United States Patent [19]

McDonald et al.

[11] **3,839,952**

[45] **Oct. 8, 1974**

[54] **REFUSE COMPACTOR WITH SELECTIVE SPRAY DEVICE**

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[73] Assignee: **Whirlpool Corporation,** Benton Harbor, Mich.

[22] Filed: **June 18, 1973**

[21] Appl. No.: **371,280**

[52] U.S. Cl. ..... **100/45,** 100/73, 100/229 A, 222/180

[51] **Int. Cl.** **B30b 15/00**

[58] **Field of Search** ..... 100/45, 71, 73, 229 A; 239/274; 222/162, 174, 181, 185, 402.15, 180; 312/31, 31.2, 31.3; 21/77; 220/87

[56] **References Cited**

UNITED STATES PATENTS

2,989,214	6/1961	Manheimer	222/180
3,556,619	1/1971	Bottas et al.	100/45
3,636,862	1/1972	Bottas et al.	100/229 A
3,786,744	1/1974	Miller et al.	100/229 A
3,793,942	2/1974	Martiniak	100/229 A
3,800,694	4/1974	Miller et al.	100/45

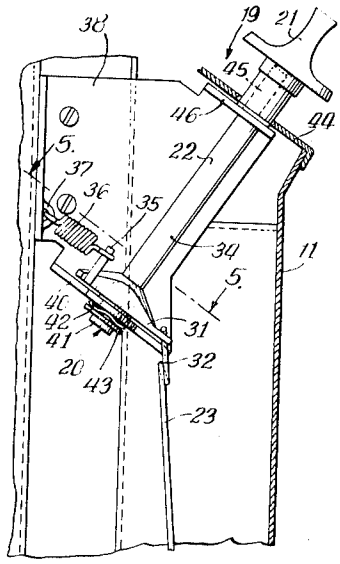
Primary Examiner—Billy J. Wilhite

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[57] **ABSTRACT**

A refuse compactor having means for holding refuse to be compacted and means for selectively providing access to the receptacle for placing trash therein. Means are provided for spraying a treating material onto the refuse in the receptacle and control means are provided for controlling operation of the spraying means to provide different modes of operation thereof. The control means includes a manually operable selector for selecting the desired mode of operation. The receptacle may define a movable drawer having cam means associated therewith for effecting operation of the spray device in one mode of operation.

7 Claims, 5 Drawing Figures



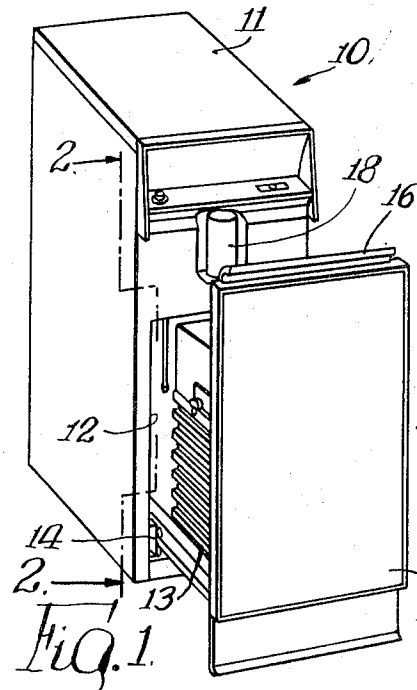


Fig. 1

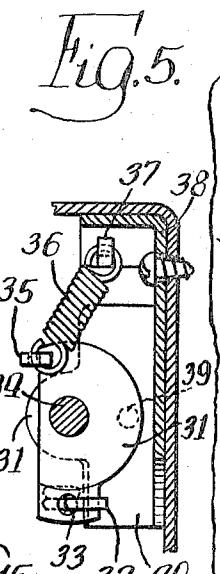


Fig. 5

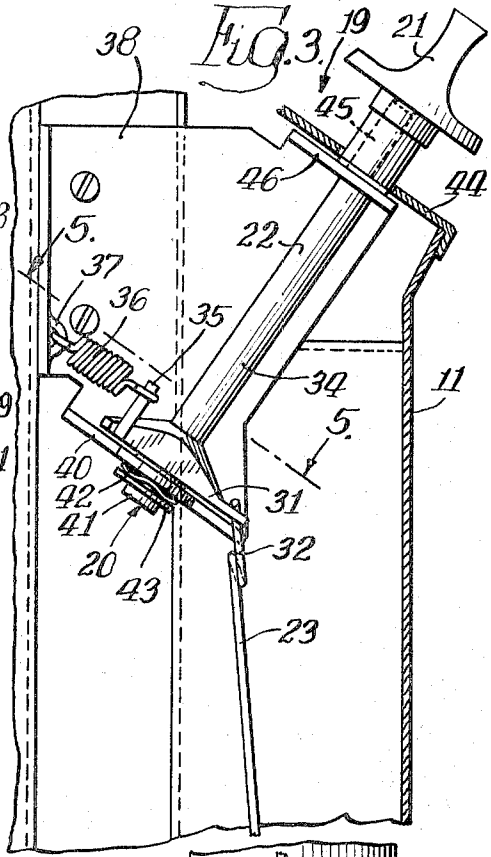


Fig. 3

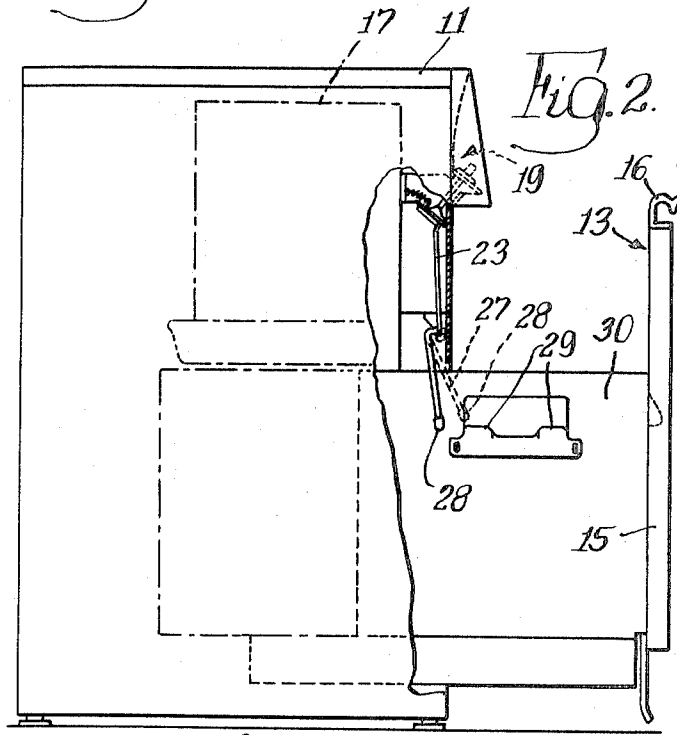
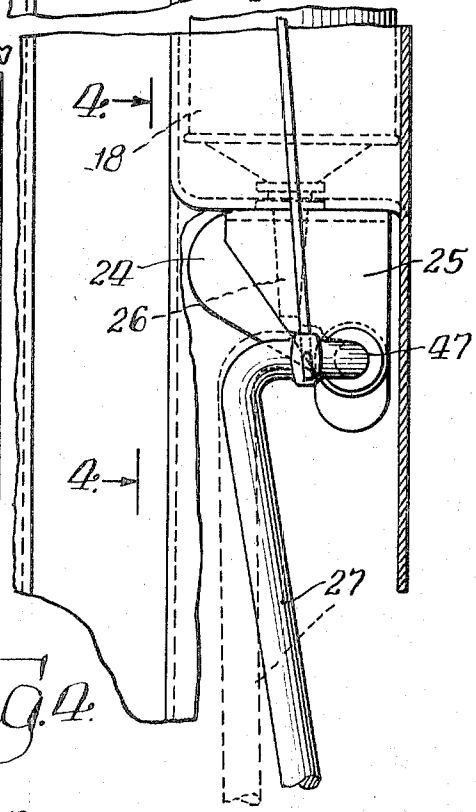


Fig. 2



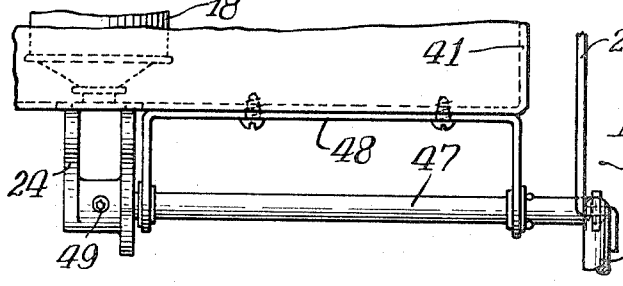


Fig. 4

REFUSE COMPACTOR WITH SELECTIVE SPRAY DEVICE

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to refuse holders, and in particular to refuse compactors having means for spraying a treating material onto refuse in a receptacle thereof.

2. Description of the Prior Art

In U.S. Letters Pat. No. 3,556,619 and 3,636,862 of M. J. Bottas et al., owned by the assignee hereof, refuse storage compactors are disclosed having spray devices associated therewith for spraying treating agent or material onto the refuse placed in a receptacle of the apparatus. As illustrated in said patents, the spray device may be actuated by a cam follower responsive to movement of the receptacle drawer. The drawer is provided with suitable cam means for engaging the cam follower to effect the desired automatic dispensing of the spray material. The actuating means is arranged to effect the spraying operation upon a movement of the drawer to the retracted, or compacting, position so that refuse newly placed in the drawer will automatically be treated prior to the compacting operation.

The spray means may comprise means for delivering a preselected quantity of the treating material during each actuation thereof.

In U.S. Letters Pat. No. 2,989,214 of G. J. Manheimer, an automatic aerosol dispensing device is illustrated having associated therewith a lever operable to prevent automatic dispensing of the aerosol when desired.

SUMMARY OF THE INVENTION

The present invention comprehends an improved refuse storage apparatus having a device for spraying treatment material onto the refuse. A new and improved control is provided for selective operation of the spraying means.

More specifically, the invention comprehends the provision in a refuse compactor, having a receptacle for holding refuse to be compacted and means for selectively providing access to the receptacle for placing trash to be compacted therein, of means for treating the refuse in the receptable comprising means for spraying a treating material onto refuse in the receptacle and control means for controlling operation of the spraying means selectively (*a*) to automatically treat the refuse as an incident of providing access to the receptacle, (*b*) to treat the refuse at any time as a result of a manual actuation of the control means, and (*c*) to prevent treatment of the refuse irrespective of providing access to the receptacle.

The receptacle, or container, may comprise a drawer selectively movable into a retracted, refuse compacting position within a cabinet and to a disposed accessible, refuse loading position forwardly of the cabinet. The drawer may be provided with cam means for effecting the automatic operation of the spraying means by suitable control of a cam follower associated therewith.

The control means may include a manually operable selector mechanism which, illustratively, may be disposed at the front of the cabinet for facilitated manual control of the spraying means. The control mechanism may be biased to an arrangement wherein the spraying means is automatically operated. Releasable holding means may be provided for selectively releasably retaining the selector mechanism in an arrangement wherein the control means is disposed to prevent treatment of the refuse irrespective of providing access to the receptacle. The control means is arranged to operate the spraying means as a result of a manipulation of the control mechanism to provide spray of treatment material onto the refuse in the manual mode of operation.

In the arrangement of the control mechanism for preventing operation of the spraying means, the cam follower is caused to be spaced from the cam means so as to prevent actuation of the spraying means at all times.

The invention broadly comprehends providing a closure means for the receptacle, or container, and effecting the desired automatic operation in response to movement of the closure means. In the illustrated embodiment, the closure means comprises a portion of the receptacle, and more specifically, defines a front panel of a drawer-type receptacle.

BRIEF DESCRIPTION OF THE DRAWING

Other features and advantages of the invention will be apparent from the following description taken in connection with the accompanying drawing wherein:

FIG. **1** is a perspective view of a refuse compactor having a refuse spraying means embodying the invention;

FIG. **2** is a side elevation thereof with portions broken away and hidden portions shown in broken lines;

FIG. **3** is a fragmentary enlarged vertical section of the spray control means;

FIG. **4** is a reduced vertical section taken substantially along the line **4—4** of FIG. **3**; and

FIG. **5** is a fragmentary section taken substantially along the line **5—5** of FIG. **3.**

DESCRIPTION OF THE PREFERRED EMBODIMENT

In the exemplary embodiment of the invention, a refuse compactor generally designated **10** is shown to comprise a cabinet **11** defining a front opening **12.** A receptacle, or container, **13** is provided in the form of a drawer carried on suitable guides **14** for selective disposition in a retracted refuse compacting arrangement within the cabinet **11,** or a forward, refuse receiving accessible position. Drawer **13** may be provided with a front panel **15** having a handle **16** for facilitated movement of the drawer between the compacting and loading positions.

Refuse placed in the drawer in the loading position is compacted therein by a suitable compactor ram means **17** when the drawer is placed in the compacting position. An aerosol can spray device **18** is mounted within the cabinet above the opening **12** for spraying suitable treatment material onto the refuse placed in the drawer thereby to sanitize or deodorize the refuse which may be retained in the drawer for a number of days while building up a substantial amount of compacted material.

The present invention comprehends an improved means for controlling the release of the spray material from the aerosol can **18** providing a novel selective control. The control means generally designated **19** provides controlled operation of the spraying means for selectively automatically treating the refuse as an inci-

dent of providing access to the receptacle **13**, treating the refuse at any time as a result of a manual actuation of the control means, or preventing treatment of the refuse irrespective of movement of the drawer **13**. Thus, where normal refuse is deposited in the drawer, the normal automatic operation of the spray device **18** may be continued. Where it is desired to provide extra treatment of the refuse, the user may operate the control **19** to spray desired additional treating material onto the refuse at any time. Where the refuse comprises simply paper or the like not requiring any sanitizing or deodorizing action, the user may dispense with the spraying operation.

Control **19** includes a rotary mechanism **20** operable by a handle **21** through a connecting shaft **22** to longitudinally displace a link **23** connected to the actuator **24** mounted on a bracket **25** adjacent the nozzle **26** of the aerosol spray can device **18**. Movement of the actuator **24** is controlled by a cam follower rod **27** carrying a cam follower **28** at the lower end thereof to be normally engaged by a pair of cams **29** mounted on the side wall **30** of drawer **13**. In the automatic mode of operation, the follower **27** is disposed as shown in full lines in FIGS. **2** and **3** and, thus, cam follower **28** is disposed to be engaged by cams **29** as the drawer is moved to the retracted position within cabinet **11**. Thus, two sprays of treating material are provided from aerosol can device **18** in the moving of the drawer to the closed position.

Rotary device **20** further includes a connector plate **31**. Link **23** includes an upper connecting portion **32** which is passed through a suitable opening **33** in connector plate **31** for effecting longitudinal movement of link **23** as a function of rotation of plate **31** about the longitudinal axis **34** of connecting shaft **22**.

Generally diametrically oppositely of opening **33**, plate **31** is provided with a lug **35**. A coil spring **36** is connected between lug **35** and a lug **37** on mounting bracket **38** mounted within cabinet **11** to bias plate **31** to a centered position, as shown in FIG. **5**. With plate **31** in the centered biased position, cam follower rod **27** is disposed as shown in full lines in FIGS. **2** and **3** so as to dispose cam follower **28** in the path of movement of cams **29**. By rotating knob **21** to effect a counterclockwise rotation of plate **31** to the position of FIG. **5**, link **23** is moved longitudinally, or linearly downwardly, to pivot the cam follower rod **27** from the full line position of FIGS. **2** and **3** to the dotted line position of FIG. **2** wherein the cam follower **28** is spaced above the path of movement of cams **29** thereby disposing the control in an "Off" arrangement precluding operation of the spray device notwithstanding movement of the drawer between the loading and retracted positions.

Cooperating detent means **39** may be provided on plate **31** and a subjacent mounting bracket flange **40** for releasably holding the plate **31** in this "Off" disposition. Connecting shaft **22** includes a reduced diameter end portion **41** which is journalled in bracket flange **40**. Rotation of plate **31** is controlled by a spring washer **42** and backup washer **43** on shaft end **41** with spring washer **42** being retained yieldingly between washer **43** and bracket flange **40**, as shown in FIG. **3**. Thus, spring washer **42** cooperates with detent means **39** for releasably holding the control mechanism **19** in the "Off" position when desired.

As indicated above, control mechanism **19** further defines means for manually effecting operation of aerosol spray device **18** when desired. Thus, clockwise rotation of knob **21** to rotate plate **31** sufficiently to longitudinally raise link **23** to swing cam follower rod **27** to the dotted line position of FIG. **3** causes a corresponding pivotal movement of actuator **24** to actuate the aerosol spray device **18** and thereby manually effect a spray operation.

As shown in FIG. **3**, cabinet **11** may further include an inclined wall portion **44** through which the upper end **45** of shaft **22** extends for carrying knob **21**. The upper end of shaft **22** may be suitably journalled in an upper bracket flange **46**, as shown in FIG. **3**. Thus, rotation of the shaft **22** about its longitudinal axis **34** is converted into a rectilinear movement of the link **23** suitable for controlling the disposition of cam follower **28** and actuation of the aerosol device actuator **24** as desired.

Thus, control mechanism **19** is normally biased to the automatic control disposition wherein cams **29** control the dispensing of the spray material. The user may selectively disable the mechanism by rotating the knob in a counterclockwise direction with the detent means **39** releasably retaining the mechanism in this "Off" arrangement.

Alternatively, the user may at any time effect the dispensing of the spray material by rotating the knob **21** in a clockwise direction.

The automatic operation of the spray device is effected by a movement of the closure panel **15** to provide access to the container, or drawer, **13** as for placing additional refuse therein. Movement of the closure panel **15**, and drawer **13**, to the position wherein the panel closes the front portion of the cabinet normally automatically effects the desired spraying operation.

As shown in FIG. **4**, link **23** is connected to the upper end of cam follower rod **27**. A cross piece **47** continues from the upper end of cam follower rod **27** and is rotatably journalled in a bracket **48** secured to the cabinet **11**. The actuator **24** is secured to the distal end of cross piece **47** by suitable means such as set screw **49**. Thus, aerosol spray device **18** may be disposed centrally of the drawer **13** with the cam follower rod **27** extending along one side of the drawer and with the cams **29** being mounted on the outer surface thereof. The operation of the metered dispensing means of the aerosol can device such as device **18** is illustrated in greater detail in the above-discussed Bottas et al. U.S. Pat. No. 3,636,862 and the disclosures of each of the Bottas et al. U.S. Pat. Nos. 3,556,619 and 3,636,862 are incorporated by reference herein.

The foregoing disclosure of specific embodiments is illustrative of the broad inventive concepts comprehended by the invention.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. In a refuse compactor having a receptacle for holding refuse to be compacted, and means for selectively providing access to the receptacle for placing trash to be compacted therein, means for treating the refuse in the receptacle comprising:

means for spraying a treating material onto refuse in the receptacle; and

control means for controlling operation of said spraying means selectively

a. to automatically treat the refuse as an incident of providing access to the receptacle,

b. to treat the refuse at any time as a result of a manual actuation of the control means, and

c. to prevent treatment of the refuse irrespective of providing access to the receptacle.

2. The refuse compactor treating means of claim **1** including means for selectively disposing the receptacle in a retracted compacting disposition and an exposed accessible disposition, and said control means is arranged to cause operation of the spraying means to automatically treat the refuse as an incident of movement of the receptacle from said accessible disposition to said retracted disposition.

3. The refuse compactor treating means of claim **1** wherein said control means includes a manually operable selector mechanism having biasing means for urging the control means to the arrangement wherein the spraying means is automatically operated.

4. The refuse compactor treating means of claim **1** wherein said control means includes a manually operable selector mechanism having biasing means for urging the control means to the arrangement wherein the spraying means is automatically operated and releasable holding means for selectively releasably retaining the selector mechanism in an arrangement wherein the control means is disposed to prevent treatment of the refuse irrespective of providing access to the receptacle.

5. The refuse compactor treating means of claim **1** wherein said control means includes a manually operable selector mechanism and means responsive to a manipulation of the selector mechanism to a preselected manual operation position to operate said spraying means to treat the refuse.

6. The refuse compactor treating means of claim **1** including means for selectively disposing the receptacle in a retracted compacting disposition and an exposed accessible disposition, and said control means is arranged to cause operation of the spraying means to automatically treat the refuse as an incident of movement of the receptacle between said dispositions, said control means including cam means on said receptacle, cam follower means responsive to said cam means to operate the spraying means, and a manually operable selector mechanism for selectively

a. permitting control of the cam follower by said cam means to automatically treat the refuse as an incident of providing access to the receptacle,

b. manually disposing the cam follower to operate the spraying means to treat the refuse at any time, and

c. positioning the cam follower to preclude engagement with the cam means to prevent treatment of the refuse irrespective of providing access to the receptacle.

7. The refuse compactor treating means of claim **1** wherein said control means includes a manually operable selector mechanism having a linearly movable actuator associated with the spraying means for actuating the same, a rotary selector, and means for converting rotation of the rotary selector to a linear movement suitable to operate the spraying means actuator.

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