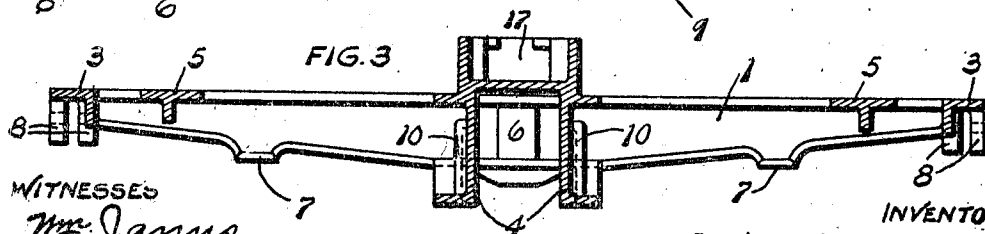
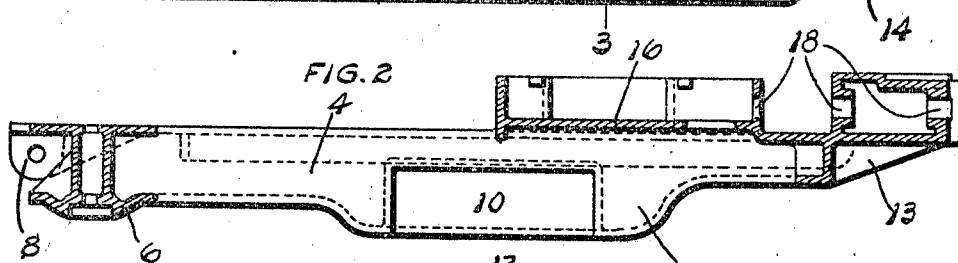
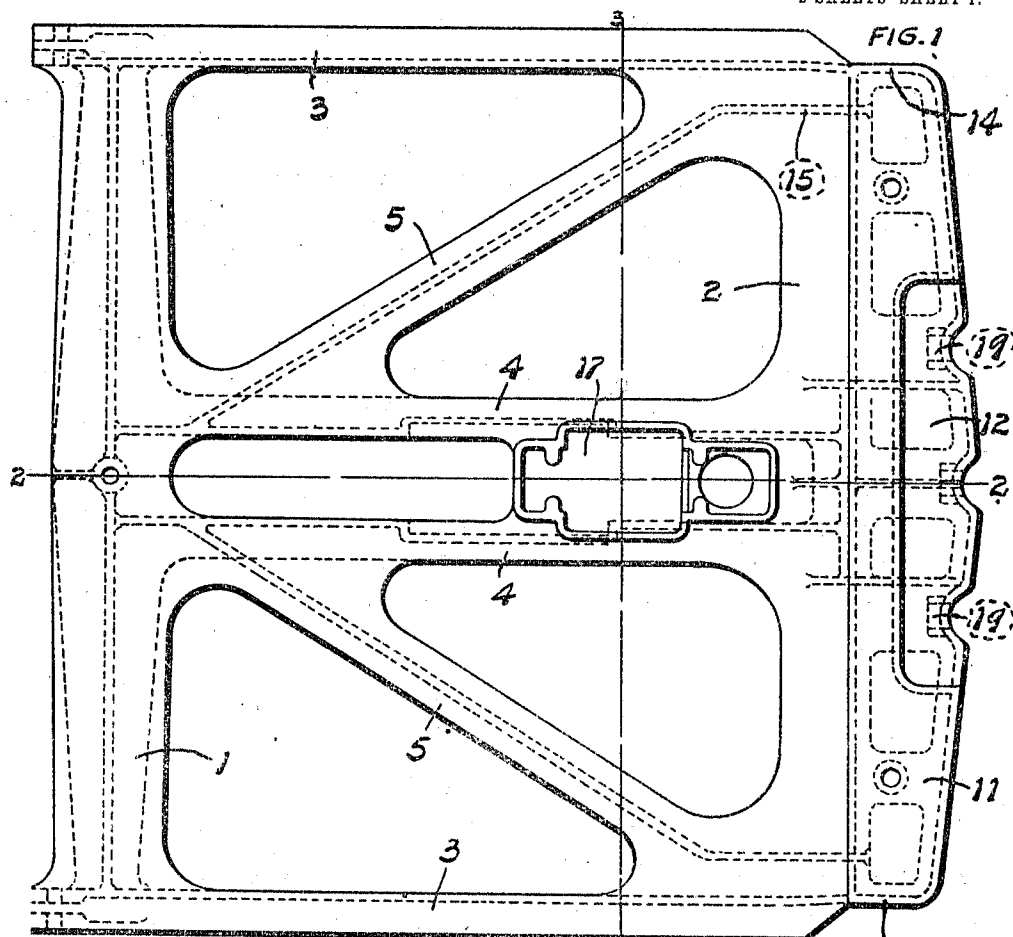


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APPLICATION FILED SEPT. 2, 1911.

1,048,431.

Patented Dec. 24, 1912.

3 SHEETS-SHEET 1.



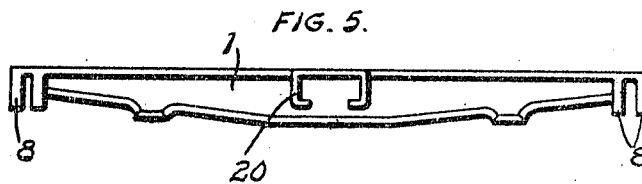
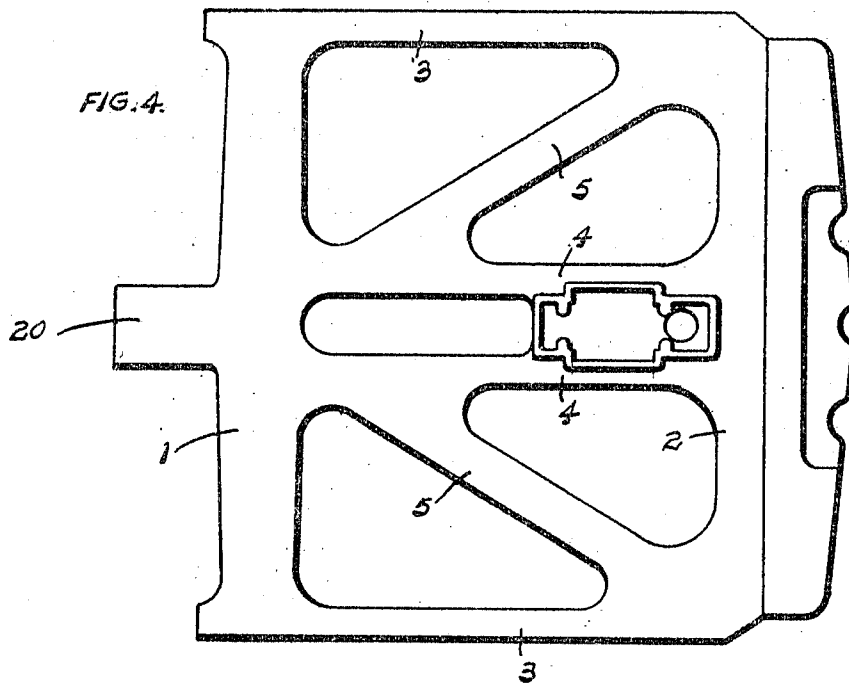
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2 SHEETS-SHEET 2.



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UNITED STATES PATENT OFFICE.

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CAR END UNDERFRAME.

1,048,431.

Specification of Letters Patent.

Patented Dec. 24, 1912.

Application filed September 2, 1911. Serial No. 647,351.

To all whom it may concern:

Be it known that I, CHARLES S. SHALLENBERGER, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Car End Underframes, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which is 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 end under frame of my improved construction. Fig. 2 is a sectional view taken lengthwise through the center of the car end under frame on the line 2—2 of Fig. 1. Fig. 3 is a transverse section taken approximately on the line 3—3 of Fig. 1. Fig. 4 is a plan view of a modified form of my improved car end underframe. Fig. 5 is a rear elevation of the modified form of end frame illustrated in Fig. 4.

This invention relates generally to car under frame construction, and more particularly to under frames of the ends of blind cars, such as baggage and express cars.

In Patent No. 873,800 issued to me December 17, 1907, I disclosed an under frame construction particularly adapted for use in connection with freight cars, and my present invention is an improvement on the construction shown and described in said patent, and contemplates the formation of a bolster end sill, buffer beam, side and center sills in a single integral casting, combining lightness of weight with great strength and rigidity, and the various parts of which are so disposed as to effectually resist buffing strains and stresses to which it is subjected while in service.

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

As shown in the drawings the main body of my improved car end under frame comprises a bolster 1, preferably I-shaped in cross section, an end sill 2, preferably channel-shaped in cross section with the horizontally disposed flanges extending inwardly, side sills 3, preferably of inverted L-shape in cross section with the horizontally disposed flanges projecting outward, a

pair of center sills 4, preferably channel-shaped in cross section with their horizontally disposed flanges projecting outwardly away from the longitudinal center of the casting and diagonally disposed brace members 5, which are preferably T-shape in cross section, and which brace members extend between the central portion of the bolster 1 and the outer ends of the end sill 2.

A center bearing plate 6 is formed integral with the under side of the bolster at the center thereof, and formed integral with said bolster at equidistances from said center plate are side bearing plates 7. A pair of depending perforated lugs 8 are formed integral with the rear end of each side sill 3, and provide means for the attachment of the side truss rods.

The central portions of the center sills 4 are extended downward a short distance as designated by 9 and formed in the inner faces of these downwardly extended portions are longitudinally disposed pockets 10 adapted to receive the ends of follower plates of the draft rigging carried by the under frame.

11 designates a buffer beam which is preferably box-shaped and this buffing beam is formed integral with the end sill 2, and occupies a position so that the bottom plate of said buffer beam occupies the same horizontal plane with the top flange of said end sill thus the main body portion of the box-shaped buffer beam occupies a position above the top surface of the end sill, and the main parts of the under frame.

Formed in the central portion of the top plate of the buffer beam 11 is a recess 12 adapted to receive a threshold plate. Formed integral with the underside of the buffer beam at the central portions thereof is a series of braces 13.

The end walls 14 of the box-shaped buffer beam are in direct alinement with and are practically continuations of the vertically disposed webs of the side sills 3, and the forward portions of the vertically disposed legs of the T-shaped brace members 5 are extended forward parallel with the vertically disposed legs of the angle shaped side sills as designated by 15. The extreme forward ends of these forwardly projecting legs 15 are joined to the bottom plate of the buffer beam 11, as shown by dotted lines in Figs. 1

and 2, thus serving to materially strengthen the ends of the buffer beam and the forward corners of the car end under frame.

Formed integral with the forward portions of the center sills 4 is a horizontally disposed plate 16, and formed on the top thereof by means of four vertically disposed walls is a pocket 17 adapted to receive the springs and follower plates which are located upon the central one of the buffer stems utilized in connection with my improved under frame.

The central buffer stem (not shown) operates through alined openings 18 formed in the front and rear walls of the buffer beam 11, and through the front wall of the pocket 17 and the side buffer stems operate through alined openings 19 formed through the front and rear walls of the buffer beam 11.

The sills of the car body rest directly upon and are attached in any suitable manner to my improved car end underframes, and the ends of said sills bear directly against the rear wall of the buffer beam 11. Thus a very solid and substantial support is formed for the end portions of the car body, and all buffing and pulling strains upon the buffing beam, and said underframes, are distributed over areas of considerable extent at both ends of the car body.

In the modified construction illustrated in Figs. 4 and 5 an extension 20 is formed integral with or fixed to the rear side of the bolster 1, and which extension serves as a bearing for the attachment of the center draft sill, or sills of the car body underframe. This extension is preferably of inverted U shape in cross section, or it may be of box form in cross section, and the top plate of said extension preferably occupies the same horizontal plane with the top plate or flange of the bolster 1. The center draft sill or sills of the car body underframe are rigidly fixed in any suitable manner to the extension 20, and thus said sills are in direct alinement with the center sills 4 of my improved car end underframe, and by such arrangement all buffing and draft strains imparted to the car end underframes are transmitted directly to the car underframe draft sills which extend longitudinally beneath the car body, and unite said car end underframes.

A car end underframe of my improved construction is comparatively light in weight, and by reason of its being formed in a single piece combines strength with rigidity, is inexpensive, can readily be installed and is practically designed to resist all strains to which it may be subjected while in service.

It will be readily understood that various changes in the construction and combination of my improved device may be made and substituted for those herein shown and de-

scribed without departing from the spirit of my invention, the scope of which is set forth in the appended claims.

I claim:

1. In a car end underframe, the combination with an integral structure comprising a bolster, an end sill, side sills, a pair of center sills, diagonally disposed brace members arranged between the central portion of the bolster and the end portions of the end sill, of a hollow box shaped buffer beam integral with the end sill, the bottom plate of which buffer beam occupies the same horizontal plane with the top plate of the end sill.

2. In a car end underframe, the combination with a one piece cast metal structure comprising a bolster, an end sill, side sills, and a pair of center sills, of a hollow box shaped buffer beam integral with the end sill, the bottom plate of which buffer beam occupies the same horizontal plane with the top plate of said end sill.

3. In a car end underframe, the combination with a one piece cast metal structure comprising a flanged bolster, a flanged end sill, flanged side sills, and a pair of flanged center sills, of a hollow box shaped buffer beam integral with said end sill, the bottom plate of which buffer beam occupies the same horizontal plane with the upper flange of said end sill.

4. In a car end underframe, the combination with a one piece cast metal structure comprising a flanged bolster, a flanged end sill, flanged side sills, a pair of flanged center sills and a pair of diagonally disposed brace members arranged between the central portion of the bolster and the end portions of the end sill, the forward ends of the webs of which brace members extend forwardly to the end sill parallel with the webs of the side sills, of a hollow box shaped buffer beam integral with the end sill and which buffer beam occupies a plane above the plane occupied by the underframe.

5. In a car end underframe, the combination with a one piece cast metal structure comprising a flanged bolster, a channel shaped end sill, inverted L-shaped side sills, and a pair of channel shaped center sills, of a hollow box shaped buffer beam integral with said end sill, the bottom plate of which buffer beam occupies the same horizontal plane with the top flange of said end sill.

6. In a car end underframe, the combination with a one piece cast metal structure comprising a flanged bolster, a channel shaped end sill, a pair of inverted L-shaped side sills, a pair of channel shaped center sills, a pair of flanged diagonally disposed brace members extending from the central portion of the bolster to the end portions of the end sill, of a hollow box shaped buffer

beam integral with said end sill and the bottom plate of which buffer beam occupies the same horizontal plane with the upper flange of said end sill.

5 7. In a car end underframe, the combination with a cast metal member having a channel shaped end sill and inverted L-shaped side sills, of a hollow box shaped buffer beam integral with said end sill, the
10 bottom plate of which buffer beam occupies the same horizontal plane with the top flange of the end sill, and the top flanges of the side sills and the end sills of which buffer beam are in direct alinement with
15 and are continuations of the vertically disposed webs of the side sills.

8. In a car end underframe the combination with a cast member having a channel shaped end sill and inverted L-shaped side
20 sills, of a buffer beam integral with and occupying a plane above the end sill, and the end walls of which buffer beam are in direct alinement with and are continuations
25 of the vertically disposed webs of the side sills.

9. In a car end underframe the combination with a cast member having a bolster, a pair of side sills, an end sill and diagonally disposed brace members between the
30 central portion of the bolster and the end

portions of the end sill, of a hollow box-shaped buffer beam integral with the end sill, the bottom plate of which buffer beam occupies the same horizontal plane with the top plate of the end sill portions of 35 which diagonally disposed brace members extend forward parallel with the side sills to form braces for the ends of the buffer beam and braces integral with the underside of the buffer beam and with the front side 40 of the end sill.

10. In a car underframe, the combination with a one-piece cast metal structure comprising a bolster, a rearward extension on the central portion of said bolster for the 45 attachment of the center draft sills of the car body underframe, an end sill, side sills, and a pair of center sills, of a hollow box-shaped buffer beam integral with the end sill, the bottom plate of which buffer beam 50 occupies the same horizontal plane with the top plate of said end sill.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this seventh day of August, 1911.

CHARLES S. SHALLENBERGER.

Witnesses:

M. P. SMITH,

HAL C. BELLVILLE.