

PHILCO CORPORATION

PHILADELPHIA 34
PENNSYLVANIA

October 24, 1958

(9508)

Mr. C. U. Gramelspacher,
Jasper Wood Products Co., Inc.,
Jasper, Indiana.

Re: Your Letters of September 26 & 27, 1958,
on Patented Means for Disposal of Bottles,
Cans, etc.

Dear Mr. Gramelspacher:

According to Philco's general policy with respect to ideas and patents of persons outside its own organization, your letters were referred to this department for consideration and reply.

We have to advise that on the one hand we have noted numerous patents in the general field indicated by your letter and that on the other hand Philco has not thus far manufactured and marketed apparatus of this kind. However, if you care to send us a copy of your patent we shall take pleasure in studying it, in order to determine the answer to your question whether Philco will be interested in it.

Thank you for submitting the matter to Philco.

Very truly yours,

PHILCO CORPORATION

Frank D. Prager

Frank D. Prager
Patent Department

FDP:phm
cc: Mr. T. K. Decker

(Handwritten mark)

Bob

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Philco
file*

*went for copy to
Patent*

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(Large handwritten mark)

PHILCO CORPORATION

PHILADELPHIA 34
PENNSYLVANIA

October 27, 1958

October 24, 1958

(9508)

Mr. C. U. Gramelspacher,
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Re: Your Letters of September 26 & 27, 1958,
on Patented Means for Disposal of Bottles,
Cans, etc.
Mr. Frank D. Prager
Patent Department
Philco Corporation
Tioga & "C" Street
Philadelphia, Pennsylvania

Dear Mr. Prager:

Dear Mr. Prager:

According to Philco's general policy with respect to ideas and patents of persons outside its own organization, your letters were referred to this department for consideration and reply.

Thanks very kindly for yours of October 24th.

In reply would like to say that I am sending for a copy of the patent of the bottle and can disposal and upon receipt of same will forward it to you.

Thanking you very kindly for your consideration, I am
Very sincerely yours,

Thank you for submitting the matter to Philco.

C. U. Gramelspacher
Very truly yours,

CUG/rm

PHILCO CORPORATION

Frank D. Prager

Frank D. Prager
Patent Department

FDP:phm
cc: Mr. T. K. Decker

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Prager
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Prager*

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NOV-6-1958

JASPER WOOD PRODUCTS COMPANY, Inc.

MANUFACTURERS OF

PLYWOOD, TOPS  AND PANELS

JASPER, INDIANA

November 4, 1958

GENERAL OFFICE
AND PLANT NO. 1
TELEPHONES 132, 211, 579
JASPER, INDIANA

PLANT NO. 2
TELEPHONE 3515
WATSONTOWN, PA.

C. U. GRAMELSPACHER
MANAGER

United States Patent Office
Washington, D. C.

Gentlemen:

Enclosed please find \$.50 for which
please send us two copies of Patent No. 2,763,202
issued to Mr. C. U. Gramelspacher September 18,
1956.

Thanking you very kindly, I am

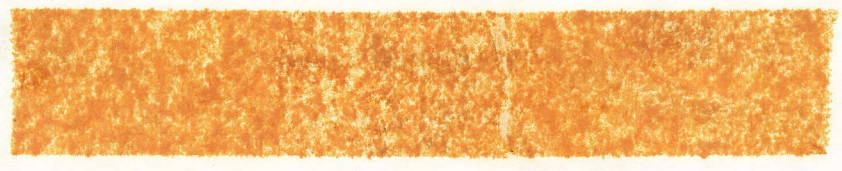
Very sincerely yours,

C. U. Gramelspacher
C. U. Gramelspacher

*Patent
file*

CUG/rm

Enc.



Sept. 18, 1956

C. U. GRAMELSPACHER
APPARATUS FOR WASTE DISPOSAL

2,763,202

Filed Sept. 6, 1952

2 Sheets-Sheet 1

FIG-1

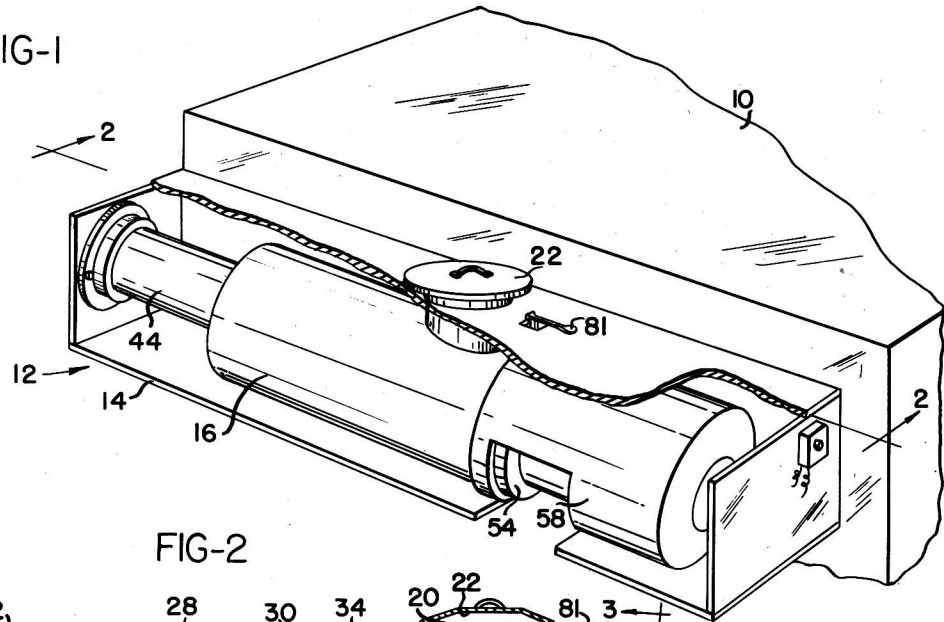


FIG-2

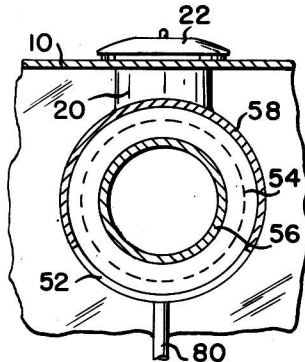
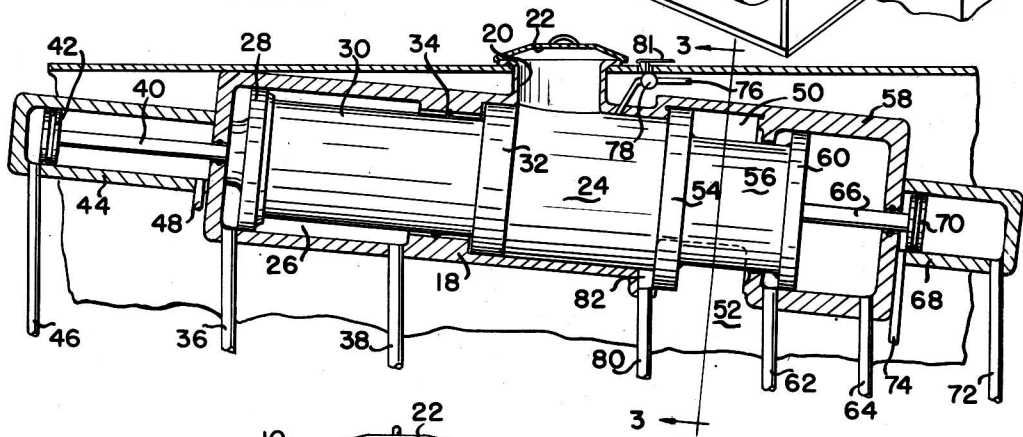


FIG-3

INVENTOR.
CLARENCE U. GRAMELSPACHER
BY *Joulman & Joulman*
ATTORNEYS

Sept. 18, 1956

C. U. GRAMELSPACHER

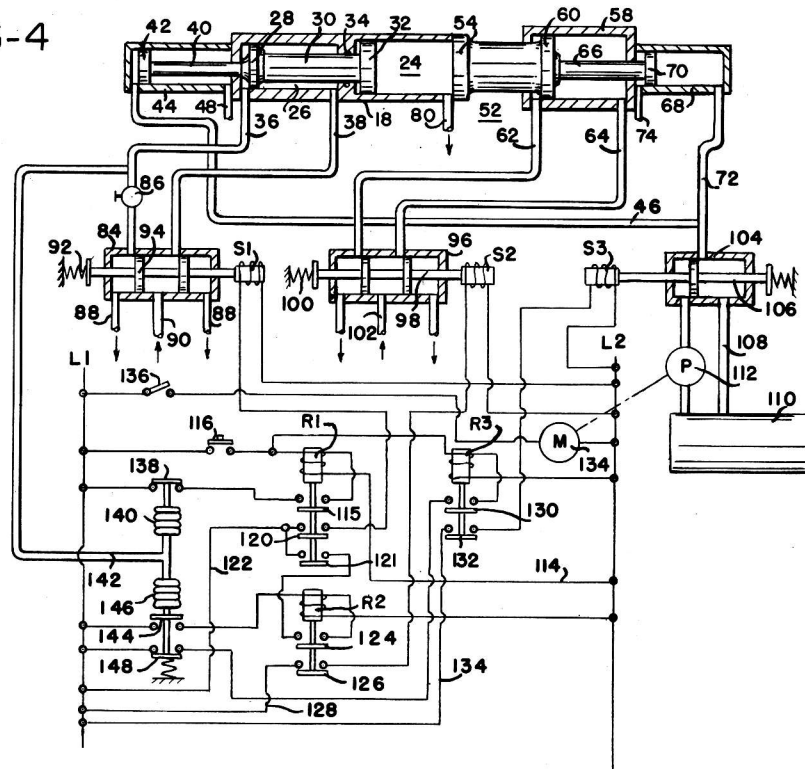
2,763,202

APPARATUS FOR WASTE DISPOSAL

Filed Sept. 6, 1952

2 Sheets-Sheet 2

FIG-4



INVENTOR.
CLARENCE U. GRAMELSPACHER
BY *Lawrence & Lawrence*
ATTORNEYS

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2,763,202

APPARATUS FOR WASTE DISPOSAL

Clarence U. Gramelspacher, Dubois County, Ind.

Application September 6, 1952, Serial No. 308,255

3 Claims. (Cl. 100—52)

This invention relates to a waste disposal unit, particularly to a unit of this nature for domestic use especially in the kitchen.

A piece of kitchen equipment which has lately become popular and which is highly useful is a garbage disposal unit which will receive garbage and other waste which can readily be comminuted to a small enough size to be washed down a drain, and will comminute the garbage and waste and thus permit it to be flushed away down a drain. However, there is always a great deal of waste materials about a kitchen which cannot be disposed of in this manner. Waste materials of this nature might comprise jars, bottles, empty cans, papers, and other materials which sometimes form considerable bulk and which cannot be disposed of in a regular garbage disposal unit.

Having the foregoing in mind it is a primary object of this invention to provide a unit which will be especially adapted for the disposing of waste, particularly kitchen waste, which cannot be handled in the usual garbage disposal unit.

Another object of this invention is the provision of a waste disposal unit especially adapted for handling substantially dry waste that can be employed in a combination with a garbage disposal unit to form substantially a complete waste disposal unit for a kitchen.

Still another object of this invention is the provision of a unit for compressing and compacting waste, particularly domestic waste other than garbage and the like, into relatively small, compact bricks which can readily be handled and disposed of.

A still further object is the provision of a waste disposal unit of the nature described which is relatively small and compact, but which is highly efficient in operation.

The foregoing objects, and still other objects and advantages of this invention will become more apparent upon reference to the following specification taken in connection with accompanying drawings in which:

Figure 1 is a perspective view showing one end of a kitchen cabinet sink having a unit according to my invention mounted at one end thereof and with the outer housing of the unit partly broken away;

Figure 2 is a vertical longitudinal section through the waste disposal unit of Figure 1 and is represented by line 2—2 of Figure 1;

Figure 3 is a cross sectional view indicated by line 3—3 of Figure 2; and

Figure 4 is a more or less diagrammatic representation of the operating circuit for the disposal unit and the electric control system therefor.

Referring to the drawings somewhat more in detail in Figure 1, there is illustrated at 10 a cabinet such as the cabinets in which domestic sinks are mounted.

At one end of the cabinet 10, there is mounted the disposal unit according to this invention identified generally by reference numeral 12 and consisting of an outer housing 14 within which is mounted the disposal unit proper, 16.

Reference to Figure 2, will indicate that the disposal

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unit proper comprises a main cylindrical casing 18 having a central chamber 24 into which there opens the vertical feed chute 20 having the manually removable cover 22.

5 Leftwardly of the central chamber 24 of the unit is a fluid motor comprising a cylinder 26 within which is reciprocally mounted a piston 28 that is attached to a ram 30 that extends through the right end wall of cylinder 26 to have connected therewith the compacting head or piston 32 within chamber 24. Suitable packing means such as is represented by the resilient annular O-ring 34 is provided about ram 30 to prevent leakage of fluid from cylinder 26.

10 At the left end of cylinder 26 is a conduit 36 and at the right end of the cylinder is a conduit 38 into which conduits fluid under pressure, such as water, is supplied for reciprocating piston 28 and thus also reciprocating the compacting head 32.

15 Piston 28 also has connected therewith a rod 40 extending leftwardly through the left wall of cylinder 26 and connected with a piston 42 mounted in cylinder 44. Cylinder 44 has connected at its left end a conduit 46 through which fluid under pressure, such as oil is conducted for exerting a thrust on piston 42, while at the right end of cylinder 44 a drain conduit 48 is provided for conducting leakage back to a suitable reservoir means.

20 Chamber 24 at its right end communicates with chamber 50 somewhat larger in diameter and which is opened at the bottom as at 52. A closure member 54 is mounted in chamber 50 and is adapted to abut against the end of casing 18 at the right end of chamber 24 to provide a closure member therefor.

25 Closure member 54 has a second fluid motor associated therewith and to this end closure member 54 has a ram 56 connected therewith leading into a cylinder 58 and wherein the ram carries a piston 60. Conduits 62 and 64 provide means for admitting fluid under pressure, such as water, to cylinder 58 for actuating piston 60 thereby to create a thrust on closure member 54.

30 Connected with piston 60 and extending out the right end of cylinder 58 is a rod 66 that has connected therewith, within cylinder 68, a piston 70. The conduit 72 provides a means for admitting fluid under pressure, such as oil, to the right end of cylinder 68 for exerting a thrust on piston 70 and at the left end of cylinder 68 a drain conduit 74 is advantageously provided.

35 A water pipe 76 leads into the disposal unit at the upper side of chamber 24 and flow therethrough is adapted for being regulated by a valve 78 having an operating handle 81. The end of water pipe 76 is preferably in the form of a nozzle which will provide a spray of water to the inside of chamber 24.

40 It will be noted that the entire unit in Figure 2 is somewhat tilted, and from the lower end of the chamber there leads a conduit 80 for the purpose of draining liquids therefrom that may be pressed from the waste which is placed in chamber 24 for disposal.

45 Conduit 80 preferably communicates with a relatively small sump 82 into which the said liquids to be drained can flow.

50 Turning to Figure 4, there is illustrated therein the fluid operable circuit which supplies pressure fluid to the several pistons described above, and the electric control circuit which controls the operation of the valves regulating the said fluid flow.

55 In Figure 4, it will be seen that conduits 36 and 38 pertaining to piston 28 lead to the two service ports of a four way valve 84, with a regulating valve 86 being provided in conduit 36 for determining the speed of movement of piston 28 as the same is moving toward the right.

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Valve 84 comprises the exhaust or drain conduits 88 and the inlet conduit 90 to which pressure fluids, such as water is supplied. A spring 92 continuously urges the valve member 94 of valve 84 toward position to connect pressure conduit 90 with conduit 38 thereby normally urging piston 28 to its extreme left hand position, while a solenoid S-1 is provided which, when energised, will shift the valve into position to connect pressure conduit 90 with conduit 36 thereby bringing about a movement of piston 28 to the right.

Similarly, conduits 62 and 64 are connected with the service ports of a four way valve 96 having a valve member 98 spring urged in one direction by spring 100 and adapted for being shifted in the opposite direction by energization of a solenoid S-2. Valve member 98 is normally in position to interconnect pressure conduit 102 with conduit 64, whereby piston 60 is urged leftwardly, and energization of solenoid S-2 will shift the valve member to its other position where pressure conduit 62 is connected with conduit 64 to bring about movement of piston 60 toward the right.

The two pistons 42 and 70 have their respective conduits 46 and 72 interconnected and leading to a valve 104 normally spring urged by a spring 106 into position to connect the interconnected conduits 46 and 72 with a drain conduit 108 leading to a reservoir 110. A solenoid S-3 is also associated with valve 104 and, when energized, will shift the valve to interconnect the discharge side of pressure pump 112 with the said interconnected conduits 46 and 72 thereby to supply pressure fluid to pistons 42 and 70 for urging them inwardly. The suction side of pump 112 is connected with reservoir 110 and the fluid in the reservoir is preferably oil.

As to the electric control circuit, also shown in connection with Figure 4, this comprises the power lines, L1 and L2, and connected therebetween by a wire 114 is a relay R1 in series with a normally open start button 116. A blade 115 of the relay is arranged to by-pass the start button 116 to provide a holding circuit for the relay once it has been energized.

The relay R1 also comprises a second blade 120 disposed in a wire 122 leading from line L1 through solenoid S-1 to line L2 whereby energization of relay R1 to close its blades 115 and 120 will not only bring about continued energization of the relay but, also, energization of solenoid S-1. Relay R1 also has a third blade 121 that is normally open and which is in circuit with the coil of a second relay R2.

A second relay R2 is also provided having an operating coil connected between power lines L1 and L2 by a wire leading through a normally opened blade 144 of a pressure operated device comprising the pressure sensitive element 146 that is connected by a conduit 142 with conduit 36 on the piston side of restrictor valve 86.

Relay R2 comprises a first normally opened blade 124 that is in series with the normally opened blade 121 of relay R1. The two blades 124 of relay R2, and 121 of relay R1 are in series between power lines L1 and L2, thus providing a holding circuit for relay R2 when both relays R1 and R2 are energized.

Relay R2 also comprises a normally opened blade 126 in wire 128 that leads from power line L1 through the said blade and through solenoid S-2 to power line L2.

Arranged in parallel with relay R1 is a third relay R3 having a first blade 130 adapted for providing a holding circuit for the said relay, and a second blade 132 disposed in a wire 134 that leads through solenoid S-3 to line L2, so that energization of relay R3 will bring about energization of solenoid S-3.

The pump 112 is arranged to be driven by a motor 134 which is adapted for energization by the closing of a manually operated switch 136. This provides for operation of motor 134 and pump 112 only when it is desired to utilize the pressure from pump 112.

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The holding circuit for relay R1, of which blade 115 forms a part, also includes a normally closed blade 138 connected for being moved to open position by a bellows or other suitable pressure responsive expansible chamber means 140 that is connected by the conduit 142 with the cylinder side of regulating valve 86. Similarly, the holding circuit for relay R2 and of which blade 124 forms a part, also includes the normally open blade 144 that is adapted for being urged to closed position by a bellows or other suitable pressure responsive expansible means 142 also connected with conduit 146 to receive pressure therefrom.

Bellows 146 is also adapted for operating a normally closed blade 148 into open position and which blade forms a part of the holding circuit for relay R3, and which holding circuit also includes the blade 130 of R3.

In operation, with the entire electric circuit de-energized, but with water under pressure, as from the domestic supply mains, being supplied to conduits 90 and 102, the several parts of the disposal unit will occupy the positions in which they are illustrated in Figures 2 and 4. At this time, individual items of waste or trash which it is desired to dispose of, can be introduced to chamber 24, through vertical chute 20 by removing the cover 22. As mentioned before, such items of waste can be paper, cans, bottles, or any other sort of waste, which cannot be handled through the garbage disposal unit.

After sufficient waste has been introduced to the chamber 24 to require a compacting cycle, the switch 116 is closed.

Closing of switch 116 will bring about energization of relays R1 and R3 and the closing of the blades thereof. Closing of blade 120 of R1 will bring about energization of S1 and shift valve member 94 of valve 84 to commence the supply of pressure fluid to the left side of piston 28 whereupon the said piston drives the compacting head 32 toward the right end of chamber 24. Inasmuch as piston 60 is dwelling under pressure with the closure member 54 closing the right end of chamber 24, it will be apparent that the waste materials in chamber 24 will be compacted. Should this material consist of substances that it would be advantageous to moisten in order to bring them to a more compact condition, the valve handle 81 is availed of for opening valve 78 to deliver a spray of water into chamber 24 from water pipe 76. Any surplus water so delivered to chamber 24, or any liquids squeezed from the waste material being compacted, will drain into sump 82 and then out through conduit 80 to drain.

After compacting head 32 has compacted the material in chamber 24, a determined pressure will be built up in conduit 36 which will be conveyed through conduit 142 to the pressure expansible means 146 and which will bring about movement thereof to open blade 148 thereof, while simultaneously closing blade 144. The opening of blade 148 will bring about de-energization of relay R3 and which will cause shifting of valve 104 to its exhaust position. The closing of blade 144 will bring about energization of relay R2 to close the blades thereof and which will, in turn, bring about energization of solenoid S2 to shift valve member 98 of valve 96 to commence the supply of pressure fluid through conduit 62 to the left side of piston 60, and whereupon the said piston, together with the closure member 54, will move rightwardly.

At this time, the compacting head 32 is moving rightwardly in chamber 24, while the closure member 54 is also moving to the right. After a predetermined amount of movement the piston 60 will bottom against the end of cylinder 58 and movement thereof and of the closure member will cease while the compacting head 32 will continue movement to expel the briquette or compacted waste material out the right end of chamber 24 through opening 52 into any suitable container placed therebeneath.

The regulating valve 86 is effective at this time to prevent compacting head 32 from moving as rapidly as the

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closure member 54 whereby the briquette is released from between the compacting member and the closure member, and will readily drop through opening 52.

After the briquette has been expelled from the compacting chamber, the piston 28 will bottom at the right end of cylinder 26 and a still higher pressure will be built in conduit 36 and be conveyed through conduit 142 to the pressure expansible element 140 which will bring about opening of blade 138 thereby opening the holding circuit for relay R1 which will de-energize the said relay thus opening the blades thereof and bringing about return of valve 84 to its original position, and also accomplish de-energization of relay R2 which, in turn, will de-energize solenoid S2 so that valve 96 will also return to its original position and, at which time, all parts of the disposal unit will return to the positions which they occupy in Figure 2 and Figure 4.

Should it be found necessary to exert a greater compacting force on material in chamber 24, the hydraulic power system can be availed of simply by closing switch 136 which will energize motor 134 thus causing pump 112 to run and supply pressure fluid to valve 104. The valve 104 operates in unison with valve 84 so that the supply of pressure fluid to the hydraulic pistons 42 and 70 would take place at the same time the water pressure was supplied to pistons 28 and 60 during a compacting operation.

In the modification of Figures 1 through 4 the closure member at the discharge end of the compacting chamber is provided with fluid pressure means which exerts on the closure member a thrust at least equal to that being exerted on the compacting member 32. In this manner the maximum degree of compacting and compressing of the material can be had and the closure member 54 can be quite simply constructed and there is no possibility that it will become dislodged during a compacting or briquetting operation.

It will be understood that the specific embodiments of my invention illustrated and described represent only some of the forms which the invention can take in practice and it therefore will be understood that I desire to comprehend within my invention such modifications and adaptations as may come within the scope of the appended claims.

I claim:

1. In a waste disposal unit of the nature described; a casing having an inclined compacting chamber therein with a discharge opening at one end and a feed opening at the other end of the chamber, drain means leading from the lowermost point of said chamber adjacent the discharge end thereof, a closure member adjacent the discharge opening for closing the said opening, a compacting member reciprocal in said chamber for compacting waste material therein against said closure member, a separate double acting fluid operable motor connected with each of said compacting and closure members, means for supplying pressure fluid to the motor for the compacting member to move said compacting member toward the closure member for compacting waste material in the chamber thereagainst, means for simultaneously directing pressure fluid to the motor associated with the closure member for holding it in closing position against the thrust of said compacting member, means responsive to a predetermined pressure developed on the fluid motor for said compacting member for then reversing the supply of fluid to the motor associated with the closure member to withdraw the closure member to permit the discharge of the compacted waste material from the chamber, and means responsive to a higher pressure developed on the fluid motor for said compacting member for then reversing the supply of pressure fluid to both of said motors simultaneously to bring about retracting of said compacting member and the return of said closure member into its closing position.

2. In a waste disposal unit of the nature described; a

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casing having a compacting chamber therein with a discharge opening at one end and a feed opening at the other end of the chamber, a closure member movably mounted in the casing adjacent the discharge opening of the chamber, a compacting member movably mounted in the said chamber on the other side of the feed opening from the said closure opening, a first double acting fluid motor connected with said compacting member, a second double acting fluid motor connected with said closure member, means for supplying pressure fluid to said first motor to drive said compacting member toward said closure member while simultaneously supplying pressure fluid to said second motor to hold said closure member stationary against the thrust of said compacting member, means responsive to the pressure built up on said first motor for reversing the supply of pressure fluid to said second motor for withdrawing said closure member from the discharge opening of the chamber thereby to permit the expelling from said chamber of the compacted waste material, and means responsive to a still higher pressure on said first fluid motor for simultaneously reversing the supply of pressure fluid to both of said motors thereby to return said closure member and said compacting member to their original positions.

3. In a waste disposal unit of the nature described; a compacting chamber, said compacting chamber having a discharge opening at one end and a closure member abutting said chamber and closing said opening, a feed opening in the chamber adjacent the other end thereof, a compacting member reciprocal in said chamber from the said other end thereof to compact waste material introduced into the chamber against said closure member, a separate double acting motor associated with each of said compacting and closure members, valve means for controlling the supply of fluid to said motors, electrical means energizable for bringing about the delivery of pressure fluid through said valves to said motors for urging said compacting member toward said closure member while urging said closure member into its closing position with a thrust substantially equal to that being exerted on said compacting member, first means responsive to a predetermined pressure acting on the motor associated with the compacting member for reversing the supply of fluid to the motor associated with said closure member whereby said closure member is retracted from its closing position thereby to permit continued advance of the compacting member to discharge compacted waste material from said chamber, and second means responsive to a still higher pressure acting on the motor associated with said compacting member for reversing the supply of fluid through said valves to said motors whereby to retract said compacting member and to return said closure member to its closing position, there being auxiliary fluid operable means associated with said members for exerting an increased thrust thereon during the compacting of waste materials in said chamber.

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November 24, 1958

Mr. Frank D. Prager
Patent Department
Philco Corporation
Tioga & "C" Streets
Philadelphia 34, Pennsylvania

Ref: My letters of September 26th and 27th,
1958, on Patented Means for Disposal
of bottles, cans, etc.

Dear Mr. Prager:

Just this morning I received a copy of
my patent #2,763,202 calling for an apparatus for
a waste disposal so I am enclosing same for your
consideration.

I will be very happy to hear whether
Philco is interested in acquiring the rights to
same.

Thanking you very kindly for your considera-
tion, I am

Very sincerely yours,

C. U. Gramelspacher

CUG/rm

Enc.