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M. J. BOTTAS ET AL
REFUSE STORAGE APPARATUS

3,556,619

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2 Sheets-Sheet 1

FIG. 1

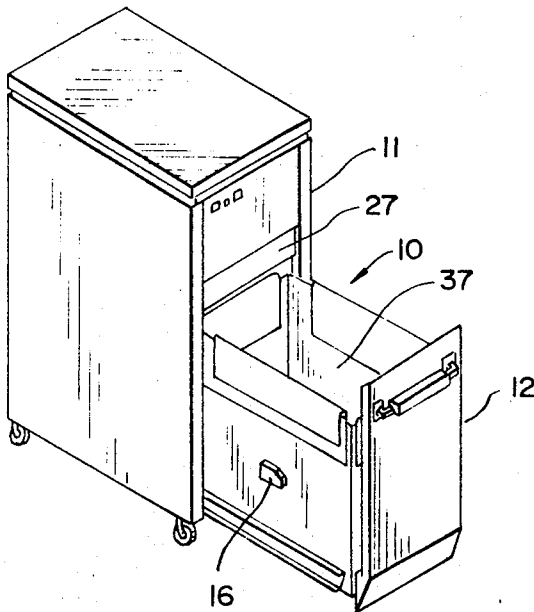


FIG. 3

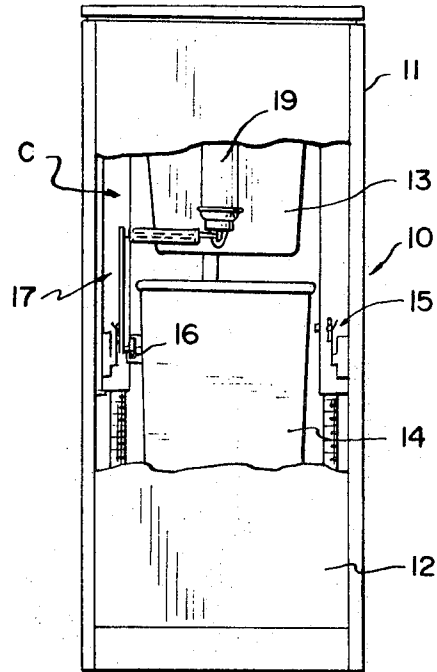


FIG. 2

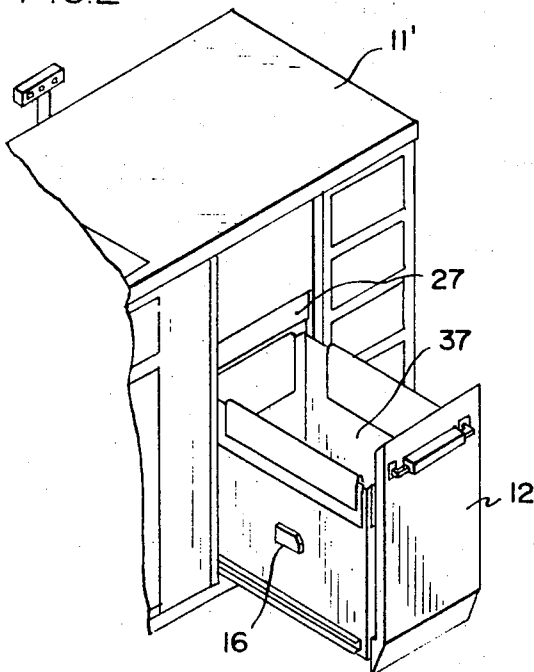
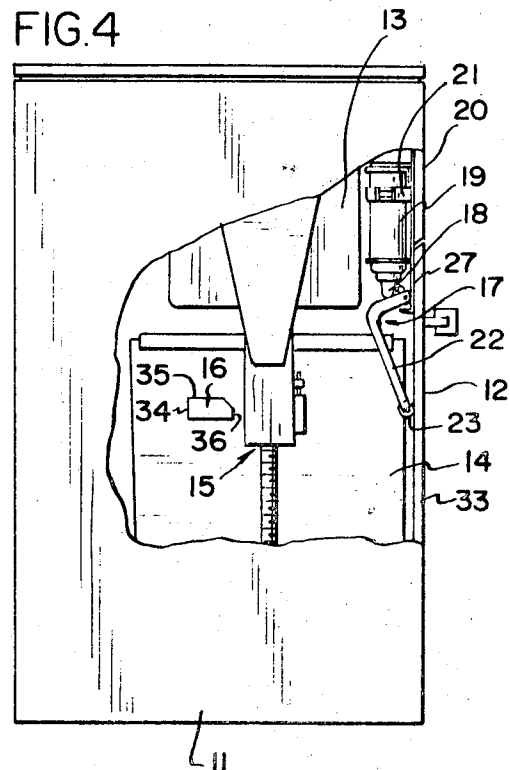


FIG. 4



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FIG. 6

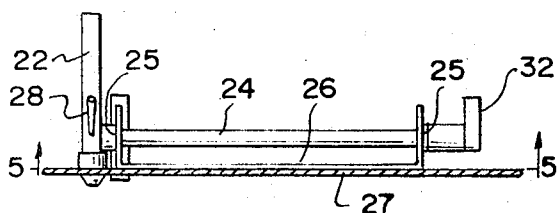


FIG. 8

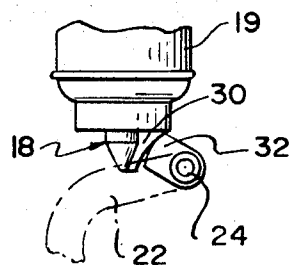


FIG. 5

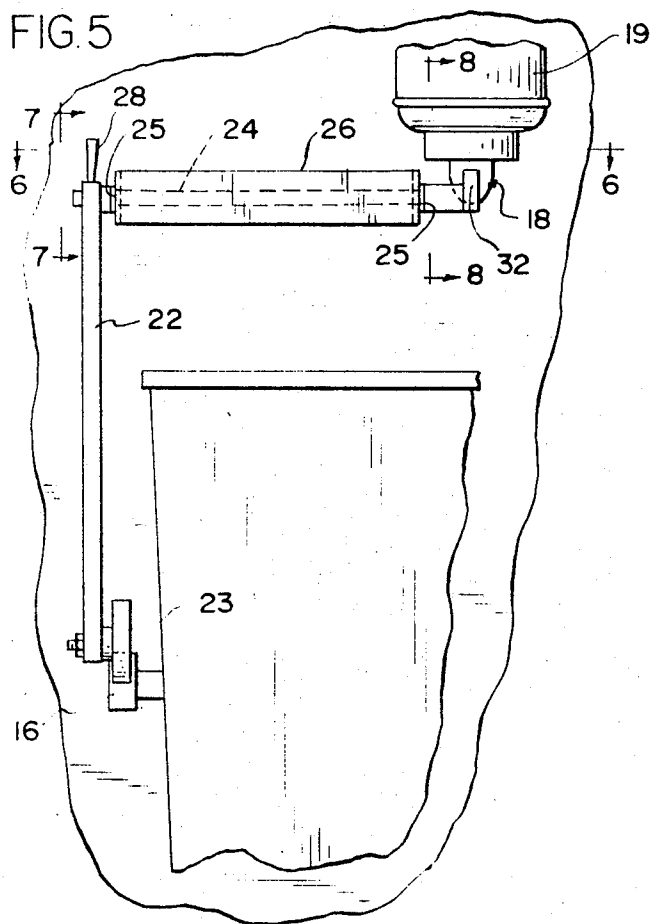


FIG. 9

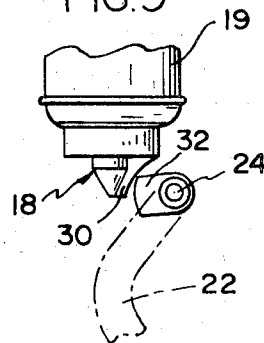


FIG. 10

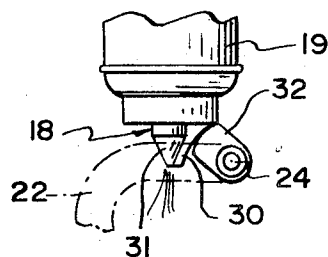
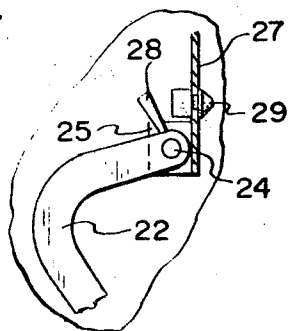


FIG. 7



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REFUSE STORAGE APPARATUS

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U.S. Cl. 312—31

15 Claims

ABSTRACT OF THE DISCLOSURE

A refuse storage apparatus having a storage drawer which is selectively movable from a storage position within a cabinet to an exposed position wherein refuse may be placed in the drawer. The apparatus includes means for spraying the refuse when the drawer is returned to the storage position. The spray may comprise a disinfectant. Further, the spray may comprise a deodorant. The apparatus is arranged so that the drawer may be partially opened and returned to the storage position without actuation of the spraying device. Resilient means are provided for positively releasing the spray mechanism to prevent jamming thereof in the spraying position. The spraying mechanism includes a gravity biased arm and cam means on the drawer for operating the arm to effect the spraying operation. The arm is arranged to be pivoted to a retracted position to permit movement of the drawer to the exposed position and back to the storage position without operation of the spraying means when desired.

BACKGROUND OF THE INVENTION

Field of the invention

This invention relates to refuse handling apparatus and in particular to refuse storage apparatus.

Description of the prior art

In conventional garbage and waste receptacles, refuse is collected in a suitable container portion thereof for subsequent disposal as by garbage collectors. In one improved form of refuse storage apparatus, means are provided for compacting the refuse so that substantial quantities thereof may be stored in relatively small containers. Thus, it is necessary to dispose of the stored garbage only at relatively infrequent intervals. It has been found, however, that with such somewhat protracted storage of the refuse it may be advantageous to introduce a disinfectant or deodorant to ensure prevention of sanitation and odor problems, particularly where the apparatus is disposed within a residence, such as within a kitchen or utility room.

A number of different devices have been provided heretofore for automatically introducing a disinfectant or the like into lid-covered refuse collecting receptacles or containers. Some of these such devices have included means for effecting a delivery of the disinfectant when the container is opened to introduce refuse into the container.

SUMMARY OF THE INVENTION

The present invention comprehends an improved refuse handling apparatus wherein means for spraying the introduced refuse is arranged to be operated as an incident of the movement of a collecting drawer thereof. The invention comprehends the arrangement of the apparatus so that the spraying occurs after the drawer is at least partially retracted into the cabinet to effectively prevent undesirable spraying outwardly therefrom, thereby to effectively maximize the efficiency and safety of the spraying operation. Thus, the invention comprehends a refuse storage apparatus wherein the spraying means are ar-

ranged to be operated by the movement of the drawer to the storage position.

The invention further comprehends the arrangement of the spraying means permitting a preselected partial exposure of the drawer without subsequent operation of the spraying means so that small quantities of refuse, such as paper napkins, and the like, may be placed in the drawer without requiring the operation of the spraying means.

The spraying means includes a container carried on the cabinet superjacent the drawer and lever means actuated by suitable cam means on the drawer to effect a delivery of the desired refuse treating material from the container into the drawer. The lever means is gravity biased to the released position, and resilient biasing means may further be provided to effectively prevent a jamming of the spraying means in the spraying condition by the lever means.

The refuse storage apparatus may further include compacting means for compacting the refuse subsequent to the spraying thereof. Resultingly, a substantial quantity of compacted refuse may be stored in the apparatus for protracted periods of time as desired by the user.

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 free-standing or portable refuse storage apparatus embodying the invention;

FIG. 2 is a fragmentary perspective view of a counter mounted refuse storage apparatus embodying the invention;

FIG. 3 is a front elevation of the apparatus of FIG. 1 with a portion broken away to illustrate the interior construction thereof;

FIG. 4 is a side elevation thereof with a portion broken away to illustrate the interior construction thereof;

FIG. 5 is a fragmentary enlarged vertical section taken substantially along the line 5—5 of FIG. 6;

FIG. 6 is a fragmentary horizontal section taken substantially along the line 6—6 of FIG. 5;

FIG. 7 is a fragmentary side elevation taken substantially along the line 7—7 of FIG. 5;

FIG. 8 is a fragmentary vertical section taken substantially along the line 8—8 of FIG. 5 with the spraying means, a rocker arm being indicated in phantom lines to facilitate understanding of the invention as disposed with the drawer in the storage position;

FIG. 9 is a view similar to that of FIG. 8, but with the spraying means as disposed with the drawer in the exposed, or open, position thereof with the rocker arm indicated in phantom lines; and

FIG. 10 is a view similar to FIG. 8, but with the spraying means in the spraying arrangement and the rocker arm indicated in phantom lines.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In the exemplary embodiment of the invention as disclosed in the drawing, a refuse storage apparatus, generally designated 10 is shown to include a cabinet 11, and a drawer 12 movably mounted in the cabinet for selective disposition in an exposed, refuse receiving position, as shown in FIG. 1, and in a closed, storage position as shown in FIGS. 3 and 4. As shown in FIG. 1, the cabinet 11 may comprise a free-standing cabinet. It should be understood, however, that the cabinet 11 may be any suitable cabinet including the counter cabinet 11' illustrated in FIG. 2.

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In the illustrated embodiment, the apparatus 10 includes a refuse compactor C having a compactor ram 13 adapted to be moved into the receptacle 14 of drawer 12 when the drawer is moved to the storage position, for compacting the introduced refuse. The ram 13 is operated by suitable mechanism generally designated 15, to automatically lower the ram into the container 14 to compress the refuse and then return the ram to the retracted position superjacent the drawer 14, as shown in FIG. 4. The details of the compaction means form no part of the present invention.

As indicated briefly above, the invention comprehends providing in apparatus 10, means for spraying refuse treating material into the drawer 12 when the drawer is moved to a preselected spray position. Herein the spray position is intermediate the exposed position of the drawer shown in FIG. 1 and the storage position of the drawer shown in FIG. 4, and is determined by the disposition of a cam 16 carried on the drawer 12 and arranged to operate a lever mechanism, generally designated 17, to control the valve 18 of an aerosol container and dispenser 19 containing disinfectant and deodorant. The valve 18 is normally biased to the closed or nonspraying position. As shown in FIG. 4, the aerosol container 19 is carried on a mounting plate 27 behind the front wall 20 of the cabinet 11 and held in place by a suitable clamp 21 to be disposed superjacent the drawer to spray suitable material, such as disinfectant and deodorizing material, downwardly into the drawer.

As best seen in FIG. 4, the mechanism 17 includes a rocker arm 22 carrying at its lower end a roller cam follower 23 and fixed at its upper end to a shaft 24 rotatably journaled in a pair of bearings 25 carried by a bracket 26 secured to the mounting plate 27. Mounting plate 27 extends downwardly from the rear of the front wall 20 to slightly below the level of the valve 18 thereby to shield the valve when the drawer is in the open position.

As best seen in FIG. 7, the upper end of the rocker arm 22 is provided with a projecting roll pin 28 and the lower portion of the mounting plate 27 is provided with a resilient rubber bumper 29 adapted to be engaged by the roll pin 28 when the rocker arm 22 is pivoted fully in a clockwise direction, as seen in FIG. 7. Thus, the rubber bumper 29 effectively defines a resilient means for urging the rocker arm 22 back toward the hanging position of FIG. 4.

As best seen in FIGS. 8-10, the valve 18 includes a manipulating portion 30 which, when pressed toward the container and dispenser 19, releases a spray of material from the container downwardly from a spray nozzle portion 31 thereof, as shown in FIG. 10. Means for depressing the actuating portion 30 comprises a cam lever 32 fixed to the shaft 24. When the drawer is in the closed position of FIG. 4, the roller 23 on the rocker arm 22 gravity biases the rocker arm 22 to the stand-by position of FIG. 8 wherein the cam lever 32 permits the valve 18 to remain in the closed position. Thus, the lever mechanism 17 constitutes a gravity-biased operating means. When the drawer is moved outwardly toward the open position of FIG. 1, the roller 23 engages the cam 16 on the drawer to swing the rocker arm 22 further in the counterclockwise direction and thus further space the cam lever 32 from the valve mechanism 30. When the cam 16 moves past the roller 23 the arm 22 may then fall behind the cam 16 to arrange the structure as shown in FIG. 9.

When the drawer is moved back to the storage position of FIG. 4, the roller 23 firstly engages the rear surface 34 of the cam 16 to swing the rocker arm 22 in a clockwise direction. When the roller 23 is moved sufficiently to ride on the upper surface 35 of the cam 16, the rocker arm 22 is pivoted to the extreme clockwise disposition of FIG. 10 wherein the cam lever 32 engages the valve mechanism 30 to open the valve 18 and deliver disinfectant and deodorant spray from the container 19

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into the drawer receptacle 14. As the drawer is moved further toward the storage position of FIG. 4, the roller 23 falls off the front surface 36 of the cam 16 allowing the rocker arm to again swing to the hanging position of FIG. 9 until the drawer is restored fully to the storage position whereupon the roller engages the rear of the front wall 33 of the drawer and the apparatus is restored to the arrangement of FIG. 8.

Thus, it may be seen that the spray operation requires that the drawer be moved outwardly from the storage position sufficiently to bring the roller 23 to rearwardly of the cam 16. A small outward movement of the drawer and return thereof to the storage position, therefore, does not activate the spray mechanism, and thus, small quantities of refuse, such as paper napkins and the like, may be conveniently placed in the receptacle 14 without effecting a spraying thereof. However, any time it is desired to effect a spraying of the collected refuse, the user need merely move the drawer outwardly to the position wherein the roller falls behind the cam 16 and then return the drawer to the storage position. In such return, the spraying operation is automatically effected, as discussed above.

As indicated briefly above, when the rocker arm 22 is pivoted fully clockwise to operate the valve mechanism 30, the pin 28 engages the rubber bumper 29 and is biased thereby in a counterclockwise direction so that as soon as the roller follower 23 leaves the cam 16, and rocker arm is effectively positively urged away from the spray operating position of FIG. 10 to prevent jamming of the spraying mechanism in the open position.

As the spraying operation is effected when the drawer is in a partially closed condition, the spray material is effectively positively retained in the receptacle 14. Thus, the refuse storage apparatus 10 provides improved safety and comfort in the use thereof.

The drawer may be lined with a replaceable bag 37 permitting the removal of the compacted refuse from time to time. At such time, it is desirable to prevent operation of the spraying apparatus when the drawer is returned to the storage position as ordinarily there will be no refuse in the newly installed bag. To prevent such operation of the spraying apparatus, the user need merely pivot the arm in a counterclockwise direction when the drawer is in the fully open position of FIG. 1 to permit the follower 23 to clear the cam 16 whereupon the drawer may be moved to the storage position of FIG. 4 without engagement of the follower 23 with the cam 16 and thus, without operation of the spraying apparatus.

A desirable feature of the refuse storage apparatus 10 is the spraying of the refuse prior to the compacting thereof when the refuse is in an expanded condition permitting improved distribution of the spraying material therein. The delay between the spraying and the initiation of the compacting operation in the storage position permits the spray to have improved distribution in the refuse prior to the compacting thereof.

While we have shown and described certain embodiments of our invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as defined in the appended claims.

We claim:

1. In a refuse storage apparatus having a cabinet, a drawer for receiving refuse, and means for movably mounting the drawer in said cabinet for selective disposition in an exposed position wherein refuse may be placed therein, and a storage position within the cabinet, means for spraying refuse treating material into said drawer as an incident of movement of the drawer to a preselected spray position intermediate said exposed and storage position.

2. The refuse storage apparatus of claim 1 wherein

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said spraying means includes valve means normally biased to a nonspraying condition.

3. The refuse storage apparatus of claim 1 wherein said spraying means includes means permitting said spraying into said drawer only in the event said drawer is firstly disposed outwardly from said storage position at least a preselected substantial distance whereby the drawer may be partially exposed and returned to the storage position without causing operation of the spraying means.

4. The refuse storage apparatus of claim 1 wherein said spraying means includes gravity biased operating means and means on the drawer for operating said operating means.

5. The refuse storage apparatus of claim 1 wherein said spraying means includes a dispenser carried by the cabinet, a lever mounted of the cabinet arranged to operate the dispenser to spray into the drawer as an incident of pivotal movement of the lever, and cam means on the drawer for pivotally moving the lever to operate said dispenser.

6. The refuse storage apparatus of claim 1 wherein said spraying means includes an aerosol container having a release valve, means for mounting the container on the cabinet, an actuating lever for depressing the container valve to release material from the container into the drawer, means on the cabinet carrying the lever for pivotal movement relative to the container valve, cam means mounted on the drawer for pivoting the lever away from the valve on opening of the drawer, and permitting the arm to ride over the cam means as the drawer moves toward said exposed position, said cam causing the lever arm to engage the valve and operate the same to release the material from the container upon a movement of the drawer cam past the lever permitting the valve to reclose.

7. The refuse storage apparatus of claim 6 further including means resiliently biasing the lever away from the valve.

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8. The refuse storage apparatus of claim 7 wherein said biasing means is mounted on said cabinet.

9. The refuse storage apparatus of claim 1 wherein said spraying means includes a container mounted on the cabinet above the longitudinal centerline of said drawer.

10. The refuse storage apparatus of claim 1 wherein said spraying means includes a container mounted on the cabinet adjacent a front wall of the cabinet.

11. The refuse storage apparatus of claim 1 wherein said spraying means includes a spray container, a control arm pivoted on said cabinet, and means on the drawer for moving said control arm to operate said spray container, said control arm being arranged to be manually pivoted in one direction to permit full movement of the drawer without operating the spray container.

12. The refuse storage apparatus of claim 1 wherein said spraying means includes means for causing said spraying only when the drawer is being moved toward said storage position from outwardly of said spray position.

13. The refuse storage apparatus of claim 1 wherein said refuse treating material comprises a disinfectant.

14. The refuse storage apparatus of claim 1 wherein said refuse treating material comprises a deodorant.

15. The refuse storage apparatus of claim 1 wherein said apparatus further includes means for compacting the refuse subsequent to the spraying thereof.

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U.S. Cl. X.R.

312—211, 330