March 21, 1944 W. G. VENARD 2,344,755

TRUCK

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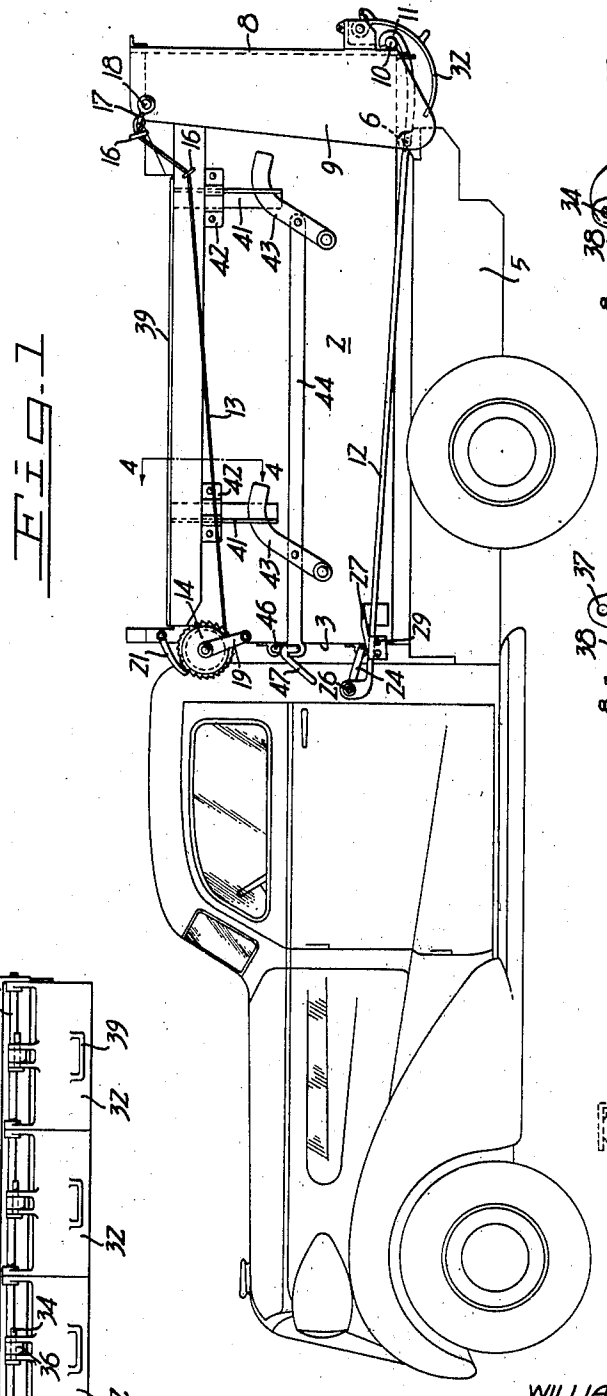


FIG. 1

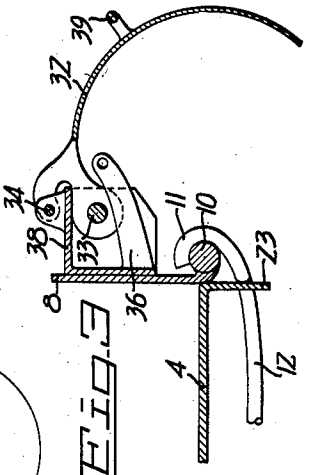


FIG. 3

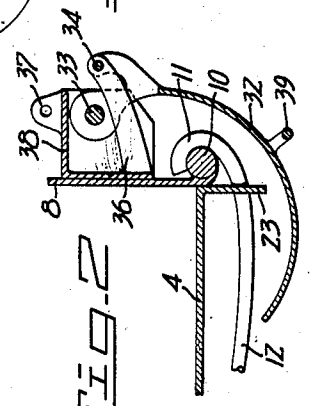


FIG. 2

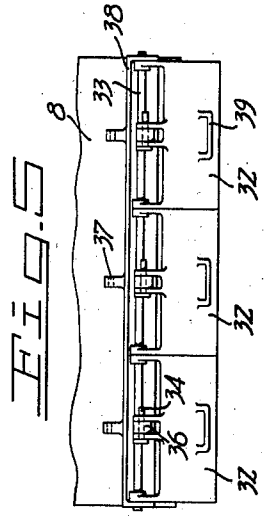


FIG. 5

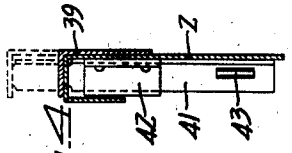


FIG. 4

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Fig. 6

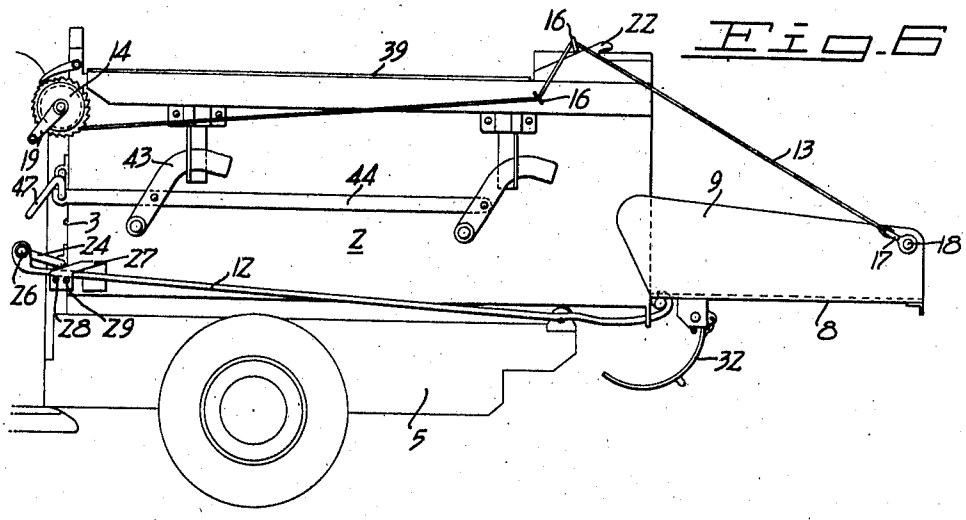


Fig. 7

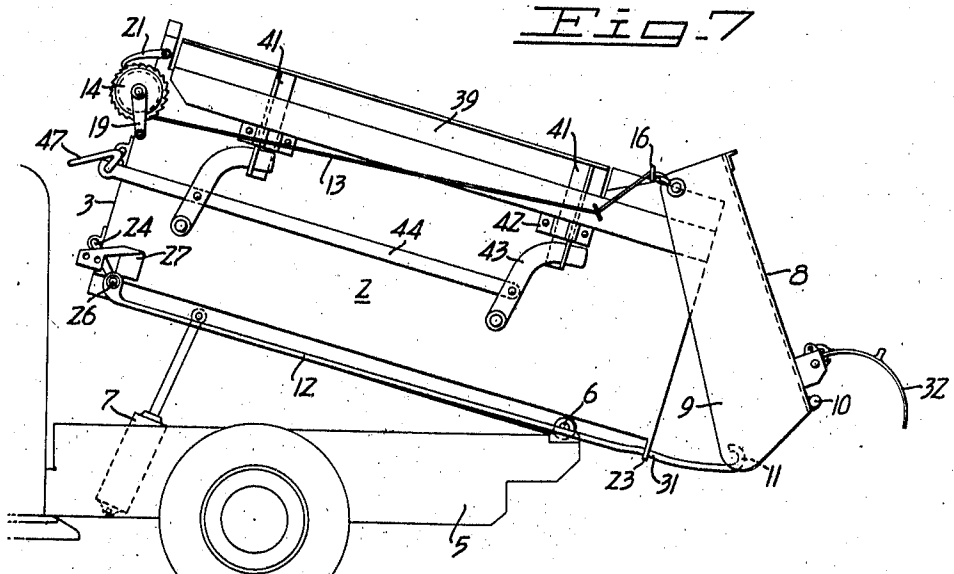
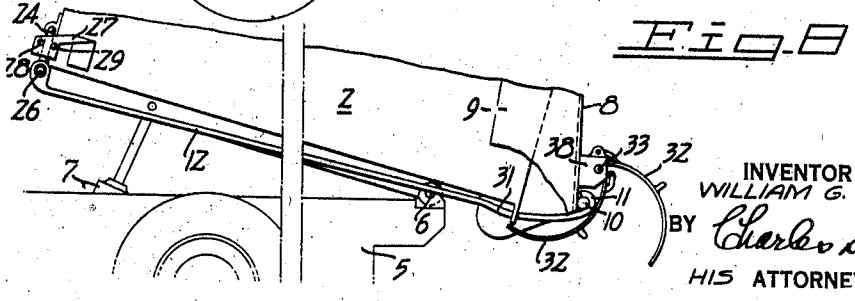


Fig. 8



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Patented Mar. 21, 1944 2,344,755

UNITED STATES PATENT OFFICE

2,344,755

TRUCK

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Application March 12, 1941, Serial No. 382,871

1 Claim. (Cl. 296—51)

My invention relates to dump trucks; and more particularly to improvements in the load carrying compartments of such trucks.

It is among the objects of my invention to provide an improved end gate for the load carrying compartment.

Another object is to provide an end gate hinged at top and bottom and adapted to swing outwardly about either of the hinges.

Another object is to provide means for controlling movement of the gate about either one or the other of the hinges.

Still another object is to provide means associated with the end gate for regulating discharge of material from the load carrying compartment.

A further object is to provide means for controlling the height of the compartment walls.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of my invention. It is to be understood that I do not limit myself to this disclosure of species of my invention, as I may adopt variant embodiments thereof within the scope of the claim.

Referring to the drawings:

Figure 1 is a side elevational view of a truck embodying the improvements of my invention.

Figure 2 is a fragmentary sectional view through the lower part of the end gate, showing one of the control gates in closed position; and

Figure 3 is a similar view showing the control gate in open position.

Figure 4 is a vertical sectional view illustrating the adjustable extension on a side wall, taken in a plane indicated by line 4—4 of Figure 1.

Figure 5 is a fragmentary rear elevation view showing the end gate and attached control gates.

Figure 6 is a side elevational view illustrating the end gate opened about the bottom hinge; and

Figures 7 and 8 are similar views illustrating the end gate opened about the upper hinge.

In terms of broad inclusion, my truck comprises a load carrying compartment, an end gate for the compartment, hinges adjacent the top and bottom of the gate, and means for controlling movement of the gate about either one or the other of the hinges. A control gate is also preferably mounted on the end gate to regulate discharge of material when the end gate is opened from the bottom. Means are further preferably provided for controlling the height of the side walls of the load carrying compartment.

In greater detail, and referring to the drawings, my truck comprises a load carrying compartment having side walls 2, forward end wall 3 and bottom 4. This compartment is mounted on any suitable truck chassis 5. In my preferred construction the load carrying compartment is pivotally mounted for dumping purposes by a pin 6, and is elevated by suitable means, as by a hydraulic cylinder 7.

The rear of the load compartment is closed by an end gate 8 having side wings 9 lapping walls 2. This end gate embodies several improvements, and a unique feature is that it is hinged at both top and bottom. At the bottom the gate hinges on a pin 10 seated in a hook-shaped socket 11 formed on the end of a rod 12. Hinge pin 10 is preferably fixed to the lower edge of gate 8; and there are preferably two socket forming rods 12, one on each side of the load compartment. When these rods are retracted, as shown in Figure 1, the hook-shaped ends 11 firmly embrace pin 10 to provide the hinge sockets.

The gate swing down about the axis of lower hinge pin 10 to the loading position shown in Figure 6; suitable apertures or dents being provided in the gate to give clearance for the sockets. This opening movement is controlled by a flexible element or cable 13 from a winch 14 at the forward end of the compartment. Eyes 16 on side wall 2 guide the cable to a clevis 17 secured to the upper end of gate wing 9 by pin 18. There are two of these cable assemblies, one on each side of the load compartment; the winch drums of these units being mounted on a common shaft and controlled by a crank 19. By this arrangement the end gate may be opened from the top and held in any desired position by pawl 21 of the winch. The truck is thus adapted for hauling bulky objects which may be loaded and unloaded from the rear end of the carrying compartment.

Pins 18 at the top of the gate project inwardly and engage C-shaped sockets 22 mounted on the upper edges of side walls 2. These pins are held firmly in the sockets by the tension of cables 13, and when so held the pin and socket units provide the upper hinges about which the gate may be opened from the bottom. This adapts the truck for hauling granular material, and enables the operator to dump the material when the load compartment is tilted as shown in Figures 7 and 8.

Outward swinging of the end gate about the axis of upper hinge pins 18 is controlled by rods 12. For this purpose rods 12 are slidably mounted in an apertured flange 23 at the rear of the load compartment. The forward ends of these rods are connected to cranks 24 formed at the

ends of a cross shaft journaled on front wall 3, so that the rods are moved by turning the cranks. An outwardly projecting end 26 on crank 24 provides a handle for moving the rods from the retracted position shown in Figure 1 to the extended positions shown in Figures 7 and 8.

In order to hold the end gate in a selected open position, a bracket 27 is arranged adjacent a crank 24 and is provided with adjustment holes 28 through which a pin 29 may be inserted to stop the crank. This enables an operator to vary the depth of discharge opening between the bottom of the gate and the rear end of the load compartment. Such regulation as to depth of the discharge opening is desirable when spreading materials, such as surfacing materials on highways. By inserting pin 29 through one of the holes 28, so as to underlie rod 12 in its retracted position, the gate is securely locked when closed.

Means are also provided for releasing hinge pin 10 from sockets 11 to allow gate 8 to swing out wide. To accomplish this the rods 12 have an offset or bent portion 31 adapted to lower hook-shaped sockets 11 sufficiently to clear pin 10 when the bent portions 31 ride through the apertures in flange 23. See Figure 7. Thus, the degree of gate opening is controlled by backward movement of rods 12, and full release of the gate is controlled by further movement of the rods.

Means are further provided for regulating the width of opening at the bottom of the end gate. Such regulation is desirable when spreading materials within confined widths. For this purpose a plurality of control gates 32 are pivotally mounted on a cross rod 33 adjacent the bottom of the end gate. These control gates, say three in number, are arranged side by side across the width of the end gate. As best shown in Figure 8, the control gates are arcuately-shaped and reach under the end gate to block off part of the discharge opening. Material may thus be spread from either side or from the center, depending upon which of the control gates is opened.

Each control gate is locked in either closed or open position by a pin 34 engageable with an arm 36 or with an ear 37 on angle bar 38. See Figures 2 and 3. In order to facilitate their opening and closing, suitable handles 39 are provided on the control gates.

Means are also preferably provided for controlling the height of side walls 2 of the load carrying compartment to prevent spilling material over the sides when traveling. To this end a flanged extension plate 39 is provded along the upper edge of the side wall, and is mounted for vertical movement by legs 41 slidable in brackets 42. Movement of the wall extension is controlled by cam arms 43 pivoted to wall 2 and engaging slots in legs 41. The cam arms are pivoted to a bar 44 connected to a crank 46 having a handle 47.

Such extension mechanism is provided on each side wall; the cranks 46 being connected by a rod across the front of the compartment for simultaneously moving the extensions. Figure 1 shows the extension lowered to provide a side wall of usual height. In this condition there is the normal clearance above the wall for a loading device such as the bucket of a power shovel. After loading, the truck operator pulls handle 47 forwardly to elevate extension plates 39, thereby increasing the height of the side walls sufficiently to prevent spilling of the material. Figure 7 shows the extension plates in elevated position.

If desired, the load carrying compartment may be mounted to swing about a central vertical axis by a suitable turntable arrangement on the chassis. Such mounting would permit the gated end of the compartment to be moved to a crosswise position for discharging material alongside the truck.

I claim:

A truck comprising a body, an end gate mounted on the body, disengageable hinge means arranged between the top of the gate and the body, hinge means arranged between the lower portion of the end gate and the body and slidable on the body to selectively control the amount of lower discharge opening of the gate when moving about its upper hinge means or disengage the lower portion of the gate to allow a free swing of the gate about its upper hinge means, a plurality of pivotally mounted control gates arranged across the lower part of the end gate and extending in closed position below the end gate and adjacent edge of the body, and means for independently locking each control gate in retracted position.

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