W. S. WITTEN.

DUMP CART.

APPLICATION FILED MAR. 15, 1909.

1,043,989.

Patented Nov. 12, 1912.

4 SHEETS—SHEET 1.

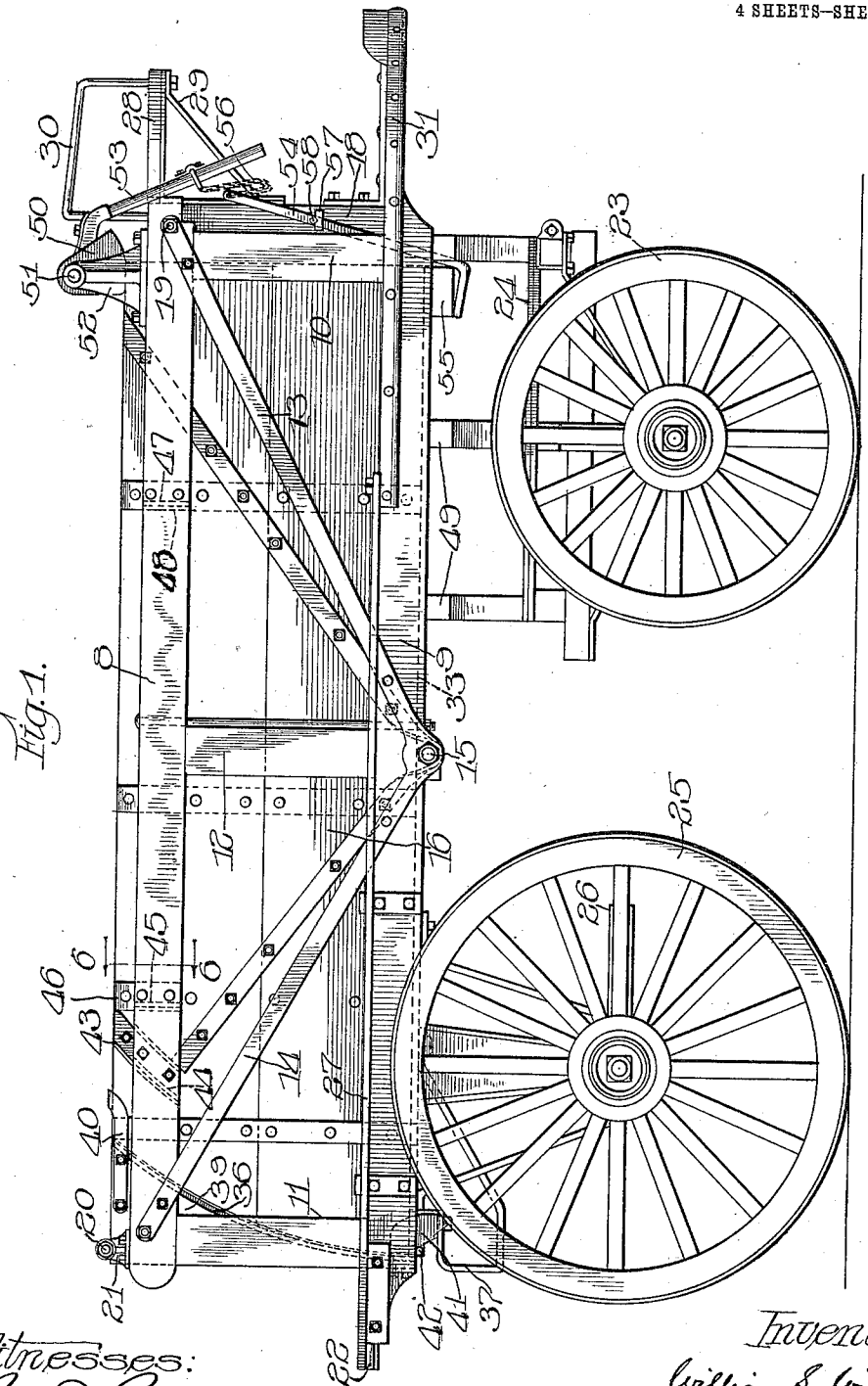

Fig. 1.

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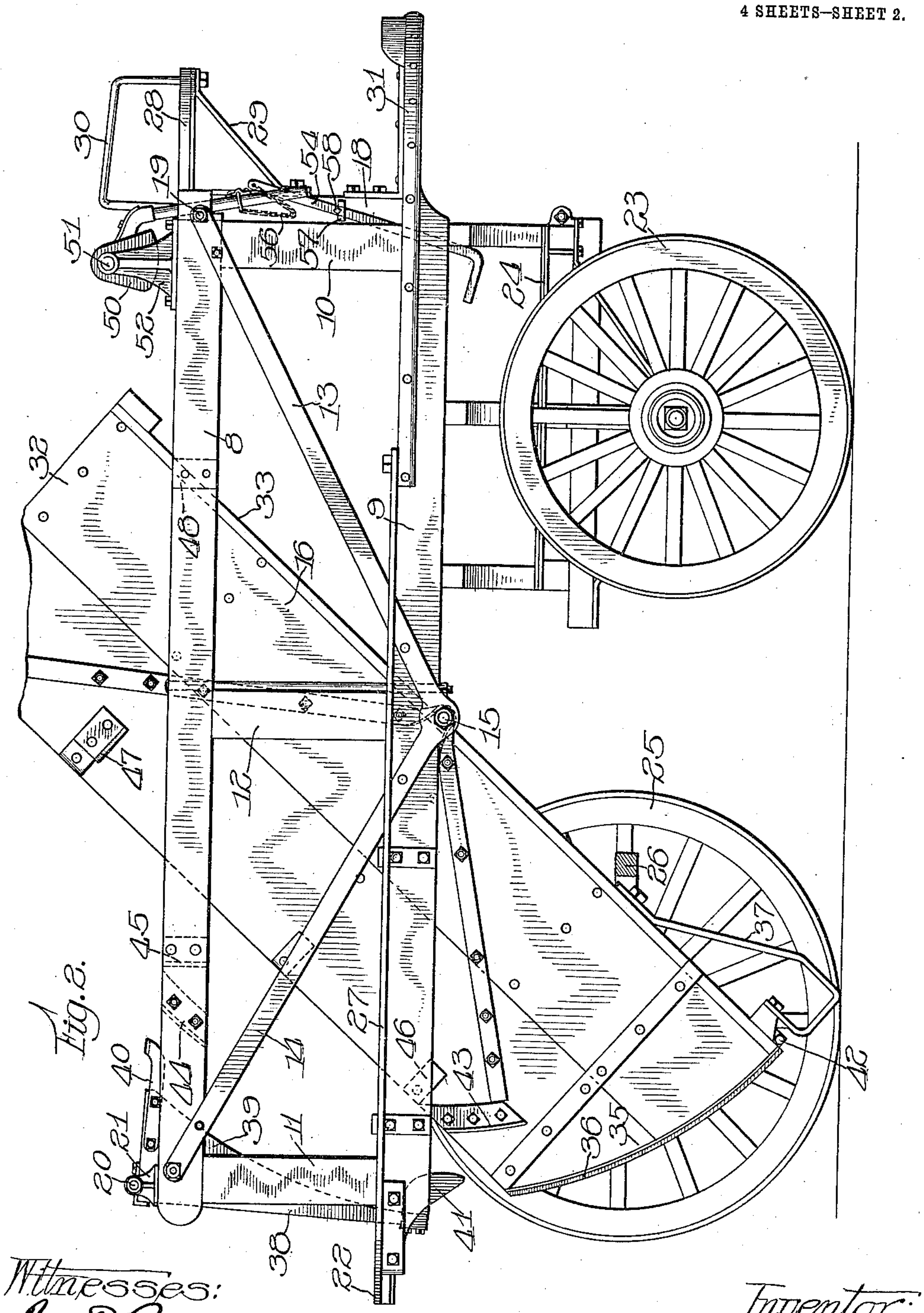

Fig. 2.

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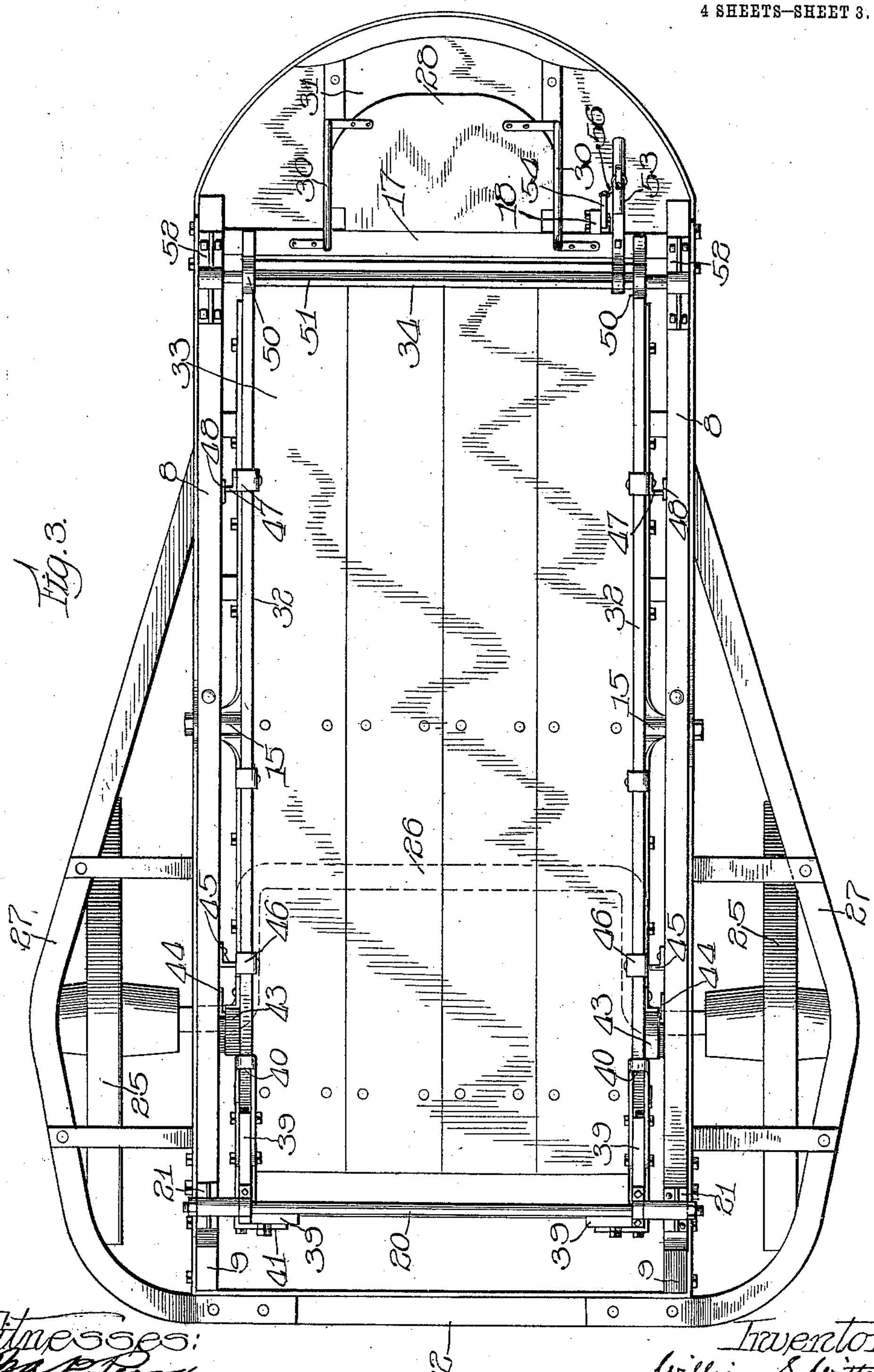

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4 SHEETS—SHEET 4.

Fig. 4.

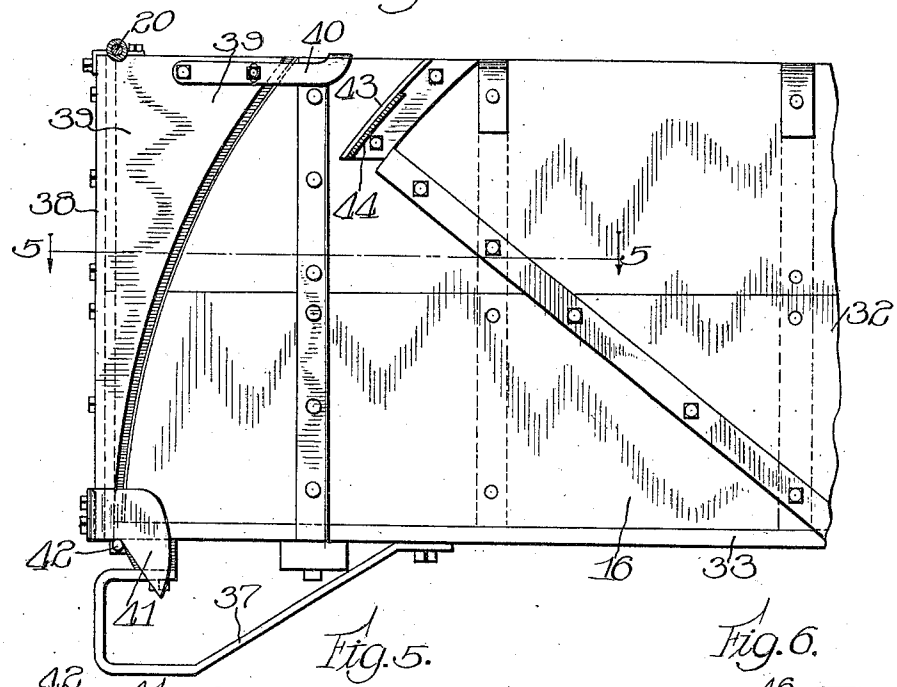


Fig. 5.

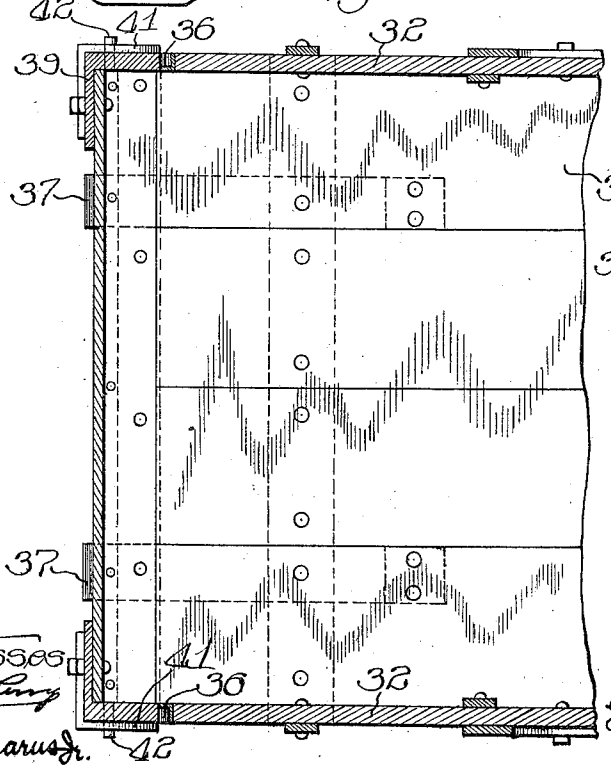


Fig. 6.

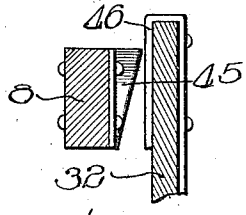
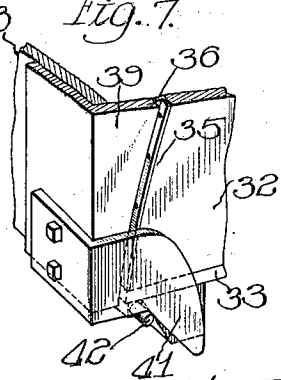


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM S. WITTEN, OF CHICAGO, ILLINOIS.

DUMP-CART.

1,043,989. Specification of Letters Patent. Patented Nov. 12, 1912.

Application filed March 15, 1909. Serial No. 483,498.

To all whom it may concern:

Be it known that I, WILLIAM S. WITTEN, 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 Dump-Carts, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to carts or wagons provided with a tilting bed for discharging the load, and it has for its object to provide certain improvements by which the construction of the cart is strengthened and its efficiency in operation increased. I accomplish this object as illustrated in the drawings and as hereinafter described. What I regard as new is set forth in the claims.

In the accompanying drawings,—Figure 1 is a side elevation of a cart illustrating my improvements, showing the bed in its normal or operative position; Fig. 2 is a similar view showing the bed in its dumping position; Fig. 3 is a plan view; Fig. 4 is a side view partly in section of the rear portion of the bed showing the end-gate; Fig. 5 is a partial horizontal section on line 5—5 of Fig. 4; Fig. 6 is a partial vertical section on line 6—6 of Fig. 1; and Fig. 7 is a perspective view of one of the lower rear corners of the bed and end-gate.

Referring to the drawings,—8—9 indicate the upper and lower rails, respectively, of side frames, and 10, 11 and 12 the end and intermediate bars which connect the upper and lower rails 8 and 9, as best shown in Fig. 2.

13—14 indicate diagonal braces connected, respectively, with the front and rear ends of the rails 8 and also connected intermediately with pivots 15 projecting laterally from the lower rails 9, as shown in Figs. 2 and 3. The several parts of the side frames are thus strongly braced together, and the pivots 15, which support the tilting box or bed, as hereinafter described, are rigidly held in position. The members 13 and 14 are preferably made integral with each other, as shown in Fig. 2, and also the pivots 15 are preferably united and made of a single rod extending under the bed or box 16, thereby pivotally supporting the bed intermediately.

17—18 indicate upper and lower cross-bars, respectively, which connect the side frames at the front, and 19 indicates a rod, the ends of which are secured in the forward ends of the upper rails 8 of the side frames for connecting them together more firmly. At the rear the side frames are connected by a rod 20, the ends of which are secured in brackets 21 attached to the rear ends of the upper rails 8, as shown in Figs. 2 and 3. The lower rails 9 of the side frames are connected together and braced by an angle-iron 22, as shown in Fig. 3. Thus the side frames are rigidly secured together at the front and rear forming a wagon frame which extends around the box or bed at all sides. The wagon frame is suitably supported at the front upon wheels 23 preferably through a fifth wheel 24, and at the rear is carried on wheels 25 connected by a bent axle 26, the arch of the axle extending forward, as shown in Figs. 1 and 2 and indicated in dotted lines in Fig. 3. The object of bending the axle 26, as shown, is to keep it from interfering with the dumping of the bed, as indicated in Fig. 2.

It will be understood that the running gear of the cart may be of any approved construction and it forms no part of my present invention.

27 indicates guards in the form of iron or steel bars, which are secured to the lower rails 9 of the side frames near the forward ends thereof and are connected at the rear with the cross-bar 22, as also shown in Fig. 3. The guards 27 extend over the wheels and project slightly beyond the outer ends of the hubs thereof so as to prevent the hubs from striking side walls, the sides of cattle pens, etc. It may be well to explain that the cart shown in the drawings is designed with special reference to its use in stock yards for removing waste material from cattle pens or alleys, but it may be used for

any purpose for which it is adapted, and I wish it to be understood that in showing my improvements as applied to a cart intended for the uses above indicated I do not intend to restrict myself to the use of my improvements on such carts alone, as they may be applied to carts designed for other uses.

28 indicates the driver's seat, which is secured at the front of the wagon frame and is supported by braces 29 in any approved way.

30 indicates the end rails of the seat 28, and 31 indicates the driver's foot-rest, which projects from the front of the wagon frame, as shown in Figs. 1, 2 and 3.

The wagon bed 16 is a rectangular box closed at the front and open at the rear,—32 indicating the sides of the box, 33 the bottom thereof, and 34 the front end thereof. The box is mounted upon the pivots 15 as already described, said pivots being placed at about the longitudinal center of the box. The rear edges of the sides 32 are curved upward and forward, as shown at 35 in Fig. 2, and are provided with a metal facing 36 of angle-iron, best shown in Figs. 5 and 7. The purpose of this arrangement is to cause the rear edges of the sides 32 of the box to engage and operate the end-gate in the manner hereinafter described.

37 indicates bumpers carried under the bottom of the box near its rear end to yieldingly engage the ground when the bed is dumped.

38 indicates the end-gate, which is pivotally suspended from the rod 20 by suitable hinges so that its lower edge may swing backward and forward and so that when released the gate will swing slightly outward, for example as indicated in Fig. 2 of the drawing. As best shown in Figs. 3, 4 and 5, the end-gate 38 is provided at its opposite ends with segmental side-pieces 39, the forward faces of which are curved to conform to the curvature of the rear edges of the sides 32 of the wagon bed, so that when the wagon bed is in operative position the side-pieces 39 are in alinement with and form continuations of the sides 32 of the box in the manner shown in Figs. 3 and 5.

40 indicates arms, preferably of strap metal bent in the form of stirrups, which are secured to and project forward from the upper edges of the side-pieces 39, as shown in Figs. 2, 3 and 4, so as to project over the rear edges of the sides 32 of the box when the box is in its operative position, as shown in Fig. 4. The arms 40 are so placed that when the box is swung into its horizontal or operative position the arms 40 are forcibly engaged by the sides of the box and accordingly carry upward the forward portions of the side-pieces 39, thereby throwing the lower edge of the end-gate forward and holding the side-pieces firmly in contact with the rear edges of the sides of the box, as shown in Fig. 4. Thus a very tight connection is made between the sides of the box and the side-pieces 39 carried by the end-gate. This, however, does not interfere with the facility with which the bed may be dumped since downward movement of the rear end of the bed automatically and instantly releases the arms 40 and leaves the lower end of the end-gate free to swing backward away from the bed.

In order to positively lock the lower edge of the end-gate in engagement with the rear edge of the bed when the latter is in operative position, I provide the end-gate with cam or wedge plates 41, which are secured to the lower corners of the end-gate and project forward therefrom parallel with and adjacent to the side-pieces 39, as best shown in Figs. 4 and 7. The locking plates 41 are adapted to be engaged by pins 42 which project laterally from the sides of the bed at the rear, as shown in Figs. 2 and 7, and, when the wagon bed is moved upward in restoring it to its normal position, engage the rear edges of the locking plates 41 and by reason of the inclination of such edges force the locking plates and the lower edge of the end-gate forward as the rear portion of the bed moves up. When the bed is in its normal position, the parts are as shown in Fig. 7, the locking plates being firmly held in their forward position, thus holding the lower edge of the end-gate tightly in contact with the lower portion of the bed. The locking plates are, of course, released as soon as the bed begins to tilt in dumping.

When the box is locked in operative position, the rear portion thereof is supported and protected against undue strain from the weight of the load carried thereby by means of laterally-projecting plates 43—44 through which the weight of the load in the rear portion of the box is transmitted to the frame. This is accomplished by securing the curved plates 43 to the sides of the box near the rear ends thereof so that they project laterally toward the upper rails 8 of the frame, said rails being provided with the curved plates 44 which project inwardly under the plates 43 in the manner best shown in Figs. 1, 3 and 4. The plates 43—44 are curved in the arc of circles of which the pivots 15 are the center so that they do not interfere with the swinging of the box, but when the box is locked in its normal position the rear portion thereof is sustained by the frame against downward movement under the weight of the load. By this construction when the box is in operative position, the weight of that portion of

the load near the front end thereof is sustained by the bolsters and fifth wheel, while the weight in the rear portion thereof is sustained by the frame, being transmitted through the plates 43—44 in the manner above described. For the purpose of bracing the sides of the bed against outward strain I provide laterally-projecting plates 45 which are carried by the rails 8 and project inwardly therefrom into engagement with bearing plates 46 carried by the sides of the box. Near the forward end of the bed I provide the sides of the bed with similar laterally-projecting plates 47 which engage bearing plates 48 carried by the wagon frame, as best shown in Fig. 3. Thus when the bed is in operative position, its upper margin is thoroughly braced against the wagon frame and thereby prevented from bulging under a heavy load. The plates 45 and 47 are beveled in the manner shown in Fig. 6 so as to secure a wedging effect.

When the bed is in its normal position it is supported at the front by resting upon bolsters 49 and is locked in its normal position by cams or locking blocks 50 mounted at the opposite ends of a rock-shaft 51 supported by brackets 52 carried on the side rails 8, as shown in Figs. 1 and 2. The locking blocks 50 lie over the sides 32, which they engage in such manner that their point of contact with the sides of the box is in the vertical plane of the rock-shaft 51 which extends thereover. By rocking said rock-shaft to throw the locking blocks 50 forward, the bed is released so that the forward end thereof may swing upward as in dumping. The shaft 51 is rocked by means of a lever 53 secured thereto at one side of the seat 28, as shown in Fig. 3. To automatically lift the front end of the box and expedite the tilting thereof, a bent rod 54 is provided, the lower end of which extends under a cross-bar 55 secured to the front end of the box, its upper end being connected by a flexible connection, as a chain 56, with the lever 53 in such manner that when the lever 53 is lifted to release the wagon box the rod 54 is drawn upward thereby lifting the box and starting the dumping operation. A guide 57 is provided for guiding the rod 54 when it is operated.

58 indicates a pin for limiting the downward movement of the rod 54 by its engagement with the guide 57.

By pivoting the wagon box at the center, as described, it tilts very readily in dumping and comparatively little power need be applied to the locking lever 53 to start the tilting of the box. As soon as the box starts to tilt the end-gate is released and the weight of the load pressing against it throws it back away from the box so that the load may readily escape through the open rear end of the box. Thus the weight of the load helps in the dumping operation. After the load has been discharged, the box is swung to operative position and is automatically locked in such position by gravity owing to the swinging back of the locking blocks 50 under the action of gravity. Furthermore, the end-gate is automatically locked in operative position through the engagement of the pins 42 with the wedge plates 41 and also the engagement of the sides of the box with the arms 40 hereinbefore described. The engagement of the locking blocks 50 with the sides of the box substantially in the vertical plane of the rock-shaft 51 relieves said locking blocks of strain and secures a very firm engagement thereof with the box. The sharp-edged plates 36 at the rear edges of the sides of the box serve to make a very tight connection between the sides of the box and the sides of the end-gate and cut away dirt that may accumulate there, thereby insuring a proper contact at all times when the box is in operative position.

So far as I am aware, I am the first in the art to provide a dump-cart with a tilting bed or box and an end-gate hanging pendent from a stationary support and moved into operative relation with the bed or box by the movement of the latter into operative position; and to provide such an end-gate with forwardly-projecting members which are engaged by the sides of the bed or box when the latter is moved into operative position and act to move the end-gate into operative position. These features, therefore, are claimed broadly.

My invention in the above and other respects also is generic in character, and the claims hereinafter made are to be construed accordingly.

I wish it to be understood that the term "end" as applied to the end-gate and the box is used in a generic sense and is not intended to limit my improvements to a wagon, in which the dumping is at the rear of the wagon, as many of my improvements may also be applied to carts, railway cars and other appliances in which the bed or box is arranged to dump laterally. The same is true also of the term "cart" or "wagon" as herein employed, as I do not restrict myself to the use of my improvements in carts or wagons only as, so far as applicable, they may also be used in connection with railway cars and analogous appliances. My improvements are, however, especially applicable to wagons designed for general purposes, as for example farm wagons, wagons for hauling manure and other refuse in stock yards, etc., wagons used in connection with harvesting corn or other farm products, and also for hauling hay in connection with hay

loaders and other hay machinery. Also they may be applied to wagons having a bed or box composed of a plurality of sections.

That which I claim as my invention, and desire to secure by Letters Patent, is,—

1. A dumping vehicle, comprising a tilting box, a stationary support, an end-gate hanging pendent from said support and having forwardly-projecting members adapted to register with and engage the sides of the box to form continuations thereof when the box is in operative position, and means carried by the forwardly-projecting members and projecting over the sides of the box for moving the end-gate into operative position when the box is restored to operative position.

2. A dumping vehicle, comprising a frame, an end-gate pivotally supported from above by said frame so that its lower margin, when released, will swing outward by gravity, a tilting box also supported by said frame, said end-gate being adapted to coact with said box to close the end thereof when the box is in operative position, and means connected with the end-gate and adapted to be engaged by the box when the latter is moved into operative position for moving said end-gate tightly into engagement with the box.

3. A dumping vehicle, comprising a tilting box, stationary supports at opposite sides of the rear portion of the box, a rod carried by said supports, an end-gate hanging pendent from said rod and arranged to swing outward by gravity when released, and adapted to coact with the box to close the end thereof when the latter is in operative position, and means for moving the end-gate into operative position when the box is moved into operative position.

4. A dumping vehicle, comprising a tilting box, stationary supports at opposite sides of the rear portion of the box, a rod carried by said supports, an end-gate hanging pendent from said rod and arranged to swing outward by gravity when released, and adapted to coact with the box to close the end thereof when the latter is in operative position, and forwardly-projecting means carried by the end-gate and adapted to be engaged by the box when the latter is moved into operative position to move the end-gate into operative position.

5. A dumping vehicle, comprising a tilting box, stationary supports at opposite sides of the rear portion of the box, a rod carried by said supports, an end-gate hanging pendent from said rod and adapted to coact with the box to close the end thereof when the latter is in operative position, forwardly-projecting means carried by the end-gate and adapted to be engaged by the box when the latter is moved into operative position to move the end-gate into operative position, and members carried by the end-gate and adapted to register with the sides of the box to form continuations thereof.

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