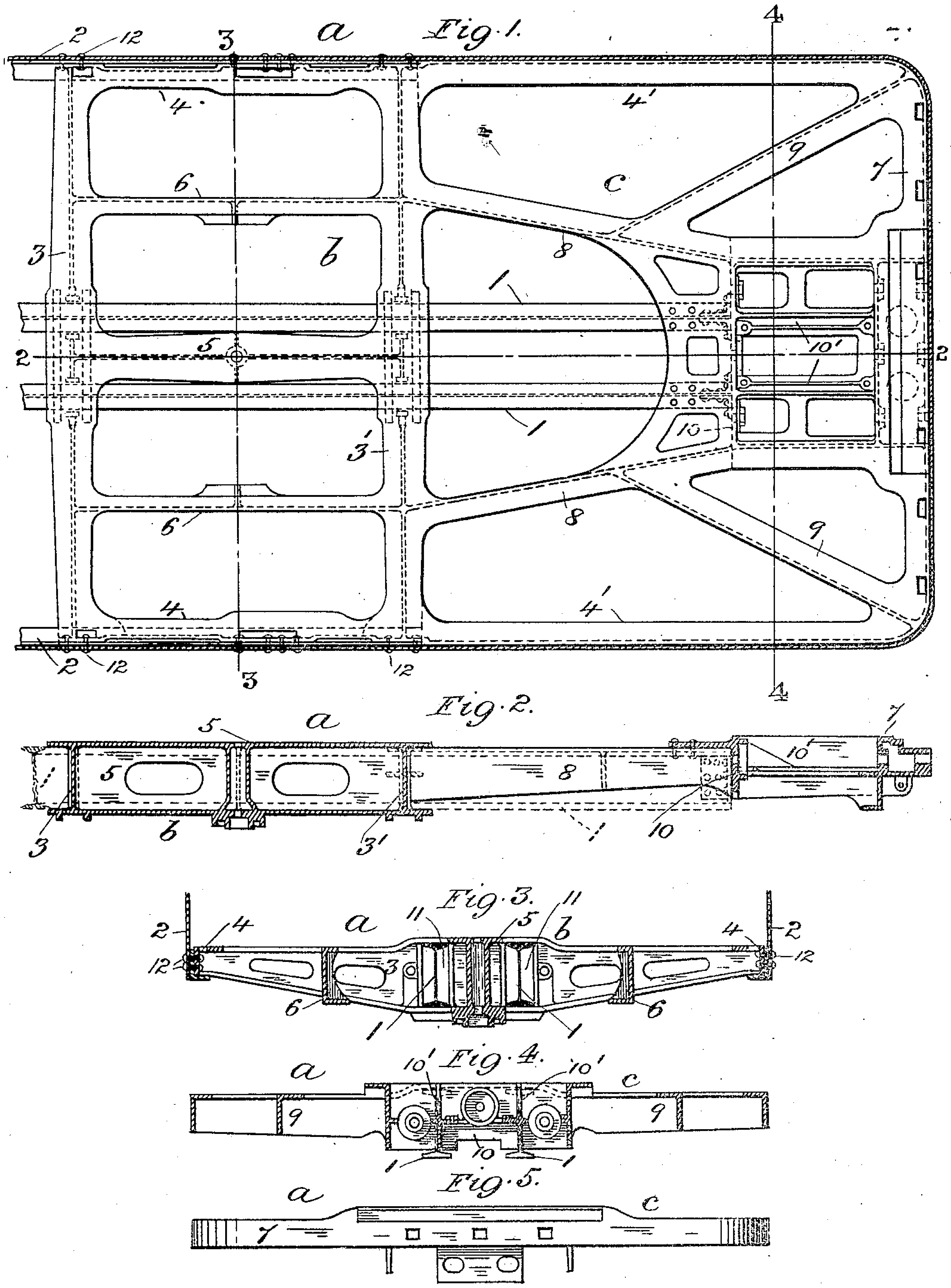
No. 848,370. PATENTED MAR. 26, 1907.

C. H. HOWARD.

CAR UNDERFRAME.

APPLICATION FILED JAN. 22, 1907.



WITNESSES

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UNITED STATES PATENT OFFICE.

CLARENCE H. HOWARD, OF ST. LOUIS, MISSOURI, ASSIGNOR TO CAST STEEL PLATFORM COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF DELAWARE.

CAR-UNDERFRAME.

No. 848,370. Specification of Letters Patent. Patented March 26, 1907.

Application filed January 22, 1907. Serial No. 353,464.

To all whom it may concern:

Be it known that I, CLARENCE H. HOWARD, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Improvement in Car-Underframes, of which the following is a specification.

My invention relates particularly to that class of car-underframe having middle longitudinal sills and side members or girders without intermediate longitudinal sills, and is in the nature of an improvement on the construction described in the Letters Patent of the United States granted to Clarence H. Howard and George G. Floyd on January 3, 1905, No. 778,973, for an improvement in railroad-cars, having also in view the construction described in the patent to Clarence H. Howard, dated November 8, 1904, No. 774,474, for improvement in railroad-cars.

My invention has for its object to provide a car-underframe of this class with a metallic end frame or casting which is adapted to be fixed to and supported by the end portions of the said sills and members in such manner as to prevent its overhanging end part, when subjected to end strain, from "buckling" and at the same time insure the transmission of the said strain directly to the ends of the said sills.

It consists in features of novelty, as hereinafter described and claimed, reference being had to the accompanying drawings, forming part of this specification, whereon—

Figure 1 is a top plan view of my improved metallic end frame for a car-underframe of the class described; Fig. 2, a vertical longitudinal section thereof on line 2 2 in Fig. 1; Figs. 3 and 4, vertical transverse sections through the end frame on lines 3 3 and 4 4, respectively, in Fig. 1; and Fig. 5, an end view thereof.

Like letters and numerals of reference denote like parts in all the figures.

a represents a rectangular-shaped frame which is composed, preferably, of cast-steel integral throughout and adapted to be fixed to the end portions of the middle longitudinal sills 1 and side members or girders 2 (which in the present case are respectively metallic) of the car-underframe in the same horizontal plane therewith, the frame *a* corresponding in outline in top plan to the end portion of the car-body.

The inner end part of the metallic frame *a* is adapted to form the preferably double body-bolster *b* of the car, and consists in the present case of two opposite parallel transverse members 3 3′, which are preferably I-shaped in cross-section and united to each other by two longitudinal L-shaped side members 4, which are adapted to bear against the side members or girders 2, a middle longitudinal and preferably I-shaped member 5, which is perforated centrally for the king-bolt, and two channel-shaped members 6, which are intermediate to the members 4 and 5 and form the side bearings of the bolster *b*, or the said members may be otherwise shaped and arranged for adapting this part of the frame *a* to form a double or single body-bolster, as desired.

The outer end part *c* of the frame *a*, which extends from the inner end part or bolster *b* to the adjacent outer end of the underframe, consists, preferably, of two longitudinal L-shaped side members 4′, which are alined to the side members 4 and unite at their inner ends with the inner transverse member 3′ of the bolster *b* and at their outer ends with a transverse partly L-shaped member 7, which forms the outer end of the underframe, corresponding to the ordinary end sill, the intermediate middle members 8 and adjoining members 9, which unite the members 3′, 4′, and 7 to each other, being of any suitable configuration and arrangement, such as that shown, for insuring the strength and rigidity of the structure and adapting the same to the necessary equipment of the underframe thereat.

Integral with the middle members 8 of the frame *a* at a suitable distance rearward from the outer end member 7 is formed an upright web or wall 10, arranged transversely to the frame *a* and adapted at its rear side to bear against the butting ends of the middle longitudinal sills 1, which pass through openings 11, formed therefor through the webs of the transverse members 3 and 3′ of the bolster *b* immediately between the top and bottom flanges thereof, to which the sills 1 are riveted, as shown. The web 10 is united to the outer end member 7 of the frame *a* by suitably-arranged longitudinal members 10′, which are preferably alined to the sills 1, the end portions of the latter when the frame *a* is in position being riveted to the overlying

metal of the frame *a* adjacent to the web 10. Furthermore, the frame *a* is secured to the side members or girders 2 of the underframe by rivets 12, which pass therethrough and through the ends of the transverse members 3 3′ and side members 4 of the frame *a*, the side members 2 in the present case terminating at the inner transverse member 3′ of the bolster *b*, as shown.

By the above construction it is to be particularly noted that the end portions of the middle longitudinal sills 1 instead of extending only to the transverse beam 3, adjacent to the inner end of the frame and forming the body-bolster in the said patent to Howard and Floyd, and consequently leaving the overhanging part of the frame unsupported, extend in the present case entirely through the bolster approximately to the outer end of the frame and is riveted to the latter at suitable intervals longitudinally, whereby the overhanging part of the frame *a* is supported and prevented from buckling when subjected to abnormal end strain.

It is to be understood that I make no claim to the use of an integral cast-metal frame for connecting the longitudinal members of a car-underframe together, as I am aware that the principle is anticipated by the said patents; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

In a car-underframe of the class described, the combination with the middle longitudinal sills and side members or girders, of a cast-metal end frame integral throughout and arranged horizontally in the plane of the said sills, the inner end part thereof between the said members being adapted to form a body-bolster having openings for the passage therethrough of the said sills, and the outer end part of the said frame having an upright web adapted to bear against the ends of the said sills, and means for fixing the end frame to the said sills and members, substantially as described and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CLARENCE H. HOWARD.

Witnesses:
LESTER L. WRIGHT,
C. C. MURPHY.