May 28, 1957 W. O. WEBER 2,793,769

REFUSE TRUCK WITH LOAD PACKING MEANS

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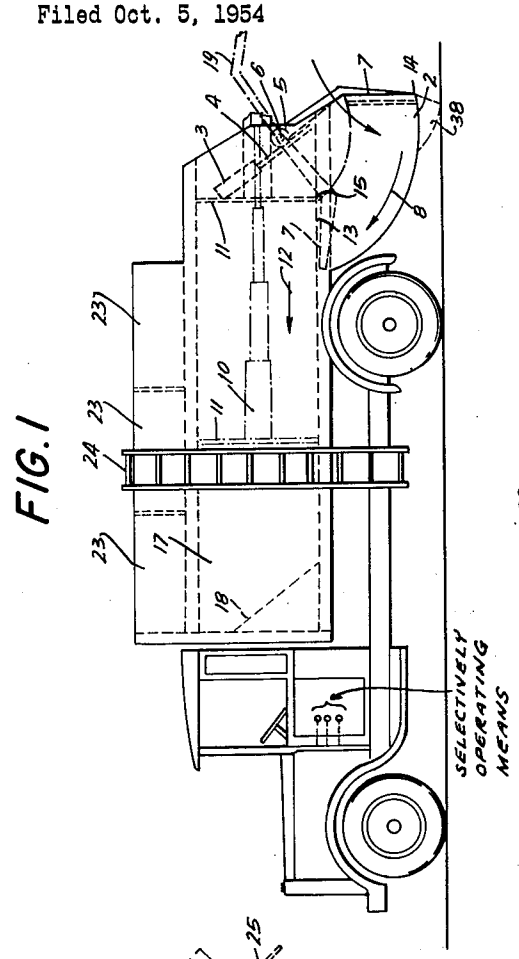


FIG. 1

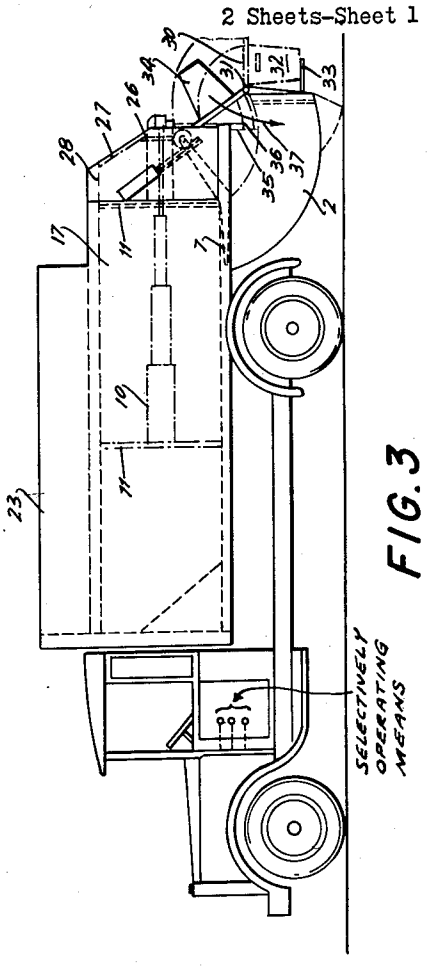


FIG. 3

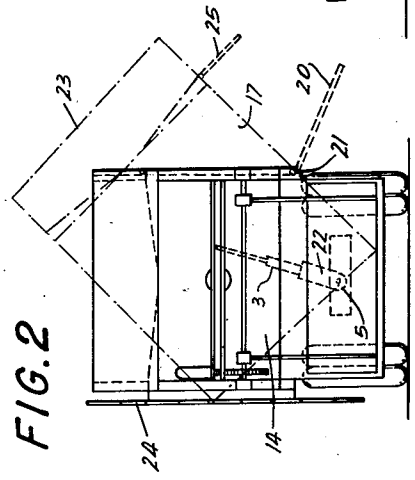


FIG. 2

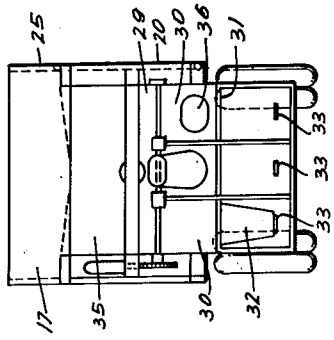


FIG. 4

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REFUSE TRUCK WITH LOAD PACKING MEANS

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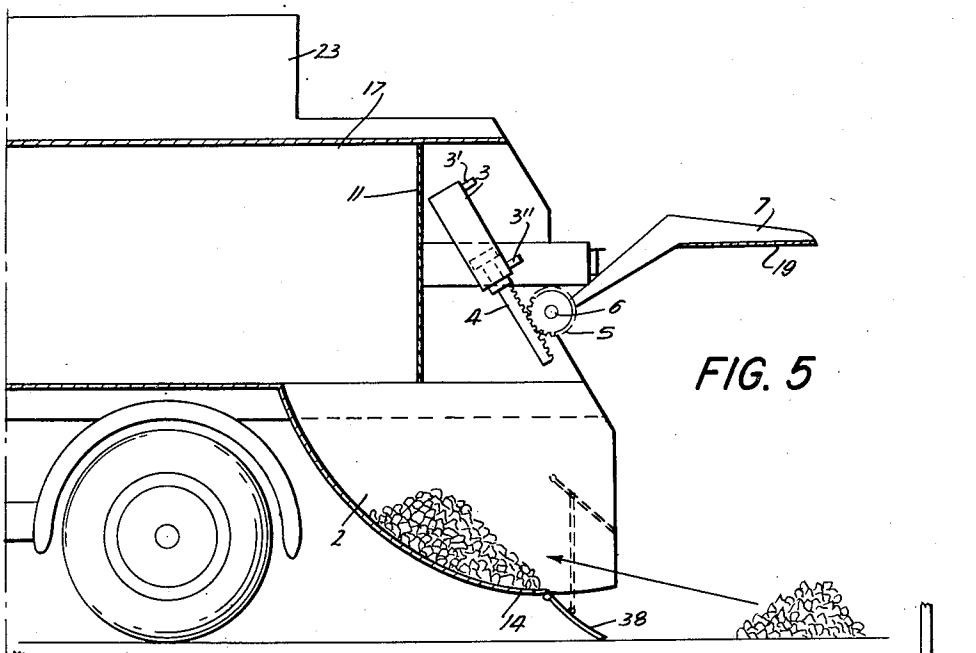


FIG. 5

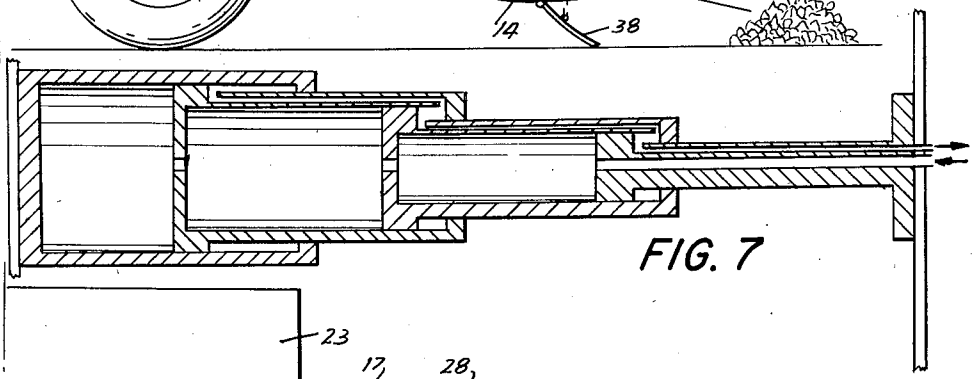


FIG. 7

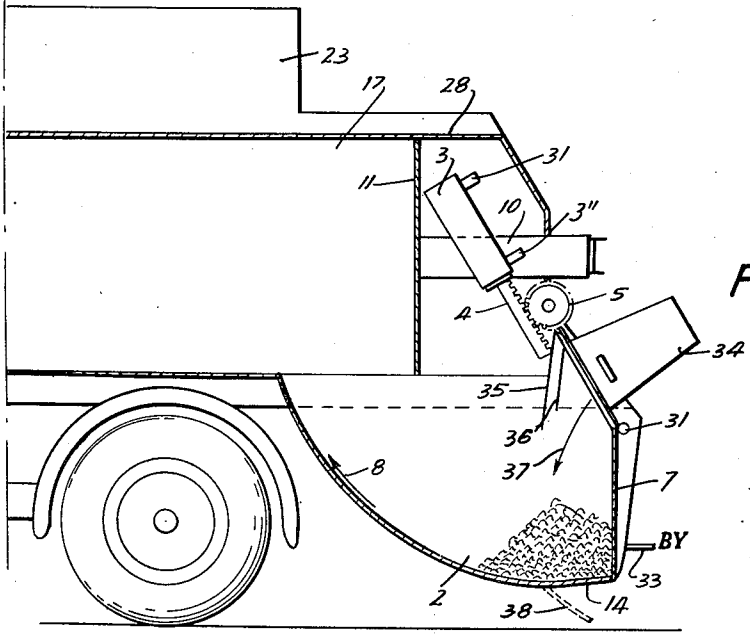


FIG. 6

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REFUSE TRUCK WITH LOAD PACKING MEANS

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4 Claims. (Cl. 214—82)

This invention relates to refuse trucks and more particularly, to refuse trucks incorporating load packing means.

Although there have been various proposals, prior to the time of the instant invention, for a refuse truck incorporating a load packing means, these prior art devices at best merely provided for the gradual forward displacement of the entire mass of refuse contained in the truck so that more refuse could be accommodated in the rear of the vehicle. Although the forward displacement of the mass was effected by means of an advancing wall within the rear compartment of the refuse truck, the prior art devices were such that, in addition to being compelled to move the entire mass of refuse on each occasion, they were also incapable of developing an effective pressure to accomplish the job. Additionally, in the prior art devices, no loading could take place while the refuse already in the truck was being pushed forwards or compressed.

Accordingly, it is one of the primary objects of the present invention to provide a refuse truck having a compression system which allows for the accommodation of unusually large quantities of refuse.

It is another important object of the present invention to provide a refuse truck having a garbage compression system wherein the loading of the garbage is not interrupted during the compression thereof.

It is still a further object of the present invention to provide a refuse truck having load packing means wherein only refuse located at the rear end of the storage compartment is forwardly displaced when it is desired to clear the rear of the truck for more refuse.

Yet another object of the present invention is to provide a refuse vehicle having load packing means wherein loading of any nature can be accommodated in an efficient and practical manner.

Another object of the present invention is to provide a refuse vehicle having load packing means wherein the operators do not come into physical contact with the refuse, and, additionally, wherein the refuse and its associated dust and particles, etc. is confiend to the refuse compartment of the truck and will not escape to the surrounding atmosphere.

With the above objects in view, the present invention mainly consists of a garbage collecting vehicle for the collection of house and street refuse comprising a tipping storage compartment closed on its upperpart by a wall provided with a lower rear part which supports a hydraulic pressure device for displacing garbage from the rear part into the storage chamber and means to move a swinging door disposed above the rear aperture of a garbage depositing chamber which extends underneath

the bottom of the storage compartment, the swinging door being adapted to be placed in a position representing the extension of the bottom of the tipping storage compartment, the hydraulic pressure device being provided with telescopic piston means bearing a plate for forcing the collected garbage on said swinging door towards the transversal front wall.

The invention will be best understood from the following description of specific embodiments when read in conjunction with the accompanying drawings wherein:

Fig. 1 is a side elevation of one embodiment of the device of the present invention;

Fig. 2 is a rear elevation of the device of Fig 1;

Fig. 3 is a side elevation of another embodiment of the present invention which provides for the collection of ashes and other powdery materials;

Fig. 4 is a rear elevational view of the device of Fig. 2;

Fig. 5 is an enlarged fragmentary detail, partly in section, of the swinging door assembly shown in Fig. 1; and

Fig. 6 is an enlarged fragmentary detail, partly in section, of the swinging door assembly shown in Fig. 3.

Fig. 7 is a sectional view of hydraulic piston **10**.

Referring to the drawings and more particularly to Fig. 1 thereof wherein a refuse truck is shown incorporating the device of the instant invention. A refuse depositing chamber **2** mounted at the rear of storage compartment **17** and depending from the bottom wall thereof is provided to initially receive the refuse mass which flows during operation in the direction of the arrow marked **1**. An opening is formed in the bottom wall of compartment **17** adjacent the forwardmost part of chamber **2** so that the two chambers are in communication with one another. A door **7** forms the rear wall of depositing chamber **2** and is in operative interconnection with hydraulic pressure piston **3** mounted in the rear of the vehicle above depositing chamber **2**. Rack or toothed bar **4** is movably interconnected with piston **3** and meshes with gear **5** to cause door **7** to swing forwardly so as to pass through depositing chamber **2** or swing rearwardly of the said chamber. The telescopic hydraulic piston **10** mounted at the rear of storage compartment **17** is operatively interconnected with movable plate **11** so as to cause the plate **11** to advance within storage compartment **17**.

When depositing chamber **2** is loaded with refuse hydraulic pressure piston **3** is actuated, causing toothed bar **4** to mesh with gear **5**, thereby setting swinging door **7** into movement in the direction of the arrow **8**. It is in this fashion that garbage is introduced into storage compartment **17**.

At this time, by means of a telescopic hydraulic piston **10**, the plate **11** is caused to advance, moving the refuse in the direction of the arrow **12**.

The swinging door **7**, which in position **12** serves as part of the bottom wall of the storage compartment **17**, returns to its original position **14** after the plate **11** passes location **16** and in this way, the depositing chamber **2** is emptied and the refuse moved towards the front of storage compartment **17**, while the swinging door **7** moves from the position designated at **13** in Fig. 1.

While the depositing chamber **2** is being filled, the plate **11** moves in the direction of the arrow **12**, pressing the garbage inside the storage compartment at **17**. Shortly before the depositing chamber **2** is filled up to a predetermined level, the plate **11**, in the meantime having finished its function of compressing the garbage,

returns quickly into its original position 15 and the cycle of movement of the swinging door 7 and the plate 11 is repeated, as described above. The wall, i. e. the inclined bottom 18 in front of the storage compartment 17, contributes to displacing the garbage during compression by causing the garbage to move in the direction of the roof of the storage compartment, in this way causing the storage compartment to be totally filled.

In case it is necessary to shovel the garbage from the street, in order to carry out this task without the necessity of lifting the shovel not more than a few centimeters from the ground, the swinging door 7 is displaced by means of the mechanism as mentioned above and sustained in its position 19 so that the depositing chamber 2 in the rear part of the vehicle remains completely open to receive the shovel loads of refuse. Once the storage chamber 2 being filled up to a predetermined level, the cycle of movement of the swinging door 7 and of the plate 11, as described above, is repeated, only with the difference that the initial position of the swinging door 7 is in 19 instead of in 14. Thus, this vehicle perfectly designed to receive the contents of garbage cans, may also give practical results when shoveling garbage from the ground, due to the fact that only a few centimeters of lifting distance is required.

In order to be able to introduce the garbage directly from the ground into the depositing chamber, there is disposed a lowerable bottom flap 38, which is hingedly connected to the side walls of the depositing chamber.

As described above, the movement of the swinging door 7 as well as that of the plate 11 is carried out by means of the piston 3 and the telescopic piston by means of a pressure liquid. However, mechanical elements such as, for example, a telescopic wheel spindle and gear movement operated from the axis of the motor of the vehicle or by human power if the vehicle is a horse car, is also applicable.

The telescopic piston 10 is most conveniently put into operation by means of a pressure liquid moved by a pump which provides for the automatic adjustment of the pressure and volume of the liquid in accordance with the resistance which the plate 11 has to overcome, so that the latter is moved quickly when the resistance is small and moves slowly in the moments of maximum compression. All these operations are carried out with the same absorption of energy from the pump for the pressure liquid, conveniently put into action from the axis of the motor of the vehicle itself.

The vehicle is unloaded from one of its sides, as shown in Fig. 2, by opening the side door 20 and laterally pivoting the storage compartment on the chassis around point 21, putting into use the telescopic hydraulic piston 22. Additionally, on the roof of the storage chamber one or two compartments may be provided, as marked (23), in order to accommodate large objects which might have been left together with the garbage, or also in order to be able, if necessary, to separately load certain objects which have been separated from the garbage. To make the loading easy, a ladder 24 is attached, and for the unloading one or more (according to the quantity of compartments) side doors are provided.

In this way exists the advantage of unloading one or all of these compartments 23 in one place, the general load of the vehicle being unloaded somewhere else.

The vehicle for collecting refuse primarily composed of combustion ashes is represented in Fig. 3 and in Fig. 4.

The vehicle is essentially identical with the one shown in Figs. 1 and 2 and described before, the movement of the swinging door 7, and plate 11 being the same along with all other observations related to the compartments for large objects and the way of unloading them. The difference lies in the hermetic closing off of the depositing chamber so as to prevent the spreading of dust during unloading. Accordingly, the chamber situated above the depositing chamber is closed by means of walls 26, 27 and 28, and the depositing chamber itself is closed off by an inclined wall 29 which forms a uniform part with the swinging door 7.

For the operation of unloading the garbage cans there is provided a certain quantity of wings 30 (in Fig. 4 3 of them are visible), movable rotatively with articulation 31 where the wall 29 and the swinging door 7 join, adapted to hermetically connect to the garbage can 32 which in this moment is set down upon some of the supports 33 fixed in the swinging door 7.

Once a garbage can is connected to one of the wings 30, the wing is revolved around articulation point 31, until it is folded on the wall, the can in such a moment being situated in the position marked 34. At this stage of the process, by means of an outside mechanism, the caps 35 of the walls 29 and 36 of the wing 30 are opened, the garbage evacuating in the direction of the arrow 37 into the primary recipient.

Before disconnecting the garbage can, the cap 35 of the wall 29 is closed, and the wing comes back to its horizontal position in order to connect another garbage can. The hydraulic pressure piston 3, the telescopic hydraulic piston 10 and the telescopic hydraulic piston 22 are operatively controlled by selectively operating means as shown in Figs. 1 and 3.

In this way the escape of any dust resulting from unloading of the garbage cans is positively eliminated. Once the depositing chamber is filled, the contents of it is displaced towards the storage compartment of garbage in a way identical to the one described above.

Having described and determined particularly the nature of the present invention and in what manner the same is to be performed I declare that what I claim is:

1. A garbage collecting vehicle for the collection of house and street refuse comprising a tipping storage compartment closed on its upperpart by a wall provided with a lower rear part which supports a hydraulic pressure device for displacing garbage from the rear part into the storage chamber and means to move a swinging door disposed above the rear aperture of a garbage depositing chamber which extends underneath the bottom of the storage compartment, the swinging door being adapted to be placed in a position representing the extension of the bottom of the tipping storage compartment, the hydraulic pressure device being provided with telescopic piston, means bearing a plate for forcing the collected garbage on said swinging door toward the transversal front wall.

2. A garbage collecting vehicle for the collection of house and street refuse comprising a tipping storage compartment provided on its rear part with a depositing chamber having an arcuated bottom which extends underneath the bottom of the storage compartment, the upperpart of the storage chamber is closed by a wall provided with a lower rear part which supports an obtuse angled swinging door disposed above said depositing chamber, hydraulic means for moving said swinging door from the outside of the depositing chamber into a straight line position with the bottom of the storage chamber, a hydraulic pressure device mounted on said lower rear part and provided with telescopic pressure means bearing a plate for forcing the collected garbage on said swinging door towards the front wall of the storage compartment, selectively operating means for said hydraulic means and telescopic pressure means, the obtuse angled swinging door being provided on its upper pivoted arm with one or more closable openings and its lower free arm with supporting means for at least one garbage recipient.

3. A garbage collecting vehicle for the collection of house and street refuse according to claim 1 wherein the garbage depositing chamber is provided on its lower part with retaining means for an additional displaceable bottom.

4. A garbage collecting vehicle for the collection of

house and street refuse according to claim 1 and including a tipping means which will laterally tip the storage compartment in a sidewise manner.

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