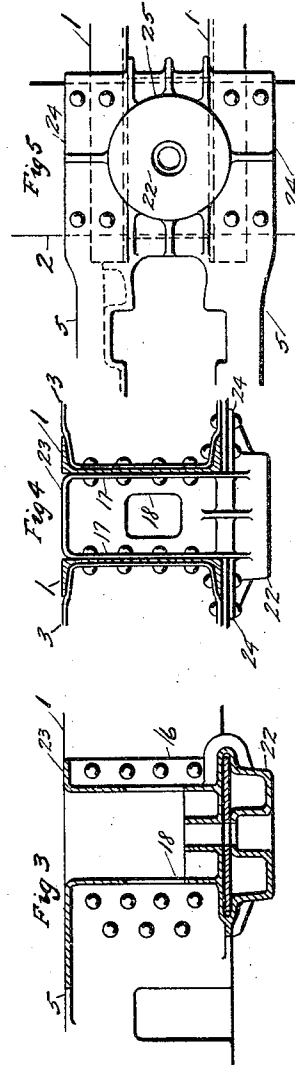
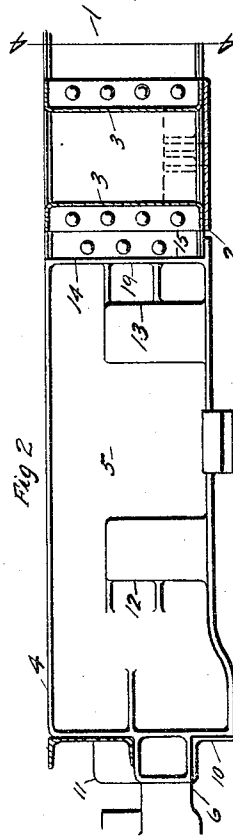
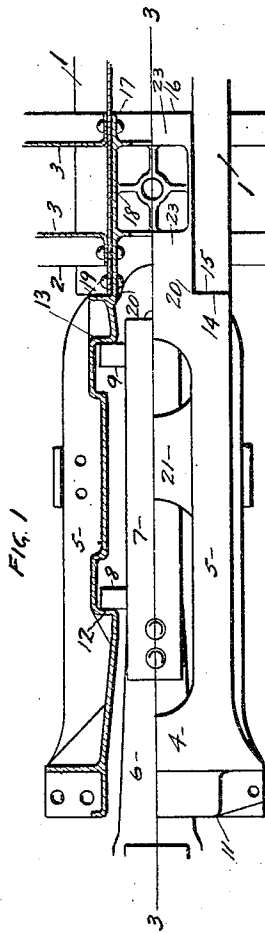


A. CAMPBELL.
 UNDERFRAME FOR RAILWAY CARS.
 APPLICATION FILED FEB. 19, 1912.

1,065,111.

Patented June 17, 1913.

4 SHEETS—SHEET 1.



WITNESSES:

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 Eleanor R. Nash.

Argyle Campbell
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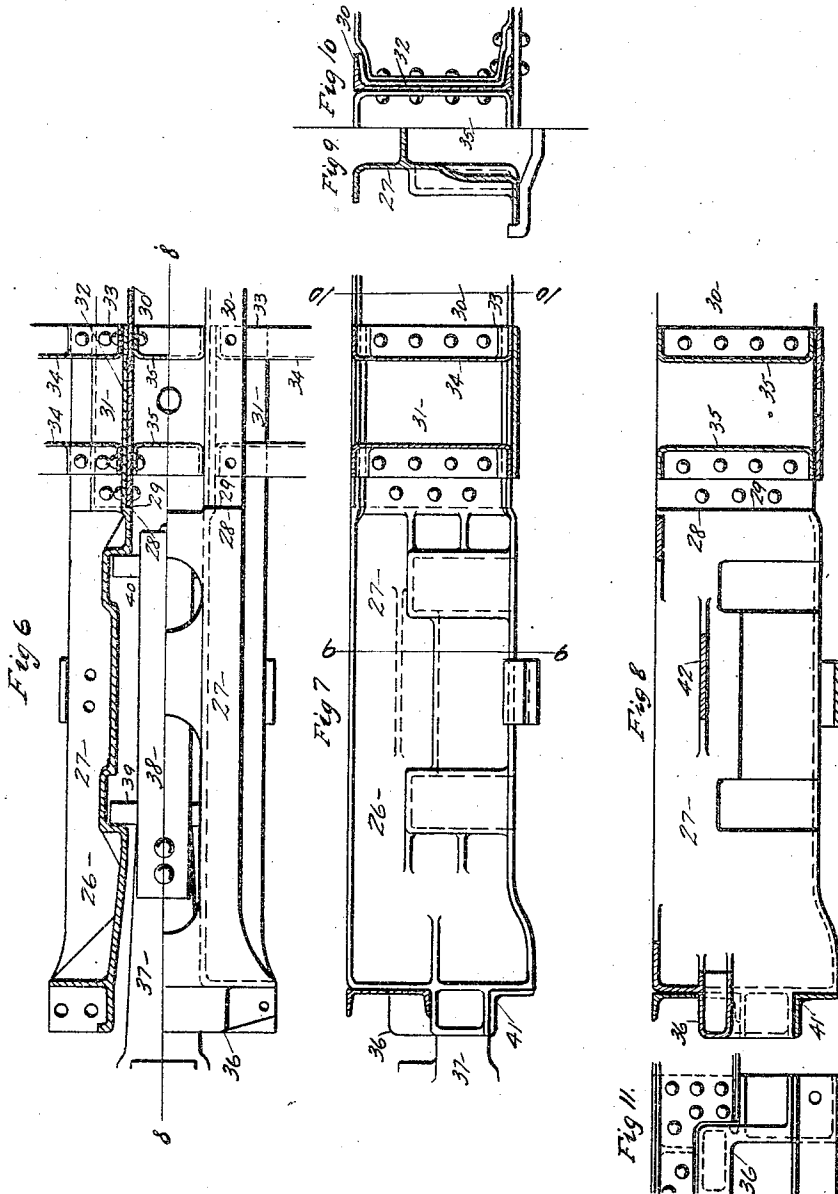
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4 SHEETS—SHEET 2.



WITNESSES:
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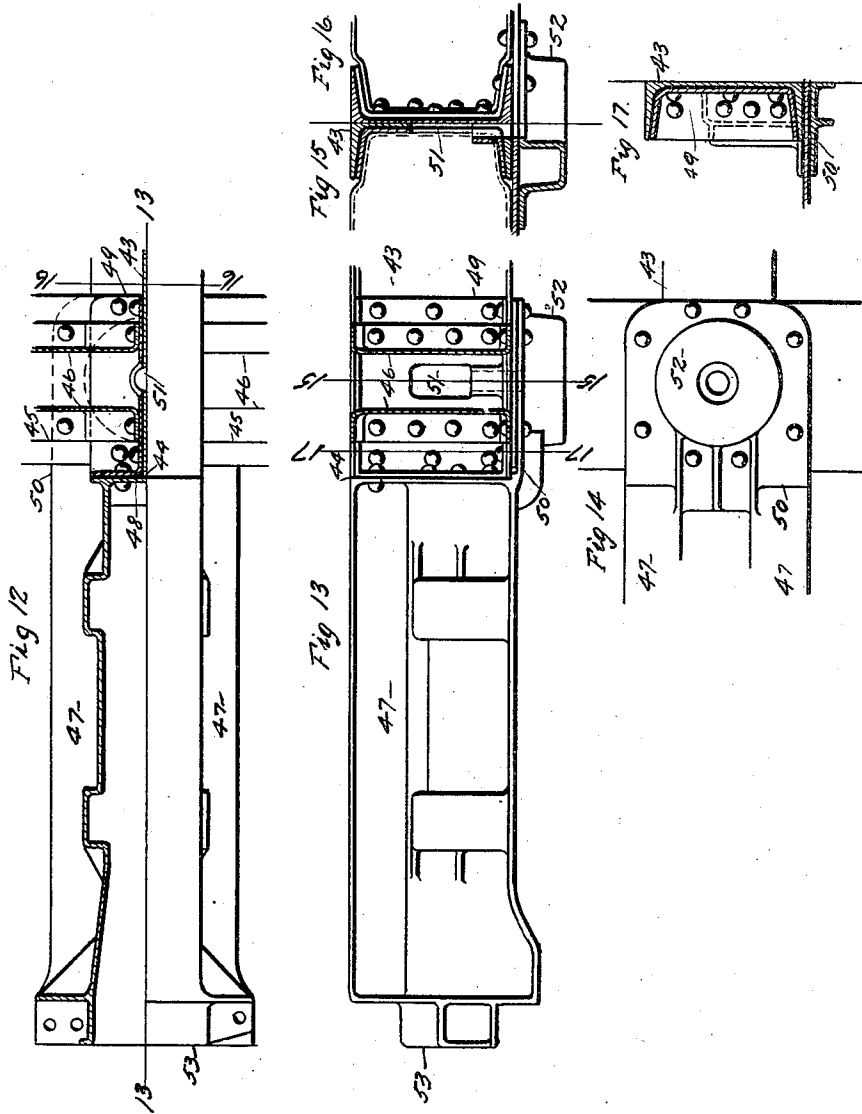
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4 SHEETS—SHEET 3.



WITNESSES:
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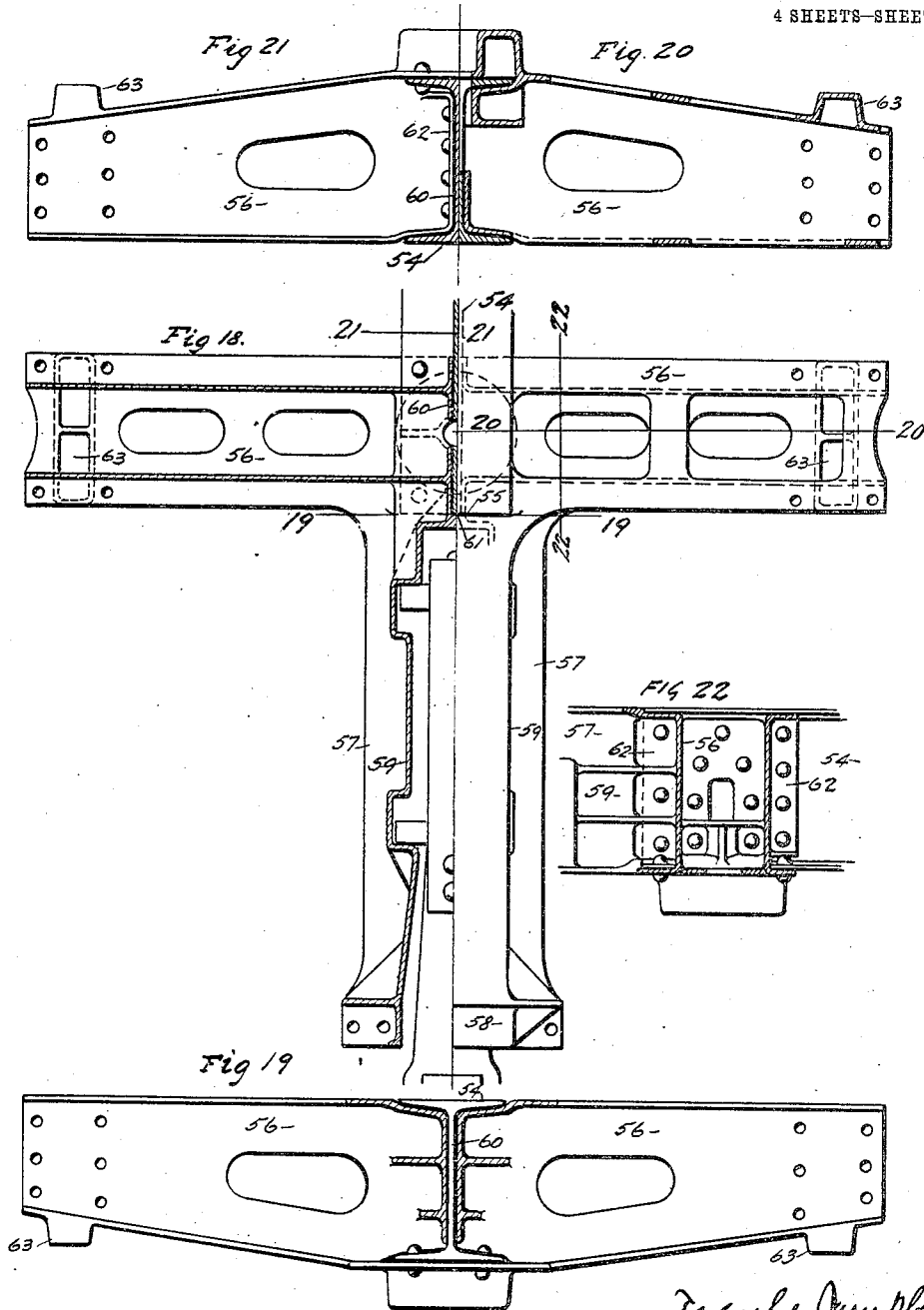
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

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UNDERFRAME FOR RAILWAY-CARS.

1,065,111

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ARGYLE CAMPBELL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Underframes for Railway-Cars, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to underframes for railway cars.

In the underframes of railway cars, particularly underframes in which I beams are used for the center sill in single center sill construction, and channel beams for the center sills in double center sill construction, and the draft members are of cast metal, the rivets, or other similar means employed to join the center sill or center sills with the draft member or draft members, are subjected in the operation of the car, especially in buffing movement of the draft rigging, to considerable shearing moment.

The main object of my invention is to construct the draft sills or draft member in a novel way so that this shearing moment upon the rivets may be obviated.

A further object is to provide an underframe for cars in which the shocks and strains transmitted in service through the draft sills to the other parts of the underframe may be directly received in the line of draft, and without torsional strain.

I accomplish these objects by employing a draft member or draft members suitably constructed, as hereinafter described, to abut against the ends of the center sills of the car.

Referring to the drawings Figure 1 is a plan view partially in horizontal section of a draft member and the adjacent parts of the body bolster and center sills embodying my invention. Fig. 2 is an elevation of the draft member showing the body bolster partly in cross section. Fig. 3 is a vertical longitudinal section through the point of attachment of body bolster, center sills and draft member on line 3—3 of Fig. 1. Fig. 4 is a cross section taken on line 4—4 of Fig. 2. Fig. 5 is an inverted plan view of the central part of the bolster showing the center bearing, and a modification in the method of attachment of the draft member

to the body bolster and center sills. Figs. 6 to 11 inclusive illustrate a modification, Fig. 6 being a plan view partly in horizontal section; Fig. 7 an elevation; Fig. 8, a vertical longitudinal section partly in elevation of line 8—8 of Fig. 6; Fig. 9 is a half cross section on line 9—9 of Fig. 7; Fig. 10 is a half cross section on line 10—10 of Fig. 7; Fig. 11 is a half view in elevation of the front end of the draft member showing the striking plate. Figs. 12 to 17 inclusive illustrate another modification showing the attachment of my device to a single center sill car, Fig. 12 being a plan view partly in horizontal section; Fig. 13 is a side elevation of the construction shown in Fig. 12 partly in vertical longitudinal section on line 13—13 of Fig. 12; Fig. 14 an inverted plan view of the central part of the bolster; Fig. 15 a half cross section on line 15—15 of Fig. 13; Fig. 16 a half cross section on line 16—16 of Fig. 12; Fig. 17 a half cross section on line 17—17 of Fig. 13. Figs. 18 to 22 inclusive illustrate another modification showing a further method of employing the principle of my invention in connection with a single center sill car, Fig. 18 being a plan view partly in horizontal section; Fig. 19 a cross section partly in front elevation on line 19—19 of Fig. 18; Fig. 20 is a longitudinal section of half the body bolster on line 20—20 of Fig. 18; Fig. 21 is a half elevation of the body bolster showing one-half the center sill in cross section on line 21—21 of Fig. 18; Fig. 22 is a cross section on line 22—22 of Fig. 18.

In one form of the application of the principles of my invention illustrated in Figs. 1 to 4 inclusive, 1, 1 represent suitable center sills, preferably channeled beams, in a double center silled car. The center sills extend longitudinally of the car, and terminate at either end near the forward edge of the body bolster.

4 is a draft member having the two draft sills 5, 5 in parallel arrangement, suitably spaced apart to permit the mounting of the draft gear between them.

6 is the draw bar, 7 the yoke, 8 and 9 the front and rear followers respectively between which, and within the yoke the compression resisting element of the draft gear, (not shown in the drawings), is arranged.

10 is the carrier plate, 11 the striking

plate, which is preferably an integral part of the draft member 4.

12 and 13 are front and rear step shoulders respectively for the followers to abut against. The draft sills each abut at their rear end 14 against the forward end 15 of the center sill in line with it. The draft member 4 is rearwardly extended between the center sills to the rear edge 16 of the body bolster 3, forming the upright flanges 17, 17, which are suitably secured, preferably by rivets, to the center sills. In preferable construction in this form of application the body bolster center brace 18 is integrally formed with the flanges 17, 17. The rear end of each of the draft sills is provided with the outwardly turned integral flange 19, which with the end of the draft sill and the flange 17 forms a shoulder within the angle 20, of which the end of the center sill is held against the rear end of the draft sill. In preferable construction the tops of the draft sills are joined together by the preferably integral flange 21. 22 is the bolster plate of the center bearing. The flanges 17, 17 are in preferable construction joined together at their top by the integral web 23.

Fig. 5 illustrates a modification of the structure at the rear end of the draft member 4, in this illustration the draft member being provided with a preferably integral flange 24, which is continuous with the draft sills 5, 5, and extends underneath the body bolster with the bolster plate of the center bearing cast integral with the said flange, as illustrated at point 25 of Fig. 5.

Referring now to the form of my invention shown in Figs. 6, 7, 8, 9, 10 and 11, 26 represents the draft member provided with the draft sills 27, 27, which abut at their rear ends 28 against the forward ends 29 of the center sills 30. The rearwardly extended castings 31, 31, the web 32 of one of which is shown in cross section in Fig. 6, are integral with the draft member 26, and are disposed at the outer sides of the center sills, the center sills terminating at their forward ends in front of the body bolster, and the rearward extensions 31 of the draft member 26 terminating at the rear edge 33 of the body bolster 34. The chief difference between this form of application of the principles of my invention and that illustrated in Figs. 1 to 4 inclusive is to be found in the disposition of the rearward extensions of the draft member on the outer side of the center sills instead of between them. 35 is the bolster center brace, 36 the striking plate, 37 the draw bar, 38 the draft yoke, 39 and 40 the front and rear followers respectively, 41 the carrier iron, and 42 a web, which in preferable construction joins the two draft sills together above the space 65 between them occupied by the draft rigging

mounted therein. The rearward extensions 31 of the draft member are suitably riveted to the center sills and body bolster.

Figs. 12, 13, 14, 15, 16 and 17 show my invention applied to a construction employing a single center sill. In these illustrations 43 represents a single center sill terminating at its end 44 near the front edge 45 of the body bolster 46. The draft sills 47 are integrally joined by the transverse member 48, and are provided with rearwardly extending castings 49, one of which abuts at either side against the sides of the center sill in the plane of the body bolster, and is suitably secured to said center sill by rivets passed through said castings and the said center sill. The draft member 47 is also provided at its rear end with the lower horizontally disposed flange 50, preferably integral with the said draft member, which is suitably riveted to the under surface of the body bolster. The center sill is provided with the slot 51 for the reception of the king pin, (not shown in the drawings), which passes downward through the center bearing 52, which is preferably integral with the flange 50. The forward end of the center sill 43 abuts against the plate 48. In preferable construction the plate or member 48, the castings 49, the draft sills 47, the bottom flange 50, the bolster plate of the center bearing 52 and the striking plate 53 are all cast in one piece, forming the draft member for the car.

Figs. 18, 19, 20, 21 and 22 show the application of the principles of my invention to a single center sill car in which the draft member and body bolster is cast in one piece. 54 is the single center sill, which terminates at its forward end at the front line 55 of the body bolster 56. The draft member 57 comprises the striking plate 58, a pair of draft sills 59, 59, and the bolster 56 integral therewith. The forward end of the single center sill rests within the transverse slot 60 in the body bolster, and its forward end abuts against the member 61 which join the draft sills 59, 59 together at their rear end. In this construction the body bolster is preferably riveted to either side of the center sill through flanges 62 provided at the junction of the bolster and center sill, and preferably the side bearings 63, 63 are integral with the body bolster.

It is believed that the operation and application of the various forms of my device will be clear to those skilled in the art to which it pertains. I wish to call attention, however, to the advantage of the principles of my invention in that the draft member abuts directly against the end of the draft sills, which is a decided advantage, as the shock received in buff in the operation of the car is transmitted to the center sill or sills without tendency to shear the rivets,

and is transmitted without subjecting the center sill or sills to torsional strains.

In the accompanying drawings I have shown four forms of my invention. First
5 as applied to a double center sill car with the rearward extension of the draft member disposed between the center sills, secondly
10 as applied to a double center sill car with the rearward extensions of the draft member disposed outside of the center sills, thirdly
15 as applied to a single center sill car, and fourthly as applied to a single center sill car with the body bolster cast integral with the draft members. Provision is made in
20 all forms shown to retain the rear ends of the draft members against the forward end of the sill or sills. In addition to these elements, which are common to all the figures, minor improvements are also shown, and
25 parts common to all forms are shown in slightly modified forms to adapt them to the different center sill constructions of railway cars. It will be apparent that other changes may be made without departing from the spirit of my invention.

I claim:—

1. In combination with a body bolster, a pair of center sills extending forwardly thereof, a draft member having a rearward
30 extension thereon, said extension fitting between and connected to said sills in line with said body bolster and the rear end of the said draft member abutting against the front ends of the center sills.
35 2. In combination with a body bolster, a pair of center sills extending forwardly

thereof, a draft member having a rearward extension thereon, said extension fitting between and connected to said sill in line with said body bolster, and a body bolster center
40 brace integral with said rearward extension.

3. In combination with a body bolster, a pair of center sills extending forwardly thereof, a one piece draft member comprising a pair of draft arms, a rearward extension
45 thereon fitting between and connected to the center sills in line with the body bolster, and a body bolster center plate integral therewith.

4. In combination with a body bolster, a pair of center sills extending forwardly thereof, a draft member having a pair of draft arms and a rearward extension thereon fitting between and connected to said
50 sills in line with the body bolster, the draft member being provided with shoulders adapted to engage the ends of the center sills in abutment with the ends of the draft arms.

5. In combination with the body bolster, a pair of center sills extending forwardly thereof, a draft member having a rearward extension thereon, said extension fitting between and connected to said sills in line
60 with said body bolster, said draft member being further provided with a flange extending underneath the body bolster, and having a bolster center plate integral therewith.

ARGYLE CAMPBELL.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."