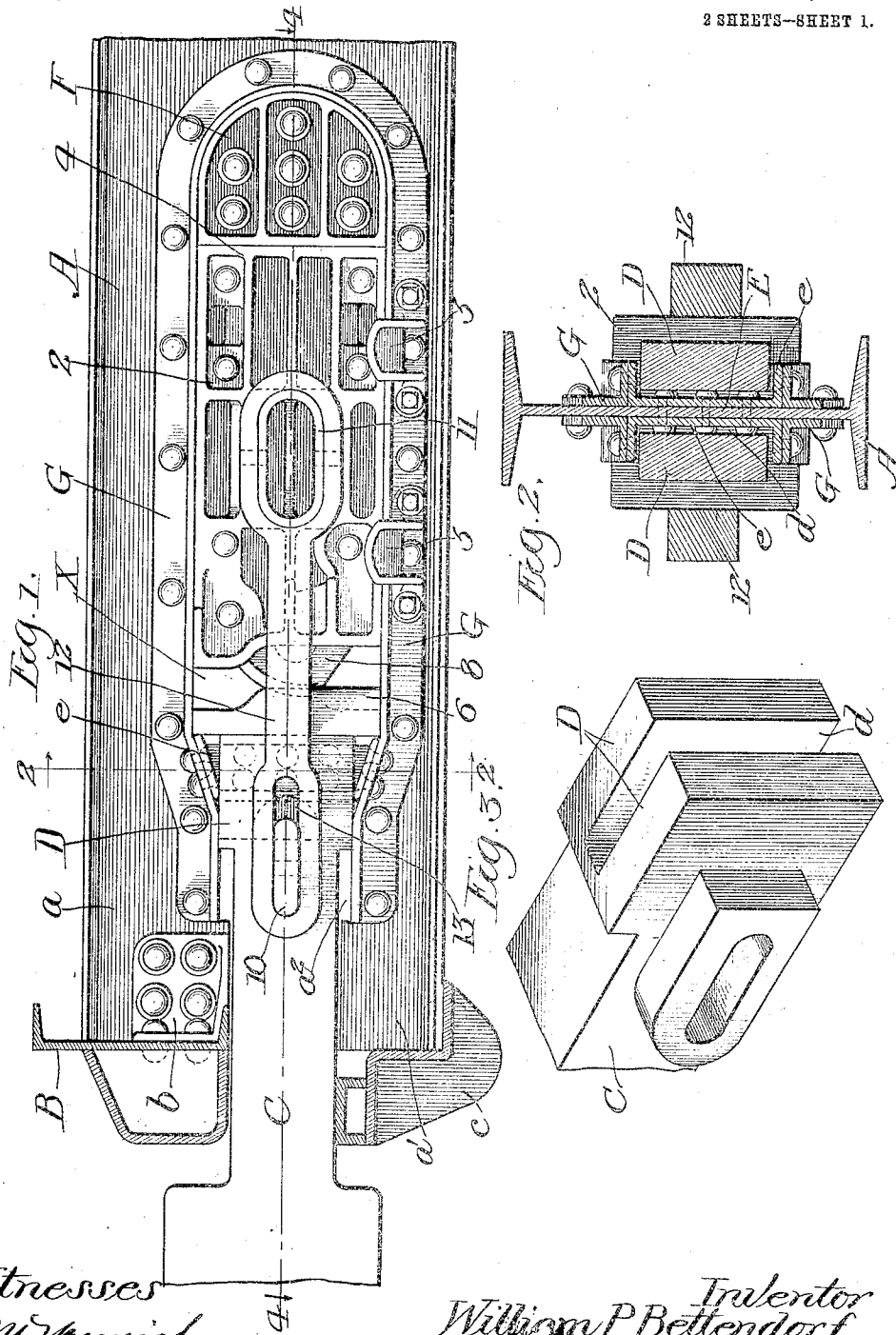


960,255.

Patented June 7, 1910.
2 SHEETS—SHEET 1.



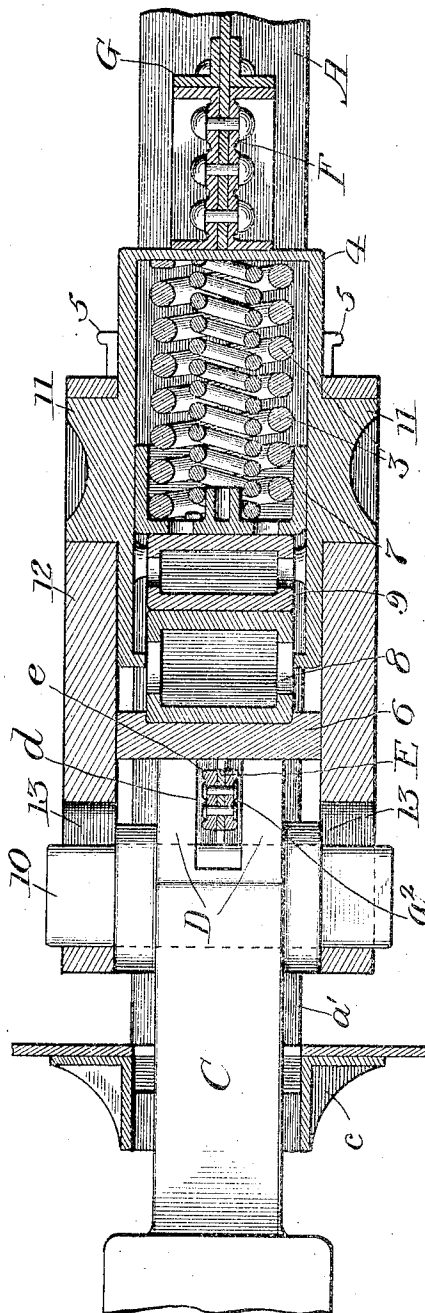
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Patented June 7, 1910.
 2 SHEETS—SHEET 2.

Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM P. BETTENDORF, OF DAVENPORT, IOWA.

DRAFT-RIGGING.

960,255.

Specification of Letters Patent.

Patented June 7, 1910.

Application filed June 4, 1908. Serial No. 436,655.

To all whom it may concern:

Be it known that I, WILLIAM P. BETTENDORF, a citizen of the United States, and a resident of Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Draft-Riggings and Supports Therefor, of which the following is a clear, full, and exact description.

My invention relates to draft rigging for cars the underframes of which have a single center-sill consisting, preferably, of a commercial rolled metal beam.

The object of my invention is to provide a draft rigging that can be inserted and secured in the end of a single center-sill, and impart thereto the strain of the push or pull of the car-coupler in such manner that said strain will be distributed throughout the center-sill and so that the wear and tear will not exceed that of the conventional Master Car Builders' standard designs.

A further object is to so construct the end of the draw-bar of the coupler that it can avoid interference with the integral web ligament connecting the upper and lower bifurcations of the bifurcated ends of the center-sill. This I accomplish by the means hereinafter fully described, and as particularly pointed out in the claims.

In the drawings:—Figure 1 shows a central section of the broken away end of the underframe of a car having my improvements applied thereto. Fig. 2 is a transverse section of the center-sill taken on dotted line 2, 2, Fig. 1, showing my invention applied thereto. Fig. 3 is a perspective view of the broken away rear end of the draw-bar of the car-coupler. Fig. 4 is a longitudinal horizontal section through the draft rigging and end portion of the center-sill, taken on line 4—4, Fig. 1.

As shown in the drawings the single center-sill A consists of an I-beam, the ends of which are bifurcated to provide an upper and lower leg a , a' , respectively. The end of the upper leg is connected by means of suitable castings b to the channel-beam end-sill B of the under-frame, and the extremity of the lower leg is connected by rivets or otherwise to a shelf c projecting rearwardly from about the center of width of the lower horizontal part of the cast metal frame, through the opening in which the draw-bar C of the car-coupler extends. This draw-bar extends back into the longitudinal space

separating the legs of the bifurcated end of the center-sill a suitable distance, and its rear end is provided with a vertical slot d , which extends forward from its rear end a suitable distance and provides the end of the draw-bar with parallel rear extensions D, D. These rear extensions D, D, pass beyond the crotch of legs a , a' of the center-sill, which crotch is formed by a vertically disposed integral ligament or column E of the web of said sill, and reinforcing plates e , e , riveted to each side thereof. This column constitutes the dividing medium between the longitudinally extending opening X, in which the parts of the draft-rigging are located, and the space a^2 separating legs a , a' . Opening X, preferably, aligns with and is greater in height than space a^2 , and the vertical edge of the web forming its rear end is reinforced and strengthened by cast metal-plates F, and its longitudinal edges and the corresponding edges of the rear portion of space a^2 are reinforced by a U-shaped angle-iron strip G, whose bend extends around the rear semi-circular end of plates F, substantially as shown in the drawings, and as described and claimed in an application for Letters Patent of the United States for improvements in draft rigging, filed by me in the United States Patent Office, May 23, 1908, and numbered 434,669.

As before stated, opening X is designed to retain certain parts of the draft rigging, prominent among which is the housing 2 for the springs 3. This housing consists of a tubular casing, which, preferably, is square in cross-section and has its rear end 4 that bears against the forward ends of reinforcing plates E, closed, and its forward end open. This housing is placed in opening X, and retained therein by brackets 5 that are secured by rivets or bolts to the vertical portions of the angle-iron binding strip G below opening X, and have upturned ends that prevent the lateral displacement of said housing. The length of housing 2 is less than opening X and its forward end does not reach column E, and in the space between said column and housing a buffing block 6 is placed, which consists of a substantially rectangular plate of sufficient thickness, which is kept normally in engagement with the rear extremities of extensions D, D, by the pressure of the springs 3, through the medium of a suitable follower-plate 7, and eccentrically journaled cam-

blocks 8, 9 respectively. The follower-plate 7 is of such outer dimensions and contours that it can fit and have sliding engagement with the bore of the housing, and the cam-blocks are suitably interposed between the follower-plate and the buffer-plate.

A short distance from its rear end the sides of the draw-bar are, preferably, built out or provided with bosses, and are provided with a transverse opening, which strikes through said bosses, and forms a seat for a transverse key 10, whose ends project beyond the sides of the draw-bar a suitable distance. The vertical sides of the housing are, preferably, in the same longitudinal vertical plane as the outer surfaces of the bosses of the draw-bar, and said housing, at about its center of length and in the same horizontal plane as the key 10 has trunnions 11 projecting from its sides which are connected by links 12 with the projecting ends of key 10. The openings 13 in the forward ends of the links, through which the ends of the key pass, are elongated longitudinally to permit the links to have a slight forward movement, or the draw-bar to have a slight rearward movement independent of the other, but the rear ends of the links move with the housing at all times.

In operation, when a pushing motion is imparted to the coupler it moves to the rear independently of the links 12 for a short distance, and, through the medium of the buffer-block and the rolling members 8, 9, slightly compresses the springs 3, which latter neutralize the shock and impart the strain through the rear end of opening X to the center-sill until the ends of the key come in contact with the rear end of elongated openings 13 of the links 12, whereupon the buffing strain is imparted direct to the housing of the springs and, through it to the center-sill. When the draw-bar is subjected to a pulling strain, the key 10, through the medium of links 12 draws the housing forward and compresses springs 3 against the follower-plate 7, members 8 and 9, the buffing-block 6, and the column E, until the limit of the forward compression of the springs is reached, or until said springs compress sufficient to resist the pulling strain. Thus it will be seen that the pulling strain is imparted to the center-sill and, through it, to the under-frame of the car, through the medium of the column E, and the buffing or pushing strain, which is much greater than the pulling strain, is imparted to the center-sill through the rear end of opening X and the plates reinforcing the same to the center-sill.

What I claim as new is:—

1. In a car the combination with an end-sill and a single center-sill the end of which is bifurcated, of a car-coupler having a draw-bar the shank of which is disposed be-

tween said bifurcations and is constructed so as to pass on either side of a portion of the web of said center-sill, and springs normally exerting a forward pressure against said draw-bar.

2. In a car the combination with an end-sill and a single center-sill the end of which is bifurcated and provided with an opening back of said bifurcation, of a car-coupler having a draw-bar the shank of which is disposed between said bifurcations and is constructed so as to pass on either side of a portion of the web of said center-sill, and springs mounted within the opening in said center-sill and normally exerting a forward pressure against said draw-bar.

3. The combination with the end-sills of a car, and a single rolled metal beam center-sill the ends of which are connected to said end-sills and are bifurcated and provided with a longitudinally elongated opening in alinement with and separated from the bifurcations, of a vertically disposed integral portion or column of the web of said center-sill, of a draw-bar entering the space between said bifurcations, and having a longitudinal slot therein to enable it to pass on either side of said column, longitudinally disposed springs, means supporting said springs that normally engage the rear end of said opening, and longitudinally disposed links connecting said spring supporting means to the draw-bar.

4. The combination with the end-sills of a car, and a single rolled metal center-sill the ends of which are connected to said end-sills and are bifurcated and provided with a longitudinally elongated opening in alinement with and separated from the bifurcations by a vertically disposed integral portion of the web of said center-sill, of a draw-bar entering the space between said bifurcations and having its rear end slotted, a transverse key seated in a suitable opening in the rear portion of the draw-bar and having its rear end projecting laterally beyond the sides of the same, longitudinally disposed springs, means for supporting the same in said longitudinally elongated opening that normally engage the rear end of the latter, and longitudinally disposed links the forward ends of which are provided with longitudinally elongated openings which are fitted over the projecting ends of said key, and engage with said spring supporting means.

5. In a car the combination with end-sills, and a single rolled metal beam center-sill the ends of which are connected to said end-sills and bifurcated longitudinally, and are provided with a longitudinal opening alining with and separated from said bifurcations by a vertically disposed integral part or column of the web of said center-sill, longitudinally disposed springs and reciprocal

means for retaining the same, of a draw-bar movable in the space between said bifurcations and having a vertical slot in its rear end, a buffer-block interposed between said springs and draw-bar, and links connecting the spring retaining means and said draw-bar.

6. In a car the combination with end-sills, and a single rolled metal beam center-sill the ends of which are connected to said end-sills and bifurcated longitudinally, and are provided with a longitudinal opening alining with and separated from said bifurcations by a vertically disposed integral part or column of the web of said center-sill, longitudinally disposed springs and reciprocal means for retaining the same, of a draw-bar movable in the space between said bifurcations, and having a vertical slot in its rear end, a buffer-block interposed between said springs and draw-bar and engaging the latter at the rear of the said vertically disposed column, and links connecting the spring retaining means and said draw-bar.

7. The combination with the end-sills of a car, and a single rolled metal beam center-sill the ends of which are connected to said end-sills and are bifurcated and provided with a longitudinally elongated opening in alinement with and separated from the bifurcations of a vertically disposed integral portion or column of the web of said center-sill, of a draw-bar entering the space be-

tween said bifurcations, and having a longitudinal slot in the rear end thereof to enable it to pass on either side of said column, longitudinally disposed springs, means supporting said springs that normally engage the rear end of said opening, and longitudinally disposed links connecting said spring supporting means to the draw-bar.

8. The combination with the end-sills of a car, and a single rolled metal beam center-sill the ends of which are connected to said end-sills and are bifurcated and provided with a longitudinally elongated opening in alinement with and separated from the bifurcations of a vertically disposed integral portion or column of the web of said center-sill, of a draw-bar entering the space between said bifurcations and having a longitudinal slot therein to enable it to pass on either side of said column and have a limited reciprocal movement, longitudinally disposed springs, means supporting said springs that normally engage the rear end of said opening and longitudinally disposed links connecting said spring supporting means to the draw-bar.

In testimony whereof I have hereunto set my hand and seal this 7th day of April, A. D., 1908.

WILLIAM P. BETTENDORF. [L. s.]

Witnesses:

G. S. THOMPSON,
E. K. LUNDY.