Jan. 28, 1969 J. A. BOYD ETAL 3,424,078

TRASH HANDLING AND BALING SYSTEM

Filed Jan. 18, 1967 Sheet 1 of 2

FIG. 2

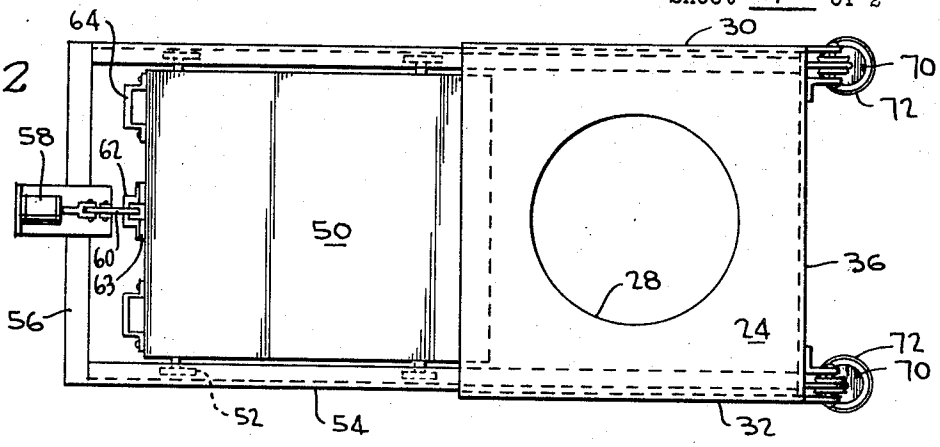
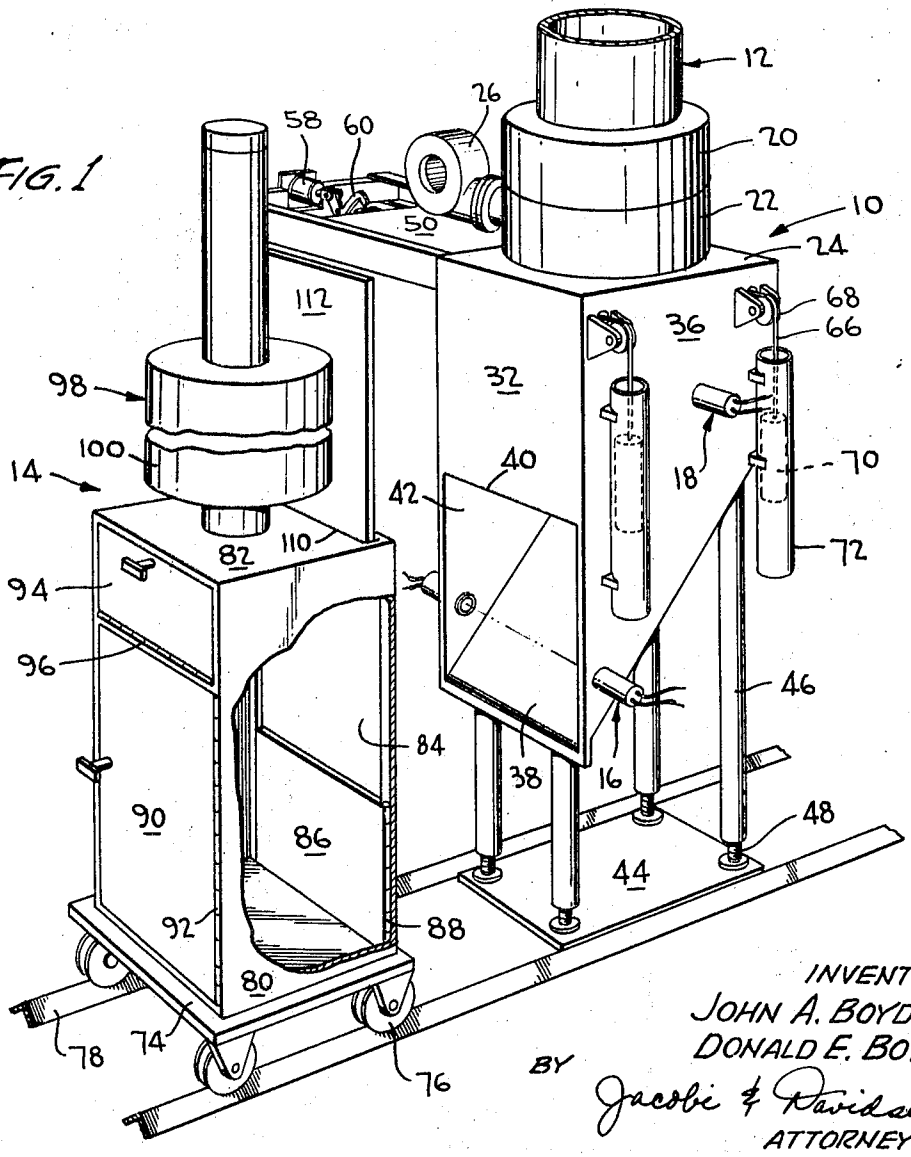


FIG. 1



INVENTORS,
JOHN A. BOYD
DONALD E. BOYD

BY Jacobi & Davidson
ATTORNEYS

Jan. 28, 1969 J. A. BOYD ETAL 3,424,078

TRASH HANDLING AND BALING SYSTEM

Filed Jan. 18, 1967 Sheet 2 of 2

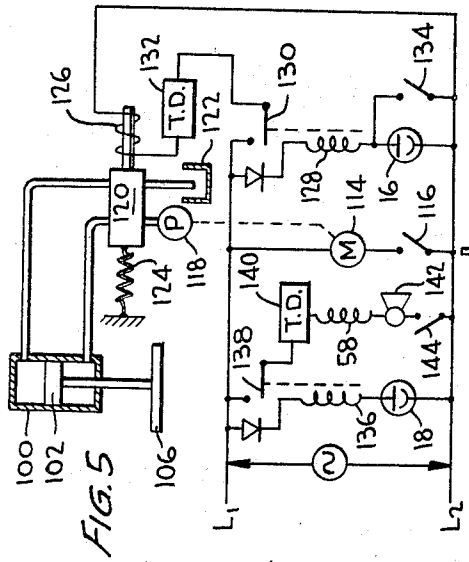


FIG. 5

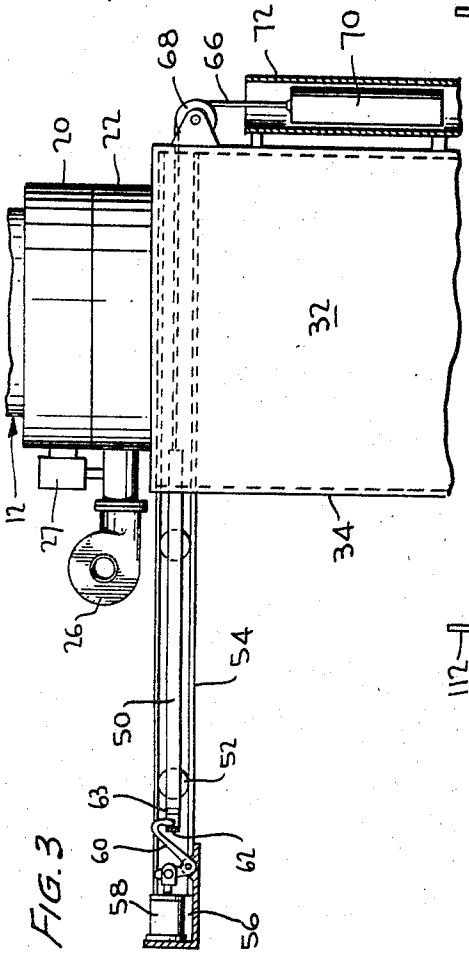


FIG. 3

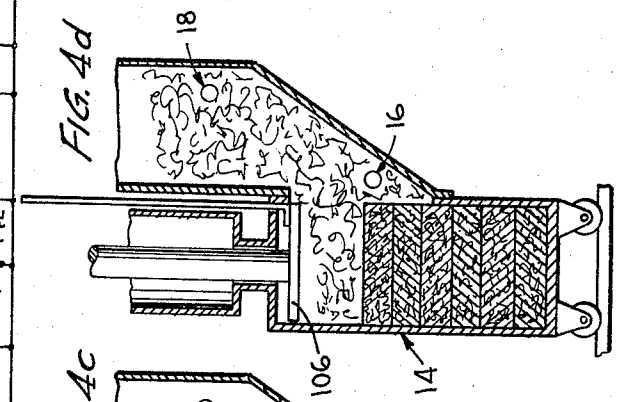


FIG. 4d

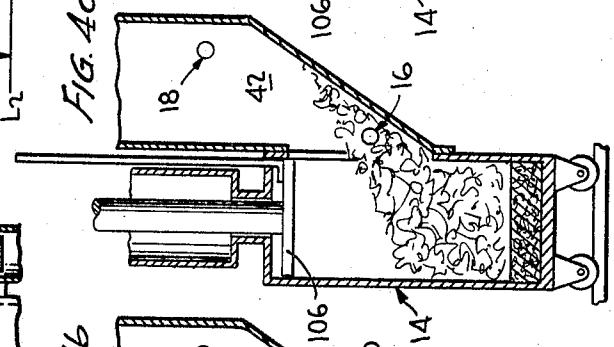


FIG. 4c

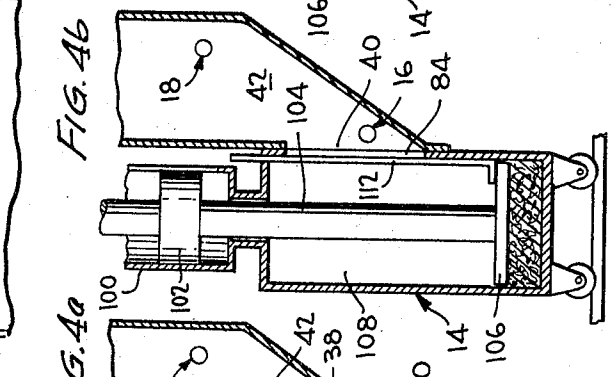


FIG. 4b

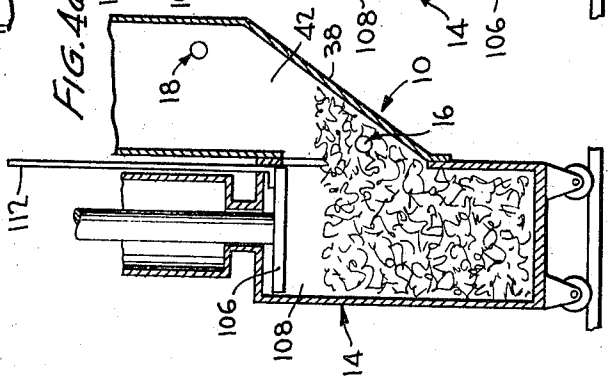


FIG. 4a

INVENTORS,
JOHN A. BOYD
DONALD E. BOYD

BY Jacobi & Davidson
ATTORNEYS

United States Patent Office 3,424,078
Patented Jan. 28, 1969

3,424,078

TRASH HANDLING AND BALING SYSTEM

John A. Boyd and Donald E. Boyd, Fairfax, Va., assignors to Boyd Package Trash Systems, Inc., Falls Church, Va., a corporation of the District of Columbia

Filed Jan. 18, 1967, Ser. No. 610,182
U.S. Cl. 100—49 12 Claims
Int. Cl. B30b 15/14, 15/16; B65b 63/02

ABSTRACT OF THE DISCLOSURE

A trash handling and baling system connected at the base of a vertically extending trash chute in a multistory building. The trash chute is coupled to a trash directing means having a sloped base therein. The sloped base directs the trash out of the trash directing means and into a baling means having a vertically movable compacting ram which compresses the trash into a bale. First and second time-delayed photocell control means are provided in the trash directing means and are operated when the light beams are broken by the presence of trash. The first control means operates the compacting ram and blocks off communication between the trash directing means and the baling means while the second control means blocks off communication between the trash chute and the trash directing means and signals when the bale has reached proper size.

This invention relates to a trash handling and baling system which is particularly adapted for the disposal of trash from multistory buildings such as apartment houses, office buildings, and the like wherein an elongated trash chute is utilized.

In the usual variety of multistory building, at least one, and possibly more than one, vertically extending elongated trash chute is provided, with each floor of the building having an access opening which permits trash to be dropped or deposited into the chute. Such trash then descends through the chute by gravity until it reaches the basement or lower level. At this area, some means must be provided for either destroying the trash or otherwise disposing of the same. As used herein, the term "trash" is intended to comprehend garbage, waste paper, refuse, or any other form of disposable matter.

In the past, the simplest and least expensive type of installations for disposing of trash from multistory buildings involved the use of a collection pan or bin at the base of a trash chute. The trash would drop by gravity through the chute into this bin and would collect therein until a janitor or maintenance man removed the same and burnt it or placed it in suitable trash containers. This was an extremely undesirable type of arrangement, if for no other reason than the fact that the odors from the trash collected in the bin would pass back up through the trash chute and would exhaust into the upper floors of the building each time someone opened an access door to the trash chute. Additionally, a considerable amount of time and effort was required to manually dispose of the collected trash.

A more recent innovation utilized a horizontally operating pushing or compacting means which directed the trash at the base of the trash chute laterally into a specialized form of container. Once the container was full of trash, it had to be removed from the building and lifted onto a truck which removed the same.

While prior systems did represent an improvement over the arrangement wherein the trash merely collected in a bin, such systems nevertheless have not proved wholly satisfactory for several different reasons. First of all, because the trash pushing means operated horizontally and

the trash receiving cart had to be disposed adjacent thereto, a considerable amount of space was required to accommodate such a system. In certain existing structures, the garbage room was insufficient in size to accommodate such a system. Moreover, even in a new building wherein such a system was to be installed originally, it was necessary to leave an inordinately large garbage room to accommodate the system, thereby wasting space which could otherwise be used more valuably.

Another disadvantage which was found with systems of this type, was that the trash tended to become so compacted within the cart that it could not readily be removed therefrom. Still a further drawback with such a system was the fact that the heavy metal cart, fully loaded with garbage, had to be removed from the garbage room, wheeled through hallways and doors and removed from the building whereat it could be loaded onto a special form of truck. Such moving of the loaded cart often damaged the building's walls and doors and because of the extreme weight of the cart, difficulty was encountered in moving the same. Moreover, using such a prior art form of system, it was necessary to provide a truck having a specialized form of lifting means so that the loaded cart could readily be lifted thereonto. This meant that the building's owners or managers would not be able to utilize any trash removal company which they desired to employ, but instead, were limited to employing a trash removing company which utilized this special form of truck. This necessarily increased the cost of trash removal for the buildings. Finally, such a prior art systems required that at least one, and usually several empty carts be maintained on hand so that when one cart became full, a new empty cart could replace it. Naturally, this meant that additional space had to be provided to accommodate all of these empty carts.

With the foregoing in mind, it is, therefore, an object of the present invention to overcome the difficulties and deficiencies encountered in prior art trash handling systems and to provide in their stead, a new and improved trash handling system.

Another object of the present invention is to provide a trashing handling system wherein the trash is compressed into a self-sustaining bale which can be manually handled, packaged in a plastic container, or so on, without the need for maintaining such trash in any special form of vessel.

Another object of the present invention is to provide a trash handling and baling system which requires a minimum amount of floor space for operation, which can be readily installed in existing structures or in new structures, and which operates in a simple and efficient manner.

Another object of the present invention is to provide a trash handling and baling system which operates substantially automatically and which does not require the presence of an attendant or operator.

Another object of the present invention is to provide a trash handling and baling system which prevents objectionable trash odors from traveling up through the trash chute and exhausting onto the upper floors of a building or structure.

Another object of the present invention is to provide a safe, efficient and relatively inexpensive apparatus for handling trash and for compressing the same into bales which can be manually handled and removed by any conventional type of trash hauling vehicle, thereby eliminating the need for any specialized type of trash receiving container or any specialized form of vehicle for handling such container.

Other objects, advantages and salient features of the present invention will become apparent from the following detailed description, which, taken in conjunction with

the annexed drawings, discloses a preferred embodiment thereof.

Referring to the drawings:

FIGURE 1 is a perspective view of a trash handling and baling system in accordance with the principles of the present invention;

FIGURE 2 is a top plan view thereof;

FIGURE 3 is a fragmentary side elevational view thereof;

FIGURES 4*a* through 4*d* are continuous diagrammatic views showing the manner of operation of the apparatus; and,

FIGURE 5 is a schematic control circuit for the present invention.

With continuing reference to the drawings, the system of the present invention includes, in general, a trash directing means generally designated **10** adapted to be connected to the base of a vertically extending elongated trash chute generally designated **12**, a baling means generally designated **14**, and first and second control means respectively generally designated **16** and **18**.

The vertically extending trash chute **12** is shown in the drawings of the present invention to be circular in cross-sectional configuration, but it will, of course, be obvious that such chute can be square, rectangular, or of any other suitable cross-sectional formation. The trash chute **12** itself does not form a part of the present invention, but instead, represents the conventional trash chute which is installed in every usual multistory building such as an apartment house, office building, or the like. The lower end of the chute **12** fits into an acoustical collar **20** formed of some suitable resilient or sound absorbing material so that the shock and sound of the trash dropping into the trash directing means **10** will not be transmitted directly back up through the trash chute **12**. A deodorizing air collar **22** is positioned between the acoustical collar **20** and the top surface **24** of the trash directing means **10**. A conventional blower **26** is connected with the air collar **22** to cause a constant downdraft in the trash chute **12**. In this manner, the odors from the trash cannot escape back up the trash chute **12**, but instead, such odors will constantly be forced downward toward the apparatus of the present invention. Additionally, a sanitizing chemical conditioner **27** can be coupled with the blower **26** to blow through the collar **22** into the means **10** for killing the bacteria therewithin.

Considering the trash directing means **10** in further detail, it will be seen that the top surface **24** thereof includes a central opening or aperture **28** which communicates with the trash chute **12** through the collars **20** and **22** so that the trash from the chute can drop into the trash directing means. Such directing means further includes a rear wall **30**, a forward wall **32**, and a pair of opposed parallel side walls **34** and **36** extending therebetween. Finally, such trash directing means includes a sloped base or bottom wall **38** which causes the trash dropping into the chute to be forwardly directed toward an outlet opening **40** formed in the forward wall **32**. Thus, the various walls of the trash directing means define therewithin a trash receiving chamber **42**. The trash enters this chamber through the opening **28**, descends till it contacts the sloped base wall **38** and is forwardly directed therealong through the outlet opening **40**.

The trash directing means is mounted upon a base plate **44** by means of internally threaded tubes **46** relatively adjustable with upstanding threaded bolts **48**. Thus, by properly adjusting the bolts within the tubes, the height of the trash directing means **10** can be varied.

A horizontally slidable door **50** having rollers **52** mounted along the side edges thereof is positioned at the upper end of the trash directing means **10** with the rollers **52** being positioned in guide channels **54**. As can be seen, the guide channels not only extend through the unit **10** but considerably therebeyond and are bridged at their outer ends by a cross beam **56**. A solenoid **58** is centrally mounted upon the cross beam **56** with the solenoid plunger being pivotally and operatively connected to a hook type crank arm **60** which locks within a central handle **62** on the forward end of the door. A fusible link **63** is provided between the handle **62** and door **50** so that in the event of fire, the door will be released and will close to prevent further trash from entering the fire. Manual operating handles **64** are also provided at opposite sides of the door **50** at the forward edge thereof. Suitable cable means **66** are connected to opposite sides of the door **50** and these cable means extend through the upper end of the trash directing means **10** and are reeved over pulleys **68** mounted at the top of the side wall **36**. Counterweights **70** are mounted at the lower end of these cables **68** with the counterweights being suitably positioned in tubular guides **72** mounted on the side **36** of the unit. Normally, the plunger of the solenoid **58** is extended so that the hook crank **60** fits within the central handle **62** of the door **50** in the manner shown in FIGURES 2 and 3. In such position, the door can be considered as retracted so that the opening **28** in the top of the trash directing means **10** remains open. However, when the solenoid plunger retracts to pivot the hook crank **60** out of the central handle **62** on the forward edge of the door **50**, as is shown in FIGURE 1, the counterweights **70** descend by gravity and cause the door **50** to move into the trash directing means **10** to thereby block the opening **28** and hence block communication between the trash chute **12** and the trash receiving chamber **42**. When it is desired to reset the door from such an advanced position to its retracted position, the door **50** can be manually moved outward by a pulling force exerted on the handles **64**.

The control means or signal generating means **16** and **18** each take the form of a photocell and suitable light source. A time delay is incorporated in the circuit with each photocell as will be presently described. The first photocell means **16**, as can best be seen from FIGURE **1**, is positioned near the lower end of the forward wall **32** while the second photocell means **18** is positioned to the rear thereof and vertically thereabove. It can also be seen that the height of the second photocell means **18** is above the top level of the outlet opening means **40**.

Directing attention to the baling means **14**, it will be seen that the same is supported upon a base **74** having wheels **76** mounted on the underside thereof. The wheels **76** ride along a pair of spaced apart tracks **78** so that the baling means **14** can readily be moved toward and away from the trash directing means **10**. The baling means **14** includes a pair of spaced parallel side walls **80** and a top wall **82** positioned vertically above the base **74**. The forward wall of the baling means, which is the wall adapted to confront the forward wall **32** of the trash directing means **10**, includes an inlet opening means **84** and a door **86** outwardly swingable about a hinge **88**. The opposite or rear wall of the baling means includes a main door **90** swingable about a vertically extending hinge **92** and a small auxiliary door **94** at the top thereof downwardly swingable about a horizontally extending hinge **96**.

A compacting means generally designated **98** is mounted at the upper end of the baling means **14**. This compacting means **98** includes a cylinder **100** having a piston **102** movably mounted therewithin. The piston is carried by an elongated piston rod **104** which has mounted at the lower end thereof, a suitable compressing ram or plate **106**. It will be appreciated that due to the formation of the walls of the baling means **14**, an internal trash compacting chamber **108** is formed therewithin. The ram or plate **106** is of the same cross sectional configuration as this chamber **108** and is mounted for movement therewithin. A suitable opening is provided in the top wall **82** to permit passage of the piston rod **104** therethrough. Also, an additional slot **110** is provided at the forward end of the upper wall **82** so that an upstanding and verti-

cally movable door **112** can fit therethrough. This door **112** is fixed to the ram **106** and is movable therewith.

Before describing the manner of operation of the present invention, attention can be directed to FIGURE 5 where one suitable form of schematic operating circuit is shown. It will, of course, be understood that the particular circuit shown in FIGURE 5 is only an exemplification of a suitable circuit and it is recognized that those skilled in the art may devise other suitable similar circuits for accomplishing the same function. It can first be seen that a suitable alternating current power source is connected across a pair of electrical lead lines L1 and L2. A motor **114** is connected between these two lead lines and when a manual switch **116** is closed, the motor is energized. The motor serves to mechanically drive a pump **118** which connects through a valve **120** to the cylinder **100**. A suitable hydraulic reservoir or tank **122** is provided so that hydraulic fluid can be pumped by the pump **118** through the valve **120** and to the cylinder **100** to operate the piston **102** mounted therewithin. A biasing spring **124** normally moves the valve **120** to the position whereat the hydraulic fluid from the pump is delivered beneath the piston **102** and hence the ram **106** is maintained in raised or elevated position. However, when a solenoid coil **126** is energized through operation of the photocell means **16**, the valve **120** is moved to the opposite position so that hydraulic pressure is delivered above the piston **102** and so that the ram **106** descends.

The photocell **16** is connected between the powerlines L1 and L2 in series with a coil **128** which operates a switch **130**. A time delay device **132**, of any suitable conventional design, is incorporated in the circuit between the switch **130** and the solenoid coil **126**. Thus, when the light beam from the photocell means **16** is broken, the coil **128** operates the switch **130** to close the same against a contact on the line L1. This passes current through the time delay device **132** and through the solenoid coil **126** thereby moving the valve **120** against the biasing force of the spring **124**. A manual switch **134** can also be provided for the purpose of operating the valve **120** independently of the photocell means **16**.

The other photocell means **18** is connected across the lines L1 and L2 in series with a coil **136** which operates a switch **138**. Thus, when the light beam from the photocell means **18** is broken, the coil **136** closes the switch **138** so that current from the line L1 will pass to a time delay device **140**, to the solenoid **58** which normally maintains the door **50** in its opened position and to a suitable horn or alarm **142**. When the manual switch **144** in such line is closed, the photocell means **18** will thus operate the solenoid **58** and the alarm **142** after an appropriate time delay as determined by the device **140**.

If attention is now directed to FIGURES *4a* through *4d*, operation of the present invention will be described. It will, of course, be appreciated that the details of the trash directing means **10** and the baling means **14** have been eliminated in FIGURE 4 and that merely the basic shapes thereof have been shown so that operation of the present invention can be simply illustrated.

In FIGURE *4a*, the ram **106** is in its normal elevated position and the door **50** is in its normal retracted position as shown in FIGURES 2 and 3. The baling means **14** has been placed in juxtaposition to the trash directing means **10** so that the inlet opening means **84** of the baler and the outlet opening means **40** of the trash directing means are in communicating alignment. Thus, the trash drops directly from the trash chute **12** into the trash receiving chamber **42**, abuts against the sloped bottom wall **38** thereof and is directed through the openings **40** and **84** and into the internal compacting chamber **108** within the baling means. This trash gradually fills the baling means and eventually starts to back up within the trash directing means thereby breaking the light beam of the photocell means **16**, as shown in FIGURE *4a*. When this occurs, the coil **128** closes the switch **130** to supply current to the time delay device **132**. In operation, it has been found that a suitable time delay interval for this device is 15 seconds. After such a time interval has elapsed and the photocell beam is still broken thereby maintaining the switch **130** in a closed position, the current will pass to the solenoid coil **126** thereby moving the valve **120** against the biasing force of the spring **124**.

When the valve **120** is so moved, hydraulic fluid is supplied to the compacting means **98** to act upon the upper surface of the piston **102** and hence to cause the ram **106** to descend within the compacting chamber **108** and to powerfully compress the trash therewithin. As the ram **106** descends, the door **112** carried thereby moves downwardly thereby temporarily blocking communication between the trash receiving chamber **42** and the trash compacting chamber **108**. Thus, a small block of powerfully crushed and compressed trash is formed in the bottom of the compacting chamber.

The ram is then raised and the door **112** is likewise raised, and the trash is again flowed into the compacting chamber **108**, as shown in FIGURE *4c*. This incoming trash, will of course, rest upon the already compressed block of trash in the bottom of the compacting chamber. When the photocell device **16** is again blocked for a sufficient amount of time as preselected by the setting on the time delay device **132**, the ram will again descend and will powerfully compress the trash again.

After this operation occurs several different times, the height of the block of compressed trash will gradually increase. As shown in FIGURE *4d*, for purposes of illustration, the compressed blocks of trash are individually cross-sectioned. However, it will be understood that in actual operation, the trash will not be compressed into separate blocks, but instead, will form one compressed bale which gradually increases in height. When, at last, the height of such a bale reaches that shown in FIGURE 4, the trash will eventually back up within the trash receiving chamber high enough to break the light beam of the photocell means **18**. That is, even if the ram were to continue to operate due to the fact that the photocell **16** was blocked, the height of the bale itself would prevent the incoming trash from being fully transferred from the trash receiving chamber **42**. As a result, when this occurs, and the photocell **18** is blocked, the switch **138** is closed. This sends current to the time delay device **140** which is preferably preset for a delay interval of two minutes. After this delay interval elapses, the current will be transmitted to the solenoid **58** to cause the same to pivot the hook lever **60** to release the door **50**. The counterweights will then cause the door **50** to move across the top of the trash directing means thereby blocking the inlet opening **28** and hence preventing any further trash from the trash chute from dropping into the trash receiving chamber **42**. Instead, such trash will merely build up within the trash chute on top of the door **50**. Simultaneously with energization of the solenoid **58**, the alarm **142** is operated. This alarm operation signals a janitor or maintenance man or other operator to advise him that the bale has reached the proper height. When the maintenance man or operator arrives in response to the signal from the alarm **142**, he can deactivate such alarm by opening the switch **144**. He can then open the auxiliary door **94** to manually scoop the trash into the top of the baling means **10**. Then, by closing the switch **134**, he can manually operate the baler means to compress this last amount of trash. This operation will succeed in emptying the trash receiving chamber **42** and in compressing all of the trash within the compacting chamber **108**. Since the door **50** is now closed, it prevents any further trash from dropping into the trash receiving chamber. At this time, the janitor can roll the baling means along the tracks **78** and out of engagement with the trash directing means **10**. The operator can then open the doors **86** and **90** on opposite sides of the baling means to fully expose the bale which is now sitting in self-sustained form within the compacting chamber. If desired, he can tie or bind the bale with wire, rope or other similar means. He then pushes the bale out of the compacting chamber so

that the same comes completely free from the baling means **14**. If an incinerator is provided in the building, the janitor can throw the entire bale into such incinerator for immediate disposal. On the other hand, if no such incinerator is present, he can merely wrap the bale with a plastic film sheet to prevent odors from escaping and to assure that no bugs or rodents can get at the bale while the same is stored. Bales which have been so wrapped in these plastic sheets, can be stored for from one to several days until a trash truck arrives. Then, the wrapped bales can merely be thrown upon the trash truck and suitably disposed of by the trash company.

After the operator has completed removal of the bale, he closes the doors on the baling means and moves the same back to assembled juxtaposed relation with the trash directing means. He then manually pulls the door **50** open, through a pulling force exerted on the handles **64**, and resets the operating circuit. As the door **50** is pulled open, the trash which has accumulated in the trash chute **12** can drop freely into the trash receiving chamber **42** and from there can transfer into the compacting chamber **108**. The foregoing cycle can then be repeated. It will also be understood that if, for one reason or another, the janitor or maintenance man desires to empty some trash directly into the baler while the same was assembled to the trash directing means **10**, he can do so merely by opening the auxiliary door **94**.

After reading the foregoing detailed description, it should be apparent that the objects set forth at the outset of the specification have been successfully achieved by the present invention.

What is claimed is:

1. A material handling and baling system positioned at the base of an elongated feeding chute and comprising:

a material directing means having a material receiving chamber therewithin coupled with said feeding chute;

baling means juxtaposed to said material directing means and including a vertically reciprocable compacting means;

said material directing means including outlet opening means and said baling means including inlet opening means, with said inlet and outlet opening means communicating with each other whereby material from said chute passes into said material receiving chamber and then into said baling means;

first and second control means disposed within said material directing means and being responsive to the presence of material within said material receiving chamber;

said second control means being vertically positioned above said first control means;

said first control means being controllably coupled with said means for compression of material within said baling means; and

horizontally movable door means coupled with said material directing means and operative to block communication between said chute and said material receiving chamber.

2. A material handling and baling system as defined in claim **1** further including a vertically movable door coupled with said compacting means and operative to block communication between said inlet and outlet opening means.

3. A material handling and baling system as defined in claim **1** wherein said second control means is controllably coupled with said horizontally movable door.

4. A trash handling and baling system particularly adapted for use in a multilevel building having an elongated trash chute therein, said system comprising:

trash directing means adapted to be coupled with said chute at the lower end thereof;

said trash directing means including a receiving chamber into which trash from said chute descends by gravity;

baling means juxtaposed to said trash directing means and including an internal compacting chamber;

said baling means including inlet opening means and said trash directing means including outlet opening means;

said inlet and outlet opening means communicating with each other whereby trash from said receiving chamber can pass into said compacting chamber;

said baling means including compacting means movable within said compacting chamber to powerfully compress the trash therewithin;

first signal generating means disposed within said receiving chamber and controllably coupled with said compacting means;

said first signal generating means being actuated by a build-up of trash within said receiving chamber to thereby signal said compacting means to cause the same to compress the trash within said compacting chamber;

said trash from said receiving chamber passing into said compacting chamber after said compacting means has compressed the trash therewithin, until the level of trash within said compacting chamber is great enough to cause trash back-up in said receiving chamber whereupon said first signal generating means becomes actuated to again signal said compacting means;

second signal generating means disposed within said receiving chamber in spaced relation to said first signal generating means;

said second signal generating means being actuated when the level of the compresed trash within said compacting chamber prevents additional trash from passing thereinto whereupon said trash backs up in said receiving chamber until both said first and said second signal generating means are actuated;

said signal from said second signal generating means serving to stop said system until said compressed trash is removed from said compacting chamber as a bale;

horizontally movable door means mounted to said trash directing means adjacent the top thereof; and

holding means normally maintaining said door in a retracted position out of the path of said trash chute but being releasable to permit said horizontally movable door means to move to an advanced position whereat it blocks communication between said trash chute and said receiving chamber.

5. A trash handling and baling system as defined in claim **4** wherein said baling means is mounted for selective movement perpendicularly to said trash chute and said compacting means is movable, in operation, parallel to said trash chute.

6. A trash handling and baling system as defined in claim **4** further including a vertically movable door coupled with said compacting means whereby, when said compacting means moves to a trash compressing position, said vertically movable door blocks communication between said inlet and outlet opening means.

7. A trash handling and baling system as defined in claim **4** wherein said second signal generating means is controllably coupled with said holding means to release the same.

8. A trash handling and baling system as defined in claim **4** wherein said baling means includes access door means which are normally closed but which can be manually opened to permit removal of said bale from said compacting chamber.

9. A trash handling and baling system as defined in claim **8** wherein said baling means further includes auxiliary door means which, when opened, permit manual loading of trash into said compacting chamber even while said access door means are closed and while said inlet and outlet opening means are in communication.

10. A trash handling and baling system particularly adapted for use in a multilevel building having an elongated trash chute therein, said system comprising:

trash directing means adapted to be coupled with said chute at the lower end thereof;

said trash directing means including a receiving chamber into which trash from said chute descends by gravity;

baling means juxtaposed to said trash directing means and including an internal compacting chamber;

said baling means including inlet opening means and said trash directing means including outlet opening means;

said inlet and outlet opening means communicating with each other whereby trash from said receiving chamber can pass into said compacting chamber;

said baling means including compacting means movable within said compacting chamber to powerfully compress the trash therewithin;

first signal generating means disposed within said receiving chamber and controllably coupled with said compacting means;

said first signal generating means being actuated by a build-up of trash within said receiving chamber to thereby signal said compacting means to cause the same to compress the trash within said compacting chamber;

said trash from said receiving chamber passing into said compacting chamber after said compacting means has compressed the trash therewithin, until the level of trash within said compacting chamber is great enough to cause trash back-up in said receiving chamber whereupon said first signal generating means becomes actuated to again signal said compacting means;

second signal generating means disposed within said receiving chamber in spaced relation to said first signal generating means;

said second signal generating means being actuated when the level of the compressed trash within said compacting chamber prevents additional trash from passing thereinto whereupon said trash backs up in said receiving chamber until both said first and said second signal generating means are actuated;

said signal from said second signal generating means serving to stop said system until said compressed trash is removed from said compacting chamber as a bale; and

collar means connected between said trash chute and said trash receiving means and a blower coupled with said collar means to create a downdraft within said trash chute.

11. A material handling and baling system positioned adjacent the outlet of an elongated feeding chute, comprising:

a material directing means having a material receiving chamber therewithin coupled with said feeding chute;

baling means juxtaposed to said trash directing means and including a reciprocable compacting means;

said material directing means including outlet opening means and said baling means including inlet opening means, with said inlet and outlet opening means communicating with each other whereby material from said chute passes into said material receiving chamber and then into said baling means;

control means disposed within said material directing means and being responsive to the presence of material in said receiving chamber;

said control means being controllably coupled with said compacting means for compaction of material within said baling means; and

means movably supporting said baling means to enable said baling means to be moved laterally away from said material receiving chamber to fully separate said inlet and outlet opening means so that said baling means can be opened and a compacted bale removed therefrom.

12. A material handling and baling system as defined in claim **11** wherein said means movably supporting said baling means includes wheel means and cooperating guide rail means extending laterally away from said material receiving chamber.

References Cited

UNITED STATES PATENTS

1,142,188	6/1915	Macomber	100—34
2,646,745	7/1953	Seltzer	100—53
3,024,719	3/1962	Englund	100—49 XR
3,039,383	6/1962	Windle et al.	
3,111,892	11/1963	Deems	100—215 XR
3,212,432	10/1965	Raab	100—215 XR
3,231,107	1/1966	Clar	100—229 XR

FOREIGN PATENTS

1,214,138	4/1966	Germany.

BILLY J. WILHITE, *Primary Examiner.*

U.S. Cl. X.R.

53—124; 100—53, 99, 215, 218, 255, 269; 141—73; 214—41