No. 677,847. Patented July 9, 1901.

F. I. E. AKERS.

DUMPING VEHICLE.

(Application filed Sept. 22, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

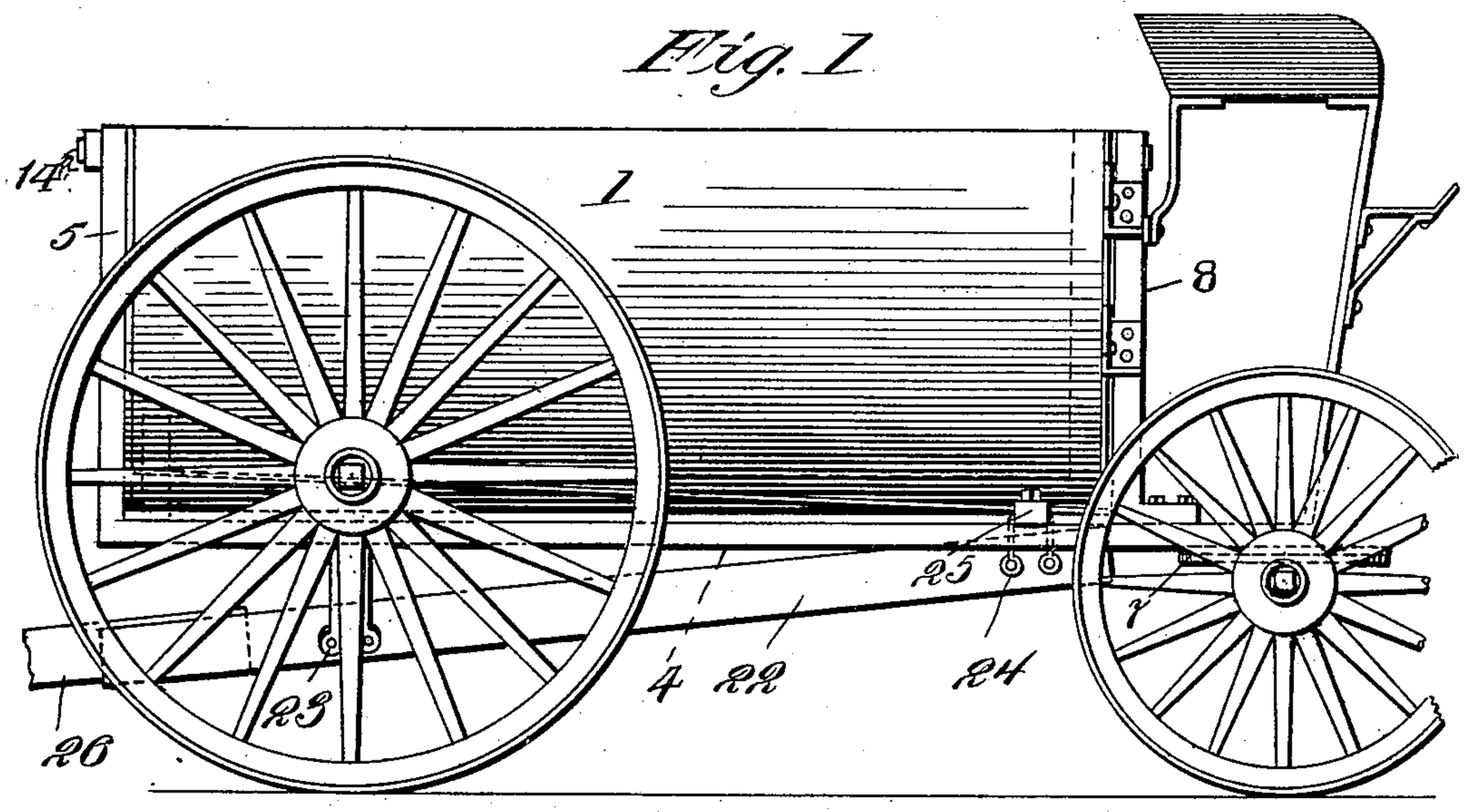

Fig. 2.

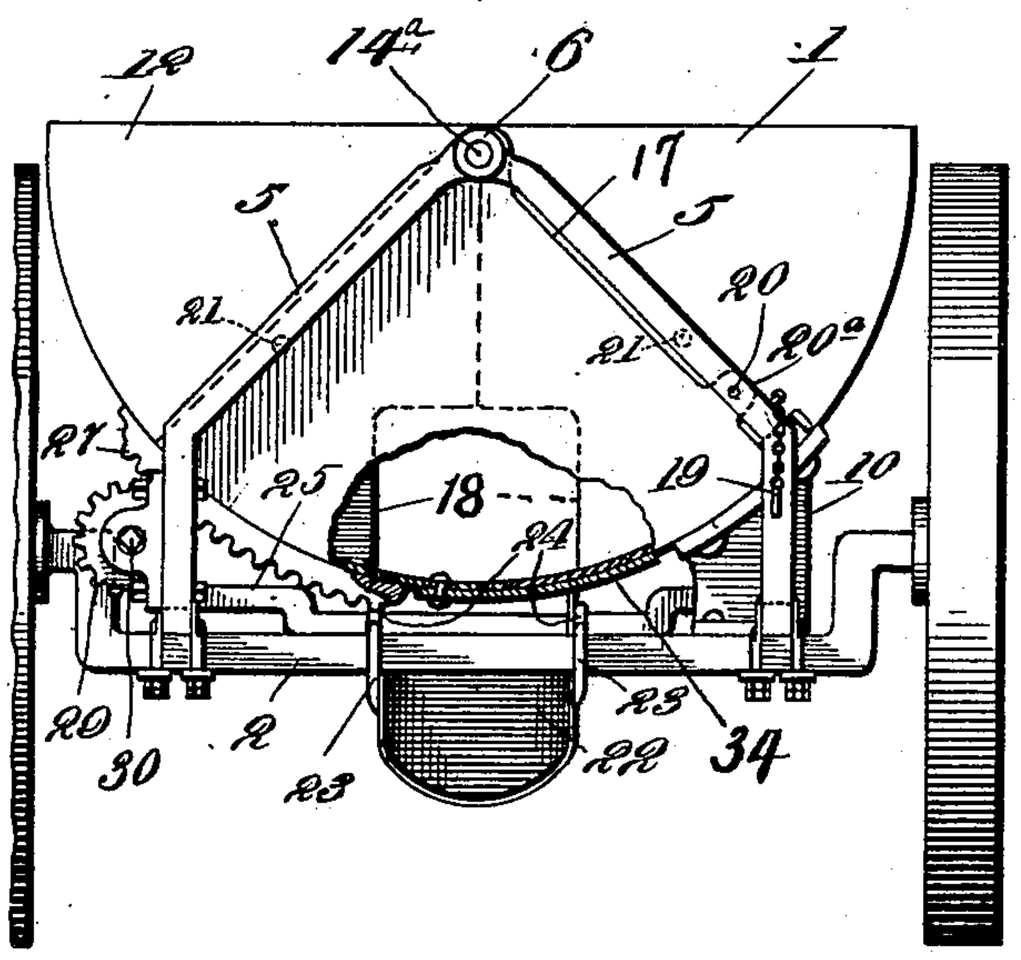

Fig. 3.

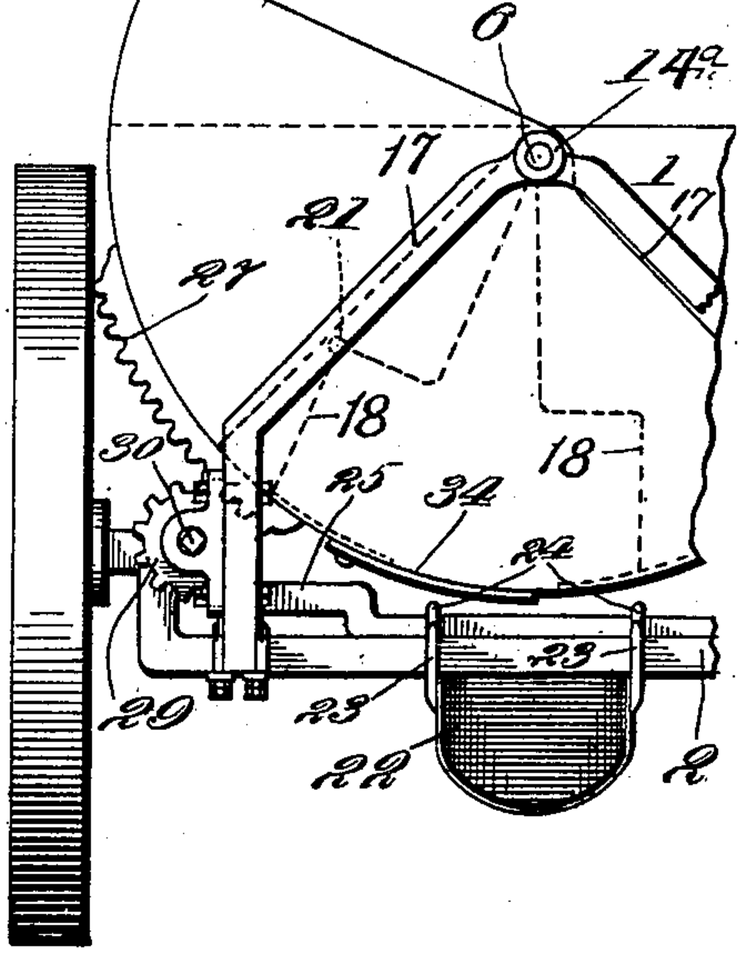

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Fig. 4.

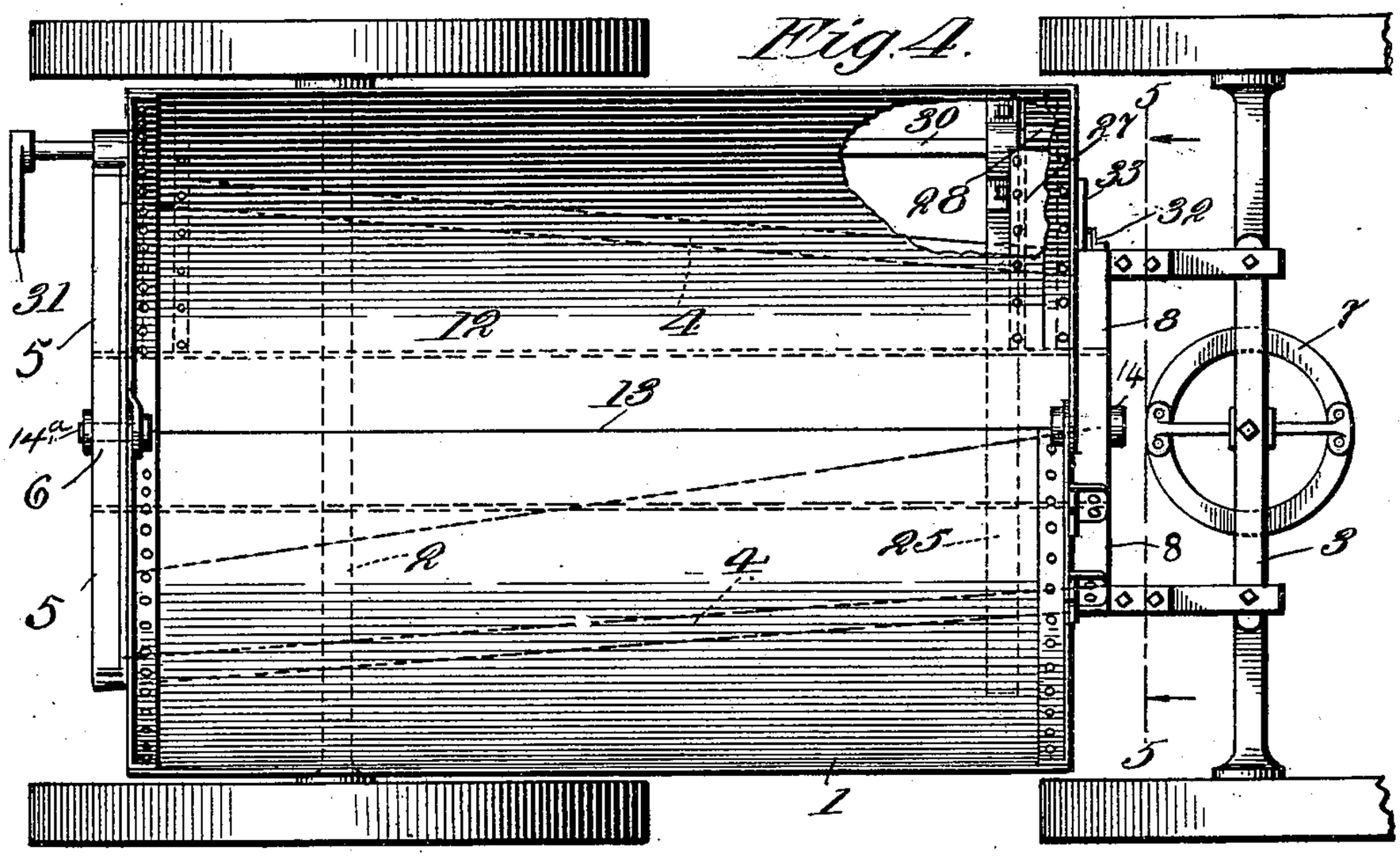


Fig. 5.

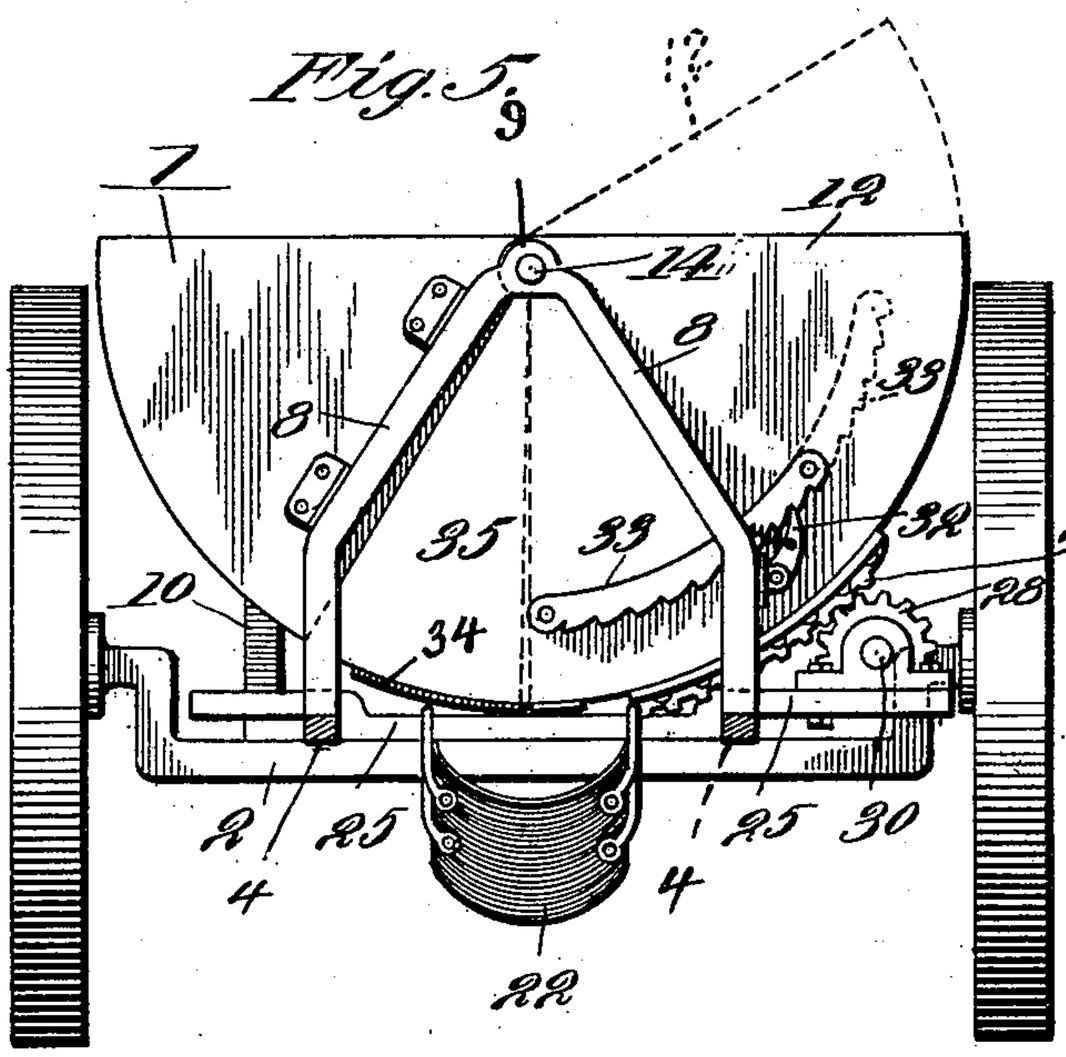
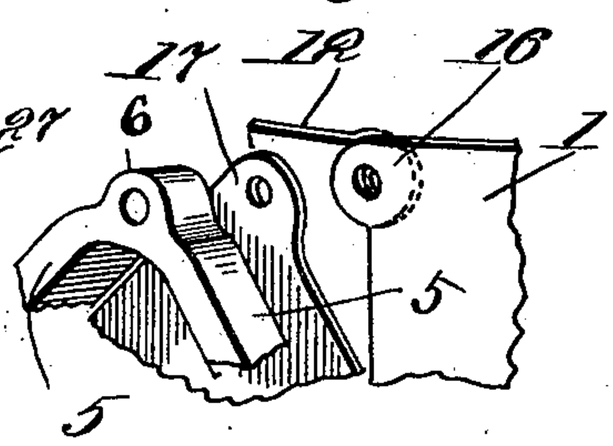


Fig. 6.



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UNITED STATES PATENT OFFICE.

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

DUMPING-VEHICLE.

SPECIFICATION forming part of Letters Patent No. 677,847, dated July 9, 1901.

Application filed September 22, 1900. Serial No. 30,759. (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 wagons and other vehicles adapted to dump their contents without the body being necessarily tilted; and it has for its primary object to provide improved means whereby the entire contents of the vehicle may be allowed to gradually discharge by force of gravity in such a way that the same may be caught in a gravity or other suitable chute and conducted to the desired point without other handling.

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 object 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 drawings, Figure 1 is a side elevation of my improved vehicle or wagon. Fig. 2 is a rear end elevation thereof, showing a portion of the body broken away. Fig. 3 is a rear end elevation showing the movable section of the body slightly raised. Fig. 4 is a plan view with a portion of the bottom broken away. Fig. 5 is a transverse section taken on the line 5 5, Fig. 4; and Fig. 6 is a perspective view of the joint or point of hinge at the rear end of the body-sections, the tail-gate, and the supporting-standards.

In carrying out my invention I employ a body composed of two sections divided from each other longitudinally along the bottom of such body, and at least one of these sections is movable with relation to the other, so that an opening may be formed along the bottom of the body to permit the contents to discharge into a chute or trough thereunder for receiving the same. These two body-sections have sloping bottom portions and when arranged together preferably constitute a semi-cylindrical body. 1 represents one of these sections, which is preferably fixed and supported in any suitable way upon the axles 2 3. For this purpose I have shown a pair of reach beams or rods 4, which are supported at their rear ends upon the rear axle 2 and have upwardly-extending standards 5, brought together in the form of a hub or trunnion support at 6. The forward ends of the reaches 4 are supported by the fifth-wheel 7 upon the front axle, and these ends also have upwardly-extending standards 8, brought together at 9 in the form of a hub or trunnion support. The fixed body-section 1 is secured to the rear axle 2 by means of a standard or bracket 10 and to one of the standards 8 by means of angle-plates 11, or any other suitable means for the purpose may be resorted to.

The movable section 12 of the body is pivoted so as to rotate to and from the fixed section 1 on the arc of a circle, and when permitted to descend to the limit of its downward motion the edge thereof comes into close contact with the lower edge of the section 1 and closes the opening at the bottom of the body. The line of division between the two sections and these two abutting edges is represented by the line 13 in Fig. 4, which extends longitudinally of the body from end to end, it being understood that the end walls of each of the sections 1 and 12 are of segment shape, so that both ends of the body are closed when the sections are together. The movable section 12 is mounted at its forward end upon a trunnion 14, which passes through trunnion-support 9, and at its rear end on trunnion 14^a, passing through trunnion-support 6. This trunnion 14^a, if desired, may also pass through an ear 16 on the fixed section 1 for supporting the latter at its upper inner corner and to also constitute a support and pivot for a segmental tail-gate 17, which overlaps an end opening 18, formed by cutting away the two contiguous edges of the rear end walls of the body-sections 1 12, so that when desired the wagon may be unloaded in the usual way by simply lifting or rotating the tail-gate 17 on its pivot until the opening 18 is uncovered a sufficient extent to permit of the insertion of a shovel. This tail-gate 17 is also extended considerably over the end wall of the movable section 12, as shown in Fig. 3, so that the end opening of the body will not be uncovered before the movable section 12 has raised a sufficient distance to avoid end discharge

while the bottom discharge is being made. If desired, the tail-gate 17 may be provided with any suitable locking means, such as a pin 19, adapted to be inserted through a hole 20 in one of the standards 5 for locking the tail-gate with relation to the fixed section 1, the edge of the tail-gate having a perforated ear 20^a, and when it is desired to hold the tail-gate open the pin 19 may be inserted through a hole 21 in the tail-gate when the latter comes opposite the hole 20 in the standard.

Arranged under the body, directly in line with the division-line 13, is an inclined chute or trough 22, which is shown as supported by hangers 23 from the rear axle and hangers 24 from a cross-beam 25 on the reaches 4. This trough or chute has sufficient pitch or inclination to induce the contents of the wagon—such as coal, &c.—to gravitate therefrom, and, if desired, it may be provided with a telescopic extension 26, whereby the material descending along the chute may be conducted to a coal-hole or other desired place.

The movable section 12 may be raised with relation to the fixed section 1 by any suitable mechanism. For this purpose I have shown each end of the section 12 provided with a curved rack-bar 27, secured thereto and engaging with pinions 28 29, respectively, at the forward and rear ends of a longitudinal shaft 30, mounted on cross-beam 25, and one of the standards 5, the rear end of the shaft 30 having a crank 31, so that it may be rotated as desired for raising the section 12. The section 12 is held at the point to which it is lifted by means of a dog or pawl 32, pivoted to one of the standards 8 and engaging a ratchet-bar 33, secured to the forward end of the movable section 12. In unloading a wagon or vehicle according to this method, however, it is quite important that the contents be allowed to discharge gradually at one end of the bottom opening, because where the contents contains or consists of large lumps, together with smaller particles, such as soft coal, the bottom opening in being made of sufficient width to permit the large lumps to pass would be so wide as to cause a sudden discharge of greater bulk than the chute 22 could receive. In order, therefore, to avoid this objection and accomplish the desired object, I make the edge of one of the body-sections oblique with reference to the other, so that the opening will begin at one end and gradually extend as it grows wider and wider toward the other end. In accomplishing this I prefer to provide the bottom of the movable section 12 with a V-shaped flange 34, which in reality constitutes a continuation of the bottom of said section, but which laps under the bottom of section 1, as shown in Figs. 2 and 3, its surface being struck on an arc from the center 14^a. When the two edges 13, Fig. 4, of the body-sections are together, the flange 34 underlies the fixed section 1, and its edge gradually approaches the forward end of the division-line 13, as clearly shown in Fig. 4. Hence it will be seen that as the movable section 12 is raised the opening will be started at the forward end of the body, where the flange 34 is the narrowest, and it will not reach the rear end of the body until the opening at the front end is as wide as the extreme width of the flange 34. Hence the discharge of the contents will be gradual and from the forward end toward the rear end, but will always be in line with the chute or trough 22.

If desired, the forward end of the movable section 12 may be provided with an end flange or lip 35, as shown in Fig. 5, overlapping the forward end wall of the section 1, so as to guard against end discharge of the contents when the bottom begins to open.

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 two body parts divided from each other longitudinally at the bottom and one of which parts is movable and one of which parts has an oblique edge lapping with the edge of the other where the two parts are divided from each other, substantially as set forth.

2. In a dumping-vehicle the combination of a body having a movable section divided from the balance of the body longitudinally at the bottom and means for closing the space between the end walls of the body portions when said movable section moves away from the balance of the body, substantially as set forth.

3. In a dumping-vehicle the combination of a body having a movable section divided from the balance of the body longitudinally at the bottom, the sides of said body being sloped transversely toward their division-line at the bottom, means for pivotally supporting said movable section, a flange having an oblique edge projecting from the lower edge of said movable section and lapping with the balance of the body and a chute arranged under the intersection of the two portions of the body, substantially as set forth.

4. In a dumping-vehicle the combination of two body portions divided from each other longitudinally at the bottom and one of which body portions is movable on the arc of a circle and one of which body portions is provided with an oblique flange lapping with the other body portion and having its upper face struck on an arc from the center around which said movable portion moves, substantially as set forth.

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