A. BECKER.

DUMPING CAR.

APPLICATION FILED MAY 20, 1910.

995,215.

Patented June 13, 1911.

3 SHEETS—SHEET 1.

Fig. 1.

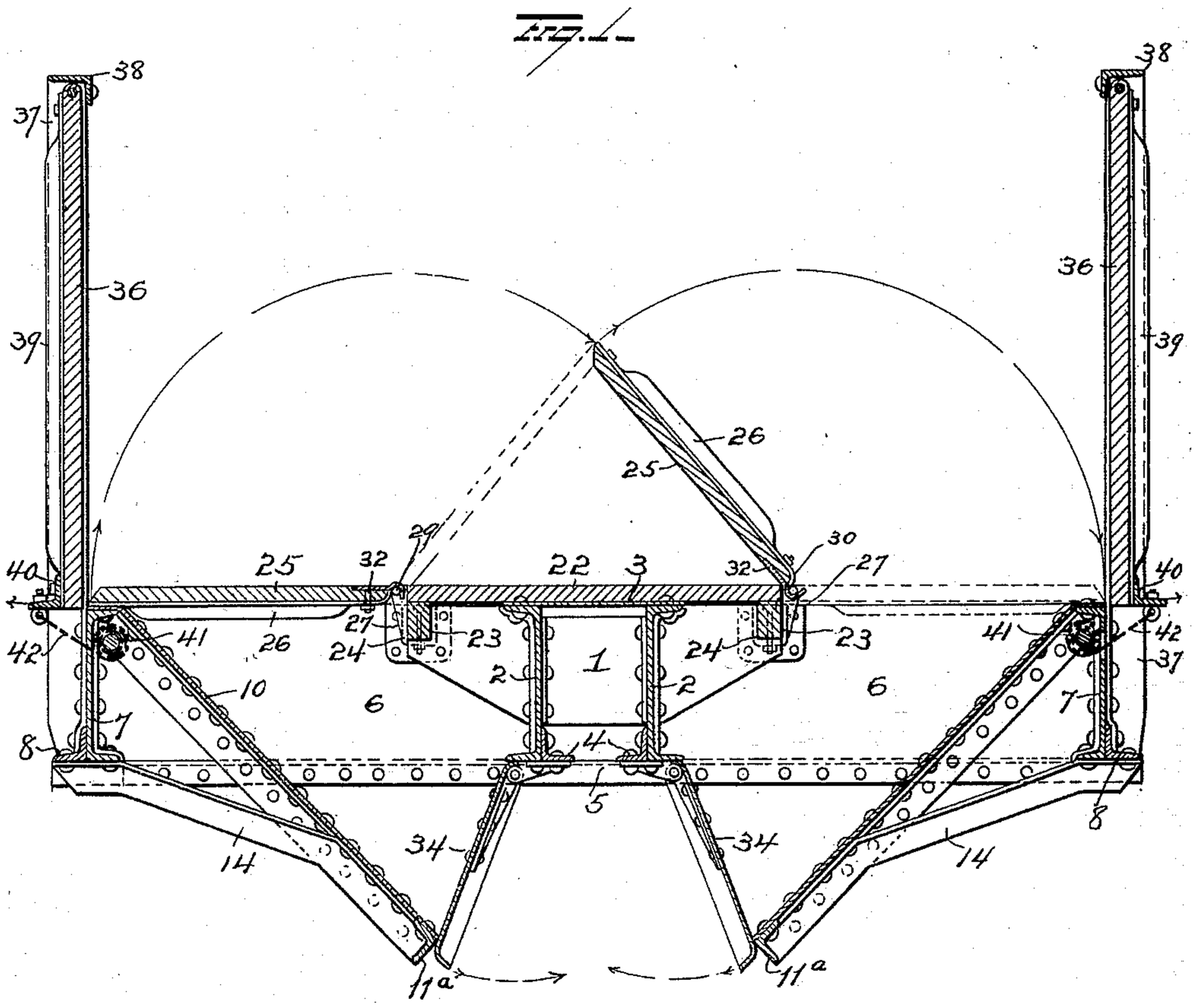
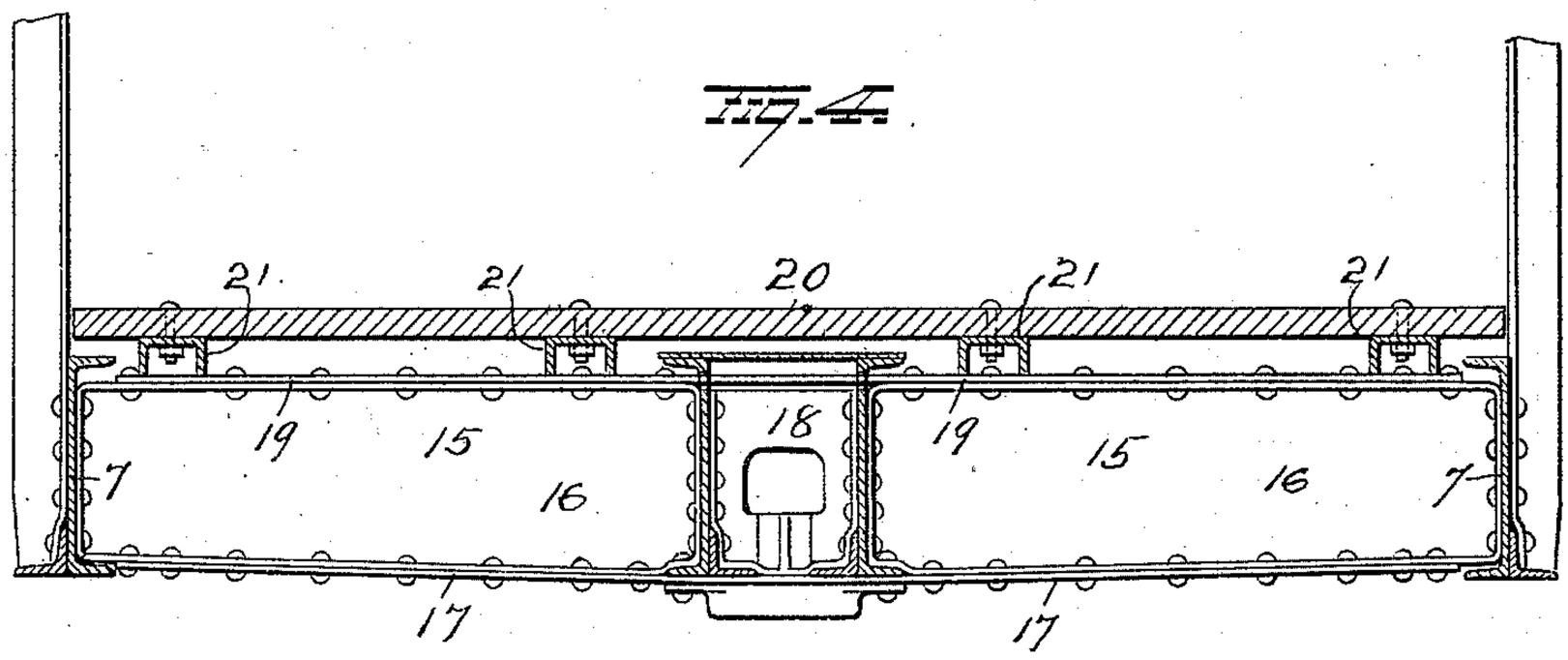


Fig. 4.



WITNESSES

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3 SHEETS—SHEET 2.

Fig. 2.

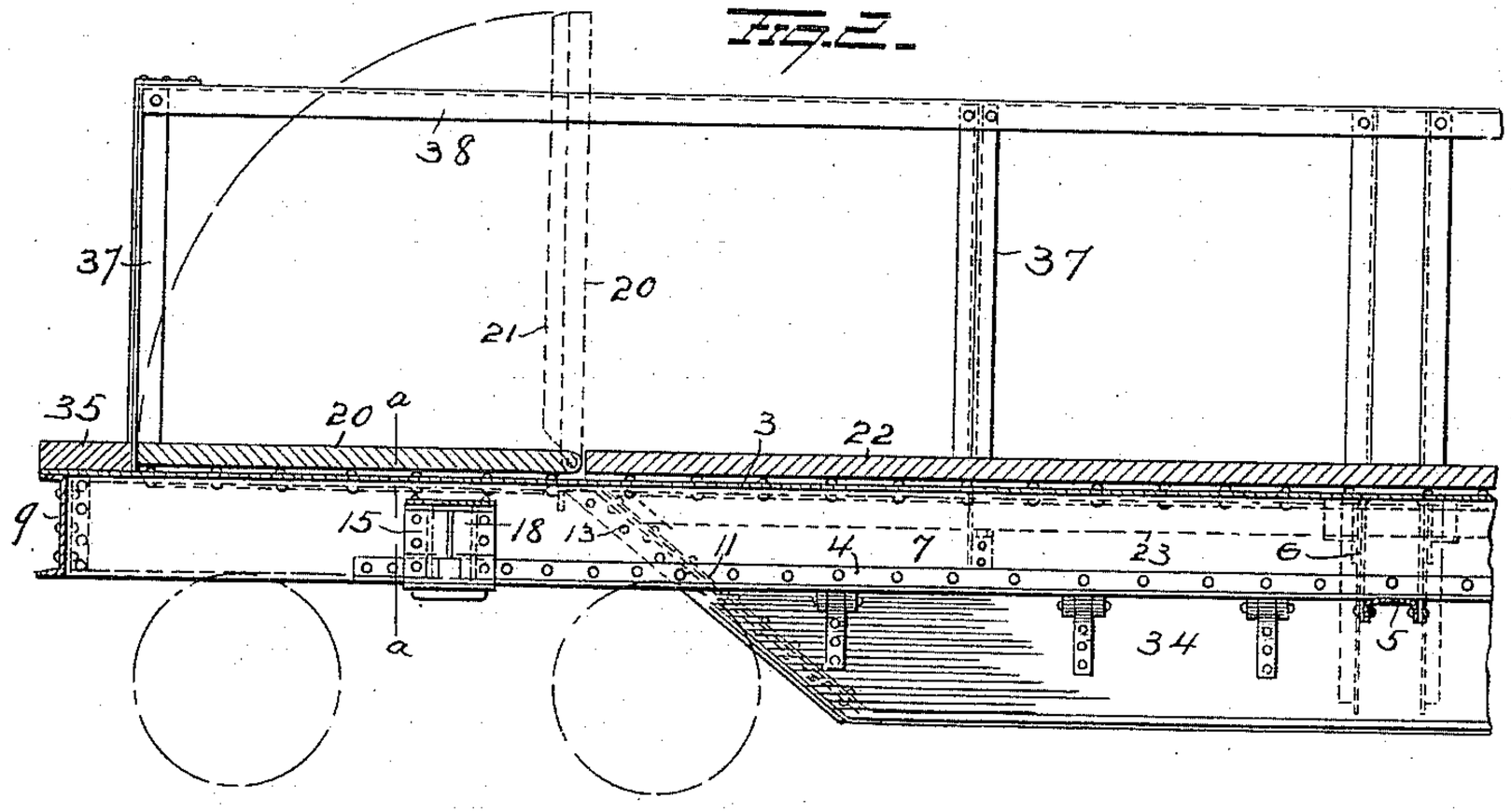
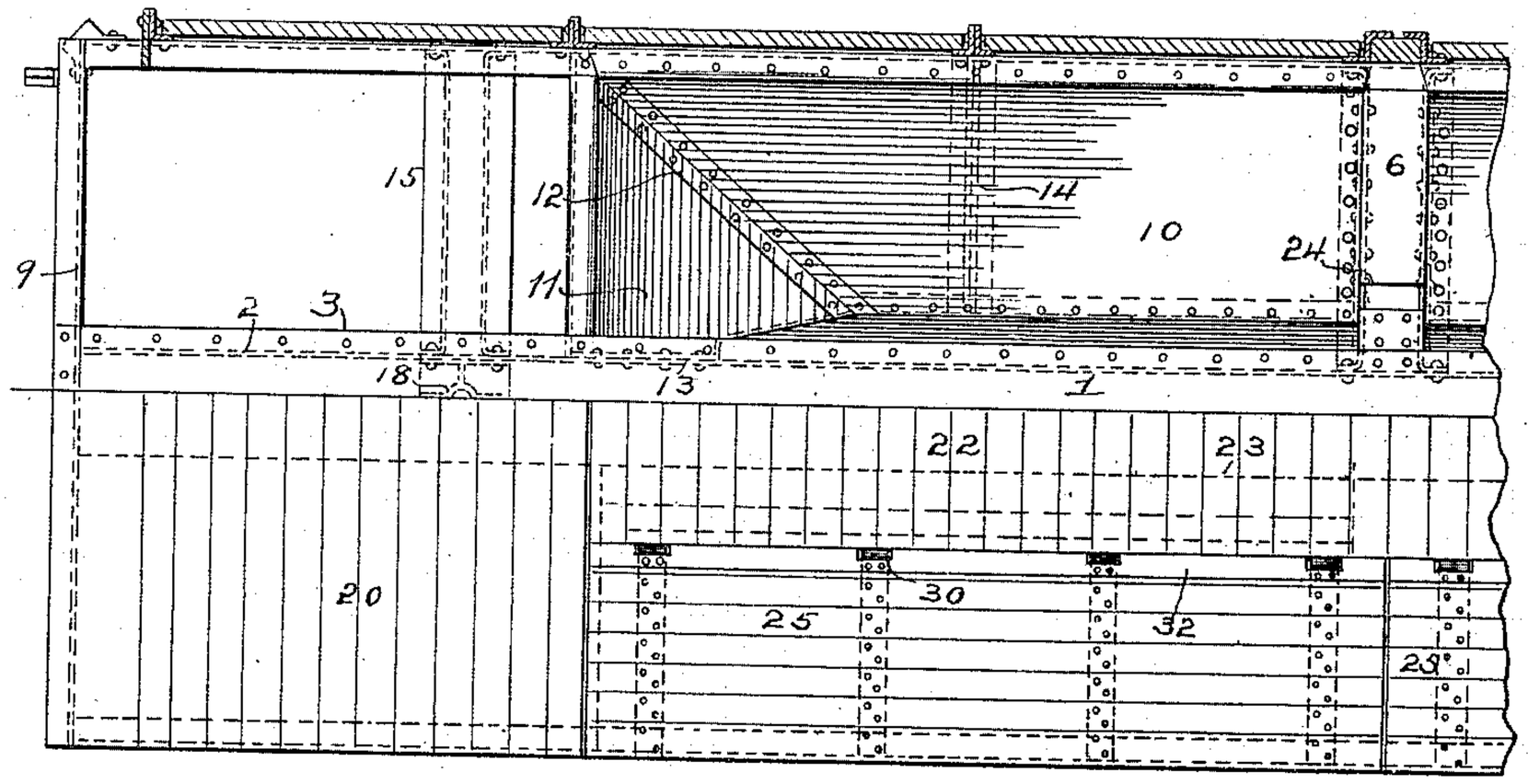


Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 5.

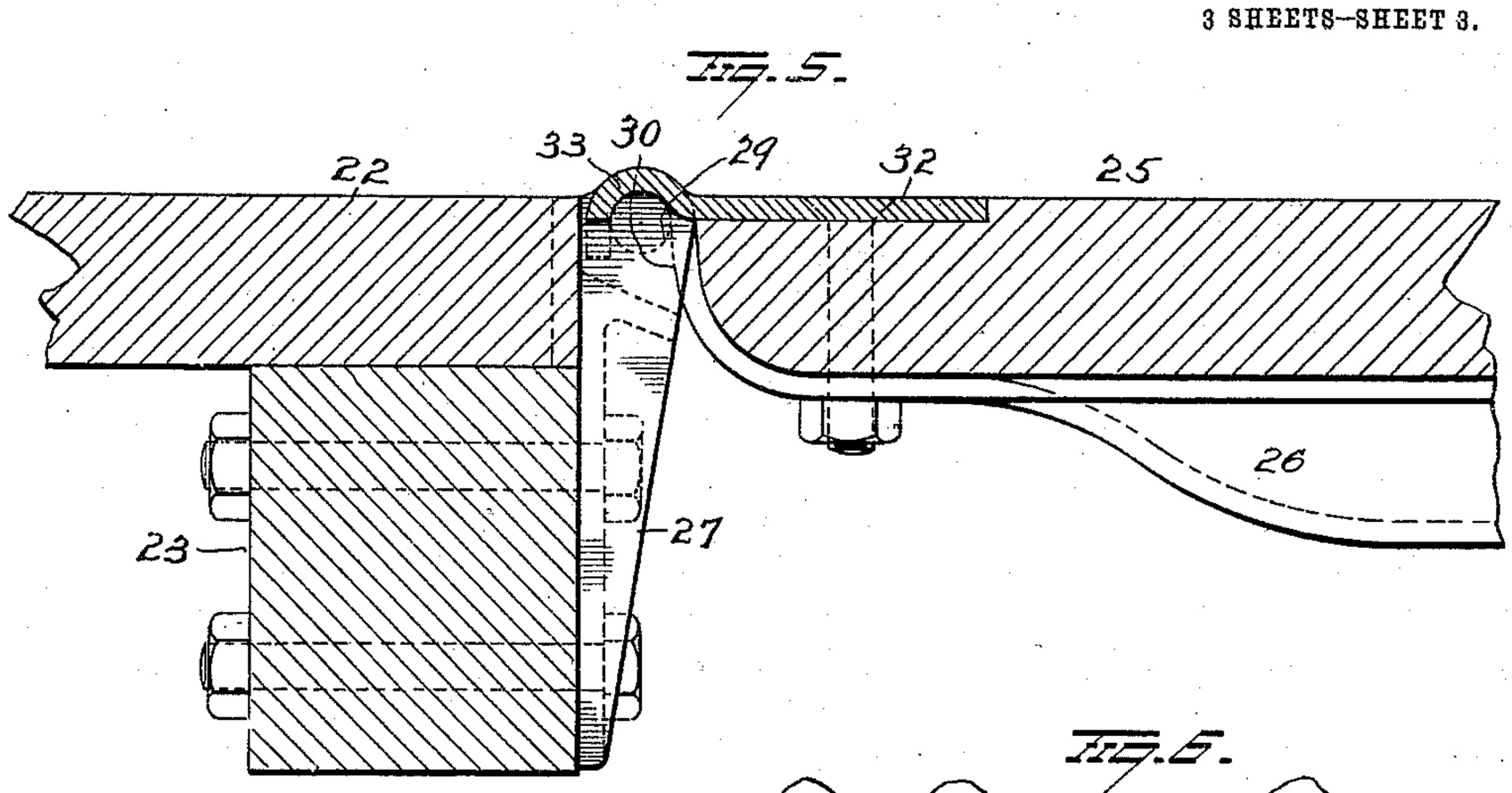


Fig. 6.

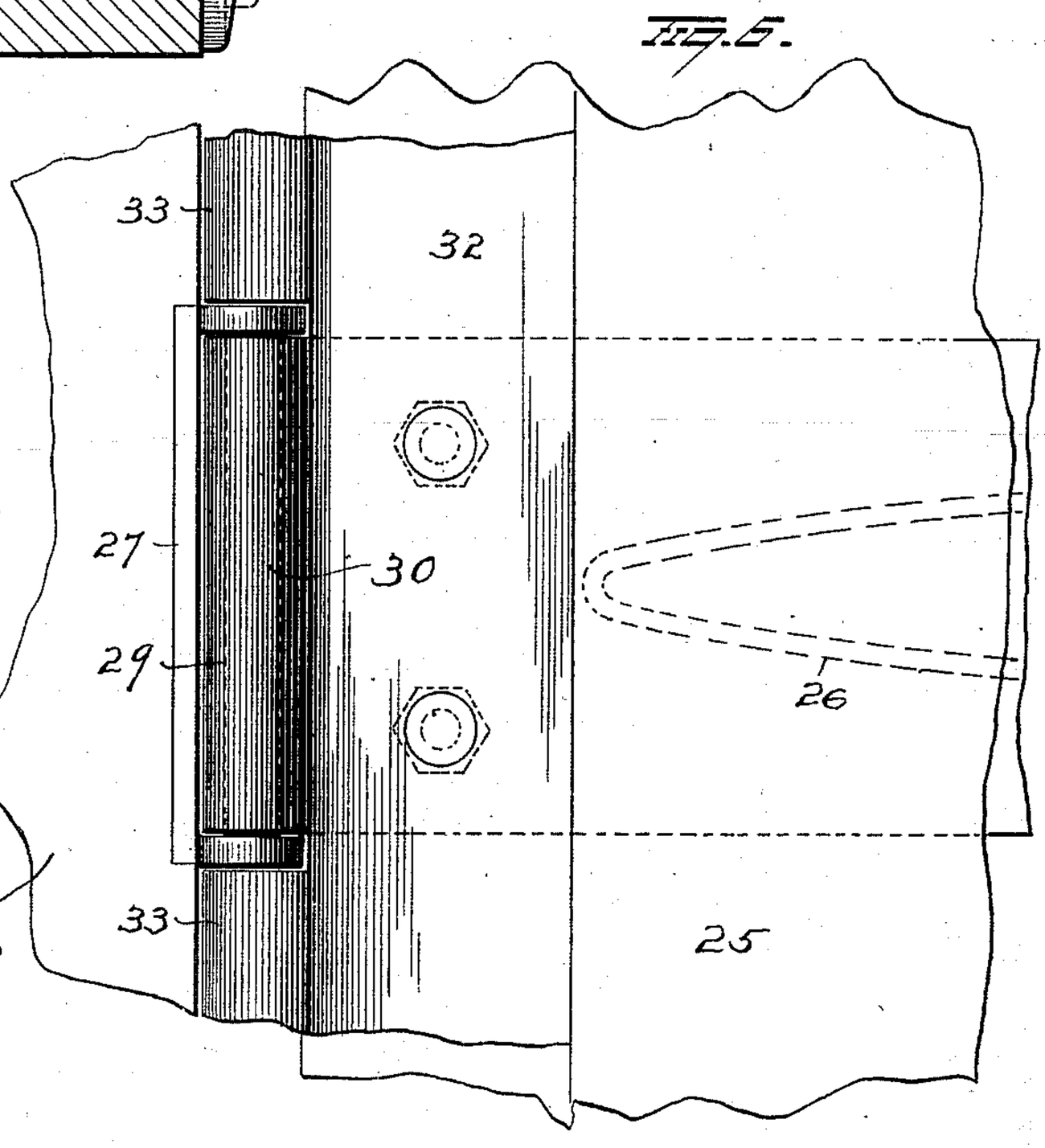
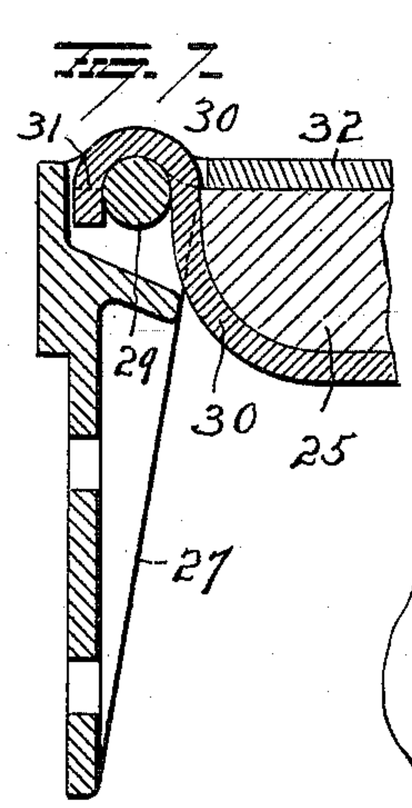


Fig. 7.



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UNITED STATES PATENT OFFICE.

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

DUMPING-CAR.

995,215. Specification of Letters Patent. Patented June 13, 1911.

Application filed May 20, 1910. Serial No. 562,536.

To all whom it may concern:

Be it known that I, ANTON BECKER, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Dumping-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in dumping cars,—one object of the invention being to provide simple and efficient means for converting such a car from a gondola to a hopper bottom type and vice versa.

A further object is to so mount hinged floor sections of a convertible car, as to prevent clogging at the hinged edges of such floor sections.

With these objects in view the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings, Figure 1 is a transverse sectional view of a car embodying my improvements. Fig. 2 is a longitudinal sectional view. Fig. 3 is a plan view. Fig. 4 is a transverse sectional view on the line *a*—*a* of Fig. 2, and Figs. 5, 6 and 7 are detail views illustrating the hinge connection for the floor sections.

1 represents a center girder comprising parallel channel members 2 connected at their tops by a cover plate 3,—the said center girder being thus of the box girder type. The channels 2 of the center girder have secured to their inner faces at their lower edges, angle-irons 4 and to these angle irons and the outwardly projecting flanges at the lower edges of the center girder members, the intermediate portions of compression members 5 are secured. The members 5 consist of channel-beams which are secured to the lower edges of U-shaped cross-bearer member 6 and the outer ends of said channel beams are secured to the bottom flanges of channel beam side sills 7 and to reinforcing angles 8 secured to said side sills.

The center girder 1 extends from end to end of the car and the cross-bearer 6 is located at the center of the car. At the ends of the car structure, end sills 9 are secured to the side sills and center girder. Inclined hopper plates 10 are secured to the sides of the cross-bearer 6 and extend an appreciable distance below the same,—the upper ends of said hopper plates being riveted to the upper inwardly projecting flanges of the side sills and provided at their lower edges with angle-bars 11ª. At the outer ends of the hopper plates 10, hopper ends 11 are secured by means of angle-irons 12 and the inner edges of these hopper ends are flanged and secured to the center girder as shown at 13 Fig. 3. At points between the cross-bearer 6 and the hopper ends 11, the hopper plates 10 are braced by means of angle-bars 14 secured at one end to the lower portions of said hopper plates and at their other ends to the bottom flanges of the side sills.

Bolsters 15 are located beyond the ends of the hopper bottom and each of these bolsters comprises two diaphragms 16 secured at their inner ends to the center girder members and at their outer ends to the side sills, the lower edges of the bolster diaphragms or members being connected by a compression plate 17 extending under the center girder. A bracket 18 is located between the center girder members in line with the bolster members and provided with a socket for a king pin. The upper edges of the bolster diaphragms or members are connected by a tension plate 19.

At each end of the hopper bottom a floor section 20 is hinged and provided with reinforcing channel bars 21 which, when said floor section is in a horizontal position, will rest upon the tension member 19 of the bolster. A fixed floor section 22 is located upon the center girder 1 and projects laterally in both directions therefrom, the outer edges of said fixed floor section being secured to furring strips 23 mounted in recesses 24 in the cross-bearer. At the side edges of the fixed floor section 22, floor sections 25 having reinforcing bars 26, are hinged and are of sufficient width to extend to the side sills when in horizontal position and thus coöperate with the fixed floor section 22 to cover the hopper bottom when it is desired to use the car as a gondola car. For the purpose of effecting the hinge connection between the floor sections 25 and the fixed floor section 22, brackets 27 are secured to the furring strip 23 at the edges of the fixed floor

section and each of said brackets is provided at its upper end with a hinge pin 29. Each floor section 25 is provided with a hinge member 30 having a rib which constitutes the reinforcement 26 for said floor section and at one end this hinge member is provided with a hook shaped portion 31 to engage the hinge pin 29.

In order to prevent the clogging of material between the hinged edge of each floor section 25 and the adjacent fixed floor section 22, a plate 32 is secured to each floor section 25 and the edge of this plate which terminates in close proximity to the edge of the fixed floor section 22 is curved as shown at 33 so as to conform to the curvature of the hook portion 31 of the hinge member and thus permit the floor section 25 to be moved to the positions indicated in Fig. 1 with the upper edges of the floor-sections at one side of the center girder resting against the upper edges of the floor sections 25 at the other side of the center girder. When the floor sections 25 are in these positions, the hopper bottom will be uncovered and material can be discharged through the latter,—the escape of such material being controlled by means of hopper doors 34 hinged at their upper edges to the center girder and adapted at their lower edges to engage the lower edges of the hopper plates 10. Any suitable means may be employed for closing said hopper doors and maintaining them closed.

When the car is to be converted to the gondola type, the floor sections 25 will be disposed horizontally so as to cover the hopper bottom and the floor sections 20 will be lowered as shown in full lines in Fig. 2 and a plank 35 is secured to the end of the framework and in effect constitute an extension of the car floor.

The sides of the car are composed of hinged doors 36,—said doors being hinged at their upper ends between side stakes 37 secured at their lower ends to the side sills of the car and in order to properly brace the upper ends of said stakes, the latter are connected by angle-beams 38. The hinged doors have secured thereto, reinforcing bars 39 and to the lower ends of said doors angle-bars 40 are secured. Door operating shafts 41 are mounted under the car floor and inside the side sills. Chains 42 are connected with the angle 40 at the lower ends of the side doors 36 and wound on the shaft 41 for the purpose of closing said doors and maintaining them closed.

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is,—

1. In a dumping car, the combination with car sides and a center girder, of a hopper bottom having portions at both sides of the center girder and between the latter and the car sides, a fixed floor section over the center girder and projecting at its side edges over the portions of the hopper bottom at respective sides of the center girder, floor sections hinged to the projecting edges of the fixed floor section, and bolsters secured to the center girder and the car sides beyond said hopper bottom.

2. In a dumping car, the combination with car sides, a center girder and a cross-bearer, of hopper plates secured to the cross-bearer and depending below the same, hopper ends secured to the outer ends of the hopper plates and to the center girder, and hopper doors hinged to the center girder and adapted at their free edges to engage the lower ends of the hopper plates.

3. In a dumping car, the combination with car sides, a center girder and a cross-bearer, of hopper plates secured to said cross-bearer and depending below the same, braces secured to the lower portions of said hopper plates and to the car sides, hopper ends secured to the outer ends of the hopper plates and to the center girder, and hinged doors for the hoppers connected with the center girder.

4. In a dumping car, the combination with side sills, a center girder and a hopper bottom, of a fixed floor section located over the center girder and overhanging portions of the hopper bottom, floor sections hinged at the overhanging side edges of the fixed floor section and adapted to extend therefrom to the side sills, stakes secured to the side sills, and car sides supported by said stakes.

5. In a dumping car, the combination with car sides, a center girder and a hopper bottom, of a fixed floor section located over the center girder and projecting laterally over portions of the hopper bottom at respective sides of the center girder, and floor sections hinged at the laterally projecting edges of the fixed floor section and adapted to extend therefrom to the car sides.

6. In a dumping car, the combination with side sills, a center girder and a hopper bottom, of a fixed floor section disposed over the center girder and projecting laterally in both directions therefrom, floor sections hinged at their inner edges at the outer edges of the fixed floor sections and adapted to extend to the side sills, side stakes secured to the side sills, side doors hinged at their upper ends between the side stakes and constituting the car sides and means for operating said doors.

7. In a dumping car, the combination with car sides, a center girder and a hopper bottom, of a fixed floor section over the center girder and projecting in both directions laterally therefrom, brackets secured at the outer edges of said fixed floor section and provided with hinge pins, movable floor sections, hinge members secured to said mov-

able floor sections and provided with hook shaped portions to engage said hinge pin, and plates secured to said movable floor sections and having curved edges in line with and conforming to the contour, substantially, of the hooked shaped portions of the hinge members.

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

ANTON BECKER.

Witnesses:
F. R. HOOVER,
IDA HELSEL.