A refuse collector particularly suitable for mounting on a trailer chassis having a loading hopper on the chassis which has a feed screw mounted in it, a container body adapted for tipping over the loading hopper for emptying and means for closing the entrance to hopper when tipping the container body.

8 Claims, 2 Drawing Figures
REFUSE COLLECTOR BODY

BACKGROUND OF THE INVENTION.

1. Field of the Invention
The present invention relates to refuse collectors and in particular to a construction of refuse collector body.

2. Description of the Prior Art
There are many types of refuse collectors in general commercial use. The majority of refuse collectors are of the rear-loading type which are discharged by rearward tipping. One of the problems with such refuse collectors is to pack and consolidate the refuse. This has been achieved by providing a refuse collector of the rear-loading type which may be tipped in a forward direction at various times during the loading operation and then finally discharged by rearward tipping. During operation the body of the refuse collector is raised vertically thus raising the rearward door and causing the refuse to fall in the refuse collector body and to consolidate somewhat under its own weight. It has however, generally been found necessary to provide some form of positive compaction of the refuse load. One of the ways used is to provide a powerful feed screw. The feed screw rotates slowly in a trough in the base of a loading hopper compressing the refuse through an opening and forcing it into the refuse collector body. The feed screw and portion of the loading hopper are so arranged that when it is desired to empty the refuse collector body by rearward tipping that the feed screw and portion of the loading hopper pivot away from the refuse container body to allow the refuse to be discharged. This latter type of refuse collector is normally mounted on the chassis of a truck or the like vehicle. These refuse collectors are it will be appreciated, relatively expensive to manufacture.

OBJECTS

The object of the present invention is to provide an improved construction of refuse collector. This and further objects will become apparent on reading the Specification.

SUMMARY

According to the invention there is provided a refuse collector body comprising:

a base chassis;

a main container body pivotally mounted on the base chassis;

a loading hopper on the base chassis having an entrance for the reception of refuse and an exit communicating with the interior of the main container body;

a feed screw mounted in the loading hopper;

means for pivoting the main container body over the loading hopper; and

means for closing the entrance to the hopper.

In one embodiment of the invention the means for closing the entrance to the hopper comprises a trap door pivotally mounted on the loading hopper and a catch on the main container body for engaging the trap door, the said catch being adapted to disengage the trap door when the container body is tipped.

The main advantages of the present invention are the simplicity of construction and the ease of operation whereby refuse is readily discharged without spilling all over the loading hopper and base chassis. Further the refuse collector body when mounted on a trailer chassis or stationary support is particularly suitable for use in hotels or the like institutions since the refuse collector is a permanent or semi-permanent fixture.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a partially cut-away side view of a refuse collector according to the present invention, and FIG. 2 is a view similar to FIG. 1 showing the refuse collector in the raised position.

Referring to the drawings there is provided a refuse collector body indicated generally by the reference numeral 1 mounted on a base chassis 2 of a trailer having ground engaging wheels 3, a draw bar 4 and a supporting height adjustable screw jack 6. A loading hopper 7 is mounted on the base chassis 2. A worm screw 8 is mounted by means on a plate 9 in the loading hopper 7. The worm screw 8 is driven through a gear box 10, drive shaft 11, and a variable length drive shaft 12 from the P.T.O. of a tractor (not shown). The loading hopper 7 is provided with an entrance 14 and an exit 15 which communicates with a main container body 16. The main container body 16 is manufactured from sheet metal and is of a welded construction. The main container body 16 is pivotally mounted on each side of the base framework by hinge pins 17 of conventional construction. A hydraulic tipping ram 18 pivotally mounted at 19 on the base chassis 2 and on the main container body 16 at 20 controls the pivoting of the main container body 16 about the hinge pins 17.

A door 21 is pivotally mounted at 22 on the container body 16. The door 21 has mounted on it a pair of side walls 23 and an end wall 24 which forms an entry chute indicated generally by the reference numeral 25. A hand rail 26 is mounted on each of the side walls 23. A trap door 29 is pivotally mounted at 30 on the loading hopper 7. The trap door 29 engages a catch or lug 31 on the end plate 21.

A step 32 is hinged at 33 on bars 34, only one of which is illustrated. Each bar 34 is connected by a link mechanism, not shown to the main container body 16 whereby as the main container body 16 is raised the step 32 retracts below the base chassis 2.

A hand brake 35 of conventional construction is provided. The variable length drive shaft 13 is connected to the power take-off of a tractor or other power source (not shown) and the hydraulic tipping ram 18 is connected by means of a hydraulic pipe 36 to the hydraulic system of the tractor. An electrical coupling 37 and wining 38 are provided for electrical services including emergency cut out.

In operation, with the refuse collector body 1 in the position illustrated in FIG. 1, refuse is dumped through the entry chute 25 into the loading hopper where it impinges against the rotating worm screw 8. The worm screw 8 forces the refuse against the side walls of the loading hopper 7 out the exit 15 and into the main container body 16. As the quantity of refuse builds up in the main container body 16 the refuse is compressed by the worm screw 8 and the refuse in the main container body 16 is compacted. When it is desired to empty the main container body 16 the tipping ram 18 is operated causing the main container body 16 to pivot rearwards about the hinge pins 17. As the main container body 16 pivots upwards it pivots over the exit 15 of the loading hopper 7 and the weight of the end door 21 and entry chute 25 causes the end door 21 to hang vertically thus
pivoting it away from the loading hopper 7. Simultaneously, the catch 31 comes out of engagement with the trap door 29 which pivots downwards to close the entrance 14 of the loading hopper 7. Accordingly, the refuse in the container body 16 is not allowed to spill over the screw 8 and the refuse is readily discharged.

An alternative embodiment of the invention envisages the use of a trailer chassis similar to that hereinbefore described which is operated by electricity from a separate power source. It will be appreciated that this embodiment of the invention will be particularly suitable for use in hotels and the like institutions where the refuse collector is a permanent or semi-permanent fixture and that the worm screw may be driven by an external power source such as an electric motor. A stationary chassis may also be used in which case the refuse collector body is emptied into a separate collection vehicle.

An alternative embodiment of the invention envisages the use of an alternative chassis construction so arranged that the rear wheels of the towing tractor can pass underneath the drawbar. Thus substantially reducing the turning circle of the vehicle.

It is also envisaged that various safety devices may be provided to prevent the likelihood of overload on the worm screw, and that a hydraulic motor drive driven from a hydraulic pump on the tractor or other power source can be used in place of the variable length drive shaft.

It will be appreciated that the refuse container body according to the present invention may be readily mounted on a vehicle chassis.

I claim:

1. A refuse collector body comprising:
   a base chassis;
   a main container body, means pivotally mounting said main container body chassis;
   a separate loading hopper, means mounting said loading hopper on the base chassis separate from said main container body, said loading hopper having an entrance for the reception of refuse and an exit communicating with the interior of the main container body;
   a feed screw mounted in the loading hopper;
   means for pivoting the main container body relative to and over the loading hopper; and
   means for closing the entrance to the loading hopper.
2. A refuse collector body comprising:
   a base chassis;
   a main container body pivotally mounted on the base chassis;
   a loading hopper on the base chassis having an entrance for the reception of refuse and an exit communicating with the interior of the main container body;
   a feed screw mounted in the loading hopper;
   means for pivoting the main container body over the loading hopper; and
   means for closing the entrance to the hopper.
3. A refuse collector body as recited in claim 1 in which the main container body has an inlet opening aligned with the loading hopper, the feed screw is inclined upwardly from the loading hopper towards the main container body to deliver refuse upwardly into the main container body.
4. A refuse collector body as recited in claim 3 wherein the feed screw terminates at the main collector body inlet.
5. A refuse collector body as recited in claim 1 in which the means for closing the entrance to the loading hopper includes a trap door pivotally mounted on the loading hopper.
6. A refuse collector body as recited in claim 1 in which the hopper body is normally fixedly mounted on the base chassis.
7. A refuse collector body as recited in claim 1 wherein the feed screw is carried solely by the feed hopper.
8. A refuse collector body as recited in claim 1 wherein the feed screw is carried solely by the feed hopper and terminates outside of the main container body.

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