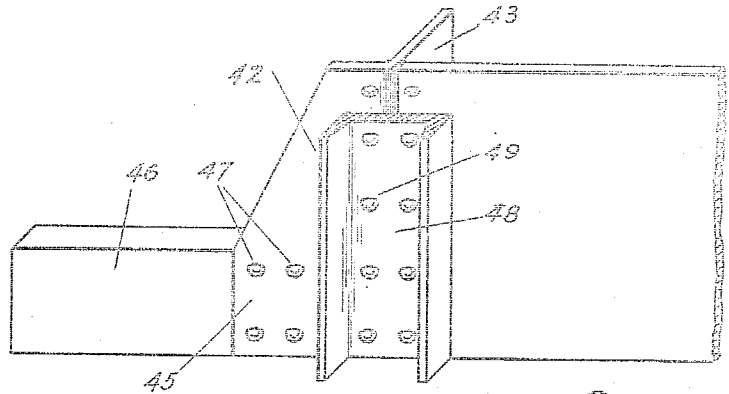
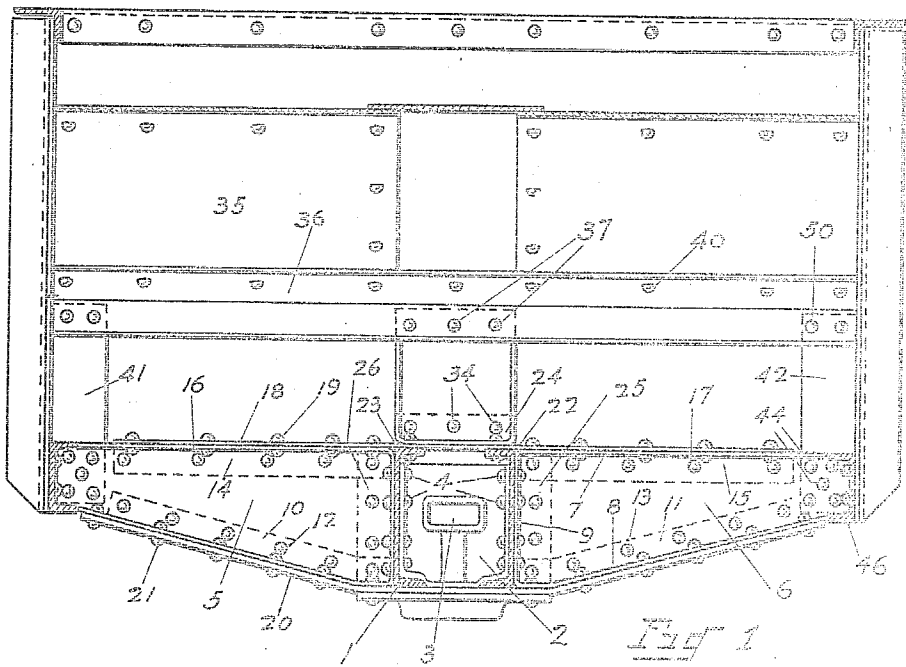


A. BECKER.
CAR UNDERFRAME.
APPLICATION FILED FEB. 5, 1909.

953,582.

Patented Mar. 29, 1910.
3 SHEETS—SHEET 1.



WITNESSES:
A. Rager
H. S. Randolph

Fig. 4

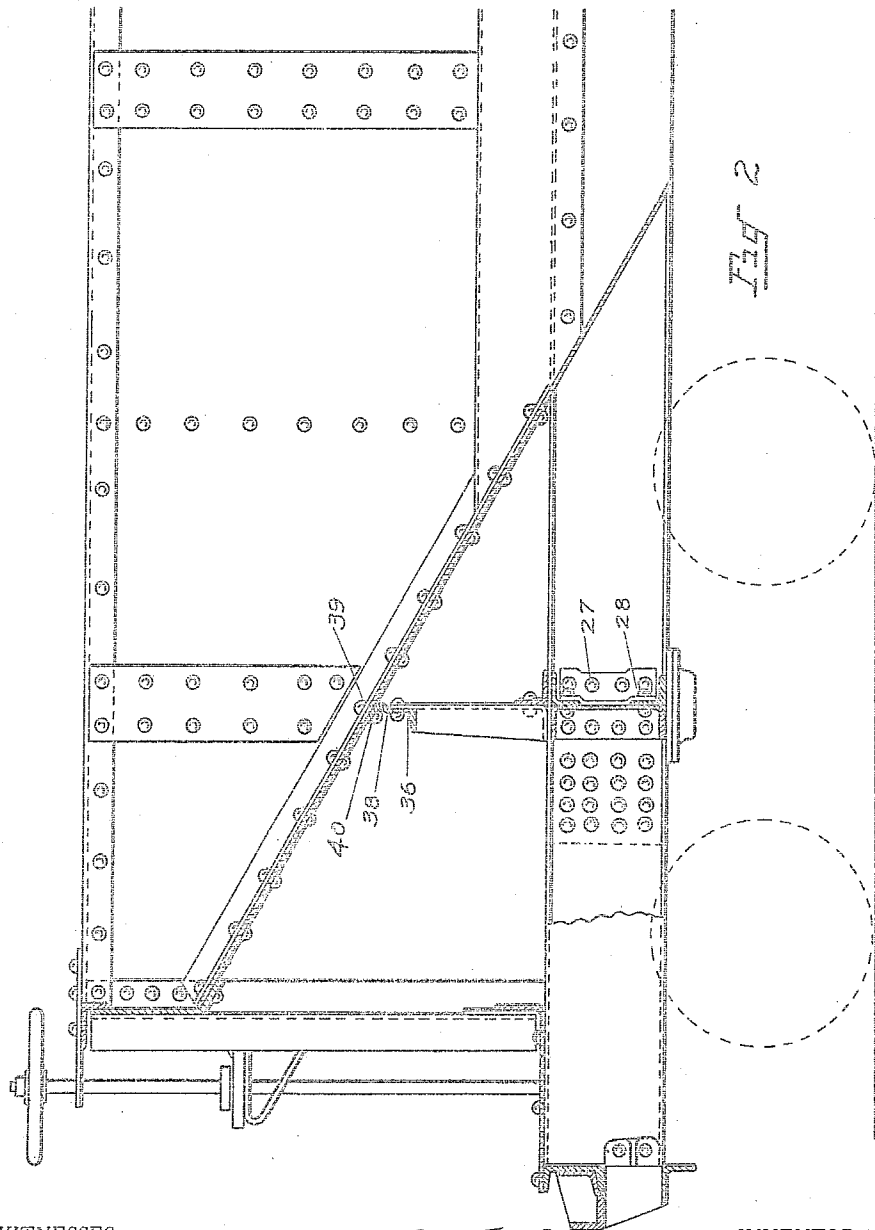
Anton Becker INVENTOR.

BY
James R. H. H. H.
ATTORNEY.

A. BECKER.
CAR UNDERFRAME.
APPLICATION FILED FEB. 6, 1909.

953,582.

Patented Mar. 29, 1910.
3 SHEETS—SHEET 2.



WITNESSES:

A. Rager.
H. S. Randolph.

Anton Becker INVENTOR.

BY

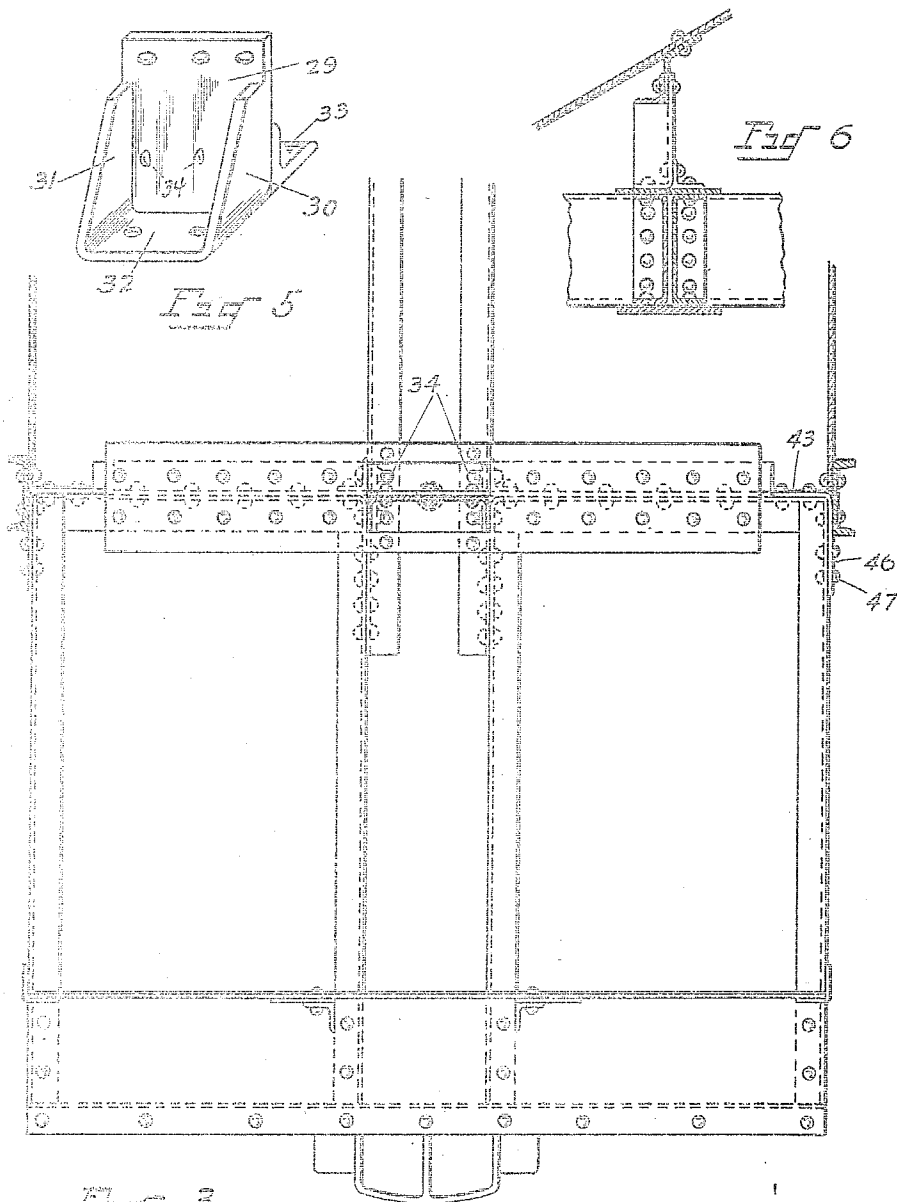
Geo. W. Rightmire
ATTORNEY.

A. BECKER.
 CAR UNDERFRAME.
 APPLICATION FILED FEB. 5, 1909.

958,582.

Patented Mar. 29, 1910.

3 SHEETS—SHEET 3.



WITNESSES:

A. Rager,
H. S. Randolph,

Anton Becker, INVENTOR.

BY
Guo. W. Righerius
 ATTORNEY.

UNITED STATES PATENT OFFICE.

ANTON BECKER, OF COLUMBUS, OHIO, ASSIGNOR TO THE RALSTON STEEL CAR COMPANY, OF COLUMBUS, OHIO, A CORPORATION OF OHIO.

CAR-UNDERFRAME.

953,582.

Specification of Letters Patent. Patented Mar. 29, 1910.

Application filed February 5, 1909. Serial No. 476,325.

To all whom it may concern:

Be it known that I, ANTON BECKER, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Car-Underframes, of which the following is a specification.

My invention relates to improvements in hopper cars, especially to the construction of the bolster and the supporting means for the floor; it includes a center girder construction, bolster diaphragms arranged on the opposite sides thereof, a transverse floor engaging member, and floor supporting member mounted upon the center girder construction, extending upwardly, and engaging the transverse member, and preferably members at the sides of the car uniting the bolster construction and sub side sill with the transverse member. Reinforcing members are employed at various points in the construction which will be hereinafter noted. My improvements have the advantage of employing the least possible metal and at the same time furnishing a construction which provides a substantial support for the floor sheets and binds together the various elements mentioned so as to render them able to withstand the stresses due to the use of the car.

In the drawings which are hereto attached and hereby made a part of this specification, Figure 1 is a vertical transverse section through a hopper car at the rear of the bolster; Fig. 2 is a vertical longitudinal section of end of a hopper car having my improvements therein; Fig. 3 is a plan view of one end of the car showing the construction at the bolster, and the gusset plate securing the bolster and sub side sill firmly together; Fig. 4 is a side elevation of the car at the point where the gusset plate is employed; Fig. 5 is a perspective of the floor supporting construction mounted on the center girder; Fig. 6 shows a modified construction of the bolster and floor supporting means.

Referring to the drawings, 1 is a center girder formed in this instance of the channels between which is placed a center brace 2 provided with the opening 3 for the positioning of the king bolt or pin; the center brace is flanged at its edges and is secured by means of rivets 4 to the center girder construction.

Arranged on each side of the center girder are bolster diaphragms 5 and 6, which are flanged along their upper, lower and inner edges, as shown at 7, 8 and 9, being secured by means of the rivets 4 through their inner flange to the center girder 1 and center brace 2, thereby securely tying the bolster construction to the center girder. At their lower edges, angles 10 and 11 are secured to the diaphragms by means of rivets 12 and 13, and angles 14 and 15 are also secured to the upper edges of the bolster diaphragms by means of rivets 16 and 17.

A tension member 18 is secured to the upper flanges of the diaphragms and the adjacent angles by the rivets 19, and a compression member 20 is secured to the lower flanges of the bolster diaphragms and the angles adjacent thereto by means of the rivets 21, the tension and compression members respectively extending transversely of the center girder from side to side of the car, the tension member being also secured to the upper flanges 22 and 23 of the center girder by the rivets shown at 24. The connection between the bolster diaphragms and the vertical web of the center girder is further reinforced by means of the angles 25 and 26, which are secured by means of rivets 27 to the center girder, and by rivets 28 to the other reinforcing angles and bolster diaphragm.

In the construction shown in Figs. 1 and 2 a single diaphragm is arranged on each side of the center girder, having flanges on three of its edges, and on the side of the diaphragm opposite to these flanges are applied angle reinforcing members, making thereby a very firm and substantial bolster construction. As shown in Fig. 6, I may also employ a pair of diaphragms arranged on each side of the center girder, and am not therefore confined to the specific construction shown in Fig. 1.

Mounted on the center girder is a floor supporting member shown in perspective in Fig. 5, in which are shown a vertical member 29, side flanges 30 and 31 and a bottom flange 32, the bottom flange resting upon the tension member and being secured by means of rivets 24 to the upper flanges of the center girder through the tension member, thereby securely uniting these three members. At the opposite side of the vertical member 29, I provide a reinforcing angle

33, which is secured thereto by means of the rivets 34, the angle 33 being positioned upon the center girder construction and secured thereto at 34.

5 Secured transversely to the under face of the floor 35 I provide the member 36, which in this case is a channel, united by the rivets 37 to the upper edge of the floor supporting member 29, and bent as shown at 38 to incline the angle 39 at the proper degree for application to the floor 35, to which it is secured by rivets 40. The transverse member 36 extends from side to side of the car.

10 At the sides of the car I provide gusset members 41 and 42, which are clearly shown in Fig. 4, and have the angle form, the flange 43 being applied to the bolster diaphragm adjacent its end and secured thereto at 44, the flange 45 being applied to the sub side sill 46 and secured thereto at 47. The side stake 48 is also secured at 49 to the flange 45 of the gusset member 42. In this manner I securely bind together the bolster and the sub side sill and render the construction very strong. At their upper ends the gusset members are secured at 50 to the transverse channel member 36, thereby affording an additional support to the floor and uniting the latter to the bolster and sub side sill members.

30 From the foregoing description it is seen that the principal floor support is furnished by the member mounted upon the center girder, and additional support is furnished by the gusset members, and that all parts of the bolster and floor supporting construction are securely united.

35 Other variations than those shown in Fig. 3 may be possible, and I do not therefore limit myself to the specific construction shown and described.

What I claim is:

1. In a hopper, car, a center girder and floor, a channel member having its vertical web bent and applied to said floor by means of its upper flange, and a floor supporting member having a lower flange mounted upon and secured to the center girder, and having side flanges extending upwardly into engagement with the lower flange of transverse channel member, said floor supporting member and said channel member being secured together.

55 2. In a hopper car, a center girder and floor, a channel member having its vertical web bent and being applied transversely to said floor by means of its upper flange, and a floor supporting member mounted upon and secured to the center girder and extending upwardly into engagement with said channel member and being secured thereto.

60 3. In a hopper car, a center girder and floor, a channel member having its vertical web bent and being applied to said floor,

and a floor supporting member having vertical flanges thereon mounted upon and secured to the center girder, said flanges being extended upwardly into supporting engagement with the lower flange on said channel.

4. In a hopper car, a center girder and floor, a channel member having its vertical web bent and its upper flange applied transversely to said floor, and floor supporting member mounted upon and secured to the center girder and having side flanges extending upwardly into supporting engagement with the lower flange of said channel, said floor supporting member being secured to said channel through the vertical web thereof.

5. In a hopper car, a center girder and floor, a member secured transversely to said floor, a floor supporting member having bottom and side flanges mounted upon the center girder and secured thereto through the bottom flange, said supporting member and side flanges extending upwardly into engagement with said transverse member and being secured thereto.

6. In a hopper car having a center girder and bolster web plates arranged on opposite sides thereof and being secured thereto, a sub side sill, a gusset applied to the outer end of said bolster and sub side sill and being secured thereto, and a flanged member mounted upon and secured to the center girder and extending upwardly into supporting engagement with the floor.

7. In a hopper car having a center girder and bolster web plates arranged on the opposite sides thereof and secured thereto, and sub side sill, an angle member applied to the outer end of said bolster web plate and sub side sill and being secured thereto, and extending upwardly into engagement with the floor, and a flanged member mounted upon and secured to the center girder and extending upwardly into supporting engagement with the floor.

8. In a hopper car having a center girder and bolster web plates arranged on the opposite sides thereof and secured thereto, a transverse member secured to the floor, a sub side sill, an angle member applied to the outer end of said bolster web plate and said sub side sill, and extending upwardly into engagement with said transverse member and being secured thereto, and a flanged supporting member arranged on the center girder and being secured thereto and extending upwardly into engagement with said transverse member and being secured thereto.

In testimony whereof I affix my signature in the presence of two witnesses.

ANTON BECKER.

Witnesses:

E. S. CULVER,
MARIE RYAN.