

No. 743,501.

PATENTED NOV. 10, 1903.

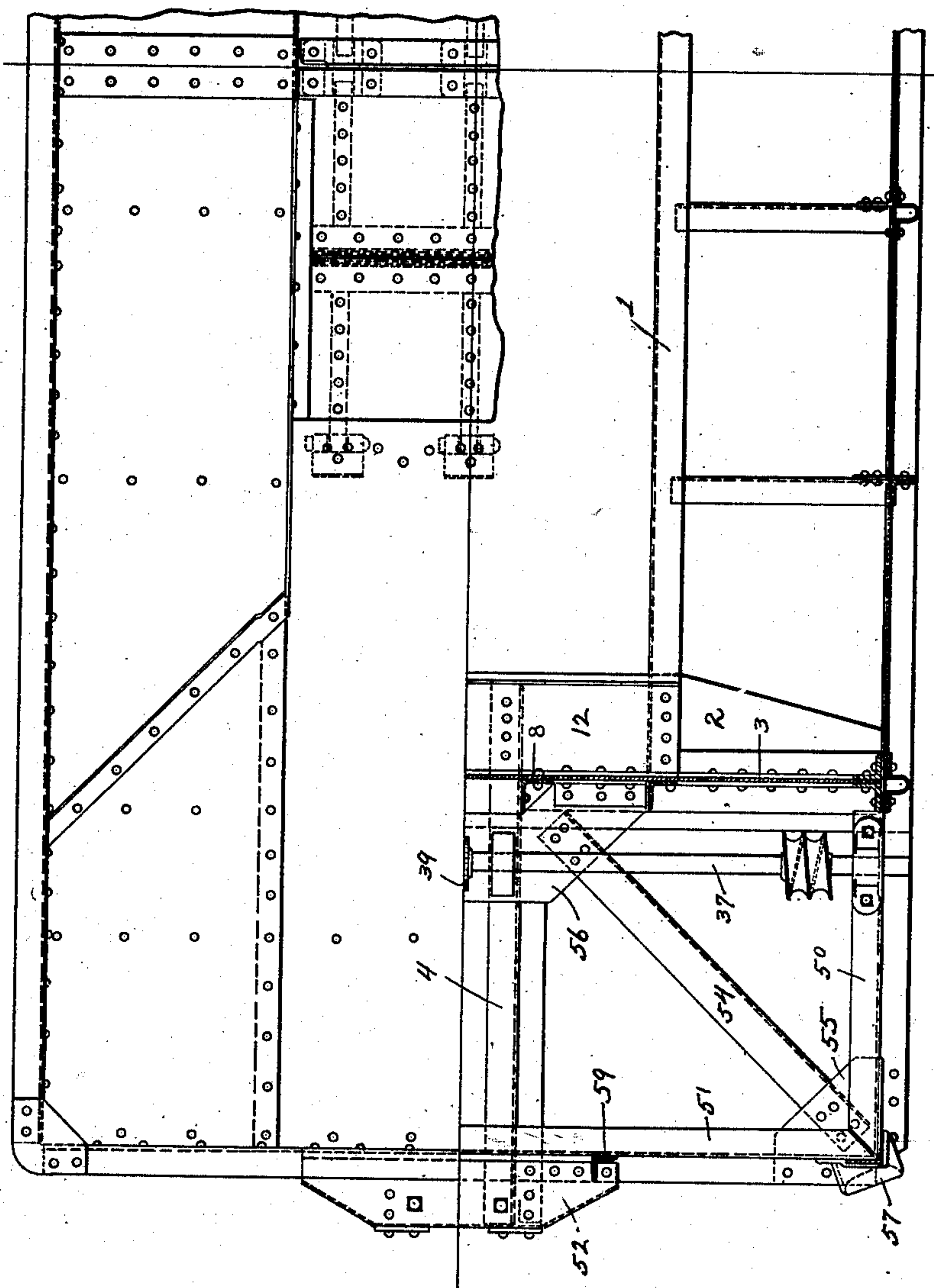
J. M. HANSEN.
ORE CAR.

APPLICATION FILED NOV. 1, 1902.

NO MODEL.

6 SHEETS—SHEET 1.

Fig. 1



WITNESSES

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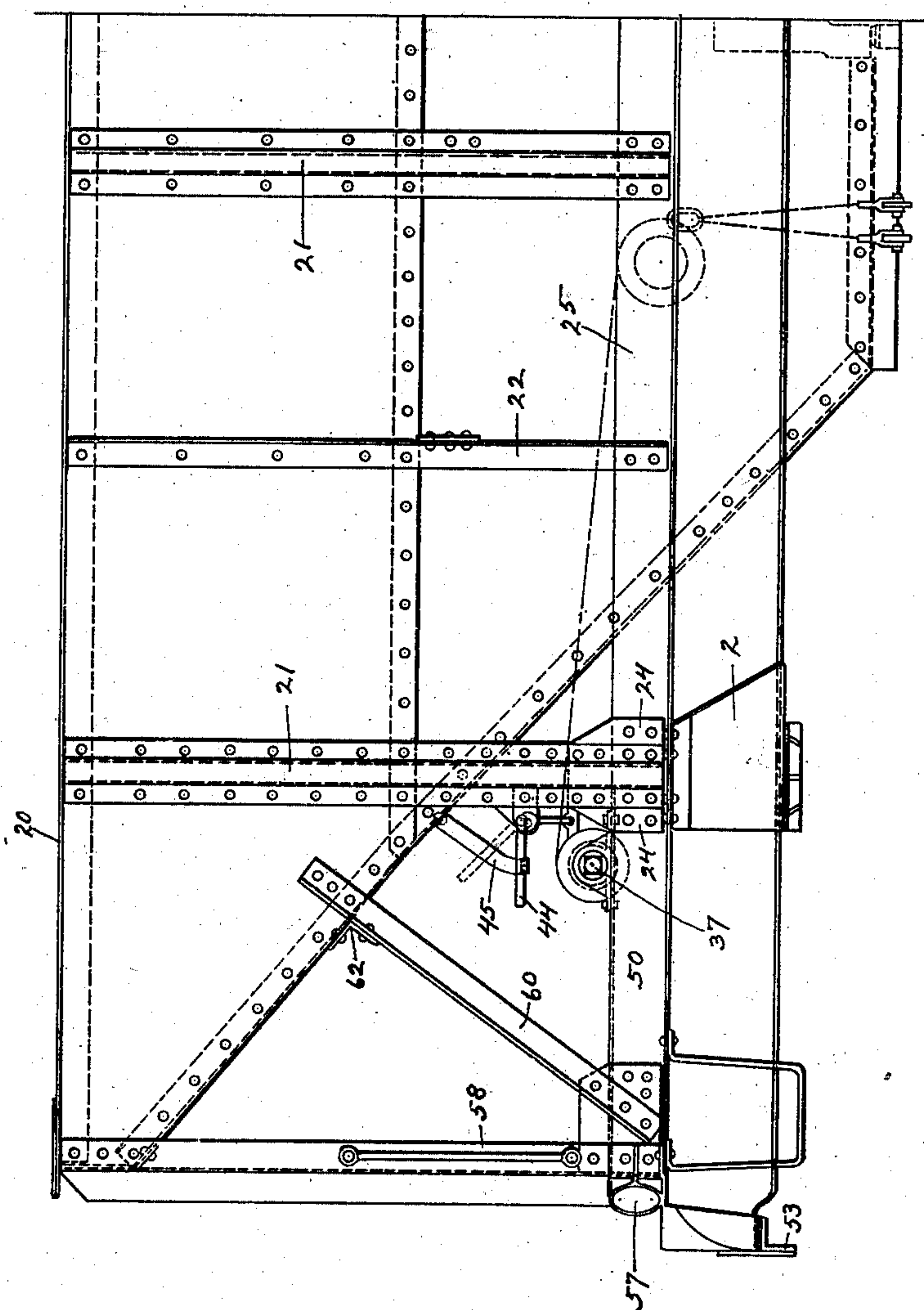
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6 SHEETS—SHEET 2.

Fig. 2



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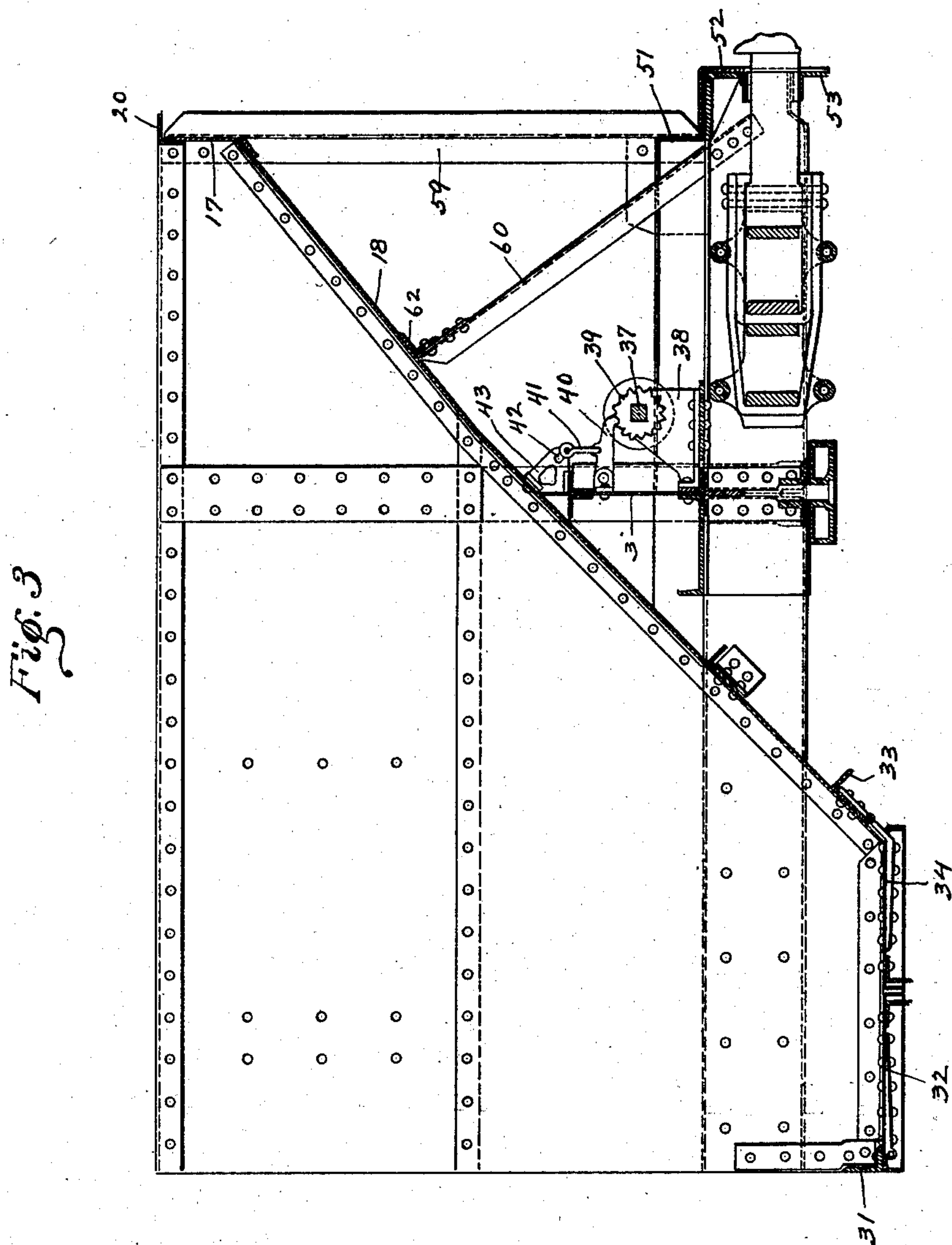
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6 SHEETS—SHEET 3.



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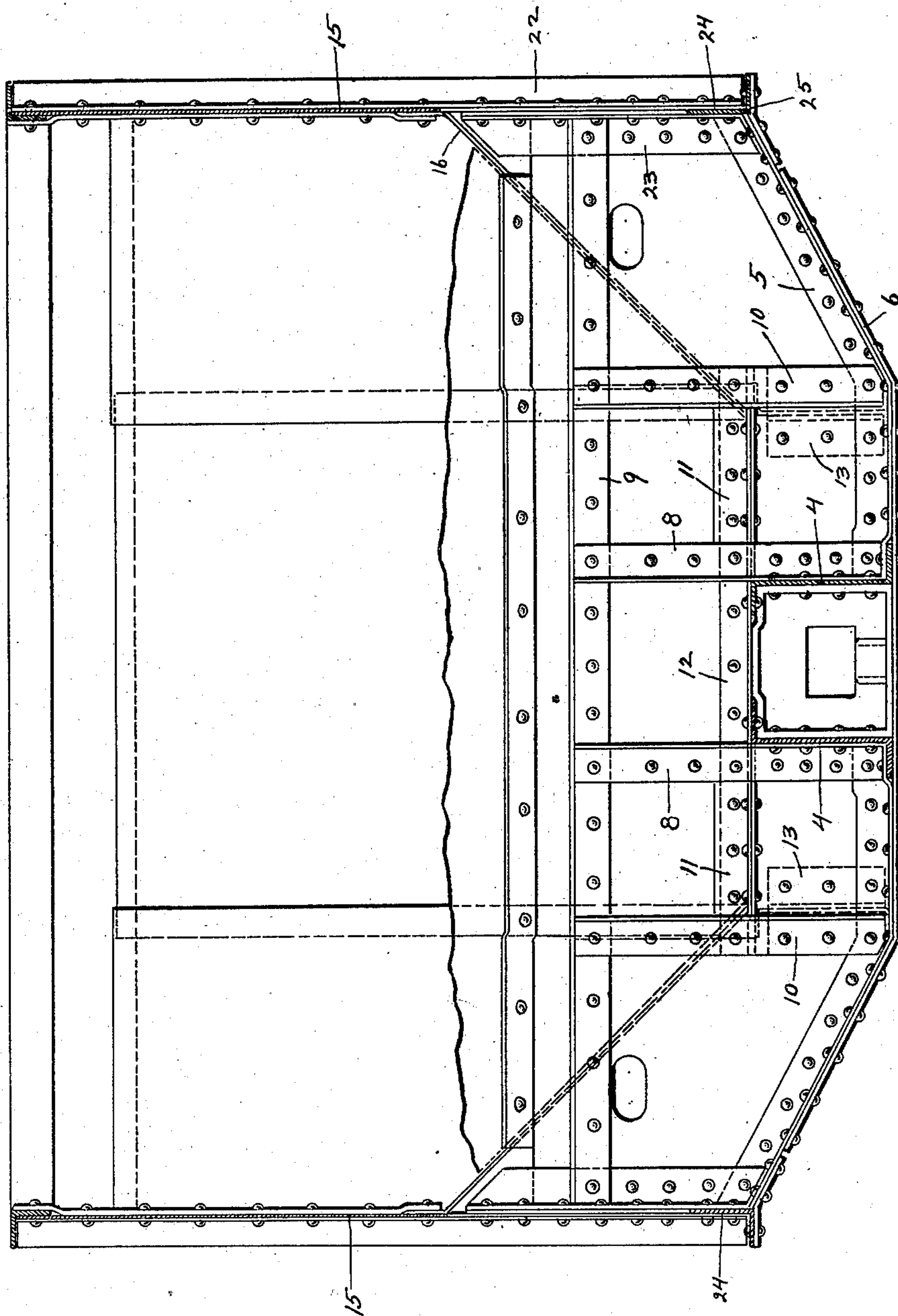
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6 SHEETS—SHEET 4.

Fig. 4



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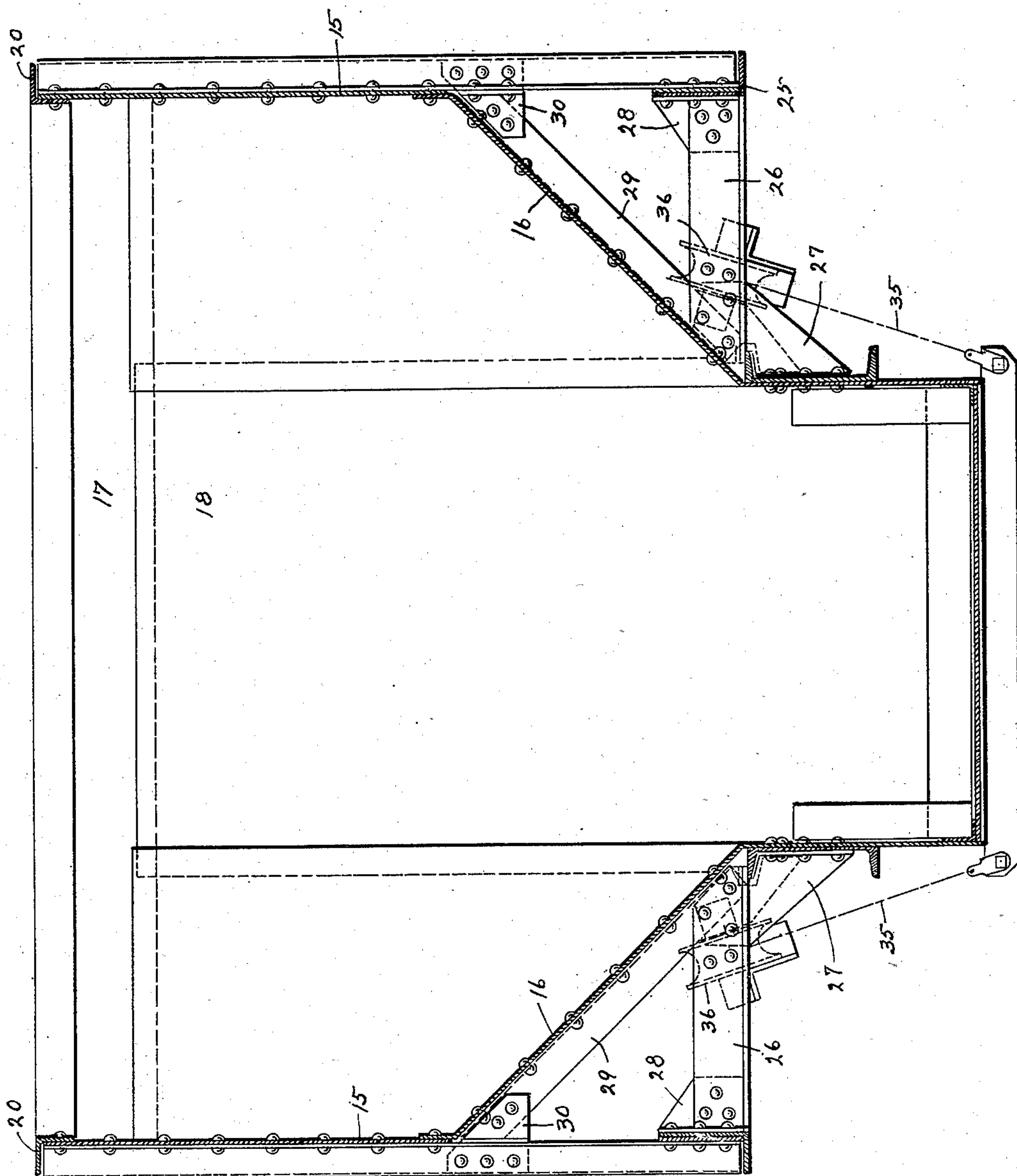
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NO MODEL.

6 SHEETS—SHEET 5.



WITNESSES

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Fig. 5

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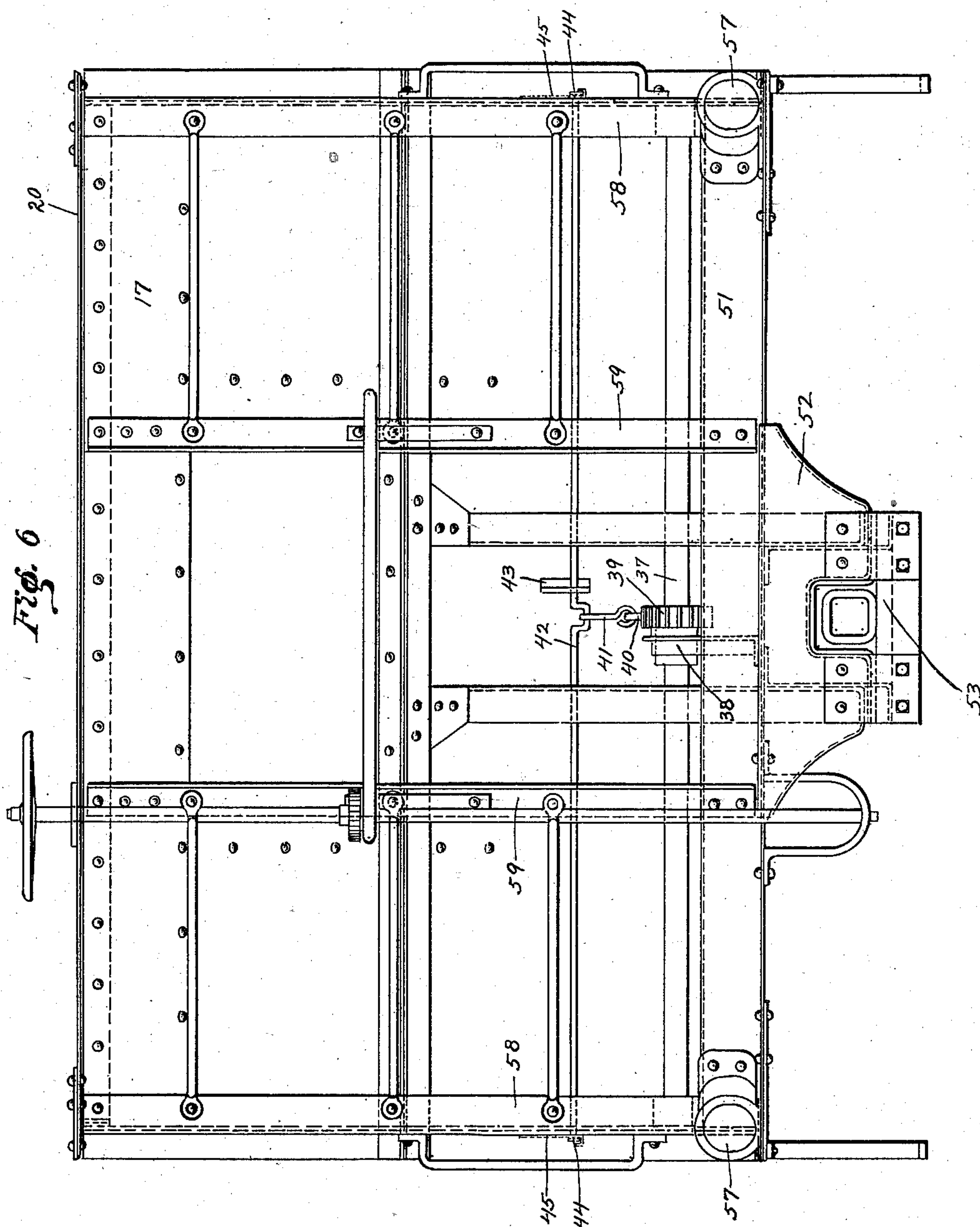
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APPLICATION FILED NOV. 1, 1902.

NO MODEL.

6 SHEETS—SHEET 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN M. HANSEN, OF PITTSBURG, PENNSYLVANIA.

ORE-CAR.

SPECIFICATION forming part of Letters Patent No. 743,501, dated November 10, 1903.

Application filed November 1, 1902. Serial No. 129,776. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. HANSEN, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Ore-Cars; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to metallic railway-cars, and more especially to hopper-cars provided with a centrally-discharging hopper.

The object of my invention is to improve cars of this character in details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 in its upper portion shows a plan of one-half of the car and in its lower portion a plan of the underframing with the side plates and bolster in section. Fig. 2 is a side view of one half of the car. Fig. 3 is a central longitudinal vertical section of the other half of the car. Fig. 4 is a transverse section taken between the body-bolster and end sill. Fig. 5 is a transverse section taken through the hopper, and Fig. 6 is an end view.

The car shown in the drawings is especially designed for conveying ore or other very heavy material, and consequently is made comparatively short, and is provided with a centrally-disposed hopper. The underframe of the car comprises two longitudinal sills 1, formed preferably of channel-beams, as shown, and removed some distance from the longitudinal center of the car, so as to leave a large hopper-opening between the same. These sills extend from one body-bolster 2 to the opposite body-bolster. Each body-bolster comprises a vertically-disposed web-plate 3, which extends as a single piece from one side of the car to the other and is of sufficient depth to project a considerable distance above the top of the longitudinal sills. This web-plate is notched out on its lower edge near the center for the passage of the draft-sills 4 therethrough. Along the lower edge of this web-plate, on each face thereof, is secured a section of angle-bar 5, which extends from the draft-sills out to the end of the web-plate. The horizontal flanges of these angle-bars extend outwardly and have secured thereto a cover-plate 6, which extends from side to side of the car continuously underneath the draft-sills. To the lower cover-plate will be secured

the center bearing and side bearings, as is customary. Inasmuch as the car is comparatively short, the distance between the body-bolster and end of the car is limited, and in order to make place for draft-rigging of any desired length it is necessary that the lower cover-plate of the bolster shall not extend very far outwardly toward the end of the car, and in order that it may have sufficient material in cross-section the cover-plate is made with a straight outer edge and with an inclined inner edge, said cover-plate projecting much farther inwardly from the web-plate than outwardly therefrom, this being shown in Fig. 1. As a consequence the cover-plate will not interfere with the placing of any standard type of draft-rigging between the draft-sills.

The draft-sills 4 are sections of flanged bar, preferably Z-bars, such as shown, and they extend through the web-plate of the body-bolster some distance to the rear thereof. They are secured to the web-plate by means of vertically-disposed sections of angle-bar 8, which have one leg riveted to the web-plate and the other to the webs of the draft-sills. These angle-bars project upwardly a considerable distance above the top of the draft-sills, as far as the horizontally-disposed angle-bars 9, which are riveted to the web-plate and extend from side to side of the car. These angle-bars 9 serve as the tension members of the bolster. Also riveted to the web-plate opposite the ends of the longitudinal sills 1 are vertically-disposed sections of angle-bar 10. The angle-bars 8 and 10 are on the outer sides only of the web-plates, while horizontal angle-bars 9 are riveted both to the inner and outer faces of said web-plates. Also riveted to the outer face of the web-plate in line with the upper edges of the longitudinal and draft sills are short sections of horizontally-disposed angle-bars 11, which serve to further strengthen the bolster.

The ends of the longitudinal sills 1 lie above the inwardly-projecting portion of the cover-plates 6 of the body-bolster and are riveted thereto. Their upper flanges are riveted to the web of a section of channel-beam 12, extending transversely of the car and having one of its flanges riveted to the body-bolster. The inwardly-projecting ends of the draft-

sills 4 are also riveted to this channel-bar 12. Short angle-pieces 13 have one leg riveted to the webs of the longitudinal sills 1 and the other leg riveted to the bolster web-plate.

5 The body of the car is formed of side and end plates and inclined floor-plates. The side plates 15 extend downwardly from the top of the body a little more than half the distance to the top of the longitudinal sills 1.
 10 To their lower edges are riveted the inclined side floor-plates 16, which extend downwardly and inwardly to the top of the longitudinal sills 1 and then extend down vertically inside of said sills to form the side hopper-sheets,
 15 being riveted to the webs of the longitudinal sills 1. The end plates 17 are of only slight depth and have riveted to their lower edges the inclined end floor-plates 18, which slope inwardly and extend down in between the
 20 longitudinal sills 1 to a considerable distance below the same. The lower ends of these inclined end floor-plates 18 and the vertical portions of the side floor-plates 16 form the hopper, which is located centrally of the car.
 25 Both the side and end plates are reinforced and finished at their upper edges by means of angle-rails 20, having their vertical legs riveted to the plates, either inside or outside the same, and having the horizontal leg projecting
 30 outwardly. The side plates of the body are stiffened at intervals by the trough-shaped stakes 21, riveted to said plates. Intermediate said trough-shaped stakes angle-stakes 22 are similarly riveted to the side plates. On each
 35 side two of the trough-shaped stakes extend downwardly and are secured to the ends of the body-bolster by means of sections of the angle-bar 23, having one leg riveted to the body-bolster and the other leg riveted to the flanges
 40 of the trough-shaped stakes. Suitable gusset-plates 24 are interposed between the stakes and bolsters at the lower ends of the stakes. The stakes intermediate those opposite the ends of the body-bolster extend down-
 45 wardly a considerable distance below the lower edge of the side plates 15, and their lower ends are riveted to a flanged bar, preferably an angle-bar 25, which extends from body-bolster to body-bolster and forms the
 50 tension member of the side sill, the compression member of this sill being composed of the side plates 15. Cantaliver-transoms composed of sections of angle-bar 26 extend from the longitudinal sills 1 outwardly to the ten-
 55 sion members 25, one such transom being placed opposite each stake intermediate those opposite the ends of the body-bolster. These transoms are suitably secured to the sills 1 by means of brackets 27 and to the tension
 60 members 25 by means of knee-pieces 28. Floor-stiffening angles 29 extend from the inner ends of each of the transoms 26 diagonally upwardly and are riveted to the inside floor-plates 16 and also secured by means of gus-
 65 set-plates 30 to the stakes.

The hopper-discharge opening is divided transversely at its middle by means of a dia-

phragm 31. To this diaphragm are hinged two doors 32, one on either side thereof. Near the lower edges of the end floor-plates 18 are transverse stiffening-angles 33, and to these are hinged the other doors 34 of the two pairs, so that each hopper-compartment is closed by means of two horizontally-disposed doors, as shown in Fig. 3. These doors are
 75 operated by means of chains 35, passing over sheaves 36 to a winding-shaft 37, mounted outside of the body-bolster.

The winding-shaft 37 is journaled in suitable brackets 38, and secured to said shaft 37 is
 80 the ratchet-wheel 39. A pawl 40 is adapted to engage the teeth of said ratchet-wheel 39, said pawl being secured to the body-bolster and having attached thereto the link 41, through which the operating-rod 42 passes, said oper-
 85 ating-rod also passing through openings in brackets 43. This operating-rod extends the entire way across the car and has the handles 44 at each end thereof, said handles normally resting upon the supporting-arms 45. When
 90 it is desired to open the doors, the operator standing on either side of the car seizes one of the handles 44 and turns the operating-rod so as to lift the pawl 40 from engagement with the ratchet-wheel 39, thus permitting
 95 the shaft 37 to turn. The weight of the contents of the car will cause the doors to drop, the chain connecting said doors unwinding from the sheaves on shaft 37. When it is desired to close the doors, the operator after
 100 the shaft 37 has been rotated to draw the doors up into their closed position can throw the pawl 40 into engagement with the ratchet-wheel 39 from either side of the car by means of the operating-rod 41. By this con-
 105 struction the door-operating mechanism can be operated from either side of the car, and the necessity of going from one side of the car to the other is avoided. While I have illustrated the ratchet-wheel 39 as located at
 110 or about the center of the car-body, it is apparent that its location may be varied without departing from the scope of my invention.

Sub side sills 50, preferably of **Z**-shape
 115 cross-section, extend outwardly from the ends of the body-bolsters to the corners of the car and are there suitably united to the end sills 51, which also preferably are of **Z**-shaped cross-section. The draft-sills 4 are united
 120 to these sills, and a hood 52 is provided centrally of the car and has an opening through which the draw-bar shank passes and is also adapted to support the draw-bar carrier 53. Diagonal braces 54 extend from gusset-plates
 125 55 at the corners of the car to similar gusset-plates 56, secured to the draft-sills and body-bolsters. At the corner of the car is the usual push-pole pocket 57, and rising from the underframe at the corners are the vertical an-
 130 gle-posts 58, which are secured at their upper ends to the corners of the body. Intermediate the corner-posts at the ends of the car are vertical angle-posts 59, which also

serve to support the end of the car-body. Diagonal braces 60 extend upwardly from the corners of the underframe and are secured to the side plates of the car and also to the transverse angle-beam 62, supporting the inclined floor-plates 18. These elements, however, form no part of the present invention, and detailed illustration is thought unnecessary. The drawings also show various other parts of a car, which are not described, as they form no part of the invention claimed.

It will be observed that the car shown and described is very short and that the hopper is arranged centrally of the car between the longitudinal sills.

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

1. A metallic-car underframe comprising longitudinal sills removed from the longitudinal center of the car and extending from body-bolster to body-bolster, of draft-sills adjacent to the longitudinal center of the car and extending from the body-bolster to the end of the car, and a body-bolster comprising a vertically-disposed web-plate extending above the center sills, a bottom cover-plate secured thereto, horizontal tension members secured to the web-plate above the longitudinal sills, and vertically-disposed stiffening members secured to the web-plate adjacent to each longitudinal sill and draft-sill.

2. A metallic-car underframe comprising longitudinal sills removed from the longitudinal center of the car and terminating at the body-bolster, of a body-bolster comprising a vertically-disposed web member, and a transverse flanged member secured to the longitudinal sills and to the web member of the body-bolster.

3. A metallic-car underframe comprising flanged longitudinal sills removed from the center of the car and extending from body-bolster to body-bolster, of a body-bolster comprising a vertically-disposed web member, a cover-plate secured to the lower edge of said web-plate and to the lower flanges of the longitudinal sills, and a transverse flanged member secured to the upper flanges of the longitudinal sills and to the web member of the body-bolster.

4. A metallic-car underframe comprising longitudinal sills removed from the longitudinal center of the car and extending from body-bolster to body-bolster, of draft-sills adjacent the longitudinal center of the car and extending from the end of the car beyond the body-bolster, of a body-bolster comprising a vertically-disposed web member having an opening through which the draft-sills pass, and a flanged member extending transversely of the car and having its web riveted to the longitudinal sills and the inwardly-projecting ends of the draft-sills and a flange secured to the web-plate of the body-bolster.

5. In a metallic railway-car, a side sill com-

prising side plates, a flanged bar located below said side plates and lying between the body-bolsters and terminating thereat, and vertical stakes secured to said side plates and said flanged bar.

6. In a metallic railway-car, the combination with the side plates, of inclined side floor-plates secured to the lower edges of the side plates and extending inwardly and downwardly, vertical stakes secured to the side plates and projecting below the same, cantaliver-transoms secured to the lower portion of the inclined floor-plates and to the lower ends of said stakes, and floor-supports secured to the inner ends of said cantaliver-transoms and to the stakes.

7. In a metallic railway-car constructed without side sills, the combination with the side plates, of inclined side hopper-sheets secured to the lower edges of said side plates and extending inwardly and downwardly, flanged bars located below the side plates and lying between the body-bolsters and terminating thereat, vertical stakes secured to the side plates and to said flanged bars, and cantaliver-transoms secured to the lower portions of the inclined floor-plates and the lower ends of said stakes.

8. A metallic railway-car comprising center sills but no side sills, body side plates, inclined side floor-plates secured to the lower edges of the body side plates and extending inwardly and downwardly to the longitudinal sills, of vertical stakes secured to the side plates and projecting below the same, cantaliver-transoms secured to the longitudinal sills and to the lower ends of said stakes, and floor-supports secured to the inner ends of said cantaliver-transoms and to said stakes.

9. In a metallic railway-car, the combination with longitudinal sills, of side body-plates, inclined side floor-plates extending from the lower edges of said side plates to said longitudinal sills, flanged bars located below the side body-plates and lying between the body-bolsters, vertical stakes secured to said side plates and to said flanged bars, and cantaliver-transoms extending from the lower ends of said stakes to the longitudinal sills.

10. In a car or like receptacle, the combination of a downwardly-opening door, a winding-shaft, a ratchet-wheel mounted on said shaft, a pawl engaging said ratchet-wheel, and means for disengaging said pawl from engagement with said ratchet from both sides of the car.

11. In a car or like receptacle, the combination of a downwardly-opening door, a winding-shaft, a ratchet-wheel mounted upon said shaft at or about the center of the car, a pawl adapted to engage said ratchet-wheel, and means for disengaging the pawl from engagement with said ratchet from both sides of the car.

12. In a car or like receptacle, the combination of a downwardly-opening door, a winding-shaft, a ratchet-wheel mounted on said

shaft, a pawl adapted to engage said ratchet-wheel, an operating-rod connected to said pawl and extending from one side to the other of said car.

- 5 13. In a car or like receptacle, the combination of a downwardly-opening door, a winding-shaft, a ratchet-wheel mounted on said shaft, a pawl adapted to engage said ratchet-wheel, and an operating-rod connected to said

pawl and extending from one side to the other of said car, said rod having a handle at each end thereof.

In testimony whereof I, the said JOHN M. HANSEN, have hereunto set my hand.

JOHN M. HANSEN.

Witnesses:

WM. BIERMAN,
ROBERT C. TOTTEN.