W. H. HUNT.

DUMPING WAGON.

APPLICATION FILED MAY 19, 1913.

1,152,510.

Patented Sept. 7, 1915.

3 SHEETS—SHEET 1.

Fig. 1.

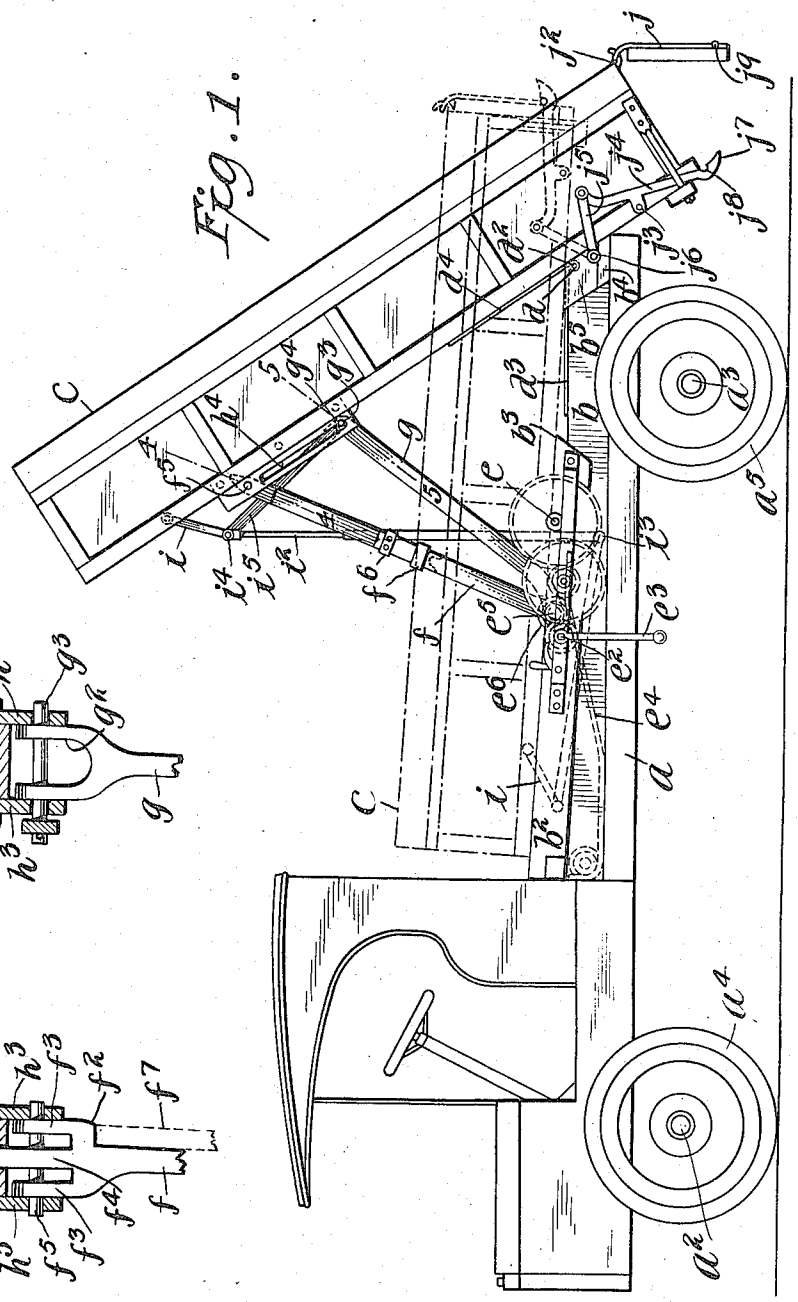


Fig. 5.

Fig. 4.

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3 SHEETS—SHEET 2.

Fig. 2.

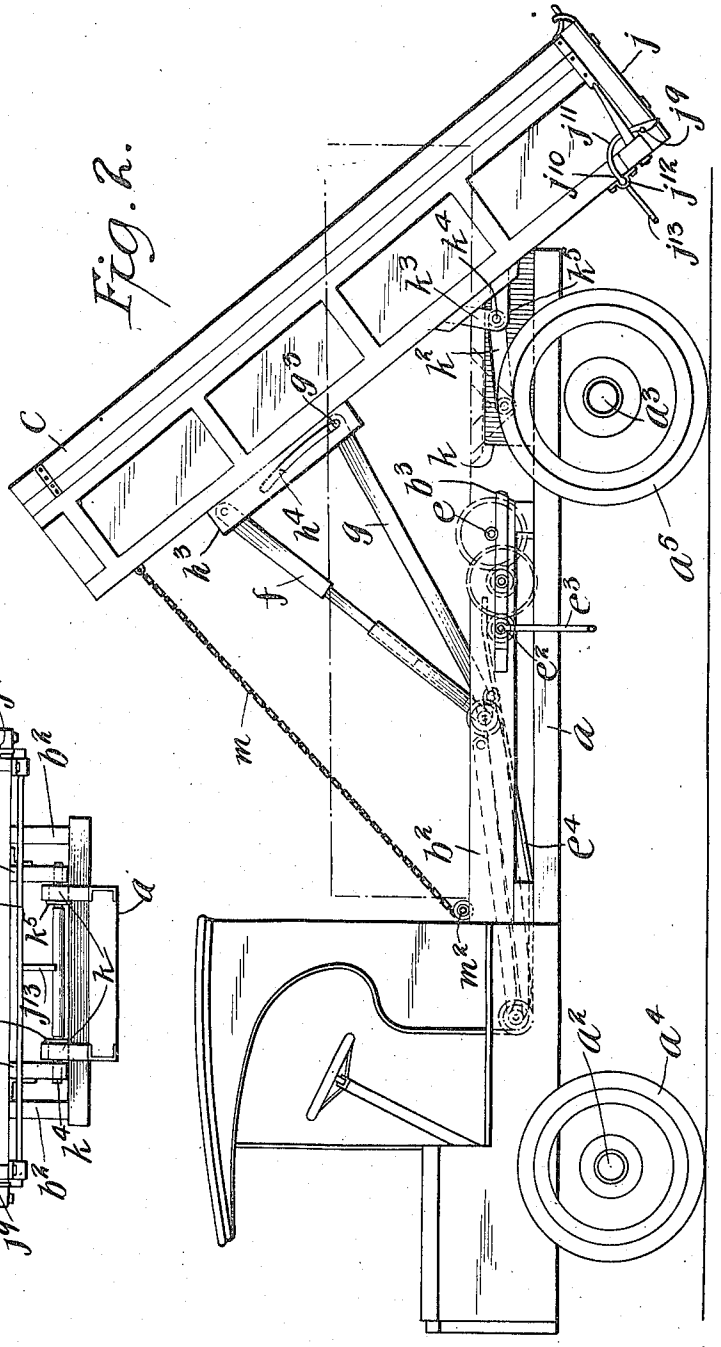
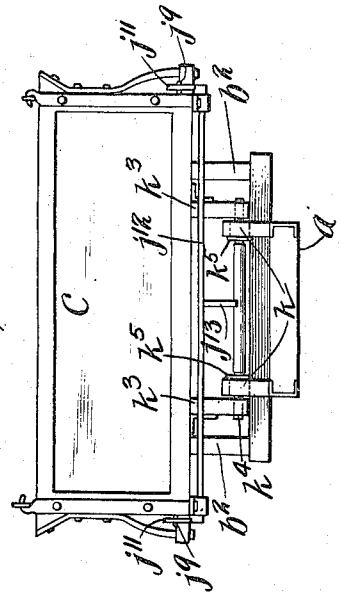


Fig. 6.



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3 SHEETS—SHEET 3.

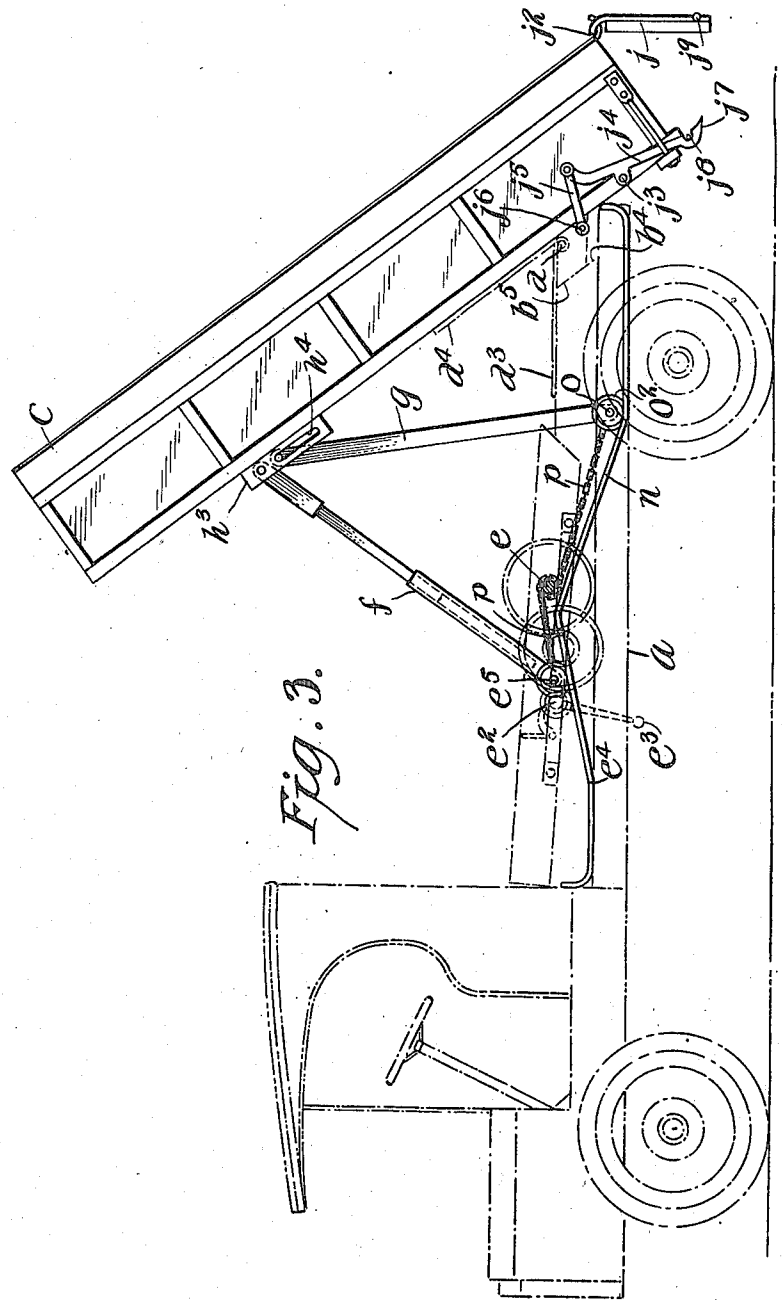


Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM H. HUNT, OF NEW YORK, N. Y.

DUMPING-WAGON.

1,152,510. Specification of Letters Patent. Patented Sept. 7, 1915.

Application filed May 19, 1913. Serial No. 768,406.

To all whom it may concern:

Be it known that I, WILLIAM H. HUNT, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Dumping-Wagons, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to delivery wagons or trucks, and the object thereof is to provide improved means for raising the front end of the bed or body of a vehicle of this class into an elevated position to facilitate the discharge of the contents therefrom; a further object being to provide an apparatus of the class specified by means of which the front end of the bed or body may be raised to the highest possible angle, with reference to the truck frame, consistent with safety so as to produce a complete and quick discharge of the contents of said bed or body; a still further object being to provide the bed or body of a vehicle of the class specified with a hinge tail gate and means automatically operated for opening said gate at the desired time and for locking said gate when the bed or body returns to its normal position on the truck frame; and with these and other objects in view the invention consists in a mechanism of the class specified constructed and operating as hereinafter described.

The invention is fully disclosed in the following specification of which the accompanying drawings form a part, in which the separate parts of my invention are designated by suitable reference characters in each of the views, and in which;—

Figure 1 is a side view of a power driven vehicle of the class specified provided with my improvement and showing the front end or body raised as in the operation of discharging the contents thereof;—Fig. 2 a similar view but showing a modification of the hoisting apparatus, and showing means whereby the bed or body is given a backward movement in the operation of raising the front end thereof;—Fig. 3 is a view similar to Figs. 1 and 2 but showing another modification in the means for raising the front end of the bed or body;—Fig. 4 a partial section on the line 4—4 of Fig. 1;—Fig. 5 a partial section on the line 5—5 of Fig. 1;—Fig. 6 a rear view of the chassis of the frame and the supplemental truck frame shown in Fig. 2, and showing the bed or body in its normal position and with parts omitted.

The invention described and claimed herein is an improvement on that described and claimed in an application for Letters Patent of the United States filed by me September 11, 1912, Serial No. 719,697, and in the accompanying drawings I have shown a power driven vehicle of the class usually employed in the art to which this invention relates, and said vehicle is provided with the usual chassis frame a, a front axle a^2, a rear axle a^3 and front and rear wheels a^4 and a^5; and in the practice of my invention as shown in Fig. 1, I provide a supplemental truck frame mounted on the chassis frame and comprising central parallel members b which correspond with the side bars of the chassis frame and outside of which are other parallel side bars b^2 which terminate forwardly of and above the rear wheels a^5, as shown at b^3, so that the bed or body c of the vehicle will always clear the rear wheels a^5, and in the construction shown, the bed or body c is longer than the chassis frame and supplemental truck frame, and the object of using or employing a supplemental truck frame is to elevate the bed or body which overhangs the rear wheels in the usual manner so that in the operation of the vehicle, when heavily loaded, and spring supported, said bed or body is not able to come in contact with said wheels.

The supplemental truck frame is provided at its rear end with a transverse bar b^4 which is clearly shown in Fig. 1 in full lines and indicated in dotted lines in Fig. 3, and said cross bar is provided with raised end blocks b^5 on which the bed or body normally rests and on which said bed or body moves on a pivot when the front end thereof is raised.

The bed or body is hinged at d to the supplemental truck frame by means of a pintle rod d^2 mounted transversely of the supplemental truck frame above the transverse bar b^4 and hinged plates d^3 connected with the supplemental truck frame, and corresponding hinge plates d^4 connected with the bottom of the bed or body through which said pintle rod passes, and said pintle rod is arranged between the blocks b^5.

The winding and hoisting mechanism which I employ involves the usual transverse wind-

ing shaft e and crank shaft e^2 geared in connection, as shown, and the crank shaft e^2 is provided with the usual crank e^3. These features of construction are the same as those shown and described in the application hereinbefore referred to, except that in this construction the shafts e and e^2 are mounted in the side bars b^2 of the supplemental truck frame.

Within the side bars b^2 of the supplemental truck frame, two of which are employed, and which correspond in position with the side bars of the chassis frame a, are placed inclined tracks e^4 which extend from the front end of the supplemental truck frame forwardly and upwardly, approximately to the middle thereof, and on these tracks are mounted a transverse shaft e^5 having end rollers e^6 which bear on said tracks or ways, this construction being also similar to that in the application hereinbefore referred to, and common in other apparatus of this class, and mounted on the shaft e^5, inwardly of the side bars b^2 of the supplemental frame, and inwardly of the rollers e^6 is a pair of telescopic arms f only one of which is shown, and another pair of arms g are also mounted on said shaft and only one of which is shown, and the connection of the arms f and g with the shaft e^5 is a pivot connection the same as in the application hereinbefore referred to, and the connection of said arms with the bed or body is shown in Figs. 1, 4 and 5, and is of the following construction. Secured to the bottom of the bed or body between the bottom side rails thereof is a pair of longitudinal cleats h, but one of which is shown, and which may extend the full length of the bed or body, or which may be of any desired length, and secured to said cleats by means of bolts h^2 are side plates h^3 which extend below said cleats and which are provided with longitudinal slots h^4, and the arms g are provided with forked heads g^2 through which are passed pins g^3 which pass through the slots h^4, and said pins g^3 are freely movable longitudinally of said slots.

The arms f are provided with heads f^2 having side ears f^3 and a central ear f^4, and the central ear f^4 is longer than the side ears and enters a corresponding slot or recess h^5 in the cleats h and the object of which is to brace the arms or the connection thereof with the bed or body against lateral movement in the operation of raising said bed or body. The head f is connected with the side plates h^3 by a pin f^5 passed through said side plates and through the ears f^3 and f^4 of said arms, and it will be observed that the connection of the arms f of the bed or body is forwardly of the connection with said bed or body of the arms g.

The arms f are telescopic arms which may be made in any desired manner, but which, in the construction shown in Fig. 1, consist of two parts each of which is provided with a keeper f^6 through which the other part is passed, and this constitutes, as will hereinafter appear, one of the chief features of this invention.

The hoisting mechanism of the bed or body, as shown in Fig. 1, is also provided with initial lift devices or apparatus involving link members i arranged in pairs and pivoted inwardly of the bottom side rails of said bed or body and preferably to and inwardly of the cleats h and with which are connected telescopic thrust rods i^2 which are pivoted inwardly of the bars b^2 of the supplemental truck frame, as indicated at i^3, and the connections of the links i and telescopic thrust rods i^2 at i^4 are hinged connections, and connected therewith are link bars i^5 also arranged in pairs, and said link bars are connected with the pins g^3 with which the heads g^2 of the arms g are connected, as clearly shown in Figs. 1 and 5.

The bed or body c is provided with a tail gate j having a loose hanging connection with said bed or body at j^2, and pivoted to the bottom side rails of the bed or body, adjacent to the rear end thereof, as shown at j^3, are lever arms j^4 with the forward ends of which are connected links j^5 which are pivoted below the bottoms of said side rails, as shown at j^6, to the blocks b^5, and the rear ends of the lever arms j^4 are provided with upwardly directed cam noses j^7 inwardly of which are recesses j^8 adapted to receive pins j^9 on the ends of the tail gate j.

It will be understood that, in practice, chains or similar devices are connected with the transverse shaft e^5 and with the winding shaft e in the usual manner, said chains being shown in Fig. 3. It will also be observed that the transverse shaft e^5 with which the arms f and g are connected, in the form of construction shown in Fig. 1, is forward of the transverse center of the bed or body and forward of the winding shaft e, and said shaft is shown in its normal position in dotted lines in Fig. 1. The top walls of the slots h^4 in the side plates h^3 in which the pins g^3 which hold the arms g in connection with said side plates are movable are preferably provided at their rear ends with shallow recesses g^4 to receive the pins g^3, when the parts are in the position shown in Fig. 1 to hold said arms against upward movement when the contents of the bed or body are being discharged.

In the normal position of the parts, the arms f and g lie flat or approximately so in the supplemental truck frame, and the separate parts of the arms f are telescoped together, and the upper ends of the parts which are connected with the shaft e^5 bear on the heads of the parts which are connected with the bed or body, as shown at f^7 in

Fig. 4, while the lower ends of the parts of said arms that are connected with the bed or body bear on the shaft e^5.

The object of making the arms f telescopic is to be able to obtain a short lifting leverage when the bed or body is in its normal position, or in other words, provide a short arm lift under the load, and by means of which a quicker and more effective operation of said arms is provided, and this also provides means whereby the bed or body may be raised to a much greater angle or inclination than would be otherwise possible, if said arms were not made telescopic, and this is one of the chief features of this invention.

In the above described operation the pins g^3 move backwardly in the slots h^4, and at the beginning of this movement, link bars i^5 pull backwardly on the pivotal or hinged points i^4 of the links i, and the telescopic rods i^2; being in their fully telescoped position take the thrust of this pull and the tendency is for the links i to raise the front end of the bed or body, or help to raise it, and this tendency continues until the front end of the bed or body, reaches a height at which one part of the telescopic rods i^2 moves outwardly with reference to the other parts of said rods.

It must be borne in mind that the initial lifting devices i, i^2 and i^5 are not an absolutely essential element in this construction and may or may not be employed.

The chief difference between the construction shown in Figs. 2 and 6 and that shown in Figs. 1, 4 and 5 is in the provision of means whereby the bed or body may be given a horizontal backward movement in the operation of raising said bed or body, whereby a greater overhang of said bed or body is produced in the operation of dumping the contents thereof, and whereby the weight of the bed or body with its load is distributed more evenly over the chassis and on both axles of the vehicle, in the normal position of said bed or body, than is possible with the construction shown in Figs. 1, 4 and 5, a further object of the construction shown in Figs. 2 and 6 being to provide means whereby the center of gravity of the bed or body and its load may be moved backwardly at the beginning of the operation of elevating or raising the front end thereof so as to reduce the power necessary to raise said front end of the bed or body with its load.

The above objects are obtained by providing in the supplemental truck frame, or at the rear end thereof, supplemental truck frame members k which are connected directly with the rear end of the chassis frame, as shown in Figs. 2 and 6, and in which are formed longitudinal slots k^2 which are preferably forwardly and downwardly inclined, and connected with the bottom of the bed or body are hangers k^3 in which is mounted a transverse bar k^4 which passes through the slots k^2, and the bar k^4 is provided with rollers k^5 movable in the slots k^2, and this construction forms a combined sliding and hinged connection for the bed or body with the truck frame.

In this form of construction the tail gate j is provided with hand operated locking devices j^{10} consisting of hook-shaped arms j^{11} adapted to engage the pins j^5 and which are connected with a transverse rod j^{12} pivoted beneath the bottom of the bed or body and provided with a central hand piece j^{13} by which it may be operated to release the tail gate.

In this form of construction, the telescopic arms f and the arms g are employed the same as in Fig. 1, but the telescopic arms f are of slightly different construction, and the initial lifting mechanism consisting of the parts i, i^2 and i^5 is omitted, and the tracks or ways e^4 are extended forwardly beneath the seat body of the chassis, and in this form of construction, a chain or other flexible device m is connected with the front end of the bed or body and with a roller shaft m^2 mounted in or over the front end portion of the supplemental truck frame and by means of which the bed or body may be drawn forward into its normal position, as shown in dotted lines in Fig. 2.

The construction shown in Fig. 3 is the same as that shown in Fig. 1 except that supplemental inclined tracks or ways n are employed rearwardly of the inclined tracks or ways e^4 and which extend downwardly and backwardly between, or inwardly of the rear end portions of the side rails of the chassis frame, and the arms g are connected with an independent shaft o provided with rollers o^2 movable on the tracks or ways n, and two sets of winding chains p are employed, both of which are connected with the main winding shaft e. In this construction the same tail gate mechanism is employed, as in Fig. 1, and in the operation of the winding mechanism, the pins g^3 of the arms g are normally in the rear ends of the slots h^4 in the plates h^3 and move forwardly in said slots when the arms f are raising the bed or body and its load through its initial movement, and when the pins g^3 reach the forward ends of the slots h^4 the arms g take the load, and the telescopic arms f begin their movement.

Having fully described my invention what I claim as new and desire to secure by Letters Patent is;—

1. In a vehicle of the class described, a truck frame, a bed or body mounted thereon, and the rear end of which is movably connected with the rear end of the truck frame, and a hoisting mechanism for said bed or

body, said hoisting mechanism consisting of a winding shaft mounted centrally and transversely of the truck frame, means for operating said shaft, two pairs of arms arranged transversely of the bed or body and connected with the bottom thereof forwardly of the middle thereof, the connection of one of said pairs of arms with the bottom of the bed or body being rearward of the connection of the other pair of arms with said bed or body, and being a sliding pivotal connection, and the connection of the other pair of said arms being a pivotal connection only, said other pair of arms being of telescopic construction, said pairs of arms being also each provided at their other ends with a truck frame connection movable toward and from the winding shaft, and means connected with said other ends of said pairs of arms and with the winding shaft for moving said ends of said arms toward said shaft.

2. In a vehicle of the class described, a truck frame, a bed or body mounted thereon and the rear end of which is movable connected with the rear end of the truck frame, and a hoisting mechanism for said bed or body, said hoisting mechanism consisting of a winding shaft mounted centrally and transversely of the truck frame, means for operating said shaft, two pairs of arms arranged transversely of the bed or body and connected with the bottom thereof forwardly of the middle thereof, the connection of one of said pairs of arms with the bottom of the bed or body being rearward of the connection of the other pair of arms with said bed or body, and being a sliding pivotal connection, and the connection of the other pair of said arms being a pivotal connection only, said other pair of arms being of telescopic construction, said pairs of arms being also each provided at their other ends with a truck frame connection movable toward and from the winding shaft, and means connected with said other ends of said pairs of arms and with the winding shaft for moving said ends of said arms toward said shaft, said telescopic arms being adapted to give an initial lifting movement to the front end of the bed or body, and the other pair of arms being adapted to give a final lifting movement thereto, and to sustain the bed or body in a raised position.

3. In a vehicle of the class described, a truck frame, a bed or body mounted thereon and the rear end of which is movably connected with the rear end of the truck frame, and a hoisting mechanism for said bed or body, said hoisting mechanism consisting of a winding shaft mounted centrally and transversely of the truck frame, means for operating said shaft, two pairs of arms arranged transversely of the bed or body and connected with the bottom thereof forwardly of the middle thereof, the connection of one of said pairs of arms with the bottom of the bed or body being rearward of the connection of the other pair of arms with said bed or body, and being a sliding pivotal connection, and the connection of the other pair of said arms being a pivotal connection only, said other pair of arms being of telescopic construction, said pairs of arms being also each provided at their other ends with a truck frame connection movably toward and from the winding shaft, and means connected with said other ends of said pairs of arms and with the winding shaft for moving said ends of said arms toward said shaft, said telescopic arms being adapted to give an initial lifting movement to the front end of the bed or body, and the other pair of arms being adapted to give a final lifting movement thereto, and to sustain the bed or body in a raised position, and said bed or body being also provided with other means to aid in giving the front end thereof an upward initial movement consisting of link devices pivoted thereto, telescopic rods pivotally connected with said link devices and with the truck frame, and link members connected with said link devices, and telescopic rods at the points of their connection, and with the arms which are slidably connected with the bottom of the bed or body.

4. In a vehicle of the class described, a truck frame, a bed or body mounted thereon and the rear end of which has a movable connection with the truck frame, two pairs of arms pivoted to the bottom of the bed or body transversely of the bottom thereof and forwardly of the middle thereof, the connection of one pair of said arms with the bottom of the bed or body being rearwardly of the connection of the other pair of said arms, and being a sliding connection, the other pair of said arms being of telescopic construction, and both pairs of said arms being provided with a sliding connection with the truck frame.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 17th day of May 1913.

WILLIAM H. HUNT.

Witnesses:
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C. MULREANY.