W. W. HARRIS.

REFUSE VEHICLE.

APPLICATION FILED JAN. 30, 1917.

1,400,543.

Patented Dec. 20, 1921.

3 SHEETS—SHEET 1.

Fig. 1

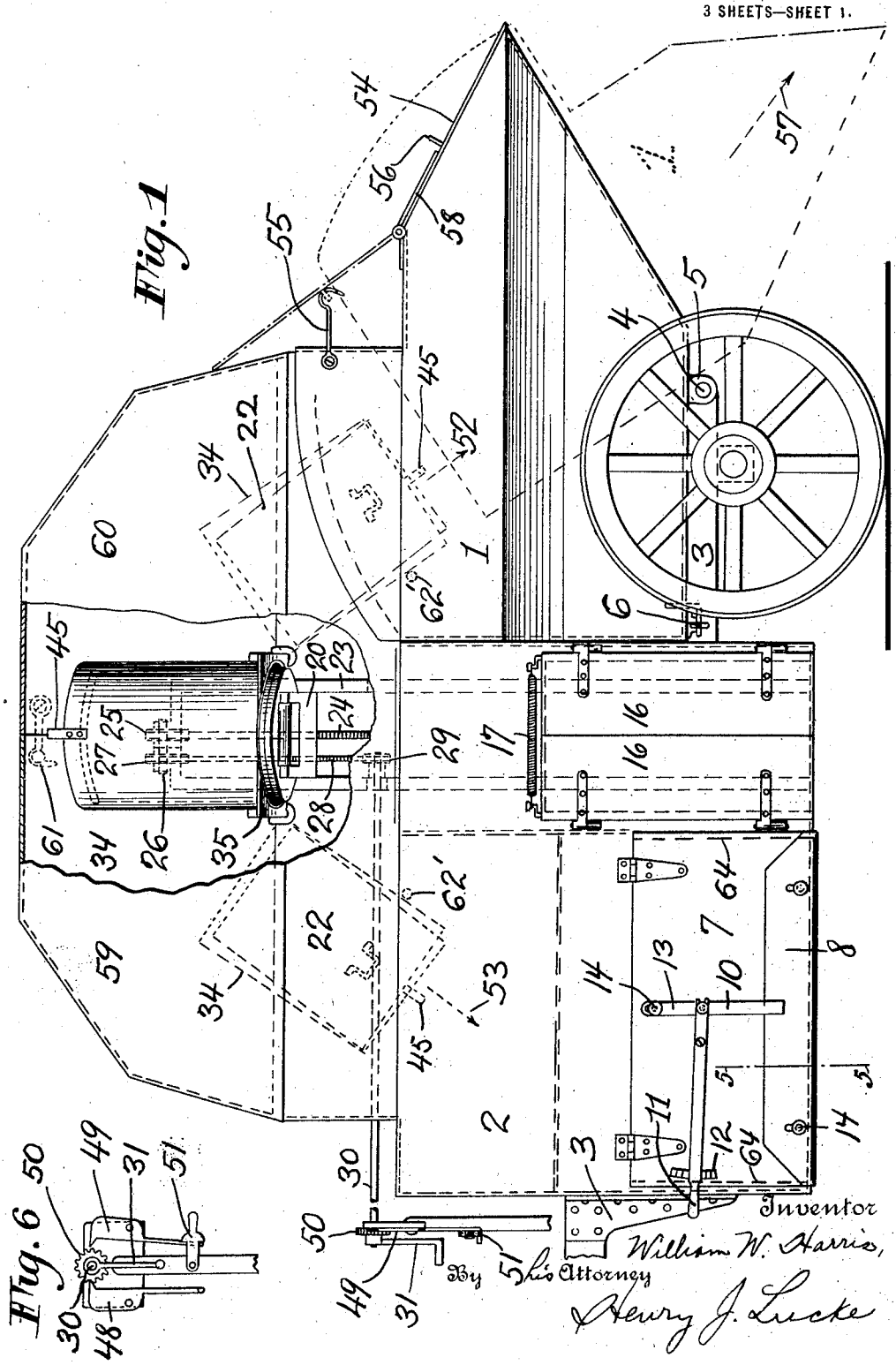


Fig. 6

Inventor

William W. Harris,

By His Attorney

Henry J. Lucke

W. W. HARRIS.

REFUSE VEHICLE.

APPLICATION FILED JAN. 30, 1917.

1,400,543.

Patented Dec. 20, 1921.

3 SHEETS—SHEET 2.

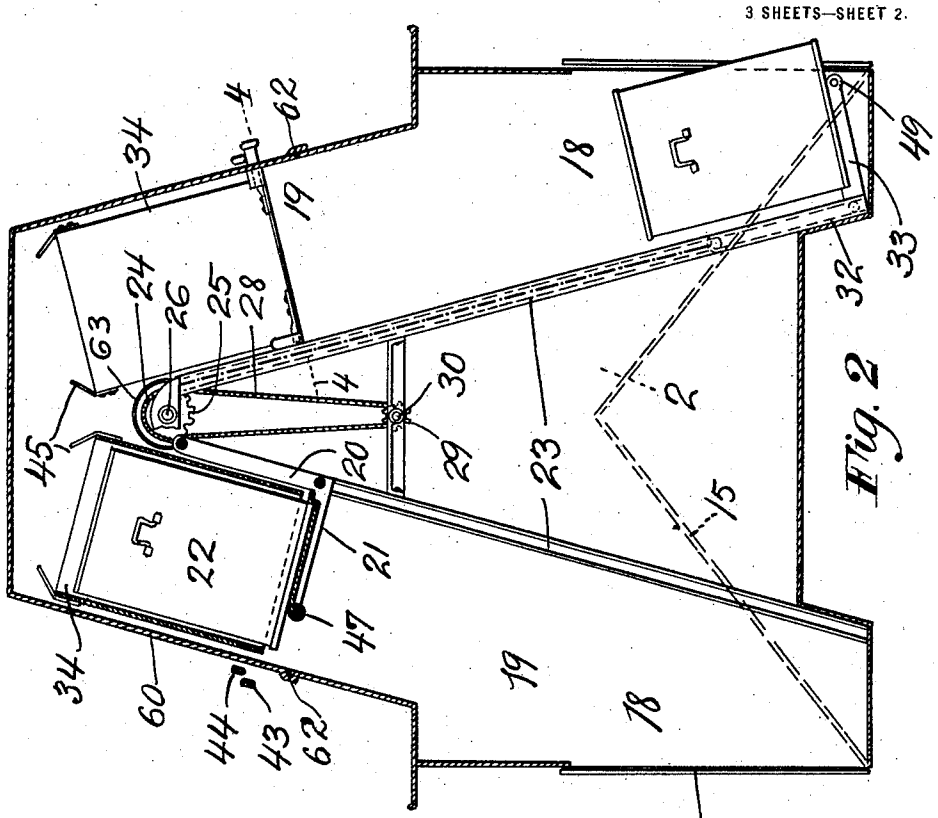


Fig. 2

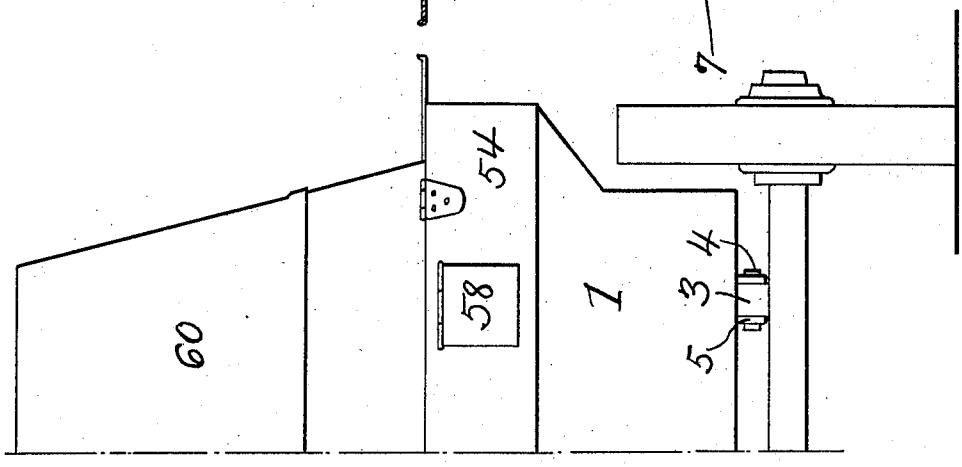


Fig. 3

Inventor
William W. Harris,
By his Attorney
Henry J. Lucke

W. W. HARRIS.

REFUSE VEHICLE.

APPLICATION FILED JAN. 30, 1917.

1,400,543.

Patented Dec. 20, 1921.

3 SHEETS—SHEET 3.

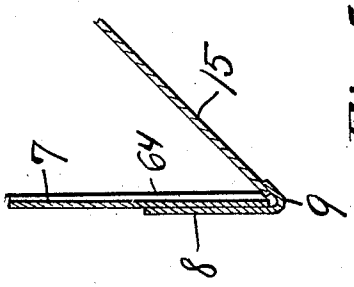


Fig. 5

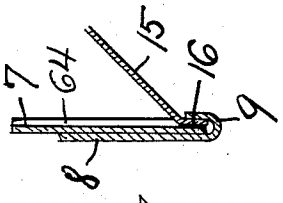


Fig. 7

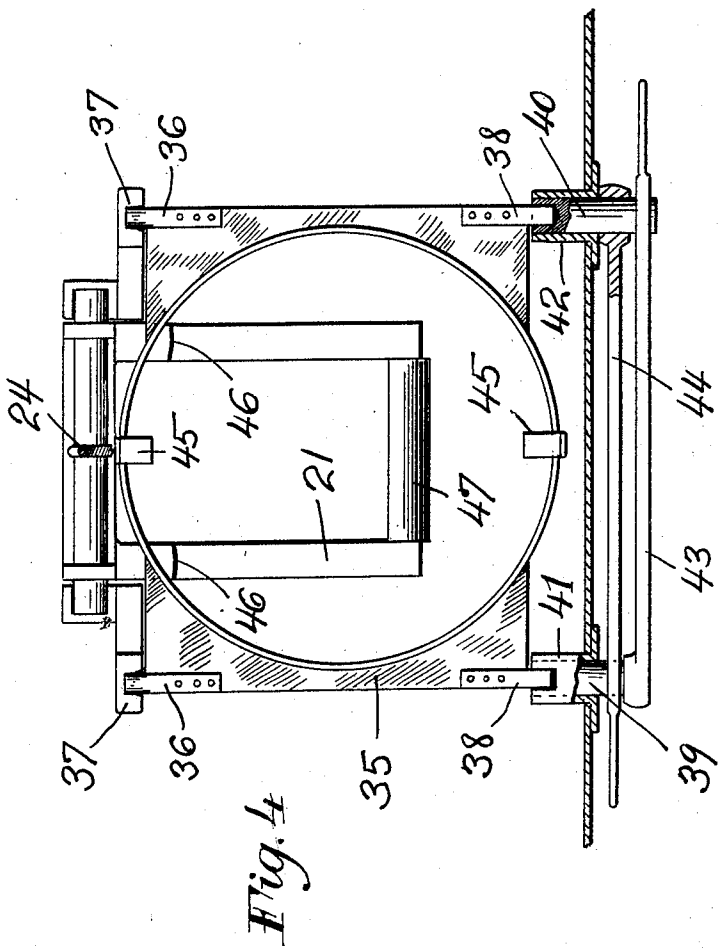


Fig. 4



Fig. 8.

Inventor

William W. Harris,

By his Attorney

Henry J. Lucke

UNITED STATES PATENT OFFICE.

WILLIAM W. HARRIS, OF NEW YORK, N. Y.

REFUSE-VEHICLE.

1,400,543. Specification of Letters Patent. Patented Dec. 20, 1921.

Application filed January 30, 1917. Serial No. 145,446.

To all whom it may concern:

Be it known that I, WILLIAM W. HARRIS, a citizen of the United States, residing at borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Refuse-Vehicles, of which the following is a specification.

This invention relates to refuse conveyances.

More particularly the invention relates to a conveyance adapted to receive ashes, garbage and similar material and comprising a plurality of compartments for such materials, combined with means for discharging receptacles containing any such material into any one of said compartments at will. In the preferred forms of the invention the discharging means is constructed to preclude the emission of dust or leakage of any liquid or other portion of the refuse into the atmosphere. The most preferred form of my invention comprises means for elevating the ordinary cans of ashes, or garbage, or other material, as the case may be, from a position proximate to the street curb, combined with means for dumping the contents of the can at will into the proper compartment of the refuse conveyance, and means for precluding the emission of dust or liquid or other impurity into the air or onto the street while being elevated and while being discharged into such compartment. In the several forms of the invention, the dumping means is arranged relative to the respective refuse compartments to assure the full loading of each compartment. Each compartment is constructed to be readily emptied into a barge or like subsequent carrier, by arranging such compartment to be directly dumped by bodily movement of such compartment, or by the provision of a downwardly sloping bottom and improved gate therefor, thereby obviating the serious operating disadvantages of hoisting and the like, necessary with compartment refuse conveyances heretofore proposed.

In the preferred construction as more fully hereinafter described, the compartment for ashes and like refuse is provided with an inclined bottom to facilitate the dumping of the load, the said receptacle being provided with dumping openings in its extreme lower portion and closures for said openings which prevent the leakage of dust and other fine particles or refuse.

Other features and objects of the invention will be more fully understood from the following description and drawings in which—

Fig. 1 is a side elevation, partly cut away of an embodiment of the invention;

Fig. 2 is a transverse sectional elevation of the elevating means of Fig. 1;

Fig. 3 is a rear elevation of a half end portion of the conveyance;

Fig. 4 is a detail horizontal view taken on line 4—4 of Fig. 2;

Fig. 5 is a detail sectional view taken on line 5—5 of Fig. 1;

Fig. 6 is a detail front elevation of the crank and controlling means therefor, for manually operating the carrier;

Fig. 7 is a detail sectonal view, similar to Fig. 5, but of somewhat modified form, and

Fig. 8 is a detail horizontal sectional view showing the discharged doors, its flange and groove in the body of the vehicle.

Referring to the drawings, the particular preferred form of the invention illustrated provides for a compartment for ashes and another compartment for garbage, the former being disposed forwardly of the conveyance while the latter is disposed rearwardly of the conveyance. It will be understood, however, that the number and particular locations of the aforesaid several compartments of the conveyance may be chosen according to the particular circumstances of use.

The garbage compartment 1 is shown comprising the entire rearward or end portion of the conveyance and is constructed to embody the advantageous characteristics of the ordinary dump cart, modified, however, by the particular construction and relation comprised by the invention. The receptacle 1 is shown hinged to the body or chassis 3 of the vehicle, as by means of the pivot bars 4 journaled in the oppositely disposed brackets 5. The compartment 1 is held in normal position on the body or chassis 3 by means of the latch 6.

The compartment 2 is shown constructed to receive and hold ashes or like material.

Such compartment 2 may be arranged to be stationarily supported on the body or chassis 3 and provided with a discharge opening closed by hinged door 7. To insure against leakage through the discharge opening of the compartment 2 when the door

7 is in closed position, I have provided the sealing means 8 (see Fig. 5) shown as comprising the effective sealing portion 9 and the locking means 10. Said locking means comprises the operating lever 11, the rack 12, the link 13 and guides 14. The door 7 is provided with the side flanges 64 extending into grooves 65 to thereby seal the sides of the door, as indicated in Fig. 8.

It will be noted that the sealing means 8 is adjustable in that the effective sealing portion 9 engages the downwardly inclined bottom 15 of the compartment 2, as an abutment to force the door 7 into the desired degree of closure determined by the position of the lever 11 on the rack 12.

In the modified form shown in Fig. 7, the inclined bottom 15 of the compartment 2 is provided with the flange 16 which is directly engaged by the effective sealing portion 9 of the sealing means 8.

The aforesaid compartments have been described as supported on a chassis of a trailer or the like, but it is obvious that the vehicle may be provided with a forward running gear and drawn by animal power.

The elevating means is shown as extending from the opposite sides of the conveyance and may be closed respectively by the hinged doors 16, normally closed by the spring 17, see Fig. 1. It will be understood that the intakes 18 of the elevating means may be disposed as desired relative to the body of the conveyance to meet the particular circumstances of use. The elevating means comprises the passage 19 extending from the intake 18 to a point above the two compartments 1, 2. The cross sectional dimensions of passage 19 are chosen to accommodate the largest size of can which may be employed with my refuse conveyance. In the passageway 19 is provided the movable carrier 20, indicated in the drawings as comprising the rest 21 for supporting a refuse can 22, said rest 21 being movable along a guideway 23. The rest 21 is elevated or lowered by means of the chain 24 passing over the sprocket wheel 25 mounted on the shaft 26.

The shaft 26 is rotated by sprocket wheel 27, chain 28, sprocket wheel 29, secured to shaft 30, at the end of which may be provided the crank 31, for manual operation.

Such elevating means is preferably constructed in duplicate form comprising such passageways 19, disposed oppositely, each passageway being provided with similar carrier means.

Preferably, such elevating means is constructed in duplicate forms and the elevating means arranged to afford counterbalancing of the carriers. Such arrangement also affords placing the cans on the carrier at either side of the vehicle. For this purpose, the ends of the chain 24 are respectively connected to the carrier 20 and the carrier 33, and the chain is of proper length so that when the carrier 20 is at its uppermost position, the carrier 33 is at its lowermost position and vice versa. In such construction, the said carriers may be operated to elevate a filled can and lower an empty can simultaneously, or may be operated from either side of the vehicle with a single can, in which latter case the weight of the empty can may be utilized to lower the carrier by force of gravity and without manipulation of the crank 31. Positioned adjacent the uppermost position of each carrier is provided rocking receiver means for dumping at will a can into either compartment 1 or compartment 2, and for returning the emptied can to its respective carrier. Such rocking receiver means is illustrated as comprising the receiver 34 open at its bottom and normally supported by the plate 35, provided with the rearward trunnions 36, 36, extending within the open-top bearings 37 and also the two forward studs 38 coacting with the trunnions 39, 40 respectively. The key portion of said studs 38 is rectangular or other angular formation, adapted to be received respectively into the open top recesses of said trunnions 39, 40. Said trunnions 39, 40 are respectively mounted in the bearings 41, and 42. The trunnion 39 is provided with the fixed lever 43 and the trunnion 40 is provided with the fixed lever 44, said levers 43, 44 being employed to respectively rock the receiver means in either direction, as desired.

The top of the receiver 34 is open but provided with stops 45, of desired number and location, to limit the extent of movement of the cam within the receiver when the receiver means is rocked to dump the contents of the can into the desired vehicle compartment.

It will be noted that the receiver and its stops are adapted to be operated with refuse cans of varying diameter and nevertheless prevent the escape of any can from the receiver into a vehicle compartment. It will also be noted that the length of the receiver and the extent of bodily movement of a can within a receiver during the operations of discharge are such as to afford sufficient momentum to the contents of the can, a sudden checking of the can itself and the discharge of the contents into a vehicle compartment at a point whereby the successive discharges are distributed within the interior of the compartment and substantially complete filling of the compartment assured.

From the above it will now be clear that upon elevating the lever 43, the receiver 34 will be rocked to the left (as viewed in Fig. 4) by rotating the trunnion 39 in bearing 41 and similarly the left-hand trunnion 36 in its bearing 37, whereas the right-hand-trun-

nion 36 will be lifted through the open top of its bearing 37 and the right hand stud 38 through the open top of its trunnion 40 and the open top of its bearing 42, the receiver 34 being thus manually rocked to its position as indicated by the arrow 53 at which point the receiver 34 contacts with the stop 62'. When the lever 44 is elevated the receiver is similarly acuated but in opposite directions as indicated by the arrow 52.

As above, the carrier 21 (33) is preferably provided with the stops 46 for locating the can when placed on said carrier, and also with the roller 47 to facilitate placing the weighted can on the carrier.

Fig. 6 shows a double ratchet arrangement for controlling the direction of rotation of the operating shaft 30 and crank 31 and comprises the left hand dog 48, the right hand dog 49, a common ratchet wheel 50 and the lock 51 for throwing out of operation either dog as desired.

Referring to Fig. 1, the arrow 52 shows the general direction of discharge of the contents of a can into the vehicle compartment 1 and the arrow 53 the general direction of discharge into the vehicle compartment 2. The vehicle compartment 1 is shown provided with the hinged door 54, which is held in open position by the hook 55 engaging the eye 56. Upon unfastening the latch 6, the vehicle compartment 1 will be bodily dumped into discharging position as indicated by the dotted and dashed lines and the contents of the compartment dumped in the general direction indicated by the arrow 57. The door 54 may be provided with one or more supplementary doors 58, suitable for dumping pails or small cans of refuse therethrough.

The vehicle compartments are entirely covered by sectional hoods, (shown as two in number) 59, 60, their lower edges forming grooves 62 and adapted to slide longitudinally of the vehicle, to thereby permit access to the inner operating parts for oiling, inspection, etc. The sectional hoods 59, 60 are held in normal position by the hooks 61.

Although not fully indicated in the drawings, the various operating parts of the mechanism are provided with suitable guards, such as the guard 63 indicated for the sprocket chain 24.

Whereas I have illustrated my invention by reference to specific embodiments thereof, it will be understood that many changes and other modifications may be made without departing from the invention.

I claim.

1. The combination with a vehicle frame, of a plurality of compartments, a carrier for conveying a receptacle thereon, means for discharging at will into any one of said compartments the contents of the receptacle when said carrier reaches a predetermined stage, means for mounting said carrier on said vehicle frame, means for mounting one of said compartments in fixed relation to said vehicle frame and means for mounting another of said compartments in pivotal relation on said vehicle frame, said pivotal mounting means being separate from said carrier and said fixed compartment mounting means.

2. The combination with a vehicle frame, of a plurality of separate compartments, a carrier for conveying a receptacle thereon, means for supporting said carrier on said vehicle frame, means for discharging at will into any one of said compartments the contents of the receptacle when said carrier reaches an upper stage of its travel, means for mounting said discharging means on said vehicle frame and means for pivotally mounting one of said compartments on said vehicle frame, said pivotal mounting means being separate from said supporting means and said discharge mounting means.

3. The combination with a plurality of compartments, of a carrier for a receptacle, a receiver for the receptacle disposed at a point of travel of said carrier and means for moving said receiver in a direction toward any one of said compartments at will.

4. The combination with a plurality of compartments, of a carrier for a receptacle, a receiver for the receptacle disposed at a point of travel of said carrier and means for rocking said receiver in a direction toward any one of said compartments at will.

5. The combination with a plurality of compartments, of a carrier for elevating a receptacle, a receiver for the receptacle disposed at an uppermost point of travel of said carrier and means for moving said receiver in a direction toward any one of said compartments at will.

6. The combination with a plurality of compartments, of an upwardly traveling carrier for a receptacle, a receiver for the receptacle disposed at an upper point of travel of said carrier and means for moving said receiver in a direction toward any one of said compartments at will.

7. The combination with a plurality of compartments, of a carrier for a receptacle disposed between said compartments, a receiver for the receptacle disposed at a point of travel of said carrier and means for moving said receiver in a direction toward any one of said compartments at will.

8. The combination with a plurality of compartments, of a carrier for a receptacle disposed between said compartments, a receiver for the receptacle disposed at a point of travel of said carrier and means for rocking said receiver in a direction toward any one of said compartments at will.

9. The combination with a plurality of compartments, of an upwardly traveling carrier for a receptacle disposed between

said compartments, a receiver for the receptacle disposed at an upper point of travel of said carrier and means for moving said receiver in a direction toward any one of said compartments at will.

10. The combination with a plurality of compartments, of an upwardly traveling carrier for a receptacle disposed between said compartments, a receiver for the receptacle disposed at an upper point of travel of said carrier and means for rocking said receiver in a direction toward any one of said compartments at will.

11. The combination with a plurality of compartments, of an upwardly traveling carrier for the receptacle, means for counterbalancing said carrier, a receiver for the receptacle disposed at an upper point of travel of said carrier, means for supporting said receiver independently of said carrier, and means for moving said receiver in a direction toward any one of said compartments at will.

12. The combination of a plurality of compartments, a receiver for receptacles having an open terminal, means for positioning a receptacle in said receiver and means for moving said receiver toward any one of said compartments at will, to thereby discharge the contents of the receptacle into the desired compartment.

13. In combination with a plurality of compartments, of a receiver for receptacles having an open terminal and means for rocking said receiver toward the interior of any one of said compartments at will.

14. In combination with a compartment, of a receiver for receptacles having an open terminal, a recessed support for said receiver and means for moving said support and thereby said receiver toward the interior of said compartment to thereby discharge contents of the receptacle into said compartment.

15. In combination with a plurality of compartments, of a receiver for receptacles having an open terminal, a recessed support for said receiver and means for rocking said support and thereby said receiver toward the interior of any one of said compartments at will.

16. The combination with a plurality of compartments, of a receiver having an open bottom and an open top, stops disposed adjacent the top and means for moving said receiver toward any one of said compartments at will.

17. The combination with a plurality of compartments, of a receiver having an open bottom and an open top, stops disposed adjacent the top and means for rocking said receiver toward any one of said compartments at will.

18. The combination with a plurality of compartments, of a receiver having an open bottom and an open top, stops disposed adjacent the top, a recessed support for said receiver and means for moving said support and thereby said receiver toward any one of said compartments at will.

19. The combination of a receiver having an open bottom and an open top, stops positioned adjacent said top, a recessed plate supporting said receiver, studs extending from opposite sides of said plate, trunnions for said studs, said trunnions having openings and means for rotating said trunnions.

20. The combination with a plurality of compartments, of a receiver having an open face, means for conveying receptacles into said receiver through said open face and means for rocking said receiver toward any one of said compartments at will, to thereby discharge the contents of the receptacle into such compartment.

21. The combination with a plurality of compartments, of an open bottom receiver, said receiver having an open top, stops positioned adjacent the top, means for conveying a receptacle into said receiver through the open bottom, and means for rocking said receiver.

22. The combination with an open face receiver, a recessed support for said receiver, a plurality of pairs of studs, a pair of trunnions for one of said pairs of studs, said trunnions having open sides, a pair of bearings for the other of said pairs of studs, said bearings having open sides, and means for separately rotating said trunnions to thereby rock said receiver.

23. The combination with a compartment having an open portion, of a carrier for receptacles extending toward said open portion, means for operating said carrier, means for removing a receptacle from said carrier, to discharge the contents of the receptacle into said compartment, and a counterweight for said carrier.

24. The combination with a plurality of compartments having adjacent open portions, of a carrier disposed between said compartments and extending toward said open portions, rests for receptacles disposed on said carrier, means for operating said carrier, and means for removing a receptacle from one of said rests to thereby discharge the contents of the receptacle into one of said compartments.

25. The combination with a plurality of compartments, of a carrier extending from one side of said compartments to another side, said carrier extending upwardly between said compartments, a rest on said carrier adapted to support a receptacle, a counter-weight for said carrier and means for operating said carrier upwardly to thereby move a receptacle to an upper point of discharge.

26. The combination with a plurality of

compartments, of carriers extending from opposite sides of said compartments, said carriers respectively extending from one side upwardly to a point of discharge, rests for receptacles disposed at predetermined locations on said carrier, means for operating said carrier and means for removing a receptacle from a rest to thereby discharge the contents of the receptacle into one of said compartments.

27. The combination with a plurality of compartments, of carriers extending from opposite sides of said compartments, said carriers extending upwardly from each said side and between said compartments, a receiver disposed at a predetermined location of said carriers and means for rocking said receiver toward any one of said compartments at will.

In testimony whereof I have signed this specification this 25th day of January, 1917.

WILLIAM W. HARRIS.