

June 12, 1951

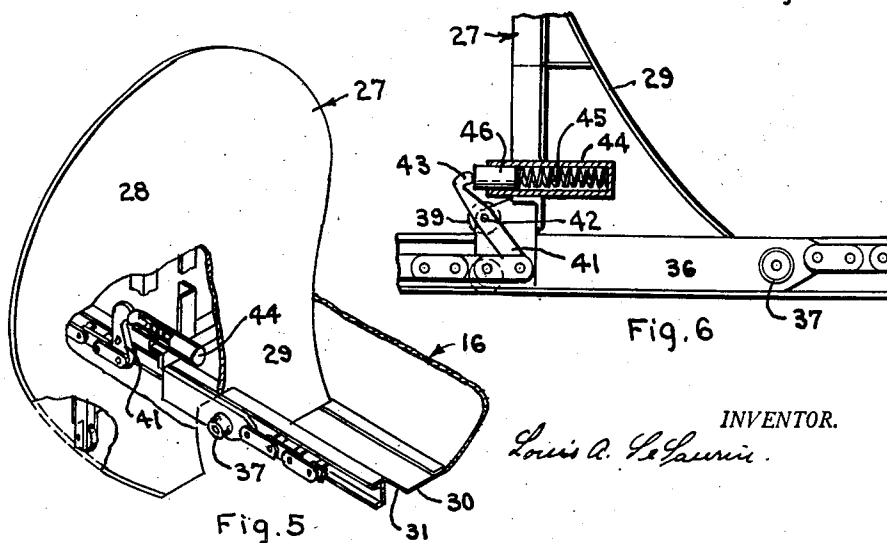
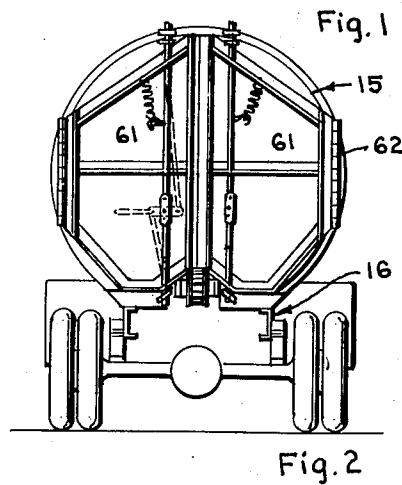
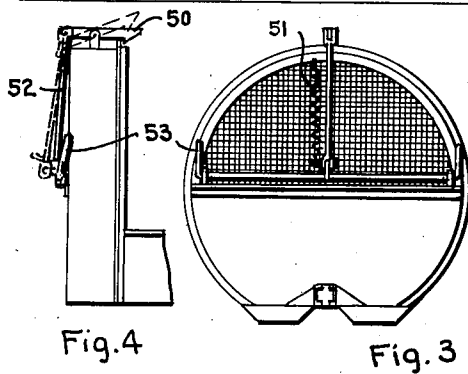
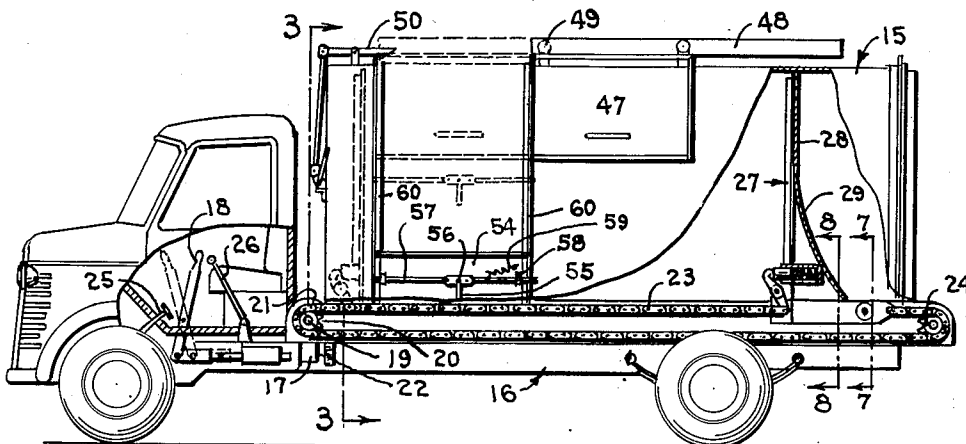
L. A. LE LAURIN

2,557,003

GARBAGE COMPRESSING TRUCK BODY

Filed April 14, 1950

2 Sheets-Sheet 1



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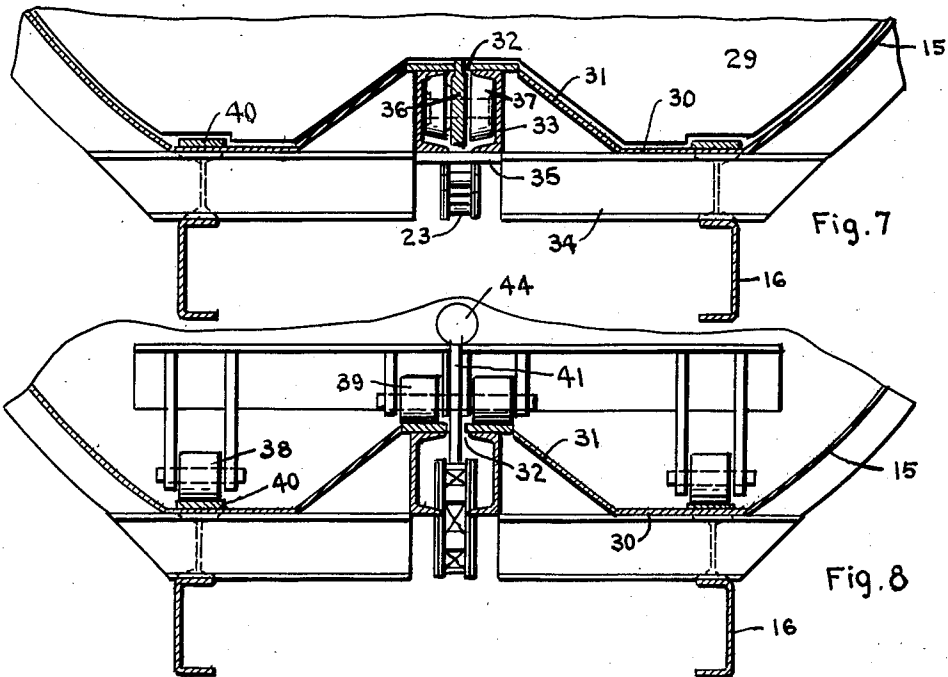
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INVENTOR.

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GARBAGE COMPRESSING TRUCK BODY

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3 Claims. (Cl. 214—82)

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My invention relates to improvements in bodies used in connection with motor trucks for transporting loose and bulky materials such as garbage or other compressible materials and an object of my invention is to provide a truck body in which the power of the truck motor may be utilized to compress the material in successive increments as it is being loaded thereby greatly increasing the capacity of the body and reducing the number of trips required between the pick-up and unloading points.

The invention as herein disclosed constitutes a simplified and improved structure over my Patent No. 2,258,988, granted October 14, 1941, on an application filed July 30, 1940, Serial No. 348,404.

An object of my invention is to provide a truck body in which the compression member located within the body may be actuated by the driver of the truck by means of controls located within easy reach of the driver's seat.

A further object is to provide a body which requires no manual labor for the unloading operation. All that is necessary to effect unloading is to open the rear doors of the body after which the driver moves the compression member to the rear of the body and the load is discharged.

A particular advantage of the present invention is that the material is uniformly compressed throughout the body by the shape of the compression member and, therefore, the body can be loaded to its maximum capacity. Furthermore, the load is entirely covered during the time it is being transported thus preventing loss of any material from the body. Also, gaskets on the rear doors prevent leakage of any liquids that may have been loaded into the body with other materials onto the streets and promotes sanitation.

Other objects and advantages of my invention will be apparent to those skilled in the art during the course of the following specification.

These objects are accomplished as described in the following specification and illustrated in the accompanying drawings forming a part thereof and in which like reference characters refer to like parts throughout the different views of the drawings.

In the drawings:

Fig. 1 is a side elevational view, partly in section, showing a truck equipped with one of these bodies.

Fig. 2 is a rear elevational view of the body and truck chassis.

Fig. 3 is a fragmentary end view of the front end of the body taken on the line 3—3 of Fig. 1

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Fig. 4 is a side elevational view as seen from the right hand side of Fig. 3.

Fig. 5 is a fragmentary isometric view, partly in section, of the compression member and illustrating a portion of the body in the rear.

Fig. 6 is an enlarged vertical sectional view of the lower portion of the compression member and the chain connections thereto.

Fig. 7 is an enlarged vertical sectional view taken on the line 7—7 of Fig. 1.

Fig. 8 is an enlarged vertical sectional view taken on the line 8—8 of Fig. 1.

In describing my invention attention is here invited to Figs. 1 and 2 wherein my body, generally denoted by the numeral 15, is shown mounted on the chassis of a truck, generally denoted by the numeral 16. It will be observed that the body is circular in transverse section except for the lower portion thereof which is flattened to provide an easy mounting on the truck chassis. It has been found in practice that this circular form, in addition to being easily constructed, is of substantial assistance in securing a uniform compression of material in the body. This body may be attached to the chassis of the truck by means of suitable bolts or welded on if desired. The truck 16 is equipped with a power take-off unit 17 the action of which is controlled by means of the lever 18 located in the cab of the truck. A shaft 19 carrying a drive sprocket 20 is supported by suitable bearings attached to the truck chassis and one end of this shaft is driven by a speed reduction unit 21 which is connected to the power take-off of the truck by means of the chain 22. This combination forms the driving means for the chain 23. The rear end of the chain 23 is supported by means of the idler sprocket 24. The operation of the lever 18 to control the movement of the chain 23 may be explained as follows: The lever 18 normally occupies a neutral position midway between the full line and the dotted line positions shown. This is when the power take-off unit is disconnected from the transmission of the truck.

When it is desired to engage the power take-off unit 17 for moving the chain 23 in either direction the clutch pedal 25 is depressed to disengage the clutch of the truck and the truck gear shift lever 26 is placed in neutral position after which the power take-off lever 18 is shifted to the desired position and the clutch pedal is released. Power will then be transmitted through the power take-off unit 17 and the speed reduction unit 21 to the driving sprocket 20. The reverse of this procedure is followed when disengaging the power take-off unit from the transmission of the truck.

Now, referring to Figs. 1, 5 and 6 it will be noticed that the compression plate, generally denoted by the numeral 27 is composed of a plate 28 the lower portion 29 of which is curved rearwardly toward the back end of the truck giving a substantial length to the lower end of the compression member. The base 30 of the body is provided with a centrally located raised portion 31 (Figs. 5, 7 and 8) this raised portion having a slot 32 extending its entire length. The base of the body is reinforced with structural members 33, 34 and 35. The lower end of the compression plate is provided with a downwardly projecting plate 36 which acts as a brace for the lower part of the compression member, a connecting means for the rear end of the chain 23 and a mounting means for a pair of rollers 37 which engage the under sides of the flanges of the members 33. Mounted at the front end of the compression member 27 are rollers 38 and 39 the rollers 38 engaging the upper surfaces of rails 40 at the sides of the base 30 while the rollers 39 engage the upper surface of the raised portion 31. The rollers 38 and 39 serve to support the weight of the compression plate and, acting in conjunction with the rollers 37 prevent tilting of the compression member when the material is being compressed within the body. At this point it may be well to emphasize that the lower curved portion 29 of the compression plate combined with the upwardly diverging walls of the cylindrical body 15 are elements the combination of which is imperative in order to secure a uniform compression of material at all levels in the body. Also, the curved portion 29 projects past the rear end of the body when in its rearmost position thereby assuring complete unloading of material from the body.

Referring to Fig. 6 it will be noted that the rear end of the chain 23 is connected to the plate 36 while the front end of the chain is connected to the lower end of a lever 41. This lever is pivoted on the shaft 42 and the upper end of the lever is provided with a suitable head 43 which is in alignment with the bore of a cylinder 44 secured to the frame of the compression plate 27. This cylinder contains a compression spring 45 with a slidable plunger 46 interposed between the spring 45 and the head 43 of the lever 41. Thus, all slack which may result from wear or improper spacing of the sprockets 20 and 24 is eliminated from the chain.

In Fig. 1 the loading opening is shown in its fully opened position and it will be noted that this opening extends entirely across the top of the body and partially down each side to form a large opening for the loading of bulky materials therethrough. The top and side doors for this opening are shown in dotted lines in their closed positions. The top door 47 which closely fits the external periphery of the body is formed in two sections which are secured to a tubular member 48 the entire assembly being supported by rollers 49 secured to the top of the body 15. When this door is in its closed position it is locked in position by means of the latch 50 which is normally held in its closed position, as shown by the full lines of Figs. 1 and 4, by the action of a tension spring 51 but which may be released through the medium of the link 52 by turning the handle 53.

The side doors 54 which are slidable around the periphery of the body are provided with locking handles 55 pivoted on the pivots 56. Connected to each end of the handles 55 are the

rods 57. The rods 57 are supported at their outer ends by suitable bearings 58 and are normally held in their outermost positions by springs 59. When in their outermost positions the ends of the rods 57 project through a series of holes provided in the flanges 60 on each side of the opening.

The rear doors 61 are pivoted on hinges 62 on each side of the body and are provided near their inner ends with latching means similar to the latching means described for the side doors 54. This enables the doors to be locked in their closed positions while the material is being compressed inside the body.

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

1. In a body adapted to be mounted upon the chassis of a truck the combination of, a substantially cylindrical body having a pair of horizontally swinging doors at the rear end thereof, a loading opening proximate the front end of said body said opening extending across the top of said body and partially down each side thereof, a pair of doors slidable around the periphery of said body for closing the lower portions of said opening, a horizontally slidable door mounted on the top of said body for closing the top portion of said loading opening, latching means for all of said doors, a transverse compression plate mounted within said body for longitudinal movement therein said compression plate having its lower portion curved downwardly and rearwardly toward the rear end of said body for assuring uniform compression of material at all levels within said body, a longitudinal slot centrally located in the floor of said body, a plate extending downwardly from said compression plate through said longitudinal slot to form chain connecting means and roller support means at its rear end, rollers mounted on said plate proximate its rear end and engageable with the under sides of channel members forming the sides of said longitudinal slot, a lever mounted on the front end of said compression plate and extending downwardly through said longitudinal slot with chain connecting means at its lower end, a spring loaded plunger engageable with the upper end of said lever whereby any slack in the chain is eliminated, rollers located at the front end of said compression plate said rollers being engageable with the upper surface of the body floor, a drive sprocket for said chain located at the front of said body, an idler sprocket for said chain located at the rear of said body, a speed reduction unit located between the drive sprocket and the power take-off of said truck and manual control means in the cab of said truck for starting, stopping and reversing said drive sprocket.

2. A body adapted to be mounted upon the chassis of a truck comprising a substantially cylindrical body having a planal base, a longitudinal raised portion centrally located in said planal base extending throughout the length thereof, a structural reinforcing for said planal base and said longitudinal raised portion, a longitudinal slot through the central part of said longitudinal raised portion said slot extending the entire length of said raised portion, a transverse pressure plate within said body mounted for longitudinal movement therein said pressure plate closely fitting the interior contour of said body, driving means for moving said pressure plate within said body said driving means being located in said longitudinal raised portion of

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said planal base and exterior of said body, a pair of horizontally swinging doors having a combined area equal to the full transverse area of said body located at the rear end of said body for the discharge of material therefrom, gasket means associated with said doors for effecting a fluid tight seal between said doors and said body when said doors are in their closed positions, latching means for said doors, a loading opening located proximate the front end of said body extending over the top thereof and partially down each side, a longitudinal sliding door located exterior and fitting the periphery of said body for closing the upper portion of said loading opening, latching means for said longitudinal sliding door, doors on each side of said loading opening for closing the lower portions of said loading opening said doors being mounted for graduated vertical sliding movement around the periphery of said body, latching means for said doors, driving means communicating with the motor of said truck for moving said pressure plate within said body and manually operable control means within the cab of said truck for controlling the movement of said pressure plate.

3. In a substantially cylindrical body adapted to be mounted upon the chassis of a vehicle with its longitudinal axis parallel with the longitudinal axis of said vehicle, a compression plate mounted within said body for longitudinal

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movement therein and closely fitting the interior contour thereof the lower portion of said compression plate being curved toward the discharge end of said body whereby the horizontal and vertical components of forces of the combined curved portions of said compression plate and the curved portions of the sides of said body will vary in accordance with their height to secure a uniform compression of material within said body, power transmission means between said compression plate and the motor of said vehicle and manually operable control means for governing the movement of said compression plate located within the cab of said vehicle.

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