

J. H. WEISBROD.
CAR UNDERFRAME.

APPLICATION FILED AUG. 28, 1908.

1,021,856.

Patented Apr. 2, 1912.

2 SHEETS—SHEET 1.

Fig. 1

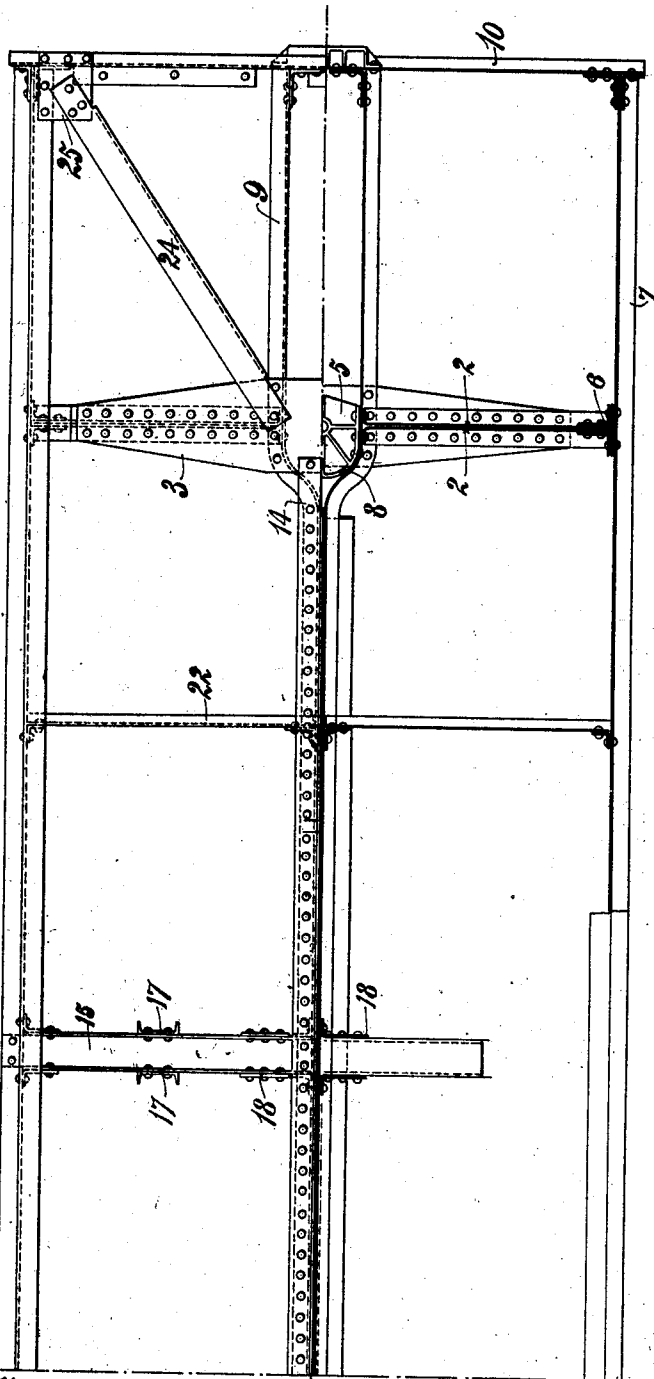
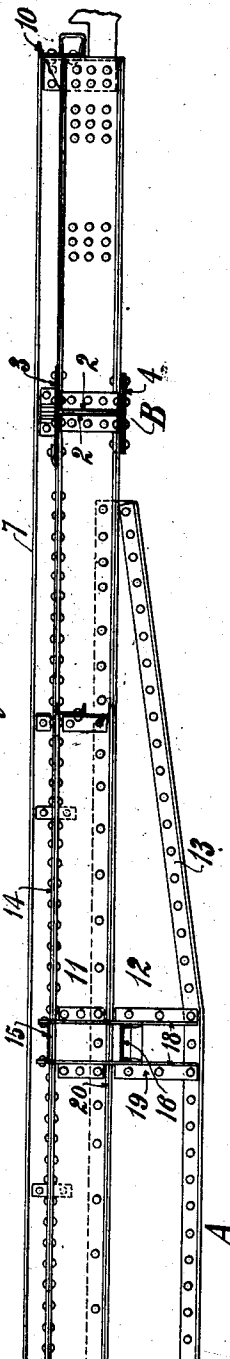


Fig. 2



Witnesses:
Raphael Keller
H. Huguenin

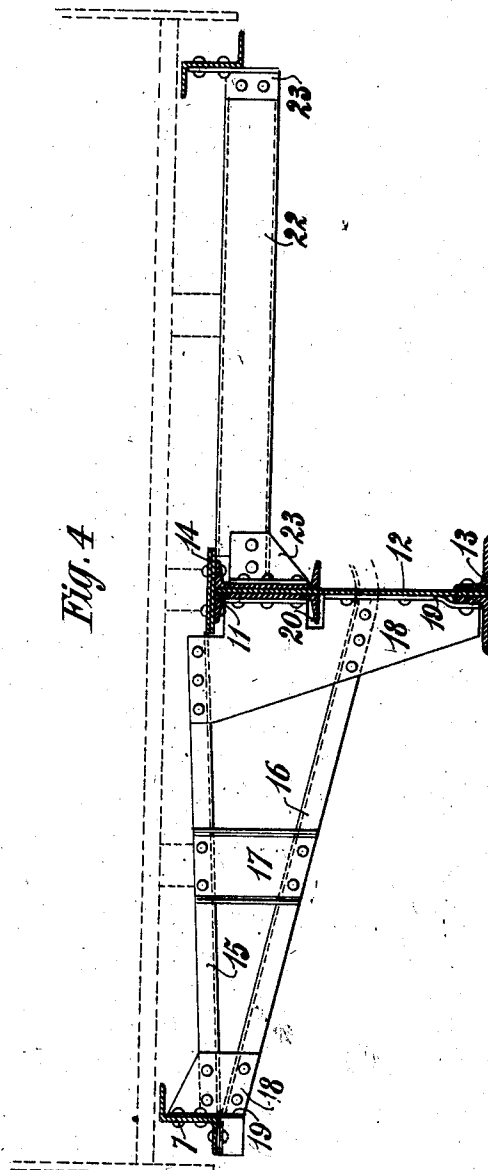
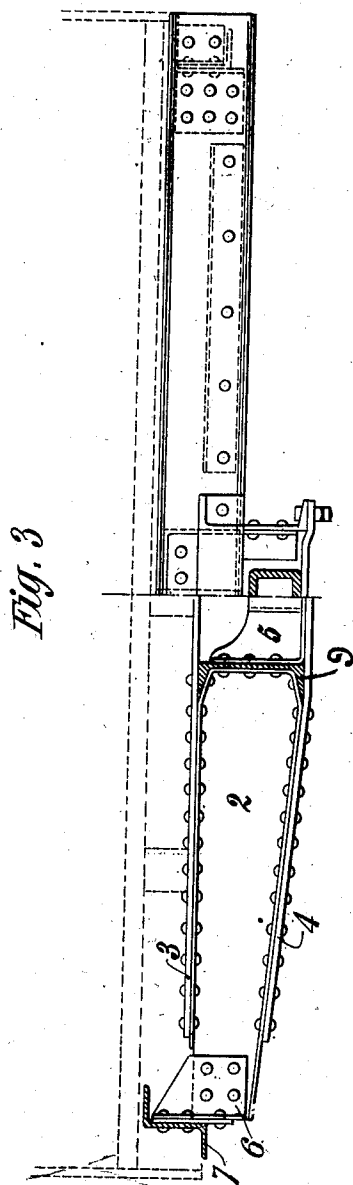
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J. H. Gibbs

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2 SHEETS-SHEET 2.



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UNITED STATES PATENT OFFICE.

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CAR-UNDERFRAME.

1,021,856.

Specification of Letters Patent.

Patented Apr. 2, 1912.

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To all whom it may concern:

Be it known that I, JACOB H. WEISBROD, residing at St. Louis, Missouri, and being a citizen of the United States, have invented certain new and useful Improvements 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 to use the same, reference being had to the accompanying drawings, which illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof will occur to persons skilled in the art.

In said drawings: Figure 1 is a plan view partly in section; Fig. 2 is a central longitudinal sectional view; Fig. 3 is a view showing a transverse section taken between the end sill and bolster, at the left, and an end view at right hand side thereof; Fig. 4 is a transverse section showing at the left parts of one of the transverse trusses and at the right hand side one of the channel shaped cross bearers extending between the center sills and the light sills, with connecting means therefor.

The object of the invention is to provide a simple, light and strong metal underframe for railway cars with a single plate girder center sill in which the compression member is divided at the rear of the bolsters and passes beyond said bolsters to form draft members either extending to end sills without interruption or serving as supporting means for separate draft beams or sills which may be connected therewith as is commonly done with the ends of separated center sills which extend beyond the bolsters. In this car the greater part or all the load is carried by the single plate girder center sill, the web and tension member of which terminate preferably between the bolsters and the compression member extends from end sill to end sill to serve between the bolsters as parts of the center sill and beyond the bolsters as draft sills where at the said compression members are sep-

arated sufficiently to receive between them the usual draft rigging, not shown. For the purpose of securing the rear end portions of these draft sill extensions bolster filler castings are provided which have relatively parallel side faces and curved rear portions and the draft sills are riveted to said filler castings and to the upstanding inner flanges of the bolster diaphragms while a continuous sill cover plate connects the cover plates of the bolsters and is also connected with the outstanding upper flanges of the compression members of the center sill. Continuous Z-shaped side sill members are supported by the ends of the bolsters and transverse members and on these sills are carried the usual side nailing strips, shown in dotted lines in Fig. 3, though it is evident that other forms of side sills or their equivalent may be substituted if desired, this invention relating principally to the monosill underframe and its associated parts as used in one construction.

Referring to the parts, A is the single center sill of plate girder form extending relatively from near the bolster B shown to the same relative distance from its companion bolster at the other end portion of the car. Said bolsters comprise pressed diaphragms 2, top and bottom cover plates 3-4, center castings 5, and flanged plate 6, by means of which the Z-shaped side sills 7 are connected therewith.

The center casting differs in form from that usually employed in that the rear portion thereof 8 is curved to better adapt it for use in connection with the peculiar form of draft sills employed, which draft sills 9 are preferably rolled channel members which extend from the end sills 10 in parallel lines past the bolster diaphragms and there converge as shown in Fig. 1 to form parts of the compression member 11 of the plate girder center sill. This center sill is of plate girder construction comprising the compression members 11 which, as explained, are extensions of the draft sills, between which compression members is secured a web plate 12 and to the lower portion of the web plate are secured a pair of

angles 13 which are substantially coextensive with said web plate as best shown in Fig. 2.

Resting on the upper flanges of the members 11 is a longitudinally extending sill cover plate 14 which may be duplicated, if desired, and said sill cover plate extends to and is secured to the bolster cover plates 3 by suitable rivets.

Extending transversely of the car underframe are truss members comprising the upper channels 15 which extend over the center sills and to the side sills, and the lower channels 16 which extend below and are secured to the bottom flanges of said Z-shaped side sills and extend through the web plate 12 of the center sill, as best shown in Figs. 2 and 4.

Connecting the top and bottom channel members 16 are webs 17 of channel form which are securely riveted in position. Above the tension angles 13 of the center sills are brackets 18 which are provided with laterally extending flanges 19 through which rivets extend to secure said flanges to the webs of the compression members, the web 12 and the upper legs of the tension angles 13, said brackets 18 being cut away as shown at 20, to accommodate the lower flanges of the compression members 11.

It will be observed that the bottom members 16 of the transversely extending truss, just described, extending through the web plate 12 causes said web plate and the compression members 11 to serve as struts for the transversely extending truss.

Between the transversely extending trusses and the bolsters are cross bearers 22 of channel form in cross section which are secured by suitable flanged plates 23 to the side sills and to the compression members of the center sills. Extending from the bolsters are diagonal braces 24 which are preferably angle shaped in cross section, and said diagonal braces have their vertical legs cut away so that the horizontal legs thereof may pass over the top cover plates 3 of the bolsters and be secured to said top cover plates and to the outstanding horizontal flanges of the bolster diaphragms, as best shown in Fig. 1. The opposite or outer ends of said diagonal braces also have their vertical legs cut away and the horizontal flanges thereof are secured to the plates 25 which are riveted to the upper flanges of the channel shaped end sills and to the Z-shaped side sills.

What is claimed as new is:—

1. In a car underframe, the combination comprising bolsters each with an opening relatively at the middle thereof, a filler in each of said bolster openings, a single built-up center girder with a vertical web plate between said bolsters, compression members forming parts of said center girder and

diverging from the ends of said web plate 65 and extending through said bolster at each side of said bolster filler, and a cover plate extending between and connecting said bolsters.

2. In a car underframe, the combination with side sills, bolsters, a built-up plate girder center sill with tension members terminating between said bolsters and compression members diverging from the ends of said tension members and extending beyond said bolsters, a sill cover plate connected with said bolsters, and filling members within relatively central openings of said bolsters and separating the extensions of said compression members.

3. In a car underframe, the combination with side sills, bolsters, a plate girder center sill with tension members terminating between said bolsters and compression members extending beyond said bolsters, and a transverse truss one member of which extends below said side sills and through the web plate of said center sill.

4. In a car underframe, the combination with side sills, bolsters, a plate girder center sill with tension members terminating between said bolsters and compression members extending beyond said bolsters, and a cross bearer having one member extending to said side sills and another member passing through the sill web plate and below said side sills.

5. In a railway car, bolsters, end sills and channel shaped draft sills extending from said end sills through said bolsters between which bolsters said draft sills converge and are connected together, and means clamped between the connected portions of said draft sills connecting all of said draft sills together.

6. In a railway car, the combination comprising bolsters, end sills and channel shaped draft sills between each bolster and end sill, said draft sills converging between said bolsters and being connected together, and means clamped between the connected portions of said draft sills connecting all of said draft sills together.

7. A car provided with a single plate girder center sill extending from end sill to end sill and provided with an intermediate web and tension member said web and tension members terminating between the bolsters, said sill comprising separately formed compression members diverging from the ends of said tension member.

8. A car provided with a flanged web center sill, a pair of channel shaped draft sills secured to said center sill web between the bolsters and semi-circular bolster fillers fitted between curved portions of said draft sills.

9. A car underframe comprising a bol-

ster and a single plate girder center sill, said center sill comprising a compression member extending beyond said bolster and a web plate and tension member terminating between said bolsters, and a cross bearer extending through said web plate.

10 In a car underframe, the combination with bolsters and a center sill formed with diverging end portions of a web plate
10 for said center sill terminating substantially

coincident with the points of divergence of said center sill, and a cover plate of said center sill extending beyond the ends of said web plate and being fixed to said bolsters.

In witness whereof I have set my hand in the presence of two witnesses.

JACOB H. WEISBROD.

Witnesses:

FREDERICK H. GIBBS,
JOHN D. SEILER.