April 20, 1943. L. W. WACHTER 2,316,826

GARBAGE DUMPING BODY

Filed Oct. 27, 1941 4 Sheets-Sheet 1

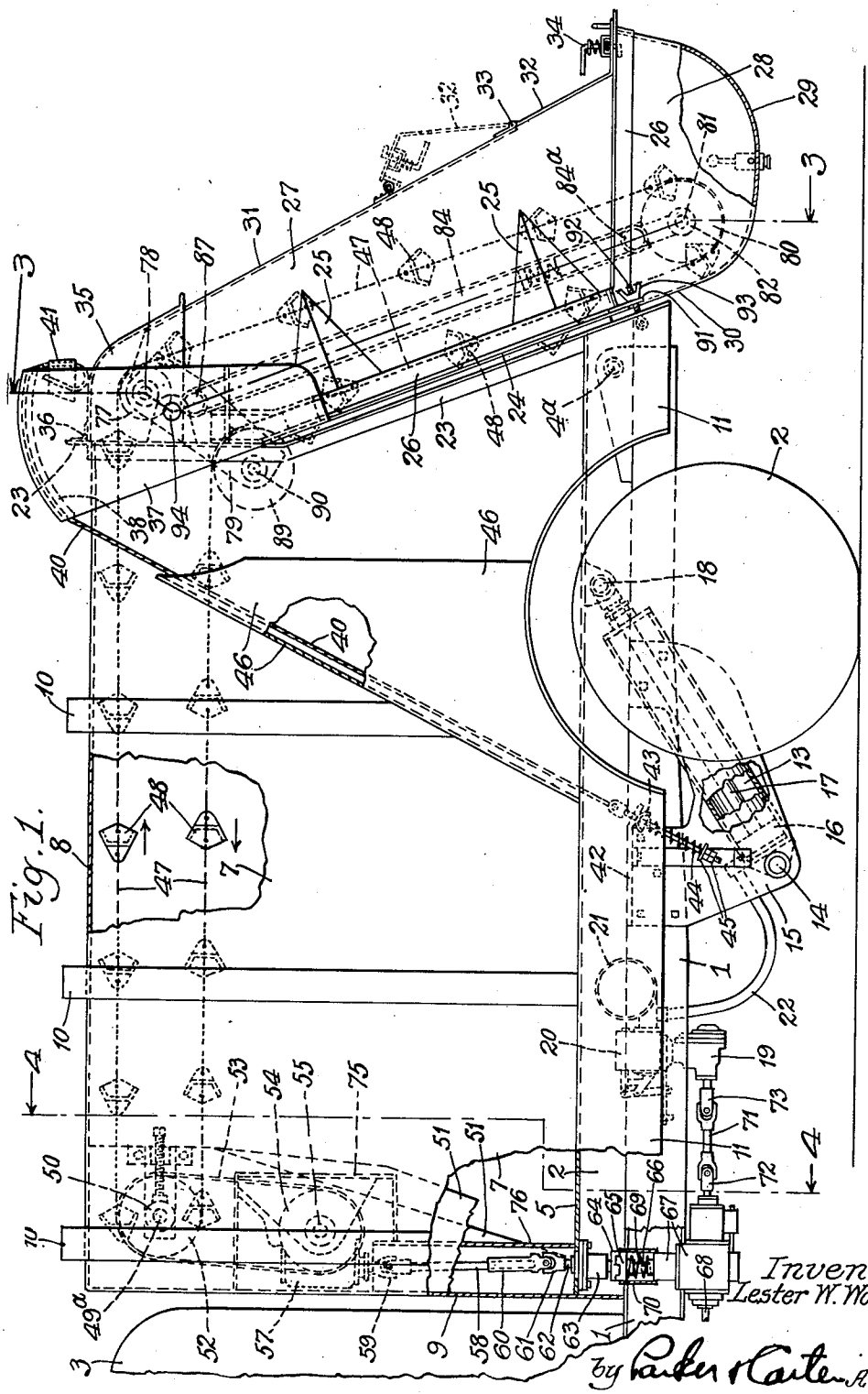


Fig. 1.

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by Carter & Carter Attys.

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GARBAGE DUMPING BODY

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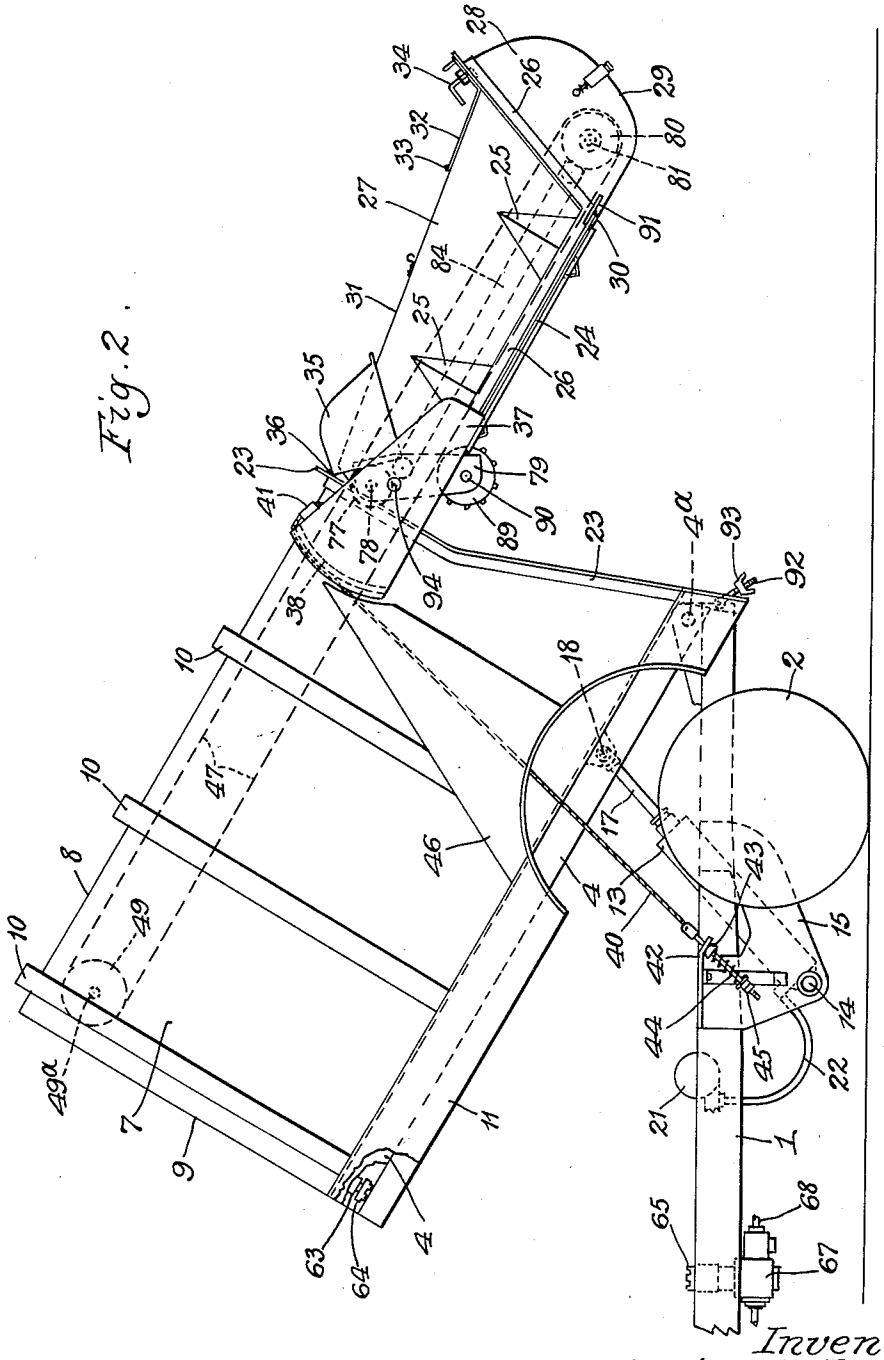


Fig. 2.

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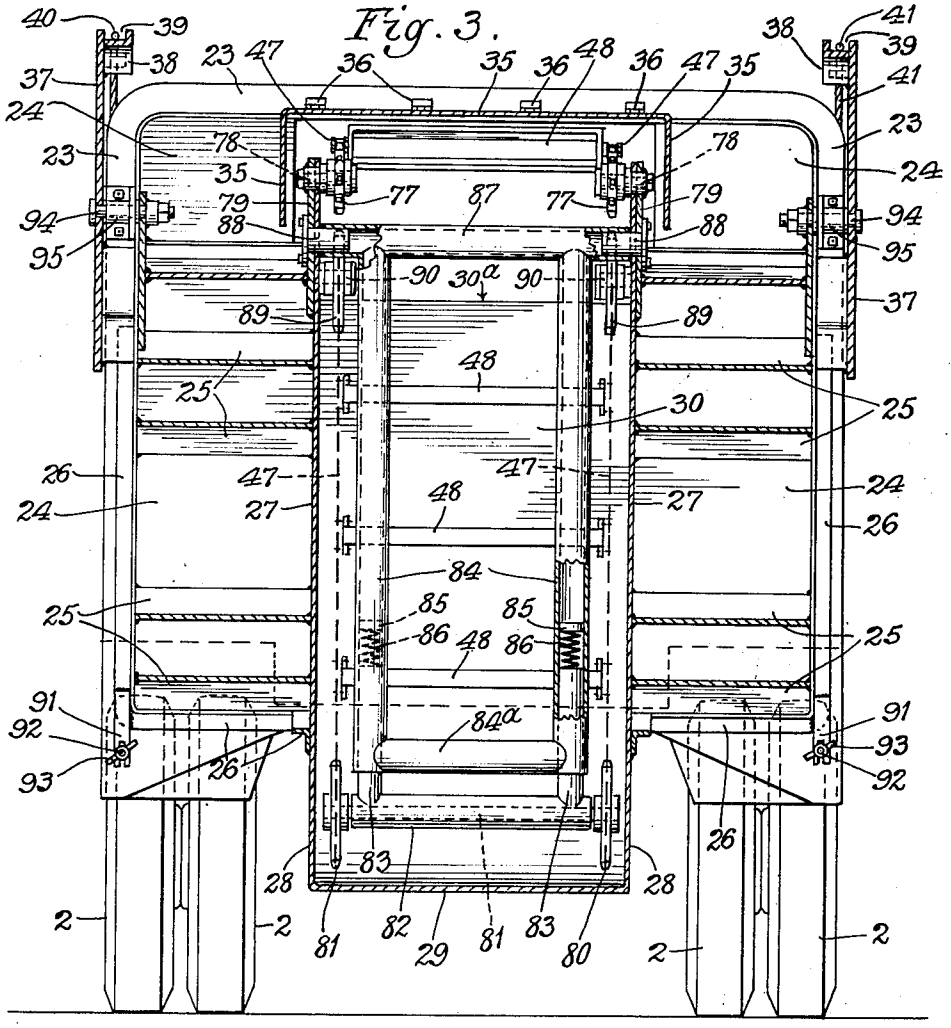
by Parker & Carter.
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April 20, 1943. L. W. WACHTER 2,316,826

GARBAGE DUMPING BODY

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Fig. 3.



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GARBAGE DUMPING BODY

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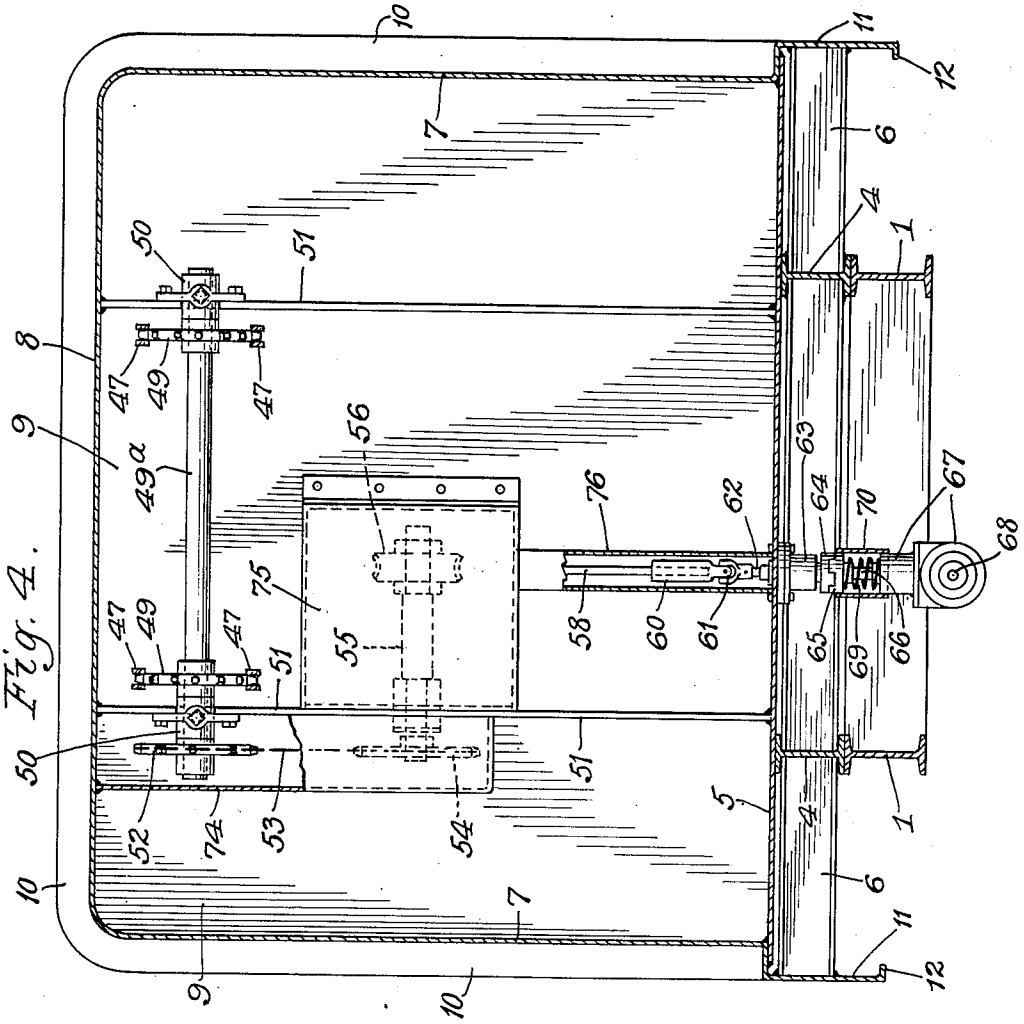


Fig. 4.

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Patented Apr. 20, 1943

2,316,826

UNITED STATES PATENT OFFICE

2,316,826

GARBAGE DUMPING BODY

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Application October 27, 1941, Serial No. 416,765

24 Claims. (Cl. 214—67)

This invention relates to a vehicle body of a type which is closed by walls and top and which is provided with a moveable end gate which may be closed or opened. It has for one object to provide a tipping body of the type indicated.

Another object is to provide a tipping body with a loading gate including a hopper, and power driven means for moving material from the hopper to the interior of the body.

Another object is to provide in a tipping body loading means for delivering material into the body and for packing it therein, and to provide in connection with such a body a simple drive for the loading means.

Other objects will appear from time to time throughout the specification and claims.

This invention is illustrated more or less diagrammatically in the accompanying drawings, wherein:

Figure 1 is a side elevation with parts broken away and parts in section.

Figure 2 is a side elevation on a reduced scale, showing the body in the tipped position, with the end gate opened.

Figure 3 is a transverse vertical section taken at line 3—3 of Figure 1.

Figure 4 is a transverse vertical section taken at line 4—4 of Figure 1.

Like parts are indicated by like characters throughout the specification and drawings.

The invention may be applied to an automotive vehicle or to a trailer, or for some purposes it might be mounted on a fixed platform or support. However it is mounted, power means are associated with it for tipping it and for moving the loader.

As shown, the body of the present invention is mounted on an automotive vehicle which is illustrated diagrammatically. It includes longitudinal frame members 1, 1, wheels 2, 2, and the vehicle may have a cab 3. The other parts of the vehicle are omitted as their details form no essential part of the invention.

The body includes a pair of main longitudinal frame members 4, 4, which support floor member 5, and are pivoted to the vehicle frames 1 as at 4a, and the body may include transverse frame members 6. The body is enclosed mainly by side members 7, 7, a top 8, and a forward wall 9. The sides, top, and forward wall may be of almost any desired shape and arrangement, and may include stiffening and reinforcing members 10. Laterally depending side members 11, 11 may be supplied if desired, and as used are preferably inturned at their lower edges, as at 12.

As a means for tipping the body, one or more hydraulic cylinders 13 are used. These cylinders may be mounted on a shaft 14, which is journaled in downward extensions 15 which are secured to the side frames 1 of the vehicle. In each cylinder a piston 16 is mounted and provided with a piston rod 17, which extends outwardly from the cylinder and is pivoted to the tipping frame as at 18. It may be pivoted directly on the frame, or on a member which is itself secured to the frame. Pressure fluid is supplied to the cylinders by means of a pump 19, and the flow of the pressure fluid is controlled by a valve assembly 20. A sump or reservoir 21 may be mounted in the fluid line and pipes or conduits 22 lead to the cylinders. The particular details of the pump circuit form no essential part of the invention, which might be carried out with different types of pump assemblies and pump circuits.

The rear of the body is open, and this opening may be of any desired shape. As shown, the open end is bounded by members 23, which strengthen and reinforce it. A tail gate is mounted in or upon the open end and includes generally flat portions 24, 24, which are provided with stiffening and reinforcing members 25, and with an outside frame member 26, of generally angular cross section which extends about the flat members 24 on their exterior edges, and on their bottoms. Secured to the flat members 24 and extending rearwardly from them and positioned inwardly from their outward edges are a pair of members 27, which enclose a conveyor or loader. At the bottom the members 27 are shaped to form a hopper, as indicated particularly at 28, and this hopper is closed at its bottom by a curved plate 29 which extends upwardly, as at 30, to a point near the top of the gate. The member 29 is in effect a continuation of the members 24, and in general may be integral with them, and may lie in the same plane in which they lie. The side members 27 are closed or joined by a member 31, which extends from a point near the top of the gate to a point adjacent its bottom, where a gate or cover 32 is hinged to it as at 33. This gate may be opened to permit material to be inserted into the hopper, and a latch member 34 may be used if desired, to hold the gate removeably closed. The plate 31 does not extend fully to the top of the tail gate, and the upper end of the conveyor is closed by a moveable cover 35, which is pivoted as at 36, to the frame 23, which is positioned about the open end of the body. As shown in Figure 1, the cover 35

is down when the gate is down, and when the gate is raised to the position of Figure 2, the cover is tilted or raised with it, but continues to overlie the opening above the upper end of the plate 31.

Secured on either side of the gate structure, and arranged to move with the gate, is a plate 37. The upper end of each plate 37 has secured to it a rounded or arcuate member 38, providing a grooved or track portion 39 within which a cable 40 may lie. One end of the cable is secured as at 41 at the end of the arcuate portion 38, and the other passes through a perforation in an extension 42, which may be made integrally with the extension 15, and preferably projects laterally from the side frame member 1 of the vehicle. A contact member 43 is loosely mounted on each cable 40 below the extension 42, and a spring 44 is positioned about the cable and held in place by a combination of nuts and a washer 45.

Each of the sides 7 of the body may be provided with an irregularly shaped housing 46 which has an open top and bottom and which encloses one of the cables 40, thus covering it and protecting users against injury by contact with the cable.

In order to load material into the body and to move and pack it within the body, conveying means are provided which move upwardly along the tail gate and inwardly into the body. These means include a pair of chains 47 which are joined by a series of flights 48. At the forward end of the body the chains are passed about driving sprockets 49, which are secured to a shaft 49a, which is carried in bearings 50, which are themselves supported on members 51, secured to the rear plate 9 of the body. These members serve to strengthen the rear of the body and to support the bearings for the shaft 49a. Fixed on the shaft is a third sprocket 52 which is driven by a chain 53, which is itself driven from a sprocket 54. The sprocket 54 is fixed on a shaft 55, which carries a worm gear 56 which meshes with a worm not shown, but carried in the housing 57 of Figure 1. Extending downwardly from the worm is a shaft 58 which is connected by a universal joint 59, and the shaft is preferably squared and slideably fitted into a sleeve 60, which is squared internally and which is connected by a universal joint 61 to a short shaft 62, which extends through a bearing 63 and which at its outer end carries a clutch member 64. A mating clutch member 65 is carried on a slideable stub shaft 66. This shaft is driven by gearing mounted within a housing 67. The particular details of this gearing form no essential part of the present invention, and need not be shown further. It is sufficient that means are provided to drive the member 66. In the present case, a power take-off shaft 68 is shown. A spring 69 is mounted about the member 66 and tends to force it upwardly, and a sleeve 70 is positioned about the spring. For convenience, the pump 19 may be driven from the shaft 68 through the housing 67 by means of a shaft 71, and a pair of universal joints 72, 73. It is generally desirable to enclose the sprocket driving means for the conveyor, and hence a housing 74 encloses the sprockets 52 and 54, and the chain 53. A housing 75 encloses the shaft 55, and the worm and gear associated with it. A housing 76 encloses the upwardly extending shaft 58, and parts associated with it.

The upper run of the chains 47 passes over idler sprockets 77, which are carried on stub shaft 78, mounted in the frame member 79. From the upper idler sprockets 77 the chains 47 extend to lower idler sprockets 80, which are supported on a shaft 81 which is journaled in a member 82. This member forms part of a pivoted conveyor frame. Extending upwardly from the member 82 are two extensions 82 which fit within tubular sections 84 of the pivoted conveyor. Within the sections 84 are mounted stops 85 and springs 86. The inner end of each member 83 bears against a spring 86. The members 84 are joined at their lower ends by a brace member 84a and in their upper ends by a member 87, which is pivoted in the particular form here shown upon plugs 88, which are themselves carried in the side members 27. By the means just described, that portion of the conveyor which lies within the tail gate is carried on a pivoted support which swings about an upper pivot and is compressible within itself. Should the conveyor encounter obstacles, it may swing outwardly about the pivots 88 and it may be partially compressed against the springs 86. From the tail gate the lower run of the conveyor passes about sprockets 89, which are journaled as at 90, upon supports which are carried by the frame 79. If desired, means may be provided for latching the tail gate in the down position, and as shown, these means comprise slotted members 91 on the tail gate frame, and bolts 92 pivoted on the frame 23 of the body and carrying thumb nuts 93.

The gate itself is pivoted upon the short pins or stub shafts 94, which are carried in bearings 95, themselves supported on the frame 23 adjacent its upper end.

It will be realized that whereas I have described and shown a practical and operative embodiment of my invention and the method for carrying it out, nevertheless many changes may be made in the size, shape, number, and disposition of parts and in the details and steps of such method without departing from the spirit of my invention. I therefore wish my description and drawings to be taken as in a broad sense illustrative or diagrammatic, rather than as limiting me to my precise showing.

The use and operation of the invention are as follows:

In the particular form here shown, the invention is embodied in a garbage body mounted on a truck. Assuming that the body is empty and that it is to be filled, it will be moved to a place where material is to be put into it. The engine will be in operation, and the shaft 66 will be driven, and the clutch 64, 65 will rotate the gearing, which finally drives the shaft 49a and the chains driving sprocket 49. Thus the conveyor is moved in the direction of the arrows shown in Figure 1. The door or gate 32 is raised, and the material is dumped or discharged into the hopper 28. The conveyor or loader moving in the direction of the arrows of Figure 1 carries its flights 48 upwardly along the bottom 29, 30 of the hopper and conveyor portions of the tail gate. Material is discharged over the upper edge 30a of the tail gate plate 30, as shown in Figure 3, and falls into the body. Should some material which is too large to pass under the conveyor or too tough or hard to be broken by the conveyor be put into the hopper, it will not break the conveyor because the conveyor may ride up on it, pivoting about the pivot points 88. Also in extreme cases, the conveyor will be shortened or

compressed automatically by yielding of the springs 86, which permits the lower end of the conveyor, including the member 82 and the sprockets 80, to yield upwardly.

When the body has been substantially filled, if further material is added, it will be carried upwardly and discharged into the body, and will be carried rearwardly by the flights as they move into the body, and material is not merely discharged into the body by the conveyor, but is actually packed therein by the effect of the inwardly moving flights.

When the body has been filled and is to be dumped, it is taken to the place of dumping and the hoisting mechanism is manipulated to direct pressure fluid into the tipping cylinder 13. The tipping operation is the same whether there are several cylinders or only a single cylinder. When pressure fluid is directed to the cylinder, the piston is raised or forced outwardly, and the body is tilted to the position of Figure 2. The exact degree of tilt depends upon the proportions of the parts and depends upon the amount of travel provided for the piston. If the body is tilted, the arcuate portions 38 move rearwardly with the gate structure, and the cables 40, unwinding from the arcuate portions, rock the gate rearwardly open and hold the gate in that open position until the body is lowered, when they permit the gate progressively to move downwardly as the body moves downwardly, until it finally reaches the closed position. Of course for dumping, the body will ordinarily be held in the raised position long enough to permit the load to fall or slide out of the body.

After dumping, the vehicle is again taken to the place where further material is to be loaded, and the cycle of operation is repeated. Ordinarily, of course, a full load would not be taken on at any one stop, and ordinarily the loading conveyor will be operated a number of times before the body is full.

The means for operating the lower conveyor, include a power take-off from the engine, a handle or lever to control it so that it may be turned off and on, and means for connecting the conveyor with the power take-off. Since the conveyor need operate only for loading, and since loading is not carried out when the body is in the tipped position, it is sufficient to provide means for operating the conveyor when the body is in the down position, and this means comprises the clutch and the gearing illustrated. When the body is in the tipped position, the clutch member 64 moves away from the clutch member 65, and no means are or need be provided for driving the conveyor. When the body is returned to the upright or untipped position, the clutch members come into contact and the lower member 65 is forced yieldingly upward by the spring 66, and the clutch members re-engage so that the drive is completed, and should the controlling lever be operated to drive the conveyor, the latter will be moved through the completed drive. The conveyor drive shown obviates the necessity of prime movers or hydraulic cylinders or the like on the body itself for operating the conveyor, and thus reducing the necessary weight of the assembly and amplifying the construction. The use of the cables 40 obviates the necessity of any separate prime movers or hydraulic cylinders or the like for swinging the gate to the opened position when the body is tilted, and thus the single power source of the vehicle operates the conveyor when the latter is needed, and operates the pump to supply pressure fluid to the tipping cylinder, and the tipping movement of the body under the influence of those cylinders swings the gate open. The structure is thus simple, and duplication and unnecessary weight are avoided.

I claim:

1. In combination, a support and a container mounted thereon for movement with relation thereto, means mounted on said support and engaging said container, a gate moveably mounted upon one end of said container, gate moving means secured at one end to said gate and at one end to said support, and of such length that movement of said container causes movement of said gate, and a conveyor mounted in part on said gate, and a driving linkage for said conveyor, and a support for said conveyor within said gate, said support including a frame, means for pivoting the frame for movement bodily with respect to said gate, said gate including a hopper portion which encloses the lower part of the container, and a moveable door mounted for movement to give access to said hopper and to the portion of the container mounted therein.

2. In combination, a support and a container mounted thereon for movement with relation thereto, means mounted on said support and engaging said container, a gate moveably mounted upon one end of said container, gate moving means secured at one end to said gate and at one end to said support, and of such length that movement of said container causes movement of said gate, and a conveyor mounted in part on said gate and in part extending into said container, and a driving linkage for said conveyor, and a support for said conveyor within said gate, said support including a frame, means for pivoting the frame for movement bodily with respect to said gate, said gate including a hopper portion which encloses the lower part of the container, and a moveable door mounted for movement to give access to said hopper and to the portion of the container mounted therein.

3. In combination, a support and a container mounted thereon for movement with relation thereto, means mounted on said support and engaging said container, a gate moveably mounted upon one end of said container, gate moving means secured at one end to said gate and at one end to said support, and of such length that movement of said container causes movement of said gate, and a conveyor mounted in part on said gate, and a driving linkage for said conveyor, said linkage including a clutch part, power driving means for said linkage mounted on said support and including a second clutch part adapted when the container is in the lowered position to engage said first-mentioned clutch part, and a support for said conveyor within said gate, said support including a frame pivoted adjacent its upper end and comprising the sole support for said conveyor, means for pivoting the frame for movement bodily with respect to said gate, said gate including a hopper portion which encloses the lower part of the container, and a moveable door mounted for movement to give access to said hopper and to the portion of the container mounted therein.

4. In combination, a support and a container mounted thereon for movement with relation thereto, means mounted on said support and engaging said container, a gate moveably mounted upon one end of said container, gate moving means secured at one end to said gate and at one end to said support, and of such length that

movement of said container causes movement of said gate, and a conveyor mounted in part on said gate and in part extending into said container, and a driving linkage for said conveyor, said linkage including a clutch part, power driving means for said linkage mounted on said support and including a second clutch part adapted when the container is in the lowered position to engage said first-mentioned clutch part, and a support for said conveyor within said gate, said support including a frame, means for pivoting the frame at its upper end only, said frame and conveyor being bodily movable independent of said gate, said gate including a hopper portion which encloses the lower part of the container, and a moveable door mounted for movement to give access to said hopper and to the portion of the container mounted therein.

5. In combination, a support and a container mounted thereon for movement with relation thereto, means mounted on said support and engaging said container, a gate moveably mounted upon one end of said container, gate moving means secured at one end to said gate and at one end to said support, and of such length that movement of said container causes movement of said gate, and a conveyor mounted in part on said gate and in part extending into said container, and a driving linkage for said conveyor, and a support for said conveyor within said gate, said support including a frame, means for pivoting the frame, said frame including a section telescopically mounted with respect to the remainder of said frame, said gate including a hopper portion which encloses the lower part of the container, and a moveable door mounted for movement to give access to said hopper and to the portion of the container mounted therein.

6. In combination, a support and a container mounted thereon for movement with relation thereto, means mounted on said support and engaging said container, a gate moveably mounted upon one end of said container, gate moving means secured at one end to said gate and at one end to said support, and of such length that movement of said container causes movement of said gate, and a conveyor mounted in part on said gate and in part extending into said container, and a driving linkage for said conveyor, and a support for said conveyor within said gate, said support including a frame, means for pivoting the frame adjacent its upper end, the lower end of said frame being unsupported, said frame including a section telescopically mounted with respect to the remainder of said frame, said gate including a hopper portion which encloses the lower part of the container, and a moveable door mounted for movement to give access to said hopper and to the portion of the container mounted therein.

7. In combination, a support and a container mounted thereon for movement with relation thereto, means mounted on said support and engaging said container, a gate moveably mounted upon one end of said container, gate moving means secured at one end to said gate and at one end to said support, and of such length that movement of said container causes movement of said gate, and a conveyor mounted in part on said gate and in part extending into said container, and a driving linkage for said conveyor, and a support for said conveyor within said gate, said support including a frame, means for pivoting the frame, said frame including a section telescopically mounted with respect to the remainder of said frame, and yielding means tending normally to resist telescoping movement of the frame portion, said gate including a hopper portion which encloses the lower part of the container and a moveable door mounted for movement to give access to said hopper and to the portion of the container mounted therein.

8. In combination, a support and a container mounted thereon for tipping movement with relation thereto, power means mounted on said support and engaging said container, a gate moveably mounted for pivotal movement upon one end of said container, gate moving means secured at one end to said gate and at one end to said support, and of such length that movement of said container causes swinging movement of said gate, and a conveyor mounted in part on said gate and in part extending into said container, and a driving linkage for said conveyor, said linkage including a clutch part, power driving means for said linkage mounted on said support and including a second clutch part adapted when the container is in the lowered position to engage said first-mentioned clutch part, and a support for said conveyor within said gate, said support including a frame, means for pivoting the frame adjacent its upper end, the lower end of said frame being unsupported, said frame including a section telescopically mounted with respect to the remainder of said frame, and yielding means tending normally to resist telescoping movement of the frame portions, said gate including a hopper portion which encloses the lower part of the container and the container frame, and a moveable door mounted for movement to give access to said hopper and to the portion of the container mounted therein.

9. In combination, a support and a container mounted thereon for tipping movement with relation thereto, power means comprising a hydraulically cylinder and piston assembly mounted on said support and engaging said container, means for supplying fluid under pressure to said cylinder to move said piston and to tip said container, a gate moveably mounted for pivotal movement upon one end of said container, gate moving means secured at one end to said gate and at one end to said support, and of such length that movement of said container causes swinging movement of said gate, and a conveyor mounted in part on said gate and in part extending into said container, and a driving linkage for said conveyor, said linkage including a clutch part, power driving means for said linkage mounted on said support and including a second clutch part adapted when the container is in the lowered position to engage said first-mentioned clutch part, and a support for said conveyor within said gate, said support including a frame, means for pivoting the frame adjacent its upper end, the lower end of said frame being unsupported, said frame including a section telescopically mounted with respect to the remainder of said frame, and yielding means tending normally to resist telescoping movement of the frame portions, said gate including a hopper portion which encloses the lower part of the container and the container frame, and a moveable door mounted for movement to give access to said hopper and to the portion of the container mounted therein.

10. In combination, a support and a container, mounted thereon for relative pivotal movement

with respect thereto, and a gate moveably mounted to close the rear end of said container, said gate being pivoted adjacent its upper end upon said container, said gate including members defining a hollow portion and a hopper, members engaging said gate and said support and extending directly from one to the other, said members being secured at one end to said support, and at the other end to said gate, means for tipping said container with respect to said support, and a conveyor positioned partly within the hollow portion of said gate and extending into said hopper and partly within said container, and transmission means mounted on said container and adapted to move therewith, for driving said conveyor.

11. In combination, a support and a container, mounted thereon for relative pivotal movement with respect thereto, said container being closed except at its rear end, and a gate moveably mounted to close rear end of said container, said gate being pivoted adjacent its upper end upon said container, said gate including members defining a hollow portion and a hopper, members engaging said gate and said support, said members being secured at one end to said support, and at the other end to said gate, said gate being provided with curved parts, about which said members extend, and a conveyor positioned partly within the hollow portion of said gate and extending into said hopper and partly within said container, and transmission means mounted on said container and adapted to move therewith, for driving said conveyor.

12. In combination, a support and a container, mounted thereon for relative pivotal movement with respect thereto, said container being closed except at its rear end, and a gate moveably mounted to close rear end of said container, said gate being pivoted adjacent its upper end upon said container, said gate including members defining a hollow portion and a hopper, flexible members engaging said gate and said support, and enclosures therefor, mounted on said container, said members being secured at one end to said support, and at the other end to said gate, means for tipping said container with respect to said support, and a conveyor positioned partly within the hollow portion of said gate and extending into said hopper and partly within said container, and transmission means mounted on said container and adapted to move therewith, for driving said conveyor, and power transmitting means carried by said support and adapted when said container is in the untipped position to engage the transmission means mounted on said container and with them to drive said conveyor.

13. In combination, a support and a container, mounted thereon for relative pivotal movement with respect thereto, said container being closed except at its rear end, and a gate moveably mounted to close rear end of said container, said gate being pivoted adjacent its upper end upon said container, said gate including members defining a hollow portion and a hopper, said hopper being rigidly held with respect to the other parts of said gate, a door for said hopper, flexible members engaging said gate and said support, said members being secured at one end to said support, and at the other end to said gate, means for tipping said container with respect to said support, and a conveyor positioned partly within the hollow portion of said gate and extending into said hopper and partly within said container, and transmission means mounted on said container and adapted to move therewith, for driving said conveyor, and power transmitting means carried by said support and adapted when said container is in the untipped position to engage the transmission means mounted on said container and with them to drive said conveyor.

14. In combination, a support and a container mounted thereon for pivotal movement with respect thereto, means for tipping said container, a gate at the rear end of said container, and means effective when said container is tipped to move said gate to the open position in direct response to the tipping movement of said container, said gate including members defining a hollow conveyor chamber and a hopper, a conveyor frame pivoted adjacent its upper end only within the conveyor chamber of said gate, said frame including a plurality of members mounted for relative movement, and a conveyor mounted on said frame, and means for driving said conveyor to carry material from said hopper through the conveyor chamber of said gate, and into said container, said conveyor including chains and flights and sprockets engaged by said chains, and a linkage carried by said container, drive means therefor carried by said support, adapted to engage said linkage when the container is in the lowered position only and in that position adapted to drive said conveyor.

15. In combination, a support and a container mounted thereon for pivotal movement with respect thereto, means for tipping said container, a gate at the rear end of said container, and means effective when said container is tipped to move said gate to the open position in response to the tipping movement of said container, said gate including members defining a hollow conveyor chamber and a hopper, a conveyor frame pivoted within the conveyor chamber of said gate, said frame including a plurality of members mounted for relative telescopic movement means for yieldingly resisting said movement, and a conveyor mounted on said frame, and means for driving said conveyor to carry material from said hopper through the conveyor chamber of said gate, and into said container, said conveyor including chains and flights and sprockets engaged by said chains, some of said sprockets being mounted within the container, and some on the frame within the gate.

16. In combination, a support and a container mounted thereon for pivotal movement with respect thereto, means for tipping said container, a gate at the rear end of said container, and means effective when said container is tipped to move said gate to the open position in response to the tipping movement of said container, said gate including members defining a hollow conveyor chamber and a hopper, a conveyor frame pivoted within the conveyor chamber of said gate, said frame including a plurality of members mounted for relative telescopic movement, and means tending—when free to do so—to hold them yieldingly against such movement, and a conveyor mounted on said frame, and means for driving said conveyor to carry material from said hopper through the conveyor chamber of said gate, and into said container, said conveyor including chains and flights and sprockets engaged by said chains.

17. In combination, a support and a container mounted thereon for pivotal movement with respect thereto, means for tipping said container, a gate pivoted adjacent its upper end at the rear

end of said container, and means effective when said container is tipped to move said gate to the open position in response to the tipping movement of said container, said gate including members defining a hollow conveyor chamber and a hopper, a conveyor frame pivoted adjacent its upper end within the conveyor chamber of said gate, said frame including a plurality of members mounted for relative movement, and means tending—when free to do so—to hold them yieldingly against such movement, and a conveyor mounted on said frame and extending into said container, and means for driving said conveyor to carry material from said hopper through the conveyor chamber of said gate, and into said container, said conveyor including chains and flights and sprockets engaged by said chains, and a linkage carried by said container, drive means therefor carried by said support, adapted to engage said linkage when the container is in the lowered position only and in that position adapted to drive said conveyor.

18. In combination, a support and a container mounted thereon for pivotal movement with respect thereto, means for tipping said container, a gate pivoted adjacent its upper end at the rear end of said container, and means effective when said container is tipped to move said gate to the open position in response to the tipping movement of said container, said gate including members defining a hollow conveyor chamber and a hopper, a conveyor frame pivoted within the conveyor chamber of said gate, said frame including a plurality of members mounted for relative movement, and means tending—when free to do so—to hold them yieldingly against such movement, and a conveyor mounted on said frame and extending into said container, and means for driving said conveyor to carry material from said hopper through the conveyor chamber of said gate, and into said container, said conveyor including chains and flights and sprockets engaged by said chains, some of said sprockets being mounted within the container, and some on the frame within the gate.

19. In combination with a tipping container having an open end, a gate mounted therein, members defining a chamber in said gate, and a conveyor positioned in said chamber, a support for said conveyor moveably mounted within said chamber and supported adjacent its upper end, said support free to move about its upper end and comprising a plurality of members, positioned together for relative movement.

20. In combination, a support and a container mounted thereon for movement with relation thereto, means mounted on said support and engaging said container, a gate moveably mounted upon one end of said container, gate moving means secured at one end to said gate and at one end to said support, and of such length that movement of said container causes movement of said gate, and a conveyor mounted in part on said gate, and a driving linkage for said conveyor, and a support for said conveyor within said gate, said support being pivoted for body movement with respect to said gate, said gate including a hopper portion which encloses the lower part of the container, and a moveable door mounted for movement to give access to said hopper and to the portion of the container mounted therein.

21. In combination, a support and a container mounted thereon for movement with relation thereto, means mounted on said support and engaging said container, a gate moveably mounted upon one end of said container, gate moving means secured at one end to said gate and at one end to said support, and of such length that movement of said container causes movement of said gate, and a conveyor mounted in part on said gate, and a driving linkage for said conveyor, and a support for said conveyor within said gate, said support being pivoted adjacent its upper end only for body movement with respect to said gate, said gate including a hopper portion which encloses the lower part of the container, and a moveable door mounted for movement to give access to said hopper and to the portion of the container mounted therein.

22. In combination with a tipping container having an open end, a gate mounted therein, members defining a chamber in said gate, and a conveyor positioned in said chamber, a support for said conveyor moveably mounted within said chamber and supported adjacent its upper end, said support free to move about its upper end and comprising a plurality of members, positioned together for relative movement, said members including an upper pivoted part having downwardly depending members and a lower part mounted for telescopic movement with respect to said downwardly depending members and carrying a conveyor sprocket assembly.

23. In combination with a tipping container having an open end, a gate mounted therein, members defining a chamber in said gate, and a conveyor positioned in said chamber, a support for said conveyor moveably mounted within said chamber and supported adjacent its upper end, said support free to move about its upper end and comprising a plurality of members, positioned together for relative movement, said members including an upper hollow pivoted part having a pair of downwardly depending parallel, generally tubular members, and a spacing member secured to said tubular members adjacent their lower end, there being a second member comprising a cross-piece and a pair of upwardly extending parallel spaced members, said parallel spaced members being moveably received within said downwardly depending members.

24. In combination with a tipping container having an open end, a gate mounted therein, members defining a chamber in said gate, and a conveyor positioned in said chamber, a support for said conveyor moveably mounted within said chamber and supported adjacent its upper end, said support free to move about its upper end and comprising a plurality of members, positioned together for relative movement, said members including an upper hollow pivoted part having a pair of downwardly depending, parallel, generally tubular members and a spacing member secured to said tubular members adjacent their lower end, there being a second member comprising a cross-piece and a pair of upwardly extending, parallel spaced members, said parallel spaced members being moveably received within said downwardly depending members, and a sprocket assembly for said conveyor mounted for rotation within said lower member.

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