

No. 862,247.

PATENTED AUG. 6, 1907.

C. A. HALLEEN.
OPERATIVE MECHANISM FOR DUMPING CARS.

APPLICATION FILED MAY 8, 1907.

2 SHEETS—SHEET 1.

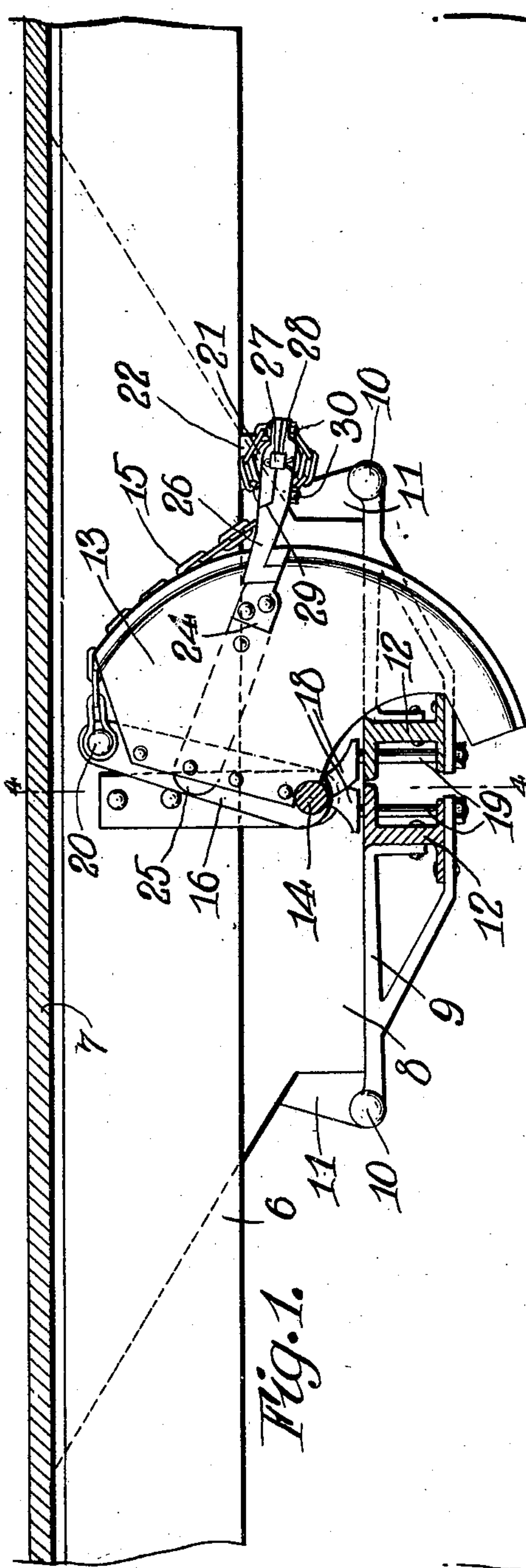


Fig. 1.

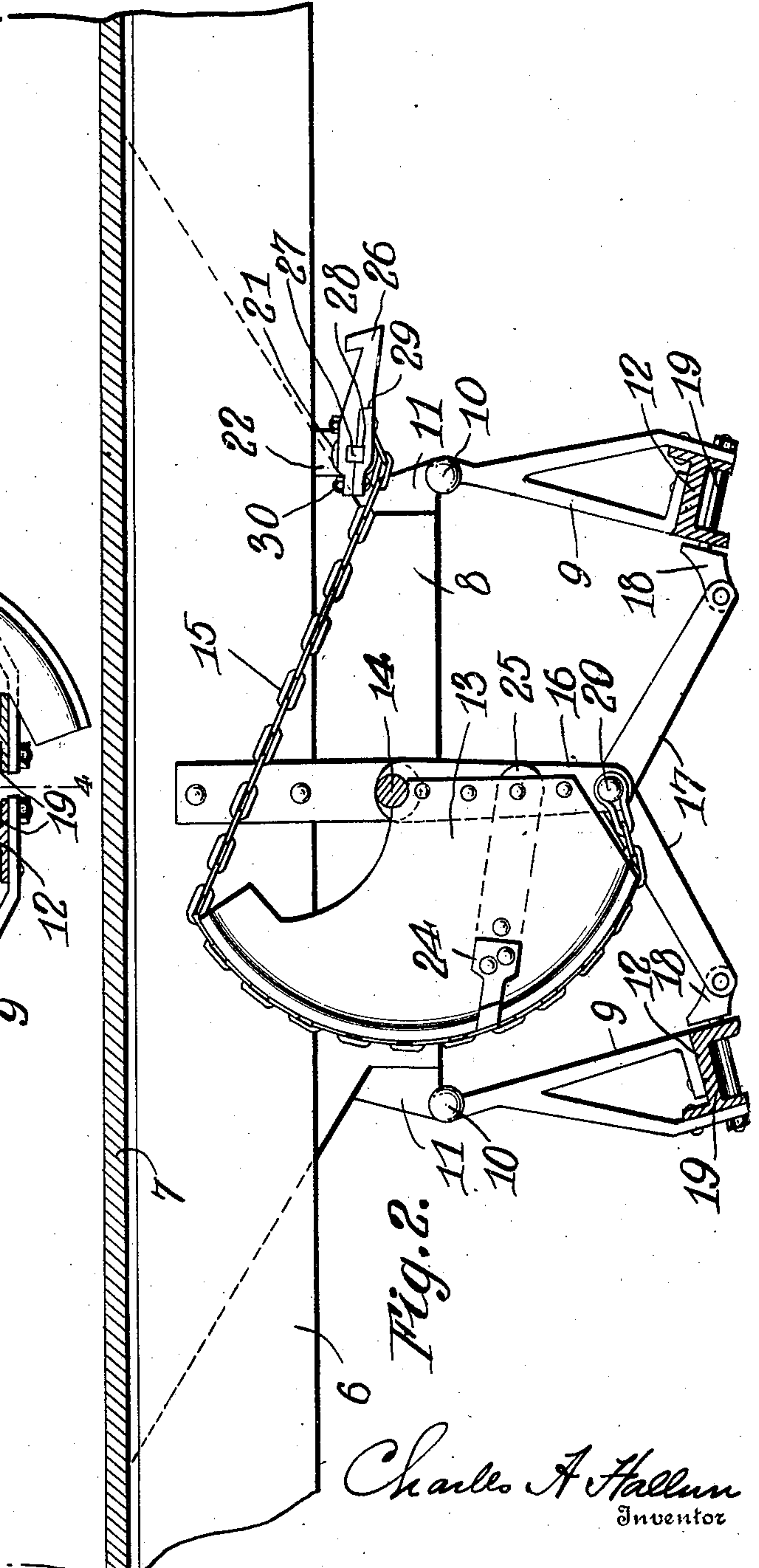


Fig. 2.

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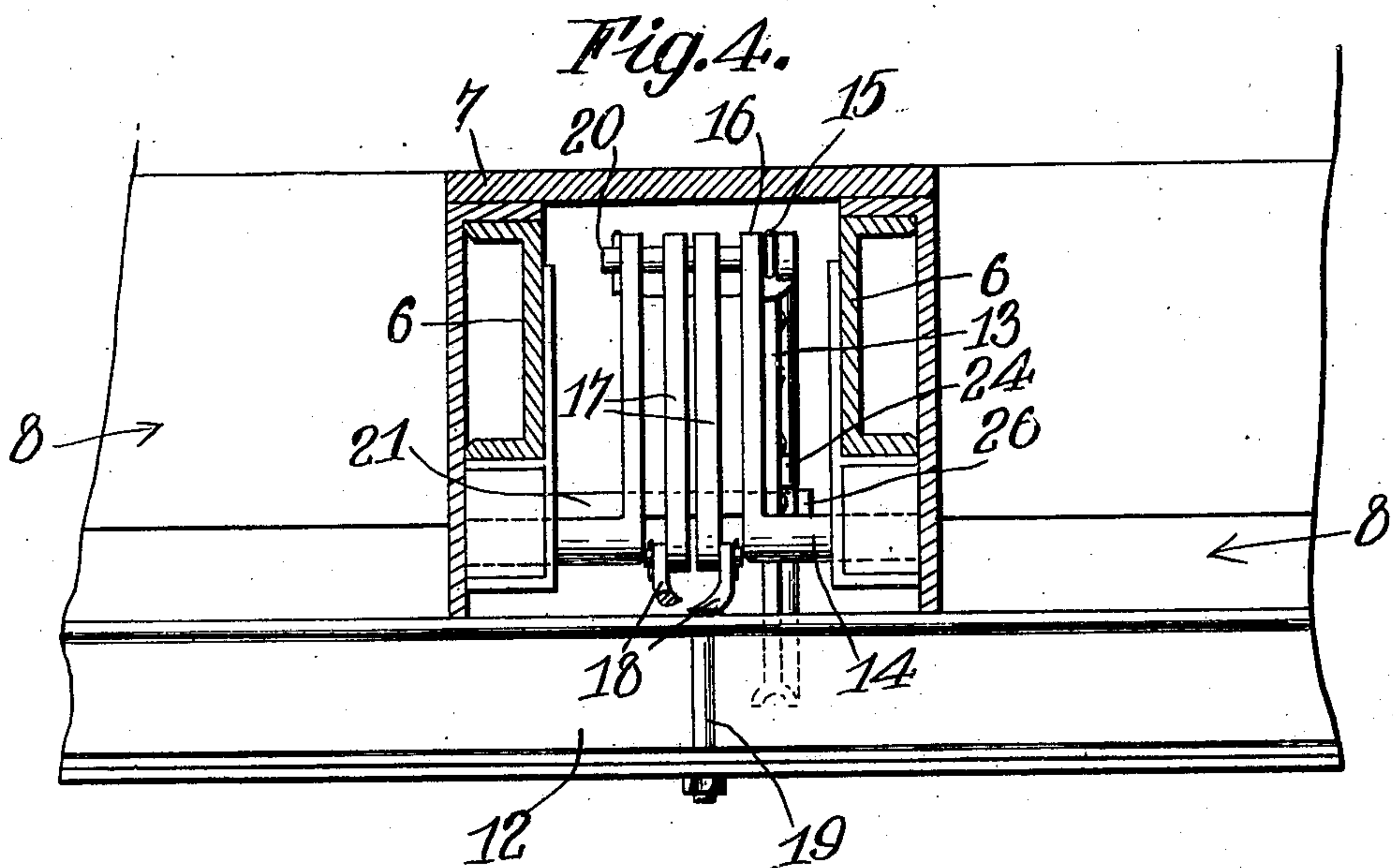
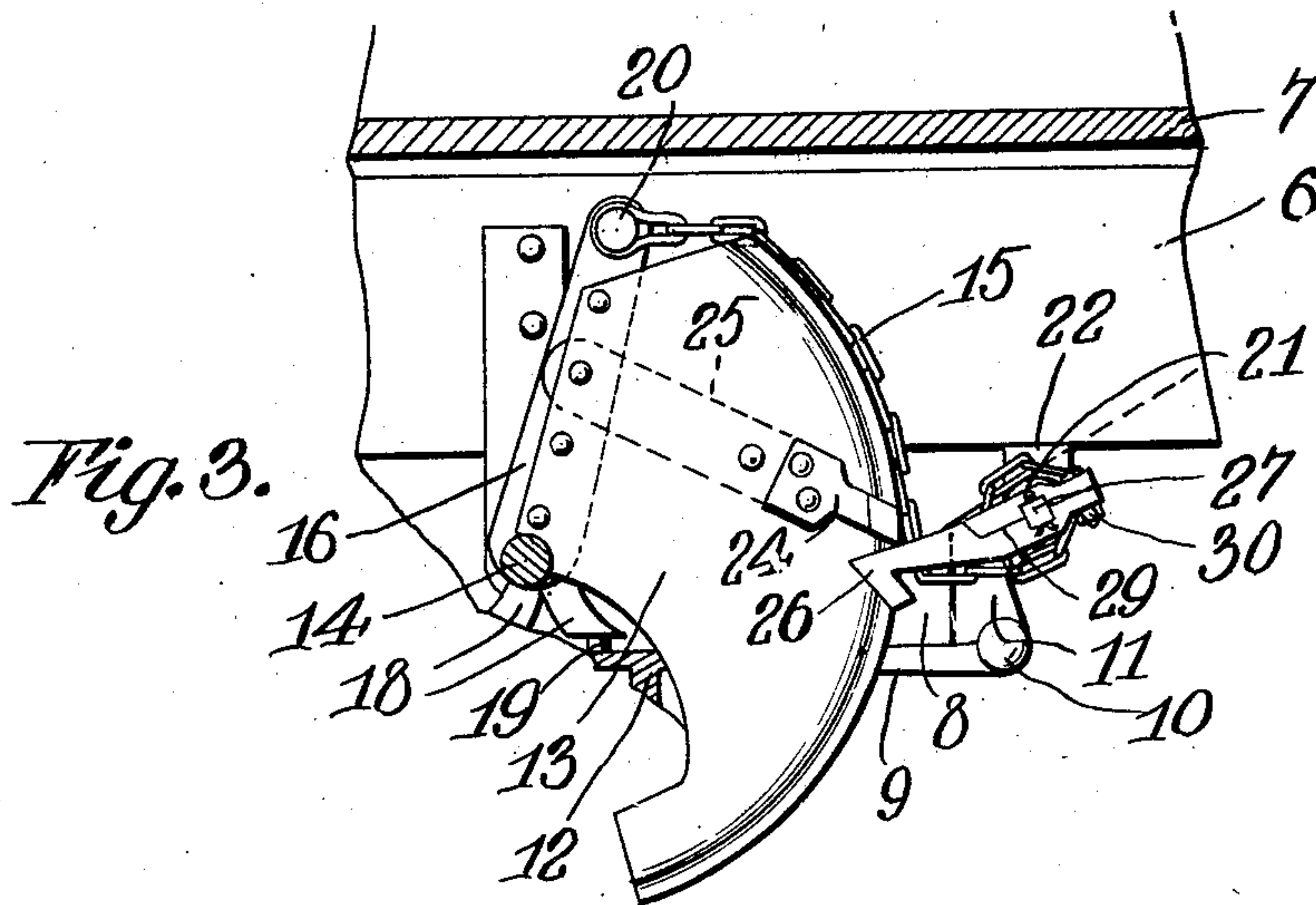
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UNITED STATES PATENT OFFICE.

CHARLES A. HALLEEN, OF ASHTABULA, OHIO.

OPERATIVE MECHANISM FOR DUMPING-CARS.

No. 862,247.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed May 8, 1907. Serial No. 372,540.

To all whom it may concern:

Be it known that I, CHARLES A. HALLEEN, a citizen of the United States, residing at Ashtabula, in the county of Ashtabula and State of Ohio, have invented
5 new and useful Improvements in Operative Mechanism for Dumping-Cars, of which the following is a specification.

This invention relates to an operating mechanism and latch for the swinging doors of hopper bottom cars,
10 and has for its object to provide improved means for opening and closing the doors and for holding the same open or closed, and especially for unlatching or releasing the devices which support the doors. This latter has hitherto been a matter of some difficulty or inconvenience, because of the imperfect means provided for
15 releasing the doors when it is desired to dump the car.

The invention is illustrated in the accompanying drawings, in which

Figure 1 is a longitudinal sectional view showing the
20 hopper of a car and the devices forming the subject of the present invention applied thereto, with the doors closed. Fig. 2 is a similar view with the doors open. Fig. 3 is a similar view showing the position of the parts in the act of releasing the doors. Fig. 4 is a vertical
25 cross section on the line 4—4 of Fig. 1.

Referring specifically to the drawings, 6 indicate the longitudinal car sills, 7 the floor of the car, and 8 the hopper in the bottom of the car. The pair of swinging
30 doors 9 open or close the bottom of the hopper and they are hinged at 10 to hangers 11 secured to the car frame. The car is preferably of the ordinary pressed steel construction, and the edges of the doors are strengthened by short I beams 12 extending across the same.

At 13 is indicated a segmental wheel or sheave, pivoted upon a stud 14 projecting from the wall of the hopper, and this segment is grooved at its outer edge to carry the operating chain 15. The segment is bolted or otherwise securely fixed at one end to an arm 16
40 which thus turns therewith and forms substantially a part thereof. This arm is connected by pivoted links 17 to ears 18 on the heads of bolts 19 which extend through and are secured to the flanges of the I beams 12 on the respective doors.

One end of the chain 15 is connected to the pin 20
45 which also connects the links 17 to the arm 16, and the chain extends thence around the segment to connection with a shaft 21 which is carried in hangers 22 secured to the car sills and which extends horizontally across under the sills adjacent to the hopper.

50 In the operation of the mechanism thus far described, the chain when wound on the shaft 21 (which will be provided with a crank at its end whereby it may be turned) will turn the segment and by means of the con-

necting links will lift the door. When the doors are closed the arm 16 will pass slightly beyond the vertical
55 center line and will be automatically locked until the segment is turned back to bring the arm 16 on the other side of the center line.

In order to prevent accidental movement of the segment when the doors are closed, which might be caused
60 by the pounding or jolting of the cars or otherwise, I provide the segment with a lateral projecting lug 24 bolted to the side of the segment. This lug may if desired be connected to the arm 16 by bar 25 placed within or between the plates of the segment. The lug 24 is
65 adapted to be engaged by a hook 26 at the end of a crank arm 27 carried by the shaft 31. A convenient and preferred means of attaching said arm 27 is to square the end of the shaft as indicated at 28 and split the shank of the arm, as indicated at 29, the sections being united
70 and clamped upon the squared part of the shaft by bolts 30. This allows convenient and quick repair in case of breakage.

The latch mechanism operates as follows: When the doors are closed, as shown in Fig. 1, the turn of the shaft
75 21 to wind the chain thereon brings the arm 27 to position where its hook 26 engages over the lug 24, the parts being properly proportioned and positioned to have this result. When the hook is so engaged the segment is latched and cannot accidentally swing over and back
80 to dump the load. When it is desired to dump the car, the shaft 21 is turned back to slack the chain and the turn thereof lifts and disengages the hook 26 from the lug 24 and swings the arm 27 around until it comes up under the lug 24, as shown in Fig. 3, and continued
85 turn of the shaft causes said arm to act as a lever under the lug, to lift the same, thereby turning the segment until the arm 16 passes the vertical line or center, when the doors will immediately drop by gravity and dump the contents of the car. The doors may then be closed
90 by turning the shaft in the opposite direction, to original position.

I claim:

1. In a car door operating mechanism, the combination with a door and lifting devices including a turning member
95 and a winding shaft, of a latch carried by the shaft and engageable with the member to prevent turn thereof.

2. In a car door operating mechanism, the combination with a door, and lifting devices including a winding shaft and chain, and a turning member connected to the chain
100 and to the door, of a latch carried by the shaft and engageable with the member when the chain is wound.

3. In a car door operating mechanism, the combination with a door, and lifting devices including a winding shaft and chain, and a pivoted segment over which the chain
105 passes and to which the chain and door are connected, the segment having a projecting lug at the side thereof, of a latch carried by the shaft and engaged with the lug when the chain is wound.

4. In a car door operating mechanism, the combination with a door, of a winding shaft having connections to the door including a chain and a pivoted segment over which the chain passes, the segment having a lug projecting from its side, and an arm extending from the shaft and arranged to strike the lug and turn the segment, when the shaft is turned to unwind the chain.
5. In a car door operating mechanism, the combination with a door, of a winding shaft having connections to the door including a chain and a pivoted segment over which the chain passes, the segment having a lug projecting from its side, and an arm extending from the shaft and arranged to strike the lug and turn the segment when the shaft is turned to unwind the chain, and having a hook arranged to engage the lug and latch the segment when the chain is wound.

6. In a car door operating mechanism, the combination of a turning segment connected to the doors, a winding shaft, and a chain which extends over the segment and is connected thereto and to the shaft.

7. In a car door operating mechanism, the combination of a turning arm and segment beside the same, the arm being connected to the doors, a winding shaft, and a chain connected to the arm and to the shaft and extending over the segment.

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

CHARLES A. HALLEEN.

Witnesses:

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EDITH D. COMER.