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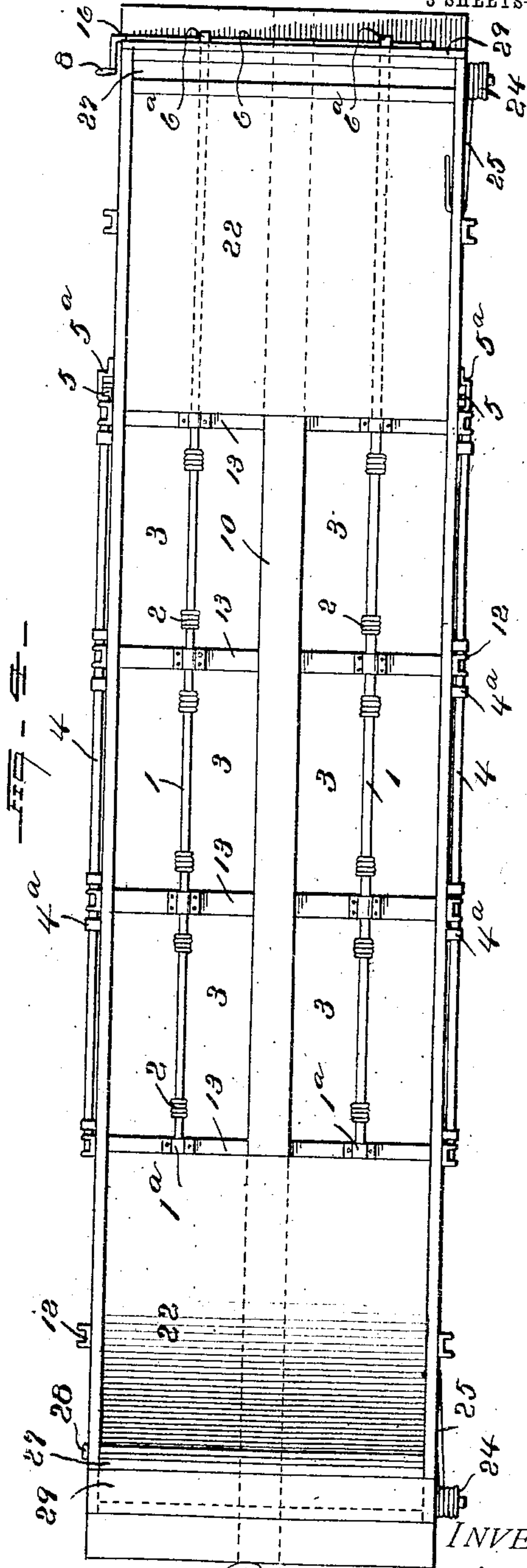
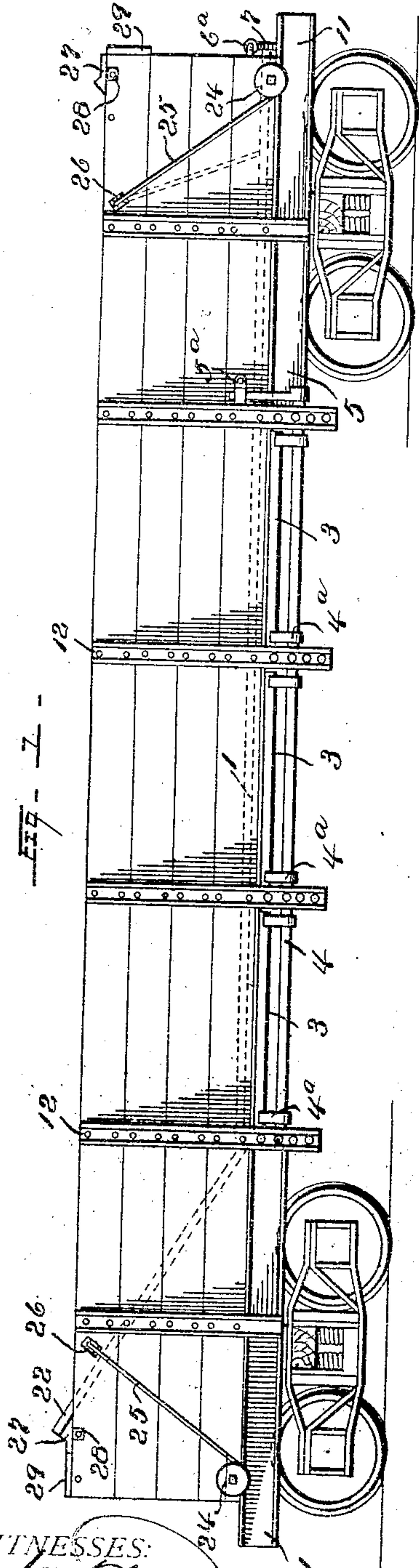
PATENTED JAN. 23, 1906.

R. W. & J. V. ERICSON.

DUMPING CAR.

APPLICATION FILED JULY 31, 1905.

3 SHEETS—SHEET 1.



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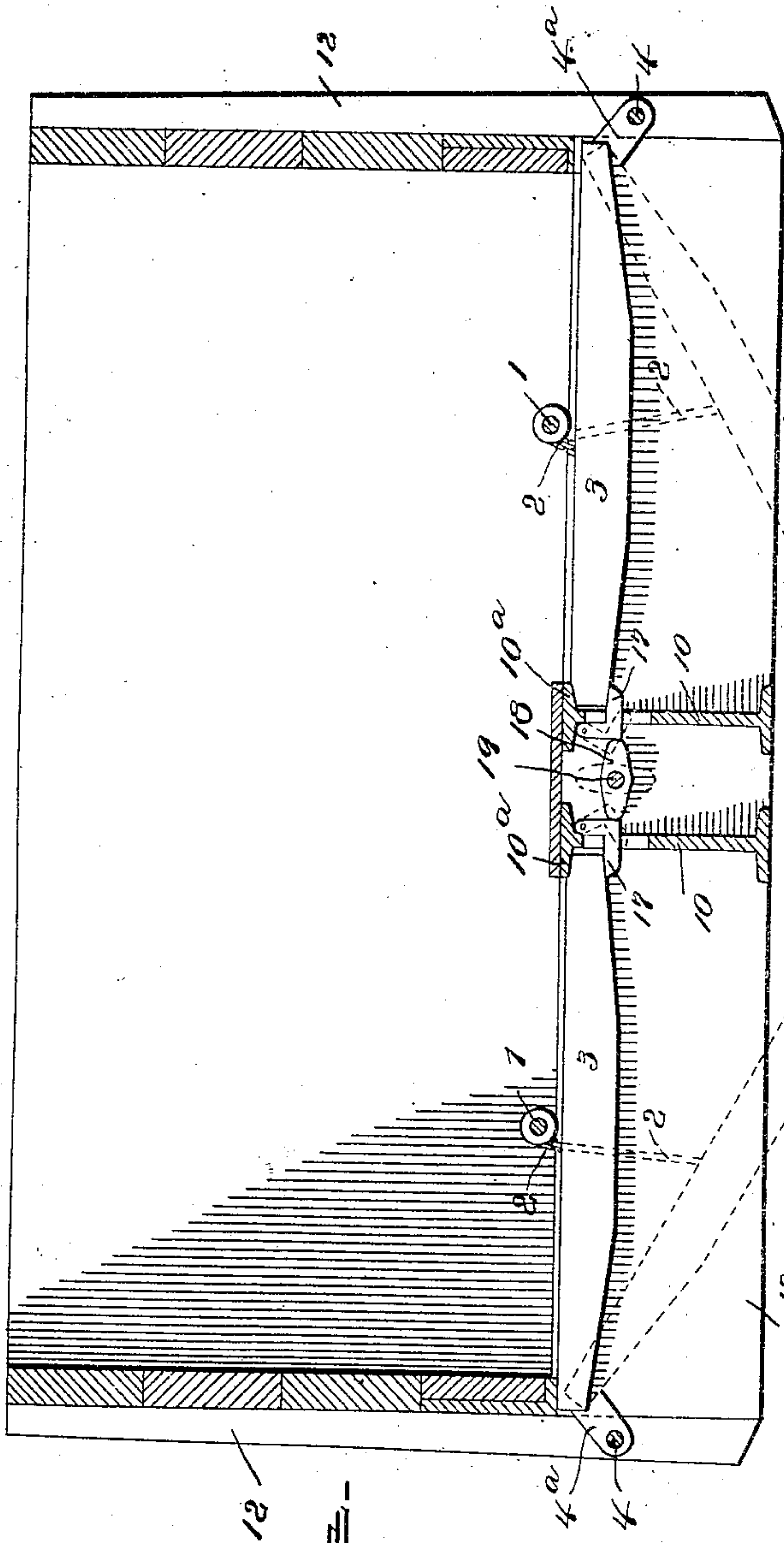
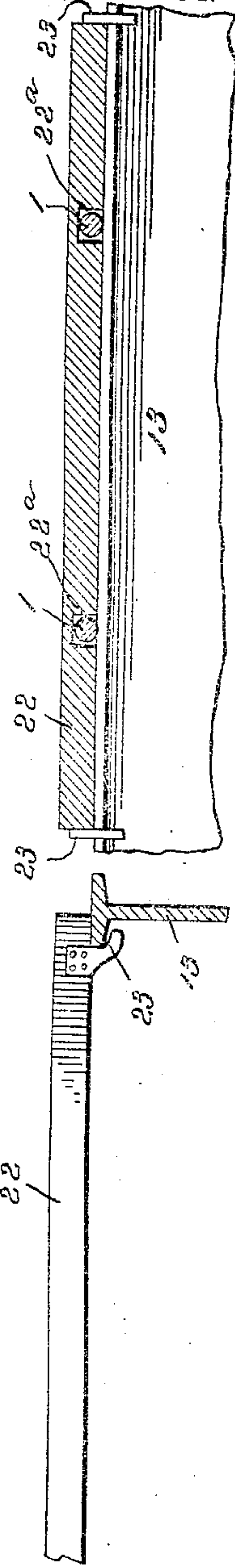


FIG. 2—

FIG. 3—



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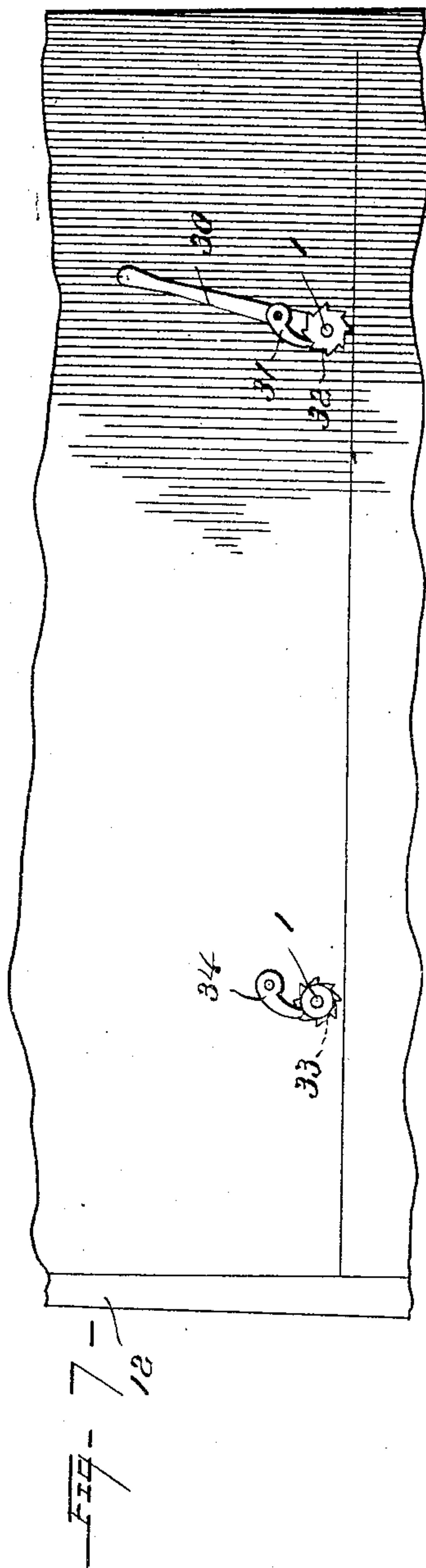
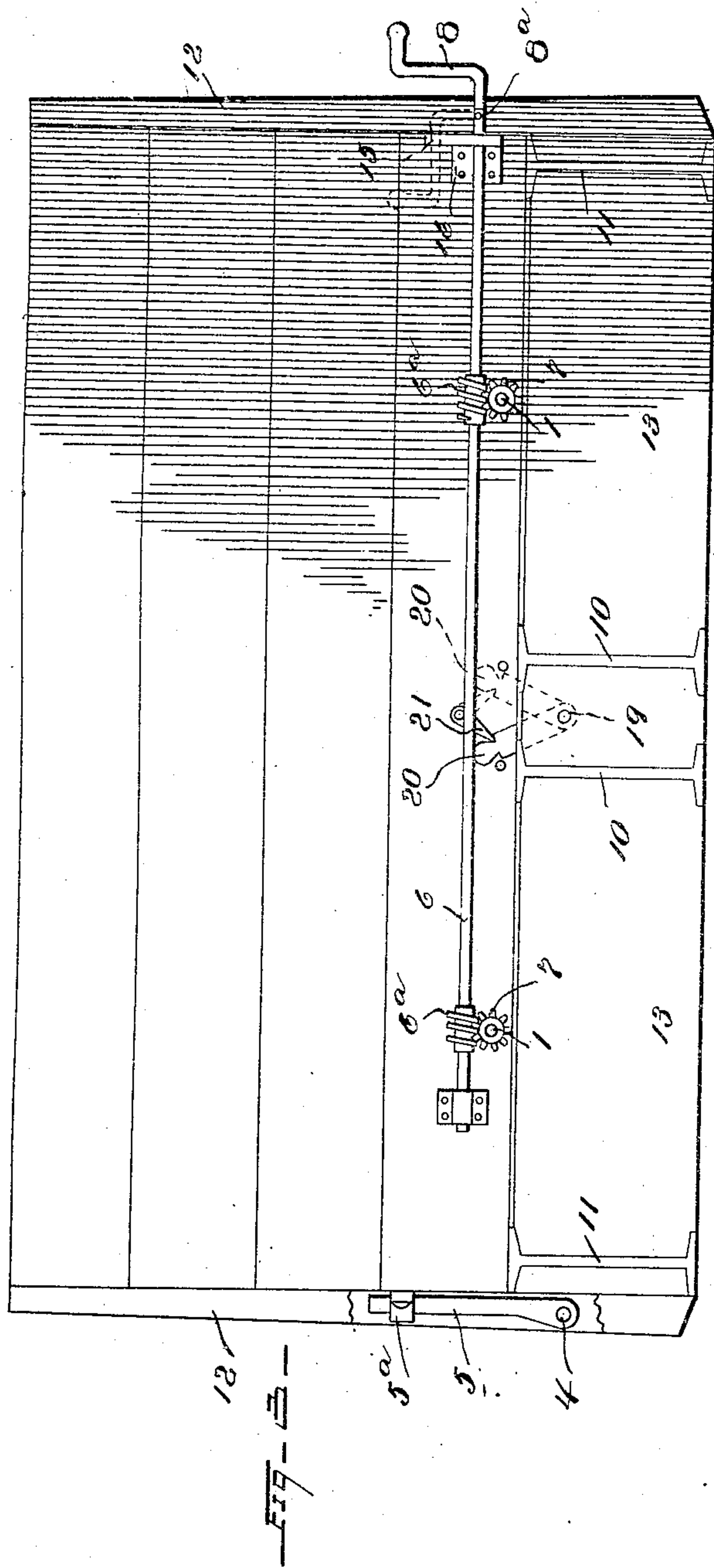
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3 SHEETS SHEET 3.



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UNITED STATES PATENT OFFICE.

RICHARD W. ERICSON AND JOHN V. ERICSON, OF CHICAGO, ILLINOIS.

DUMPING-CAR.

No. 810,524.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed July 31, 1905. Serial No. 272,002.

To all whom it may concern:

Be it known that we, RICHARD W. ERICSON and JOHN V. ERICSON, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Dumping-Cars, of which the following is a specification.

This invention is an improved dumping-car particularly adapted for railway use and having means for dumping loads to either the middle or the sides. The bottom is made with opposite side sections, which can be tilted in or out to dump to the center or the sides, as will more fully hereinafter appear.

In the accompanying drawings, Figure 1 is a side elevation of a car constructed according to the invention. Fig. 2 is a vertical cross-section. Fig. 3 is an end elevation. Fig. 4 is a plan. Fig. 5 is a detail showing a hinged or flexible connection between an end floor-section and a transom. Fig. 6 is a detail and cross-section of the same parts. Fig. 7 is an end view illustrating modified means for raising or lowering the bottom doors.

The frame of the car has continuous center sills 10 and short side sills 11 at each end. The side posts 12, or such of them as are located between the side sills at the respective ends, extend below the bottom and support the outer ends of the transoms 13, which are supported at the middle by the center sills.

The bottom sections or doors 3 are arranged on each side of the center sill and between the transverse sills 13, and these doors tilt in either direction to dump the load either to the center or to the sides. Said doors are supported by chains 2, connected to longitudinal shafts 1, which extend lengthwise of the car, and are supported at one end in bearings at 1^a in one of the cross-sills and extend at the other end beyond the end frame of the car, where they have pinions 7, which mesh with worms 6^a on the cross-shaft 6, which is mounted in bearings on the end of the car. This shaft 6 has a crank 8, whereby it may be turned. The crank 8 is hinged to the shaft at 8^a, so that it may be turned in and dropped into a notch at 15 in a bracket 16, which is bolted to the end of the car and also serves to support the shaft 6. The doors 3 are connected to the chains 2 at the middle, so that

they will swing in either direction with equal facility. The doors close at their inner edges against the side flanges 10^a at the top of the center sill, and at their outer edges they close under the side planks of the car. To support the inner edges of the doors, hooks 17 are provided. These hooks are hinged to the center sill and are locked under the edges of the doors by means of cam-arms 18, carried by a shaft 19, which extends lengthwise along the middle sill and has at the end a lever 20, whereby it may be turned. This lever is engaged and held in either position by a swinging latch 21, which engages a notch in either side of the lever. When the lever is swung in one direction, the cam-arms 18 turn against the hooks 17 and swing the same out under the edge of the doors and are held in this position by a latch and lever. When the inner edges of the doors are to be released to permit the center dump, the lever 20 is swung over to the other side, which turns the cam-arms 18 from behind the hooks and allows the hooks to swing back and the doors to drop, as indicated in dotted lines in Fig. 2.

To support and control the outer edges of the doors, shafts 4 are provided, extending lengthwise along the side of the car and supported by the side posts. These shafts have notched arms 4^a, which may be swung in or out—into or out of engagement—under the outer edges of the door. Each shaft has a handle 5, whereby it may be turned, and 5^a indicates a pivot-clip secured to the side of the car and which may be turned to hold the handle when it is turned in. To effect the side dump, the clip 5^a is turned up and the handle 5 pulled out. This rocks the shaft 4 and swings the arms 4^a out from under the doors, thereby releasing the outer edges thereof and allowing the same to drop and dump the load to the sides.

It will be seen that by the construction shown either a center or a side dump may be effected. The parts are not complicated, and the supporting and releasing devices for the doors are capable of easy and quick operation.

In order that the car may be used either as a flat-bottom or hopper-bottom car, means are provided for raising or lowering the end sections of the car-floor. To this end said

end sections (indicated at 22) are provided with a hinged or flexible connection, (see Fig. 5,) with the transoms 13 adjacent to the dumping-doors. Curved lugs 23 are secured to the side edges of the floor-sections and engage under the upper flange of the transoms 13, so that the floor-sections may be lifted or lowered. It is conveniently raised by a winding-drum 24 on the outside of the car, to which a crank may be applied. Connected to this drum is a rope 25, which passes over the pulley 26, set in a recess in the side of the car, near the upper edge thereof, and is attached at its other end to the floor-section. By means of the drum the floor-section can be raised when desired. The floor-sections 22 are grooved on the under side, as at 22^a, so as to let the shafts 1 pass through thereunder to the end of the car.

To hold the floor-sections up in raised position, a cross-piece 27 is provided. This fits between the sides of the car and may be held by bolts 28 at the end of the car, as shown at the right-hand end of Fig. 1, or it may be moved along and located under the upper end of the floor-section, as indicated at the left-hand end of the car, as shown in Fig. 1. In the latter position it supports the end of the floor 22 in raised position. Hinged to this cross-piece is a board 29, which when the cross-piece is at the end of the car hangs down beside said end and when the cross-piece is advanced covers the opening between the floor-sections and the end of the car, as illustrated at the left-hand end of the car, (shown in Fig. 1,) and also provides a platform or foot-piece for the trainmen to stand upon.

Instead of the worm-gear for raising the doors above described the devices shown in Fig. 7 may be used. This figure shows at one place a lever 30, mounted upon the end of the shaft 1 and provided with a pawl 31 to engage a ratchet-wheel 32 on said shaft, or, as shown at another place, the ratchet-wheel may have a block provided with a set of holes 33, into which a lever-bar may be inserted to turn the shaft, in which case a pawl 34 prevents back slip.

What we claim as new, and desire to secure by Letters Patent, is—

1. A dumping-car having doors in the bottom, a winding-shaft and means to turn the same, a cable connecting the shaft and the middle of the doors, to permit them to swing either way, and releasable means to support the doors at opposite edges thereof.

2. A dumping-car having doors in the bottom, hoisting devices having flexible connections to about the middle of the doors, constructed to raise and lower the same and to

allow them to swing either way, and means to release either of the opposite edges of the door.

3. A dumping-car having a row of doors in the bottom on each side of the middle, a winding-shaft extending across each row, chains connecting the shaft and the middle of the doors, and means to release either the outer or the inner edge of the doors, to effect either center or side dump.

4. A dumping-car having a row of doors in the bottom on each side of a middle sill, a winding-shaft extending lengthwise across each row of doors and having connections with the doors at about the middle thereof, so that they will swing either way, and means to hold either edge of the doors and to release the opposite edge.

5. The combination with a row of swinging doors in the bottom of a dumping-car, of a rock-shaft extending along the side of the car and having projecting rigidly therefrom a series of supporting-arms having notched ends engageable under the doors when closed, and disengageable therefrom to allow the doors to open.

6. The combination in a dumping-car, of a row of swinging doors in the bottom on each side of the middle, devices supported on the frame of the car under the middle of the floor thereof and between said doors and constructed to engage the adjacent edges of said doors and hold them closed, and means to simultaneously release said devices on both sides, to allow the doors to open.

7. The combination in a dumping-car, of a middle sill, a row of swinging doors in the bottom of the car on each side of the sill, latch devices carried on the sill and engageable with the inner edges of the doors to hold them closed, and a shaft extending along the sill between said devices and having cam-arms bearing against said devices to hold the same engaged, said shaft being provided with means to turn the same to release said devices.

8. A dumping-car having doors in the bottom which swing down to open, said doors having each a middle support, and releasable supports at both edges, either of which may be released, to dump toward the middle or the sides of the car.

9. A car having an end floor-section which may be raised or lowered to form either a hopper or flat bottom, and a cross-piece which extends between the sides of the car and which may be shifted under the floor-section to support the same in raised position.

10. A car having an end floor-section which may be raised or lowered to form either

a hopper or nat bottom, a cross-piece extending between the sides of the car at the upper edge thereof and shiftable along the same to support the floor-section, and a board hinged
5 to the cross-piece and arranged to hang down beside the end of the car when the cross-piece is shifted to said end, and to extend across the sides of the car when the cross-piece is shifted under the floor-section.

10 In testimony whereof we have signed our

names to this specification in the presence of the subscribing witnesses.

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JOHN V. ERICSON.

Witnesses:

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