United States Patent [19]

Engebretsen

[11] **3,905,289**

[45] **Sept. 16, 1975**

[54] **COMPACTOR WITH SEPARATE BIN FOR RECEIVING MATERIALS**

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[22] Filed: **Apr. 26, 1974**

[21] Appl. No.: **464,546**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 391,995, Aug. 27, 1973, Pat. No. 3,841,214, which is a continuation-in-part of Ser. No. 188,295, Oct. 12, 1971, abandoned.

[52] **U.S. Cl.** ..... **100/215;** 100/229 A

[51] **Int. Cl.²** **B30B 15/30**

[58] **Field of Search** ..... 141/73, 80; 53/124 B; 232/43.1, 49, 50, 51; 100/215, 229 A, 246, 255

[56] **References Cited**

UNITED STATES PATENTS

1,675,669	7/1928	Snyder	100/229 A
3,353,478	11/1967	Hopkins	100/229 A
3,463,079	8/1969	Corbett	100/215
3,601,953	8/1971	Boyd	100/229 A
3,691,944	9/1972	Boyd	100/229 A
3,772,984	11/1973	Karls et al.	100/215

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[57] **ABSTRACT**

A compactor which includes a compaction receptacle and a separate compartment disposed above the receptacle to permit materials to be deposited in the compactor without moving the entire receptacle out of the compactor housing. A bottom wall of the compartment is pivotally mounted for movement between a first position in which material is retained in the compartment and a second position in which the contents of the compartment dump into the receptacle. In one embodiment of the invention, the pivotal bottom wall is fixed with respect to the front wall or access door of the compartment and pivots in response to movement of the front wall as it is opened and closed. In other embodiments the pivotal bottom wall moves to a dumping position in response to movement of the receptacle from its compacting position.

11 Claims, 4 Drawing Figures

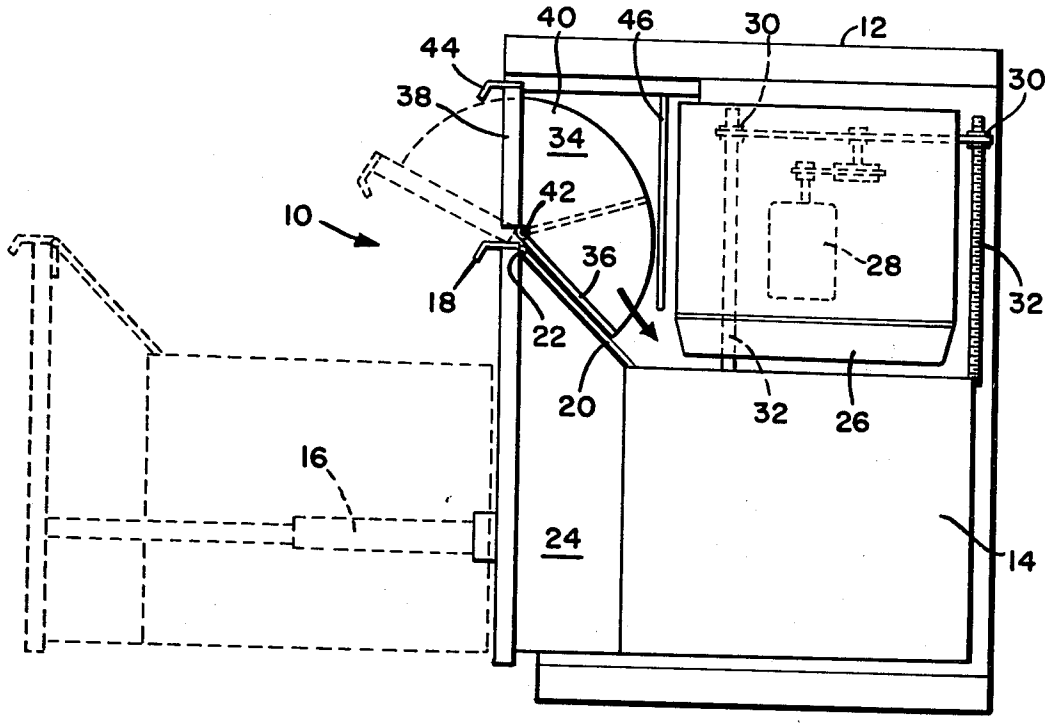


FIG-1

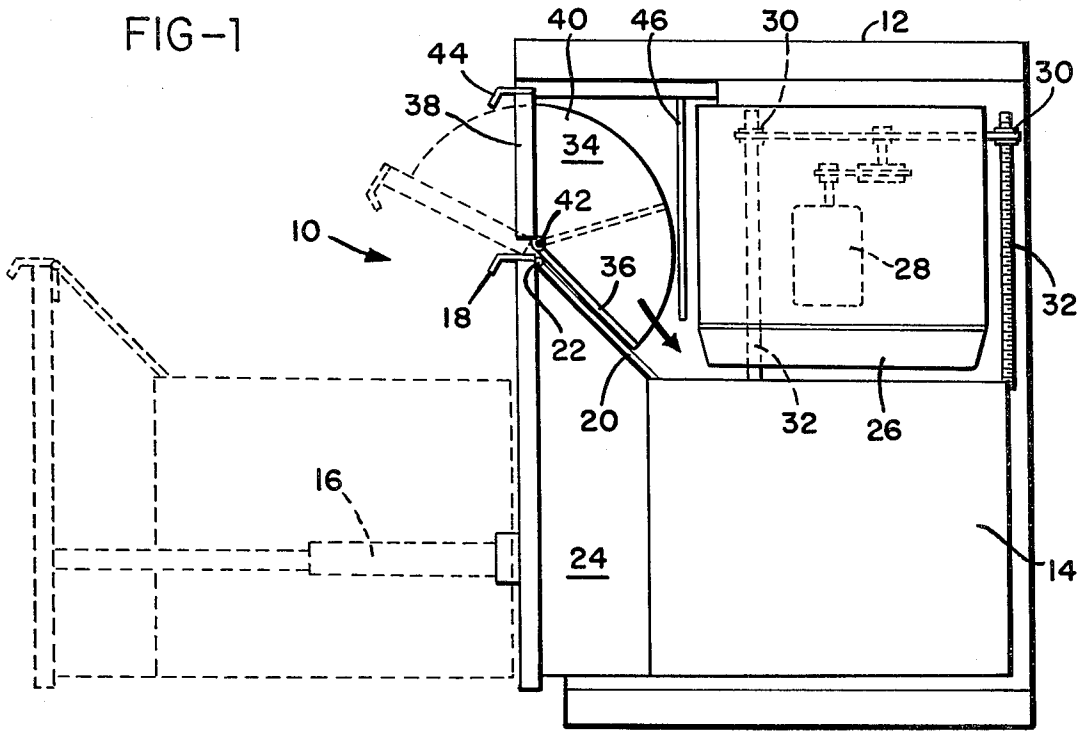


FIG-2

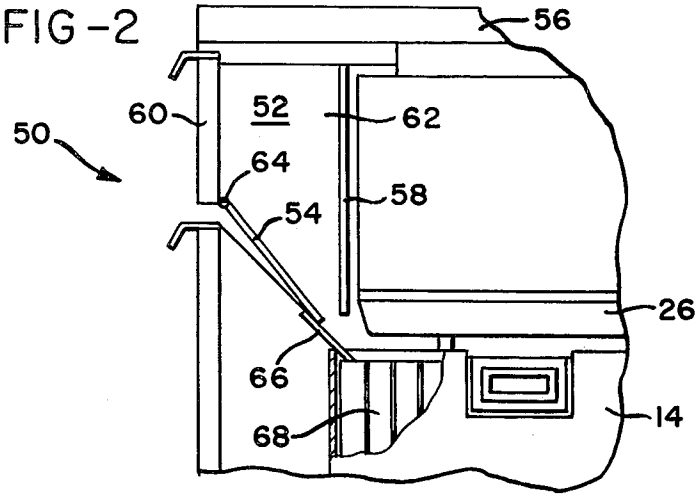


FIG-3

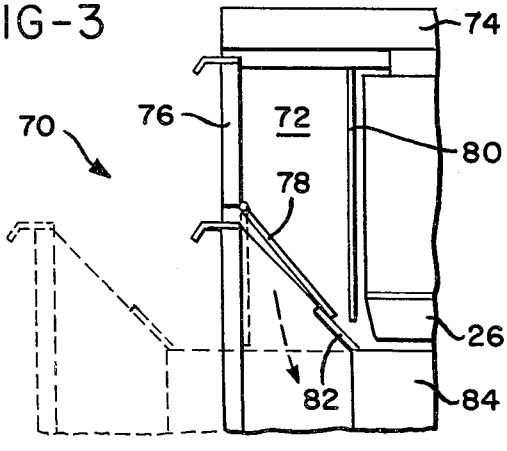
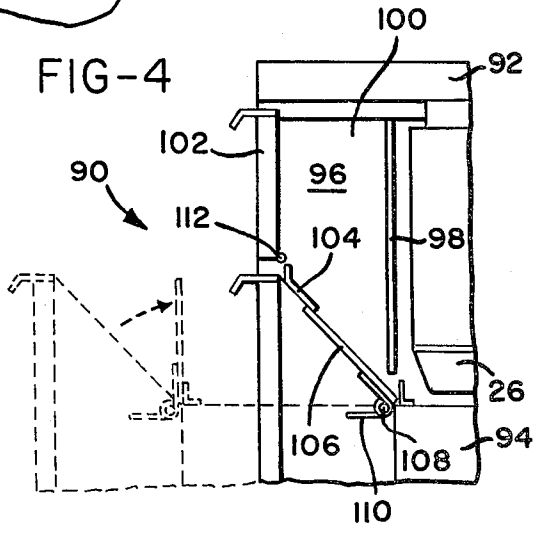


FIG-4



COMPACTOR WITH SEPARATE BIN FOR RECEIVING MATERIALS

CROSS REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of U.S. application Ser. No. **391,995**, filed Aug. **27, 1973**, now U.S. Pat. No. **3,841,214**, which in turn is a continuation-in-part of U.S. application Ser. No. **188,295**, filed Oct. **12, 1971** now abandoned.

BACKGROUND OF THE INVENTION

It has been found highly advantageous to utilize a slide-mounted container, such as a drawer, as a compaction receptacle in compactors because of the ease with which the receptacle may be moved out of the compactor housing for emptying, cleaning or the depositing of large materials in the receptacle. In many instances, however, the materials to be deposited in the receptacle are relatively small, and it is undesirable to require that the entire compaction receptacle be slid out of the housing each time materials, regardless of size, are to be deposited in the compactor.

The above-noted related applications disclose a compactor having a drawer-mounted compaction receptacle, which provides the convenience of this type of construction, and a separate compartment into which materials, particularly waste materials of small size, can be deposited without opening the entire drawer.

In two embodiments disclosed in the above-noted related applications, the receptacle is provided with a sloping wall which forms the bottom wall of the compartment, so that as the receptacle is opened, materials in the compartment slide down the sloping wall into the receptacle. In other embodiments the compaction receptacle is normally offset from the compacting ram and in direct communication with the materials receiving compartment, so that materials deposited in the compartment fall directly into the receptacle. When it is desired to compact the materials in the receptacle, the receptacle is positioned in alignment with the ram to permit the ram to enter the receptacle during compacting strokes.

In none of the embodiments disclosed in the above-noted application is the compartment provided with a bottom wall capable of positive movement relative to the receptacle between a position in which material is retained in the compartment and a second position in which the material deposited in the compartment is dumped into the compaction receptacle.

SUMMARY OF THE INVENTION

The present invention provides a compactor which includes a drawer-mounted receptacle and, positioned above the receptacle, a compartment having a bottom wall mounted for movement relative to the receptacle between a first position in which material is retained in the compartment and a second position in which material deposited in the compartment is dumped into the compaction receptacle.

In one embodiment of the invention, the bottom wall is fixed with respect to the front wall or access door of the compartment and pivots simultaneously therewith. With this construction, when the front wall is pivoted downwardly to open the compartment, the bottom wall pivots upwardly. Thereafter, when the front wall is closed, the bottom wall pivots downwardly, dumping the material received in the compartment into the receptacle. This allows material to be deposited in the compactor without opening the drawer, but prevents a person from inserting their hand into the compactor through the open access door.

In a second embodiment of the present invention the bottom wall is pivoted along a forward edge thereof and supported in a materials-receiving position to prevent downward pivoting thereof by an underlying lower wall which projects upwardly beneath the bottom wall. This lower wall may be formed integrally with the compactor drawer or with a liner for the drawer, preferably with the latter in order to receive any liquid drippings from items deposited in the compartment.

In yet another embodiment of the present invention, the bottom wall is pivoted along its rear edge to the compaction receptacle. In this embodiment, as the compaction receptacle slides outwardly from the compacting position thereof, the upper forward edge of the bottom wall pivots upwardly to dump the contents of the compartment into the receptacle.

In any of the embodiments described above, it may be desirable to provide spring pressure for urging the bottom wall of the compartment to a particular position thereof. For example, the bottom wall would preferably be spring-loaded to a dumping position. In the first embodiment described above this would insure that the bin is closed except when it is desired to deposit materials therein, and in the remaining embodiments spring pressure would provide a positive dumping action as the compaction receptacle is opened.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is an elevational view with portions removed showing a compactor in accordance with the present invention;

FIG. **2** is a view similar to FIG. **1**, but showing only a portion of a compactor in accordance with a second preferred embodiment of the invention;

FIG. **3** is a partial elevational view with parts removed showing a modified version of the embodiment of FIG. **2**; and

FIG. **4** depicts still another embodiment of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

As seen in FIG. **1** of the drawings, a compactor **10** in accordance with the present invention includes a housing **12** receiving a receptacle **14** which is preferably in the form of a drawer, slidably supported by suitable slide structure, indicated generally at **16.** The receptacle **14** is thus slidably supported for movement between the fully-extended position shown in dotted lines and a compacting position shown in solid lines.

The receptacle will be provided with a handle **18** and a sloping wall **20** pivoted at **22** to allow the wall **20** to be pivoted upwardly when the receptacle is positioned outside of the housing **12** to expose a storage space **24** for bags or the like. In the compacting position, it will be seen that the receptacle **14** is positioned beneath a ram **26** which may be of the type shown in U.S. Pat. No. **3,734,009.**

As described in that patent, the ram is substantially hollow and contains a motor **28** driving pulleys **30** rotatably mounted on the ram to cause the ram to move

upwardly and downwardly along the stationary jack screws **32.** The latter are preferably disposed in a triangular pattern with one jack screw extending along the rear wall of the housing centrally thereof and a pair of identical screws positioned on opposite sides of the ram adjacent the front thereof.

Material deposited in the receptacle **14** is compacted to a portion of its original volume by movement of the ram **26** along the jack screws **32** into the receptacle **14.** In order to deposit material in the ram **14** without moving the entire receptacle outwardly from its compacting position, a compartment **34** is disposed in the compactor housing adjacent the front thereof and generally above the receptacle **14.**

In the embodiment shown in FIG. **1** of the drawings, a compactor is provided with a bottom wall **36** fixed to a front wall or access door **38** and arcuate side walls **40,** only one of which is shown in FIG. **1** of the drawings. The assembly of the bottom, front and side walls **36, 38** and **40** is pivotally mounted to the compactor housing at **42,** so that by grasping the handle **44,** the assembly can be moved from the solid line position shown in FIG. **1** of the drawings to the dotted line position.

In the dotted line position, waste materials can be deposited in the compartment **34,** but because of the wall **46** extending downwardly in front of the ram **26** and the bottom wall **36** of the compartment, a person cannot insert their hand into the compactor beneath the ram **26.** This provides a safety feature which allows the ram to be operated when the access door **38** is opened, so that materials can be deposited in the compartment **34** without regard to whether or not the compactor is in operation.

After materials have been so deposited, the access door **38** is closed, pivoting the bottom and side walls **36** and **40** to the solid line position shown in FIG. **1** of the drawings and allowing material deposited in the compartment to fall into the receptacle **14,** as indicated by the arrow in FIG. **1** of the drawings.

In FIG. **2** of the drawings, a second embodiment **50** of the invention is shown which permits material to be deposited in the compactor without opening the receptacle **14** and in which a compartment **52** is provided having a bottom wall **54** mounted for positive dumping movement relative to the receptacle. The receptacle is slidably received in a housing **56** and a wall **58** extends downwardly adjacent the front of the ram **26** and defines a rear wall of compartment **52.**

The compartment **52** is also provided with a front wall or access door **60** and side walls **62,** only one of which is shown in FIG. **2** of the drawings. Both the front and bottom walls **60** and **54** are pivotally mounted independently of each other to the housing at **64** and in the compacting position of the receptacle **14,** an upwardly sloping wall **66** extends beneath the lower edge of the bottom wall **54** and supports it in the position shown in FIG. **2.**

The wall **66** may be formed as an integral part of a liner **68** associated with and positioned within the receptacle **14.** The liner is preferably of molded, two piece construction, self-supporting and designed to be removed from the receptacle when full, emptied and reused. Reference may be had to U.S. application Ser. No. **184,038,** dated Sept. **27, 1971,** now U.S. Pat. No. **3,807,299,** for a suitable liner of this type.

With this construction it will be seen that, as the receptacle **14** is moved from its compacting position outwardly to noncompacting positions displaced outwardly from its compacting position, the bottom wall **54** pivots downwardly with a positive dumping movement to allow material deposited in the compartment **52** to dump into the receptacle **14.**

FIG. **3** of the drawings depicts another embodiment **70** of the invention which is similar in many respects to that shown in FIG. **2.** Thus, a compartment **72** is formed in a housing **74** by a front wall or access door **76,** a bottom wall **78** and a downwardly-extending wall **80** separating the ram **26** from the compartment **72.** However, rather than a liner positioned within a receptacle providing an upwardly extending wall positioned beneath the bottom wall **78,** a wall **82** is formed integrally with the slide mounted receptacle **84.**

In all other respects, the embodiment of FIG. **3** is the same as that shown in FIG. **2** and it will be noted that as the receptacle **84** is slid outwardly from the solid line, compacting position to a noncompacting position displaced outwardly from the compacting position, the bottom wall **78** may drop downwardly to the position shown in dotted lines in FIG. **3** allowing the contents of compartment **72** to drop into the receptacle **84.**

In FIG. **4** of the drawings, an embodiment **90** is shown including a compactor housing **92,** a compactor ram **26** and a receptacle **94.** Positioned above and in front of the receptacle **94** is a compartment **96** defined by a downwardly extending rear wall **98,** a pair of side walls **100,** only one of which is shown, a front wall or access door **102** and a pair of cooperating upper and lower bottom walls **104** and **106,** respectively.

The wall **104** is fixed with respect to the housing **92** and extends only a short distance downwardly and rearwardly. The bottom wall **106,** on the other hand, is pivoted, as at **108,** to the receptacle **94** and is provided with a spring **110** urging it upwardly in a clockwise direction. With this construction, it will be seen that the front wall **102** may be pivoted downwardly about its hinge connection **112** to provide access to the compartment **96.**

As the receptacle **94** is then moved from the solid line position shown in FIG. **4** of the drawings outwardly of the housing, the spring-loaded bottom wall **96** pivots upwardly in the direction indicated by the arrow to the position shown in dotted lines to cause material deposited in the compartment **96** to dump into the drawer **94.** Thereafter, when the receptacle **94** is moved back to the solid line position, the upper bottom wall **104** engages the lower bottom wall **106** adjacent the upper edge thereof and pivots it back to the solid line position shown in FIG. **4** of the drawings.

From the above it will be seen that the present invention provides a compactor having a bottom wall mounted for positive dumping movement with respect to the compaction receptacle.

While the forms of apparatus herein described constitute preferred embodiments of the invention, it is to be understood that the invention is not limited to these precise forms of apparatus, and that changes may be made therein without departing from the scope of the invention.

What is claimed is:

1. In a compactor including a housing, a compaction receptacle received in said housing and movable between a compacting position disposed entirely within said housing and non-compacting positions displaced outwardly of said compacting position, and a compact-

ing ram positioned above said receptacle when in said compacting position thereof, the improvement comprising:

a. a material receiving compartment positioned in said housing above said receptacle,

b. means providing access to said compartment independently of said receptacle,

c. a bottom wall of said compartment, and

d. means mounting said bottom wall for movement relative to said receptacle between a first position in which material is retained in said compartment and dumping positions in which material deposited in said compartment falls into said receptacle.

2. The compactor of claim **1** wherein said mounting means comprises:

a. means mounting said bottom wall for pivotal movement.

3. The compactor of claim **2** wherein said mounting means comprises:

a. means pivotally mounting said bottom wall along a front edge thereof.

4. The compactor of claim **3** wherein:

a. said bottom wall is pivotally mounted independently of said receptacle.

5. The compactor of claim **2** wherein said mounting means comprises:

a. means pivotally mounting said bottom wall along a rear edge thereof.

6. The compactor of claim **5** wherein:

a. said mounting means mounts said bottom wall for pivotal movement on said receptacle.

7. The compactor of claim **3** further comprising:

a. a front wall of said compartment fixed with respect to said bottom wall for pivoting of said front wall about a lower edge thereof simultaneously with pivoting of said bottom wall.

8. The compactor of claim **3** further comprising:

a. an underlying lower wall projecting upwardly beneath said bottom wall.

9. The compactor of claim **8** wherein:

a. said receptacle comprises a drawer and said lower wall projects upwardly from a forward edge of said drawer.

10. The compactor of claim **8** wherein:

a. said receptacle comprises a drawer,

b. a liner is positioned in said drawer, and

c. said lower wall projects upwardly from a forward edge of said liner.

11. A compactor comprising:

a. a compactor housing,

b. a horizontally-movable, open-top compaction receptacle received in said housing,

c. means mounting said receptacle for movement between a compacting position within said housing and noncompacting positions displaced outwardly from said compacting position,

d. a compacting ram within said housing located in vertical alignment with and above said receptacle when said receptacle is in said compacting position,

e. means mounting said ram for compacting and retracting movement into and out of said receptacle respectively when said receptacle is located in said compacting position,

f. a temporary storage, material-receiving compartment having side walls and a bottom wall located in said housing above the level of the open top of the receptacle intermediate said ram and the front of said compactor housing,

g. means providing access to said compartment for deposition therein of material to be compacted while said receptacle is in said compacting position, and

h. means pivotally mounting said bottom wall of said compartment to said housing for movement of said bottom wall between a material-receiving position when said receptacle is in said compacting position and dumping positions as said receptacle is moved outwardly from said compacting position.

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