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Patented Dec. 17, 1912.

2 SHEETS—SHEET 1.



Mr. Jannis.
W. B. Smith

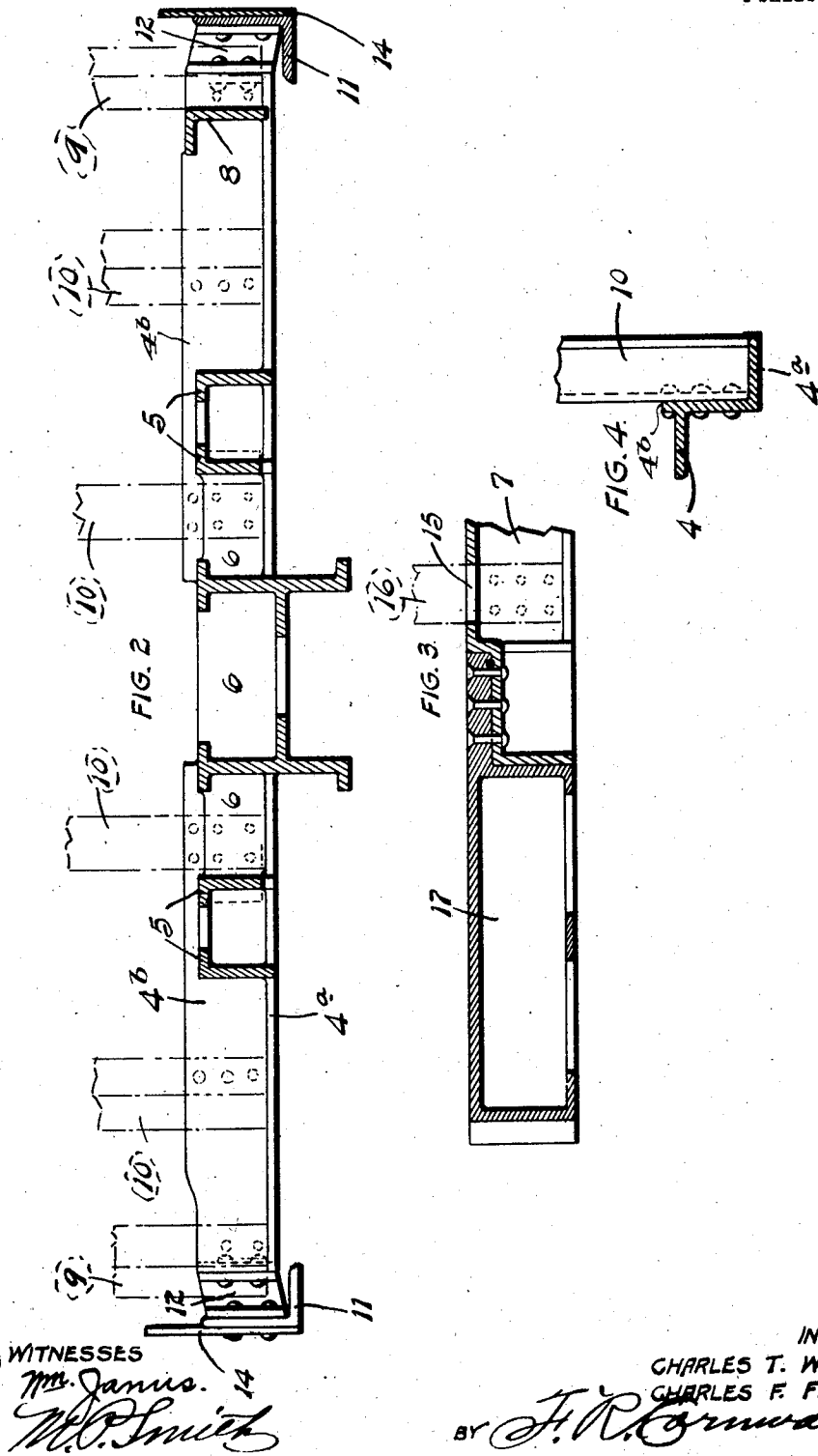
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C. T. WESTLAKE & C. F. FREDE.
RAILWAY CAR UNDERFRAME.
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WITNESSES

Mr. James.
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INVENTORS

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UNITED STATES PATENT OFFICE.

CHARLES T. WESTLAKE AND CHARLES F. FREDE, OF ST. LOUIS, MISSOURI, ASSIGNORS
TO DOUBLE BODY BOLSTER COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION
OF NEW JERSEY.

RAILWAY-CAR UNDERFRAME.

1,047,901.

Specification of Letters Patent. Patented Dec. 17, 1912.

Application filed November 6, 1911. Serial No. 658,814.

To all whom it may concern:

Be it known that we, CHARLES T. WESTLAKE and CHARLES F. FREDE, citizens of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Railway-Car Underframes, 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, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of a car under-frame of our improved construction. Fig. 2 is an enlarged cross-section taken approximately on the line 2—2 of Fig. 1. Fig. 3 is an enlarged cross-section taken approximately on the line 3—3 of Fig. 1. Fig. 4 is an enlarged cross-section taken approximately on the line 4—4 of Fig. 1.

Our invention relates generally to the under-frames of railway passenger cars and more particularly to that portion of the under-frame which comprises the double body bolster, the end sill, the platform and the buffer beam.

The principal objects of our invention are, to combine in a single integral casting, the double body bolster, the end sill and the greater part of the buffer beam, to unite one end of the end sill with the corresponding end of the buffer beam by an integral rail, to form one end of the buffer beam separate from the main body portion thereof and to attach the same to the main body of said beam at the side of the step opening. To construct the end sill so that it will support the lower ends of the end posts attached to said end sill and to provide a simple under-frame construction which combines several essential parts and which can be easily and cheaply manufactured, and combines lightness of weight with great strength and rigidity, thereby readily resisting such shocks and strains as may be received in service.

To the above purposes, our invention consists in certain novel features of construction and arrangement of parts hereinafter more fully described and claimed.

Referring by numerals to the accompanying drawings, 1 designates the double body bolster which is of the usual form and construction and formed integral with one end

thereof and projecting forwardly therefrom is a pair of side rails 2 and a center beam 3 which form the platform proper, and formed integral with the ends of these rails and beam is a plate or rail 4 preferably Z shape in cross section as shown, or of any desirable shape having an outwardly projecting bottom flange 4^a and an upwardly projecting flange 4^b. This last mentioned flange 4^b is in direct vertical alinement with the vertically disposed web of the rail 4. This plate or rail 4 performs the function of an end sill and the bottom flange 4^a forms a support for the end posts 10. The elevation of the plate 4 is limited by the fixed location of the floor level and the degree to which the bottom flange may be lowered is likewise limited and in order to obtain sufficient rivet space, and ample vertical bearing surface for the lower portions of the end posts, the upwardly projecting flange 4^b is provided.

The frame of the platform for the passenger landing comprises a series of longitudinally disposed webs 5 which are formed integral with and projecting forwardly from the central portion of the plate 4 and between these webs are formed pockets 6 for buffing gear, (not shown).

7 designates the buffer beam which is of the usual box-shape and as shown, this beam is formed integral with the outer ends of the platform webs 5. A buffer beam end piece or extension 7^a is formed integral with one end of the main body of the buffer beam and uniting the end portion of this end or extension 7^a and the adjacent end of the plate 4, is an integral rail 8 which is practically a continuation of the side rail 2. This rail 8 is offset relative to the corresponding side rail 2 in order to permit a corner post 9 to be applied to the corner of the platform at the point where the plate 4 joins the side rail 2.

10 designates end posts of any desired shape in cross-section the lower ends of which posts rest upon the horizontal flange 4^a of the end sill and the laterally projecting flanges of said end posts are fixed to the vertical web of the end sill by means of rivets or in any suitable manner.

11 designates commercially rolled members preferably in the form of angles which form the bottom chords of the side walls of the car-body and these members are connect-

ed to the side rails 2 and to the side rails of the double body bolster by means of suitable metal brackets 12. On the open or step side of the end frame, the members 11 terminate at the end of the plate 4 and on the opposite side of the end frame the member 11 extends to the end of the extension 7^a of the buffer beam, and at this point, said member is connected to said extension by means of an angle bracket 13. The lower edges of the metallic side plates 14 of the car-body are fixed in any suitable manner to the vertical webs of the members 11.

Formed through the top plate of the main body of the buffer beam 7 and at the ends thereof are openings 15 adapted to receive the lower ends of the vestibule posts 16, which as shown, are preferably in the form of I beams.

17 designates a removable end section which forms the end portion of the buffer beam at the side of the step opening and this end section is attached directly to the corresponding end of the buffer beam 7 by means of rivets as shown in Fig. 3 or in any suitable manner.

It will be noted that in our improved construction that the entire platform and the main portion of the buffer beam are formed integral with the double body bolster and that the end of the integral buffer beam is united with the corresponding end of the end sill by an integral beam and this arrangement provides a very strong, rigid construction which will withstand such strains and shocks as it may be subjected to in service.

By making the end of the buffer beam of the step side of the platform removable, said end when broken, can readily be replaced by a new end one without discarding the entire underframe.

It will be readily understood that minor changes in the size, form and construction of the various parts of our improved underframe can be readily made and substituted for those herein shown and described without departing from the spirit of our invention, the scope of which is set forth in the appended claims.

We claim:—

1. In a car under-frame, a double body bolster, a platform integral therewith, a buffer beam integral with the platform, an end sill integral with the platform, a horizontally disposed extension integral with the end sill to form a support for the lower ends of the car end posts and longitudinally extending flanges integral with the top of the end sill in alinement with the vertical web thereof.

2. In a car under-frame, a double body bolster, a platform integral therewith, an end sill integral with the platform, a horizontal extension integral with the end sill

for supporting the lower ends of the car end posts, a longitudinally disposed flange on the top of the end sill which flange is in vertical alinement with the vertical web of said end sill, a buffer beam integral with the platform and an integral rail forming a connection between one end of the buffer beam and the corresponding end of the end sill.

3. In a car under-frame, a double body bolster, a platform integral therewith, an end sill integral with the platform, a horizontal extension integral with the end sill for supporting the lower ends of the car end posts, a longitudinally disposed flange on the top of the end sill which flange is in vertical alinement with the vertical web of said end sill, a buffer beam integral with the platform and an integral rail forming a connection between one end of the buffer beam and the corresponding end of the end sill which integral side rail is offset with respect to the corresponding side rail connecting the end sill with the double body bolster.

4. In a car underframe, the combination with a double body bolster, of a platform casting rigidly fixed to said double body bolster, a buffer beam rigidly fixed to the platform casting, a rail fixed to one end of the buffer beam and the corresponding end of the platform casting, the space between the opposite end of the buffer beam and the platform casting being free and unobstructed to accommodate the steps of the car and a pair of commercially rolled members lying parallel with and spaced apart from the side rails of the double body bolster, one of which members extends to the end of the buffer beam.

5. In a car under-frame, the combination with a cast metal structure comprising a double body bolster, a platform integral therewith a buffer beam body integral with the platform and an integral rail between one end of the buffer beam and the corresponding side rail of the double body bolster of a buffer beam end section detachably applied to the end of the buffer beam body opposite from the end to which the integral rail is connected.

6. In a car under-frame, the combination with a cast metal structure comprising a double body bolster, an end sill, a platform, a buffer beam body, a buffer beam end section and a rail between the end portion of said buffer beam end section and the adjacent end of the end sill all of which parts are formed integral, of a buffer beam end section detachably applied to the buffer beam body.

7. In a car underframe, the combination with a cast metal structure comprising a double body bolster, a platform frame, a buffer beam body, and an extension on one end of said buffer beam body, all of which

parts are formed integral, of commercially rolled members lying parallel with and spaced apart from the side rails of the double body bolster, one of which members
 5 extends to the end of the buffer beam body, and spacing brackets forming connections between the side rails of the double body bolster and said rolled members.

8. The herein described car underframe
 10 structure, comprising a double body bolster, a platform integral therewith, a buffer beam body integral with the platform, a buffer beam end section integral with the buffer beam body, a pair of commercially rolled
 15 members lying parallel with and spaced apart from the side rails of the double body bolster, one of which members extends to the end of the buffer beam end extension, spacing brackets forming connections between
 20 the side rails of the double body bolster and the rolled members, and a buffer beam end extension detachably applied to the buffer beam body on the end opposite from the integral end extension.

25 9. In a car underframe, a double body bolster having an end sill, a car end post supporting flange projecting outwardly from said end sill, and a vertically disposed riveting flange integral with the top of
 30 said end sill and extending longitudinally thereon.

10. In a car underframe, a double body bolster having an end sill, means on said
 35 end sill for supporting the car body end frame posts, and a vertically disposed flange on top of said end sill, which flange extends

lengthwise of said end sill and is adapted to receive the means utilized for attaching the car body end posts.

11. In a car underframe, a double body 40 bolster having an end sill, a platform extending outwardly from the end sill, a buffer beam carried by the outer end of the platform, a buffer beam end extension integral with the body portion of said buffer beam, 45 a rail between the outer end of the integral end extension of the buffer beam and the corresponding end of the double body bolster end sill, and a buffer beam end extension detachably applied to the body of the 50 buffer beam opposite the integral end extension.

12. In a car underframe, a double body bolster having an end sill, a platform integral with said end sill, a buffer beam body 55 fixed to the platform, a buffer beam end extension integral with the buffer beam body, a rail integral with the integral end extension and the corresponding end of the end sill of the underframe, and a buffer beam 60 end extension applied to the end of the buffer beam body opposite the integral end extension.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses, this 28th day of October, 1911.

CHARLES T. WESTLAKE.
 CHARLES F. FREDE.

Witnesses:

B. E. KEIHL,
 HAL C. BELLVILLE.