

No. 725,564.

PATENTED APR. 14, 1903.

R. H. HORN BROOK.  
CENTER DUMPING CAR.

APPLICATION FILED JUNE 13, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

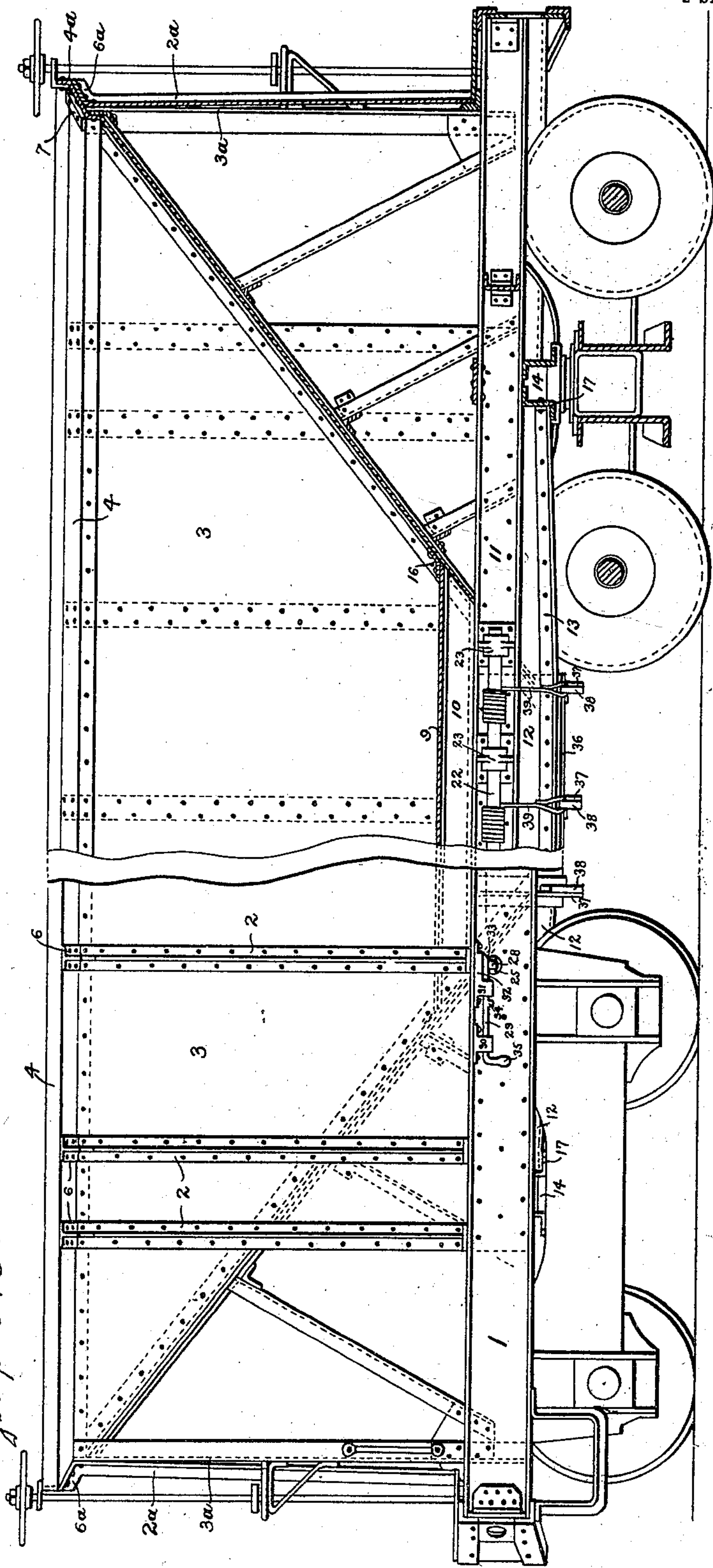


Fig. 1.

Witnesses:  
Albert S. Griffin  
Joseph F. Freese.

Inventor:  
Raymond H. Hornbrook,  
By Harry Freese, Attorney.

No. 725,564.

PATENTED APR. 14, 1903.

R. H. HORN BROOK.  
CENTER DUMPING CAR.

APPLICATION FILED JUNE 13, 1902.

• NO MODEL.

2 SHEETS—SHEET 2.

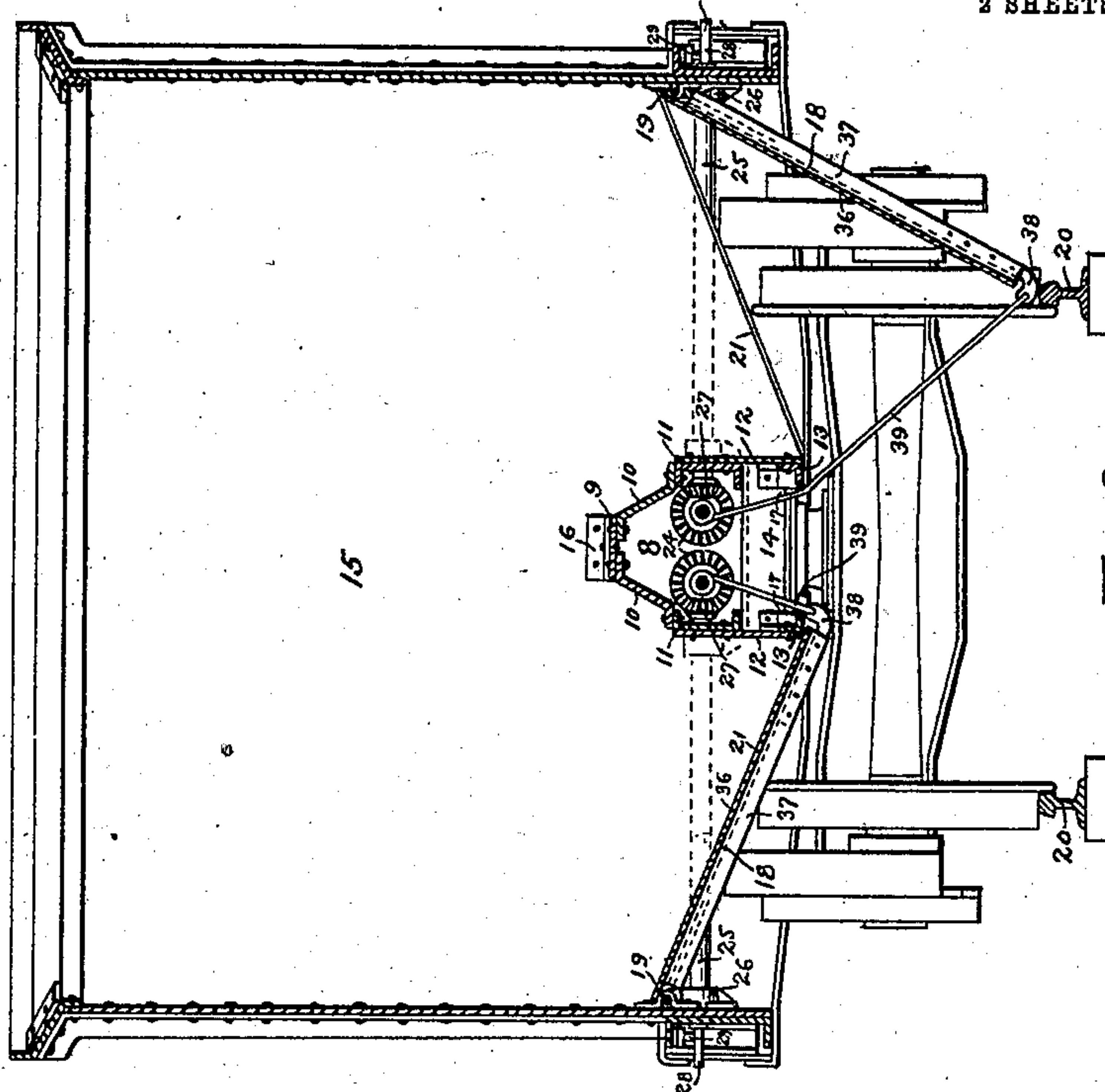


Fig. 3.

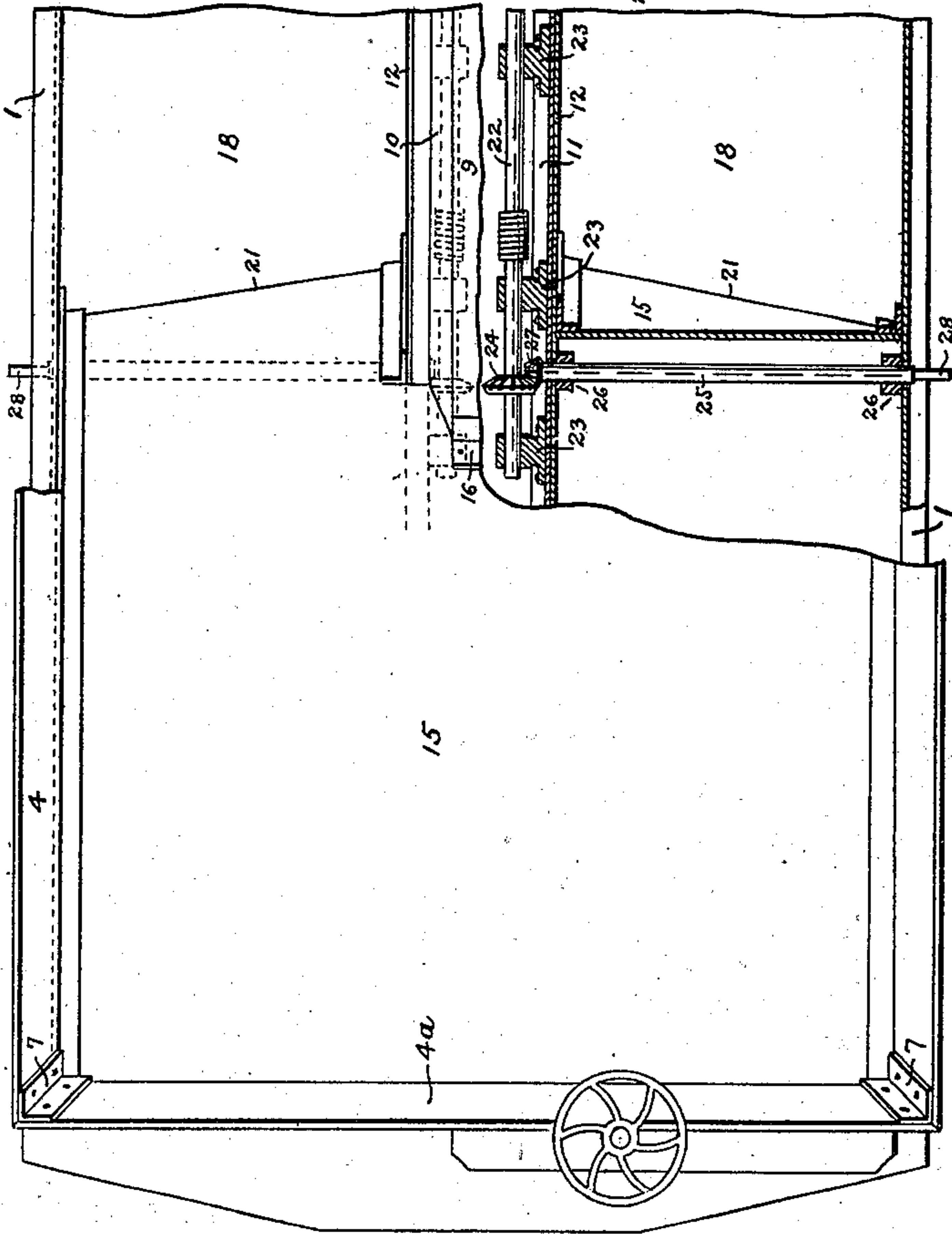


Fig. 2.

Witnesses:  
Albert L. Griffin  
Joseph Freese.

Inventor,  
Raymond H. Hornbrook,  
By Harry Freese, Attorney.



# UNITED STATES PATENT OFFICE.

RAYMOND H. HORN BROOK, OF CANTON, OHIO, ASSIGNOR TO STRUCTURAL  
STEEL CAR COMPANY, OF CANTON, OHIO.

## CENTER-DUMPING CAR.

SPECIFICATION forming part of Letters Patent No. 725,564, dated April 14, 1903.

Application filed June 13, 1902. Serial No. 111,454. (No model.)

*To all whom it may concern:*

Be it known that I, RAYMOND H. HORN-  
BROOK, a subject of the King of Great Brit-  
ain, residing at Canton, in the county of Stark  
5 and State of Ohio, have invented a new and  
useful Center-Dumping Car, of which the fol-  
lowing is a specification.

My invention relates to improvements in  
center-dumping cars in which the car-body is  
10 made of structural steel and plates; and the  
objects of my improvements are, first, to fin-  
ish the rim of the car in such a manner as  
will stiffen the sides and also serve to retain  
the contents of the car from running over  
15 the sides; second, to make a center ridge that  
will give strong support to the middle of the  
car between the body-bolsters, that will resist  
transverse and torsion strains, and at the same  
time will furnish housing for the longitudi-  
20 nal shafts and gears; third, to provide a bot-  
tom for each lateral half of the car which can  
be dropped outward from the middle, so as  
to discharge the contents of the car between  
the rails, and, fourth, to provide a mechan-  
25 ism for operating the drop-bottoms that can  
be manipulated from the sides of the car and  
that will open them quickly and close them  
easily. I attain these objects by the con-  
struction and mechanism illustrated in the  
30 accompanying drawings, in which—

Figure 1 is a side elevation and a vertical  
longitudinal section, respectively, of the ends  
of the car; Fig. 2, a plan view of one end of  
the car, with parts broken away to show the  
35 operating mechanism; and Fig. 3, a vertical  
cross-section showing one side of the bottom  
open and the other side closed.

Similar numerals refer to similar parts  
throughout the drawings.

40 The side sills of the cars are preferably  
made of channel-bars 1, on which rest the  
side stakes 2, made, preferably, of T-bars, to  
which side stakes the side plates 3 of the car  
are riveted. To the upper edges of the side  
45 plates are riveted the depending flanges of  
the rim trough-plates 4, the webs of which  
trough-plates project diagonally upward and  
outward beyond the edges of the side plates,  
and the free flanges of the trough-plates pro-  
50 ject directly upward. The upper ends 6 of  
the side stakes are bent outward to conform

to the webs of the trough-plates to which they  
are respectively riveted. The side trough-  
plates are connected at the ends by the simi-  
lar end trough-plates 4<sup>a</sup>, which are similarly 55  
riveted to the end plates 3<sup>a</sup> and to the bent-  
out upper ends 6<sup>a</sup> of the end stakes 2<sup>a</sup>, the  
several corners being connected by the angle-  
plates 7. This construction forms a very sub-  
stantial finish to the rim of the car and at the 60  
same time forms a suitable shape for retain-  
ing the contents of the car from running over  
the sides and ends.

The center ridge 8 is made up of the hori-  
zontal top plate 9, located in the median line 65  
of the car, the two trough-plates 10, having  
their upper flanges riveted to the top plate on  
either side, their webs projecting diagonally  
downward and outward, respectively, and  
their lower flanges projecting directly out- 70  
ward, the two channel-bars 11, respectively,  
having their flanges projecting inward and  
the upper flanges riveted to the lower flanges  
of the trough-plates, the two side plates 12  
being respectively riveted on the outer faces 75  
of the channel-bars and extending downward  
some distance below the same, and the two  
angle-bars 13, respectively, riveted by one  
flange on the inner sides at the lower edges  
of the side plates and having the free flanges 80  
directed inward. The ridge channel-bars 11  
extend endwise to the respective ends of the  
car and have bearings and are riveted on the  
respective body-bolsters 14, thereby consti-  
tuting the center sills of the car. The top 85  
plate 9 and the trough-plates 10 extend end-  
wise to the respective inclined end bottoms  
15 of the car, to which the top plate is con-  
nected by the angle-plates 16. The side  
plates 12 and the angle-bars 13 extend end- 90  
wise to the respective body-bolsters, on which  
they have bearings at 17 and to which they are  
riveted. When necessary, by reason of the  
width of the ridge side plates, as illustrated,  
the lower edges of the side plates and the 95  
angle-bars are inclined upward at the respec-  
tive ends to gain the body-bolster bearings.

The side bottoms 18 of the car are con-  
nected, respectively, to the sides of the car  
by the hinges 19, preferably near the top of 100  
the side-sill channel-bars, from which point  
they are normally inclined inward and slightly



downward and close up, respectively, against the lower edges of the center-ridge angle-bars, and the parts are so arranged that when the side bottoms open downward and outward, swinging on their hinges, the free edges will pass clear above the respective rails 20. The side bottoms extend endwise under and slightly beyond the lower edges 21 of the inclined end bottoms, thus completing the bottom of the car when closed.

The longitudinal shafts 22 are mounted, respectively, in the bearings 23, attached on the inner sides of the center-sill channel-bars, and have attached near one end the bevel cog-wheels 24, respectively. The transverse shafts 25 are mounted, respectively, in bearings 26, attached on the outer sides of the center ridge and the inner sides of the side sills, respectively, and have attached on their inner ends the bevel cog-pinions 27, respectively, meshing with the bevel cog-wheels. The outer ends 28 of the transverse shafts are formed square and are adapted to receive a wrench for operating the mechanism.

A stop-bolt 29 is provided on each side of the car and has endwise movement in the lugs 30 and 31, depending from the upper flanges of the side-sill channel-bars. The plate 32 projects forward from the lug 31 and over the square end of the transverse shaft, there being a space equal to the thickness of the bolt between the plate and the flat face of the shaft end, so that when the bolt is inserted between the plate and the shaft end the shaft is stopped from turning. The end 33 of the bolt is preferably beveled to facilitate its entry above the shaft end, and the stop projection 34 on the bolt between the bearing-lugs properly limits the endwise movement of the bolt. At the end of the bolt is provided a suitable handle, by which it is operated.

The side bottoms are composed of the plates 36 and the transverse angle-bar ribs 37, to the outer ends of which ribs are attached the hinges 19 and to the inner ends of which are attached the arms 38, which project beyond the edges of the respective bottoms. The cables 39 or, if preferred, chains are respectively attached at their lower ends to the projecting bottom arms and at their upper ends to the longitudinal shafts, and by the rotation of the shafts the cables are wound on them, and thereby raise the bottoms and close them against the center ridge. The normal closed position is maintained by locking the stop-bolts, which prevents the rotation of the shafts, and to drop the side bottoms the mechanism is released by a sharp stroke or sudden pull on the bolt-handle, which disengages it from the square end of the transverse shaft. The distance of the drop of the side bottoms is regulated by the length of the cables or by other suitable means.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a metallic car, a rim composed of a trough-plate having its depending flange riveted to the side plate of the car, the web of said trough-plate being inclined upward and outward and the free flange being directed upward.

2. In a metallic car, a trough-plate rim having its depending flange riveted to the side plate of the car, the web inclined upward and outward and the free flange directed upward; and side stakes riveted to said side plates and having their upper ends bent outward with and riveted to said trough-plate.

3. A car center ridge composed of a top plate, trough-plates respectively riveted by their upper flanges to said top plate on either side and having their webs inclined downward and outward, channel-bars respectively riveted to the lower flanges of said trough-plates and having their flanges directed inward, side plates respectively riveted on the outer faces of said channel-bars and extending below the same, and angle-bars respectively riveted on the inner sides at the lower edges of said side plates and having their free flanges directed inward.

4. A car center ridge composed of a top plate, trough-plates, channel-bars, side plates and angle-bars, arranged and riveted substantially as described.

5. In a car, a center ridge composed of a top plate, trough-plates channel-bars, side plates and angle-bars arranged and riveted substantially as described, said channel-bars, side plates and angle-bars bearing on and being riveted to the respective body-bolsters of the car.

6. In a car, a transverse shaft, the outer end of said shaft being squared and projected from the side of the car, a plate opposite said squared end, and a bolt adapted to fill the space between said plate and the flat face of the shaft end, thereby stopping the shaft from rotating.

7. In a shaft-locking device, a shaft, a squared section on said shaft, a plate opposite said squared section, a bolt movable endwise in lugs connected with said plate, said bolt being adapted to fill the space between the plate and the flat face of said shaft, there being a stop-lug on said bolt between said lugs.

8. In a shaft-locking device, a shaft, a squared section on said shaft, a plate opposite said squared section, a bolt movable endwise in lugs connected with said plate, said bolt being adapted to fill the space between the plate and the flat face of said shaft, and the end of said bolt being beveled.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RAYMOND H. HORN BROOK.

Witnesses:

ALBERT S. GRIFFIN,  
JOSEPH FREASE.