

A. BECKER.
BOLSTER FOR HOPPER CARS.
APPLICATION FILED JAN. 30, 1909.

Patented Aug. 31, 1909.

3 SHEETS—SHEET 1.

933,014.

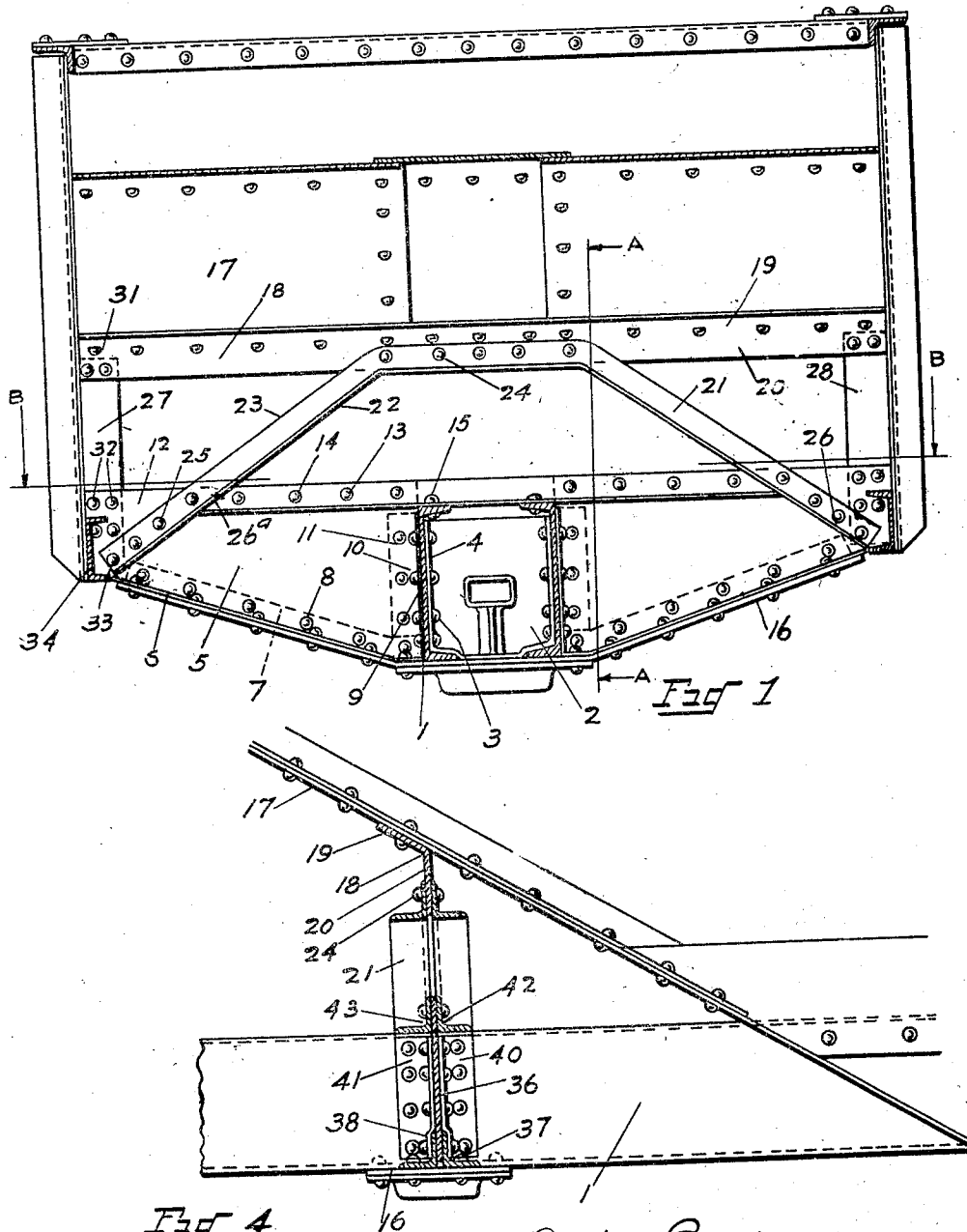


Fig 4

Anton Becker INVENTOR.

WITNESSES:

H. S. Randolph.

R. Rager.

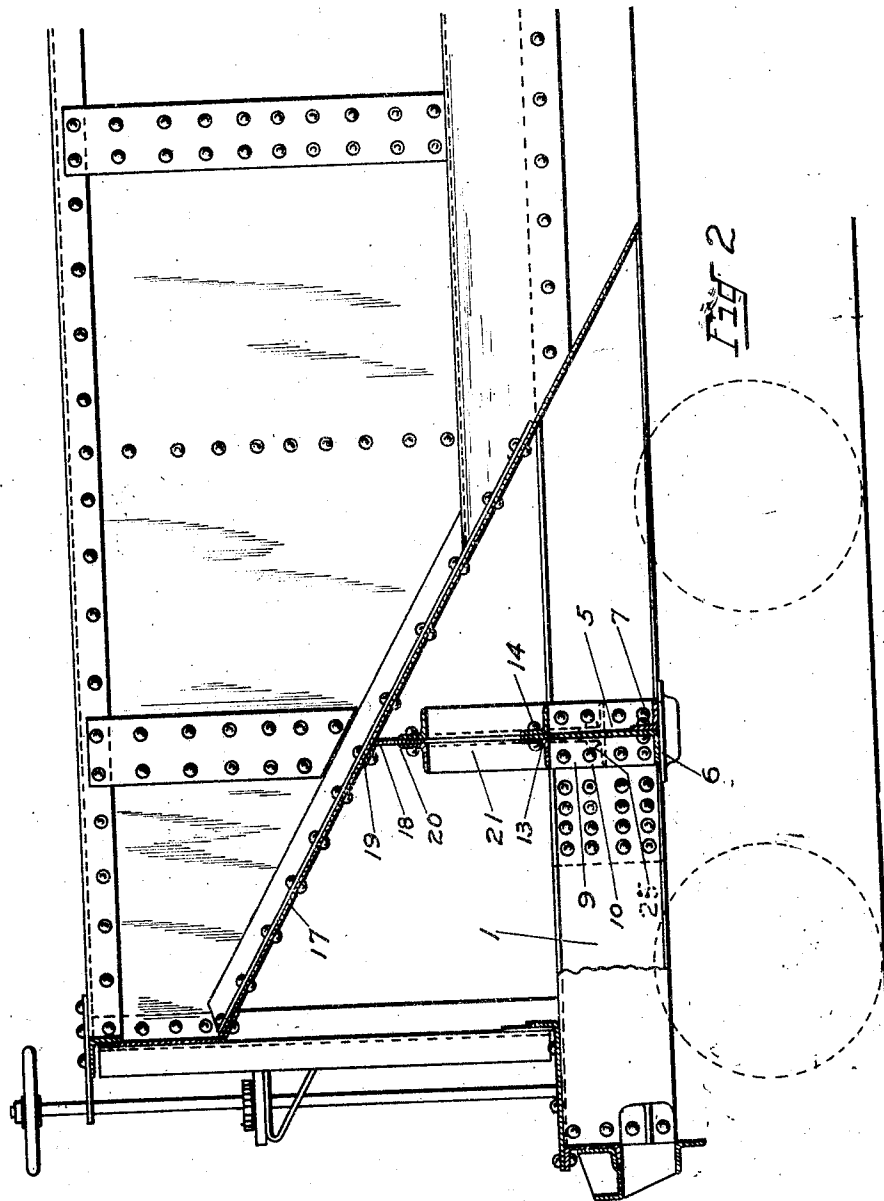
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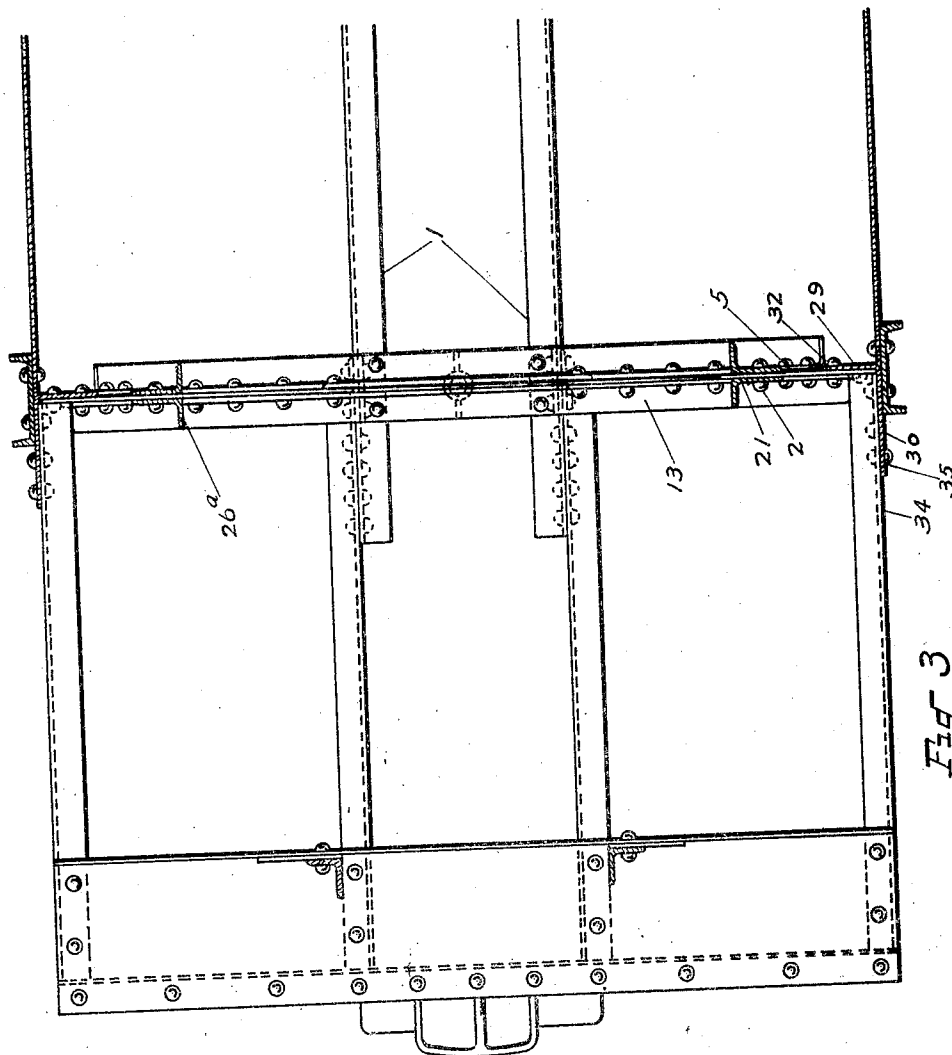


Fig 3

WITNESSES:

H. S. Randolph
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UNITED STATES PATENT OFFICE.

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

BOLSTER FOR HOPPER-CARS.

933,014-

Specification of Letters Patent.

Patented Aug. 31, 1909.

Application filed January 30, 1909. Serial No. 475,258.

To all whom it may concern:

Be it known that I, ANTON BECKER, a citizen of the United States, and a resident of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Bolsters for Hopper-Cars, of which the following is a specification:

My invention relates to improvements in the construction of bolsters for hopper cars and the means of supporting the floor from the bolster; other features are means for securely uniting the bolster and floor supporting member at their ends, and also preferably extending the said means upwardly into contact with the floor.

The foregoing features and their combinations and the manner of applying them to a hopper car, will be hereinafter specifically set forth.

In the drawings which are hereto attached and hereby made a part of this specification, Figure 1 is a transverse section through a hopper car with my improvements therein, taken at the rear of the bolster; Fig. 2 is a vertical longitudinal section through one end of the car having my improvements thereon, along the line A—A of Fig. 1; Fig. 3 is a horizontal section of one end of the car with my improvements thereon, taken along the line B—B of Fig. 1; Fig. 4 is a vertical transverse section through the same portion of the car shown in Fig. 2, but with a modified bolster construction.

Referring to the drawings, 1 is the center girder construction formed in this instance of the oppositely disposed channels, and arranged between and secured thereto is the center brace 2, being secured by rivets 3 through the flanges 4 thereon. At each side of the center girder is mounted a bolster diaphragm 5, having preferably a flange 6 formed thereon along its lower edge and secured on the opposite side of the bolster diaphragm 5 is the angle member 7, the rivets 8 securely uniting the diaphragm and the said angle member; at the inner edge of the diaphragm 5 is formed a flange 9 through which and the center girder and the center brace are inserted the rivets 10, securely uniting these three members. Applied to the opposite face of the inner end of the diaphragm 5 and to the center girder is an angle member 11, which reinforces the bolster diaphragm

at its junction with the center girder construction.

Preferably the bolster diaphragm 5 extends above the face of the center girder and is left unflanged, as appears at 12; a tension angle 13 is arranged transversely of the center girder and applied to the upwardly extending edge 12 of the bolster diaphragm and is secured thereto at 14, and is secured to the upper flange of the center girder at 15; the tension member 13 is not extended entirely to the sides of the car, for a purpose hereinafter mentioned. Preferably, two tension angles will be provided, disposed on opposite sides of the diaphragm members 5 and secured thereto. A compression member 16 underlies the center girder construction and the bolster diaphragms and is secured thereto from side to side of the car.

The floor sheets of the car are shown at 17, and preferably I apply thereto the transverse member 18 provided with the inclined flange portion 19 applied to the under face of the floor, and also provided with the depending or vertical flange portion 20; secured to this transverse member is the supporting member 21, preferably formed with flanges arranged at right angles to each other at 22 and 23, the flange 23 being applied to the flange 20 and secured thereto by means of the rivets 24. The supporting member 21 is bent downwardly and at opposite ends is applied to the vertical web of the bolster diaphragms as appears at 25 and 26, being preferably riveted thereto. The tension member 13, at its ends, is cut away on an incline 26^a and the flange 22 bears upon this inclined face and is to some extent braced thereby. As shown, the floor supporting member 21 is constructed somewhat on the principle of the arch, having its bases disposed on the opposite sides of the center girder and secured to the bolster diaphragms, and its upper portion is in engagement with the transverse member secured to the floor; whereby the floor is firmly supported from beneath.

By applying the supporting member to the vertical web of the bolster diaphragm in the manner described, I obtain a lateral bearing therefor, which greatly strengthens it against end and side thrusts, while I maintain the necessary strength for vertically sustaining the load.

At the sides of the car, I provide the gusset members 27 and 28, which are each preferably formed with the flanges 29 and 30, the flange 29 being secured to the transverse member 19 at 31, to the vertical web of the bolster at 32, to the floor supporting member 21 at 33, and to the sub side sill 34 at 35, thereby firmly binding together these members at their ends and also securing them to the side sill of the car.

Various modifications of the construction herein shown are possible, and I have shown one in Fig. 4, in which the bolster diaphragm 36 is left unflanged at its lower edge, and I apply thereto the angle members 37 and 38, securing the same by rivets to the bolster diaphragm; the usual compression member is shown at 16; the flanges at the inner end of the diaphragm whereby the diaphragm is secured to the center girder, are shown at 40 and 41; the tension angles secured along the upper edge of the diaphragm 36 are shown at 42 and 43; I do not confine myself to the specific construction disclosed and described herein, but desire to have the advantage of all the variations which fall within the scope of the appended claims.

What I claim is:

1. In a hopper car, a bolster and floor sheets, and a floor supporting member having its ends secured to the vertical web of said bolster.

2. In a hopper car, a bolster and floor, and an arch-like floor supporting member bearing laterally against the vertical web of said bolster and being secured thereto.

3. In a hopper car having a center girder, and bolster diaphragms applied thereto and extending upwardly above the center girder, a floor supporting member having its ends disposed on opposite sides of the center girder and applied to the vertical web of the bolster diaphragms.

4. In a hopper car having a center girder, and bolster diaphragms applied thereto and extending upwardly above the center girder, a floor supporting member having its ends disposed on opposite sides of the center

girder and applied to the vertical web of the bolster diaphragms, and a tension member overlying said center girder and secured to the vertical web of the bolster.

5. In a hopper car having a center girder, and bolster diaphragms applied thereto and extending upwardly above the center girder, a floor supporting member having its ends disposed on opposite sides of the center girder and applied to the vertical web of the bolster diaphragms, and a tension member overlying said center girder and secured to the vertical web of the bolster, and having its ends abutting the floor supporting member.

6. In a hopper car having a center girder, and bolster diaphragms applied thereto having their upper edges unflanged and extending above the center girder, a sub side sill, a gusset member secured to said bolster and sub side sill, and a floor supporting member having its ends secured to the vertical web of said bolster and to said gusset member.

7. In a hopper car having a center girder, and bolster diaphragms applied thereto having their upper edges unflanged and extending above the center girder, a sub side sill, a gusset member secured to said bolster and sub side sill, and a floor supporting member having its ends secured to the vertical web of said bolster and to said gusset member, and a tension member secured to said center girder and the vertical web of said bolster.

8. In a hopper car having a center girder, and bolster diaphragms applied thereto having their upper edges unflanged and extending above the center girder, a sub side sill, a gusset member secured to said bolster and sub side sill, and a floor supporting member having its ends secured to the vertical web of said bolster and to said gusset member, and a tension member secured to said center girder and the vertical web of said bolster.

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

ANTON BECKER.

Witnesses:

E. S. CULVER,

T. A. LIVINGSTON.