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[54] **PERMANENT GARBAGE DISPOSAL APPARATUS FOR DISPOSAL OF LARGE VOLUMES OF GARBAGE**

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[51] **Int. Cl.** **B02c 4/08,** B02c 13/18

[58] **Field of Search**.....241/42, 43, 46.11, 46.17, 60, 241/98, 101, 227, 235, 152 R, 152 A

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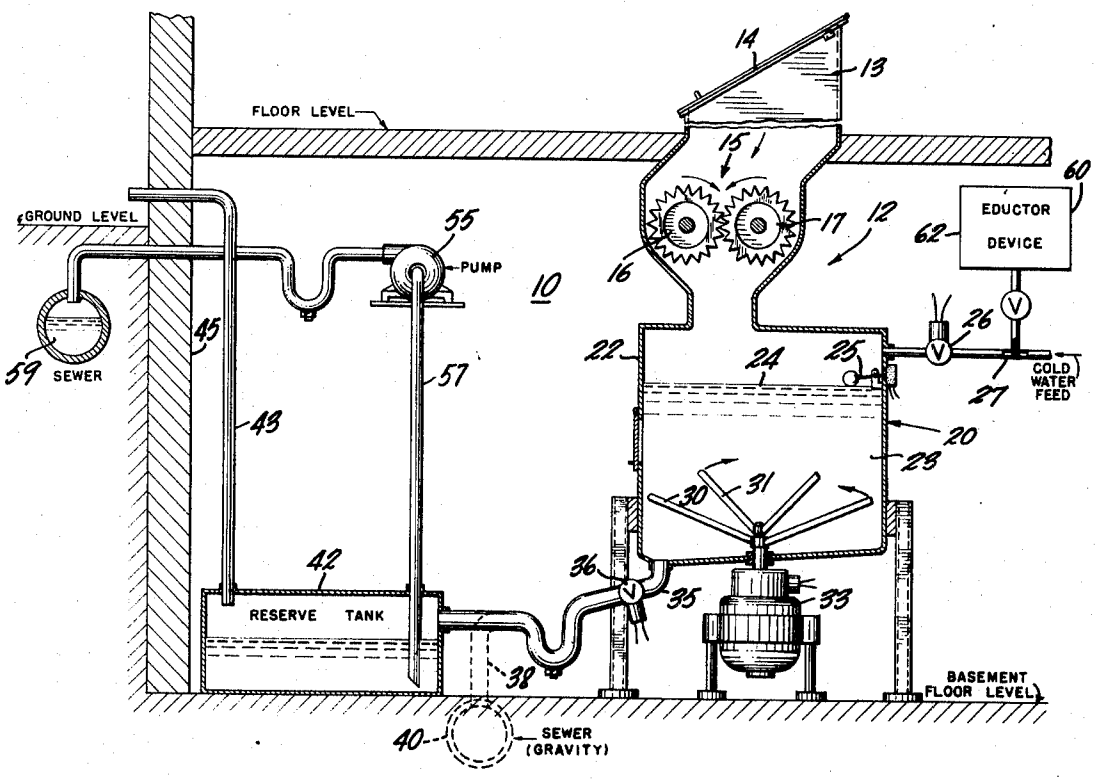
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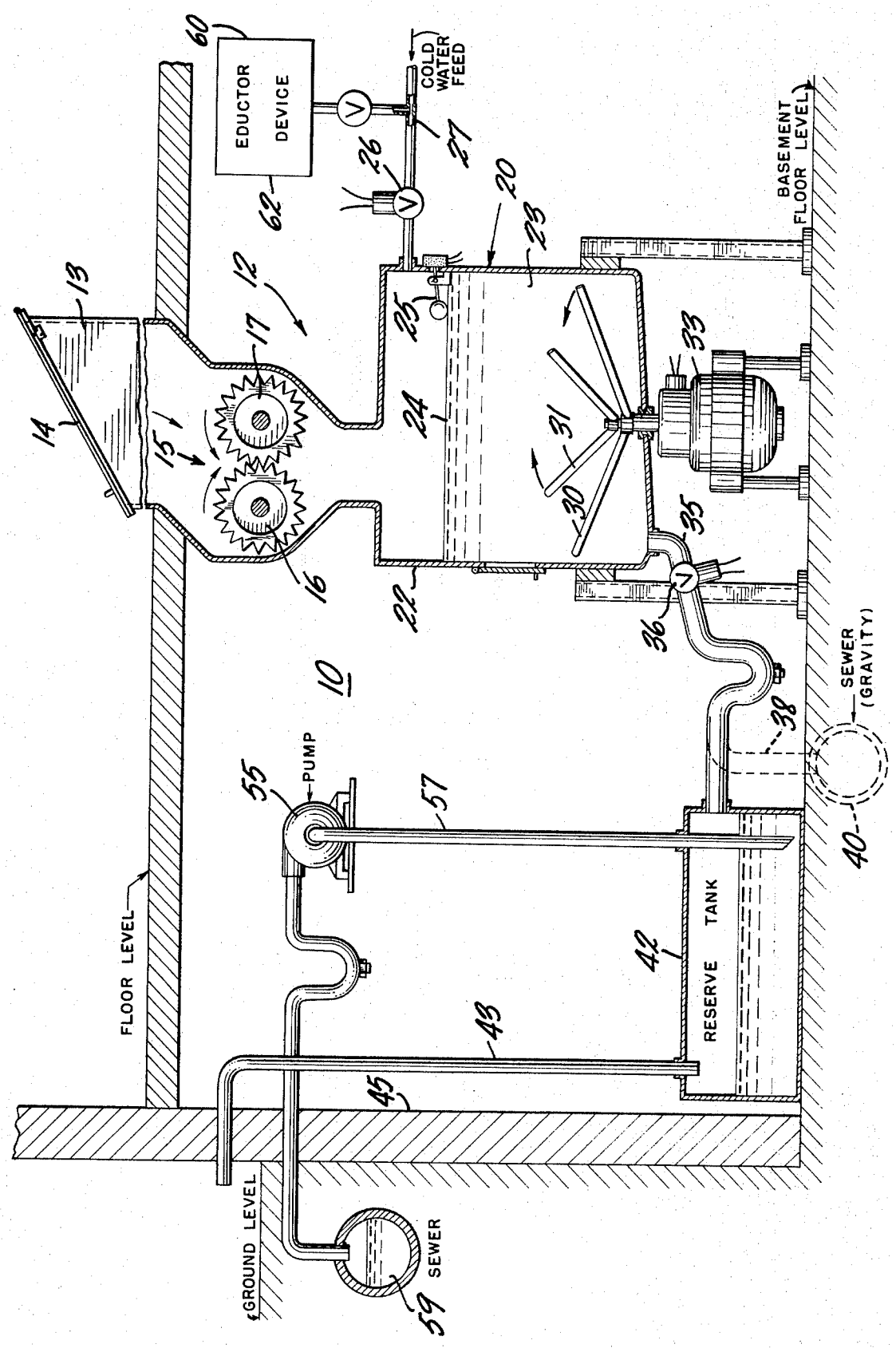
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[57] **ABSTRACT**

A garbage disposal apparatus permanently installed in a building for grinding bulk garbage in large quantities and blending the ground garbage in a water bath and disposing of the blended mixture in a sewer line. The apparatus is provided with a bulk garbage feed and grinder device and a permanently installed blender having sets of large blades driven counter-rotationally in a water bath for blending garbage discharged from the feed and grinder device to the blender.

3 Claims, 1 Drawing Figure




EDUCTOR DEVICE
COLD WATER FEED
BASEMENT FLOOR LEVEL
PUMP
SEWER (GRAVITY)
FLOOR LEVEL
RESERVE TANK
GROUND LEVEL
SEWER
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PERMANENT GARBAGE DISPOSAL APPARATUS FOR DISPOSAL OF LARGE VOLUMES OF GARBAGE

This invention relates generally to garbage disposal and more particularly to a permanently installed garbage disposal apparatus for disposal of garbage in large quantities or volumes.

Many garbage disposal apparatus are known. These garbage disposal apparatus are generally compactor apparatus that shred or comminute the bulk garbage and then compact it to a reduced volume. These known devices generally employ the use of a mill for comminuting the garbage and then compact the waste material either with a hydraulic ram or a helical screw. The known devices have several limitations in that the compacted material must be disposed of even though the volume of the initial garbage treated is greatly reduced. Moreover, the hydraulic devices have considerable maintenance problems and the helical screw devices, while eliminating some maintenance, require replacement of the helical compactor screw.

It is a principal object of the present invention to provide a permanently installed garbage disposal unit or apparatus capable of handling large volumes of bulk garbage and disposing of it without further handling.

Another object of the present invention is to provide a garbage disposal apparatus disposing of wet or dry organic and inorganic waste material or garbage in large quantities through the conventional sewer system of a city.

The garbage disposal apparatus, according to the invention, comprises a large grinder to which waste material or garbage is delivered in large volumes. The grinder has rolls that grind the garbage and discharge it into a blender. The blender has a large volume tank or container containing a large volume or bath of water into which the ground garbage is discharged. The blender is provided with sets of blending blades driven rotationally by an electric motor. These blades break up the larger particles of garbage received and effect blending of organic and inorganic matter reducing the material to reduced size particles so that the garbage can be disposed of through a sewer line by discharging the water from the blender.

Other features and advantages of the apparatus in accordance with the present invention will be better understood as described in the following specification and appended claims in conjunction with the drawing constituting a elevation view, partly in section, of apparatus according to the invention.

As shown in the drawing, a basement **10** of a building houses the garbage disposal apparatus **12** according to the invention. As illustrated a garbage chute provided with a cover **14** is provided above the basement floor level for receiving garbage to be disposed of. It is assumed, for example, that the building is a very large apartment house from which large quantities of bulk wet and dry, organic and inorganic waste material or garbage is gathered and delivered to the chute **13**. The chute **13** is permanently installed and may be connected to an incinerator or may be constructed to provide an incinerator itself. The garbage received in the chute is delivered to a garbage grinder and feed device **15** comprising grinding rolls **16, 17** rotationally driven by an electric motor, not shown. The grinding mechanism is illustrated diagrammatically as toothed

rolls that have teeth meshing for grinding and crushing the solid materials of the garbage which is discharged from the grinder into a blender **20**.

The blender comprises a tank or container **22** in communication with the grinder and in which a large volume or bath of water **23** is maintained at a level **24** controlled by a float device **25** controlling an electric feed valve **26** in a water feed line **27**. The blender is provided with two sets **30, 31** of counter-rotating blending blades mounted on coaxial shafts driven by an electric motor **33** permanently installed under the tank **22**.

The blender blades **30, 31** are constructed of sufficient strength, for example of a metal, so that large particles of organic and inorganic waste material are blended or comminuted in the bath of water so that the water and mixture of particles may be readily discharged from the blender tank **22**.

The blended mixture contained within the tank **22** is discharged through a line, for example a four inch line, **35** under control of an electrically controlled valve **36** operated from a control panel, not shown. The discharge line **35** may be connected through a connecting line **38** shown in broken lines for discharging to a sewer line **40** by gravity.

In the event the sewer line is above the level of the outlet of the blender the installation is as shown in solid lines in which case the discharge line **35** discharges into a reserve tank **42** provided with a vent **43** venting to the outside of the building through a wall **45**, as illustrated. A pump **55** provided with a suction line **57** takes a suction from the reserve tank **42** and discharges through a sewer line **59** which is higher than the blender so that discharge from the blender cannot be effected by gravity as in the case before described.

Since in many localities or municipalities the sewer lines discharge into a body of water, for example a river, the apparatus is provided with an eductor device **60** illustrated diagrammatically for delivery of concentrated marine food or a scent material provided from tank **62**. This device can be constructed as an eductor which delivers a proportionate amount of marine life food or scent, depending on what is contained in the device, in accordance with the volume of water delivered through the feed line **27**.

Those skilled in the art will recognize that the apparatus eliminates the burning of garbage, the necessity of collecting the garbage in the usual way and is constructed for disposing of garbage with a minimum of handling thereof. Moreover, the control system of the apparatus, not shown, provides for automatic starting and stopping of the grinder or manual control thereof, as well as automatic and manual control of starting and stopping of the blender motor and the intake and discharge valve.

What I claim and desire to be secured by letters patent is:

1. A permanently installed garbage disposal apparatus for use in a building comprising, a garbage feed device comprising grinder means comprising rotationally driven toothed grinder rolls for grinding large volumes of wet and dry, organic and inorganic solid waste material, means to deliver wet and dry organic bulk solid waste material to said garbage grinder, a blender receiving ground waste material discharged

from the garbage feed and grinder device, said blender comprising a stationarily mounted enclosed tank containing in operation a volume of water therein into which the waste material from said garbage grinder is discharged, means to supply water into said tank and rotationally driven blending blades disposed in said tank immersed in said water in operation for breaking up and comminuting the solid waste material and blending the waste material received in said tank, means to rotationally drive said blending blades, means to discharge water and the blended waste material from said tank, said blending blades comprising two sets of metallic blades driven counter-rotationally, said means to drive the blades comprising an electric motor and two coaxial drive shafts driven in opposite directions by said electric motor and said garbage feed and grinder device having a discharge disposed on said tank above said blending blades.

2. Garbage disposal apparatus according to claim 1, in which said means to discharge water and waste material from said tank comprises means connecting said tank to a sewer line.

3. Garbage disposal apparatus according to claim 1, including means to supply to said tank feed material for fish discharged therefrom jointly with said water and blended waste material.

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