

No. 748,188.

PATENTED DEC. 29, 1903.

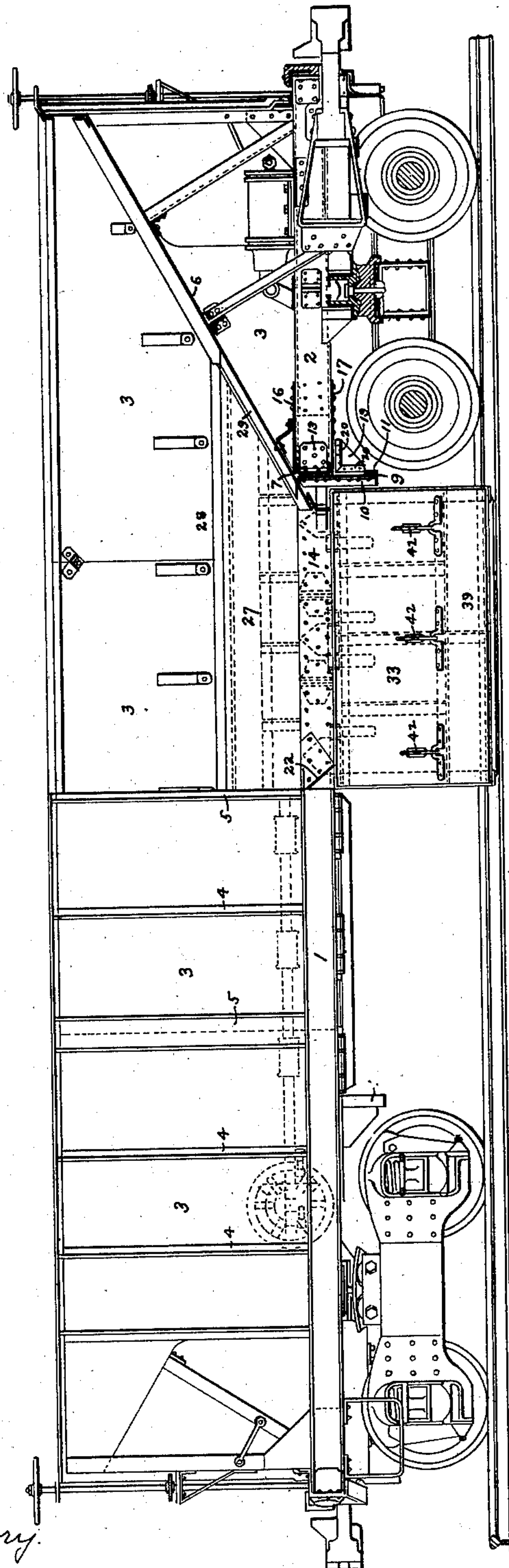
R. H. HORN BROOK.
SIDE DUMPING CAR.

APPLICATION FILED FEB. 28, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 1.



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INVENTOR

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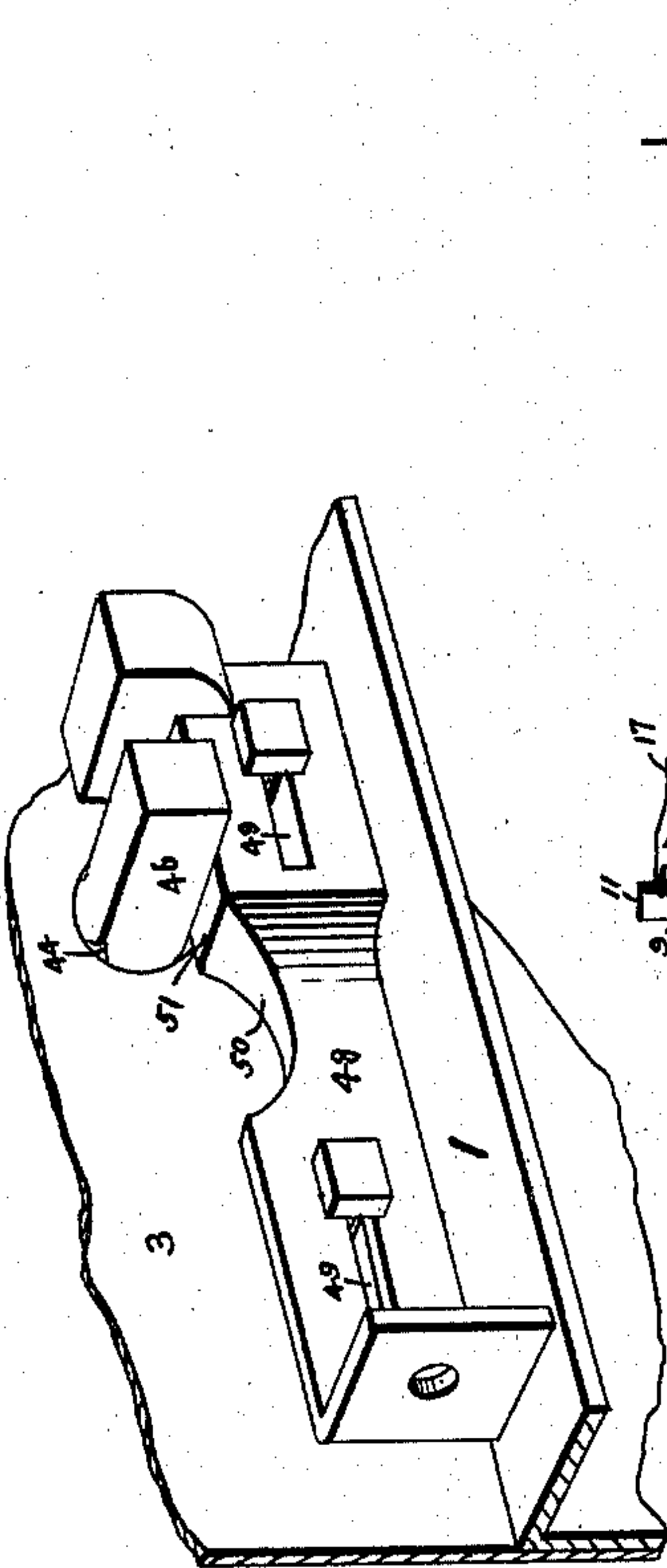


FIG. 6.

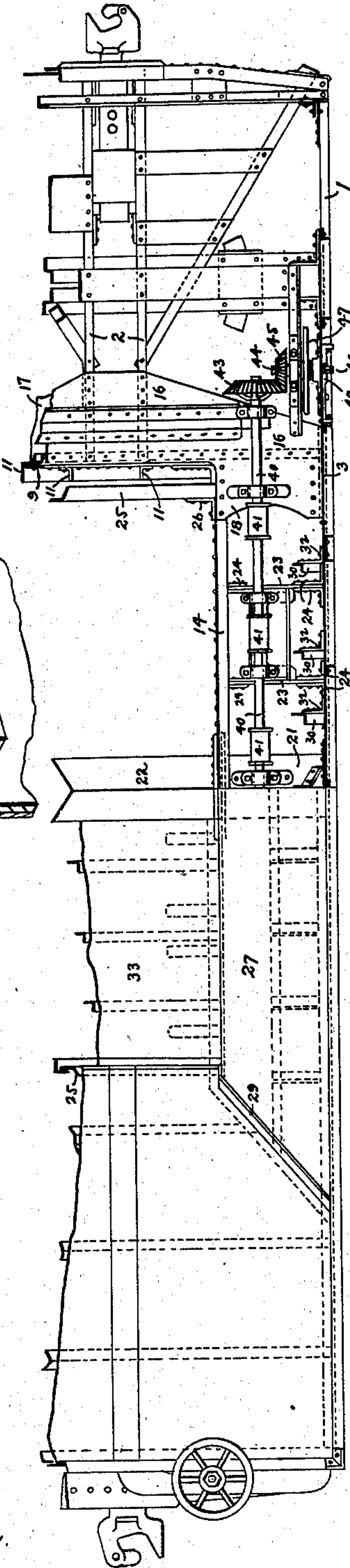


FIG. 2.

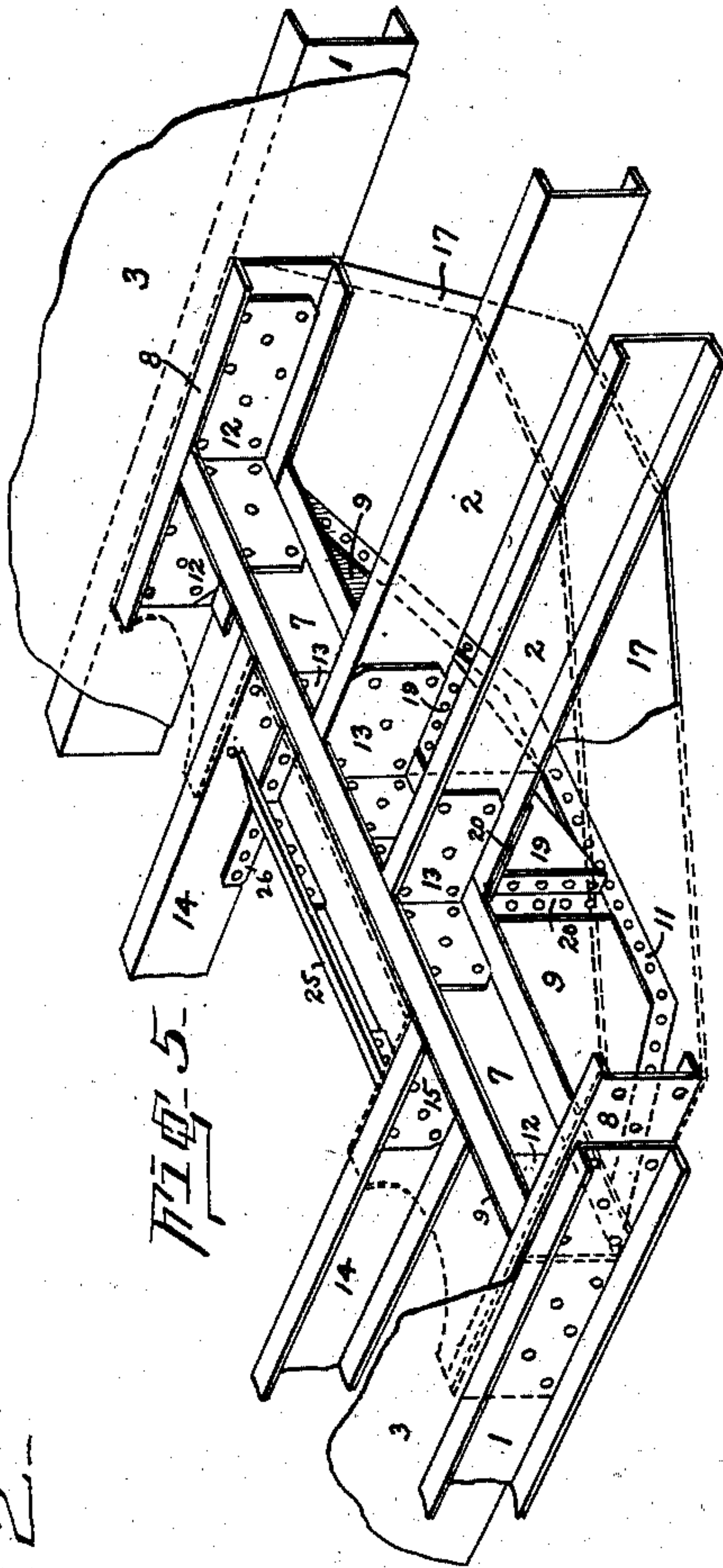


FIG. 5.

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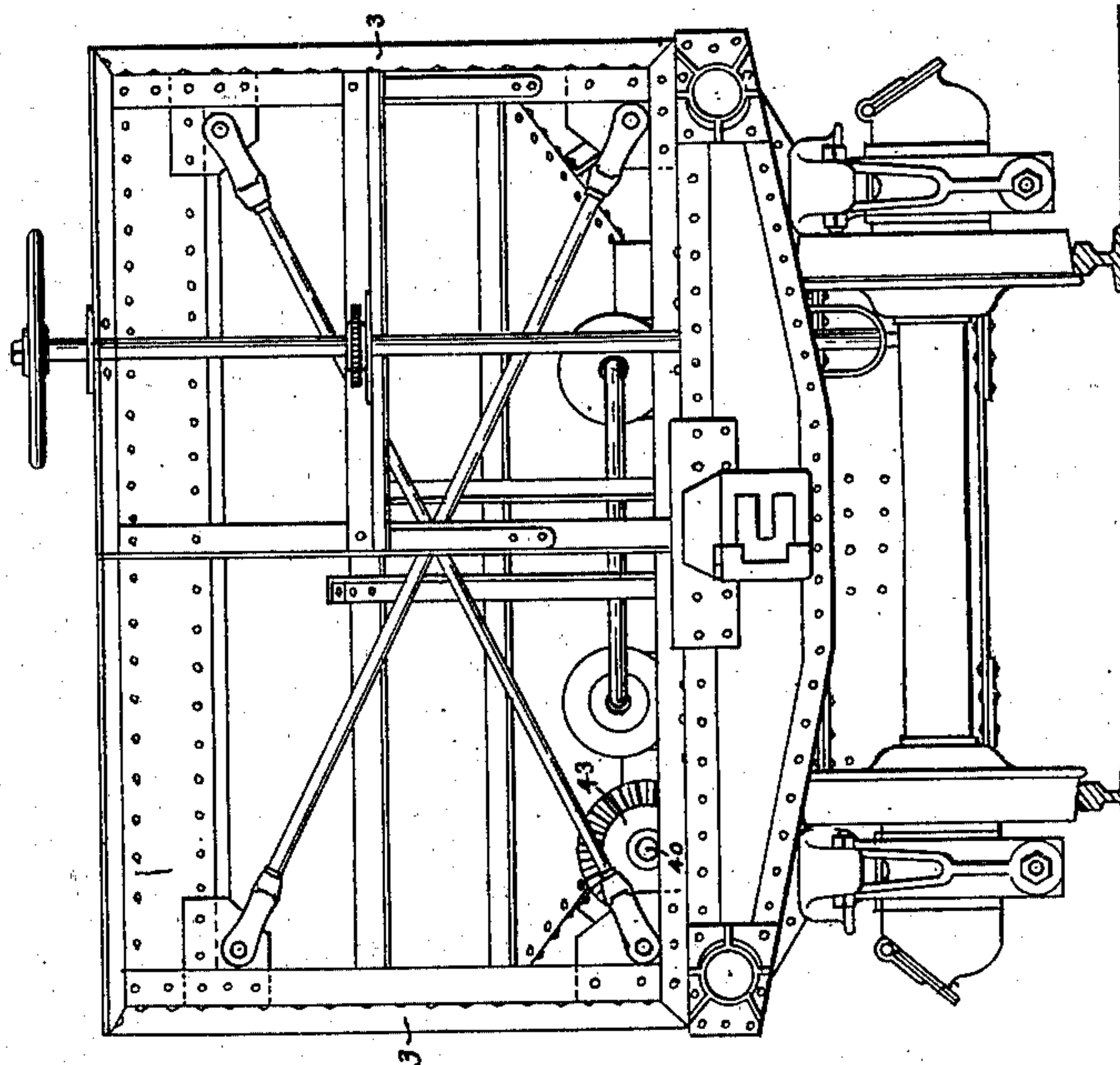
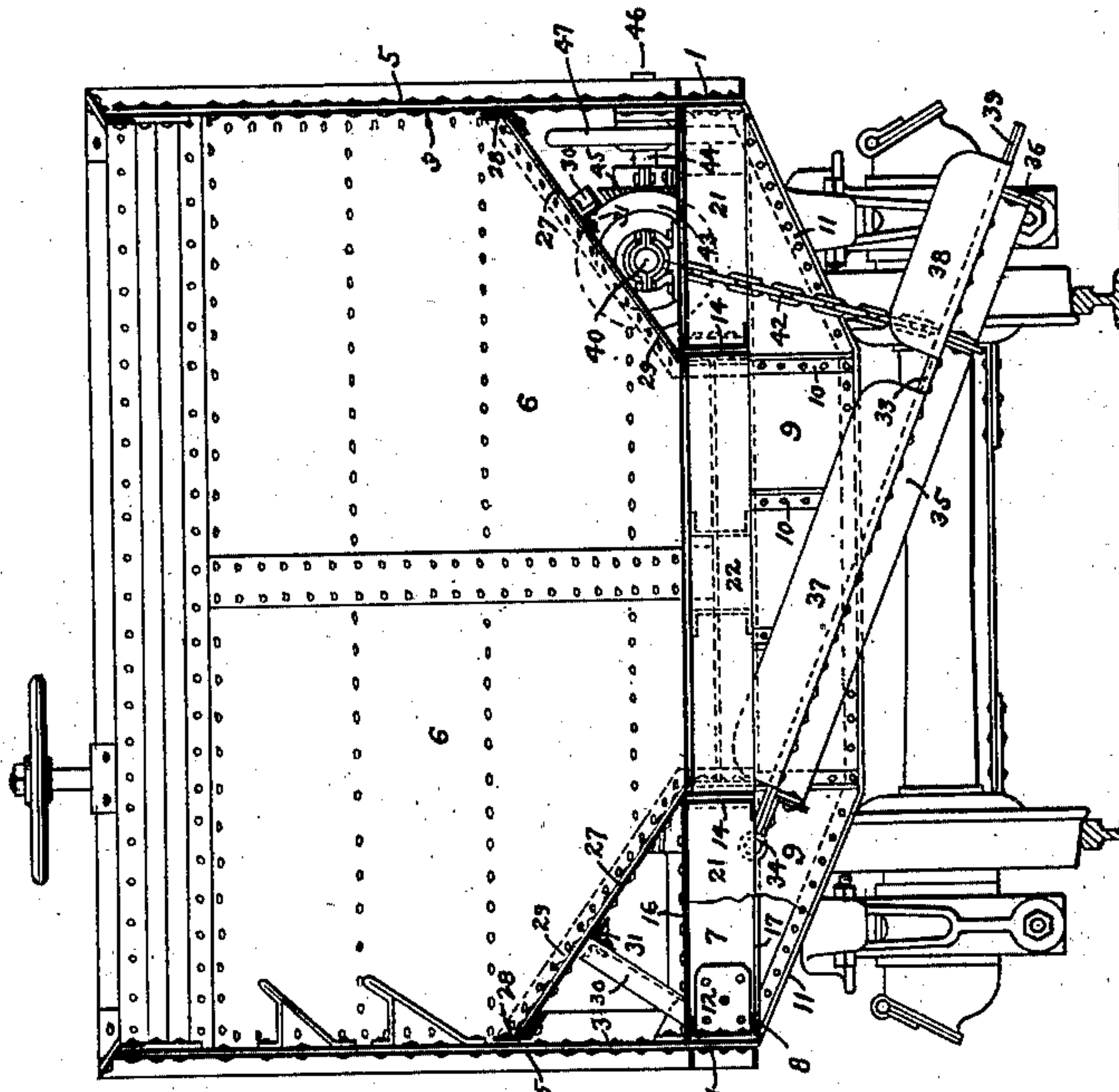
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3 SHEETS—SHEET 3.



WITNESSES:

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Elmer F. Mallory

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UNITED STATES PATENT OFFICE.

RAYMOND H. HORN BROOK, OF CANTON, OHIO.

SIDE-DUMPING CAR.

SPECIFICATION forming part of Letters Patent No. 748,188, dated December 29, 1903.

Application filed February 28, 1903. Serial No. 145,508. (No model.)

To all whom it may concern:

Be it known that I, RAYMOND H. HORN BROOK, a subject of the King of Great Britain, and a resident of Canton, in the county of Stark and State of Ohio, have invented a new and useful Improvement in Side-Dumping Cars, of which the following is a specification.

My invention relates to side-dumping cars made of rolled bars and plates; and the objects of the improvements are to provide a suitable frame and arrangement of the parts on which to hinge and operate the doors constituting the bottom floor of the car, to make the same strong enough to carry the load and withstand all shocks the car may receive, and to provide a suitable gearing for operating the doors from either outside or inside the car and a lock for the same. I attain these objects by the construction, arrangement, and mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the car, showing one end in longitudinal section; Fig. 2, a plan showing the frame in one end; Fig. 3, an end view; Fig. 4, a cross-section on the middle line; Fig. 5, a perspective view showing the cross-sills and connected parts, and Fig. 6 a detached perspective view of the locking-bolt.

Similar numerals refer to similar parts throughout the drawings.

The side sills 1 and the center sills 2 are preferably made of channel-bars, with their flanges turned out, and the side sills extend the entire length of the car, while the center sills are cut out in the middle part, leaving sections in each end of the car preferably about the length of the car-trucks. The side plates 3 are riveted on the inner sides of the side sills and are preferably stiffened and connected by the angle-bars 4 and the channel-bars 5, riveted on the outer sides. The inclined end floors 6 are attached and supported in the usual manner, and the side plates are cut away under these floors at the ends to give free access thereunder from the sides of the car.

The cross-sills 7 are preferably made of channel-bars, with their flanges turned out, and extend across the car to the short channel-bars 8, which are attached on the inner

sides of the side plates, the flanges on the ends of the cross-sills being preferably cut away, so the webs enter between the flanges of the short bars and butt against the webs thereof. The inner ends of the center-sill sections join the cross-sills and likewise preferably have their flanges cut away, so the webs enter between the flanges of the cross-sills and butt against the webs thereof. The vertical girder-plates 9 are riveted on the inner sides of the cross-sills and depend therefrom, the lower parts being stiffened by the angle-bars 10 and 11, riveted on the sides and lower edges thereof, and altogether make up the cross-girder of the car. These various parts are connected and riveted together at each side of the car by the angle-plates 12, the outer rivets extending through the side sills, and in the middle of the car by the angle-plates 13 on each side of the center sills.

The intermediate sills 14 are preferably made of channel-bars, with their flanges turned out, and extend lengthwise between the cross-girders, about midway between the middle line and side sills of the car. The ends of the intermediate sills are riveted to the cross-girders by the angle-plates 15. The horizontal girder-plates 16 and 17 are located one above and one below the cross-sills and the inner ends of the center sills, to the flanges of which they are riveted, and extend across the car to the side plates, where they are riveted to the intumed flanges of the short bars 8. The inward extensions 18 of the upper horizontal plates on each side of the car are riveted to the flanges of the intermediate sills, and the depending plate of the cross-girder is stayed by the gusset-plates 19, which are riveted to the vertical plates and the lower horizontal plates by the angle-bars 20, the latter rivets extending through the flanges of the center sills. There is thus completed a rigid joinder of the side sills, the center sills, the cross-ridge, and the intermediate sills by the upper and lower horizontal plates in each end of the car, which will firmly resist all kinds of horizontal shocks and strains, and by means of the vertical plate, which is likewise joined to all these parts, there is provided a cross-girder which will withstand all kinds of vertical shocks and strains.

The cross-ridge in the middle of the car is made of the wide-flanged angle-bars 21 between the side sills and the intermediate sills on each side, and of the similar angle-bars 22 between the intermediate sills. These plates are split along the angle line at each end, and the flanges are bent out and riveted through to the respective sills. The intermediate sills are also connected to the side sills by the tie-plates 23, located at intervals between the cross-ridges and the cross-girders, which tie-plates are riveted to the respective sills by the angle-plates 24, and between the intermediate sills, near the cross-girders in each end of the car, are located the obtuse-angle bars 25, which bars are riveted to the intermediate sills by the angle-plates 26 and constitute a bearing and stiffening for the lower edges of the inclined end floors. The intermediate sills are further stiffened by the inclined side floors 27, which are riveted to the side plates by the obtuse-angle bars 28, and thence extend downward and inward to the upper inner edges of the intermediate sills, whence they are bent down along the inner sides and riveted to the webs of these sills. The inclined side floors are riveted to the inclined end floors at their juncture by the obtuse-angle bars 29 and are supported near their middle lines by the strut-bars 30, which are riveted above to the side floors by the longitudinal angle-bars 31 and below to the side plates and sills by the angle-plates 32.

The doors 33 constitute the bottom floors of the car and are connected on one side, preferably on opposite sides in the respective ends of the car, by the hinges 34, which hinges are attached to the intermediate sills, preferably on the outer sides thereof. The doors are stiffened by the angle-bars 35 and 36, which are riveted transversely and longitudinally on the under side, with their free flanges turned down, and on the end edges by the angle-bars 37 and 38, which have their wide free flanges turned up, making sides for the door proper and for the extension 39, and together form a trough or chute to deliver the contents of the car to the side of the track. The doors close up against the intermediate sills and the depending free edges of the cross-ridge and of the obtuse-angle bars 25, and the sides of the doors lap past these flanges, whereby the contents are well retained until the doors are dropped.

The longitudinal shafts 40 are mounted in bearings which are conveniently attached on the frame of the car between the intermediate sills and side sills, and one shaft extends from the middle of the car toward the end on each side above the free side of the corresponding door. The winding-drums 41 are provided on the longitudinal shafts, to which the chains 42 are attached, the lower ends of which chains are attached to the doors clear outside of the intermediate sills at such length as will carry the doors clear above the rails when the chains

are unwound, and on the outer ends of the longitudinal shafts are mounted the bevel cog-wheels 43. The short transverse shafts 44 are mounted in bearings which are conveniently attached on the floor-frame of the car and have mounted on their inner ends the bevel cog-pinions 45, which mesh with the bevel cog-wheels. The transverse shafts extend through the side plates and terminate with the squared ends 46, outside of the car, by means of which the gearing can be operated with an ordinary wrench, and on each shaft at a convenient place within the side plates is located the hand-wheel 47, by means of which the gearing can be operated on the inside of the car.

Locking-bolts, as 48, are attached on the outer sides of the car by ordinary bolts passing through the longitudinal slots 49 and operate endwise under the squared outer ends of the transverse shafts, preferably resting and sliding on the upper flanges of the side sills. In the upper edge of the locking-bolt is provided the recess or notch 50, and the parts are so arranged that the upper edge 51 of the bolt normally engages one flat side of the squared end of the shaft, and thereby stops it from turning; but when the bolt is moved endwise to bring the notch opposite the shaft the same is free to turn.

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

1. A car-frame comprising through side sills, center sills in the ends of the car, continuous cross-girders extending between the side sills against which cross-girders the inner ends of the center sills abut, intermediate sills extending between the cross-girders, horizontal plates above and below the center sills and extending on the side sills, the upper horizontal plate having inward extensions on the intermediate sills, and means for connecting these parts together.

2. A car-frame comprising through side sills, center sills in the ends of the car, continuous cross-girders extending between the side sills against which cross-girders the inner ends of the center sills abut, intermediate sills extending between the cross-girders, horizontal plates on the center sills and extending on the side sills, and means for connecting these parts together.

3. A car-frame comprising through side sills, center sills in the ends of the car, continuous cross-sills extending between the side sills against which cross-sills the inner ends of the center sills abut, horizontal plates on the center sills extending on the side sills, and having inward extensions on the intermediate sills, and means for connecting these parts together.

4. In combination, a track, a car on the track, an opening in the bottom of the car extending laterally each way from the median line, a door hinged on one side of the opening and extending across the median line to clear the opposite side of the track,

and means for operating the door and for holding it clear above the track.

5 5. In combination, a track, a car on the track, an opening in the bottom of the car extending laterally each way from the median line, a door hinged on one side of the opening and extending across the median line to clear the opposite side of the track, and sides on the door to form a chute when
10 the same is dropped.

6. In combination, a track, a car on the track, an opening in the bottom of the car extending laterally each way from the median line, and a door hinged on one side of the
15 opening and extending across the median line to clear the opposite side of the track.

7. A car-door-operating mechanism including a transverse shaft terminating in a

squared end outside of the car and a hand-wheel on the shaft inside of the car. 20

8. A car-door-locking device comprising a shaft having a squared end, a slotted locking-bolt attached on the side of the car by ordinary bolts passing through the slots, and a notch in the edge of the locking-bolt, which
25 edge normally engages one flat side of the shaft but frees it to turn in the notch when the bolt is moved endwise.

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

RAYMOND H. HORNBROOK.

Witnesses:

L. A. SMITH,

O. N. MCCLINTOCK.