opposite ends extending beneath the journal boxes to which the ends of the casting A and tie bar  $a$  are secured by the usual vertical bolts. The casting A has an upper chord  $a'$ , a lower chord  $a''$  having a depressed horizontal central portion, and upright struts or bolster columns  $a^3$  which join the upper and lower chords and form with them a bolster opening to receive the end of the truck bolster.

The several members of the trussed frame are of U-shape or channel-form in cross section, with the flanges of the upper and lower chords extending inwardly or toward each other, and the flanges of the two columns extending toward the ends of the frame or away from each other. This construction facilitates the casting of the frame and dispenses the bulk of the metal at the outer edges of the upper and lower chords and at the inner edges of the columns, that is, the edges next to the bolster. The horizontal central portion of the lower chord is preferably provided at opposite sides with suitably braced laterally-projecting flanges  $a^4$  on which the spring plank or cross-piece B rests and is bolted, and between its side flanges with hollow posts  $a^5$ , Figs. 3 and 4, through which bolts  $d$  pass for securing the spring-plank and tie rod or strap  $a$ . The spring plank or cross-piece shown consists of a channel beam arranged with its flanges projecting upwardly, but a spring plank or cross-piece of any other suitable construction could be used.

E E represent bolster guides which are detachably secured in seats in the upper portions of the bolster columns  $a^3$  and are adapted to extend between the usual guide lugs on the sides of the bolster to hold the bolster in place between the columns and



guide the movements thereof. The guides are of U-shape in cross-section, having vertical body portions  $e$  located at the inner edges of the columns and side flanges  $e'$  which straddle the columns. The bolster columns have recesses  $e^2$ , Fig. 3, in the upper portions of their inner edges which receive the bodies of the guides, and shallow seats  $e^3$ , Fig. 2, in their opposite side faces which receive the side flanges of the guides so that the outer faces of said flanges are flush with the side faces of the columns.

The recessed portions of the columns which are embraced by the side flanges  $e'$  of the guides, and said side flanges, are tapered somewhat, as shown in Fig. 2, and the top edges of said guide flanges  $e'$  and the upper edges of the seats  $e^3$  in the sides of the columns against which they bear are inclined somewhat, as shown in Fig. 1, so that when the guides are forced onto the columns they wedge tightly in their seats and are firmly held. The body parts of the guides extend above their side flanges into the channeled upper chord of the side frame and have lugs  $f$ , Figs. 3 and 5, extending at an angle therefrom which are secured by bolts  $g$  to the web of the upper chord. These lugs bear only at their extremities against the web of the upper chord, as shown in Fig. 3, so that the bolts  $g$  act, when tightened up, to draw the guides snugly back into their seats. By making the guides and seats as described, a tight fit of the parts is secured without requiring them to be machined or specially fitted.

Each guide is preferably made with an integral portion  $H$  which extends horizontally inward from the truck frame and forms a supporting bracket for the brake beam hanger. The bracket is preferably tubular with upper and lower strengthening ribs. A bolt  $I$  passing through the column of the side frame and through the side flanges and bracket portion of the guide fastens the guide securely on the column. The upper end of the brake beam hanger, shown at  $K$ , Fig. 4, enters a slot  $k$  in the bracket  $H$ , and the bolt  $I$  passing through the brake hanger also forms the pivotal support for the hanger. As the guide straddles the column and the securing bolt  $I$  passes through both flanges of the U-shaped guide and both flanges of the channel column, a very strong attachment for the guide is provided. Furthermore, as the side flanges of the guides straddle the columns and the upper and lower ends thereof bear against adjacent parts of the guide seats, the guides are held from transverse or vertical play on the columns by integral parts thereof irrespective of their securing bolts, and these are therefore largely relieved from strain and shearing stresses. The guides are also confined between the bolster and the columns, which

assists in preventing lateral movement of the guides in the plane of the side frame. Consequently the guides could not become displaced even if their securing bolts were broken or worked out, and the guides form a very secure and reliable connection between the bolster and the side frame.

$L$  represents a bearing plate or seat for the bolster springs. This bearing plate rests on the spring plank and is provided with recesses or holes to receive the heads of the securing bolts for the spring plank. The bolt heads hold this bearing plate from lateral displacement.

The bolster can be inserted endwise into the opening of the side frame through the large upper portion thereof before the guides are secured in place. Then by dropping the bolster the guides can be secured in their seats and the bolster lifted into its working position in engagement with the guides and the bolster springs put in place beneath the ends of the bolster.

I claim as my invention:

1. The combination of a truck side frame having upright guide columns which are of channel-shape in cross-section and are provided at their upper portions with seats in their inner edges which increase the width of the bolster opening and are also provided with seats in their opposite faces, bolster guides which are located in said seats in the inner sides of the columns and have flanges which straddle the columns and occupy said seats in the opposite faces thereof, and fastening devices for securing said guides on the side frame, substantially as set forth.

2. The combination of a truck side frame having a bolster opening, a channeled upper chord over said opening, detachable bolster guides having body parts which are seated in recesses in the side edges of said bolster opening, said guides having parts extending up into said channeled top chord, and fastening devices for securing the upper extensions of the guides in the top chord and for securing the body parts of said guides to the side edges of the bolster opening, substantially as set forth.

3. The combination of a truck side frame having a bolster opening, a channeled upper chord over said opening, detachable bolster guides having body parts which are seated in recesses in the side edges of said bolster opening, and side flanges which straddle the side edges of said opening, said guides having parts extending up into said channeled top chord, and fastening devices for said guides, substantially as set forth.

4. The combination of a truck side frame having a bolster opening, a bolster guide in said opening having side flanges which straddle the edge of said opening and are located in recessed seats in the opposite sides of said frame, said flanges and seats being



tapered and the upper edges of said seats and flanges being inclined, and fastening means for said guide, substantially as set forth.

5 5. The combination of a truck side frame having a bolster opening, a detachable bolster guide in said opening having side flanges which straddle one edge of said opening, said guide having a projecting bracket-part  
10 for supporting a brake beam hanger, and a securing bolt for said guide passing through said bracket part and forming the pivotal support for the brake beam hanger, substantially as set forth.

15 6. The combination of a truck side frame

having a bolster opening, the portion of the frame below said opening being of U-shape in cross-section and having horizontal flanges projecting from opposite sides thereof and bolt posts projecting up between the sides 20 thereof, a spring plank resting on said horizontal flanges, and securing bolts for said spring plank passing through said bolt posts, substantially as set forth.

Witness my hand, this 29th day of April, 25 1908.

WILLARD F. RICHARDS.

Witnesses:

C. W. PARKER,  
C. B. HORNBECK.