

No. 781,663.

PATENTED FEB. 7, 1905.

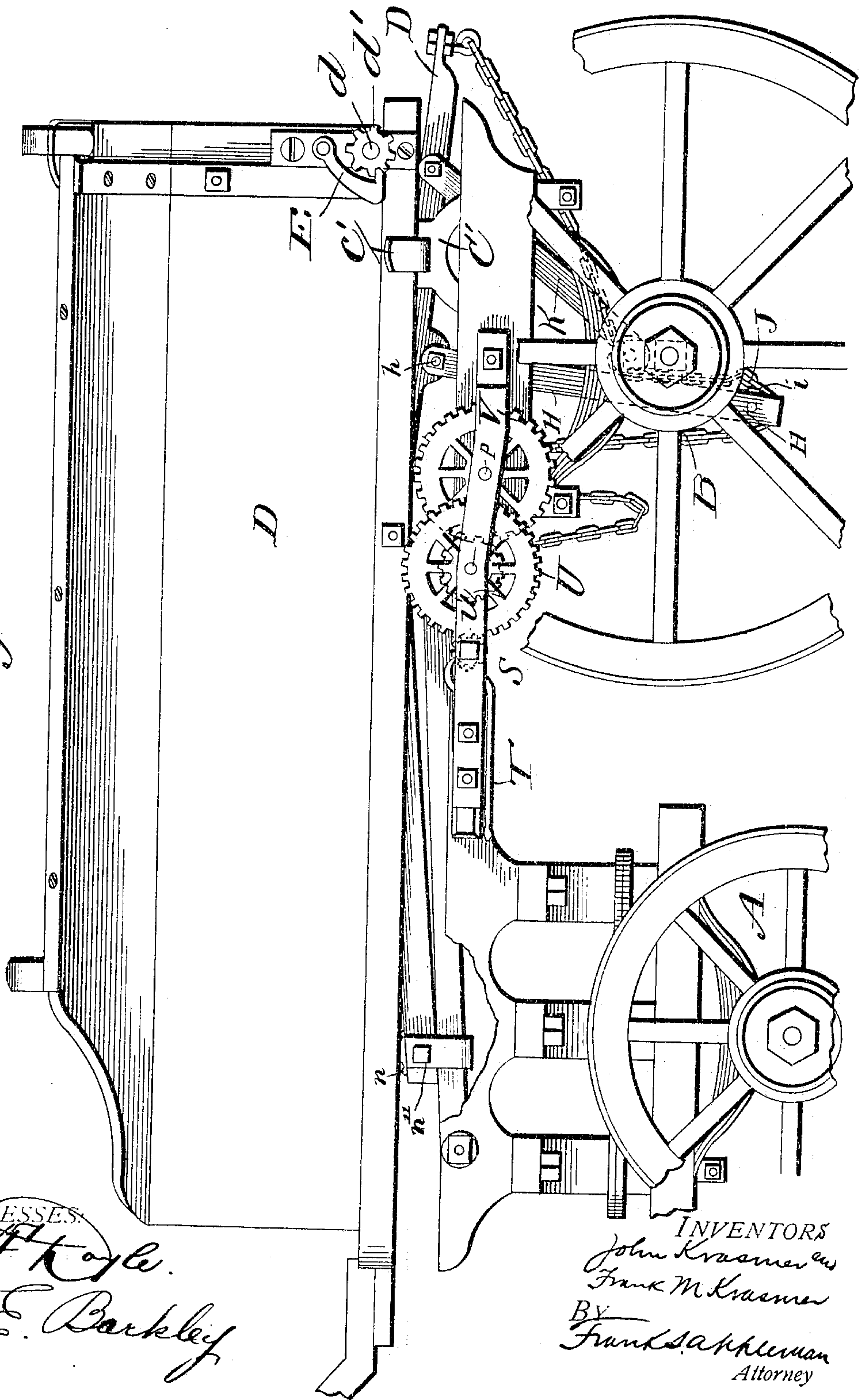
J. & F. M. KRASMER,

DUMPING WAGON.

APPLICATION FILED MAY 21, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



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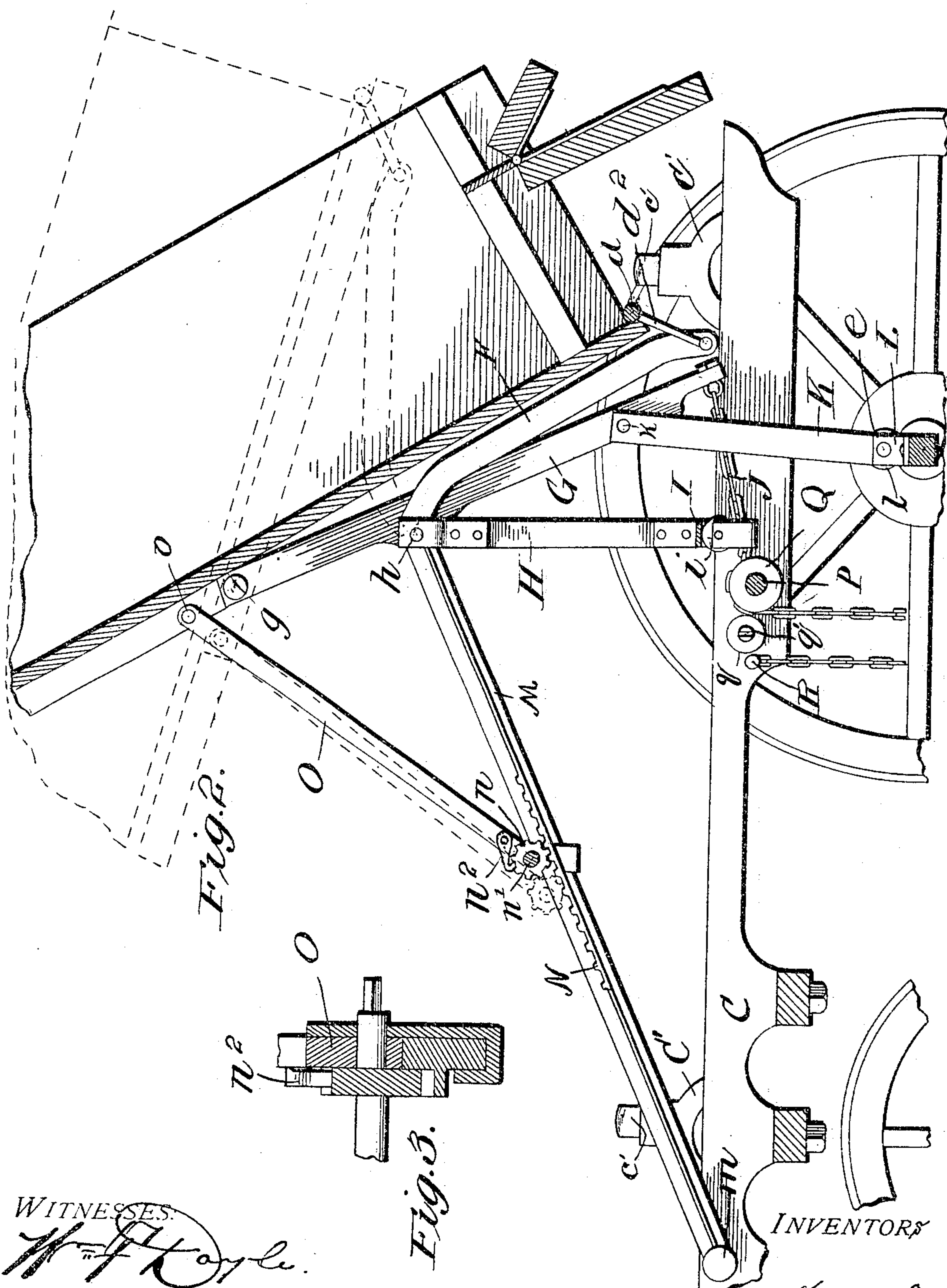
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2 SHEETS—SHEET 2.



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JOHN KRASMER AND FRANK M. KRASMER, OF PHILADELPHIA, PENNSYLVANIA.

DUMPING-WAGON.

SPECIFICATION forming part of Letters Patent No. 781,663, dated February 7, 1905.

Application filed May 21, 1904. Serial No. 209,070.

To all whom it may concern:

Be it known that we, JOHN KRASMER and FRANK M. KRASMER, citizens of the United States of America, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Dumping-Wagons, of which the following is a specification.

This invention relates to carriages and wagons, and particularly to a class thereunder known as "dumping-wagons."

An object of this invention is to provide a dumping-wagon in which the weight of the contents of the body is supported directly by the axles of the wagon, thus obviating any intermediate yielding of the supports between the bed and the axle. In many of the wagons of this character in use the base-support is mounted on yielding members, such as springs, and when the weight becomes unequal with respect to the sides of the body or with respect to its length in some instances there is a tendency to tip or tilt, which results in turning the vehicle on its side.

It is the object, therefore, of this invention to have the stays on which the body is mounted when in position for dumping connected directly to an unyielding support, so that regardless of the position of the weight within the top the tilting action is obviated.

A further object of this invention is to provide novel means for elevating the body and for bringing it to different angles with respect to the frame on which the body rests when being transported, a further object of the invention being to provide novel means for affording the adjustment and also for manipulating the parts to bring the elements of the combination in the proper relation to effect a dumping action; and the invention further contemplates the provision of novel means for retaining the parts in the adjusted position.

Finally, an object of this invention is to produce a dumping-wagon of the character noted which will possess advantages in points of efficiency and durability, proving at the same time comparatively inexpensive to manufacture and maintain.

With the foregoing and other objects in view the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and specifically claimed.

In describing the invention in detail reference will be had to the accompanying drawings, forming part of this specification, wherein like characters denote corresponding parts throughout the several views, in which—

Figure 1 is a view in elevation of a wagon embodying the invention, parts of the structure being broken away to show other parts in elevation. Fig. 2 is a longitudinal sectional view taken approximately centrally of the wagon, the walls being broken away. Fig. 3 is a detail of the rack and pinion.

In the drawings, A denotes a suitable front truck, and B a suitable rear truck connected by the sills C, and these sills have brackets C' at the front and rear for the support of the body D. The brackets C' have guides c', which serve to cause the body to be directed to the surfaces of the brackets as it settles.

The body D may be of any ordinary construction having in its rear end a transversely-disposed shaft d, on which is mounted a toothed wheel d'. A dog E is pivoted on the side of the body and engages the toothed wheel and causes the detent to prevent the rotation of shaft d when the said detent is in engagement with the teeth of the wheel. The shaft is provided with short arms d², which extend under the body and have pivotally connected to their lower ends the arms F. The arms F are provided for the purpose of supporting the body at different positions or degrees of incline, and the movement of the body is controlled through the engagement of the detent with the toothed wheel. The body is pivotally connected to the levers G through the medium of the bolt g, the said levers being pivoted intermediately their length on the upper end of the yoke H through the medium of the pivotal pin h. The yoke comprises two vertically-disposed pieces connected by a horizontal brace I, so that both sides of the yoke move together. The bottom of the yoke

has journaled in it a wheel i under each vertically-disposed piece, and the levers G have at their lower ends the flexible connections J , (hereinafter to be termed a "chain," though in using the term "chain" we wish to be understood as meaning a cable, rope, or any other flexible connection which can operate over pulleys for the purpose of adjusting the parts,) and these chains run under the wheels i for the purpose of elevating the yoke and the levers therewith. As a means for assisting the movement of the levers on their pivots the pull of the chains on the outer ends thereof will greatly aid in the elevation of the body. Stays K have their lower ends secured to the axle by means of brackets L , and journaled in each bracket is a pulley Z , over which the chain operates when being wound in raising or lowering the body. The levers are pivoted to the sides and move rearwardly as the body assumes an approximately horizontal position when the body is resting on the brackets of the sills. Guide-rods M each have their front ends pivoted to the sill by means of the bolt m , and the said guide-rods have racks N on their inner surfaces, which are engaged by pinions n on the shaft n' . The end of the shaft is provided with an angular shoulder n'' , which is designed to be engaged by a crank of any ordinary construction for the purpose of rotating the shaft. Pawls n^2 are provided for engaging the pinions for preventing the retrograde movement thereof and for holding them in their positions of adjustment. A lever O is provided on each side of the body and has one end pivoted to the body by means of the pivot o and has its opposite end pivoted on the shaft n' . The lever O and the mechanism to which it is connected are an auxiliary means for tilting the wagon-body to the position shown in full lines in Fig. 2; but where the shaft d and the parts which coact with it are employed the lever O cannot be manipulated until the detent E is disengaged from the wheel. If desired, either one of these adjusting or tilting devices may be used independently; but both are illustrated and disclosed in this connection.

The means for manipulating the chain J comprises in part a shaft P , journaled between the two sides of the sills, and it has mounted thereon at each side in alinement with the pulley i sprocket-wheels Q , having recesses or teeth or other engaging means for causing the chain to travel as the said wheels Q are rotated. As a means for preventing the chains from slipping or to insure their engagement with the wheel Q idlers q are journaled on studs q' , and, as shown in Fig. 2, the chains are held thereby against slipping. The ends of the chains are held to the sills by means of the pins R . The shaft is rotated through the medium of a pinion S , having a shaft pro-

vided with an end which is angular in cross-section for the purpose of receiving a crank-handle. A suitable brake-lever T is pivoted to the frame for the purpose of bearing on the shaft of the pinion in order to prevent too rapid rotation of the parts with the descent of the body. The pinion is preferably in mesh with a gear-wheel U on the shaft u , and on the shaft u is a pinion u' , which meshes with the gear-wheel V on the shaft P . Thus through the medium of this train of gearing the rotation of the crank is communicated to the shaft P , and the rotation of the shaft P carries the wheels Q , which cause the chains to travel.

In operation with the rotation of the shaft P when the parts are in the position shown in Fig. 1 the chain exerts a pull on the outer end of the lever G , which causes it to have a tendency to swing on the pivot k , which connects it to the stays, and it also has a tendency to move the lever G on its pivot h with the yoke, and at the same time the chains have a tendency to elevate the yoke, which movement will bring the parts to the position shown in Fig. 2 from the position of the parts shown in Fig. 1. When the body is first elevated, it will be in the position shown in dotted lines; but through the rotation of the shaft n' or through the elevating of the front of the body or pull on the rear of the body the parts may be brought to the position shown in full lines—that is, if the dog is out of engagement with the toothed wheel d' . When the parts are in the position shown in Fig. 2, the lower end of the yoke is on a plane with the wheel Q , showing the degree of elevation of the yoke from the position which is shown in Fig. 1, and it will be apparent that the body will be elevated to any position intermediately of the positions shown in Figs. 1 and 2.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a dumping-wagon, a suitable running-gear and sills, a body, stays pivotally connected to the axles whereby the weight of the body is communicated direct therewith, suitably-operated mechanism for swinging the stays with relation to the axle as the body is elevated, and means on the body for controlling the movement of the body.

2. In a dumping-wagon, a suitable running-gear and sills, a body, stays pivotally connected to the axles, whereby the weight of the body is communicated directly to the axles, levers pivoted to the body and to the stays, a yoke pivotally connected to the levers and means for elevating the yoke and exerting a pull on the ends of the levers simultaneously.

3. In a dumping-wagon, a suitable running-gear and sills, a body, stays pivotally connected to the axles, whereby the weight of the body

is communicated directly to the axles, levers pivoted to the body and to the stays, yokes, having pulleys at their lower ends, chains connected to the ends of the levers and operating under the pulleys of the yokes, and suitable chain-operating mechanism substantially as described.

4. In a dumping-wagon, a suitable running-gear and sills, a body, stays, pivotally connected to the axles, whereby the weight of the body is communicated directly to the axles, levers pivoted to the body and to the stays, yokes pivotally connected to the levers, pulleys at the lower end of the yoke, chains run under the pulleys and attached to the end of the levers, wheels over which the chain runs and by which the chain is operated, and a suitable train of gearing for rotating the said wheels.

5. In a dumping-wagon, a suitable running-gear and sills, a body, stays pivotally connected to the axles, whereby the weight of the body is communicated directly to the axles, levers pivoted to the body and to the stays, yokes pivotally connected to the levers, pulleys at the lower end of the yoke, chains run under the pulleys and attached to the ends of the levers, wheels over which the chain runs and by which the chain is operated, a suitable train of gearing for operating the said wheels, and means for tilting the body.

6. In a dumping-wagon, a suitable running-gear and sills, a body, stays pivotally connected to the axles, whereby the weight of the body is communicated directly to the axles, levers pivoted to the body and to the stays, yokes pivotally connected to the levers, pulleys at the lower end of the yoke, chains run under the pulleys and attached to the ends of the levers, wheels over which the chain runs and by which the chain is operated, a suitable train of gearing for operating the said wheels, means for tilting the body and means for holding the body at different positions.

7. In a dumping-wagon a suitable running-gear and sills, a body, stays pivotally connected to the axles whereby the weight of the body is communicated directly to the axles, levers pivoted to the stays and to the bed, a yoke to which the levers are pivoted, arms extending rearwardly from the pivots of the yoke, a shaft rotated by the movement of the arms and means for preventing rotation of the said shaft.

8. In a dumping-wagon, a suitable running-gear and sills, a body, stays pivotally connected to the axle, whereby the weight of the body is communicated directly to the axle, suitably-operated means for elevating the body, and suitably-operated means connecting the body and elevating means for further elevating one end of the body.

9. In a dumping-wagon, a suitable running-gear and sills, a body, stays pivotally connect-

ed to the axle, whereby the weight of the body is communicated directly to the axle, suitably-operated means for elevating the body, and suitably-operated means connecting the body and elevating means for further elevating one end of the body independently of the first-named elevating means.

10. In a dumping-wagon, a suitable running-gear and sills, a body, a shaft journaled in the body, suitably-operated means for elevating the body, arms on the shaft pivotally connected to the elevating means, means for controlling the rotation of the shaft, and means for elevating one end of the body independently of the first named elevating means.

11. In a dumping-wagon, a suitable running-gear and sills, a body, stays pivotally connected to the axle, whereby the weight of the body is communicated directly to the axle, suitably-operated means for elevating the body, and suitably-operated means connecting the body and elevating means for further elevating one end of the body independently of the first-named elevating means and means on the body for controlling the last-named elevating means.

12. In a dumping-wagon, a suitable running-gear and sills, a body, a shaft on the body, a toothed wheel on the shaft, a dog pivoted to the body and adapted to engage the toothed wheel, suitably-operated means for elevating the body and arms on the shaft pivoted to the said elevating means.

13. In a dumping-wagon, a suitable running-gear and sills, a body, a transverse shaft in the rear end of the body, a toothed wheel on the shaft, a dog pivoted to the side of the body and adapted to engage a toothed wheel, suitably-operated means for elevating the body and arms depending on the shaft pivoted at their lower end to the elevating means.

14. In a dumping-wagon, a suitable running-gear and sills, a body, means for elevating the body, suitable guide-rods, levers pivoted to one end of the body and having their free ends bearing on the guide-rods.

15. In a dumping-wagon, a suitable running-gear and sills, a body, means for elevating the body, suitable guide-rods, racks on the rods, levers pivoted at one end to the body, a shaft connecting the free ends of the levers, and pinions on the shaft adapted to engage the rack.

16. In a dumping-wagon, a suitable running-gear and sills, a body, means for elevating the body, suitable guide-rods, racks on the rods, levers pivoted at one end to the body, a shaft connecting the free ends of the levers, pinions on the shaft adapted to engage the rack and means on the levers for controlling the rotation of the shaft.

17. In a dumping-wagon, a suitable run-

ning-gear and sills, a body, means for elevat-
ing the body, suitable guide-rods, racks on the
rods, levers pivoted at one end to the body, a
shaft connecting the free ends of the levers,
5 pinions on the shaft adapted to engage the
rack, and pawls pivoted to the levers and en-
gaging the pinions.

In testimony whereof we affix our signa-

tures, in the presence of two witnesses, this
18th day of May, 1904.

JOHN KRASMER.

FRANK M. KRASMER.

Witnesses:

CHARLES M. JOHNSON,

HARRY J. FRANK.