United States Patent [19]

Wagley

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[54] **LANDFILL CRUSHER**

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[52] **U.S. Cl.**..... **100/73,** 100/100, 100/153, 198/102, 214/520, 241/223

[51] **Int. Cl.**..... **B30b 15/30**

[58] **Field of Search**..... 100/73, 74, 75, 41, 100, 100/144, 151, 152, 153; 214/520, 521, 522; 241/101.7, 223; 198/82, 102

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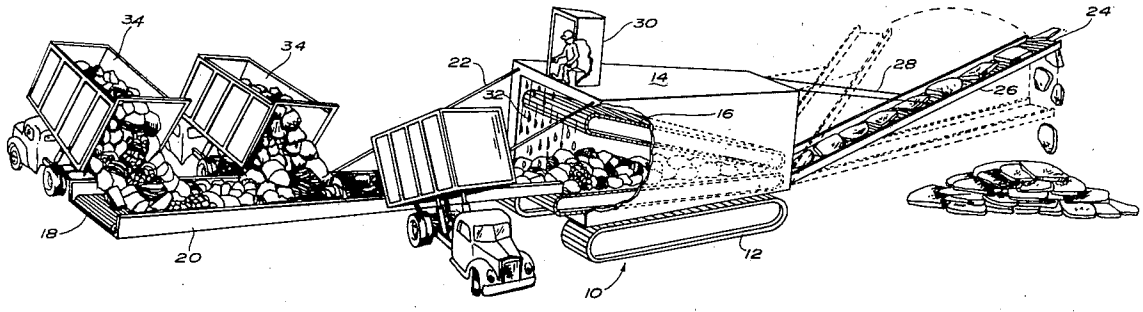
Primary Examiner—Billy J. Wilhite

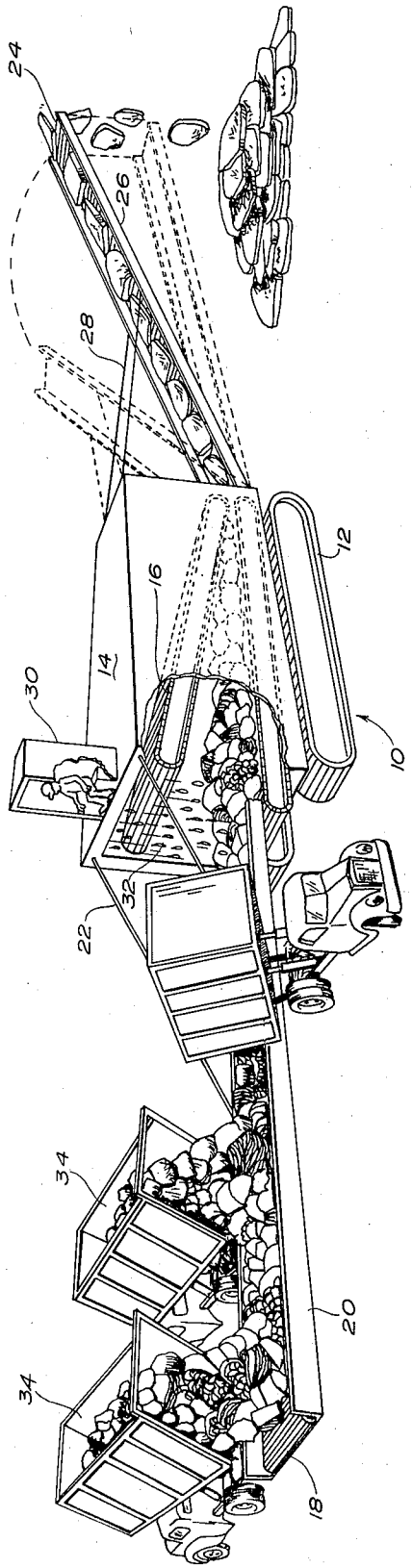
Attorney, Agent, or Firm—Wendell Coffee

[57] **ABSTRACT**

Garbage is conveyed to a landfill by dump trucks. At the landfill it is dumped from the trucks onto a belt conveyor where it is conveyed to a crusher; from the crusher it is conveyed by a swinging belt conveyor to the particular portion of the landfill where it is desired to be deposited. The crusher and two conveyors are mounted upon a track-laying vehicle so that as one part of the land is filled, the crusher is moved as a unit.

5 Claims, 1 Drawing Figure




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LANDFILL CRUSHER

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to garbage handling and more particularly to a landfill crusher.

2. Description of the Prior Art

Present commercial practice is to convey garbage to a landfill area. There the garbage is dumped upon the ground and then crushed by rolling over it with a track-laying vehicle. The crushed garbage is covered with a layer of dirt.

Also, it has been suggested that garbage could be taken to a central station and there dumped and then at the central station it be dragged into crushers and crushed, baled and then removed from the central station in the crushed form to a landfill area where it is placed upon the land and covered with earth.

I have a previous patent, U.S. Pat. No. 3,691,942 issued Sept. 19, 1972, wherein the material (cans, refuge, etc.,) is crushed between two moving belts. The belts are in the form of chains with plates attached thereto.

SUMMARY OF THE INVENTION

1. New and Different Function

I have invented a giant landfill crusher which is adapted to more efficiently receive, crush and place the garbage than the present practice. The crusher is mounted on a track-laying vehicle so it can be readily positioned at the desired location in the landfill area. An intake belt conveyor is attached to the vehicle and suspended therefrom. It is long enough to accommodate several (e.g., six) trucks dumping garbage onto the belt. After the garbage is crushed by a continuous crushing process, the crushed garbage is conveyed to a swinging placement conveyor which can swing from side to cover a large area of earth. After the desired depth has been filled, the dirt can be placed over the garbage as is standard practice in the art.

2. Objects of this Invention

An object of this invention is to dispose of garbage in a sanitary landfill.

Further objects are to achieve the above with a device that is sturdy, durable, simple, safe, efficient, versatile, and reliable, yet inexpensive and easy to manufacture, operate, and maintain.

Other objects are to achieve the above with a method that is versatile, rapid, efficient, and inexpensive, and does not require skilled people to adjust, operate, and maintain.

The specific nature of the invention, as well as other objects, uses, and advantages thereof, will clearly appear from the following description and from the accompanying drawing.

BRIEF DESCRIPTION OF THE DRAWING

The drawing is a perspective view of an embodiment of this invention with parts broken away for clarity.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring more particularly to the drawing, vehicle **10** is supported by a continuous track **12**; therefore, it is a track-laying vehicle. The elements of the track **12** form a plurality of ground engaging elements. The track **12** provides a means for the vehicle **10** to propel

itself from one location to another, in a direction of travel.

Housing **14** is mounted upon the vehicle **10.** The housing **14** encloses crusher **16.** The crusher **16** is of the type that has crusher elements that continually move toward one another so the material is crushed and flattened therebetween. This type crusher is more fully disclosed on a small scale in my issued U.S. Pat. No. 3,691,942 mentioned above.

Intake belt conveyor **18** is mounted upon intake trough **20.** The inboard end of the trough is pivoted to the housing **14** by trunnions (not shown). The means for powering the conveyor **18** are not illustrated, but would be well within the skill of ordinary mechanics. A hydraulic or electric motor powered by the power plant of the crusher **16** within the housing **14** on the vehicle **10** could be used. Cables **22** extend from the top of the housing **14** to the intake trough **20** to support the intake conveyor **18.** The distal end of the intake trough **20** is shown as above the ground, however, it will be understood that the cables **22** could be played out so the distal end of the intake trough could rest upon the ground, particularly when the vehicle is stationary. As illustrated, the intake trough **20** extends in the direction of travel in use. Therefore, the vehicle **10** may be moved even if trucks **34** were maneuvering into dump position.

Swinging placement belt conveyor **24** is mounted to the housing **14** for swinging from side to side. It likewise is mounted in placement trough **26** which is at least partially supported by cables **28.** As illustrated, it may not only be raised and lowered, but it may be swung from side to side. Therefore, there is a great deal of choice by the operator as to where the crushed garbage is placed in the landfill.

The operator occupies operator's station **30** on top of the housing **14** at the inlet of the crusher **16** which is the point the intake conveyor **18** delivers the garbage onto the crusher. A water system pumps water from the top of the housing **16** at the intake opening to the crusher **16** to form a water screen **32** to prevent dust from rising during the crushing operation. Also, the addition of the water aids in more efficient crushing of certain types of garbage.

Although only three trucks **34** are shown dumping garbage upon the intake conveyor **18** in the drawing, it will be understood there is sufficient room for six trucks to be in position at one time. In operation, it is not contemplated that all six trucks would be dumping garbage at one time, but some could be positioning themselves to dump garbage, others could be in the process of actually dumping garbage onto the intake conveyor while others could be moving away.

Inasmuch as the intake conveyor **18** and the placement conveyor **24** are suspended from the housing **14,** which encloses the crusher **16,** it will be understood that when the vehicle **10** moves under its own power, the entire operation will be moved as a unit.

I have not considered it necessary to show details of construction inasmuch as those ordinarily skilled in the building of large equipment will understand how to structurally place the housing upon the vehicle and how to arrange power units, controls, etc.

The embodiment shown and described above is only exemplary. I do not claim to have invented all the parts, elements or steps described. Various modifications can be made in the construction, material, arrangement,

and operation, and still be within the scope of my invention. The limits of the invention and the bounds of patent protection are measured by and defined in the following claims. The restrictive description and drawing of the specific example above do not point out what an infringement of this patent would be, but are to enable the reader to make and use the invention.

I claim as my invention:

1. A machine to crush garbage and fill land comprising:

a. a vehicle having front and rear ends and

i. a plurality of ground engaging elements, forming

ii. means to propell itself from one location to another in a direction of travel,

iii. rotary crusher elements that continually move toward one another mounted on said vehicle and extending within the confines of said vehicle forming means for crushing and flattening material therebetween,

b. a belt intake conveyor suspended from the front end of said vehicle adapted to have garbage dumped from trucks thereinto, said conveyor extending in said direction of travel in use,

c. said belt intake conveyor forming means for feeding garbage to said crusher elements, and

d. a belt placement conveyor which

e. forms means for conveying crushed garbage from the vehicle to the land to be filled,

f. said belt placement conveyor being suspended from the rear end of said vehicle.

2. The invention as defined in claim **1** wherein

g. said vehicle is in the form of a track-laying vehicle and

h. said ground engaging elements are in the form of continuous track.

3. The invention as defined in claim **1** with additional limitations of

g. said crusher elements being enclosed within a housing on said vehicle enclosing said rotary crusher elements and

h. a water screen at the intake of the housing.

4. The invention as defined in claim **3** with an additional limitation of

j. an operator's station mounted upon the housing above the water screen.

5. The invention as defined in claim **4** wherein

k. said vehicle is in the form of a track-laying vehicle and

m. said ground engaging elements are in the form of continuous track.

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