No. 887,225. PATENTED MAY 12, 1908.

G. A. POST.

DUMP WAGON.

APPLICATION FILED NOV. 19, 1907.

4 SHEETS—SHEET 1.

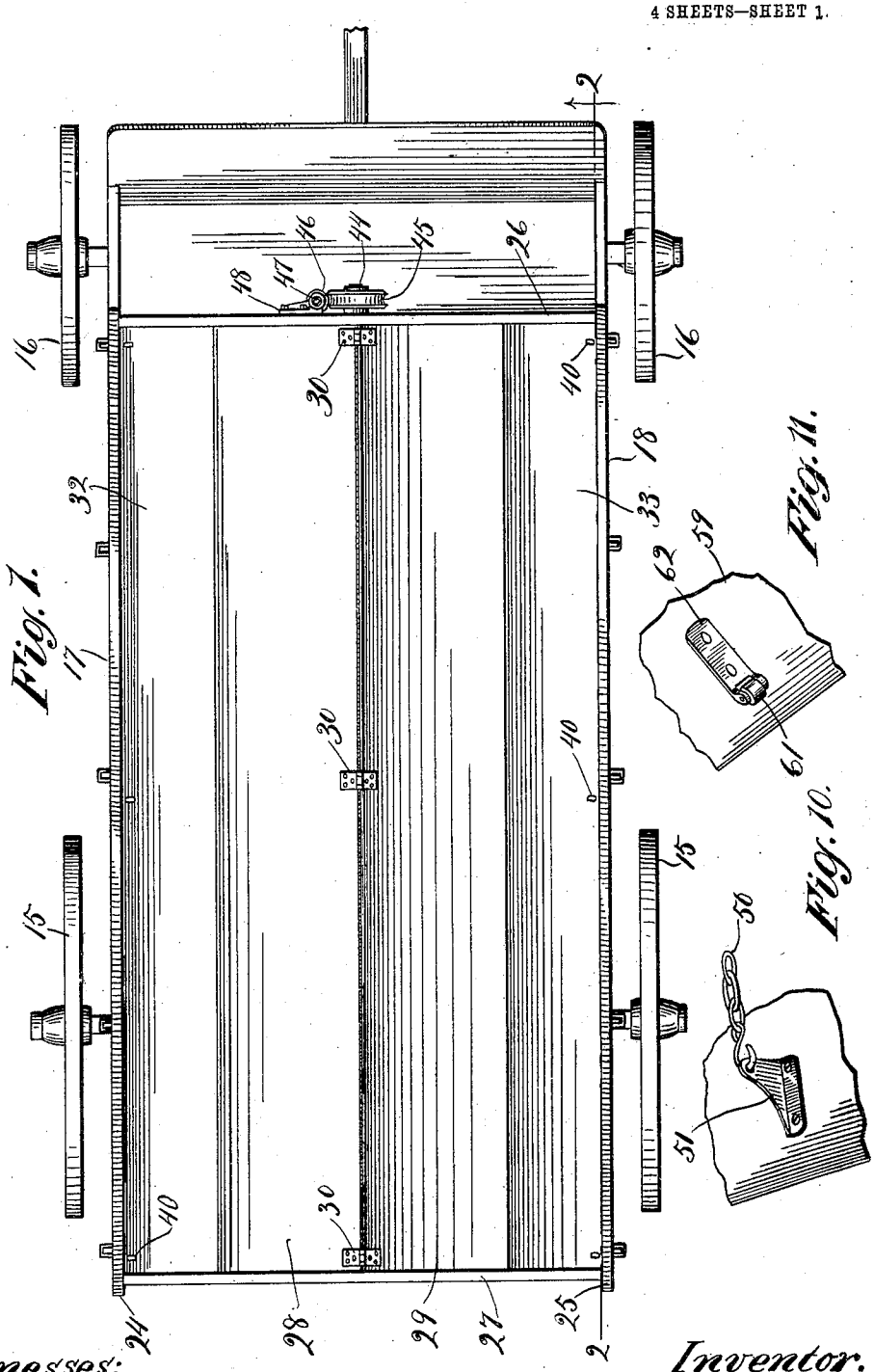

Fig. 1.

Fig. 11.

Fig. 10.

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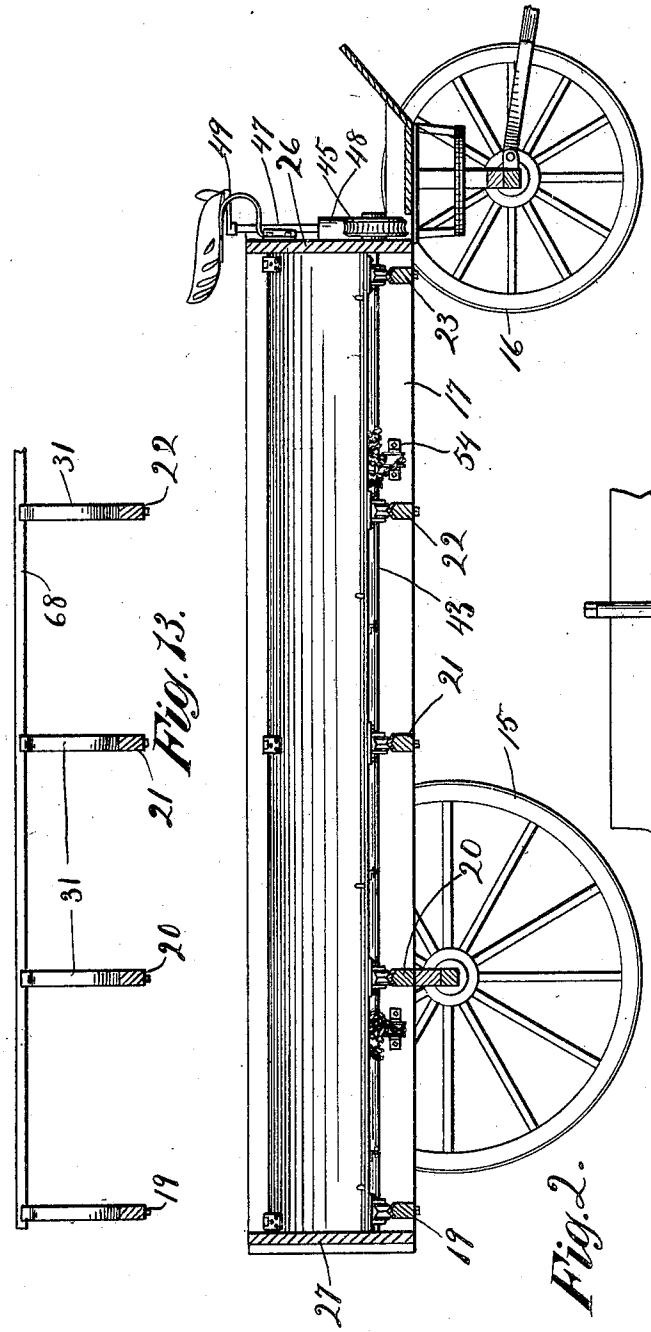

Fig. 2.

Fig. 13.

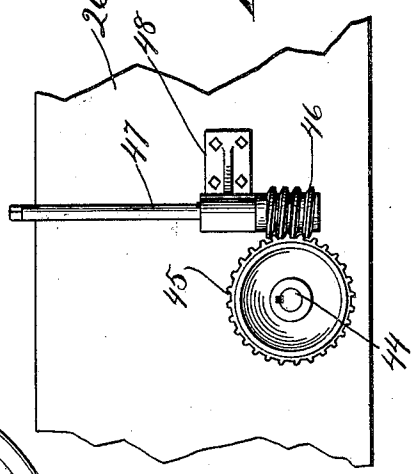

Fig. 3.

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4 SHEETS—SHEET 3.

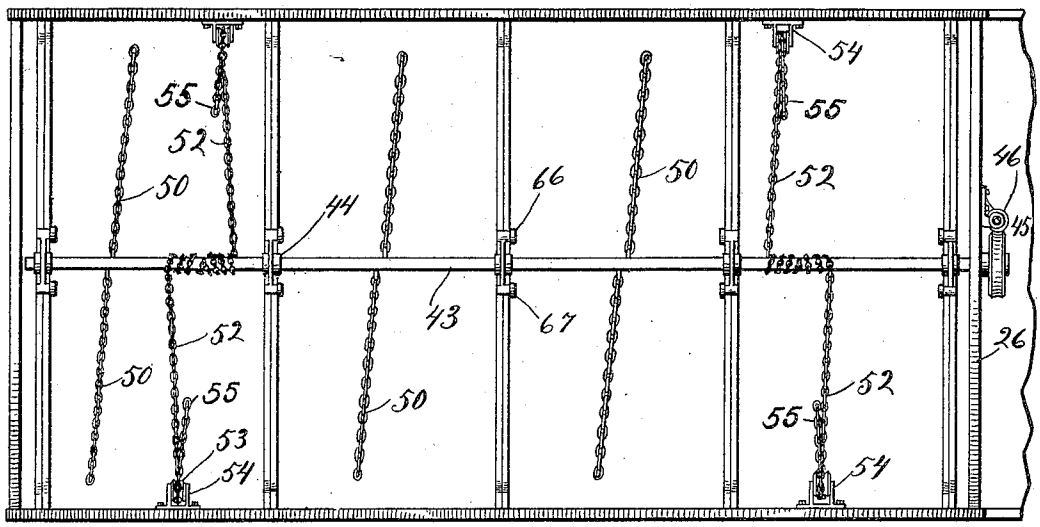

Fig. 4.

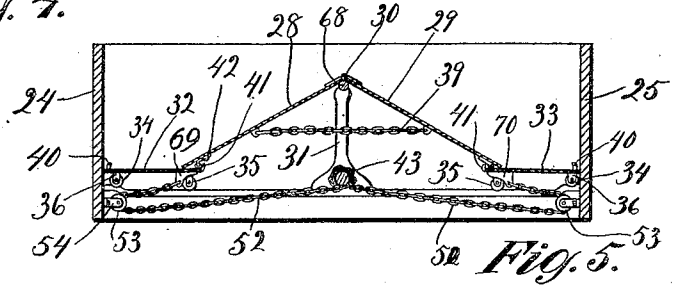

Fig. 5.

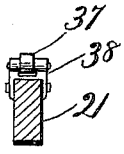

Fig. 12.

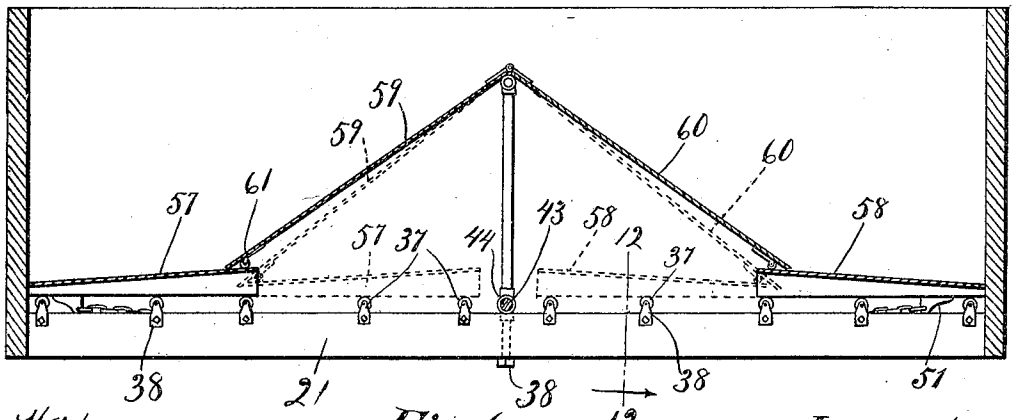

Fig. 6.

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4 SHEETS—SHEET 4.

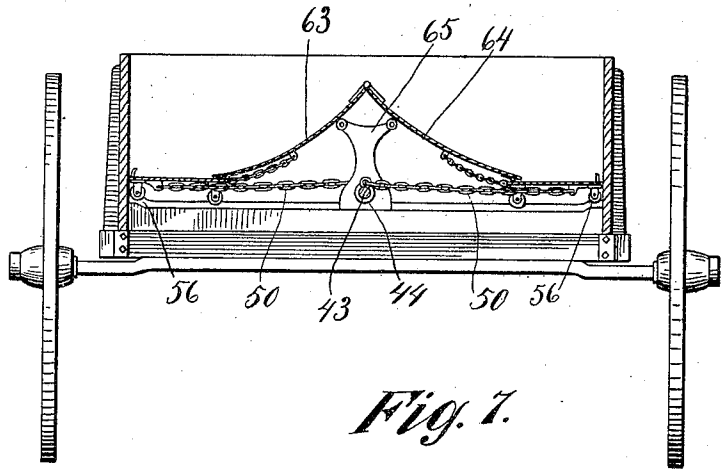

Fig. 7.

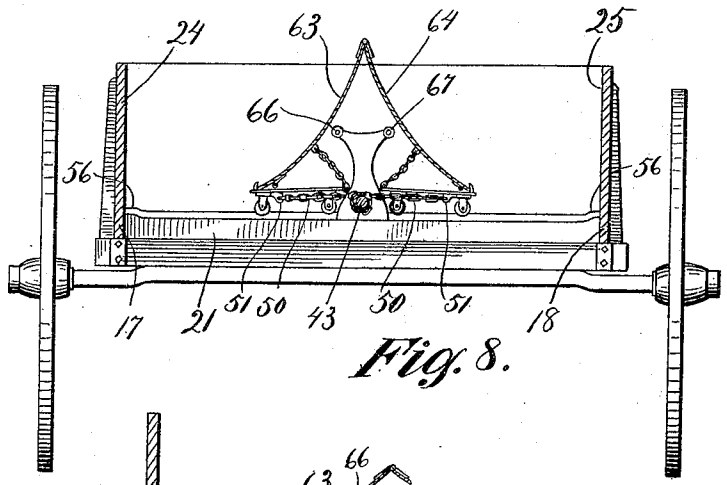

Fig. 8.

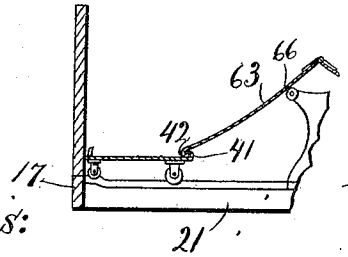

Fig. 9.

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UNITED STATES PATENT OFFICE.

GEORGE A. POST, OF CHICAGO, ILLINOIS.

DUMP-WAGON.

No. 887,225. Specification of Letters Patent. Patented May 12, 1908.

Application filed November 19, 1907. Serial No. 402,784.

To all whom it may concern:

Be it known that I, GEORGE A. POST, a citizen of the United States, and resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Dump-Wagons, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

This invention relates to dump wagons having openable bottoms; its object being to secure a simple, effective and easily controlled dumping mechanism.

The invention consists in the structure hereinafter described, and which is illustrated in the accompanying drawings, in which

Figure 1 is a plan view of the wagon; Fig. 2 is a vertical longitudinal section on the line 2—2 of Fig. 1; Fig. 3 is a detail front elevation of the wagon body showing the mechanism for controlling the dumping apparatus; Fig. 4 is a plan view of the body with the bottom plates removed; Fig. 5 is a transverse section of the body; Fig. 6 is a transverse section of the body on a larger scale, showing a modified form of construction, the movement of certain parts being indicated by dotted lines; Figs. 7 and 8 are vertical transverse sectional views of the wagon showing a further modification, the parts being shown in the two figures in different positions; Fig. 9 is a detail transverse vertical sectional view of the structure illustrated in Figs. 7 and 8; Fig. 10 is a detail bottom plan of one of the plates of the bottom of the body, showing the attachment thereto of a controlling cable; Fig. 11 is a detail bottom plan view of one of the sections of the bottom of the wagon, showing an anti-friction supporting member; Fig. 12 is a detail section on the line 12—12 of Fig. 6; and Fig. 13 is a detail side elevation of the support for the inner portion of the bottom of the wagon.

The wagon is provided with the usual carrying wheels, as 15 and 16. The body comprises the longitudinal side sills 17, 18, and cross sills of any desired number, as shown at 19, 20, 21, 22 and 23. The side boards 24, 25, and end boards 26, 27, may be permanently mounted upon the sills.

The bottom of the wagon is openable and comprises a plurality of sections longitudinally disposed. The central sections or plates 28, 29, are preferably pivotally united, as shown being hinged together at 30. These center plates are inclined downwardly towards their outer edges and preferably, when the bottom is closed, rest upon pedestals 31 rising from the cross sills; these pedestals may be as numerous as may be deemed advisable, preferably one being placed on each cross-sill.

The outer edges of the plates 28, 29, rest upon outer plates 32, 33, which are normally in substantially horizontal position, and are supported on the cross-sills by means of rollers, as 34, 35, journaled in brackets 36 secured to the plates, or on rollers 37 journaled in brackets 38 secured to the sill.

The pedestals 31 are supplemented as supports for the plates 28, 29, by a cable, shown in the form of a chain 39 attached to the inner surfaces of the plates and being of such length that it is taut when the bottom is closed. A plurality of hooks 40 rise from the plates 32, 33, at their outer edges, and, as these plates travel inward, engage the outer edges of the plates 28, 29, further advance causing these latter plates to rise, flexing their uniting hinges. Upstanding hooks 41 at the inner edges of the plates 32, 33, engage depending hooks 42 secured to the inner faces of the plates 28, 29, adjacent their outer edges, as the plates 32, 33, move outwardly, thus positively restoring the inner plates to their normal position.

A shaft 43 is located along the median line of the wagon body, being journaled in suitable boxes 44, carried by cross-sills and projecting beyond the front board 26, its outer end carrying a worm-wheel 45, which meshes with a worm 46, carried by a vertical shaft 47, journaled in a bracket 48 secured to the end board, and to the upper end of which is applied a crank-arm 49.

Cables 50, in the form of chains, are secured to the shaft 43, and brackets 51, attached to the under faces of the plates 32, 33, and serve as means for drawing these plates inward as the shaft 43 is rotated. Cables 52, shown as in the form of chains, are attached to the shaft 43 and turn over sheaves 53, journaled in brackets 54 secured to the side sills 17 and 18, the outer ends of the cables being attached to the under faces of the plates 32, 33, as shown at 55. The cables 52 are so attached to the shaft 43 that as it is rotated to pay out the cables 50 they

are wound upon it, thereby drawing the plates 32, 33, outwardly to their normal position.

Referring to Fig. 5, the parts are in position to carry a load. By rotating the crank 49 (Fig. 2) the shaft 43 is turned to wind about it the cables 50 (Fig. 4) and pay out the cables 52, thus drawing in towards the center the plates 32, 33, and opening a space adjacent the sides of the body to permit the load to escape, this space widening as the plates travel inward. When the hooks 40 engage the outer edges of the plates 28, 29, the latter are drawn inward and tilted upward, permitting the material to slide down their surfaces and thus completely discharging the wagon of its load. The crank 49 being now turned in the opposite direction to wind up the cables 52 and pay out the cables 50, the plates 32, 33, are drawn outwardly to the position shown in Fig. 5, the plates 28, 29, dropping by their own weight and being completely restored to the position shown in Fig. 5, by the engagements of the hooks 41 with the hooks 42.

In order to facilitate the movement of the plates 32, 33, the upper faces of the cross sills, forming the tracks upon which the plates travel, are offset upwardly slightly adjacent their ends, as most plainly shown at 56 (Figs. 7 and 8), thereby providing for a slight drop of the outer edges of the plates as soon as they commence to move inward, and freeing them to some extent from the frictional engagement of the load.

If desired outer plates, as shown at 57, 58 (Fig. 6), may be employed having their upper surfaces inclined downwardly slightly toward their outer edges, thus securing a reduction of friction as they travel inward.

In the construction illustrated in Fig. 6 there is no upward movement of the inner plates in discharging the load, the hooks at the outer edges of the outer plates for engaging the inner plates being dispensed with. In this construction the inner plates, here designated 59, 60, drop from the outer plates as the latter approach the limit of their inward movement, thus tilting them downwardly to the dotted line position to permit the more ready discharge of the load from their surfaces. As the outer plates, here designated 57, 58, move outward, the inner plates are again raised to their normal position. Preferably an anti-friction roller 61, shown in detail in Fig. 11, is secured to the inner face of each of the plates 59, 60, adjacent its lower edge, by means of a bracket 62, to run upon the upper surfaces of the plates 57, 58.

The inner plates of the bottom may, if desired, be concave, as shown at 63, 64, Figs. 7 and 8, thereby somewhat increasing the capacity of the box. In place of the pedestal 31 there may be employed pedestals 65, more plainly shown in Figs. 7 and 8, which are widened at the top and carry a pair of anti-friction rollers 66, 67, against which the plates 63, 64, rest when the wagon bottom is closed. In the opening operation these plates are lifted away from these rollers, as indicated in Fig. 8.

The several pedestals may be and preferably are tied together by a rod 68, extending longitudinally of the body and giving the parts greater rigidity.

If desired, the effect of a downwardly and outwardly inclined upper surface for the outer plates of the wagon bottom, coupled with the inwardly and downwardly inclined outer track for the plates to run on, may be utilized together, thereby securing the lessening of the frictional engagement of the load with the bottom plate without necessitating material cutting away of the sill and permitting the use of a less expensive plate than those shown at 57, 58, in Fig. 6. This combination of the two features is illustrated in Fig. 5, and is secured by mounting the rollers 35 at the inner edges of the plates 32, 33, in brackets 69, 70, somewhat higher than the brackets carrying the rollers at the outer edges of these plates.

I claim as my invention—

1. In a dump wagon, in combination, a body having sides and a sectional bottom comprising a pair of upwardly-inclined center plates oscillatable substantially on the plane of the median line of the body, and outer plates slidable under and supporting the center plates.

2. In a dump wagon, in combination, a body having sides and a sectional bottom comprising a pair of upwardly-inclined center plates pivotally united on the plane of the median line of the body, and outer plates slidable under and supporting the center plates.

3. In a dump wagon, in combination, a body having sides and a sectional bottom comprising a pair of upwardly-inclined center plates oscillatable substantially on the plane of the median line of the body, outer plates slidable under and supporting the center plates, and means for sliding the outer plates laterally.

4. In a dump wagon, in combination, a body having sides and a sectional bottom comprising a pair of upwardly-inclined center plates oscillatable substantially on the plane of the median line of the body, outer plates slidable under and supporting the center plates, a rotatable shaft on the median line of the body, and cables attached to the outer plates and operatively connected with the shaft.

5. In a dump wagon, in combination, a body having sides and a sectional bottom comprising a pair of upwardly-inclined center plates oscillatable substantially on the

plane of the median line of the body, outer plates slidable under and supporting the center plates, a rotatable shaft on the median line of the body, sheaves mounted adjacent the sides of the body, and cables attached to the outer plates and running on the sheaves and being operatively connected with the shaft.

6. In a dump wagon, in combination, a body having sides and a sectional bottom comprising a pair of upwardly-inclined center plates pivotally united on the plane of the median line of the body, outer plates slidable under and supporting the center plates, the outer edges of the outer plates being engageable with the outer edges of the center plates, and means for sliding the outer plates laterally.

7. In a dump wagon, in combination, a body having sides and a sectional bottom comprising a pair of upwardly-inclined center plates pivotally united on the plane of the median line of the body, outer plates slidable under and supporting the center plates, the outer edges of the outer plates being engageable with the outer edges of the center plates, a rotatable shaft on the median line of the body, and cables attached to the outer plates and operatively connected with the shaft.

8. In a dump wagon, in combination, a body having sides and a sectional bottom comprising a pair of upwardly-inclined center plates pivotally united on the plane of the median line of the body, outer plates slidable under and supporting the center plates, the outer edges of the outer plates being engageable with the outer edges of the center plates, a rotatable shaft on the median line of the body, sheaves mounted adjacent the sides of the body, and cables attached to the outer plates and running on the sheaves and being operatively connected with the shaft.

9. In a dump wagon, in combination, a sectional bottom comprising inwardly movable plates, and downwardly inclined tracks for carrying such plates whereby the plates are lowered from the load carrying position by the inward movement.

10. In a dump wagon, in combination, a sectional bottom comprising inwardly-movable plates, and tracks for carrying such plates and having vertical offsets adjacent their outer ends.

11. In a dump wagon, in combination, a sectional bottom comprising plates inclined downwardly from the median line of the wagon body, and outer plates movable towards the center of the body and engageable with the inclined plates to raise them and fold them towards each other, and means for moving the outer plates.

12. In a dump wagon, in combination, a sectional bottom comprising inwardly movable plates having their upper faces downwardly and outwardly inclined, and tracks for the plates inclined downward from their outer ends whereby the plates are lowered from the load carrying position by the inward movement.

13. In a dump wagon in combination, a body having sides and a sectional bottom comprising a plurality of inwardly movable plates arranged upon each side of the median line of the body, and means for moving the plates of both sets inwardly successively.

14. In a dump wagon in combination, a body having sides and a sectional bottom comprising plates inclined downwardly from the median line of the wagon body and outer plates movable towards the center of the body and engageable with the inclined plates to raise them and fold them toward each other, means for moving the outer plates and tracks for carrying the outer plates having vertical offsets adjacent their outer ends.

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