

No. 884,324.

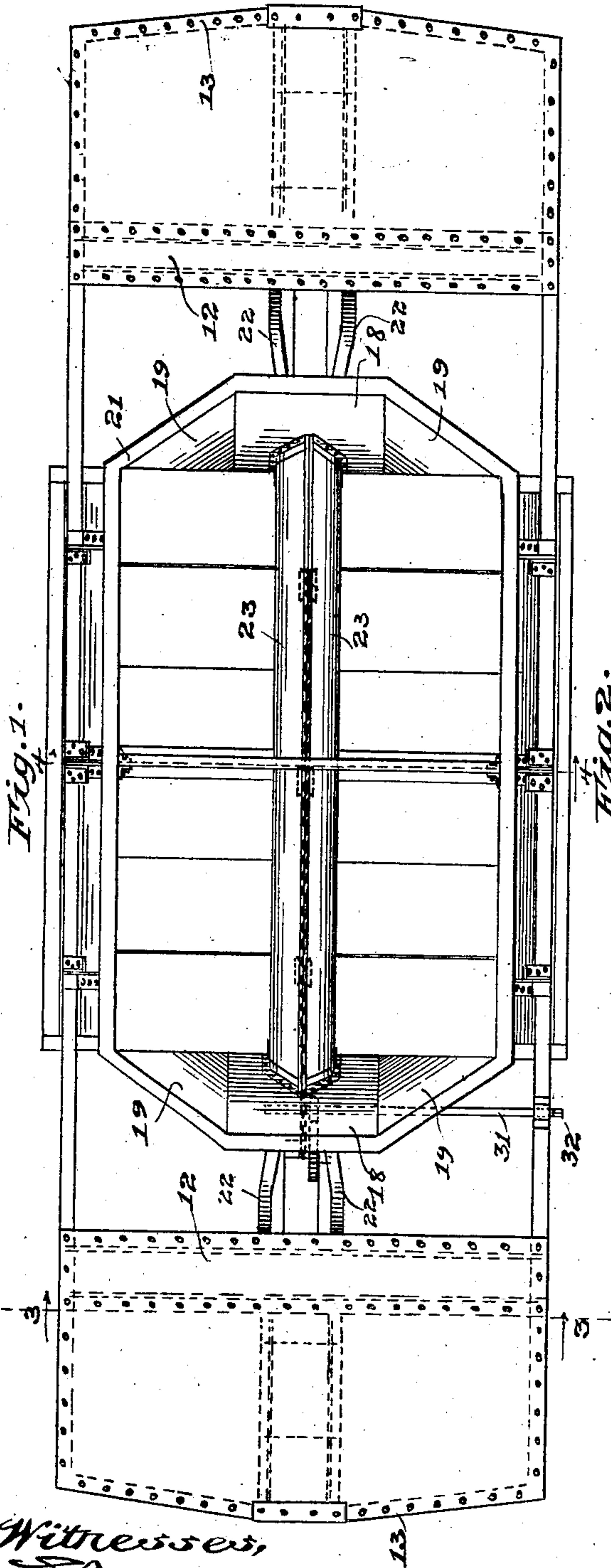
E. I. DODDS.

PATENTED APR. 7, 1908.

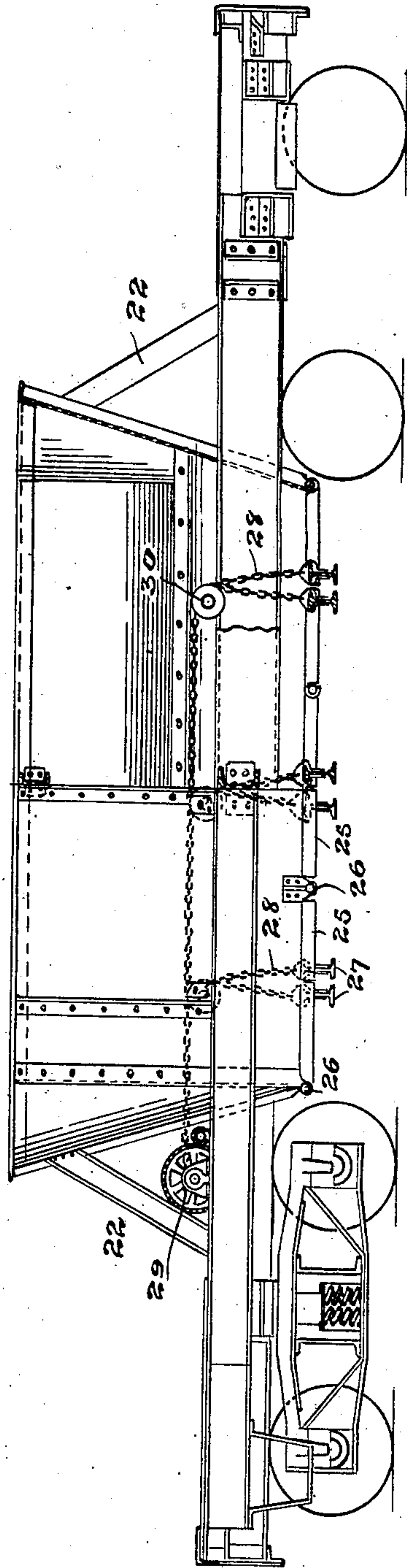
DROP BOTTOM CAR.

APPLICATION FILED DEC. 5, 1906.

2 SHEETS—SHEET 1.



Witnesses,
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2 SHEETS—SHEET 2.

Fig. 3.

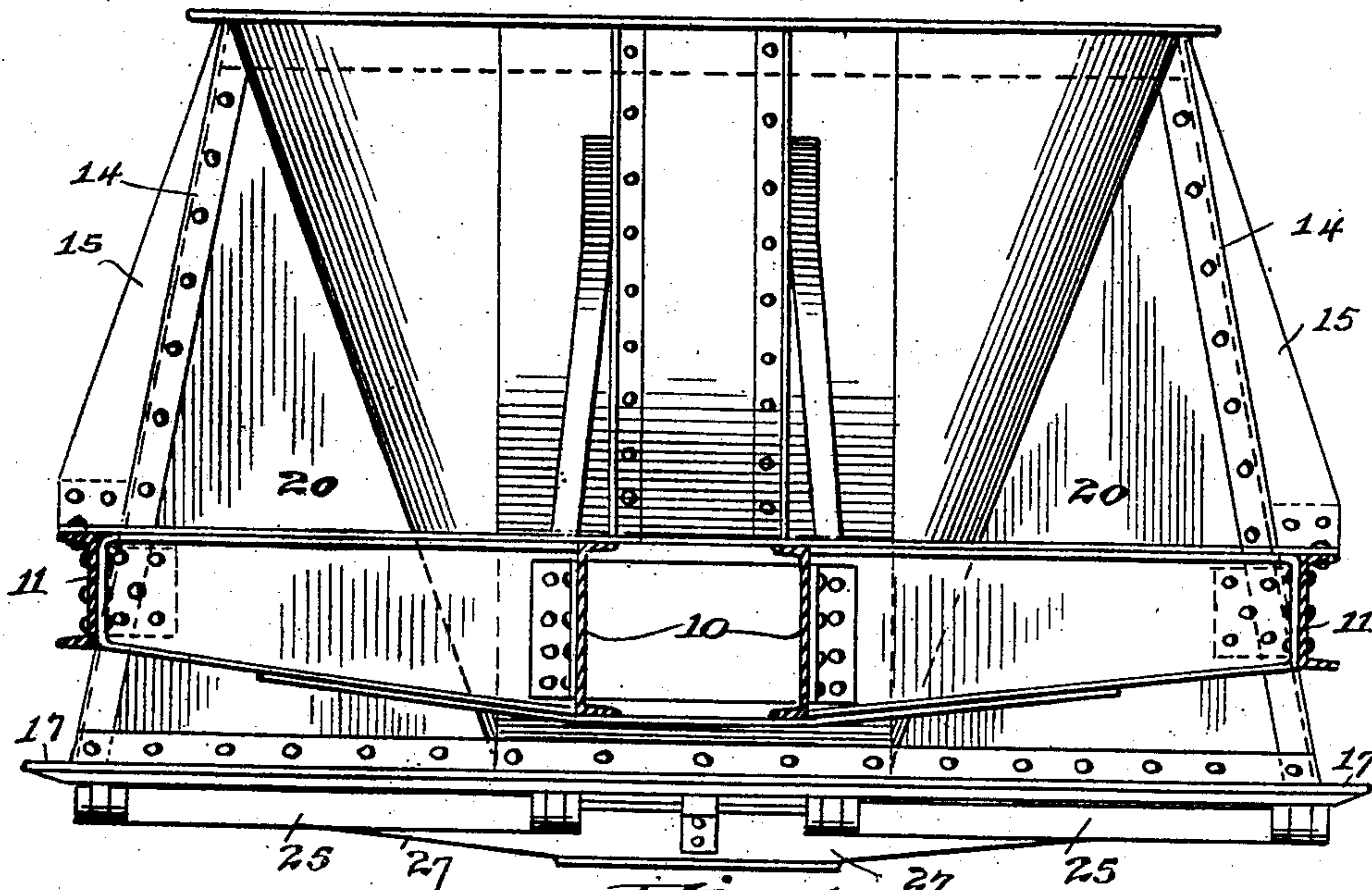
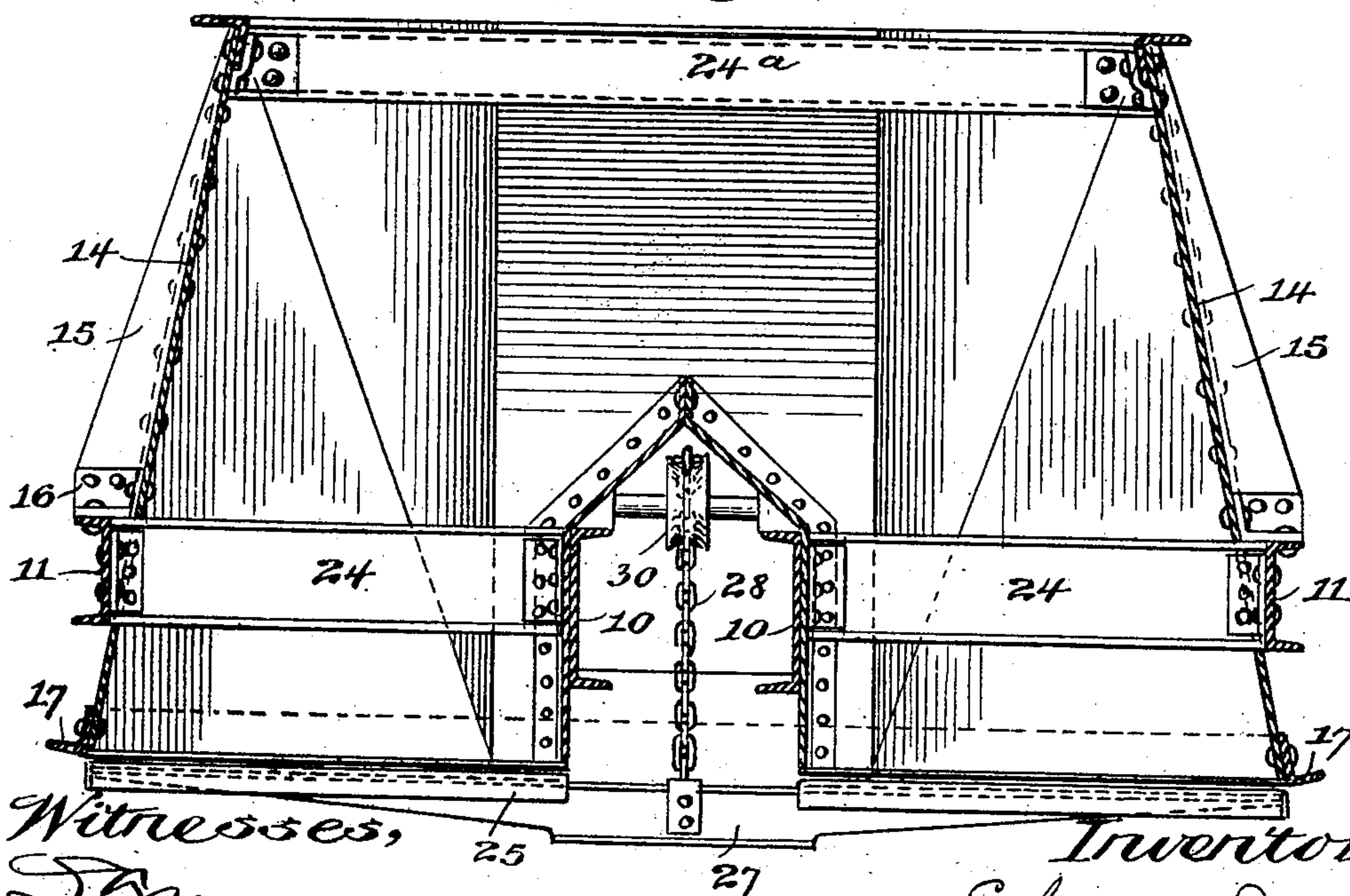


Fig. 4.



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UNITED STATES PATENT OFFICE.

ETHAN I. DODDS, OF PULLMAN, ILLINOIS, ASSIGNOR TO THE PULLMAN COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

DROP-BOTTOM CAR.

No. 884,324.

Specification of Letters Patent.

Patented April 7, 1908.

Original application filed July 6, 1904, Serial No. 215,492. Divided and this application filed December 5, 1906.
Serial No. 346,438.

To all whom it may concern:

Be it known that I, ETHAN I. DODDS, a citizen of the United States, residing at Pullman, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Drop-Bottom Cars, of which the following is a specification.

My invention concerns particularly ore or mining cars, and aims to improve the shape and construction of the car-body, whereby the discharge or unloading of the lading may be facilitated. I aim by my improved type of car to completely dump the load and have no portion thereof remaining in the body or adhering to the inner surfaces of the walls of the body. In order to be able to transport a maximum load with a given length of underframe, and dump the same between the trucks, I make a portion of the end walls of the body downwardly converging, and so place them that part of the load is carried above the trucks, but directed between the same during the dumping operation by the sloping ends mentioned. It is desirable to have at least a part of the body walls outwardly and downwardly flared so that the lading may readily drop away therefrom by its own weight, and consequently the side walls are made downwardly divergent.

Referring to the accompanying drawings, which form a part of this specification,—Figure 1 is a plan view of the preferred embodiment of my invention; Fig. 2 is a partial side elevation and partial central longitudinal section of the car shown in Fig. 1; Fig. 3 is a cross section on line 3—3 of Fig. 1; and Fig. 4 is a section on the line 4—4 of Fig. 1.

In this form of car, I employ the usual spaced channel center sills 10 placed with their flanges projecting toward each other, and channel side sills 11, 11 disposed with their flanges projecting outwardly, as is customary. In addition to the parts mentioned, the car underframe includes also body bolsters 12—12 and end sills 13—13. Centrally disposed on this underframe is the car-body having the downwardly flared side walls 14, which are supported on side sills 11 by means of angle stakes 15, the outwardly extended flanges of which are tapered, as shown, and brackets 16, which are riveted to the top flanges of the side sills, the side stakes and the side walls, as is clearly shown in Fig. 4. These side walls are rectangular in

shape, and along their lower edges are provided with stiffening angle bars 17. The end walls of the body are in part internally concave and downwardly convergent in order to direct the lading between the trucks during the dumping operation. Each concave portion consists of a rectangular plate 18, which has on either side thereof an inclined triangular intermediate wall or plate 19, which connects adjacent edges of the central plate 18 and a vertical triangular wall or plate 20, which at its outer edge is joined to the end edge of the side wall 14. It will be observed that the plates 19 are upwardly and outwardly inclined, and that the apex of their triangular shape is at the bottom of the car, while each plate 20 is vertical, with its apex at the top of the car-body. Around the top edge of the body is the usual coping angle or bar 21, and at each end the body is braced against longitudinal shifting by a pair of channel bars 22 riveted at their lower ends of the outer faces of the channel center sills 10. It should be noted that the center sills extend through the car-body and are inclosed within a hood 23 of the usual construction, the top having oppositely inclined surfaces to divide the load and deflect it on opposite sides of the center sills.

Disposed centrally of the car-body, and transversely thereto, are the comparatively short sections of I-beams 24, which at their opposite ends are fastened to the side and center sills in order to tie the structure together laterally. Above these beams 24 and extended across the car is a channel tie bar 24^a, which joins together the two sides of the car-body at their top edges.

The bottom opening of the car-body is equipped with a series of transverse doors 25, hinged in any suitable manner at the points 26. The doors on opposite sides of the car have transverse tapered I-beams 27, which connect them and control their simultaneous opening and closing, the I-beams between the center sills and beneath the hood being provided with operating chains 28 adapted to be wound upon and unwound from a suitable drum 29 at the end of the car. Sheaves 30 are placed within the hood, and the chains 28 pass over these, turning the same during the travel of the door-actuating chains. A transverse shaft 31, by means of suitable gearing and a handle applied to its

angular end 32, may turn the drum 29 to control the opening and closing of these doors, which in their closed position form a substantially flat or horizontal bottom for the
5 car-body.

It will be noted that in this car I have combined downwardly convergent and downwardly divergent walls, the former to direct the load to the discharge opening and the latter to prevent any clogging or choking at the
10 opening. Since the side walls flare downwardly, the lading, even if of a moist character, will readily drop away from the same, leaving practically none adhering thereto,
15 so that a complete discharge of the load is effected without difficulty.

To those skilled in the art it will be apparent that the advantages of my invention may be had in cars varying somewhat in structure
20 from that illustrated and described, and for this reason my invention is not limited to the details of structure set forth, except to the extent indicated in the appended claims.

This application is a division of my former
25 application, Serial No. 215,492, for steel car construction, filed July 6, 1904.

I claim:

1. A car-body having side walls and end walls, the latter being in part inclined and
30 internally concave, the concave portions being formed of a plurality of flat plates extended lengthwise the car-body, substantially as described.

2. A car-body having side walls and end
35 walls, the latter being in part downwardly convergent and internally concave, the concave portion being formed of a plurality of flat plates extended lengthwise the car-body, substantially as described.

40 3. A car-body having side walls and end walls, the latter being in part inclined and internally concave and in part vertical at each side of said inclined concave portion, substantially as described.

45 4. A car-body having downwardly divergent side walls and end walls, the latter being in part downwardly convergent and internally concave, the concave portion being formed of a plurality of flat plates extended

lengthwise the car-body, substantially as de- 50 scribed.

5. A car-body having downwardly divergent side walls, and end walls, the latter being in part inclined and internally concave, the concave portion being formed of a plu- 55 rality of flat plates substantially as described.

6. A railway car-body having side walls and end walls, the latter each comprising a central outwardly and upwardly inclined 60 portion, a similarly inclined intermediate portion at each side of said central portion, and outer portions joining the adjacent edges of said intermediate portions and said side walls, substantially as described. 65

7. A railway car-body having side walls and end walls, the latter each comprising a rectangular central outwardly and upwardly inclined portion, a similarly inclined tapered intermediate portion at each side of said cen- 70 tral portion, and tapered outer portions joining the adjacent edges of said intermediate portions and said side walls, substantially as described.

8. A railway car-body having side walls 75 and end walls, the latter each comprising a rectangular central outwardly and upwardly inclined portion, a similarly inclined triangular intermediate portion at each side of said central portion, and vertical triangular outer 80 portions joining the adjacent edges of said intermediate portions and said side walls, substantially as described.

9. A railway car-body having downwardly divergent side walls and end walls, the latter 85 each comprising a rectangular central outwardly and upwardly inclined portion, a similarly inclined triangular intermediate portion at each side of said central portion, and vertical triangular outer portions joining 90 the adjacent edges of said intermediate portions and said side walls, substantially as described.

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Witnesses:

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