April 25, 1950 A. T. C. DEAR 2,505,731

REFUSE COLLECTING VEHICLE

Filed Feb. 20, 1948 3 Sheets-Sheet 1

FIG. 1.

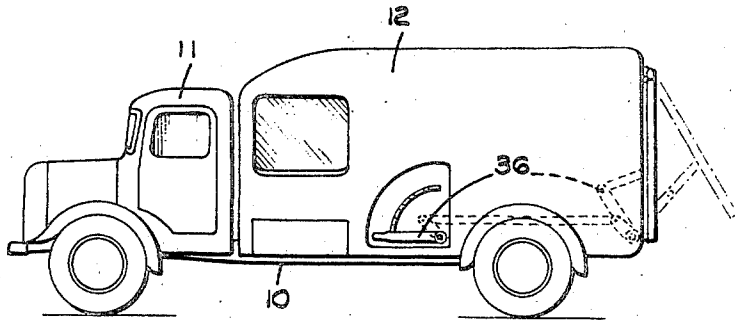
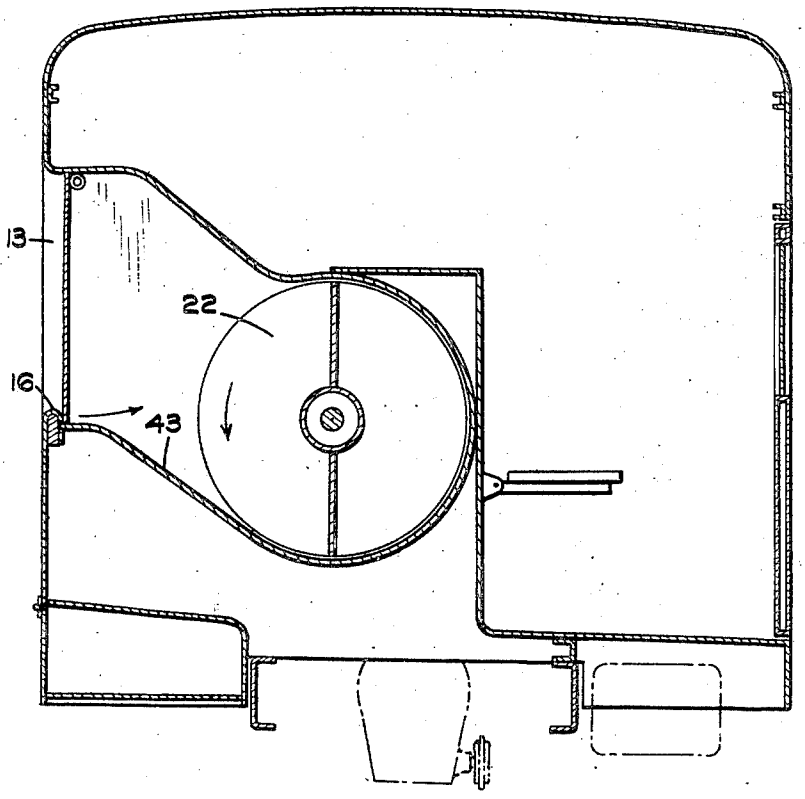



FIG. 3.




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REFUSE COLLECTING VEHICLE

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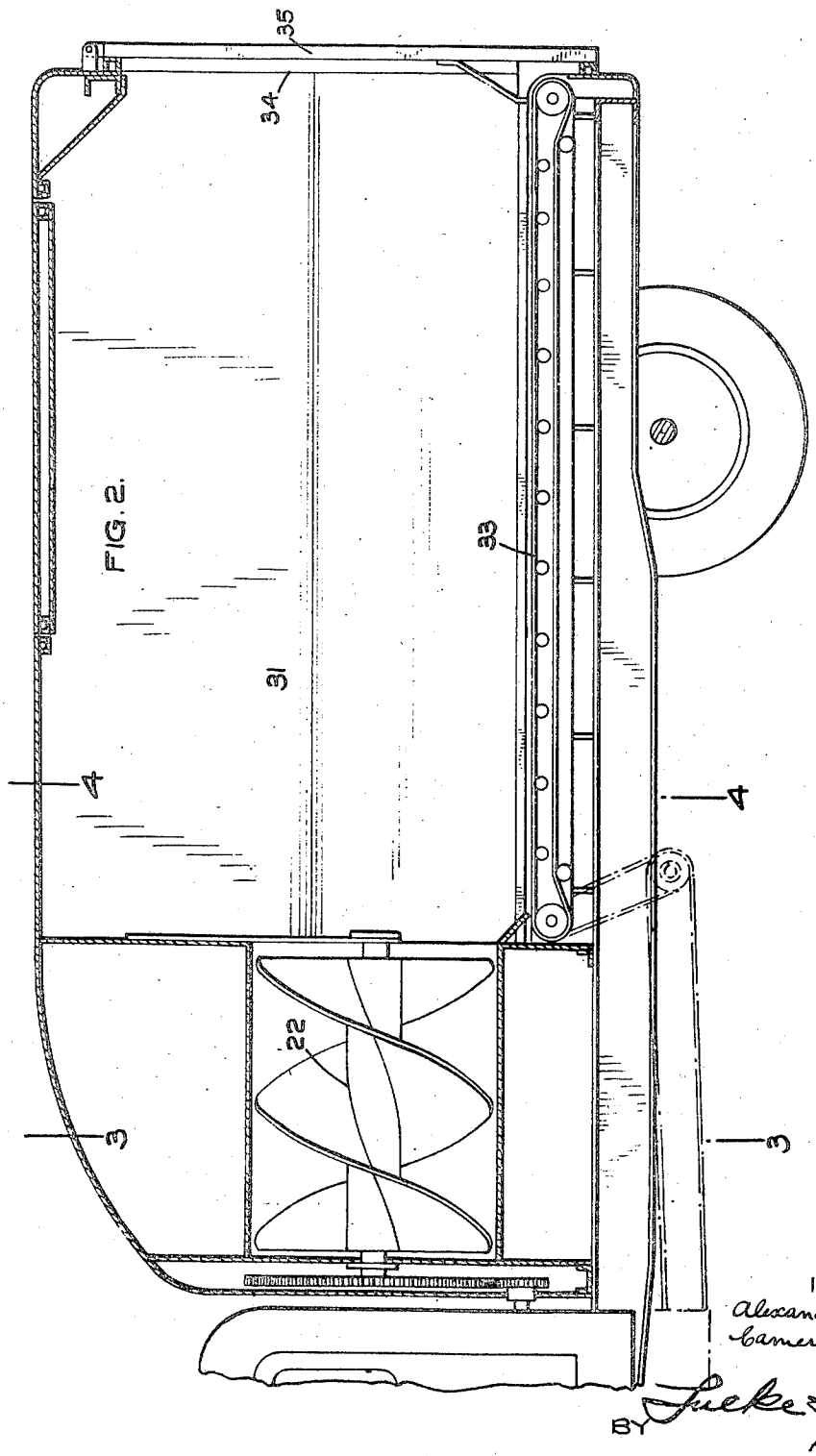



FIG. 2.

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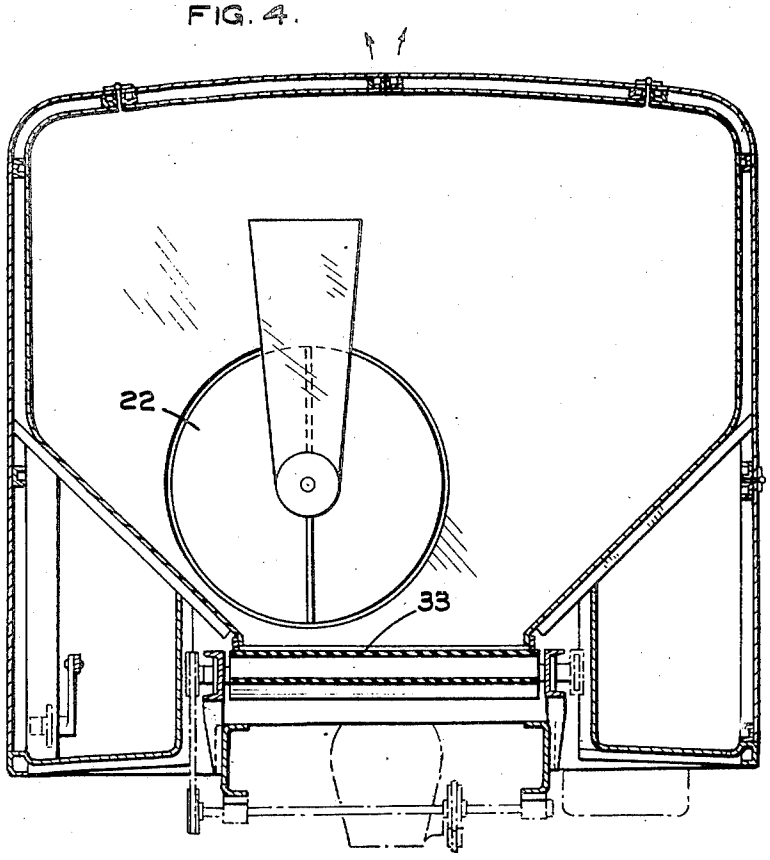
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AGENTS.

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REFUSE COLLECTING VEHICLE

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FIG. 4.




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2,505,731

## REFUSE COLLECTING VEHICLE

Alexander Thomas Cameron Dear, West Bromwich, England, assignor to Lewin Road Sweepers Limited, West Bromwich, England, a British company

Application February 20, 1948, Serial No. 9,775
In Great Britain January 8, 1947

6 Claims. (Cl. 214—67)

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This invention relates to refuse collecting vehicles and is concerned with such vehicles of the kind comprising a refuse container having a charging opening through which the refuse is tipped or otherwise delivered into the interior of the container, and a rotatable impeller having blades for feeding the delivered refuse into the interior of the container, so as to pack it therein and thus utilise economically the storage capacity of the container.

Hitherto in refuse collecting vehicles of the above kind the charging opening has been disposed at the rear of the vehicle with the impeller disposed within the container a short distance inwardly from the opening and the same opening has been used for discharging the refuse from the container; and to enable the refuse to be discharged, i. e. displaced rearwardly in relation to the container, the latter has been mounted for bodily rotation about a central axis extending longitudinally of the vehicle and provided with a spiral or helical blade so that on rotating the container in the proper direction having regard to the hand of the spiral, the refuse is ejected through the charging opening.

The above described known arrangement is subject to a number of disadvantages. In the first place the mounting of the container for bodily rotation is an expensive construction involving accurate manufacture of the container and the provision of special supporting bearings. Furthermore, in order to ensure that the material which is tipped into the container through the charging opening is delivered to the impeller blades and thus fed by the impeller forwardly of the container so as to be packed into the interior thereof, it is necessary for the lowest edge of the charging opening to be disposed at an appreciable height above the lowest part of the impeller blades so that when the refuse is delivered through the opening it has a sufficient gravity fall to enable it to reach the impeller and thus be fed by the impeller forwardly of the container.

This limitation on the height of the lowest edge of the charging opening in relation to the impeller necessitates in practice the provision of a relatively small charging opening which can only be used with standard domestic refuse bins and a non-standard domestic bin or other container cannot conveniently be employed.

Furthermore, the above known arrangement can only be used for refuse collecting purposes, the provision of the impeller at the rear end of the vehicle adjacent to the opening therein precluding the additional use of the vehicle for other purposes when required such as, for instance, the distribution of sand or grit on the roads.

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Still a further objection of this known arrangement is that the mounting of the impeller at the rear end of the container which is itself rotatable, calls for the provision of an impeller driving shaft to rotate the same extending from the front end of the vehicle through the container along the longitudinal centre line thereof. The provision of this shaft increases the expense of the construction while it entails the serious disadvantage that any refuse which is in elongated form, for example, rope, string, wire and the like, tends to become immovably wound around the longitudinal shaft as a result of the relative rotation which occurs between the shaft and the container during both charging and discharging of the container.

The object of the invention is to provide a construction of refuse collector of the above kind which is cheaper than the above known arrangement and in which the disadvantages of the above known arrangement are avoided.

The invention is illustrated in the accompanying drawings wherein:

Figure 1 is a side elevation of one form of refuse collecting vehicle constructed in accordance with the present invention.

Figure 2 is a longitudinal sectional view of the rear part of the vehicle depicted in Figure 1.

Figures 3 and 4 are sectional views on the lines 3—3 and 4—4 respectively of Figure 2.

The refuse collecting vehicle illustrated in the drawings is constructed exactly as described in my specification No. 9,772 filed February 20, 1948, now Patent No. 2,488,966 granted November 22, 1949, with the exception that the loading conveyor 18 referred to in the said specification is omitted and in place thereof there is provided a deflector member 43 which extends in a lateral direction inwardly and downwardly from the sill 16 of the loading opening 13 and terminates at a position adjacent the lower part of the impeller 22, such deflector member serving to direct refuse discharged through the opening 13 to the impeller 22 so that it is picked up by the blades of the impeller and packed rearwardly into the refuse containing compartment 31 in the manner described in our aforesaid specification.

Apart from this one modification, the design and mode of operation of the refuse collector is exactly as described in my aforesaid specification so that any detailed description in the present specification is unnecessary, it being sufficient

merely to say that the loading opening 13 is disposed near the front end of the refuse container, through which the refuse is loaded into the container so that it passes to the impeller in the manner described, by which it is packed into the refuse compartment 31 from which it is discharged through the discharge opening 34 provided at the rear end of the vehicle and provided with the closing door 35 operable by means of the mechanism 36.

Discharge of the refuse from the compartment 31 is effected by operation of the discharge conveyor 33 which is capable of being operated independently of the impeller in the manner described in my aforesaid specification, which conveyor may further be operated during the charging of the compartment as described in my specification aforesaid.

In the particular arrangement illustrated the loading opening 13 is disposed immediately to the rear of the front end of the refuse container 12. If desired it may be disposed a short distance to the rear of said front end. Alternatively the position of the container on the vehicle chassis may be reversed so that the loading opening 13 is disposed at the rear end of the vehicle and the discharge opening at the front end of the container and to facilitate discharge such opening is disposed at one side of this front end with the driver's compartment at the opposite side thereof, although the arrangement illustrated is preferred.

A refuse collecting vehicle in accordance with the present invention possesses the advantage that its construction is cheaper than the arrangement of collector already enumerated while possessing all the advantages of that kind of refuse collector in which an impeller having blades is employed for delivering the charged refuse into the interior of the container and for packing it tightly therein.

I claim:

1. In a refuse collecting vehicle a refuse container extending for substantially the full width of the vehicle, said refuse container having a refuse loading opening at one end thereof and a refuse discharge opening at the other end thereof, said refuse loading opening extending substantially vertically in one of the outer side walls of the vehicle, a sill defining the lower edge of said refuse loading opening, said sill being adapted to support a refuse bin carried manually by a garbage collecting man standing on the ground at the side of the vehicle while the contents of the bin are discharged through the loading opening, a rotatable bladed impeller adapted to receive the refuse delivered through the loading opening and to pack it into the interior of the container and towards the discharge opening thereof, said impeller being disposed intermediate the lateral sides of the vehicle adjacent the bottom of the container so as to feed the refuse into the container substantially along the longitudinal centre line of the bottom of the container, means for directing the loaded refuse from the loading opening to the lower part of the impeller, and means for transmitting drive to said impeller.

2. In a refuse collecting vehicle a refuse container extending for substantially the full width of the vehicle, said refuse container having a refuse loading opening at the front end thereof and a refuse discharge opening at the rear end thereof, said refuse loading opening extending substantially vertically in one of the outer side walls of the vehicle, a sill defining the lower edge of said refuse loading opening, said sill being adapted to support a refuse bin carried manually by a garbage collecting man standing on the ground at the side of the vehicle while the contents of the bin are discharged through the loading opening, a rotatable bladed impeller adapted to receive the refuse delivered through the loading opening and to pack it into the interior of the container and towards the discharge opening thereof, said impeller being disposed intermediate the lateral sides of the vehicle adjacent the bottom of the container so as to feed the refuse into the container substantially along the longitudinal centre line of the bottom of the container, means for directing the loaded refuse from the loading opening to the lower part of the impeller, and means for transmitting drive to said impeller.

3. In a refuse collecting vehicle a refuse container extending for substantially the full width of the vehicle, said refuse container having a refuse loading opening at one end thereof and a refuse discharge opening at the other end thereof, said refuse loading opening extending substantially vertically in one of the outer side walls of the vehicle, a sill defining the lower edge of said refuse loading opening, said sill being adapted to support a refuse bin carried manually by a garbage collecting man standing on the ground at the side of the vehicle while the contents of the bin are discharged through the loading opening, a rotatable bladed impeller adapted to receive the refuse delivered through the loading opening and to pack it into the interior of the container and towards the discharge opening thereof, said impeller being disposed intermediate the lateral sides of the vehicle adjacent the bottom of the container so as to feed the refuse into the container substantially along the longitudinal centre line of the bottom of the container, means for directing the loaded refuse from the loading opening to the lower part of the impeller, means for transmitting drive to said impeller, a refuse discharge conveyor extending from said impeller to the discharge opening adjacent the bottom of said container and along the longitudinal centre line of the said container, and means for transmitting drive to said refuse discharge conveyor.

4. In a refuse collecting vehicle a refuse container extending for substantially the full width of the vehicle, said refuse container having a refuse loading opening at the front end thereof and a refuse discharge opening at the rear end thereof, said refuse loading opening extending substantially vertically in one of the outer side walls of the vehicle, a sill defining the lower edge of said refuse loading opening, said sill being adapted to support a refuse bin carried manually by a garbage collecting man standing on the ground at the side of the vehicle while the contents of the bin are discharged through the loading opening, a rotatable bladed impeller adapted to receive the refuse delivered through the loading opening and to pack it into the interior of the container and towards the discharge opening thereof, said impeller being disposed intermediate the lateral sides of the vehicle adjacent the bottom of the container so as to feed the refuse into the container substantially along the longitudinal centre line of the bottom of the container, means for directing the loaded refuse from the loading opening to the lower part of the impeller, means for transmitting drive to said impeller, a refuse discharge conveyor extending from said impeller

to the discharge opening adjacent the bottom of said container and along the longitudinal centre line of the said container, and means for transmitting drive to said refuse discharge conveyor.

5. In a refuse collecting vehicle a refuse container extending for substantially the full width of the vehicle, said refuse container having a refuse loading opening at one end thereof and a refuse discharge opening at the other end thereof, said refuse loading opening extending substantially vertically in one of the outer side walls of the vehicle, a sill defining the lower edge of said refuse loading opening, said sill being adapted to support a refuse bin carried manually by a garbage collecting man standing on the ground at the side of the vehicle while the contents of the bin are discharged through the loading opening, a rotatable bladed impeller adapted to receive the refuse delivered through the loading opening and to pack it into the interior of the container and towards the discharge opening thereof, said impeller being disposed intermediate the lateral sides of the vehicle adjacent the bottom of the container so as to feed the refuse into the container substantially along the longitudinal centre line of the bottom of the container, means for directing the loaded refuse from the loading opening to the lower part of the impeller, means for transmitting drive to said impeller, a refuse discharge conveyor extending from said impeller to the discharge opening adjacent the bottom of said container and along the longitudinal centre line of the said container, means for transmitting drive to said refuse discharge conveyor, and said discharge conveyor having a width less than the maximum width of the refuse container and the lower part of the sides of the latter sloping inwardly and downwardly towards the longitudinal edges of the discharge conveyor.

6. In a refuse collecting vehicle a refuse container extending for substantially the full width of the vehicle, said refuse container having a refuse loading opening at the front end thereof and a refuse discharge opening at the rear end thereof, said refuse loading opening extending



substantially vertically in one of the outer side walls of the vehicle, a sill defining the lower edge of said refuse loading opening, said sill being adapted to support a refuse bin carried manually by a garbage collecting man standing on the ground at the side of the vehicle while the contents of the bin are discharged through the loading opening, a rotatable bladed impeller adapted to receive the refuse delivered through the loading opening and to pack it into the interior of the container and towards the discharge opening thereof, said impeller being disposed intermediate the lateral sides of the vehicle adjacent the bottom of the container so as to feed the refuse into the container substantially along the longitudinal centre line of the bottom of the container, means for directing the loaded refuse from the loading opening to the lower part of the impeller, means for transmitting drive to said impeller, a refuse discharge conveyor extending from said impeller to the discharge opening adjacent the bottom of said container and along the longitudinal centre line of the said container, means for transmitting drive to said refuse discharge conveyor, and said discharge conveyor having a width less than the maximum width of the refuse container and the lower part of the sides of the latter sloping inwardly and downwardly towards the longitudinal edges of the discharge conveyor.

ALEXANDER THOMAS CAMERON DEAR.


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