United States Patent

[11] 3,559,825

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[54] **REFUSE BODY LOADING MECHANISM**
7 Claims, 10 Drawing Figs.

[52] **U.S. Cl.** **214/83.3,** 100/98, 100/233
[51] **Int. Cl.** **B65f 3/00**
[50] **Field of Search** ..... 214/83.3, 503, 82; 100/233—238, 98

[56] **References Cited**

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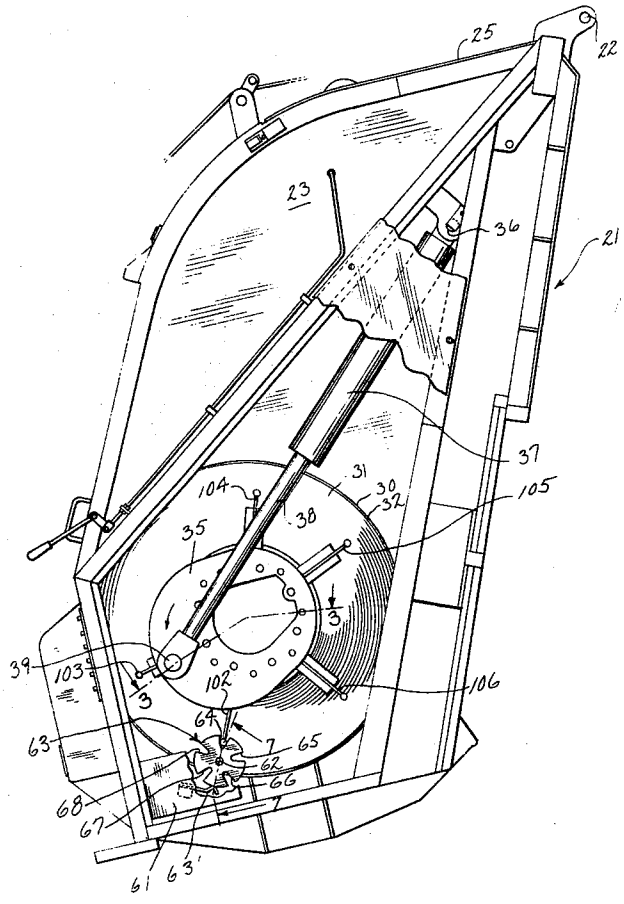
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Primary Examiner—Albert J. Makay
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ABSTRACT: The loading mechanism includes a packer blade having a serrated lower edge and having pivotal connections at the lower portions of its sides with hydraulic ram driven discs mounted for rotation in opposite sidewalls of the body. The upper end of the packer blade is pivotally suspended from the forward portions of pivoted brackets, the rear portions of said brackets being pivoted to the sidewalls of the body for oscillating movement and being powered by hydraulic rams during certain parts of the cycle. The packer plate has a curved cross-sectional shape to coact with the lower edge of a stationary baffle in preventing spillover of material. There is a star wheel control for the hydraulic rams.



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SHEET 1 OF 3

Fig. 1

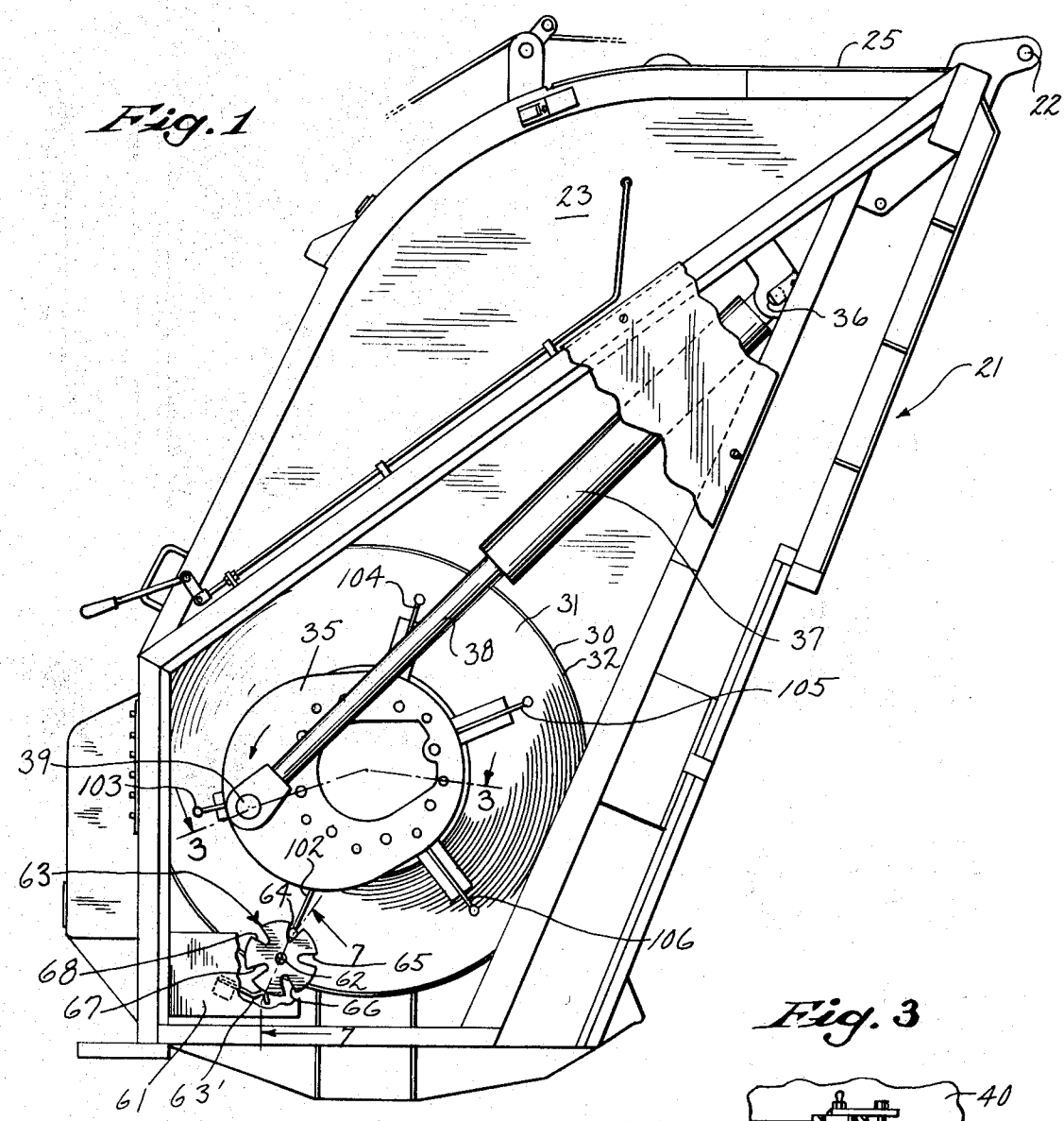
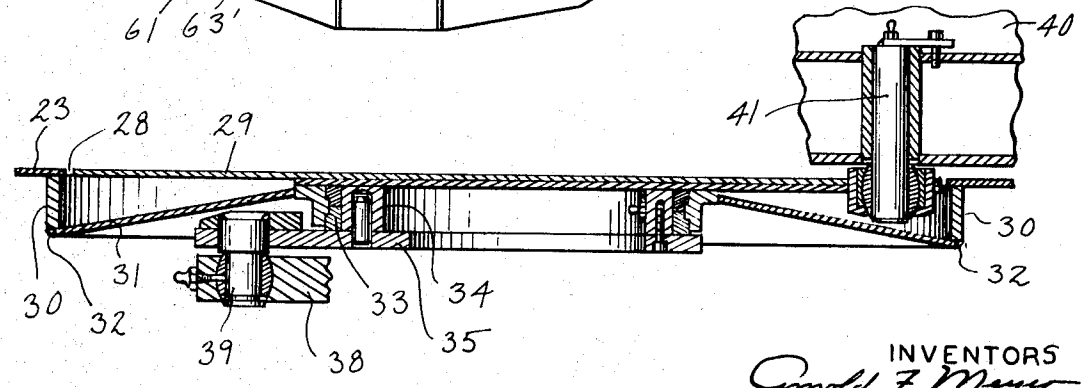


Fig. 3



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Fig. 2

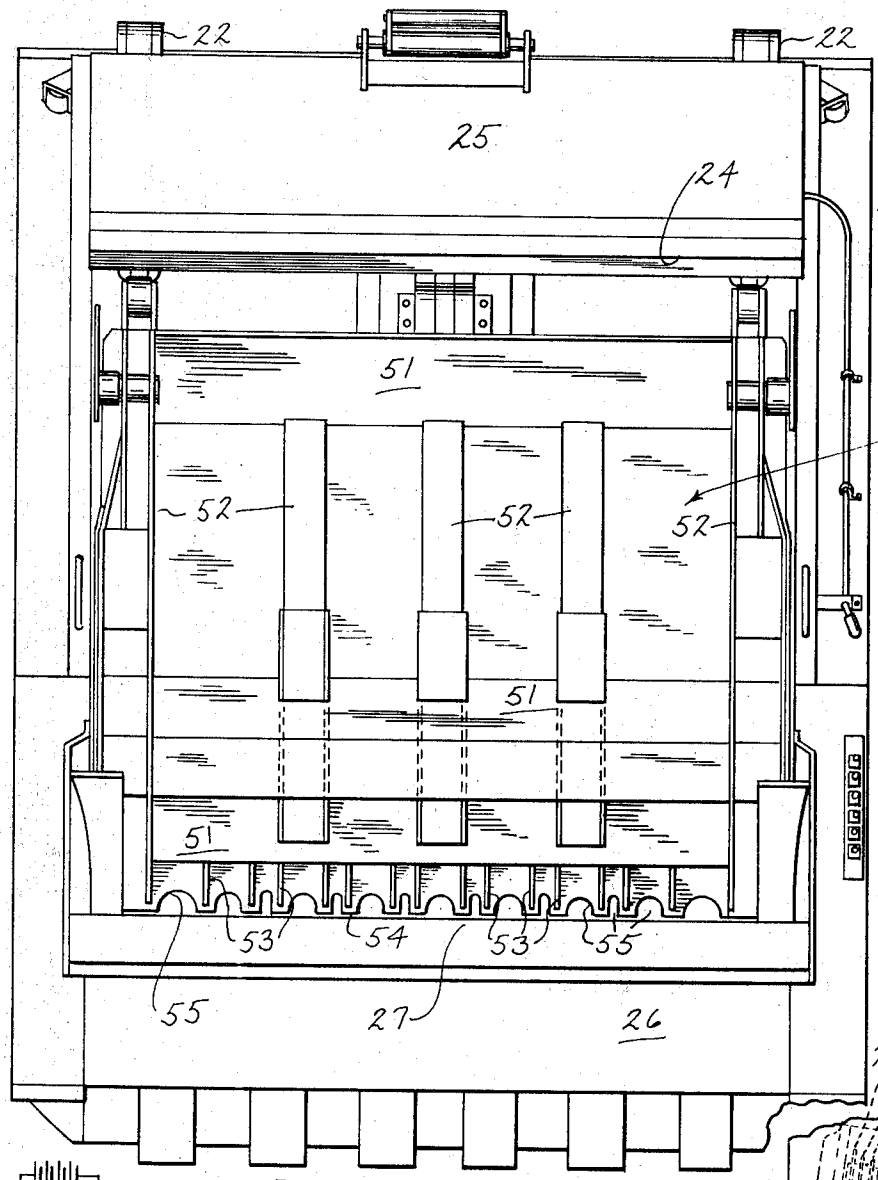


Fig. 7

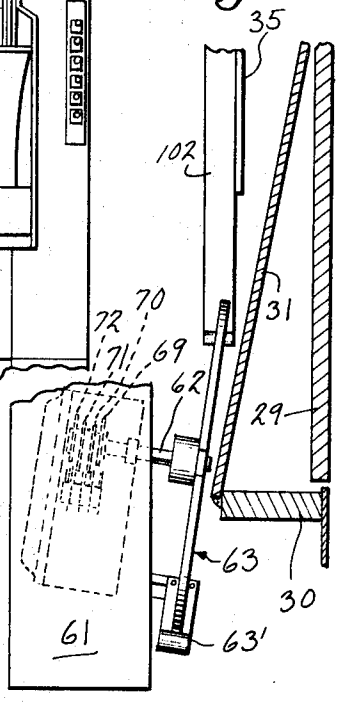
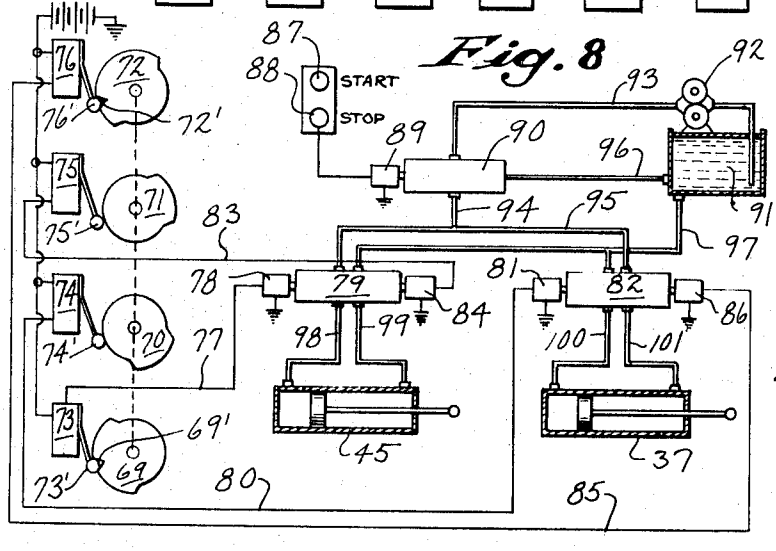


Fig. 8



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Fig. 4

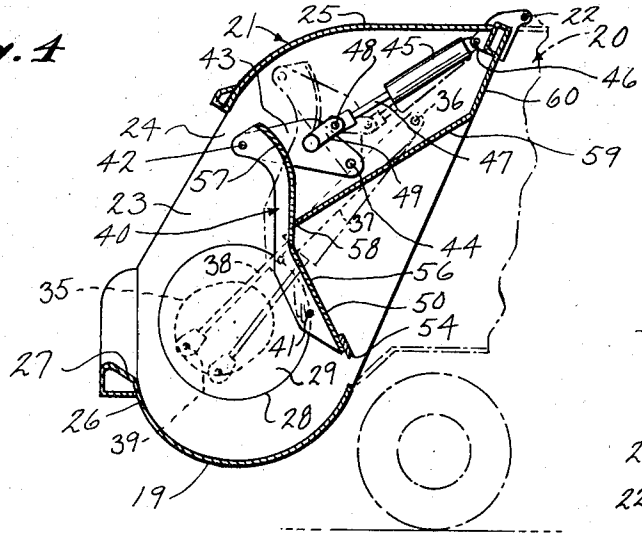


Fig. 9

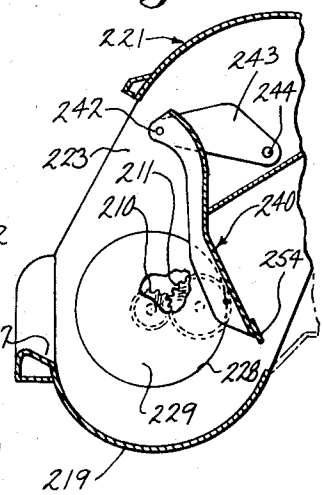


Fig. 5

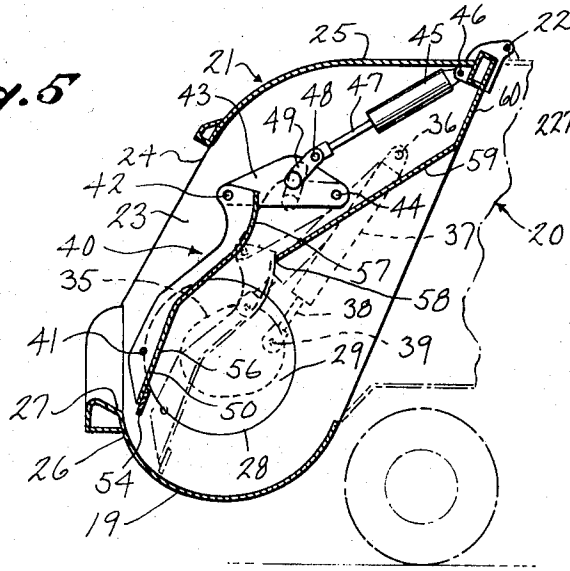


Fig. 10

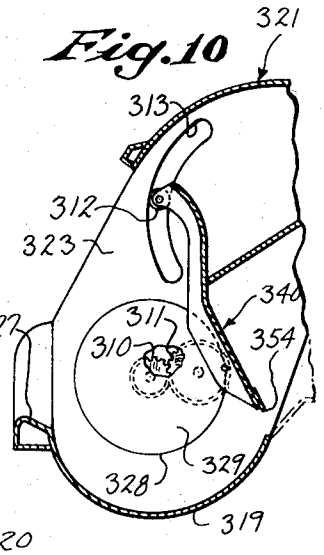
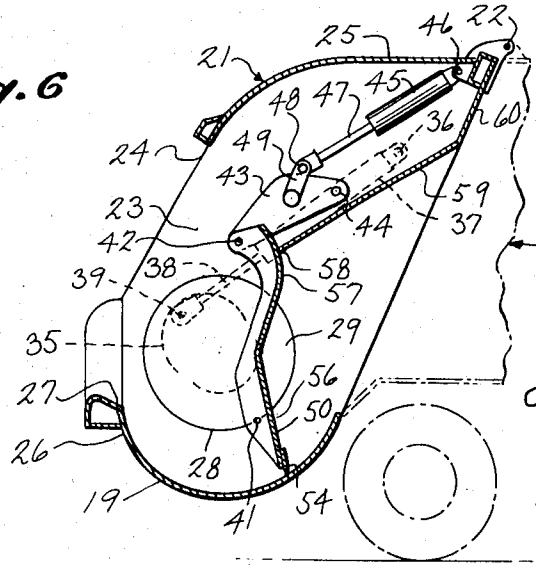


Fig. 6



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REFUSE BODY LOADING MECHANISM

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention is adapted for use in the tailgate of a rear-loaded refuse body for moving and packing refuse into the storage chamber of the vehicle.

2. Description of the Prior Art

Refuse bodies have heretofore been proposed wherein a packer blade transfers refuse from a hopper at the rear of the body into the storage chamber, with the packer blade movable in the return direction over a new load in the hopper. Refuse vehicles of this general type are disclosed in Gollnick U.S. Pat. No. 2,649,216 and in Gollnick U.S. Pat. No. 3,143,230. In both of these structures it is necessary to employ slots in the sidewalls of the tailgate for guiding either the packer plate or the packer plate carrier in its movement. This is also true of Palmer U.S. Pat. 3,402,837 where two sets of guiding slots are employed. In Gollnick U.S. Pat. Nos. 2,649,216 and 3,402,837 and in Palmer U.S. Pat. No. 3,402,837, there is only one set of hydraulic cylinders for powering the packer blade during its packing stroke. In Gollnick U.S. Pat. No. 3,143,230 there is one set of cylinders for swinging the packer plate and another set for reciprocating the carrier member, and in Gollnick U.S. Pat. No. 2,649,216 it is necessary to have stops for the swinging movement of the carrier brackets. None of these constructions provides the most efficient packing pressure at the right time in the cycle of operation nor provides as smooth an operation as is desired. In all of these patents the blades are powered by push and pull rams pivotally connected to the blades. In addition, in these prior devices limit switches are employed for controlling the hydraulic operation. Limit switches often get out of adjustment and are a source of trouble. Furthermore, it is undesirable to have sidewall guiding slots which are located in the region of the refuse.

SUMMARY OF THE INVENTION

The present invention provides novel loading mechanism in which the packer blade has pivotal connections at its sides, with discs which are mounted for rotation in opposite sidewalls of the tailgate so that the pivots for the lower portion of the blade travel in an orbit through rotation of the discs. The upper end of the packer blade is pivotally suspended from the forward portions of pivoted brackets. One set of hydraulic rams functions to rotate the discs and another set of rams functions to oscillate the brackets. The two sets of rams complement each other so that the packer blade is always powered past dead center during rotation of the discs. Furthermore, at certain times in the cycle of t operation the hydraulic rams operate together to provide for smooth operation and for the maximum power at the time when it is most needed during the packing stroke so that there is a good packing pressure when needed. In addition, there is a stationary baffle plate in the upper portion of the rear end of the body and the packer blade is so curved in cross section as to maintain a closing relationship with the lower edge of the fixed baffle and thereby prevent spillover of material. In addition, there is a star wheel control including cam discs and solenoid valve controls which positively program and control the operation of the rams.

A general object of the present invention is to provide loading mechanism for a refuse body which permits substantially continuous dumping of refuse into the rear end of the vehicle and in which the refuse is efficiently and positively transferred and packed into the storage chamber proper, and in which the guiding and powering of the packer blade is accomplished by a novel arrangement which insures high compacting capability, proper power at the times most needed, and smooth operation, the lower portions of the blades being powered by rotary motion imparted by side discs, and no stops are used for holding the brackets or supports for the blade in an elevated position during rearward movement of the blade.

A further object of the invention is to provide a construction as above described in which the packer blade exerts a high shearing force when its tip is cutting across the loading lip of the tailgate.

A further object is to provide a loading mechanism as above described in which the cross-sectional contour of the packer blade is tailored to stay close to the lower end of a stationary baffle to prevent material from sliding up over the packer blade with undesirable spillover and possible jamming.

A further object of the invention is to provide a refuse body loading mechanism wherein there is a novel control which, when set, does not readily get out of adjustment.

With the above and other objects in view, the invention consists of the improved refuse body loading mechanism, and all of its parts and combinations, as set forth in the claims, and all equivalents thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings, in which the same reference numerals designate the same parts in all of the views:

FIG. **1** is a fragmentary side elevational view externally of one of the sides of the tailgate portion of a refuse vehicle, parts being broken away;

FIG. **2** is a rear elevational view of the structure of FIG. **1**, parts being broken away;

FIG. **3** is an enlarged sectional view taken approximately on the line **3–3** of FIG. **1**;

FIG. **4** is a longitudinal vertical sectional view through the rear portion of a refuse vehicle showing the packer blade at the end of its packing stroke, the dotted line position showing the start of return movement of the blade;

FIG. **5** is a view similar to FIG. **4** showing the packer blade at the start of its packing stroke, the dotted line positions indicating an advanced position of movement;

FIG. **6** is a view similar to FIG. **4** showing the packer blade near the end of its packing stroke;

FIG. **7** is an enlarged cross-sectional view taken approximately on the line **7–7** of FIG. **1**;

FIG. **8** is a diagrammatic view of the control system;

FIG. **9** is a fragmentary view similar to FIG. **4** showing a modification; and

FIG. **10** is a similar view showing still another modification.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now more particularly to the drawings, the numeral **20** designates a refuse body with a storage chamber, the body having a tailgate **21** forming a hopper which is pivotally connected to the rear of the storage chamber as at **22** in the customary manner so that it can be swung upwardly on the pivots **22** when it is desired to discharge the load. The hopper has sidewalls **23**, a rear opening **24**, and a top **25**. Below the loading opening is a loading lip **27** over which refuse is adapted to be dumped, which lip forms the rear edge of a curved bottom portion **19**.

Each of the sidewalls **23** of the hopper has a circular opening **28** (see FIG. **3**) within which a disc **29** is adapted to rotate. Inasmuch as the construction of the discs on the two sides of the body is the same, except for reversal in position, only one of these will be described.

Surrounding each opening **28** and secured to each sidewall on the outside of the body is a circular hoop **30** to which the outer periphery of a frustoconical ring-shaped skirt **31** is welded as at **32**. The inner peripheral edge of the skirt **31** supports a bearing ring **33**, and rotatable within the bearing ring **33** is a hub **34** which projects from the outer face of the disc **29**. Rigidly secured to the hub **34** is an eccentric crank **35**.

Pivoted to the outer side of each of the sidewalls **23** as at **36** is the end of a hydraulic cylinder **37**, each cylinder having a piston rod **38** projecting therefrom which is pivotally connected as at **39** to the eccentric crank **35**. Thus, operation of the hydraulic ram units **37–38** will act through the eccentric cranks **35** to cause rotating movements of the discs **29** on the two sides of the tailgate.

Extending transversely of the tailgate is a packer blade **40** which has opposite sides of its lower portion pivoted to the disc as at **41**. Opposite sides of the upper end of the packer blade are pivotally connected as at **42** to oscillatory brackets **43**. These brackets are in turn pivotally connected as at **44** to the opposite sides of the body (see FIGS. **4,5** and **6**). Hydraulic cylinders **45** have upper ends pivotally connected to the upper portion of the tailgate as at **46**, and have piston rods **47** which are pivotally connected as at **48** to rigid links **49** projecting from the brackets **43**.

THE PACKER BLADE

The packer blade includes a face sheet **50** which is suitably reinforced by horizontal ribs **51** and crossing ribs **52** (see FIG. **2**). At the tip of the blade are tapered webs **53** which taper to the scraping edge **54**. The latter is scalloped by means of recesses **55** (FIG. **2**) which extend upwardly from the scraping edge **54** between the webbing **53** as illustrated in FIG. **2**. This scalloped scraping edge allows the edge to pierce refuse such as cardboard during shearing to drag it into the hopper, and tends to minimize jamming possibilities and creates a highly concentrated shearing force.

Referring to FIGS. **4,5** and **6**, it will be noted that while the lower approximately half of the inner face of the blade is flat as at **56** (FIG. **6**), the upper portion is curved in cross section as at **57**. This curvature is tailored to stay close to the lower edge **58** of a fixed baffle **59** throughout most of the movement of the blade. The stationary baffle member **59** extends across the upper portion of the tailgate and its upper edge joins an upper end closure plate **60**. It will be noted that the curvature **57** is such that in both positions of movement of FIG. **4**, in the position of FIG. **6** and in the dotted lien line position of FIG. **5**, the upper portion of the blade is close to the lower edge **58** of the baffle. The only time the packer blade leaves the lower edge of the baffle is at the start of the packing stroke, shown by full lines in FIG. **5**. Here, however, there is such upward overlapping of the lower edge of the baffle plate that no material can pass over the upper edge of the blade while it is in this position.

THE CONTROL MECHANISM

Referring now to FIGS. **7** and **8**, there is a control box **61** on one of the sides (see also FIG. **1**) having a suitably journaled shaft **62** projecting from the rear thereof. The projecting portion of the shaft carries a rigidly mounted star wheel **63** having notches **64,65,66,67** and **68**, there being a spring detent **63'** for coaction with the notches. Within the control box the shaft **62** rigidly carries cams **69, 70,71** and **72**, each having a high side of suitable length. In addition the high sides of the cams **69** and **72** have pip recesses **69'** and **72'**. The cams **69—72** coact with electric switches **73—76**, inclusive, (FIG. **8**). The switch **73** is electrically connected as at **77** with the solenoid operator **78** at one end of a hydraulic spool valve **79** for the cylinders **45**. The switch **74** is electrically wired as at **80** with solenoid operator **81** at one end of a hydraulic valve **82** for the cylinders **37**. The switch **75** is electrically connected as at **83** with a solenoid operator **84** at the right-hand end of the hydraulic valve **79**. The switch **76** is electrically connected as at **85** with the solenoid operator **86** at the right-hand end of the hydraulic valve **82**.

Manually operable start and stop switches **87** and **88** are electrically connected with a solenoid **89** for operating the directional hydraulic valve **90**. Hydraulic fluid from a reservoir **91** is adapted to be pumped by a pump **92** driven by the power takeoff of the truck, through line **93** to the valve **90**. An hydraulic line **94** leading from the valve **90** is connected by hydraulic lines **95** with the valves **79** and **82**. A return line **96** leads from the directional valve **90** back to the tank, and a return line **97** leads from valves **79** and **82** back to the tank. Hydraulic lines **98** and **99** connect the valve **79** with the opposite ends of the hydraulic cylinders **45**. Hydraulic lines **100** and **101** connect with opposite ends of the hydraulic cylinders **37**.

The star wheel **63** is adapted to be actuated by pins **102,103,104,105** and **106** which project from the edge of the eccentric crank **35** as shown in FIG. **1**. The electric switches **73—76** have follower rollers **73'—76'**.

FIG. **9** discloses a modified method of powering the discs. In this figure all of the common parts are designated by the same reference numerals used in FIG. **4** except that they are preceded by the digit "**2**". In the arrangement of FIG. **9** the hydraulic rams are eliminated and one or both discs are equipped with central gears **210** which are driven by larger gears **211**, the latter being rotated by any suitable source such as an hydraulic rotary motor. Because of the rotary drive for the discs **229** there is no problem of carrying the discs past dead center. Therefore, no other powering is required. This form of the invention lacks certain of the advantages of the principal form of FIG. **4** in that it does not have two sets of powering devices to apply extra power during the compacting portion of the stroke.

The form of the invention of FIG. **10** is practically the same as the form of the invention of FIG. **9** and the same reference numerals preceded by the digit "**2**" are used for all parts in common with corresponding parts of FIGS. **4** or **9**. In the form of the invention of FIG. **10** the brackets **43** of FIG. **4**, and **143** of FIG. **9**, are eliminated. Instead the upper end of the packer blade is provided with rollers **312** which are guided in curved slots **313** in the sidewalls. Just as in FIG. **10**, one or both discs is driven by applying rotary motion to a central gear or gears **310**, or the discs may be operated as in FIG. **4**, with the inside rams pivoted to the upper portion of the packer blade rather than to carrier brackets.

OPERATION

In operation, the operator may start or stop the packer plate by means of manual switches **87** and **88** of FIG. **8** is if desired, and by use of said switches may exercise control when desired.

In normal operation the hydraulic pump **92** is being driven by the power takeoff of the vehicle, and the movement of the packer blade is stopped at the end of a cycle when the follower rollers **73'** and **76'** of the electric switches **73** and **76** drop into the pip recesses **69'** and **72'** of the cams **69** and **72** the detent **63'** stopping between recesses of the star wheel as in FIG. **1**, and the star wheel being held in stop position by the engagement of control pin **102** in notch **64**. When this occurs the circuits to the solenoids **78** and **86** are deenergized as are the circuits controlled by the other two cams, allowing the hydraulic valves **79** and **82** to yieldingly shift to neutral positions which causes stopping of the packer blade in the forward position shown by full lines in FIG. **4**. In this position the packer blade pivot **41** is about 8° above a horizontal plane through the center of the discs.

When it is desired to initiate cycling of the packer blade the starting switch **87** is pressed and held in long enough to cause flow from the pump **92** through the directional valve **90** and through the lines **95** to both valves **79** and **82**. The start and stop buttons **87** and **88** are suitably incorporated in the electric circuit to the switches **73—76** and solenoid operators **78,84,81** and **86** so that through the use of suitable relays (not illustrated) when the start button is held in it will temporarily energize the solenoid operators **84** and **81** to cause shifting of the valves **79** and **82** in directions to admit hydraulic fluid through the line **100** to cause extension of the outside cylinders **37** and through the line **99** to cause retraction of the inside cylinders **45**. This action at the start allows the pin **102** to cause rotation of the star wheel and cams far enough to move the cam followers **73'** and **76'** out of the pip recesses. This will then cause closing of the switches **73** and **76** and automatic operation will thereafter take over. Thus the packer blade starts to retract over material which may have been dumped in the hopper, such retraction being originally under the power of both sets of cylinders **37** and **45**.

When the packer blade has moved a further distance in a counterclockwise direction from the full line position of FIG. **4** to a position about 16° away from a horizontal plane through

the center of the discs, then the low side of cam **72** will move switch **76** to "off." This will stop energization of the solenoid **86** and allow the valve **82** to return to a position where lines **100** and **101** are connected permitting the cylinders **37** to float. The high side of the cam **69** will, however, still maintain the switch **73** closed so that the inside cylinders **45** are still retracting. When the pivot **41** has traveled additionally in a counterclockwise direction to the dotted line position of FIG. **4**, about 55° beyond the horizontal plane through the center of the discs **29**, then the cam **69** causes opening of the switch **73**. This deenergizes the solenoid **78** and permits the valve **79** to return to a position where the lines **98** and **99** are hydraulically connected which permits floating of the inside hydraulic cylinders **45**. In this position pin **103** is now engaging notch **68** of the star wheel **63**, and the star wheel has been rotated to a position to bring the high side of cam **70** into operative position with the follower **74'** for the switch **74** to turn the switch "on" and energize the solenoid actuator **81** at the left of valve **82**. This causes the outside hydraulic cylinders **37** to retract. Inasmuch as the pivot connections **39** between the cylinders **37** and the crank eccentric **35** are now past dead center, retraction will cause continued rotation of the discs **29**.

Referring now to FIG. **5**, the pin **104** of the eccentric crank **35** is now engaging notch **67** of the star wheel and has caused further movement of the star wheel so that the high side of cam **71** has now caused closing of switch **75** to energize the solenoid operator **84** for the valve **79** so that hydraulic flow causes extension of the inside cylinders **45**, which extend extension acts through the brackets **43** to continue the counterclockwise movement of the packer blade to the position shown in FIG. **5** where the pivot **41** is 175° beyond horizontal. At the same time the high side of the cam **70** is moved away to open the switch **74** and thereby deenergize the actuator **81**, thereby allowing the valve **83** to assume a position interconnecting hydraulic lines **100** and **101** which allows the outside cylinders to float.

In full In the full line position of FIG. **5** the packer blade tip **54**, with its serrations **55**, is cutting across the loading lip **27** to shear any material overlapping the lip. Because of the serrations the packer blade tip will dig into most types of refuse and cause it to advance through the hopper **19**.

When the packer blade reaches the dotted line position of FIG. **5** where the pivot pin **41** is 225° beyond the original horizontal plane, pin **105** is engaging notch **66** of the star wheel and the cams have been rotated to positions where the high side of cam **72** is engaging the follower **72'** of switch **76** so that the solenoid operator **85** is energized to shift valve **82** to a position to cause extension of the outside cylinders **37**. At the same time cam **71** has been rotated to a position to release the follower **75'** of switch **75**, deenergizing the solenoid **84** and allowing valve **79** to shift to a position where hydraulic lines **98** and **99** are interconnected which permits floating of the inside cylinders **45**.

When the packer blade pivot pin **41** arrives at the 300° position of FIG. **6** there is need for maximum power for packing the load into the body and for compacting it. When in this position the pin **106** of the eccentric crank **35** is engaging the star wheel and the high sides of cams **69** and **72** are causing both of the switches **73** and **76** to be on. Switch **73** causes energization of the solenoid **78**, shifting the valve **79** to a position to cause retraction of the inside cylinders **45**. At the same time switch **76** has energized solenoid **86** to shift valve **82** to a position which causes extension of the outside cylinders **37**. Thus at this portion of the cycle both sets of hydraulic operators are exerting force for maximum packing power, and this continues until the parts arrive at the stop position shown by full lines in FIG. **4**, where the actuator rollers **73'** and **76'** drop into the pip recesses **69'** and **72'** of cams **69** and **72** to shut off the switches **73** and **76** and deenergize the circuit to the solenoids **86** and **78**, the other circuits being already deenergized, thus causing the packer blade to stop in the forward position of FIG. **4**, the star wheel being locked in this position by the engagement of pin **102** with star wheel notch **64**.

During cycling, refuse may be dumped into the hopper **19** while the packer blade is being operated, it being merely necessary to delay the deposit of material while the packer blade is coming down toward the shearing lip **27**. As soon as the packer blade starts its packing stroke material may again be dumped into the hopper behind the blade, the blade returning over the load, as shown by dotted lines in FIG. **4**, after the packing stroke.

Beginning with the dotted line position of FIG. **5** it is to be noted that the contour **57** of the upper portion of the packer blade is such as to maintain a close relationship with the lower edge **58** of the fixed baffle **59**. Thus during the packing action no material may ride up over the top of the packer blade. It is further to be noted that, because of the use of the rotary discs, it is unnecessary to have sidewall slots for guiding the packer blade in its movement. Such sidewall slots, where they are low enough to be within the refuse, are a source of trouble because of the fact that the refuse can get into the slots and interfere with operation. Even in applicant's proposed modification of FIG. **10** where slots **313** are employed, these slots are so high as not to be a source of trouble.

Due to the particular coaction between the two sets of hydraulic rams in the preferred form of the invention, very efficient application of the power is provided and particularly during the latter part of the packing stroke, as in FIG. **6**, when both sets of rams are cooperating, to rotate the discs, which in turn cause movement of the packer blade.

The star wheel control for the programming of the ram action is positive and foolproof, and once the star wheel is properly set there is little possibility of trouble.

The operation of the modified forms of the invention shown in FIGS. **9** and **10** is the same as the operation of the principal form of the invention insofar as the movement of the packer blade in concerned. However, due to the different means of applying power, the star wheel and cam arrangement of FIGS. **7** and **8** is of course inapplicable to the modification of FIGS. **9** and **10**.

We claim:

1. A refuse vehicle of the type having a storage body and having a receiving hopper with sidewalls and with a curved bottom positioned at the rear of the body and in communication therewith, and there being a packer blade extending transversely of the hopper and having a lower scraping edge, wherein the improvement comprises means for supporting the packer blade for swinging movement and for bodily movement upwardly and downwardly and forwardly and rearwardly in the hopper, which means includes discs rotatably mounted on the sidewalls of the hopper, pivots connecting said discs with lower portions of the packer blade, said pivots being so located on the discs and the discs being so positioned on the hopper that during rotation said pivots are moved orbitally in a circular path which guides the scraping edge of the blade, first in a loading direction along the curved bottom of the hopper, and then in a return direction spaced above said curved bottom, and power-operated means for rotating said discs which comprises crank means rotatable with said discs and hydraulic ram means connected between the sidewalls of the hopper and crank means, there also being hydraulic ram means pivotally connected between the sidewalls of the hopper and upper portions of the packer blade to complement the action of the first-mentioned hydraulic ram means, and there being means for controlling said hydraulic ram means, said controlling means including rotatably mounted shaft, control cams rigidly mounted on said shaft, a star wheel rigidly mounted on said shaft, and spaced pins projecting from one of the discs which are positioned to engage the star wheel during rotation of the disc to cause rotation of the cams.

2. A refuse vehicle of the type having a storage body and having a receiving hopper with sidewalls and with a curved bottom positioned at the rear of the body and in communication therewith, and there being a packer blade extending transversely of the hopper and having a lower scraping edge, wherein the improvement comprises means for supporting the

packer blade for swinging movement and for bodily movement upwardly and downwardly and forwardly and rearwardly in the hopper, which means includes discs rotatably mounted on the sidewalls of the hopper, pivots connecting said discs with lower portions of the packer blade, said pivots being so located on the discs and the discs being so positioned on the hopper that during rotation said pivots are moved orbitally in a circular path which guides the scraping edge of the blade, first in a loading direction along the curved bottom of the hopper, and then in a return direction spaced above said curved bottom, and power-operated means for rotating said discs which comprises eccentric plates rotatable with the discs, the power-operated means for accomplishing the rotating motion including hydraulic ram means connected between the sidewalls of the hopper and said eccentric plates.

3. A refuse vehicle as claimed in claim 2 in which there is means for controlling the hydraulic ram means, said controlling means including a rotatably mounted shaft, control cams rigidly mounted on said shaft, a star wheel rigidly mounted on said shaft, and spaced pins projecting from the periphery of one of said eccentric plates and extending in generally radial directions, said pins being positioned to sequentially engage the star wheel during rotation of the disc.

4. A refuse vehicle of the type having a storage body and having a receiving hopper with sidewalls and with a curved bottom positioned at the rear of the body and in communication therewith, and there being a packer blade extending transversely of the hopper and having a lower scraping edge, wherein the improvement comprises means for supporting the packer blade for swinging movement and for bodily movement upwardly and downwardly and forwardly and rearwardly in the hopper, which means includes members rotatably mounted on the sidewalls of the hopper, pivots connecting said member members with lower portions of the packer blade, said pivots being so located on the rotary members and the rotary members being so positioned on the hopper that during rotation said pivots are moved orbitally in a circular path which guides the scraping edge of the blade, first in a loading direction along the curved bottom of the hopper, and then in a return direction spaced above said curved bottom, and power-operated means for rotating said rotary members, the rotatably mounted members being discs which are rotatable in openings of the sidewalls, and there being means for controlling the power-operated means, said controlling means including a rotatably mounted shaft, control cams rigidly mounted on said shaft, a star wheel rigidly mounted on said shaft, and spaced pin means rotatable with one of the rotatably mounted members and positioned for sequential engagement with said star wheel during rotation of the disc.

5. A refuse vehicle of the type having a storage body and having a receiving hopper with sidewalls and with a curved bottom positioned at the rear of the body and in communication therewith, and there being a packer blade extending transversely of the hopper and having a lower scraping edge, wherein the improvement comprises means for supporting the packer blade for swinging movement and for bodily movement upwardly and downwardly and forwardly and rearwardly in the hopper, which means includes members rotatably mounted on the sidewalls of the hopper, pivots connecting said members with lower portions of the packer blade, said pivots being so located on the rotary members and the rotary members being so positioned on the hopper that during rotation said pivots are moved orbitally in a circular path which guides the scraping edge of the blade, first in a loading direction along the curved bottom of the hopper, and then in a return direction spaced above said curved bottom, and power-operated means for rotating said rotary members, there being a stationary baffle in the upper portion of the hopper extending downwardly and rearwardly and having a rear edge terminating intermediate the height of the hopper and a substantial distance rearwardly over the curved bottom, the upper portion of the packer blade being convex in cross section in a forward direction with the convexity so tailored and positioned that the upper portion of the packer blade is close to the rear edge of the baffle shortly after the beginning of packing movement and all during the rest of the packing stroke, while said upper portion of the blade rides upwardly beyond the edge of the baffle to be scraped thereby during the final portion of the packing stroke.

6. A refuse vehicle of the type having a storage body and having a receiving hopper with sidewalls and with a curved bottom positioned at the rear of the body and in communication therewith, and there being a packer blade extending transversely of the hopper and having a lower scraping edge, and there being means for supporting the packer blade for swinging movement and for bodily movement upwardly and downwardly and forwardly and rearwardly in the hopper, wherein the improvement comprises a stationary baffle in the upper portion of the hope hopper extending downwardly and rearwardly and having a rear edge terminating intermediate the height of the hope hopper and a substantial distance rearwardly over the curved bottom, the upper portion of the packer blade being convex in cross section in a forward direction with the convexity so tailored and positioned that the upper portion of the packer blade is close to the rear edge of the baffle shortly after the beginning of packing movement and all during the rest of the packing stroke while said upper portion of the blade rides upwardly beyond the edge of the baffle to be scraped thereby during the final portion of the packing stroke.

7. A refuse vehicle of the type having a storage body and having a receiving hopper with a curved bottom and with sidewalls, and having a rear wall with a horizontal loading lip, said hopper being positioned at the rear of the body and in communication therewith, and there being a packer blade extending transversely of the hopper and having a lower scraping edge which is in shearing relationship with the loading lip at a predetermined time in the cycle of movement, and there being means for supporting the packer blade for movement upwardly and downwardly and forwardly and rearwardly in the hopper, wherein the improvement comprises having the scraping edge of the blade reinforced by spaced-apart downardly-tapered webs, there being recesses in the scraping edge which extend upwardly between webs and there being web reinforced teeth between recesses to dig into refuse and pull it into the hopper after it moves past the loading lip.

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,559,825 Dated February 2, 1971

Inventor(s) Arnold F. Meyer; John E. Wieschel & Leslie F. Hans

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 1, line 30, insert -- conventional -- before the word "limit"

Column 1, line 47, remove the letter "t" before the word "operation"

Column 3, line 31, delete the word "lien" after the word "dot

Column 5, line 37, delete the first "In full" at the beginnin of the sentence

Column 5, line 47, change "85" to -- 86 --

Column 6, line 63, before the word "rotatably" inser -- a --

Column 6, line 66, before the word "engage" insert -- sequentially --

Column 7, line 34, delete the word "members" from the sentenc

Column 8, line 31, delete the word "hope" from the sentence

Column 8, line 33, delete the word "hope" from the sentence

Signed and sealed this 25th day of December 1973.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

RENE D. TEGTMEYER
Acting Commissioner of Patent

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