No. 755,268. PATENTED MAR. 22, 1904.

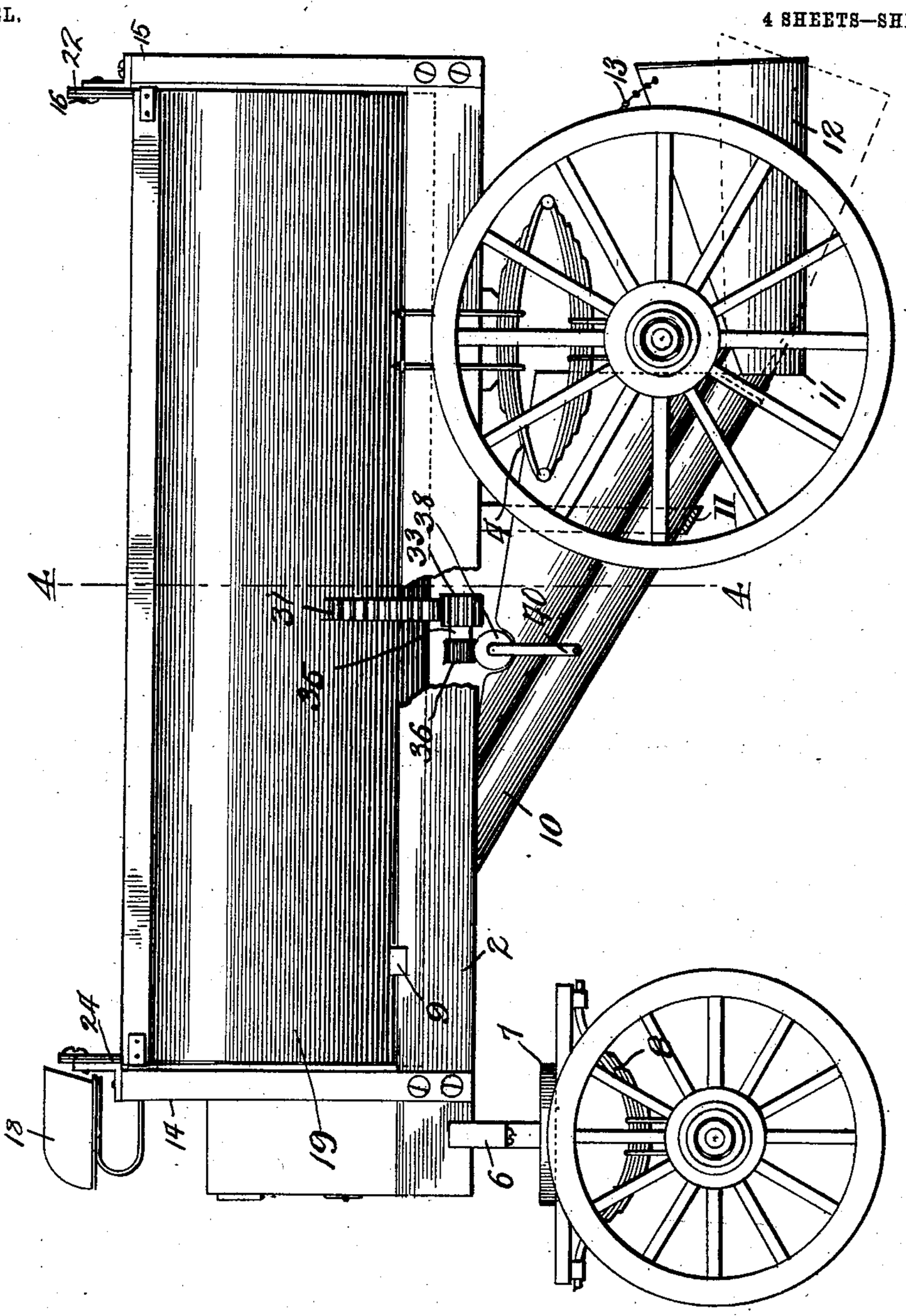
F. I. E. AKERS.

DUMPING VEHICLE.

APPLICATION FILED MAY 29, 1903.

NO MODEL. 4 SHEETS—SHEET 1.

Fig. 1.



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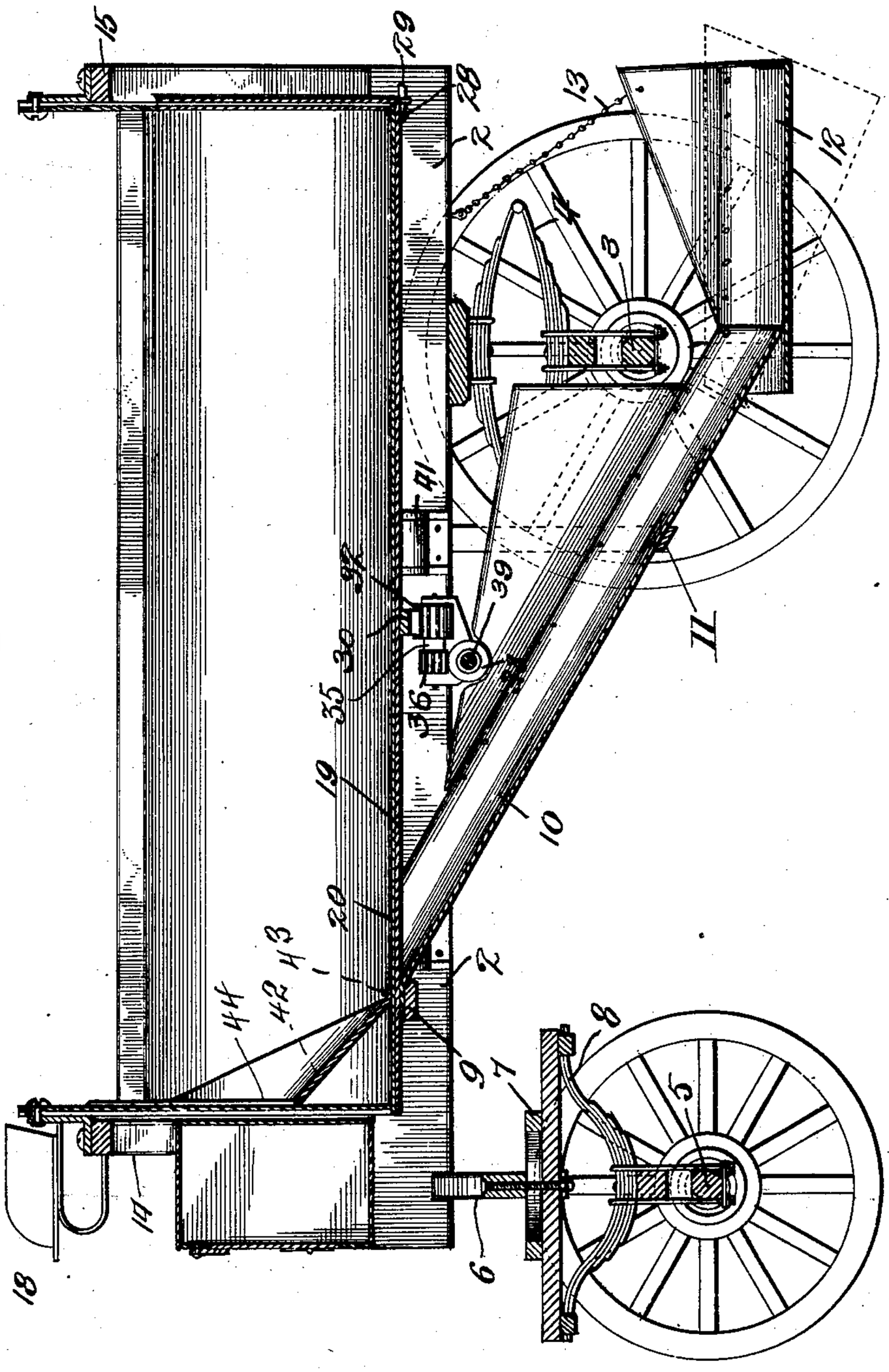
NO MODEL. 4 SHEETS—SHEET 2.

Fig. 2.



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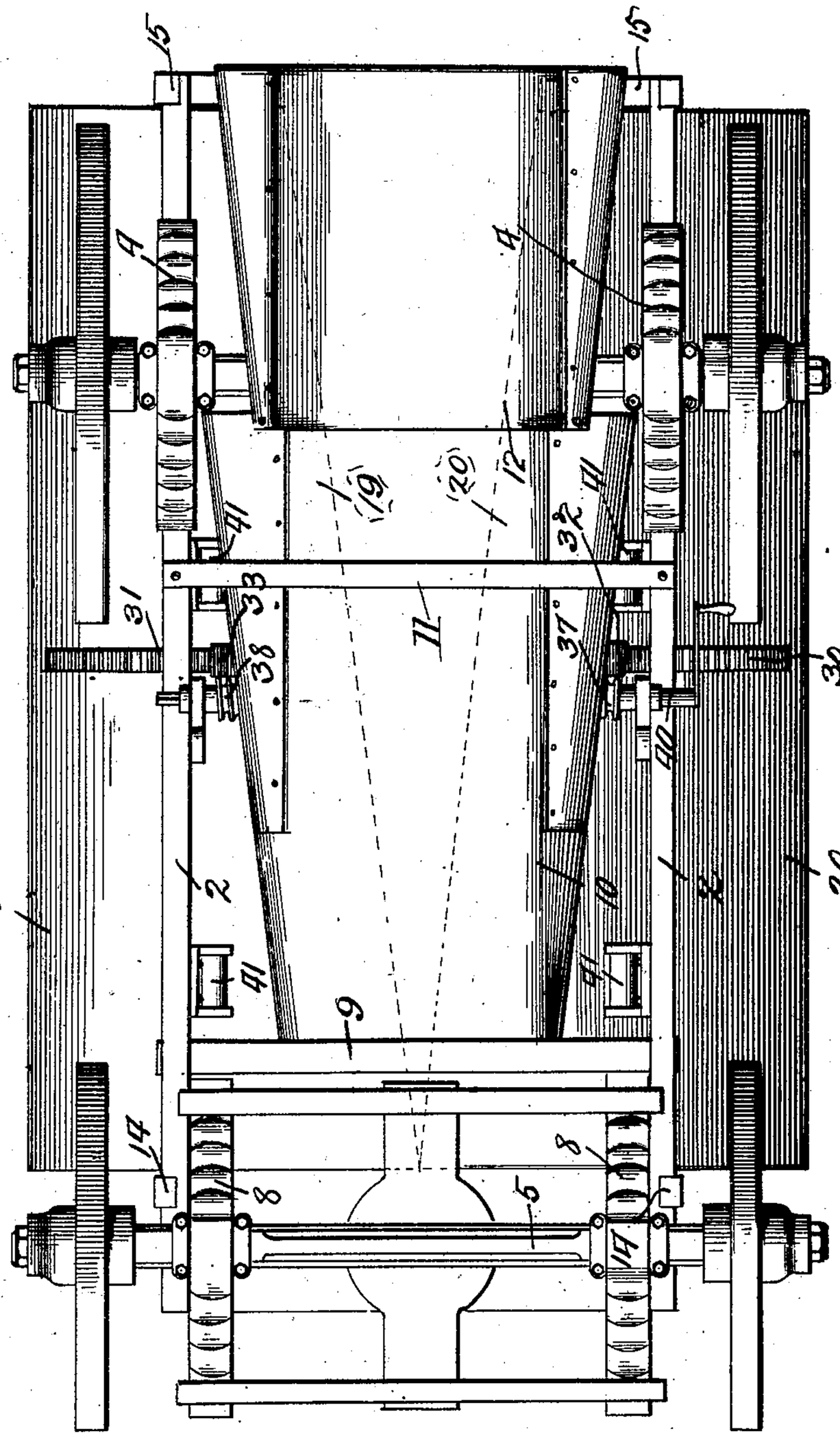
NO MODEL. 4 SHEETS—SHEET 3.

Fig. 3.



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NO MODEL. 4 SHEETS—SHEET 4.

Fig. 3.

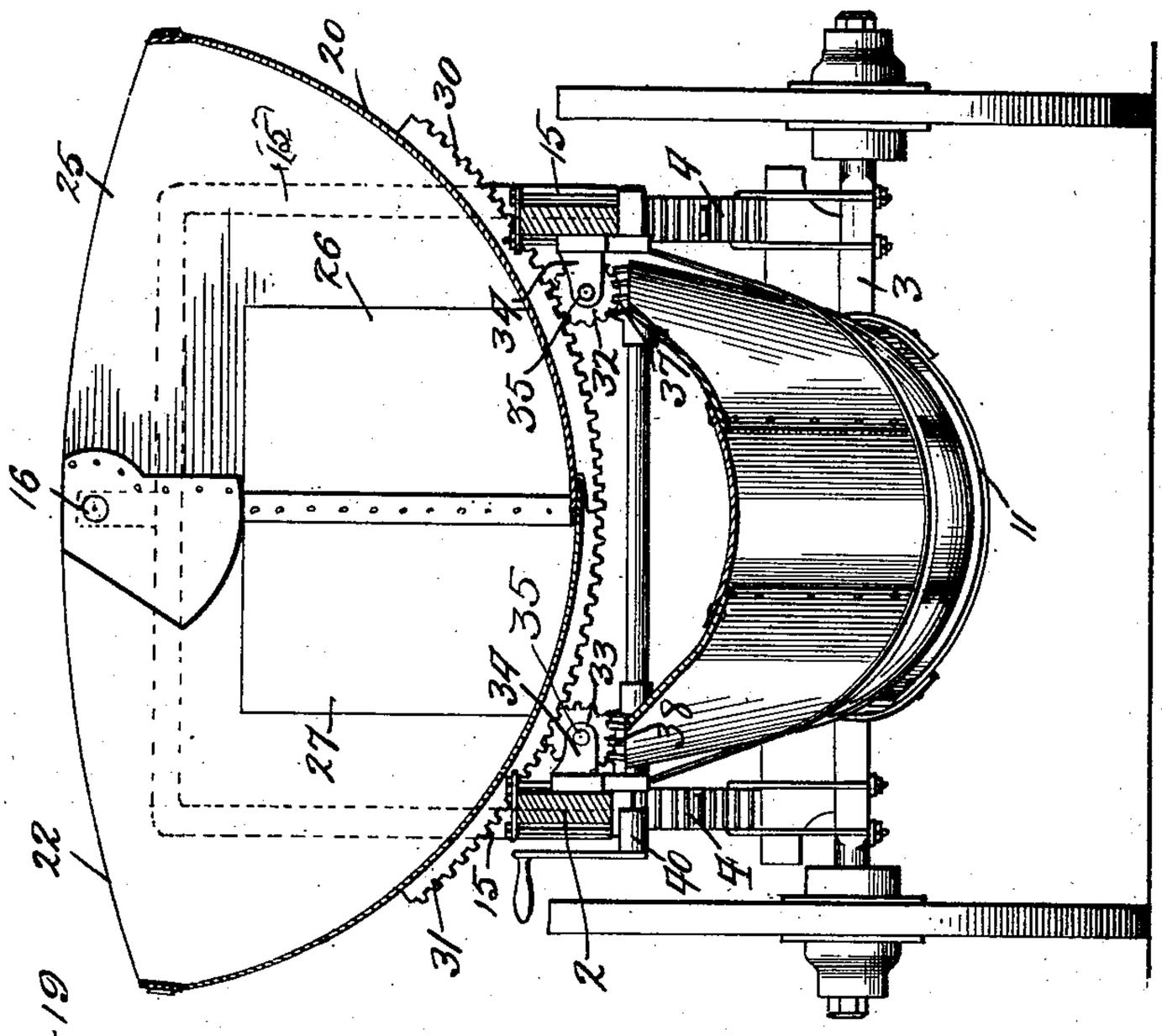
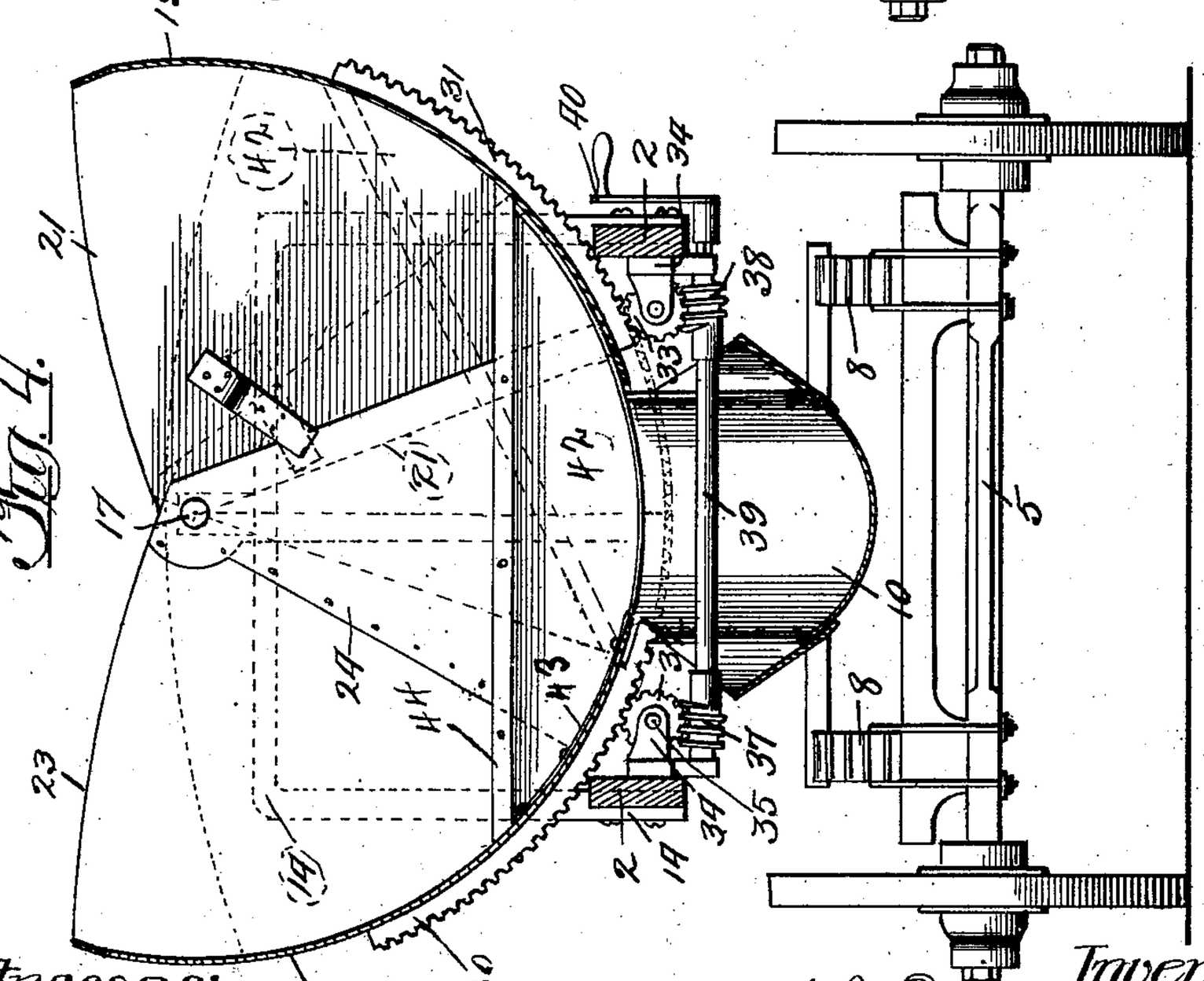


Fig. 4.



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UNITED STATES PATENT OFFICE.

FREDERICK I. E. AKERS, OF CHICAGO, ILLINOIS.

DUMPING-VEHICLE.

SPECIFICATION forming part of Letters Patent No. 755,268, dated March 22, 1904.

Application filed May 29, 1903. Serial No. 159,241. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK I. E. AKERS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dumping-Vehicles, of which the following is a full, clear, and exact specification.

My invention relates to that class of dumping-vehicles an example of which is shown in my United States Patent No. 677,847, issued July 9, 1901, in which the body of the vehicle is constituted of two halves pivoted together and having their sides and bottom struck on coincident parts, so as to open or separate longitudinally of the body to permit the contents to fall into a chute carried under the body. In vehicles of this character it is found to be essential to give the chute a greater degree of inclination than would be obtained if the chute extended from end to end of a body of the maximum or ordinary length, and hence my present invention has for one of its important objects to maintain the requisite degree of inclination of the chute and have the body of the maximum length, while at the same time causing the material in the end of the body beyond the end of the chute to discharge into the chute with the necessary degree of freedom.

A further object of my invention is to cause the two halves of the body to separate gradually from end to end thereof and along a line extending directly over the center of the chute.

With these ends in view my invention consists in certain features of novelty in the construction, combination, and arrangement of parts by which the said objects and certain other objects hereinafter appearing are attained, all as fully described with reference to the accompanying drawings and more particularly pointed out in the claims.

In the said drawings, Figure 1 is a side elevation of my improved dumping-vehicle, partially broken away. Fig. 2 is a vertical longitudinal sectional view thereof. Fig. 3 is a bottom plan view. Fig. 4 is a transverse section on the line 4 4, Fig. 1, looking toward the front and showing the body open in full lines and closed in dotted lines; and Fig. 5 is a similar section looking toward the rear, showing the body closed.

1 2 are two side bars of the frame, which are supported at their rear ends on the rear axle 3 by means of springs 4 and at their forward ends upon the front axle 5 by means of sleeper 6 and fifth-wheel 7, between which latter and the axle are interposed springs 8.

Extending across and secured to the bars 1 2 is a cross-bar 9, to which is secured the upper end of a chute 10, whose lower end is hung from the bars 1 2 by one or more straps 11, and thereby held at a sufficient inclination to induce the material discharging from the body to slide down and out. On the lower end of the main portion 10 of the chute is preferably hinged a chute extension 12, which when the chute is not in use is suspended from the side bars 1 2 by chains or other connections 13, and thus held from dragging on the road-bed.

Mounted on the front and rear ends of the side bars 1 2 are two arches 14 15, respectively, the latter of which serves as a means for supporting a pivot 16, from which the two halves of the body are suspended, while the inner or front arch serves as a means for supporting a similar pivot 17, from which the forward ends of two halves of the body are suspended, and, if desired, also serves as a means of supporting the seat 18.

19 is the bottom of one half of the body, which is struck on the arc of a circle, and 20 is the bottom of the other half, which is also struck on the arc of a circle and is concentric with and adapted to slide over the bottom 19 when the two halves are brought together. The inner lower edges of these two bottoms 19 20 are formed on an acute angle to each other, as shown in dotted lines in Fig. 3, with their wider and converging ends at the front end of the wagon, so that as the bottoms 19 20 are rotated on their pivots in one direction their lower edges will begin to separate at the back end of the body and gradually open along a line extending directly over the center of the chute 10 until the triangular opening thus formed reaches the forward end of the body, whereupon all of the contents on the bottoms 19 20 will slide down and out, discharging into the chutes 10 12 and thence onto the

ground or into the coal-hole into which the hinged section 12 may be extended.

The forward end of the bottom 19 is secured to a segmental end member 21, which is supported on the pivot 17, and the after end is secured to a similar member 22, supported on pivot 16. The bottom 20 at its forward end is secured to a segmental member 23, which is as much wider than the member 21 as the space left between the forward ends of the bottoms 19 20 when they are open, so that the member 23 will overlap the member 21 when the bottom is open and prevent the contents from escaping through the forward end of the wagon. For the sake of having the forward end of the wagon flush on the outside the end member 23 is composed of two segmental portions secured together by rivets 24 or other means, the outer portion of the segmental end 23 being the same in dimensions as the member 21, excepting that it is struck on a slightly less radius to permit the bottom 20 to pass over the bottom 19. The after end of the bottom 20 is secured to a segmental end piece 25, which is supported from the pivot 16 and is of substantially the same proportion as segment 22, excepting that it is struck on a slightly less radius, and this end portion 25, as well as the end portion 22, is provided with a door. These are shown at 26 27, respectively, and are hinged at their outer edges to the members 22 25, respectively, so that, if desired, the wagon may be unloaded from the tail end in the ordinary way without opening it at the bottom; otherwise the two doors constitute parts of and move with the end members 22 25, respectively, and when not in use are held closed by hasps 28 and staples 29, one pair for each door.

30 31 are segment-racks secured to the under sides of the bottoms 19 20, respectively, and with these respectively engage two pinions 32 33, mounted in bearings 34 on the inner sides of the bars 1 2 on shafts 35, which carry worm-wheels 36, engaging with worms 37 38, respectively, on a transverse shaft 39, provided with a crank 40, worms 37 38 being right and left, so that when the crank is turned the bottoms 19 20 will be turned upwardly or downwardly on their pivots 16 17, as desired.

41 represents rollers mounted on the inner sides of the bars 1 2 for supporting the bottom members 19 20 at a point intermediate of the pivots 16 17.

As more clearly appears in Fig. 2, the forward end of the wagon-body extends a considerable distance beyond the upper end of the chute 10, so that the body may be of the maximum capacity, while the chute has sufficient pitch to induce the contents discharging therein when the body is opened to slide down and out. In order, however, that the contents in the end of the body beyond the end of the chute may also be discharged into the chute by the same operation which causes the balance of the contents to discharge into the chute such extension of the body is provided with means for inducing the contents contained therein to slide into the chute, and this means preferably consists of a segmental plate or incline 42, which is curved at its lower edge on an arc concentric with the bottom of the body and is inclined from a point just above the forward end of the chute 10 to the forward end of the body, so as to bridge over the space between the divisions of the body when the latter are separated and to permit the material from discharging directly onto the ground. This segmental incline 42 may be secured in place in any suitable way—such, for example, as by flanging its lower end, as shown at 43, and riveting the same from the end of the incline to the edge of the bottom section 20 and flanging the upper edge, as shown at 44, and riveting the same from the same end as far as the inner or lower edge of the end piece 24, the opposite extremity of the segmental incline 42 being unsecured and lapping over the bottom 19 and segmental end member 21, the arrangement being such that when the body-divisions are separated, as shown in Fig. 4, the incline 42 will stand in a horizontal position, as shown in full lines in said figure, it assuming the position shown in dotted lines when the body is closed.

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

1. In a dumping-vehicle, the combination of a body divided longitudinally and having its divisions separable from each other to form an opening between them, an inclined chute arranged under the body, and an incline secured in the end of the body, to one of its divisions only and overlapping the other, for inducing the contents to slide toward said chute.

2. In a dumping-vehicle, the combination of a divisible body of semicylindrical form in cross-section, a chute arranged under said body, means for separating the divisions of the body, and means in one end of the body for working the contents longitudinally thereof toward the chute.

3. In a dumping-vehicle, the combination of a semicylindrical divisible body, a chute arranged under the body, means for moving the divisions of the body relatively in a transverse direction, and means operatively connected therewith in one end of the body for simultaneously working the contents in that side toward said chute.

4. In a dumping-vehicle, the combination of a semicylindrical divisible body, a chute arranged under the body, and an incline secured within the body to one end of one of the divisions thereof and overlapping the other division for working the contents toward said chute.

5. In a dumping-vehicle, the combination of a semicylindrical divisible body, a segmental inclined plate secured in one end of the body to one of the divisions thereof and overlapping the other of its divisions, contiguous to the bottom of the body, and an inclined chute arranged below the body and extending from a point contiguous to said plate.

6. In a dumping-vehicle, the combination of a body comprising two sections, each having its bottom struck on the arc of a circle and relatively movable, the inner lower edges of both of said bottom portions being formed at an angle to the longitudinal axis of the body, so that when the divisions of the body separate the space between them will be equally divided down the center of the body.

7. In a dumping-vehicle, the combination of a body comprising two relatively movable sections, the lower inner edges of both of which extend at an angle to the longitudinal axis of the body, and converging toward the forward end of the body, so that the separation of the divisions of the body will commence at the rear end of the body.

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