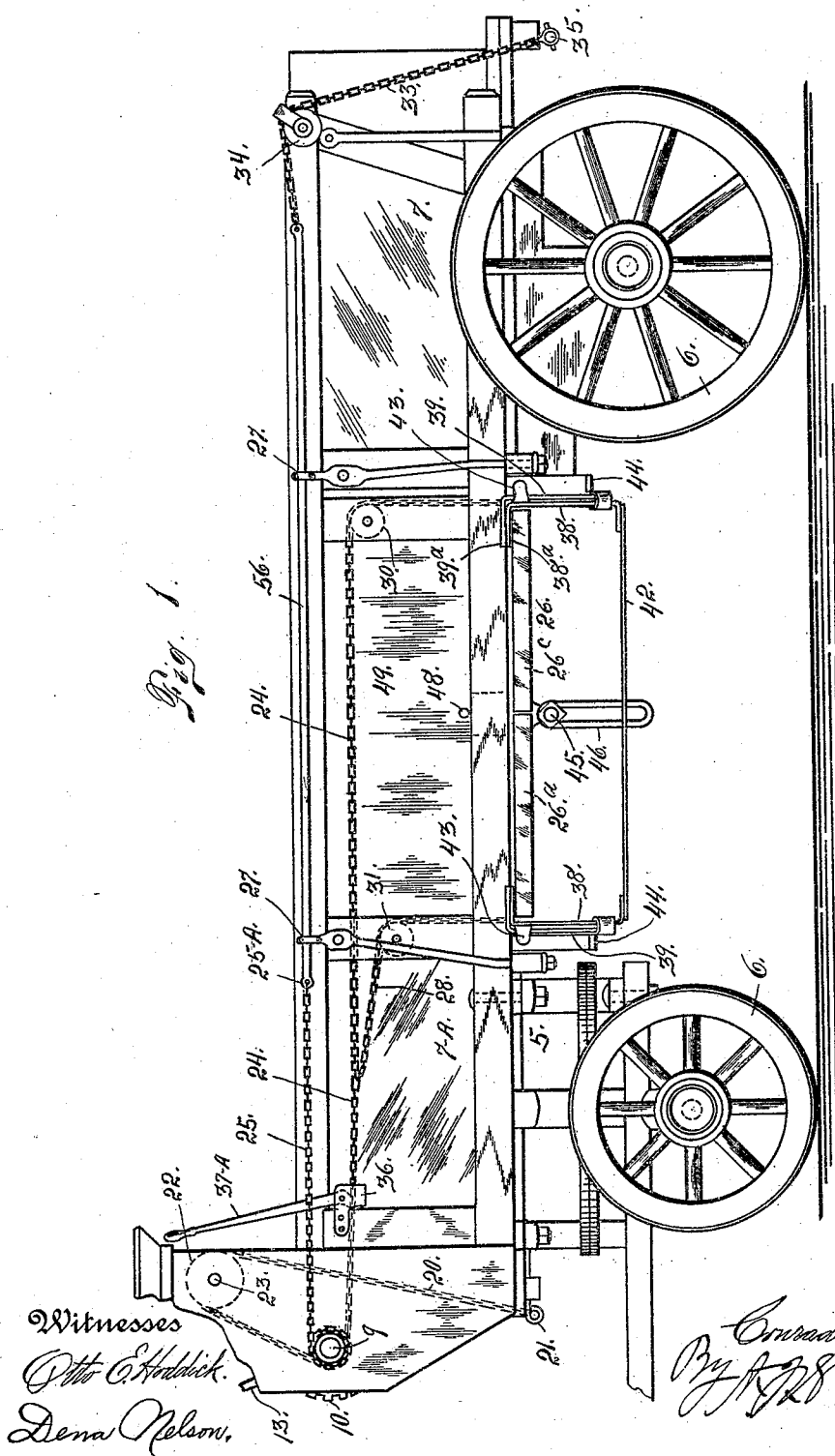


C. MILLER.
DUMPING VEHICLE.
APPLICATION FILED FEB. 24, 1906.

938,012.

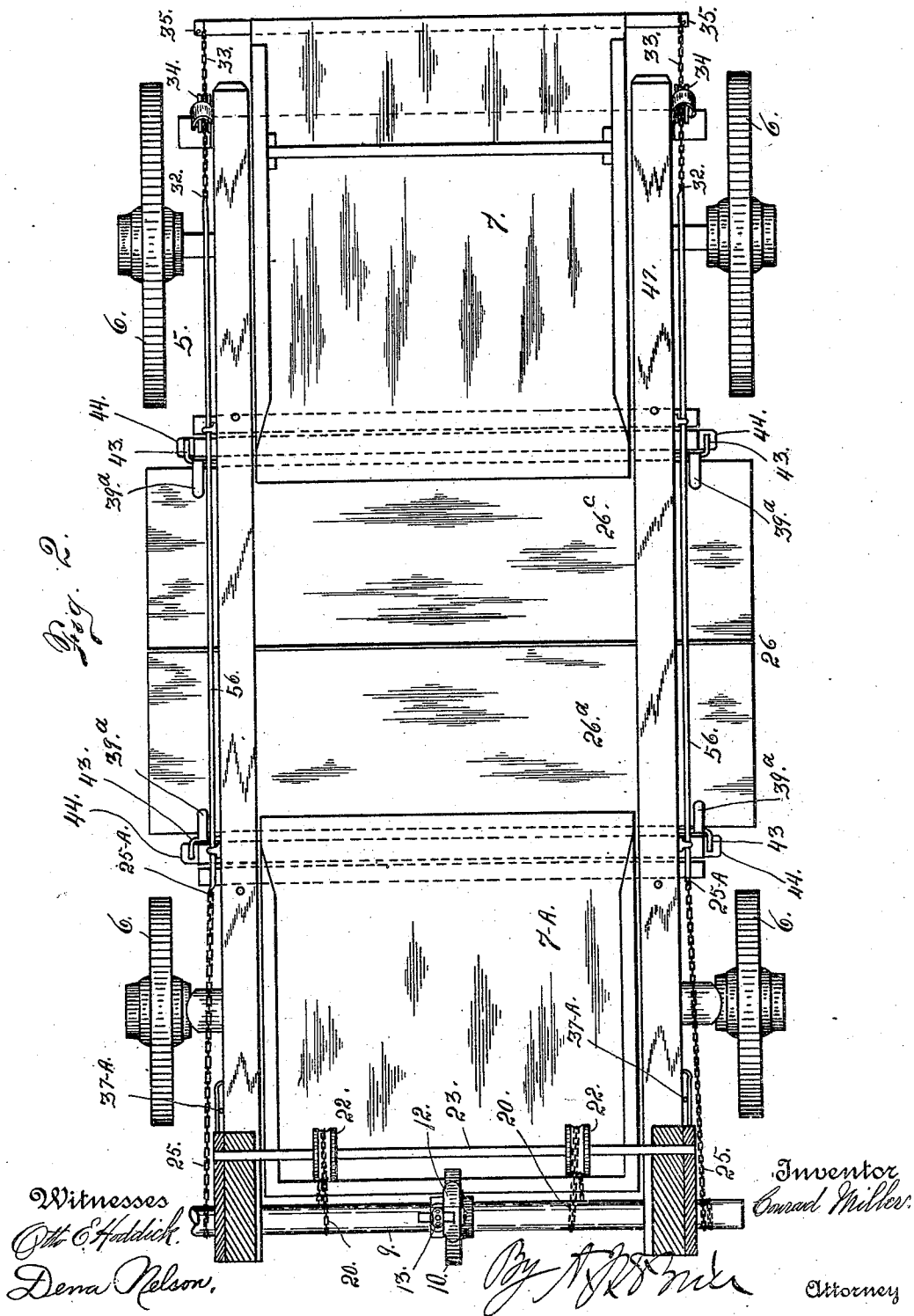
Patented Oct. 26, 1909.
7 SHEETS—SHEET 1.



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7 SHEETS—SHEET 2.

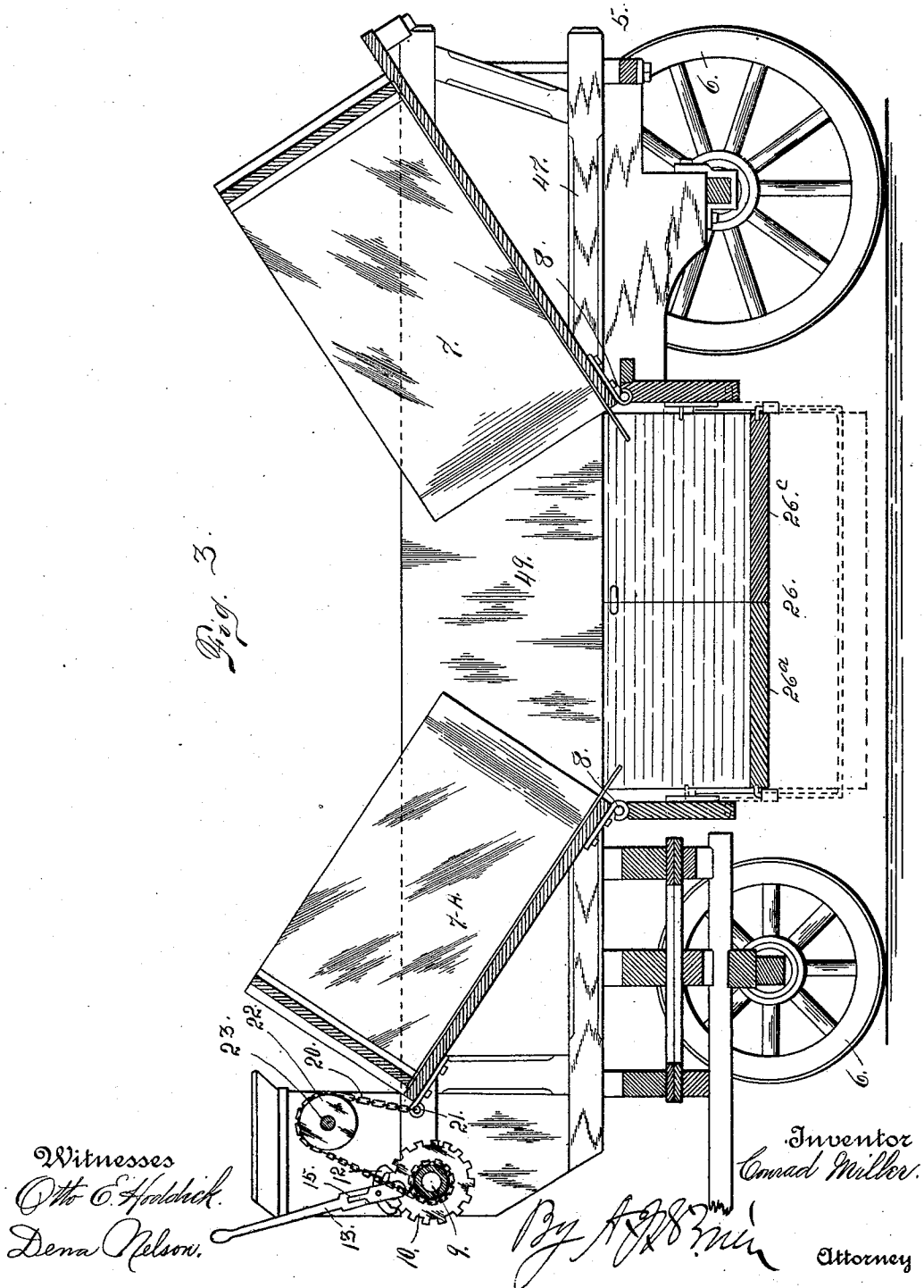


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Patented Oct. 26, 1909.

7 SHEETS—SHEET 3.

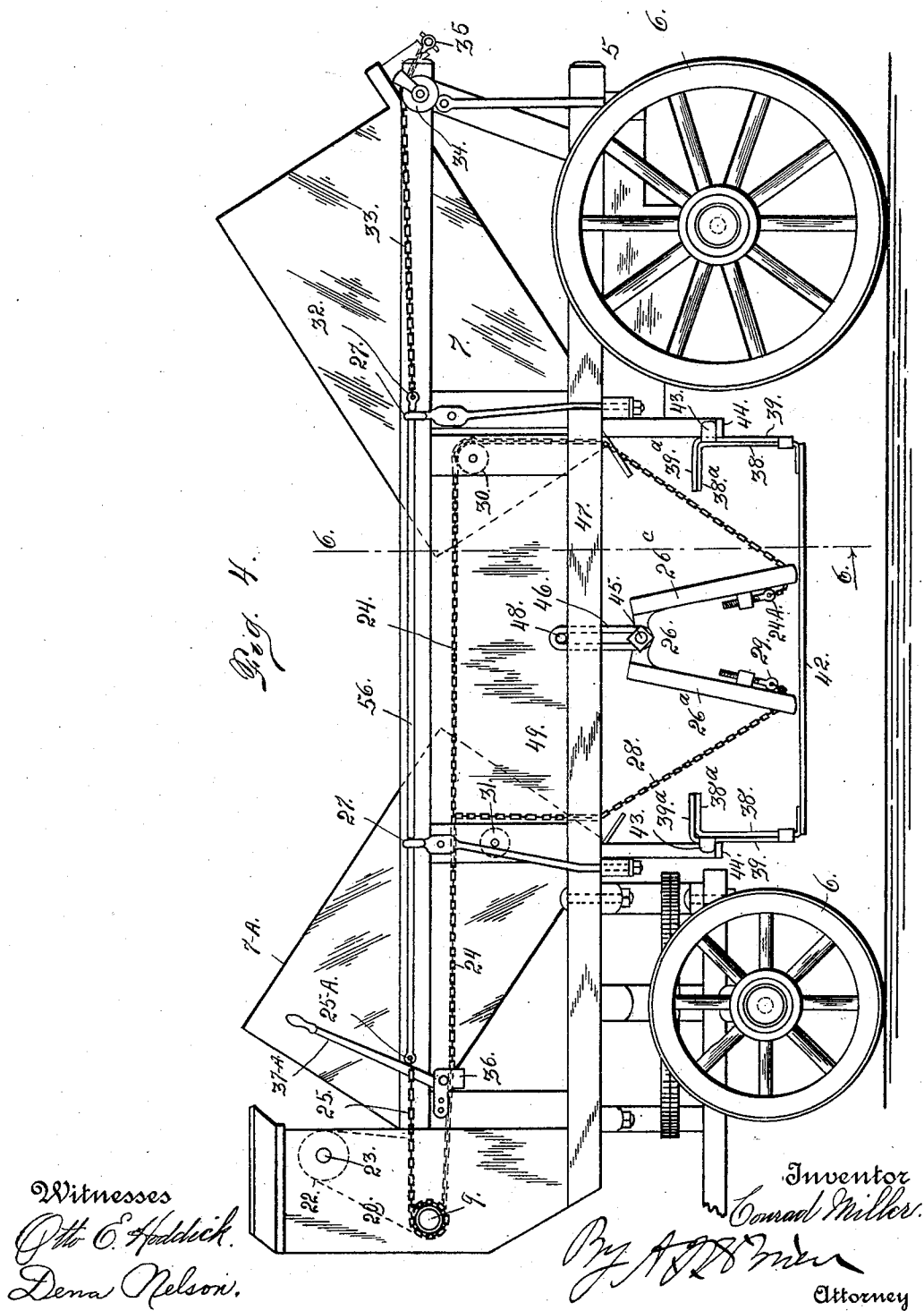


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7 SHEETS—SHEET 4.

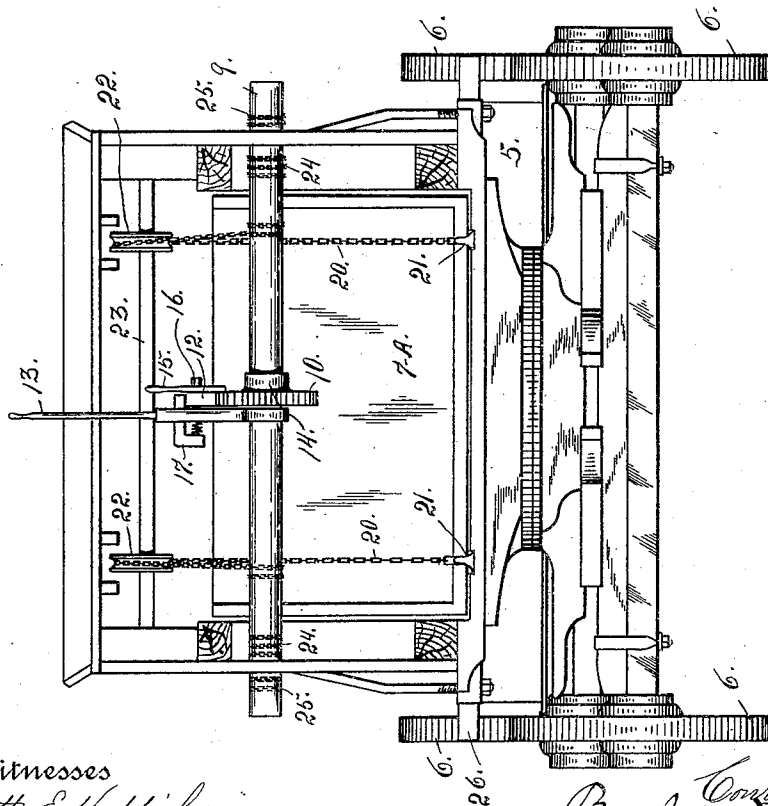
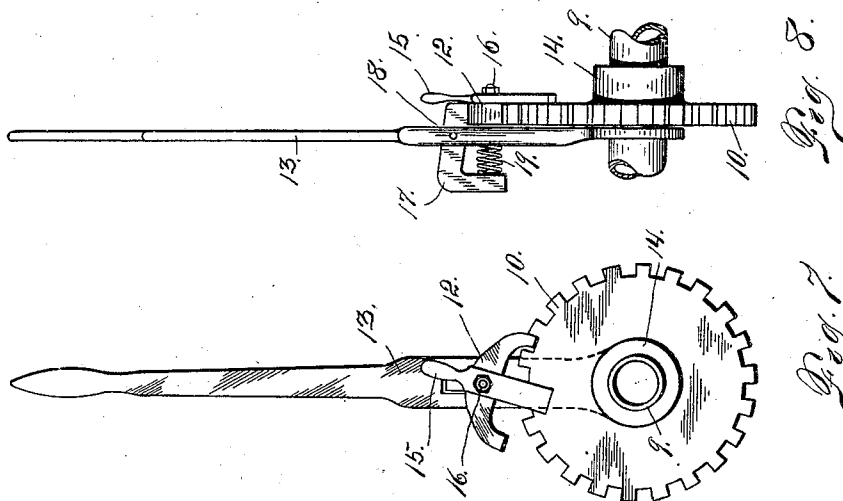


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7 SHEETS—SHEET 5.



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7 SHEETS—SHEET 6.

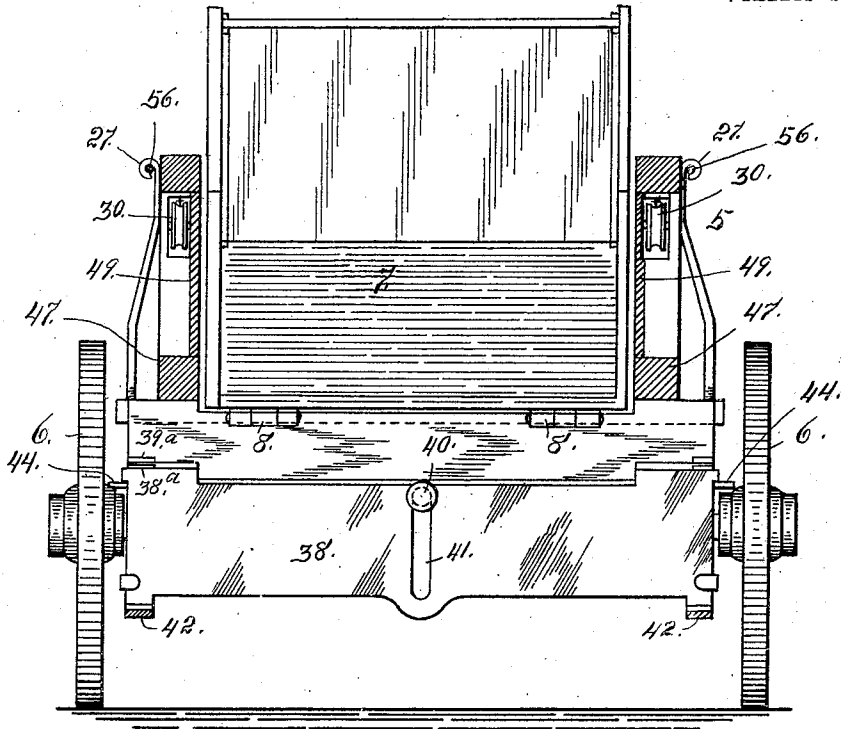


Fig. 6

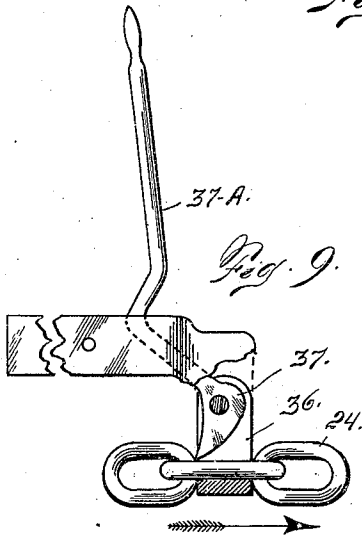


Fig. 9

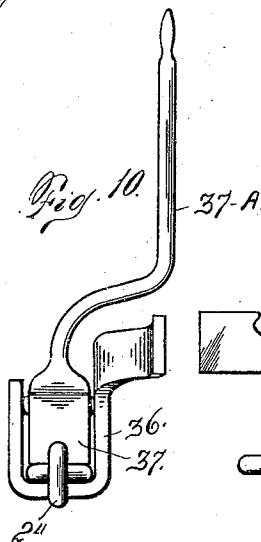


Fig. 10

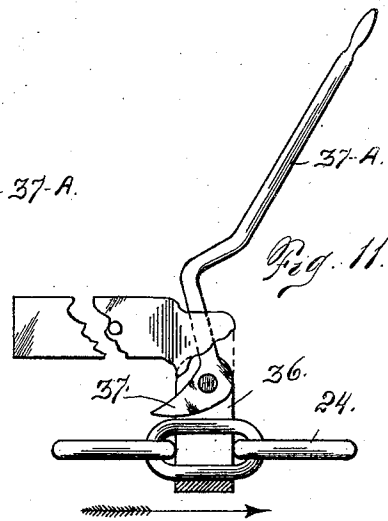


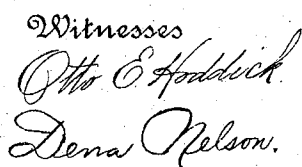
Fig. 11

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938,012.

7 SHEETS—SHEET 7.



By A. J. 28' m

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UNITED STATES PATENT OFFICE.

CONRAD MILLER, OF DENVER, COLORADO.

DUMPING-VEHICLE.

938,012.

Specification of Letters Patent.

Patented Oct. 26, 1909.

Application filed February 24, 1906. Serial No. 302,819.

To all whom it may concern:

Be it known that I, CONRAD MILLER, a citizen of the United States, residing at the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Dumping-Vehicles; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in dumping vehicles.

My improvements are more especially adapted for use in connection with wagons.

My object is to provide a comparatively simple construction of this class which may be quickly and easily manipulated for dumping purposes.

As shown in the drawing and hereinafter described, the vehicle is provided with two hinge members the same being located on opposite sides of the central portion of the vehicle, in which central portion is located a dumping platform which may be tilted to dump in either direction as the contents of the end members are discharged thereon.

My improvements also include means whereby the central dumping section which preferably consists of two centrally hinged parts, may be caused to fold downwardly thus discharging part of the load in front and the other part in the rear of the central part of the vehicle.

The construction is such that the operator can perform the entire dumping act by manipulating a lever located within convenient reach of the driver's seat constructed in the forward end of the vehicle.

It will be understood that my improved dumping construction may be employed to advantage with any material which it may be desired to haul about from place to place and discharged in bulk from the wagon body.

Having briefly outlined my improved construction as well as the function it is intended to perform, I will proceed to describe the same in detail reference being made to

the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing, Figure 1 is a side elevation of a wagon equipped with my improvements, the parts being shown in the normal position before dumping. Fig. 2 is a top plan view of the same, the front part of the body being shown in section taken below the seat in order to better illustrate the manipulating devices. Fig. 3 is a central section taken through the same with the parts shown in the dumping position. Fig. 4 is an elevation showing the members in the dumping position but with the central dumping member centrally supported, its hinged parts being folded downwardly to discharge part of the load in front and part in the rear. Fig. 5 is a front end elevation of my improved dumping vehicle. Fig. 6 is a section taken on the line 6-6 Fig. 4 looking toward the rear or in the direction indicated by the arrow. Fig. 7 is an enlarged detail view of the mechanism for manipulating the dumping members. Fig. 8 illustrates the same construction as Fig. 7 viewed in the direction at right angles to Fig. 7. Fig. 9 is an enlarged detail view illustrating the cam lever employed in locking the manipulating chain. Fig. 10 is a view similar to Fig. 9 but viewed at right angles thereto. Fig. 11 is similar to Fig. 9 but with the cam in a different position. Fig. 12 is a cross section similar to Fig. 6 but showing the central dumping section in place and in position to dump the load at one side of the vehicle. Fig. 13 is a fragmentary section of the same but with the central dumping member raised to the closing horizontal position. Fig. 14 is an end view of the adjustable walls located at the opposite ends of the central dumping section their function being to prevent the material to be dumped at either side of the vehicle from escaping in either the rearward or forward direction.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate the frame work of the vehicle which is mounted upon wheels 6. Upon this frame work of the vehicle body are mounted two end dumping members 7 and 7^A each of which is hinged at 8 and whose extremities remote from the

hinge are adapted to be lifted in order to tilt the members to the dumping position or that shown in Figs. 3 and 4 of the drawing. These dumping members 7 and 7^A are operated both to throw them to the dumping position and to restore them to their normal position for retaining the load, by a drum or winding shaft 9 journaled in the forward part of the frame work and carrying a ratchet wheel 10 adapted to be engaged by a locking pawl 12 mounted upon an operating lever 13. The lever is loosely mounted on the drum as shown at 14 and may be employed to turn the drum in either direction according to the position of the pawl 12. This dog may be made to engage the ratchet or toothed wheel 10 on either side of the lever and its position will determine the movement of the drum for a given movement of the lever arm. The pawl is easily shifted from one position to the other by operating a small arm 15 which is connected with the bolt or pin 16 which secures the pawl to the lever. Upon the hand lever is also fulcrumed a spring-actuated device 17 pivotally connected with the lever as shown at 18 and having a coil spring 19 acting upon one extremity thereof and forcing the other extremity downwardly upon the pawl 12 whereby the latter is caused to maintain any desired position of adjustment.

The hinge member 7^A has two chains or other suitable flexible devices 20 connected with its forward extremity as shown at 21. These chains pass upwardly over pulleys 22 carried by a shaft 23 mounted upon the relatively stationary frame work of the vehicle. Another flexible device 24 is secured to and passes around the drum on each side of the vehicle, its opposite extremity being connected with a central dumping member 26 as shown at 24^A, while a branch flexible device 28 leading from the main flexible device 24, passes downwardly and is connected with the opposite side of the central dumping device as shown at 29. Still another flexible device 25 is connected at one extremity with the drum 9 and at its opposite extremity to a rod 56 slidable in guides 27 mounted on the frame work. As the flexible devices and their connections are the same on each side of the vehicle a description of one set of these devices will be sufficient for both. The chain 24 is supported by a guide pulley 30 located on the upper part of the frame work; while the chain 28 is supported by a similar guide pulley 31.

Connected with the rod 56 at its rear extremity as shown at 32 is a flexible device 33 which passes over a pulley 34, its rear extremity being connected with the rear extremity of the dumping section 7 as shown at 35. The chain 24 on each side of the vehicle, passes through a shoe 36 in which

is pivotally mounted a cam 37 with which is connected an operating arm 37^A.

When it is desired to support the central dumping member on one side of the vehicle to allow its other side to tilt downwardly to the dumping position simultaneously with the assumption of the dumping position by the end dumping members, the cam lever is forced to the locking position or that indicated in Fig. 9, whereby the chain 24 on one side is locked in the shoe. Then as the drum 9 is rotated to operate the dumping members 7 and 7^A, the chains 24 and 28 on one side of the vehicle are not slackened while those on the other side are slackened to allow the central dumping member 26 to move downwardly to the position indicated by dotted lines in Fig. 3.

Attention is called to the fact that there is a locking cam 37 on each side of the vehicle and when this locking cam is thrown to the position to prevent the chain or other flexible device 24 from passing through the shoe 36, the chains 24 and 28 will be locked against movement on that side while corresponding chains on the opposite side will be released and allow the corresponding side of the central dumping member 26 to drop downwardly to the dumping position.

In case it is desired to lower the dumping member 26 to the horizontal position, or allow both sides thereof to move downwardly together, the cam 37 is thrown to the position shown in Fig. 11 on both sides of the vehicle. In this event, by the proper manipulation of the drum 9, the two dumping members 7 and 7^A will be tilted to the dumping position while the central dumping member 26 will be lowered in the horizontal position.

In order to provide suitable walls at the opposite ends of the central dumping space, so that as the central dumping member is lowered, the material can neither fall forwardly or rearwardly but must pass to the desired side of the vehicle, and at the same time not allow these walls to project downwardly so far as to be in the way when the members are not in the dumping position, I employ at each end of this central dumping space two members 38 and 39 which when the dumping members are in the raised position, overlap each other as shown in Fig. 1 and at the same time are carried upwardly with the dumping member 26 by virtue of the fact that the said overlapping walls are provided with inwardly projecting lips 38^a and 39^a, respectively. These overlapping walls 38 and 39 are both connected with the stationary frame work of the vehicle, at each end of the central dumping space by pins 40 passing through vertical slots 41 formed in the central portion of the wall members. The pins 40 are provided with heads which

overlap the inner member 38 at each end of the space and prevent the members 38 and 39 from slipping off the pins. At the same time these members slide freely on the pins during the raising and lowering of the central dumping member. The inner wall members 38 located at the opposite ends of the central dumping space, are connected at each side of the vehicle by a bar 42 which the central dumping member 26 engages as it moves downwardly. As the central dumping member moves downwardly on one side of the vehicle, the two overlapping walls 38 and 39 move downwardly together, until the lip 43 on each member 39 engages a projection 44 on the stationary part of the frame work. After this occurs the members 39 cease to move downwardly, but the members 38 continue their downward movement by virtue of the pressure of the member 26 from above. The members 38 are then allowed to move downwardly until the upper extremities of their slots 41 engage the pins 40. This range of movement is so regulated, as to allow the wall members 38 to move downwardly a sufficient distance to harmonize with the dumping position of the central dumping member 26. By virtue of the inwardly projecting lips 38^a and 39^a of the movable side walls, these walls are restored to their raised position as the dumping member 26 is carried upwardly in a manner that will be readily understood.

In order to permit the central dumping member to allow the load to fall directly underneath the vehicle, I divide the member 26 into two parts 26^a and 26^c these two parts being connected by hinge pins 45. When it is desired to cause the parts of the member 26 to move on their hinge pins 45, whereby each part is allowed to fall downwardly as shown in Fig. 4, the hinge pin 45 on each side of the vehicle is suspended by a link 46 which is passed upwardly through a beam 47, its upper extremity engaging a removable pin 48 inserted in the central stationary frame part 49 of the structure.

Attention is called to the fact that the vehicle is provided on each side of its central part with closed stationary members 49 which confine the central portion of the load at the sides when the central dumping member is in the raised or closed position. Now assuming that the hinge pins 45 are suspended by the links 46, if the shaft 9 is manipulated to release the flexible devices 24 and 28 on opposite sides of the vehicle, the two parts 26^a and 26^c will fall downwardly to the position shown in Fig. 4 allowing the load to dump immediately beneath the vehicle, part of it toward the front and part toward the rear. In this event the parts 26^a and 26^c of the central dumping member leave the lips 38^a and 39^a of the movable

walls. But when the parts of the central dumping member are returning to their normal position, they reengage the lips 38^a and 39^a and lift the movable wall parts to their normal position.

From the foregoing description the use and operation of my improved dumping vehicle will be readily understood. Assuming that it is desired to dump the load to either side of the vehicle, the cam lever 37^A is thrown to the position shown in Fig. 9, on the opposite side of the vehicle whereby the flexible device 24 is prevented from passing through the shoe 36 on that side. Then as the shaft 9 is properly manipulated, the flexible devices 24, 25 and 28, the rod 56 and the flexible devices 20, are operated to throw the dumping members 7, 7^A and 26 to the dumping position. It will be understood that by virtue of the fact that the flexible device 24 is locked from sliding in its shoe on one side of the vehicle, that the flexible device 24 forward of the shoe 36 on that particular side, would be slackened, while on the opposite side the corresponding flexible device will run through the shoe and allow the central dumping member to move downwardly on that side. When, however, the suspension links 46 are connected with the hinge pins 45 of the central dumping member, the cam levers 37^A must be released on both sides of the vehicle, so that the chains 24 are allowed to run through their shoes 36 as will be readily understood, from an inspection of the drawing, reference being made particularly to Fig. 4.

Having thus described my invention, what I claim is:

1. In a dumping vehicle, the combination with a suitable relatively stationary frame, of two dumping members mounted at the opposite extremities of the vehicle and adapted when tilted to dump toward the central part of the vehicle, a central dumping section located between the two end dumping sections and suspended to be tilted to throw the load at either side of the vehicle, and suitable means connected with all of the said dumping members whereby they may be simultaneously caused or allowed to assume the dumping position.

2. In a dumping vehicle, the combination with a relatively stationary frame, of two end dumping members hinged thereto, and a central dumping member located between the end dumping members, a winding device suitably journaled on the vehicle, and suitable connections between the said device and the several dumping sections whereby as the said device is operated all of the dumping members or sections are caused or allowed to assume the dumping position.

3. In a dumping vehicle, the combination

with a relatively stationary frame, of two end dumping members adapted to tilt toward the center, a central dumping member located between the two end dumping members, a winding device, flexible connections between the winding device and the central dumping member whereby the latter is supported at opposite sides of the vehicle, flexible devices also connected with the winding device and with the end dumping members, the construction and arrangement being such that as the winding device is operated both end dumping members are caused to assume the dumping position, while the central dumping member is allowed to assume the dumping position by gravity.

4. In a dumping vehicle, the combination of end dumping members, a central dumping member, a winding device, flexible connections between the winding device and the end dumping members for causing the same to assume the dumping position, flexible connections also between the winding device and the central dumping member whereby the latter is supported at opposite sides of the vehicle, means for holding the flexible devices connected with the central dumping member on either side of the vehicle, the construction and arrangement being such that as the winding device is rotated in a given direction, the end dumping members will be caused to assume the dumping position while the central dumping member will be allowed to move downwardly on one side whereby it is tilted to the dumping position, the other side being supported by the flexible devices which are held against movement.

5. In a dumping vehicle, the combination with a suitable frame work, of end dumping members adjustable to tip toward the center, a central dumping member mounted to receive the contents of the end dumping members, an operating device, flexible devices connected in operative relation with each of the dumping members, the flexible device connected with the central dumping member forming the support for said member on opposite sides of the vehicle, guides in which the last named flexible devices normally move, and a cam lever adapted to be actuated to lock either of the last named flexible devices against movement in its guides, while the flexible device upon the opposite side is allowed to move freely.

6. A dumping vehicle provided with a dumping member, an operating device, flexible devices leading from the operating device to the central dumping member on opposite sides of the vehicle and arranged to support the said dumping member in the closed position, and means for locking the flexible device connected with the dumping

member, on either side of the vehicle, while the flexible device on the other side is allowed freedom of movement, the construction and arrangement being such that as the operating device is actuated, the central dumping member is allowed to move downwardly from one side of the vehicle while it is supported against movement on the opposite side.

7. A dumping vehicle provided with a central dumping member, means for supporting the member on opposite sides of the vehicle, an operating device connected with the supporting means whereby the central dumping member may be raised and lowered at will, and adjustable wall members arranged at the opposite ends of the central dumping member and connected in operative relation with the central dumping member whereby the opening which would otherwise be left at the ends of the said dumping member, is kept closed, the wall members being tiltably mounted to operate in harmony with the said dumping member.

8. A dumping vehicle provided with a central dumping member, an operating device, flexible devices leading from the operating device to the opposite sides of the central dumping member on each side of the vehicle, means for locking either flexible device against movement during the movement of the operating device to allow the central dumping member to move downwardly on the opposite side of the vehicle, two wall members arranged at opposite ends of the central dumping member and adapted to slide past each other, the said wall members being centrally connected with dumping stationary members, the said wall members being connected in operative relation with the dumping member and actuated by the latter to maintain the opening which would otherwise be left at the opposite ends of the central dumping member, closed during the dumping operation, the said wall members being also connected with the central dumping member so that the wall members are raised to their normal position by the closing movement of the dumping member.

9. A dumping vehicle provided with end dumping members, a central dumping member composed of two parts hinged together whereby the said parts are allowed to swing downwardly from a horizontal position, an operating device, and connections between the operating device and the parts of the central dumping member for actuating the same for the purpose set forth.

10. A dumping vehicle provided with two end dumping members mounted to dump toward the center, a central dumping member, a winding device, flexible devices leading from the winding device to the forward end dumping member, a rod slidably mounted on

each side of the vehicle, a flexible device
leading from the winding device to the forward
extremity of said rod on each side of
the vehicle, another flexible device connected
5 with the rear extremity of the rod on each
side of the vehicle and connected with the
rear dumping member, and other flexible de-
vices leading from the winding device to the
central dumping member on each side of the
10 vehicle, and means for locking the flexible

devices connected with the central dumping
member on each side of the vehicle against
movement while the said device on the oppo-
site side is allowed freedom of movement.

In testimony whereof I affix my signature 15
in presence of two witnesses.

CONRAD MILLER.

Witnesses:

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ALEX T. JAMESON.