No. 681,927. Patented Sept. 3, 1901.

C. S. PHARIS.

DUMPING WAGON.

(Application filed Dec. 14, 1900.)

(No Model.) 5 Sheets—Sheet 1.

Fig. 1

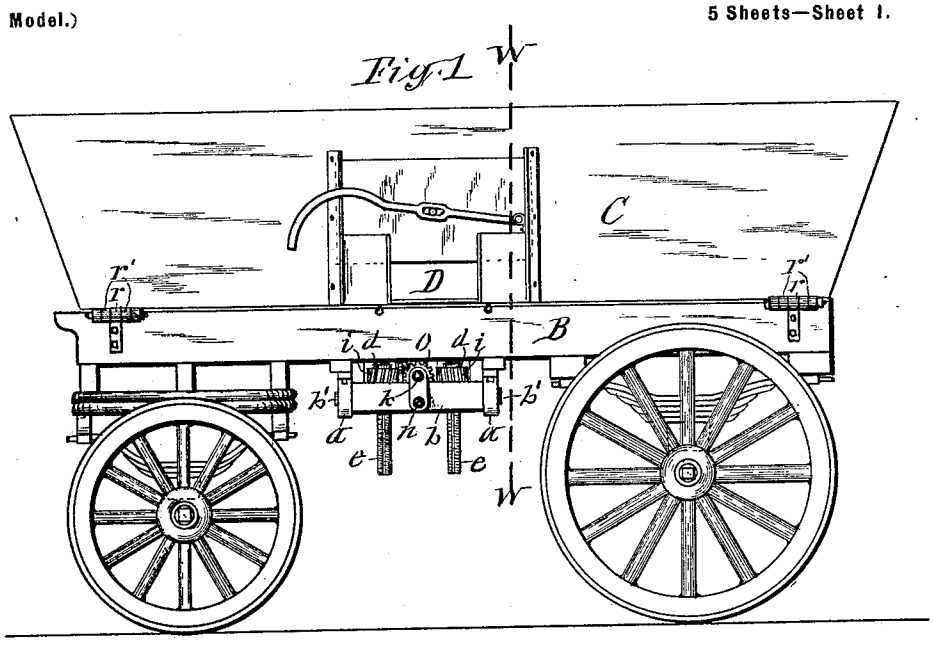
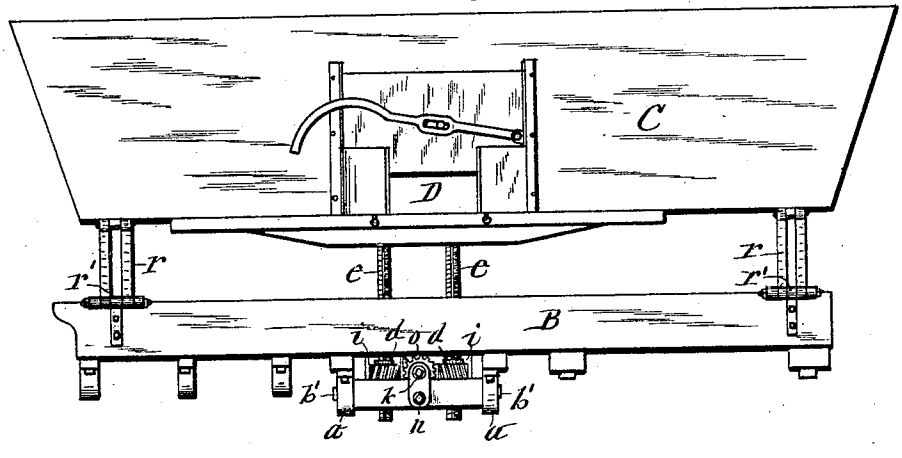


Fig. 2



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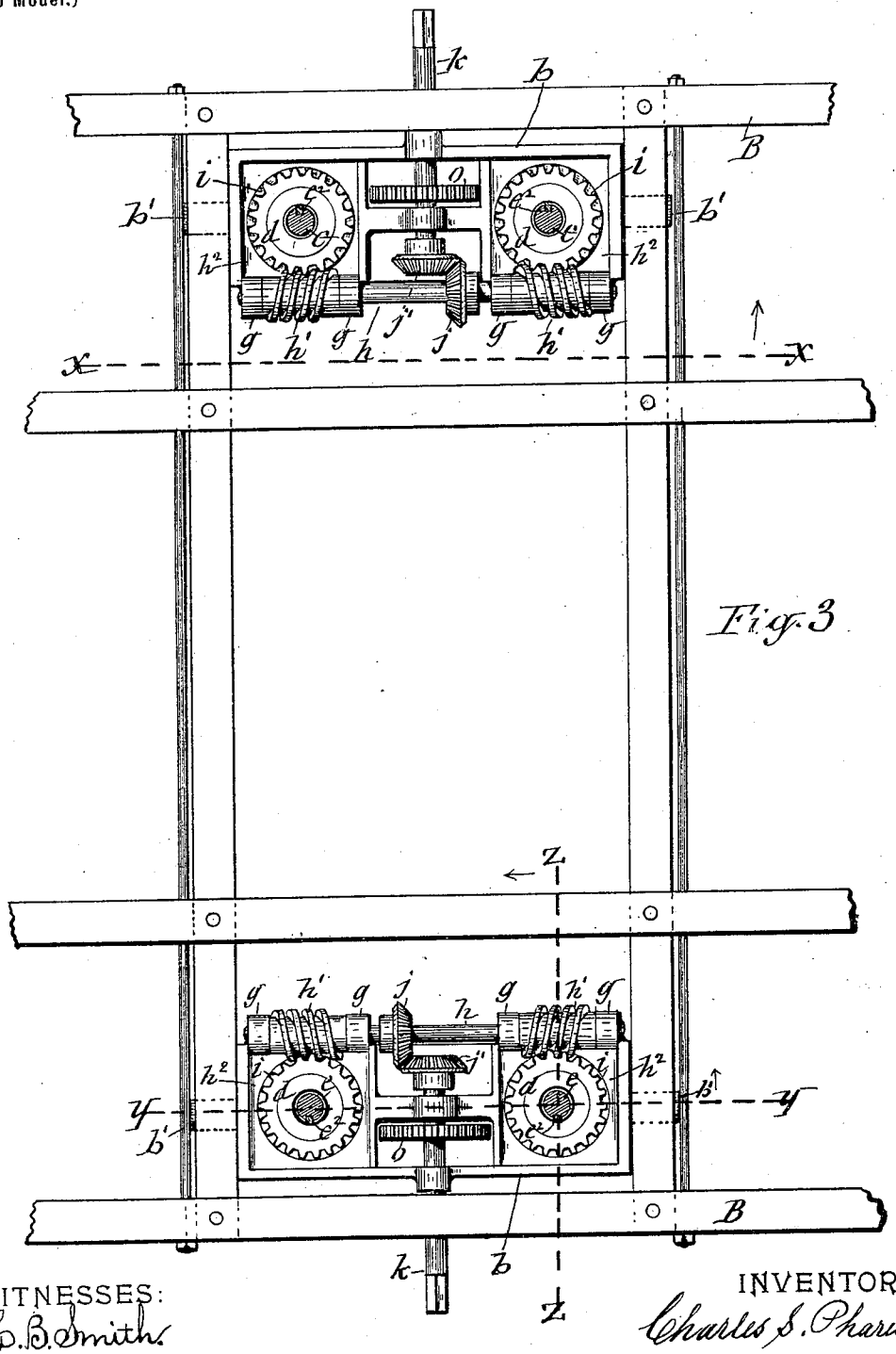


Fig. 3.

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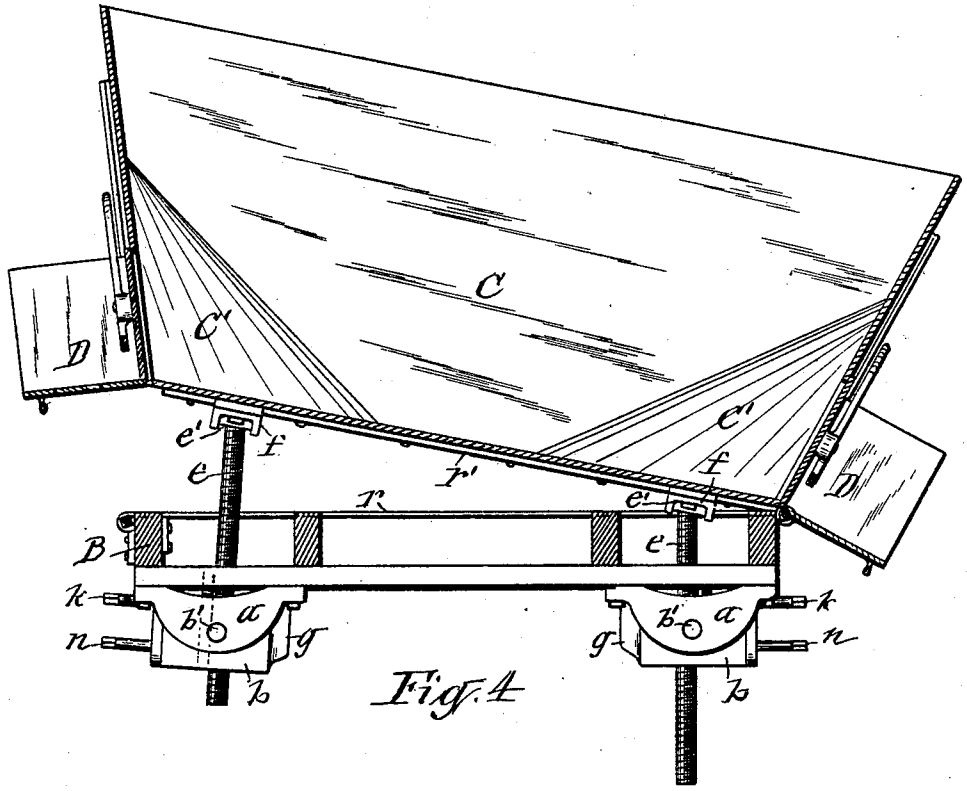


Fig. 4

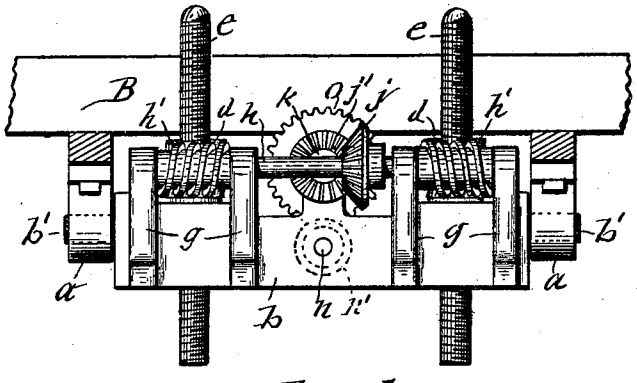


Fig. 5

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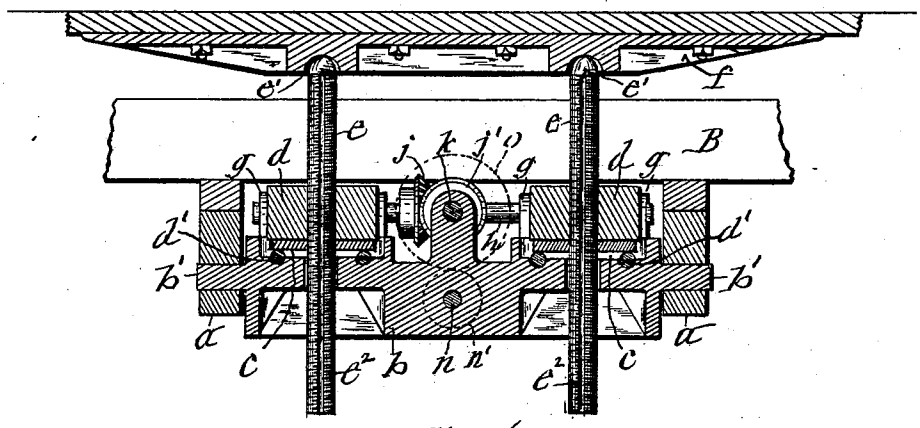


Fig. 6

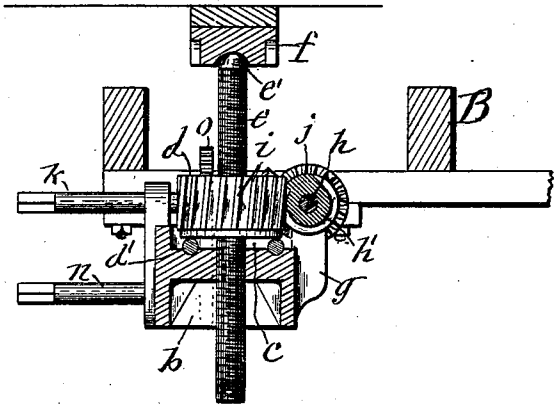


Fig. 7

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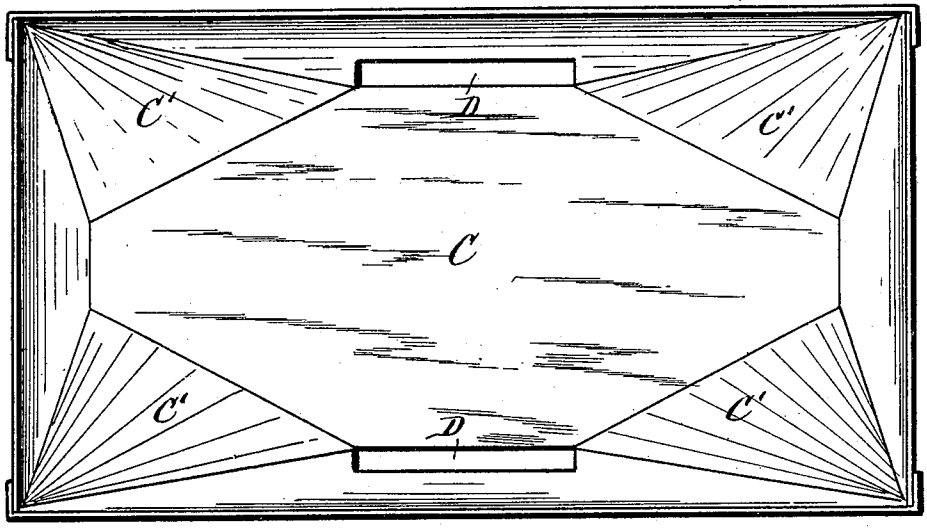
C. S. PHARIS.

DUMPING WAGON.

(Application filed Dec. 14, 1900.)

(No Model.) 5 Sheets—Sheet 5.

Fig. 8



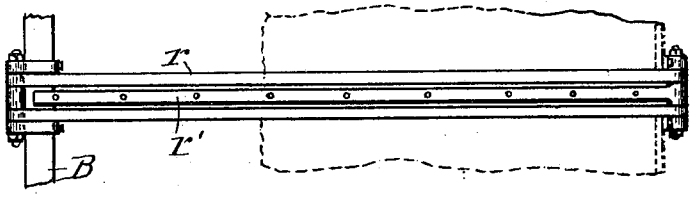


Fig. 9

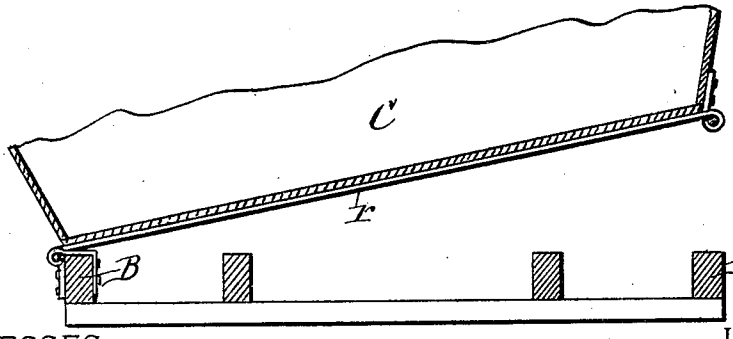


Fig. 10

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UNITED STATES PATENT OFFICE.

CHARLES S. PHARIS, OF SYRACUSE, NEW YORK.

DUMPING-WAGON.

SPECIFICATION forming part of Letters Patent No. 681,927, dated September 3, 1901.

Application filed December 14, 1900. Serial No. 39,903. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. PHARIS, a citizen of the United States, and a resident of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Dumping-Wagons, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of dumping-wagons which are provided with discharge-gates in the sides of the wagon.

The object of the invention is to facilitate and at the same time expedite the discharge of the load by means of simple and efficient mechanisms connected to the wagon; and to that end the invention consists in the novel construction and combination of the component parts of the dumping mechanism hereinafter described, and set forth in the claims.

In the annexed drawings, Figures 1 and 2 are side elevations of my improved dumping-wagon in different operative positions. Fig. 3 is an enlarged plan view of the dumping mechanism, taken in a plane directly under the body of the wagon. Fig. 4 is an enlarged vertical transverse section on line W W in Fig. 1. Fig. 5 is a vertical longitudinal section on line X X in Fig. 3. Fig. 6 is a vertical longitudinal section on line Y Y in Fig. 3. Fig. 7 is a vertical transverse section on line Z Z in Fig. 3. Fig. 8 is plan view of the wagon-body. Fig. 9 is a plan view of one of the side stays of the wagon-body, and Fig. 10 is an edge view of said stay.

A and A′ represent the front and rear running-gears of the dumping-wagon, which running-gears may be of any desirable and suitable construction. Upon the running-gears is mounted a horizontal frame B, extending lengthwise of the wagon, and upon this frame is normally seated the wagon-body C, which is provided with suitable discharge-gates D in the center of its sides and has its side walls joined to the end walls of the body by triangular plates C′ C′, disposed with their apexes in the tops of the inner corners of the body and extending therefrom divergent to the bottoms of the side and end walls of the body. To expedite the discharge of the load through said side gates, I connect to the wagon suitable mechanism for lifting either side of the body C independently of the opposite side thereof, and thus tilt said body sidewise, as shown in Fig. 4 of the drawings. The said hoisting and tilting mechanism I prefer to construct as follows, to wit: To the frame B, at or near the sides and midway the length thereof, I firmly secure two pairs of hangers *a a*, to each of which I connect a longitudinal bar *b* by suitable lateral rocker-bearings, preferably formed of trunnions *b′ b′* on the ends of the bar pivotally supported in the hangers. The top of each of said bars *b* is formed with annular recesses *c c*, in which are seated revoluble nuts *d d*, which are threaded reverse from each other and are preferably mounted on ball-bearings *d′*, as shown in Figs. 6 and 7 of the drawings. Through these nuts pass vertical screws *e e*, the upper ends of which engage sockets or recessed bearings *e′ e′*, formed on a stout metal plate *f*, fastened to the under side of the body C. The plate *b* is provided with rigid upwardly-projecting ears *g g*, formed with journal-bearings supporting a longitudinal shaft *h*, to which are fastened two worms *h′ h′*, engaging corresponding gears *i i*, formed on the peripheries of the nuts *d d*. By turning the shaft *h* the worms *h′ h′* transmit rotary motion to the geared nuts *d d*, which impart vertical movement to the screws *e e*, restrained from rotating by splines secured to the bar *b* and engaging vertical grooves e^2 in the screws. For turning the shaft *h* I prefer to attach thereto a bevel-gear *j*, which meshes with a corresponding gear *j′*, attached to a transverse shaft *k*, mounted in bearings *l l* on the longitudinal bar *b*. The outer end of the shaft *k* is squared or otherwise adapted to receive a hand-crank by which to turn said shaft.

In order to provide more powerful means for operating the described hoisting and tilting mechanism when required, I pivot to the longitudinal bar *b* a supplemental transverse shaft *n* and attach to said shaft a pinion *n′*, meshing with a gear-wheel *o*, fastened to the shaft *k*. By employing under opposite sides of the body C two separate sets of the described hoisting and tilting mechanisms, as shown, the said body can be elevated either in a horizontal position or tilted toward either side of the wagon. To sustain the body in its tilted position and retain the screws *e e*

from lateral strain, I employ at or near each end of the body a transverse main sustaining-bar *r*, hinged at one end to one side of the frame B, and a transverse supplemental bar *r'*, hinged to the free end of said main sustaining-bar and firmly attached to the under side of the body C. Said body is thus connected to the frame B by double hinges, which allow the body to be tilted toward either side of the wagon, according to the side at which the load is to be discharged. Said bars also prevent lateral movement of the body during its vertical movement. The load is to a considerable extent discharged before tilting the body, owing to the convergent triangular plates C' C' in the interior of the body leading to the discharge-gates. Said preliminary discharge materially reduces the lateral strain on the screws *e e* in the operation of tilting the body.

What I claim as my invention is—

1. A dumping-wagon comprising a frame supported at its ends on the running-gears of the wagon, the body pivotally supported at opposite sides on said frame and movable vertically thereon and provided with discharge-gates in its sides, and mechanism for elevating and lowering said body from and to the frame.

2. A dumping-wagon having a vertically-movable body pivotally supported at opposite sides and provided with discharge-gates in its sides, and mechanism for lifting either side of the body independently of the opposite side thereof as set forth.

3. A dumping-wagon having a vertically-movable body pivotally supported at opposite sides and provided with discharge-gates in its sides, and mechanism for elevating said body and adapted to tilt the body sidewise as set forth.

4. A dumping-wagon having a vertically-movable body pivotally supported at opposite sides and provided with discharge-gates in its sides, mechanism for tilting said body sidewise, and means for sustaining the body in its tilted position.

5. A dumping-wagon having a vertically-movable body pivotally supported at opposite sides and provided with discharge-gates in its sides, mechanism for elevating said body and adapted to tilt the elevated body sidewise, and means for preventing lateral movement of the body during its vertical movement.

6. A dumping-wagon comprising a frame extending lengthwise of the wagon and supported on the running-gears thereof, transverse main sustaining-bars hinged at one end to one side of said frame, transverse supplemental bars hinged to the free ends of said main sustaining-bars, and the body fastened to said supplemental bars and provided with discharge-gates in its sides as set forth.

7. A dumping-wagon comprising a frame extending lengthwise of the wagon and supported on the running-gears thereof, transverse main sustaining-bars hinged at one end to one side of said frame, transverse supplemental bars hinged to the free ends of said main sustaining-bars, the body fastened to said supplemental bars and provided with discharge-gates in its sides, and mechanisms for tilting the body sidewise as set forth.

8. A dumping-wagon comprising a frame extending lengthwise of the wagon and supported on the running-gears thereof, longitudinal bars supported on the sides of the said frame by lateral rocker-bearings, nuts disposed axially vertical and pivotally supported on the aforesaid longitudinal bars, screws passing through said nuts, the body mounted on said screws and provided with discharge-gates in its sides, and means for turning said screws.

9. A dumping-wagon comprising a frame extending lengthwise of the wagon, and supported on the running-gears thereof, longitudinal bars supported on the sides of said frame by lateral rocker-bearings, separate mechanisms mounted on said bars and each consisting of nuts disposed axially vertical and pivotally supported on the longitudinal bar, screws passing through said nuts, gears formed on the peripheries of said nuts, a shaft disposed at right angles to the axis of said gears, worms attached to said shaft and engaging the said gears, means for operating said shaft, and the wagon-body supported on the screws at opposite sides of the aforesaid frame and provided with discharge-gates in its sides as set forth.

10. A dumping-wagon comprising a frame extending lengthwise of the wagon and supported on the running-gears thereof, two pairs of hangers disposed at opposite sides of said frame and fastened thereto, longitudinal bars pivotally supported in said hangers, nuts disposed axially vertical and arranged in pairs pivotally supported, one pair on each of the longitudinal bars, gears formed on the exteriors of said nuts, longitudinal shafts disposed one at each pair of said gears, worms on said shafts and engaging said gears, a bevel-gear attached to each of said longitudinal shafts, separate transverse shafts each having fastened to it a bevel-pinion engaging one of said bevel-gears, screws passing through the aforesaid nuts, and the wagon-body supported on said screws and provided with discharge-gates in its sides as set forth.

11. A dumping-wagon comprising a frame extending lengthwise of said body and supported on the running-gears thereof, two pairs of hangers disposed at opposite sides of said frame and fastened thereto, longitudinal bars pivotally supported in said hangers, nuts disposed axially vertical and arranged in pairs supported, one pair on each of the longitudinal bars, gears formed on the exteriors of said nuts, longitudinal shafts disposed one at each pair of said gears, worms on said shafts engaging said gears, a bevel-gear attached to each of said longitudinal shafts, separate transverse shafts each having at-

tached to it a bevel-pinion engaging one of said bevel-gears, screws passing through the aforesaid nuts, the wagon-body mounted on said screws and provided with discharge-gates in its sides, transverse main sustaining-bars hinged at one end to one side of the aforesaid frame, and supplemental transverse bars hinged to the free ends of the main sustaining-bars and fastened to the wagon-body as set forth.

12. A dumping-wagon having its body pivotally supported at opposite sides and provided with discharge-gates in its sides, and the side walls joined to the end walls of the body by triangular plates disposed with their apexes in the tops of the inner corners and extending therefrom divergent to the bottoms of the side and end walls of the body as set forth and shown.

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Witnesses:
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