

May 26, 1970

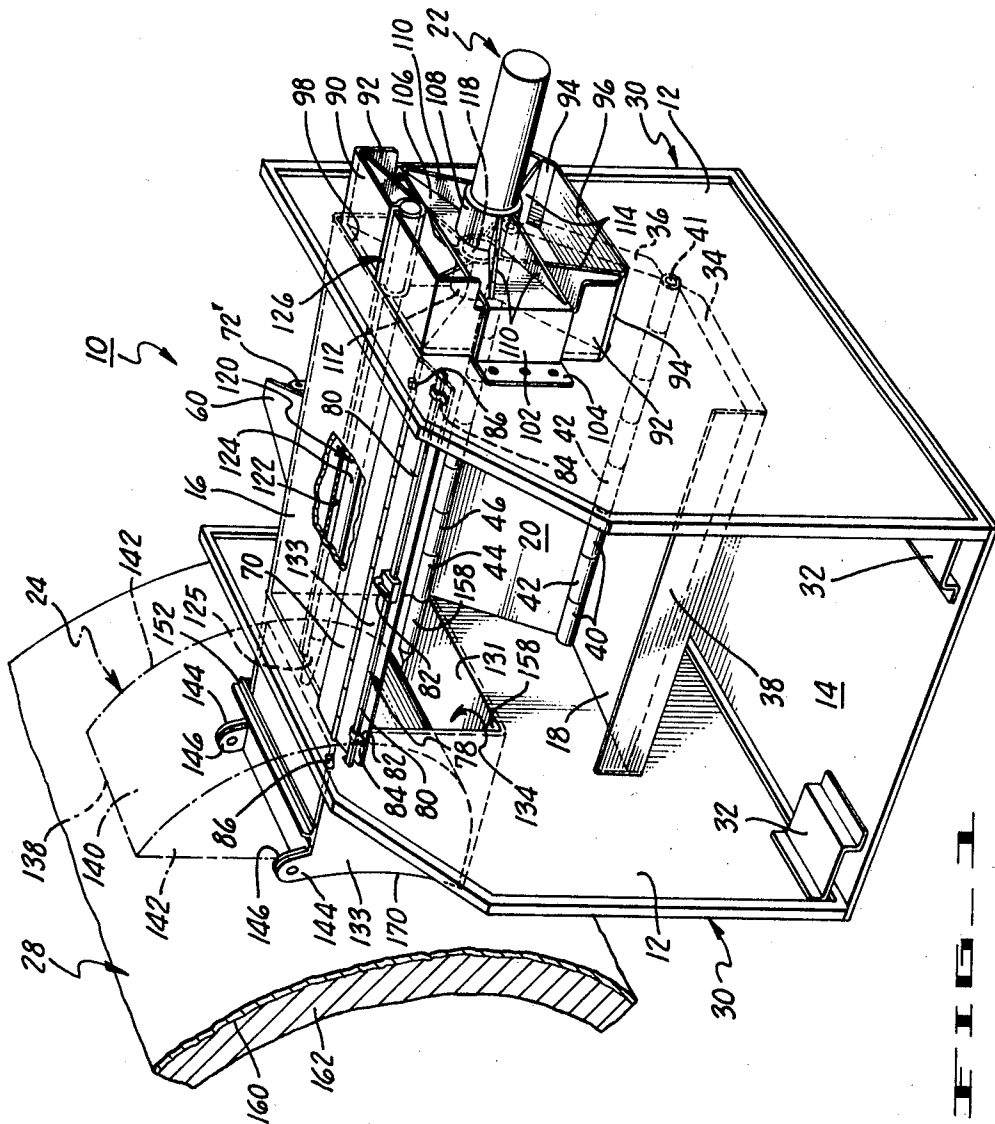
B. G. ALTMANN ET AL

3,513,768

MATERIAL HANDLING APPARATUS

Filed June 3, 1968

3 Sheets-Sheet 1



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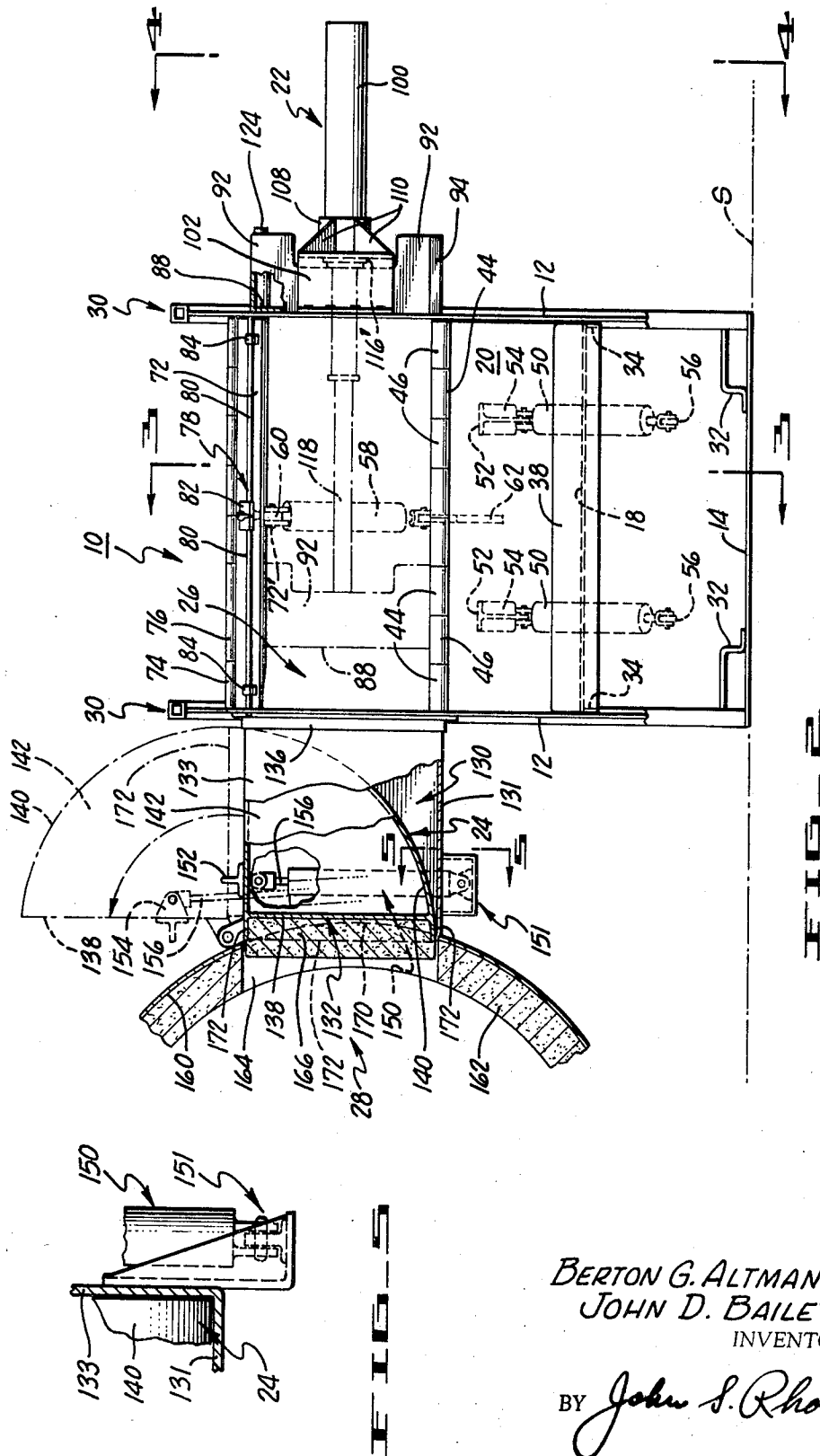
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3 Sheets-Sheet 3

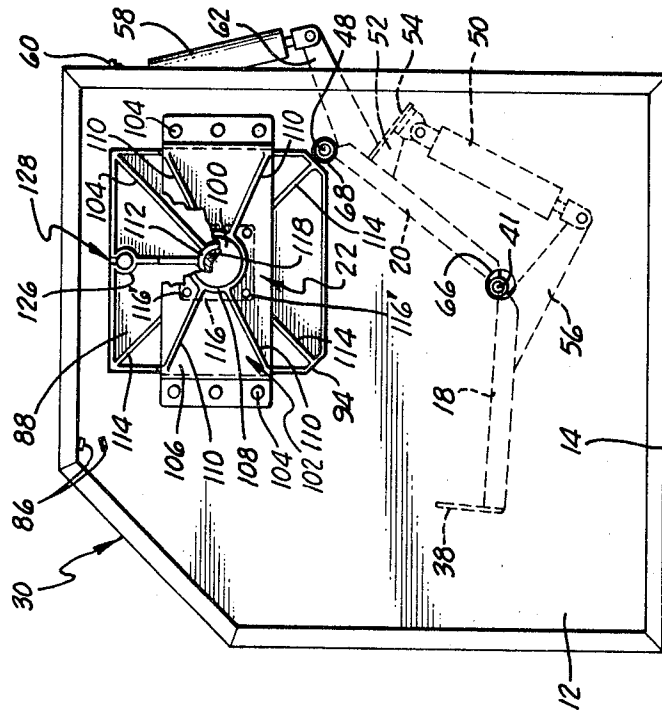


FIG. 4

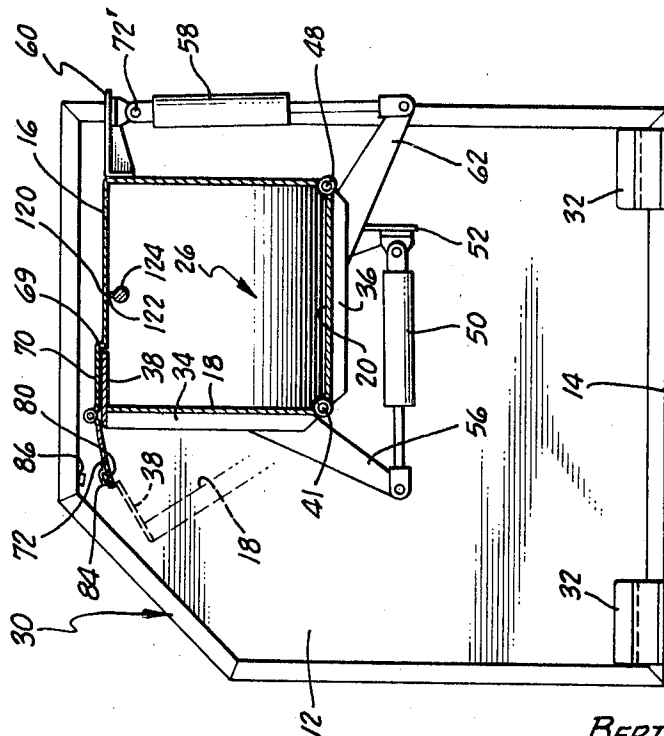


FIG. 3

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MATERIAL HANDLING APPARATUS

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15 Claims

ABSTRACT OF THE DISCLOSURE

A material handling apparatus for effecting compaction of material and the transfer of compacted material wherein means including a ram is used to effect removal of the compacted material through a discharge opening in the apparatus into a combustion furnace or the like.

CROSS REFERENCE TO A RELATED APPLICATION

Reference is hereby made to copending application entitled "Waste Combustion System," Ser. No. 734,045 and filed concurrently with the instant application on June 3, 1968, and covering a waste combustion system with which the apparatus of the instant application can be used.

BACKGROUND OF THE INVENTION

This invention relates to a material handling apparatus for effecting the compaction and handling of waste material. More particularly, it relates to an improved material handling apparatus provided with a plurality of spaced wall elements and a series of displaceable partitions disposed in an operable and an improved manner within the confines of the wall elements. The displaceable partitions not only initially receive the material to be compacted but also cooperate with portions of the spaced wall elements to receive material and to effect full compaction of the material and removal thereof to another apparatus such as a waste material burning receptacle.

Various material handling apparatus have been designed in the past for effecting compaction of the material and transfer of the same to a waste material burning device and the like. Examples of such prior art apparatus are illustrated in U.S. Patent 984,488 to Pearson, granted on Feb. 14, 1911, and U.S. Patent 3,195,447 to Taylor, granted on July 20, 1965. One of the principal deficiencies of the aforesaid prior art material handling apparatus, even though the prior art apparatus were provided with displaceable partitions in handling the material, was the fact that the particular displaceable partitions of the prior art devices did not have the dual function of initially receiving the material to be compacted with a minimum of spillage and thereafter compacting the material in the apparatus in a simple expeditious fashion whereby it could be readily removed by a ram from the apparatus and transferred to another device such as a combustion furnace.

SUMMARY OF THE INSTANT INVENTION

It is the primary purpose of the instant invention therefore to provide an improved material handling and compacting apparatus generally made up of spaced wall elements and unique means disposed relative to the wall elements for not only initially receiving the material to

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be handled but also for effecting compaction and disposition of the material for the ready removal of the material from the apparatus with a minimum of spillage.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings:

FIG. 1 is a perspective view, parts of which are broken away and other parts shown in dotted lines of an advantageous embodiment of the material handling apparatus of the instant invention;

FIG. 2 is a side elevational view of the apparatus shown in FIG. 1, with certain parts shown in dotted lines and other parts broken away;

FIG. 3 is a cross-sectional view generally taken along line 3—3 of FIG. 2;

FIG. 4 is an end elevational view generally taken along line 4—4 of FIG. 2 certain parts of which are broken away; and

FIG. 5 is an enlarged fragmentary cross-sectional view generally taken along line 5—5 of FIG. 2 and with parts broken away and illustrates certain details of the apparatus of the instant invention.

DETAILED DESCRIPTION

With further reference to the drawings, FIG. 1 illustrates a preferred embodiment of the material handling apparatus 10 of the instant invention. This apparatus is generally comprised of a plurality of spaced side wall elements 12, 12, bottom 14 and an end wall 16. The apparatus also includes a series of displaceable partitions 18 and 20, an extensible ram assembly 22 and an openable closure element 24. The upstanding side wall elements 12 and 12 are connected in parallel spaced relation at their bottom edges by the bottom wall 14 and at their upper ends by the wall element 16 of generally L-shaped configuration. The bottom wall 14 can be mounted on a suitable support whereby the apparatus 10 is normally supported in an upright position during the use thereof.

As will be explained more fully hereinafter, the displaceable partitions 18 and 20 are advantageously pivotally or hinged interconnected to the lower edge of the wall element 16 in such fashion that when the partitions 18 and 20 are in a forwardly extended or open position (see FIGS. 1, 2 and 4), the apparatus is adapted to receive in the fashion of a scoop a relatively loose mass of material (not shown) such as trash made up of an admixture of solids and/or semi-solids. By hingedly connecting partition 20 to wall element 16 in this fashion the partitions are pivoted in a generous arc and the apparatus is provided with an optimum material receiving and compacting capacity. After receiving this mass of material the displaceable partitions 18 and 20 are moved from an open position to the preselected material compacting position indicated in solid lines in FIG. 3. When in this position partitions 18 and 20 act in conjunction with wall elements 12, 12, bottom 14 and end wall 16 to form a material holding and compacting chamber 26 with partition 20 serving as the bottom of this chamber. The ram assembly 22 movably mounted at one longitudinal end of the material holding chamber 26, as will be subsequently described, effects removal of the compacted material from the chamber 26 through an openable closure element 24 disposed at the opposite longitudinal end thereof. When the apparatus 10 of the instant invention is disposed adjacent a com-

bustion furnace 28 in the manner indicated in FIGS. 1-2 the compacted mass in chamber 26 can discharge directly into this furnace.

A series of suitable hollow reinforcing strips, generally indicated at 30, can be attached to and extend fully around the outer edges of each one of the pair of side walls 12. If desired and in order to further rigidify the connection of the side walls 12 to the bottom plate 14, reinforcing elements 32 can be provided, as depicted in FIGS. 1-3.

Each of the displaceable partitions 18 and 20 generally comprises a plate of sufficient length to substantially fully bridge the opening between walls 12-12 without binding and while being in freely slidable engagement with the walls and these plates can be reinforced by ribs 34 and 36 respectively. If desired, a reinforcing strip or plate 38 can be connected to the leading edge of partition 18 and it can act as a retaining lip for holding the trash material deposited on the partition 18. It is to be understood that the mass of trash material can be deposited on the partitions 18 and 20 when they are in an open position by hand or mechanically.

As indicated in FIGS. 1-4, the partitions 18 and 20 are pivotally interconnected to the lower edge of the vertical leg section of the L-shaped wall 16 and to each other by means of hollow ears or hinges 40 and 42 in the case of partitions 18 and 20 respectively and hinges 44 and 46 in the case of partition 20 and wall 16 respectively in the usual fashion of a pin 41 being used in the case of hinges 40 and 42 and pin 48 in the case of hinges 44 and 46.

In order to controllably pivot the partition 18 relative to the partition 20 and partition 20 relative to wall 16 a pair of laterally spaced and corresponding extensible fluid actuators 50 are provided. Since the manner in which each actuator 50 is mounted and operates is the same, a description of one will suffice for both. Suspended from the bottom of partition 20 is a bracket 52 to which a mounting pad 54 is affixed. Pad 54 is pivotally connected to the cylinder end of the fluid actuator 50, in the manner shown in FIGS. 3-4. An elongated bracket 56 is affixed to the backside of partition 18 and the free end of bracket 56 includes an aperture for pivotal connection to the rod end of the actuator 50 in a known manner.

The displaceable partitions 18 and 20 are moved relative to the L-shaped wall element 16 by means of a single fluid actuator 58 spaced above and interposed between the fluid actuators 50. To this end a bracket 60 of approximately T-shaped configuration is affixed to the backside of the vertical leg section of wall element 16 and a bracket 62 is dependently affixed to a surface portion on the backside of the movable partition 20 adjacent the pivotally connected rearward edge thereof. The outer end of the bracket 62 is pivotally connected to the rod end of the actuator 58 and the outer end of the bracket 60 is pivotally connected to the cylinder end of the actuator 58, in a known manner as generally indicated at 72'. From the above it will be observed that when the fluid actuators 50, 50, and 58 are operated by a suitable control circuit (not shown), partitions 18 and 20 can be alternately pivoted to a lowered and open position relative to wall element 16 for receiving a relatively loose mass of material within the confines of the spaced wall elements 12, 12 and then to a closed position to form the material holding chamber 26. When the partitions 18 and 20 are moved to a closed position the material disposed therein is automatically compacted. As noted in the drawings and particularly FIG. 4, the partitions 18 and 20 are somewhat underslung or held in their stationary material receiving position at a low level relative to the position or high level of the ultimate chamber 26 formed by the partitions when collapsed. This means that a relatively large amount of material can be handled and compacted at one time with a minimum amount of spillage due to the manner in which the underslung par-

titions 18 and 20 cooperate with the side walls 12. Arranging the partitions in this underslung or underbite fashion also means that it is easier to load the same.

Although not heretofore mentioned, apertures 66 and 68 in at least one of the side walls 12 are provided, as indicated in FIG. 4, for facilitating removal and the insertion of hinge pins 41 and 48 in their associated hinge elements.

In an advantageous embodiment of the invention, the forward edge of the L-shaped wall element 16 is provided with an upstanding shoulder 69 and an upwardly disposed offset portion 70 connected thereto. The shoulder 69 and offset portion 70 define a recess at the forward edge of the L-shaped wall element 16 for receiving the lip 38 on partition 18 when the partitions 18 and 20 are pivoted to the preselected position whereby shoulder 69 acts as a stop for the lip 38.

As indicated in FIGS. 1-3, a flap 72 is pivotally connected to the forward edge of the offset portion 70 for the advantageous purpose of shearing off and removing any excess material draped over the free edge of the lip 38, during movement of the partitions 18 and 20 from a lowered position to the preselected position. Accordingly, the rearward edge of the flap 72 includes a series of relatively spaced and hollow ears 74 of cylindrical shaped configuration. Similarly, the forward edge of the offset portion 70 includes relatively spaced and hollow ears 76 of cylindrical shaped configuration that are longitudinally offset relative to the ears 74. When the ears 74 and 76 are interfitted together and the apertures thereof aligned along a common axis, a longitudinal pin (not shown) can be passed through the aligned apertures for pivotally connecting the flap 72 to the offset portion 70. As with the aforedescribed pins 41 and 48 in pivotally interconnecting the partitions 18 and 20 to the L-shaped wall element 16, an opening (not shown) can be provided in one of the pair of side wall elements 12 and 12 for facilitating connection and disconnection of the pin (not shown) from the interfitted ears 74 and 76.

In order to hold the flap 72 in a proper position relative to the arcuate path of movement of lip 38, a latching device 78 can be affixed to an upwardly facing surface portion of the flap 72. The latching device 78 can comprise a pair of spreader-type latching bars 80 operated by a suitable hand-operated crank mechanism 82 connected in a suitable manner (not shown) to the inner ends of the latching bars 80, and a pair of strap elements 84 for holding the outer ends of the latching bars 80. As indicated in FIGS. 1 and 4, the side wall elements 12 are each provided with a pair of spaced slots 86. The pair of slots 86 in each side wall 12 are disposed relative to each other such that corresponding and opposed slots 86 in the side walls 12 and 12 are longitudinally aligned. During locking of bars 80 and the two sets of longitudinally aligned slots 86 and 86 are adapted to alternately and selectively receive the outer ends of the latching bars 80 upon operation of the crank mechanism 82 and outward spreading of the bars.

During the movement of the partitions 18 and 20 to the preselected position and compaction of the material within the chamber 26 a ram assembly 22 is held in a fully retracted position as indicated in full lines in FIG. 2. This ram assembly can comprise a flat plate 88, a telescoping fluid actuator 100 connected to the plate 88 and a one-piece steel strap 102 of approximately U-shaped configuration for attaching the plate 88 and actuator 100 to the right side wall element 12. An opening 98 is provided in the right side wall element 12 for receiving the plate 88 of the ram assembly 22 during retraction of the plate. During retraction in opening 98, plate 88 of the ram assembly acts as a wall for chamber 26.

The outer edges of the plate 88 can have a series of reinforcing flange or gusset plates 90, 92, 94, 96, 94, and 92 connected thereto and the outer free ends of the legs of the U-shaped strap 102 are flanged. The outer flanged

ends of the strap 102 are provided with a series of aligned apertures 104 and the intermediate portion 106 of the strap 102 extends between and is connected to the inner ends of the outer legs thereof while a cylindrical sleeve 108 is concentrically affixed to this intermediate portion 106 of the strap 102. The longitudinal bore of the sleeve 108 in being affixed to the intermediate portion 106 of the strap 102 is aligned with a concentric opening (not shown), in the intermediate portion 106 thereof whereby a common aperture is defined through the sleeve 108 and the strap 102.

It is to be understood that the fluid actuator 100 is any suitable commercially available device comprised of several telescopically related rod sections, the innermost rod section being indicated at 118. The fluid actuator 100 is slidably fitted through the common aperture sleeve 108 and strap 102. The rod end of the actuator 100 includes a mounting flange 116 having a series of four cap screw openings 116' therein, three of which are illustrated in FIG. 4.

The forward end of the innermost telescopic section 118 is connected to the backside of the ram plate 88. A cylindrical sleeve 112 is concentrically affixed to the backside of the plate 88 and disposed in alignment with the common aperture through the intermediate portion 106 of the strap 102 and sleeve 108. The forward end of the telescopic section 118 is inserted through the open end of the bore of the affixed sleeve 112 and secured thereto.

If desired, the outwardly facing side of the intermediate portion 106 of the strap 102 is reinforced by a series of four triangularly shaped plates 110. The back side of the plate 88 of the ram 22 can also include a series of four triangularly shaped reinforcing plates 114.

In a further advantageous embodiment of the invention a guide 120 can be used for the plate 88 of the ram assembly 22. Guide 120 is comprised of an elongated bar 122 and an elongated rod 124 of cylindrical shape connected thereto. The bar 122 is dependently affixed to the inner surface of the top leg of wall element 16 and extends between side walls 12. The end of the rod 124 adjacent the left side wall as viewed in FIG. 1 can be tapered whereby the reduced end portion 125 can extend beyond the adjoining end of the bar 122 in the aforesaid side wall 12. The importance of this arrangement will become more apparent hereinafter. The other end of the bar 124 and rod 126 adjacent the right side wall 12 as viewed in FIGS. 1-2 and 4 extends through the upper portion of the opening 98 and beyond the outer surface of the right side wall 12 for the purpose of supporting and guiding the ram plate 88 through the opening 98 and the chamber 26 during the operation thereof.

The intermediate portion of upper flanged plate 90 is provided with an inverted keyhole slot 126 for slidably receiving the rod 124 and bar 122. By virtue of the slidable engagement of bar 122 and rod 124 with flange plate 90, plate 90 can support and guide the ram plate 88 and keep it in alignment with the opening 98 as well as the inner surfaces of chamber 26 formed by wall element 16 and partitions 18 and 20 so that the ram plate will be prevented from twisting or binding even when a heavy load of compacted material is being handled.

The other longitudinal end of the chamber 26 includes an opening 134 in the left side wall 12 as viewed in FIG. 1 closed off by a pivotal closure element 24.

The closure element 24 generally comprises an outwardly extending wall extension 130 of approximately U-shape and a hollow door 132 disposed within this extension and pivotally connected thereto. The extension 130 is made up of a pair of upstanding side plates 133 and 133 and a bottom plate 131 extending between and connected to the side plates 133 and 133 so as to form an upwardly facing U-shaped recess in direct communication with the opening 134. The edges of the plates 131, 133 and 133 adjacent the outside surface of the left side wall 12 are connected thereto by a bracket 136 of U-shaped configuration only part of which is illustrated in

FIG. 2. The bracket 136 is made up of an angle shaped element whereby one leg section of the bracket 136 throughout the extent of the U-shaped configuration thereof is affixed to outer surface portions of the left side wall 12 adjacent the opening 134 and whereby the other leg section of the bracket 136 is affixed to the inner edges of the plates 131, 133 and 133 adjacent the opening 134.

The hollow door 132 is comprised of an angle shaped outer plate 138, bottom plate 140 and a pair of side plates 142. The upper and outer ends of the side plates 133 and 133 include upwardly and outwardly projecting apertured ears 144 and 144 of matching configuration with similar ears 146 on door plate 138. When the openings on the various ears 146 and 144 are aligned a pin (not shown) can be inserted therein for pivotally connecting the ears 144 of the wall extension 130 to the ears 146 of the plate 138 of the door 132 thereby pivotally connecting the door 132 to the wall plate extensions 133.

The door 132, by virtue of its pivotal connection to the ears 144 and 144, has a tendency to remain in a closed position within the recess between the side plates 133 and 133 under the influence of gravity. It is noted here that with the door 132 in a closed position the free upper edge of the door 132 adjacent the left side wall as viewed in FIGS. 1-2 is spaced slightly away therefrom so as to provide ample clearance and prevent binding engagement of the door in a closed position. The overall width of the door 132 between its segment plates 142 and 142 is somewhat less than the distance between the opposing surfaces of the side plates 133 and 133 of the wall extension 130 thereby assuring that the door 132 will freely pivot from a closed position to an open position and vice versa.

In a further advantageous embodiment of the invention and as indicated in FIGS. 1-2, an inverted T-shaped bar 152 can extend across and is attached to the outer surface of the upper leg section of the angle plate 138.

Both ends of the bar 152 extend beyond the upper edges of the side plates 133 and 133 and abuttingly engage the upper edges thereof thereby limiting the downward pivotal movement of the door 132 to the closed position, as depicted in FIGS. 1-2.

In order to raise the door 132 to an open position a fluid actuator 150 is disposed between and connected to the right flanged end 154 of the bar 152 and the lower edge of the right side plate 133. As indicated in FIGS. 2 and 5 a bracket 151 of approximately U-shape is connected to a lower outer edge portion of the right side plate 133 and the cylinder end of the fluid actuator 150 is pivotally connected to the bracket 151, in appropriate fashion. The free rod end 156 of this actuator 150 is pivotally connected to the right flanged end 154 of the bar 152. When the rod end 156 of the actuator 150 is extended by the control circuit (not shown), the door 132 can be pivoted to a raised position and opening 134 of the chamber 26 is exposed. When the rod end 156 of the actuator 150 is retracted, the door 132 is pivoted to a closed position, as evidenced by the dotted and solid lines of FIG. 2 and opening 134 is closed off.

Assuming that the door 132 is an open position, as shown by the dotted lines in FIGS. 1-2, the plate 88 of the ram 22 can be fully extended by the actuator 100 through the chamber 26 and into the U-shaped recess of the wall extension 130 thereby effecting removal of the compacted material from the chamber 26 and its discharge from the apparatus 10. As ram plate 88 passes through the chamber 26 and opening 134 and enters the recess of the wall extension 130, it is guided and supported in a different fashion in wall extension 130 than by the aforescribed guide 120 and upper flange plate 90 associated therewith.

As ram plate 88 passes into wall extension 130, a pair of track inserts 158 affixed to the lower inner surface portions of the wall extension 130 at the adjacent edges

of the adjoining plates 131 and 133 take over the function of guide 120. The outer surfaces of the affixed inserts 158 and 158 are of arcuate configuration and correspond to the arcuate configuration of the interfitted ears or hinge elements 40 and 42 and 44 and 46 of the partitions 18 and 20 and partition 20 and L-shaped wall 16 respectively. Thus, the affixed inserts 158 and 158 within the recess of the wall extension 130 can be said to constitute an extension of these interfitted ears.

When the plate 88 of the extended ram 22 enters the recess of the wall extension the inverted keyhole slot 126 on the upper flange plate 90 becomes fully disengaged from the guide 120 by becoming disengaged from the tapered reduced end 125 of the rod 124 which is disposed adjacent to the upper end of the opening 134 as indicated in FIG. 1. After such disengagement of the upper flange plate 90 from the guide 120, the bottom flange plate 96 nestingly engages the inner surface of the bottom plate 131 of the wall extension 130 thereby supporting and aligning the plate 88 within the recess of the wall extension 130 until the ram 22 is retracted again into the chamber 26, normally after full discharge of the compacted material from the outer end of the wall extension 130.

When the actuator 100 of the ram 22 retracts the plate 88 from the recess of the wall extension 130 preparatory to compacting another mass of material within the chamber 26, normally after reopening of the partitions 18 and 20 to a lower position from the preselected position, the flange plates 90, 92, 94, 96, 94 and 92 of the plate 88, when disposed within the recess of the wall extension 130, serve not only to prevent binding and twisting engagement of the plate 88 relative to the inner surfaces of the plates 131, 133 and 133 but also to maintain the inverted keyhole slot 126 of the upper flange plate 90 in full alignment with the reduced end of the rod 124. In addition, the inserts 158 and 158 by virtue of acting as extensions of the interfitted ears 40 and 42 and 44 and 46 serve to maintain the flange plates 92, 94, 96, 94, and 92 of the ram plate 88 in proper sliding relation relative to the inner surfaces of the plates 133, 131 and 133 of the wall extension 130 as well as relative to the inserts 158 thereof. Thus when the keyhole slot 126 of the upper flange plate 90 re-engages the reduced end 125 of the rod 124 of the guide 120, upon retraction of the ram 22, the reduced end 125 serves to pilot the keyhole slot 126 into proper sliding engagement with the guide 120 thereby re-aligning the plate 88 for passage through the chamber 26 without binding and twisting engagement therein.

When the partitions 18 and 20 are reopened to their underslung lower or at-rest position from the preselected material compacting position, during retraction of the plate 88 of the ram 22 into the opening 98 in the right side wall 12 as viewed in FIGS. 1-2, another load of material can be deposited thereon. The partitions 18 and 20 are then pivoted to the preselected material compacting position. With the door 132 in the closed position as shown in FIGS. 1-2, during compaction of the material, the arcuate shaped plate 140 within the recess of the wall extension 130 and in engagement with one end of the compacted material prevents jamming of the door 132 particularly when the door 132 is pivoted to an open position for effecting removal of the compacted material.

Depending upon the use of the apparatus 10 of the instant invention and the requirements therefore, the apparatus 10 can be operatively connected or associated with another apparatus such as the waste combustion furnace 28 of the aforementioned copending application. Although not shown in detail, this waste combustion furnace 28 would generally comprise an outer cylindrical metal shell 160 and a suitable refractory liner 162 attached to the interior surface of the shell 160. The furnace 28 is supported in a suitable fashion (not shown) in relation to the support S for the apparatus 10. A common opening 164

through the outer shell 160 and the liner 162 on one side of the furnace 28 enables connection to or communication with the apparatus 10 of the instant invention. By virtue of the apparatus 10 being connected to the opening 164 of the furnace 28, the door 132 additionally includes a refractory liner 166 appropriately affixed thereto. Accordingly, the segment plates 142 and 142, the arcuate plate 140 and the upper leg section of the plate 138 are provided with outwardly extending integral flange portions 172 as shown in FIG. 2. The refractory liner 166 is partially inserted within the recess formed by the flange portions 172 and secured to the outwardly facing surface of the lower intersecting leg section of the angle plate 138 in a conventional fashion. The outer edges 170 and 170 of the side plates 133 and 133 are of arcuate shape corresponding to the arcuate shape of the outer metal shell 160 of the furnace 28. It is to be understood that the outer edge of the bottom plate 131 of the wall extension 130 and the arcuate shaped edges 170 of the side plates 133 thereof are all secured to the outer shell of 160 of the furnace 28 adjacent the opening 164 thereof by a bracket, not shown.

Further, as indicated in FIG. 2, when the door is in the open position the outer surface of the refractory liner 166 is disposed in alignment with the upper edges of the side plates 133 of the extension 130 thereby providing a top cover for the recess of the extension 130. Such a cover for the recess of the extension 130 assures that compacted material disposed within the chamber 26 is discharged from the chamber 26 and extension 130, upon extension of the ram plate 88, into the furnace 28 through the opening 164 thereof.

Although the partitions 18 and 20 can be moved from an open position to the preselected position and vice versa by other appropriate mechanism instead of the fluid actuators 50, 50 and 58 such as a rotatable feed screw device and various other changes made in the parts of the instant invention, it will be noted that the particular manner in which the partitions 18 and 20 are disposed and operatively arranged relative to wall elements 12 and 16 results in an apparatus which although compact and small can handle and compact relatively large volumes of material with a minimum of spillage.

Advantageous embodiments of the instant invention have been disclosed and described. It is obvious that various changes and modifications can be made therein without departing from the spirit and scope thereof as defined by the following appended claims.

What is claimed is:

1. A material handling and compacting apparatus comprising a plurality of wall elements, certain ones of which are disposed in spaced relation to each other, and means including at least one displaceable partition slidably disposed within and between the confines of said spaced wall elements for initially receiving material supplied to said apparatus and for compacting said material, said partition cooperating with at least some of said wall elements to form a closed material holding and compacting chamber when said partition has been moved to a preselected and material compacting position along with the initially supplied material, means for displacing said partition within the confines of said spaced wall elements from an at-rest position to said preselected material compacting position and means including a ram means mounted at one end of said chamber and an openable closure means mounted at the opposite end of the chamber for removing the material from said chamber when said partition has been moved to and is held in said preselected material compacting position.

2. An apparatus as set forth in claim 1 including means for pivotally interconnecting said partition to one of the said wall elements.

3. A material handling and compacting apparatus comprising a plurality of wall elements, certain ones of which are disposed in spaced relationship to each other, means

including a series of interconnected and displaceable partitions slidably disposed within and between the confines of said spaced wall elements, means pivotally interconnecting said partitions in an underslung position to one of said wall elements whereby said displaceable partitions can initially receive material supplied to said apparatus while in an underslung position, means for displacing said interconnected partitions within the confines of said spaced wall elements from said underslung position to a preselected material compacting position relative to said one of said wall elements, said partitions cooperating with the wall elements and each other to form a closed material holding and compacting chamber when said partitions have been moved to the preselected material compacting position and means apart from said partitions including a ram means movably mounted at one end of said chamber and an openable closure means mounted at another end of said chamber and disposed between said partitions and certain of said wall elements for removing the material from said chamber when said partitions have been moved to and are held in said preselected material compacting position.

4. An apparatus as set forth in claim 3 in which said partitions are hingedly connected to each other.

5. An apparatus as set forth in claim 3 including stop means for engaging one of said partitions when the partitions have been moved to the preselected material compacting position.

6. An apparatus as set forth in claim 3 including means engageable with one of said partitions for removing excess material draped over one of said partitions during the displacement of said partitions.

7. An apparatus as set forth in claim 1 including stop means for engaging said partition when the partition has been moved to the preselected and material compacting position.

8. An apparatus as set forth in claim 1 in which said partition is provided with lip means for retaining material supplied to said apparatus.

9. An apparatus as set forth in claim 1 including means engageable with said partition for removing excess material draped over said partition during displacement thereof.

10. An apparatus as set forth in claim 1 including means for guiding said ram means upon its advancement in a direction towards said closure means.

11. A material handling and compacting apparatus comprising a plurality of wall elements, certain ones of which are disposed in spaced relationship to each other, means including a series of interconnected and displaceable partitions slidably disposed within and between the confines of said spaced wall elements, means pivotally interconnecting said partitions in an underslung position to one of said wall elements whereby said displaceable partitions can initially receive material supplied to said apparatus while in an underslung position, means for displacing said interconnected partitions within the confines of said spaced wall elements from said underslung position to a preselected material compacting position relative to said one of said wall elements, said partitions cooperating with the wall elements and each other to form a material holding and compacting chamber, and means apart from said partitions for removing the material from said chamber when said partitions have been moved to and are held in said preselected material compacting position, said last mentioned means being comprised of a ram movably mounted at one end of the material holding chamber and an openable closure means mounted at the opposite end thereof.

12. A material handling and compacting apparatus comprising a plurality of wall elements, certain ones of which are disposed in spaced relationship to each other, means including a series of interconnected and displaceable partitions slidably disposed within and between the confines of said spaced wall elements, means

pivotally interconnecting said partitions in an underslung position to one of said wall elements whereby said displaceable partitions can initially receive material supplied to said apparatus while in an underslung position, means for displacing said interconnected partitions within the confines of said spaced wall elements from said underslung position to a preselected material compacting position relative to said one of said wall elements, said partitions cooperating with the said wall elements and each other to form a material holding and compacting chamber, means apart from said partitions for removing the material from said chamber when said partitions have been moved to and are held in said preselected material compacting position, said last mentioned means being comprised of a ram movably mounted at one end of the material holding chamber, an openable closure means mounted at the opposite end thereof and guide means for said ram.

13. A material handling and compacting apparatus comprising a plurality of wall elements, certain ones of which are disposed in spaced relationship to each other, means including a series of interconnected and displaceable partitions slidably disposed within and between the confines of said spaced wall elements, means pivotally interconnecting said partitions in an underslung position to one of said wall elements whereby said displaceable partitions can initially receive material supplied to said apparatus while in an underslung position, means for displacing said interconnected partitions within the confines of said spaced wall elements from said underslung position to a preselected material compacting position relative to said one of said wall elements, said partitions cooperating with said wall elements and each other to form a material holding and compacting chamber, and means apart from said partitions for removing the material from said chamber when said partitions have been moved to and are held in said preselected material compacting position, said last mentioned means including a ram and an openable closure means for the chamber formed in part by said partitions.

14. A material handling and compacting apparatus comprising a plurality of wall elements, certain ones of which are disposed in spaced relationship to each other, means including a series of interconnected and displaceable partitions slidably disposed within and between the confines of said spaced wall elements, means pivotally interconnecting said partitions in an underslung position to one of said wall elements whereby said displaceable partitions can initially receive material supplied to said apparatus while in an underslung position, means for displacing said interconnected partitions within the confines of said spaced wall elements from said underslung position to a preselected material compacting position relative to said one of said wall elements, said partitions cooperating with said wall elements and each other to form a material holding and compacting chamber, means apart from said partitions for removing the material from said chamber when said partitions have been moved to and are held in said preselected material compacting position, said last mentioned means including a ram and an openable closure means for the chamber formed in part by said partitions, means for opening said closure means and means for advancing said ram toward said closure means to effect discharge of the material from the material holding and compacting chamber upon the opening of said closure means.

15. A material handling and compacting apparatus comprising a plurality of wall elements, certain ones of which are disposed in spaced relationship to each other, means including a series of interconnected and displaceable partitions slidably disposed within and between the confines of said spaced wall elements, means pivotally interconnecting said partitions in an underslung position to one of said wall elements whereby said displaceable

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partitions can initially receive material supplied to said apparatus while in an underslung position, means for displacing said interconnected partitions within the confines of said spaced wall elements from said underslung position to a preselected material compacting position relative to said one of said wall elements, said partitions cooperating with said wall elements and each other to form a material holding and compacting chamber, means apart from said partitions for removing the material from said chamber when said partitions have been moved to and are held in said preselected material compacting position, said last mentioned means including a ram and an openable closure means for the chamber formed in part by said partitions, and means for guiding said ram in its advancement towards said closure means.

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