No. 782,348. PATENTED FEB. 14, 1905.

W. S. LIVENGOOD.

DUMPING WAGON.

APPLICATION FILED OCT. 31, 1903.

3 SHEETS—SHEET 1.

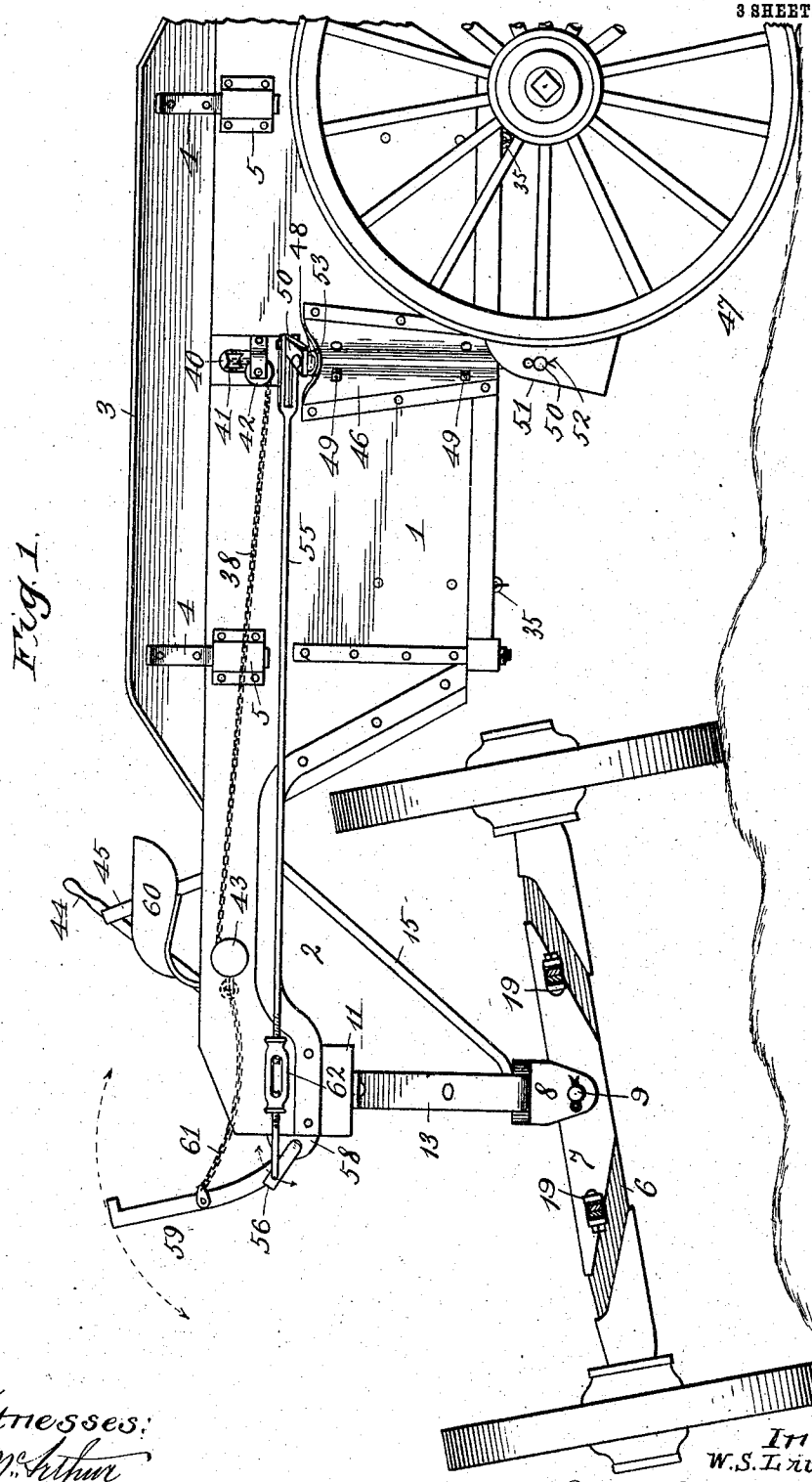


Fig. 1.

Witnesses:
A. M. Arthur
P. A. Hickey

Inventor:
W. S. Livengood
By F. G. Fischer Atty

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3 SHEETS—SHEET 2.

Fig. 3.

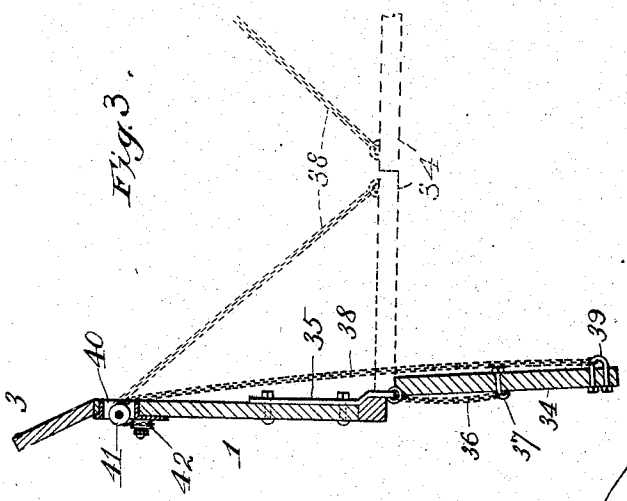


Fig. 2.

Witnesses:

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3 SHEETS—SHEET 3.

Fig. 4.

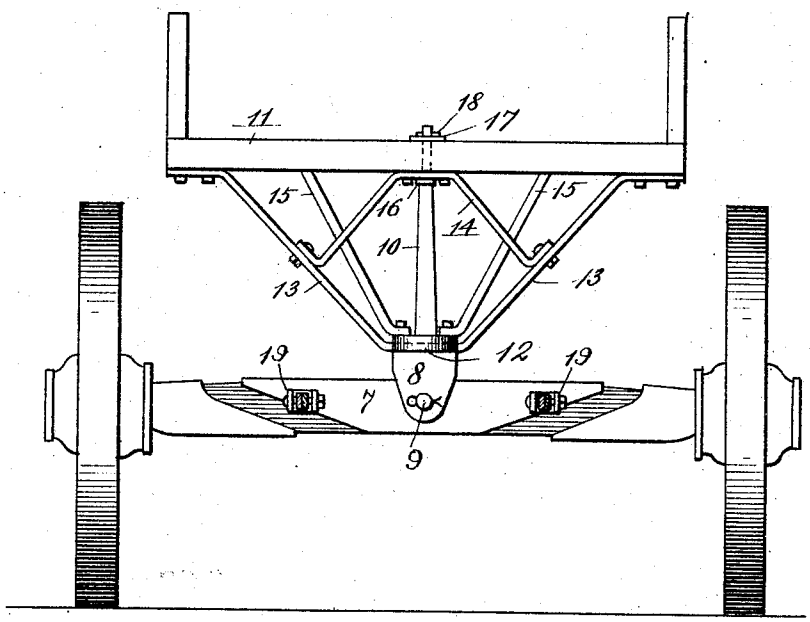
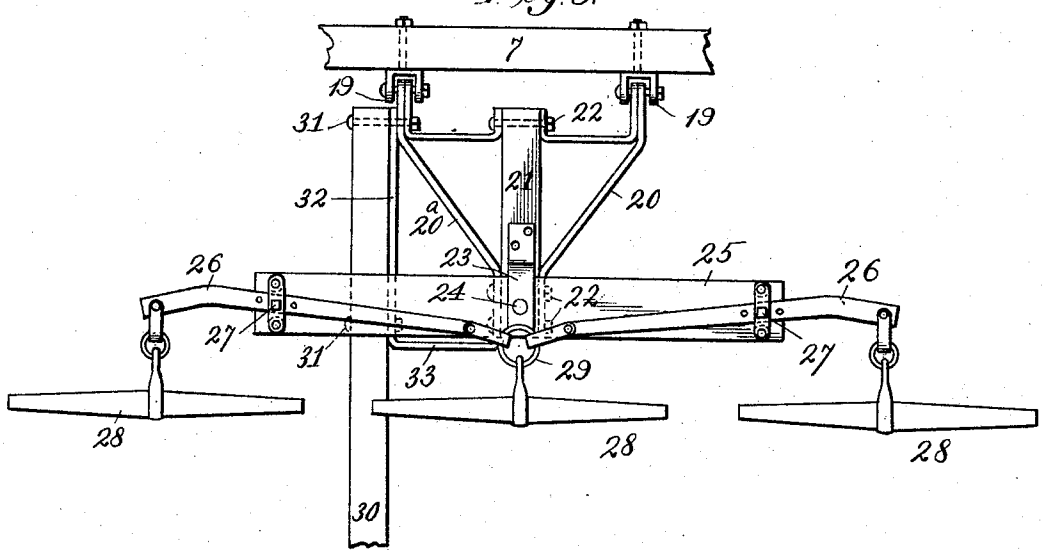


Fig. 5.



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No. 782,348. Patented February 14, 1905.

UNITED STATES PATENT OFFICE.

WINFIELD S. LIVENGOOD, OF KANSAS CITY, MISSOURI, ASSIGNOR TO SMITH & SONS MANUFACTURING COMPANY, OF KANSAS CITY, MISSOURI.

DUMPING-WAGON.

SPECIFICATION forming part of Letters Patent No. 782,348, dated February 14, 1905.

Application filed October 31, 1903. Serial No. 179,275.

To all whom it may concern:

Be it known that I, WINFIELD S. LIVENGOOD, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Dumping-Wagons, of which the following is a specification.

My invention relates to that class of dumping-wagons wherein the bottom of the wagon-body comprises a pair of hinged doors arranged to open downwardly for the purpose of dumping the load.

One of the features of the invention resides in the arrangement of the forward portion of the wagon-body and the manner in which the forward axle is mounted, whereby the latter has universal movement, and thereby relieves the wagon-body of all torsional strain caused by the wheels passing over rough and uneven ground.

Another feature consists in the combination strap and chain hinges whereby the doors are secured to the wagon-body in such a way that clods and stones are prevented from lodging between the sides of the wagon-body and the hinged sides of the doors while the latter are being closed after dumping the load.

In order that the invention may be fully understood, reference will now be made to the accompanying drawings, in which—

Figure 1 represents a side elevation of my improved wagon, showing how the front wheels are permitted to accommodate themselves to the uneven surface of the ground without straining the wagon-body by the undercut forward portion of the wagon-body and the universal movement of the front axle. Fig. 2 is a broken plan view of the wagon-body, one of the rear wheels, and part of the brake mechanism. Fig. 3 is a broken transverse central section of the wagon-body, showing the door in an open position by full lines and in a closed position by dotted lines. Fig. 4 is a front elevation of the wagon, showing how the king-bolt is braced. Fig. 5 is a broken detail plan view of an equalizer attached to the forward axle.

In said drawings, 1 designates a wagon-body having an undercut forward portion 2 for the admission of the forward wheels when turned at right angles to the wagon-body, which latter is provided with top boards 3, removably secured upon the side-boards by straps 4 and sockets 5.

C designates the front axle, the side and upper portions of which are protected and reinforced by a sheet-metal cover 7.

8 designates a yoke secured at its lower bifurcated portion to the central portion of axle 6 by a transverse pin 9.

10 designates a tapering king-bolt rigidly secured at its lower end to the upper portion of the yoke and pivotally secured at its upper end in bolster 11, connecting the forward ends of the side-boards of the wagon-body. The king-bolt is held in a vertical position by a loosely-mounted disk 12, resting upon the upper end of the yoke, a lateral **V**-shape brace 13, which is countersunk at its lower central portion in the under side of the disk and rigidly secured at its upper diverging ends to the under side of the bolster, an inverted-**V**-shaped brace 14, which is secured at its upper portion to the bolster and the king-bolt and at its lower diverging ends to brace 13, and a pair of rearwardly-extending braces 15, which are secured at their opposite ends to the top of disk 12 and the under portion of the wagon-body. The upper portion of the king-bolt is provided with a collar 16, arranged beneath the central portion of brace 14 to assist in sustaining the latter against the compression strain brought thereon by the forward portion of the wagon-body. The upper portion of the king-bolt is provided with a washer and a cotter-pin 17 18, respectively, to prevent its accidental disengagement from the bolster.

19 designates a pair of clevis-pins secured to the front axle an equal distance from the opposite sides of pin 9 for the pivotal reception of the rear ends of braces 20 20^a, having intervening spaces for the reception of an auxiliary tongue 21, secured to the braces by bolts 22. The forward portion of the auxiliary tongue is provided with a clevis 23 and

a pin 24, whereby a doubletree 25 is pivotally secured between the clevis and the auxiliary tongue.

26 designates a pair of equalizing-levers pivotally secured by bolts 27 to the opposite ends of the doubletree and provided at their outer ends with swingletrees 28. The inner ends of the equalizing-levers are loosely secured to a ring 29, carrying an intermediate swingletree 28.

The wagon is guided by a tongue 30, secured by bolts 31 to a longitudinal member 32, connected to the front and rear portion of brace 20^a by a transverse portion 33. Bolts 31 are arranged in line with bolts 22, so that when only two draft-animals are required for hauling the wagon the auxiliary tongue and the draft-equalizer may be removed and tongue 30 substituted therefor by bolting it to braces 20 20^a.

The bottom portion of the wagon-body is normally closed by a pair of doors 34, operatively secured to the lower portion of the side-boards with combination-hinges comprising straps 35, secured to the inner sides of the side-boards and arranged with their lower ends projecting a short distance below the lower edges of the side-boards, and chains 36, secured, at their opposite ends to the lower terminals of straps 35 and eyebolts 37, which latter are secured to the central longitudinal portion of the doors. By employing this form of hinge the upper edges of the doors will be held in contact with the lower terminals of straps 35 while the doors are being closed, and thus prevent clods from lodging between said edges and the side-boards and interfering with the closing of said doors. A further advantage of this style of hinge is that when the doors have been lowered to discharge the load they are free to move vertically over the top of the pile of material discharged, so they will not have to be dragged therethrough, and thus add to the draft. The doors are closed by hoisting-chains 38, attached at their rear ends to staples 39, secured to the central lower portion of the doors, and extending upwardly through openings 40 in the upper portion of the side-boards pass over and beneath wheels 41 42, respectively, and forwardly to a winding-shaft 43, journaled in the forward portion of the side-boards and controlled in the usual manner by levers 44 45, and a pawl and ratchet-wheel. (Not shown.)

The speed of the wagon is controlled in passing downgrade by a brake mechanism consisting of V-shape sheet-metal brackets 46, secured to the sideboards adjacent to the rear wheels 47 and provided at their central curved portions with arms 48, which are operatively secured to the brackets by segmental bolts 49. Arms 48 have lower outturned ends 50 for the reception of brake-shoes 51, secured in position by cotter-pins 52. Arms 48 are prevented from slipping downwardly through the brackets by washers 53, interposed between the upper edges of the brackets and cranks 54, which latter are rigidly secured to the upper ends of the arms and extend in the opposite direction to the outturned ends 50. Cranks 54 are pivotally secured at their inner ends to the rear bifurcated ends of connecting-rods 55, which extend forward and are hinged to cranks 56 on the opposite ends of a rock-shaft 57, journaled in bearings 58 and provided at its central portion with an operating foot-lever 59, located in front of the driver's seat 60. The downward movement of the foot-lever is limited by a chain 61, secured at its opposite ends to said lever and the winding-shaft 43 to prevent cranks 56 from being depressed below a horizontal position, and thus render the brake inoperative.

Brake-shoes 51 are adjusted to lock the rear wheels against rotation when cranks 56 are depressed to a horizontal position by turnbuckles 62, which adjustably secure the two members of connecting-rods 55 together. The brake-shoes are thrown out of contact with the wheels by elevating the foot-lever to its uppermost position, which movement rotates arms 48 almost one-fourth of a revolution, bringing the brake-shoes forward and to one side of the rear wheels, so that when the latter are covered with mud it will not be deposited upon the brake-shoes, and thus interfere with their proper operation.

Arms 48 are drawn into frictional contact with the curved portion of brackets 46 by bolts 49, so they will hold the brake-shoes in their inoperative position without the employment of a notched segment or other means usually employed for this purpose.

From the above description it is apparent that I have produced a dumping-wagon which is simple, strong, durable in construction, and thoroughly equipped to successfully meet the varying conditions under which a wagon of this type operates.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A wheeled vehicle provided with front and rear axles and a wagon-body undercut at its forward end, a yoke pivotally secured to the central part of the front axle, a king-bolt rigidly secured at its lower end to the yoke and pivotally secured at its upper end to the wagon-body, a disk loosely mounted upon the lower portion of the king-bolt, a brace secured at its lower central portion to the disk and at its upper terminals to the wagon-body, and a second brace secured at its upper central portion to the wagon-body and at its lower ends to the first-mentioned brace.

2. A wheeled vehicle provided with front and rear axles and a wagon-body undercut at its forward portion, a yoke pivotally secured to the central part of the front axle, a king-bolt rigidly secured at its lower end to the

yoke and pivotally secured at its upper end to the wagon-body, a collar secured to the upper portion of the king-bolt, a disk loosely mounted upon the lower portion of the king-bolt, a lateral V-shape brace secured at its lower central portion to the disk and at its upper terminals to the wagon-body, an inverted-V-shape brace arranged with its central portion interposed between the collar and the adjacent portion of the wagon-body and secured at its lower opposite ends to the first-mentioned brace, and a pair of rear inclined braces secured at their opposite ends to the disk and the wagon-body.

3. In a dumping-wagon, a suitable body portion, doors for normally closing the bottom of the body portion, straps secured to the inner sides of the body portion and arranged with their lower terminals extending a short distance below the lower edges of said sides, and chains secured at their opposite ends to the lower ends of the straps and the central longitudinal portion of the doors.

4. In a dumping-wagon, a suitable body portion, doors for normally closing the bottom of the body portion, straps secured to the inner sides of the body portion and arranged with their lower terminals extending a short distance below the lower edges of said sides, chains secured at their opposite ends to the lower ends of the straps and the central longitudinal portion of the doors, and suitable means for operating said doors.

In testimony whereof I affix my signature in the presence of two witnesses.

WINFIELD S. LIVENGOOD.

Witnesses:
J. W. BOLING,
T. A. HICKEY.