C. T. WESTLAKE & C. F. FREDE.

CAR UNDERFRAME.

APPLICATION FILED NOV. 6, 1911.

**1,030,755.**

Patented June 25, 1912.

2 SHEETS—SHEET 1.

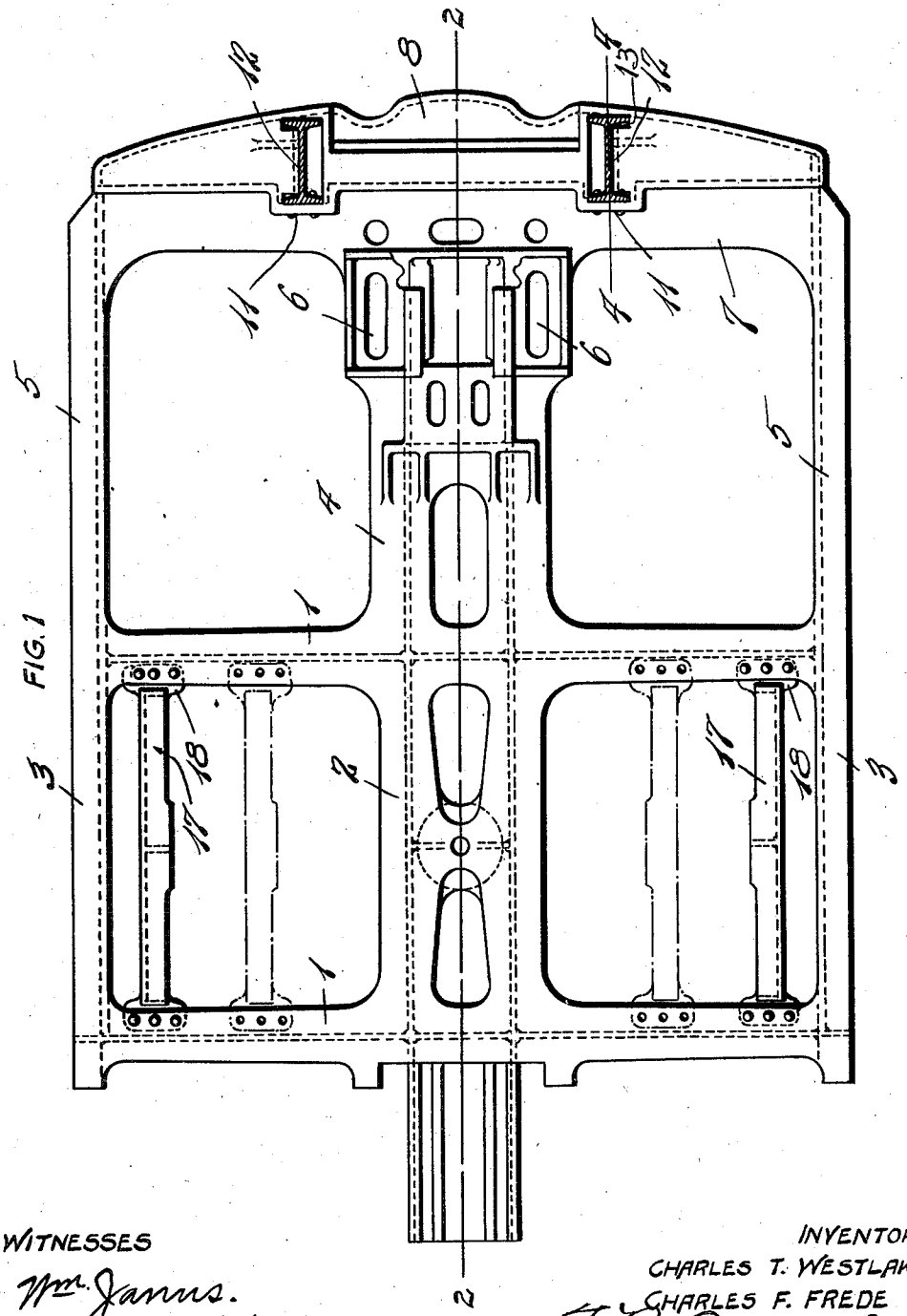



FIG. 1

WITNESSES

Wm. Jarvis.

E. M. Warrington.

INVENTORS

CHARLES T. WESTLAKE

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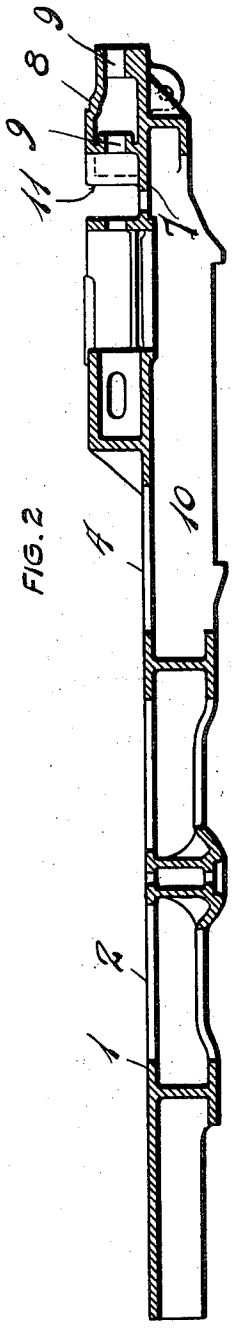



FIG. 2.

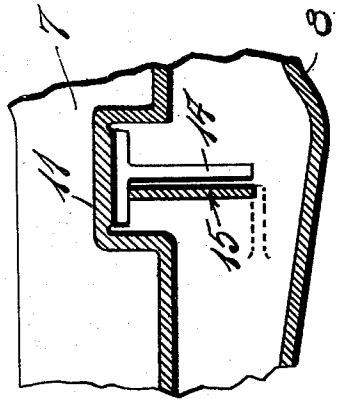



FIG. 3.

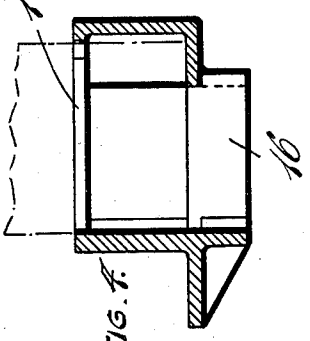



FIG. 4.

WITNESSES

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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.

## CAR-UNDERFRAME.

1,030,755. Specification of Letters Patent. Patented June 25, 1912.

Application filed November 6, 1911. Serial No. 658,816.

*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 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 an underframe of our improved construction. Fig. 2 is a longitudinal section taken approximately on line 2—2 of Fig. 1. Fig. 3 is an enlarged horizontal section taken through a portion of the buffing sill at the point where one of the vertical end posts is attached. Fig. 4 is an enlarged cross section taken approximately on line 4—4 of Fig. 1.

This invention relates to that type of underframes wherein a double body bolster, a platform frame and a buffing beam are combined preferably in a single casting and the type of underframe herein shown and described is particularly adapted for use in connection with blind end cars, although our invention is, of course, not confined to this particular type of cars.

Our invention is particularly designed to meet the requirements of a construction where it is desirable to increase the strength of old cars by the application of a steel underframe and strong vertical end posts. Ordinarily in the re-building or repair of old cars the end posts can only be applied to the car body by permitting the rear flanges of said posts to bear against the outer faces of the end sill so that said posts extend approximately 10 or 12 inches outward from the end sill, and at their upper ends said posts project beyond the old hood or end or top portion of the car, thus necessitating the replacing of the hood which involves considerable labor and material and expense.

Our invention is designed to overcome the objection just noted, and the end sill of the underframe is constructed so that the inner or rear flanges and the inner portions of the end posts project inwardly beyond the rear portion of the end sill, and thus the outer flanges or edges of said end posts do not project beyond the present limits of the hood of the car, and thus it is not necessary to re-build the hood and all benefits of strong, deep end posts are obtained.

Our improved construction permits the retention of the old wooden end sills of the car body, and it is only necessary to notch these wooden end sills at two points and therefore said end sills retain practically their full strength when combined with our improved underframe and buffer beam.

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

As shown in the drawings the double body bolster of our improved underframe comprises a pair of bolster members 1 united at their centers by a longitudinally extending member 2 and the ends of said bolster member 1 are connected by side rails or members 3 which are parallel with the center member 2. The platform frame or extension comprises a center member 4 which is formed integral with the double body bolster in alinement with the member 2, and formed integral with the ends of the member 1 to which the member 4 is connected are side rails or pieces 5 which are practically continuations of the side rails 3. Formed in the forward portion of the member 4 is a series of pockets 6 adapted to receive the buffing gear. The forward ends of the parts 4 and 5 are united by a horizontally disposed plate or end sill 7, and formed integral with this end sill and occupying a position above the plane occupied by the top of said end sill is a buffer beam 8 which is preferably of the usual box shape, and provided in its front and rear walls with suitable openings 9 for the buffer stems. Vertically disposed, horizontally extending webs or flanges 10 are formed integral with the under sides of the buffer beam 8, end sill 7, platform frame and double body bolster. The body of the buffer beam 8 is extended rearwardly over the top of the end sill 7 as designated by 11 at points equi-distant from the center of said beam and these rearward extensions are made for the purpose of accommodating extra wide I-beams 12 which are utilized as end posts between the buffer beam and the end of the hood of the car body. Formed through the top plate of the buffer beam between the front wall thereof and the rear walls of the extensions 11 are openings 13 adapted to receive the lower ends of the I-

beams 12, and formed through the bottom plate of the buffer beam immediately below the openings 13 are T-shaped openings 14 adapted to receive the extreme lower ends of the end posts 12. The lower front corners of the posts 12 are notched or cut away so that the front flanges of said posts rest directly upon the bottom plate of the buffer beam while the rear flanges and rear portions of the webs of said posts project through the openings 14. Vertically disposed walls 15 are formed integral with the top and bottom plates of the buffer beam immediately adjacent the sides of the openings 13 and 14, thereby materially strengthening the buffer beam at the points in which the openings are formed, and formed on the under side of the buffer beam in alinement with the walls 15 are transversely disposed strengthening webs 16. Beams 12 forming the end posts are rigidly fixed to the buffer beam by means of rivets which pass through the rear flanges of said beams and through the walls to the rear of the extensions 11.

The construction just described permits the use of extra wide and therefore extra strong I-beams which perform the function of car body end posts, and the upper ends of said posts unite with the hood of the car at the proper points. The wooden end sill of the car body rests directly on top of the end sill 7 immediately to the rear of the buffer beam, and it is only necessary to notch this wooden end sill at two points to accommodate the rearward extensions 11, and thus the full strength of the wooden end sill is practically retained throughout its length. The side bearing members used in connection with our improved underframe consist of cast metal beams or rails 17, the ends of which are provided with integral horizontally disposed plates or flanges 18 which are perforated in order to receive rivets or like fastening devices by means of which said side bearings are attached to the bolster members 1.

A car underframe of our improved construction is very strong and rigid, is comparatively light in weight, combines in one casting the double body bolster, the platform frame, end sill and buffer beam and said underframe is particularly adapted for use in connection with car bodies now in use, and when applied to said car bodies materially strengthens the end portions thereof and the end posts which are rigidly fixed to the buffer beam are located so as to conform with the end sills and hoods of car bodies of the present construction.

It will be readily understood that minor changes in the size, form and construction of the various parts of our improved underframe can be 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. A car underframe comprising a double body bolster, an end sill and a buffer beam, the rear wall of which buffer beam is extended inwardly for the accommodation of extra wide car end posts.

2. A car underframe comprising a double body bolster, an end sill and a buffer beam, the rear wall of which buffer beam is recessed for the reception of the rear portions of the car end posts.

3. The combination with a car underframe, of a buffer beam integral with said underframe, in the top of which buffer beam is formed openings adapted to receive the lower portions of the car end posts, and the rear wall of which buffer beam extends inwardly at the rear of said openings.

4. The combination with a car underframe, of a buffer beam integral with said underframe, in the top of which buffer beam is formed openings adapted to receive the lower portions of the car end posts, and the rear wall of which buffer beam is recessed at the rear of said openings to accommodate the rear flanges of the car end posts.

5. The combination with a car underframe of a buffer beam integral therewith, which buffer beam is provided with openings adapted to receive the lower portions of the car end posts, and the rear wall of which buffer beam is extended inwardly around the rear portions of said openings.

6. The combination with a cast metal underframe, of a buffer beam integral with said underframe, in which buffer beam is formed openings adapted to receive the lower portions of the car end posts and rearwardly extending shoulders formed in the rear wall of said buffer beam at the rear of the openings therein, which shoulders bear against the sides of the car end posts located in said openings.

7. The combination with a cast metal car underframe, of a buffer beam integral with said underframe, in the top plate of which buffer beam are formed openings adapted to receive the lower portions of the car end posts and vertically disposed walls within the buffer beam at the side of the openings therein.

8. The combination with a cast metal underframe, of a buffer beam integral with said underframe, which buffer beam is provided in its top and bottom plates with alined openings adapted to receive the lower portions of car end posts and vertically disposed walls within the buffer beams at the sides of the openings therein.

9. In a car underframe, a hollow cast metal buffer beam provided in its top plate with openings adapted to receive the lower portions of the car end posts, and the rear

wall of which beam extends inwardly at the rear of said openings.

10. In a car underframe, a hollow buffer beam the rear wall of which is extended inwardly at predetermined points for the accommodation of extra wide car end posts.

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. KUHL,
HAL C. BELLVILLE.