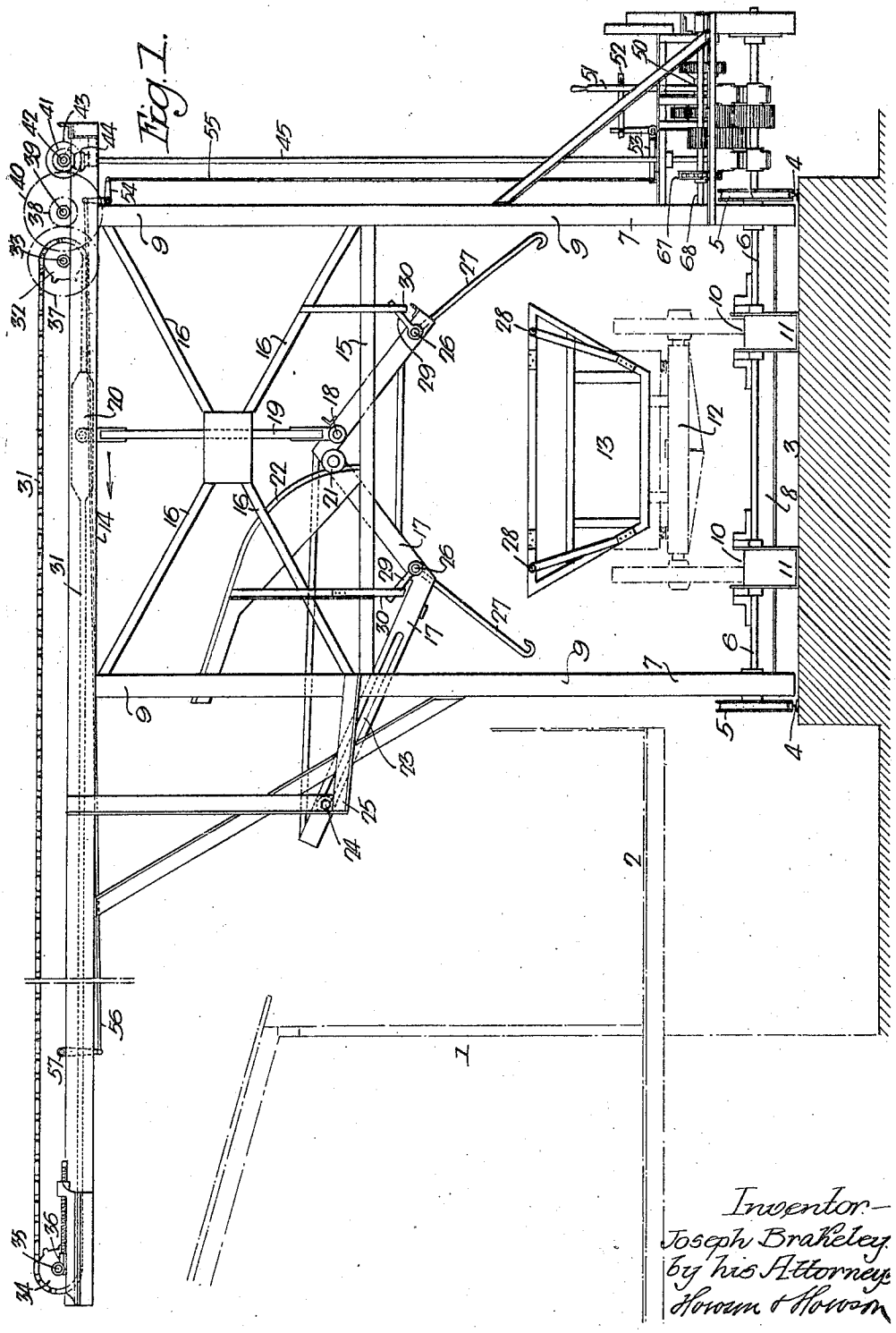
Feb. 20, 1923. 1,446,331.

J. BRAKELEY.

WAGON BODY DUMPING APPARATUS.

FILED JAN. 19, 1922. 4 SHEETS—SHEET 1.

Fig. 1.



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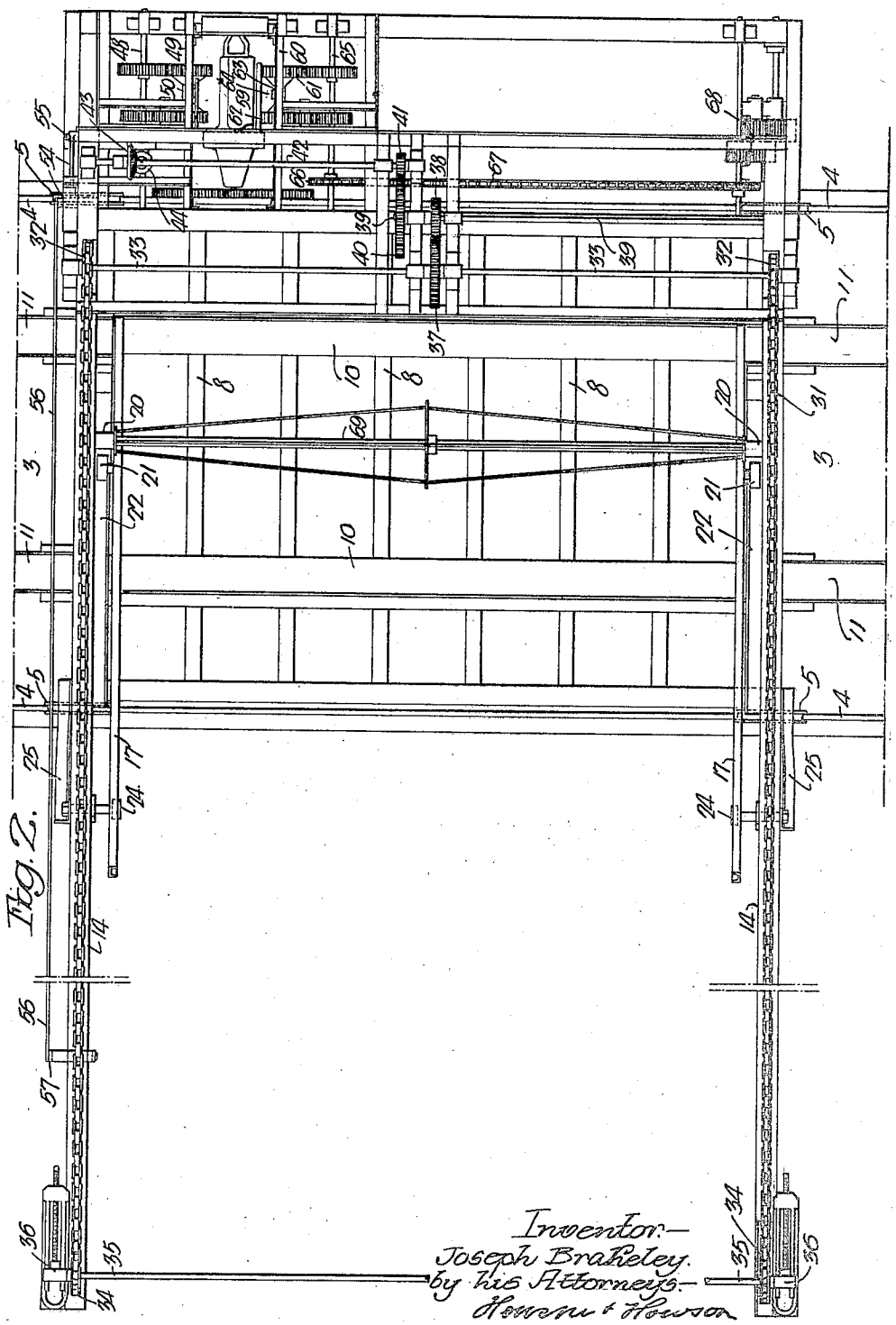

Fig. 2.

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4 SHEETS—SHEET 3.

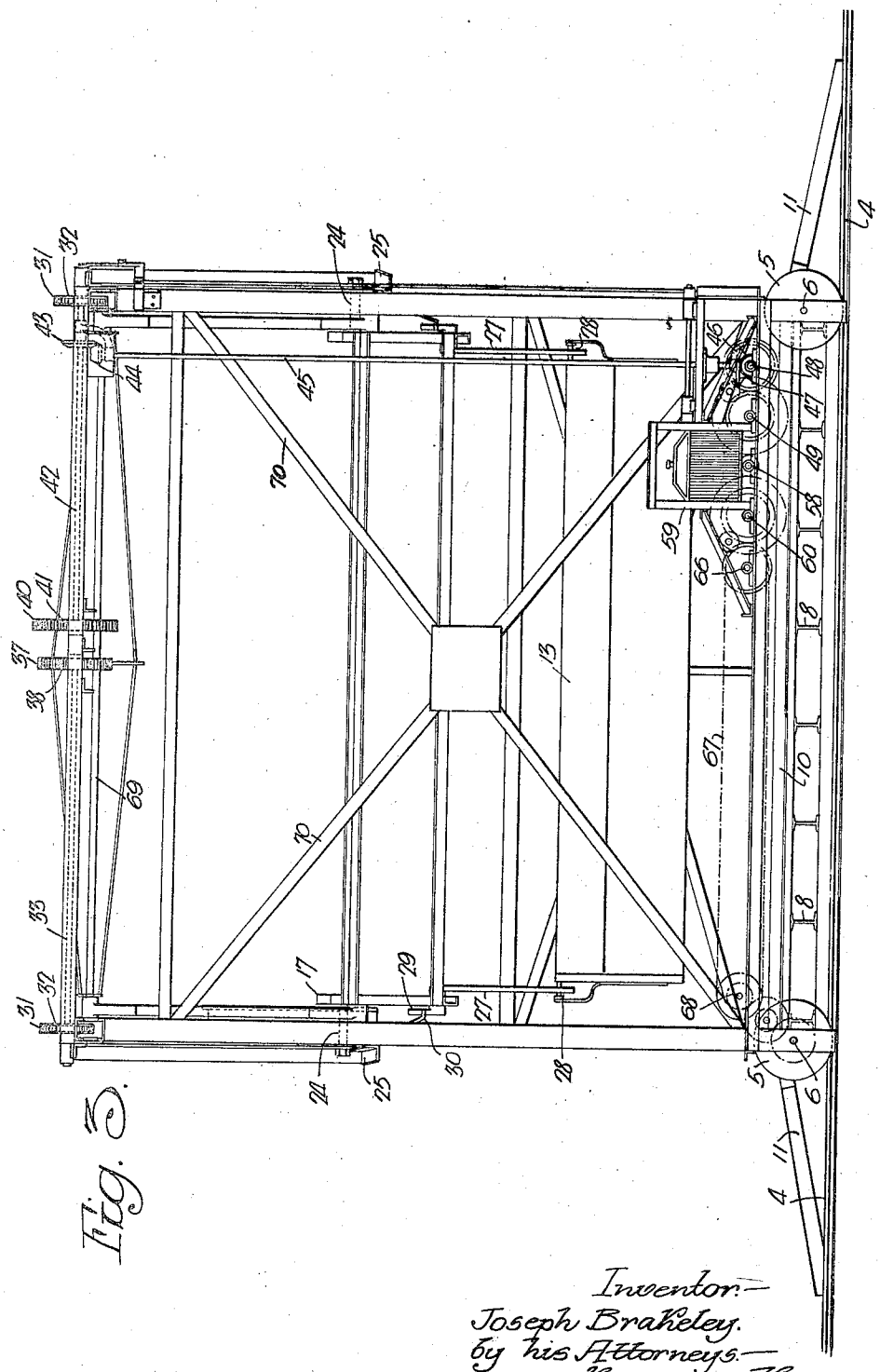

Fig. 5.

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Fig. 4.

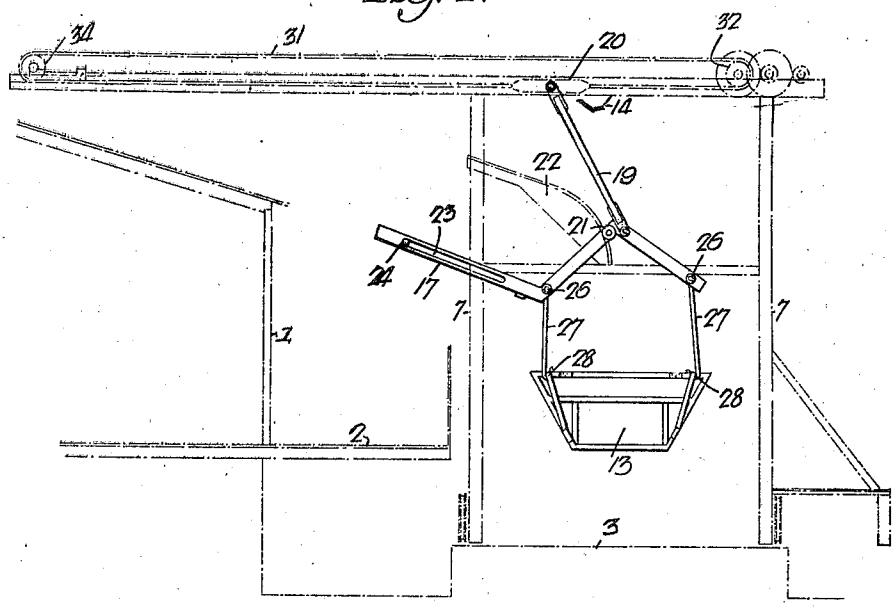
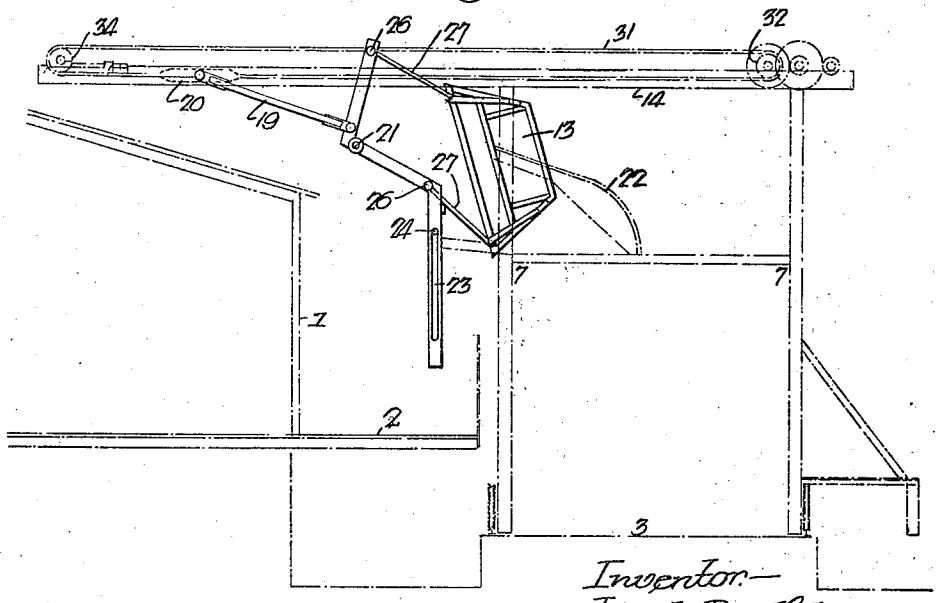


Fig. 5.



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Patented Feb. 20, 1923. 1,446,331

UNITED STATES PATENT OFFICE.

JOSEPH BRAKELEY, OF FREEHOLD, NEW JERSEY.

WAGON-BODY-DUMPING APPARATUS.

Application filed January 19, 1922. Serial No. 530,311.

To all whom it may concern:

Be it known that I, JOSEPH BRAKELEY, a citizen of the United States, residing in Freehold, Monmouth County, New Jersey, have invented certain Improvements in a Wagon-Body-Dumping Apparatus, of which the following is a specification.

The object of this invention is to provide means for dumping the contents of wagon bodies onto platforms, or into hoppers or bins.

This object is attained by detachably mounting a wagon body on its running gear and providing means for bodily lifting the wagon body off of its running gear and tilting it to discharge its load.

The invention is especially adapted for use in canneries for dumping loads of bean vines, pea vines, &c., from a wagon body onto a platform from which the vines are distributed to the pickers, as it is difficult to remove the vines from a wagon body by hand.

It will be understood that the invention is not limited to this particular use.

In the accompanying drawings:

Fig. 1 is an end view of my improved wagon dumping apparatus;

Fig. 2 is a plan view;

Fig. 3 is a side view; and

Figs. 4 and 5 are diagrammatic end views illustrating the dumping operation.

Referring to the drawings, 1 is the picking house of a canning establishment. 2 is a platform onto which the vines to be picked are dumped. 3 is a road bed on which are longitudinal rails 4. Mounted on these rails are grooved wheels 5 on axles 6 adapted to bearings in a frame 7 forming the dumping structure.

8 are transverse beams extending from one side member 9 of the frame 7 to the other. Carried by these transverse beams 8 is a wide track 10 flanged at each side. The wagon to be dumped is driven onto this track. At each end of the frame are inclined, flanged rails 11 which connect with the rails 10 so that a wagon can be readily transferred from the road bed 3 onto the rails 10.

12 is the running gear of the wagon and 13 is the detachable body, which may be of any form desired. The vertical members 9 of the frame carry at their upper ends the beams 14, which overhang the frame at one end and extend over the platform 2. In order to stiffen the frame, transverse beams 15 are provided, which extend from one vertical member 9 to the other and cross braces 16 are also provided at each end of the structure. This construction may be modified without departing from the essential features of the invention.

17 are two bars, one at each end of the structure. These bars are shaped as clearly shown in Fig. 1 and are connected at 18 to a rod 19 suspended from a trolley 20 adapted to the overhead beams. Each bar has a roller 21 arranged to travel on a curved rail 22 secured in a fixed position on the frame 7. One end of each bar is slotted, as at 23, for the reception of a pin 24, on which is an anti-friction roller. This pin is mounted in a fixed extension 25 and is so positioned in respect to the curved rail that, when the trolley is moved, the roller 21 will roll over the rail 22 until the roller reaches a certain point, when the bar will slide on the fixed pin 24. Pivoted at 26 to each bar are hooks 27, which engage the portions 28 of the wagon body. The pivots 26 for these hooks are provided with arms 29, which come in contact with stops 30 on the fixed frame so that, when the bar is lowered, the hooks will be thrown out clear of the wagon body, as clearly shown in Fig. 1. As soon as the bars are raised, their hooks swing in and are in position to engage the portions 28 of the wagon body.

The trolley 20 is attached to an endless chain 31, which passes around a sprocket wheel 32 mounted on a shaft 33 adapted to fixed bearings on the frame and around a sprocket wheel 34 on a shaft 35 adapted to adjustable bearings 36 of the ordinary type for taking up the slack. The shafts 33 and 35 extend from one beam 14 to the other and mounted on the shaft 33 is a gear wheel 37 which meshes with a pinion 38 on a shaft 39 on which is a gear wheel 40, which meshes with a pinion 41 on a shaft 42. On the shaft 42 is a bevel wheel 43, which meshes with a bevel wheel 44 on a vertical driving shaft 45. On the lower end of this shaft 45 is a bevel wheel 46 meshing with a wheel 47 on a shaft 48 on which are two gear wheels meshing with two gear wheels loosely mounted on a shaft 49 on which is a clutch sleeve 50 operated by a handle 51. This handle is operated by a bar 52 attached to a bell crank lever 53, which is connected to a bell crank lever 54

at the upper end of the frame by a rod 55. The upper bell crank lever is connected by a rod 56 to an arm 57 in the path of the trolley 20 so that, when the trolley moves to its extreme outward limit, it will strike the arm 57, operating the clutch to reverse the driving mechanism of the trolley 20.

The shaft 49 is geared to the shaft 58 of the motor 59, which, in the present instance, is an ordinary type of internal combustion engine. This motor not only operates the overhead gear for the wagon body, but also operates the means for traversing the frame on its rails 4. A shaft 60 is geared to the motor shaft 58. On this shaft are two loose gears 61 and 62 and between the gears is a clutch 63 operated by a hand lever 64 so as to throw the clutch sleeve into engagement with either of said gears. The said gears mesh with gears secured to a shaft 65 on which is a sprocket wheel 66. Passing around the sprocket wheel is a driving chain 67, which passes around a sprocket wheel on a shaft 68, which is geared to one of the axles 6 on which the wheels 5 are mounted so that, when the lever 64 is shifted in one position, the entire frame can be moved on its rails in one direction, and, when the lever is reversed, the frame can be moved in the opposite direction. When the lever is in the central position, the frame remains stationary.

The two trolleys 20 are connected by a trussed rod 69, clearly shown in Fig. 2. The side members of the main frame 7 are suitably braced by angle braces 70, as shown in Fig. 4. It will be understood that the arrangement of the braces may be modified according to the character of the apparatus and the weight of the load to be lifted.

The operation of the apparatus is as follows: If, for instance, beans are to be harvested, the wagons are loaded with the bean vines in the field and are driven up one set of inclined rails 11 onto the rails 10. The hooks 27 engage the portions 28 at each end of a wagon body. Power is then applied, which causes the trolleys 20 to move in the direction of the arrow, Fig. 1. When the trolleys reach the position shown in Fig. 4, the wagon body is suspended from the bars 17 and is free of the running gear. The rollers 21 travel over the curved track 22. When the trolleys move still farther in the direction of the arrow, Fig. 1, the rollers 21 travel on the straight portion of the track, while the slotted portions of the bars travel on the fixed pin 24. When the trolleys are moved to their full extent on the overhead portion, as shown in Fig. 5, the rollers 21 lift the rails 22 and the pin 24 is at the opposite end of the slot of the bar. The wagon body, when in this position, is tilted at such an angle that its contents will be discharged onto the platform 2—the clutch through which the mechanism is driven having been reversed, the trolleys are reversed and returned to their first position, the wagon body swinging into position directly above the running gear. When the wagon body rests on the running gear, the hooks are automatically released by the arms 29 coming in contact with the stops 30, as shown in Fig. 1. The wagon is then moved off of the rails 10 and another wagon takes its place, after which the operation hereinbefore described is repeated.

I claim:

1. The combination in a wagon body dumping apparatus, of a frame having an overhanging portion; power mechanism thereon; means suspended from the power mechanism for engaging the wagon body; and means for actuating the suspending means for the wagon body when the body is raised so that, as the body nears one side of the frame, it will be tilted to discharge its contents clear of the frame.

2. The combination in a wagon body dumping apparatus, of a frame having an overhanging portion; trolleys adapted to travel on the main portion and on the overhanging portion of the frame; means for operating the trolleys; bars suspended from the trolleys; hooks pivoted to the bars and arranged to engage the wagon body; curved rails on the frame; a roller on each bar arranged to travel on the rails, each bar having a slotted extension; and a fixed pin extending through the slot of each extension, the parts being so proportioned that when the trolley is moved out onto the overhanging portion of the frame the rollers on the bars will travel on the curved rails and the slotted portions of the bars will travel over the fixed pins until the wagon body suspended from the bars will be in a dumping position at the side of the frame under the overhanging portion thereof.

3. The combination in a wagon body dumping apparatus, of a frame; elevated tracks on the frame onto which a wagon is driven, said frame having wheels; fixed tracks on which the wheels are mounted; means for traversing the frame on the tracks, said frame having an overhanging portion; a trolley adapted to travel on the overhanging portion; means suspended from the trolley for engaging the wagon body; and mechanism for tilting the wagon body as it nears one side of the frame so that the wagon body will discharge its contents clear of the frame.

4. The combination in a wagon body dumping apparatus, of a frame; wheels on which the frame is mounted; a raised track mounted on the frame and onto which a wagon can be driven, said frame having an overhanging portion; overhead trolleys arranged to travel on the upper portion of the

frame; means for traversing the trolleys; a bar suspended from each trolley; means for controlling the movement of the bars so as to tilt the wagon body; and hooks on each bar arranged to engage the wagon body.

5. The combination in a wagon body dumping apparatus, of a frame; wheels on which the frame is mounted; a raised track mounted on the frame and onto which a wagon can be driven, said frame having an overhanging portion; overhead trolleys arranged to travel on the upper portion of the frame; means for traversing the trolleys; a bar suspended from each trolley; means for controlling the movement of the bars so as to tilt the wagon body; hooks on each bar arranged to engage the wagon body; pivots for the hooks; arms on the pivots; and stops on the frame against which the arms come in contact so that, when the wagon body is returned to the running gear of the wagon, the hooks will be automatically released from the wagon body.

6. The combination in a wagon body dumping apparatus, of a frame; wheels on which the frame is mounted; means for driving the wheels; raised rails carried by the frame onto which the wagon is driven; means for elevating and laterally dumping the wagon body; a motor; clutch mechanism; and gearing through which the motor drives the dumping apparatus, or the means for driving the wheels on which the frame is mounted.

7. The combination in a wagon body dumping apparatus, of a frame; wheels on which the frame is mounted; a raised track carried by the frame and onto which a wagon is driven; overhead beams carried by the frame, said beams extending beyond one side of the frame; trolleys arranged to travel on the beams; means for operating the trolleys; bars suspended from the trolleys; hooks on the bars arranged to engage a wagon body; curved rails on the frame; rollers on the bars arranged to travel on the curved rails; guides for the bars; and stops for limiting the movement of the bars when a wagon body is raised and the trolleys are traversed beyond one side of the frame so as to cause the wagon body to tilt and to discharge its load.

8. The combination in a wagon body dumping apparatus, of a frame; wheels on which the frame is mounted; overhead beams extending beyond one side of the frame; trolleys arranged to travel on said beams; endless chains connected to the trolleys; means for driving the chains; a bar suspended from each trolley; hooks on the bars arranged to engage the wagon body; curved rails on the frame; rollers on the bars arranged to travel on the curved rails; guides for one end of each bar; means for limiting the movement of the bars; a motor for driving the said chains; and means for reversing the motor so as to cause the trolleys to move in either direction.

9. The combination in a wagon body dumping apparatus, of a frame; wheels on which the frame is mounted; overhead beams extending beyond one side of the frame; trolleys arranged to travel on said beams; endless chains connected to the trolleys; means for driving the chains; a bar suspended from each trolley; hooks on the bars arranged to engage the wagon body; curved rails on the frame; rollers on the bars arranged to travel on the curved rails; guides for one end of each bar; means for limiting the movement of the bars; a motor for driving the said chains; means for limiting the movement of the chains; and automatic mechanism, operated by one of the trolleys, for reversing the movement of the trolleys when the trolleys have reached their outward limit and the load of the wagon body has been discharged.

10. The combination of a frame; two bars at each end of the frame; means for suspending the bars and traversing them on the frame; hooks on the bars engaging each end of a wagon body to be dumped; and means for guiding the bars so that they will be turned in order that the wagon body will be raised and moved to one side of the frame and tilted to discharge its load.

11. The combination in a wagon body dumping apparatus, of a frame; wheels supporting said frame; tracks on which the wheels are mounted, said frame having an overhead portion at the upper end extending beyond one side thereof; trolleys arranged to travel on the overhanging portion; endless chains attached to the trolleys; means for driving the chains first in one direction and then in the opposite direction; bars suspended from the chains said bars having hooks arranged to engage the wagon body, each bar having a roller; guide rails on the frame on which the rollers travel, each bar having a slotted extension; and pins on the frame extending through the slots in the extensions acting as guides for the bars, said extensions being on the same side of the center of the frame as the rails so that when the hooks engage the wagon body the body will be raised and moved to one side and tilted so as to discharge its load.

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