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SUPPORTING AND LID OPERATING MEANS FOR REFUSE RECEPTACLES

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Fig. 1.

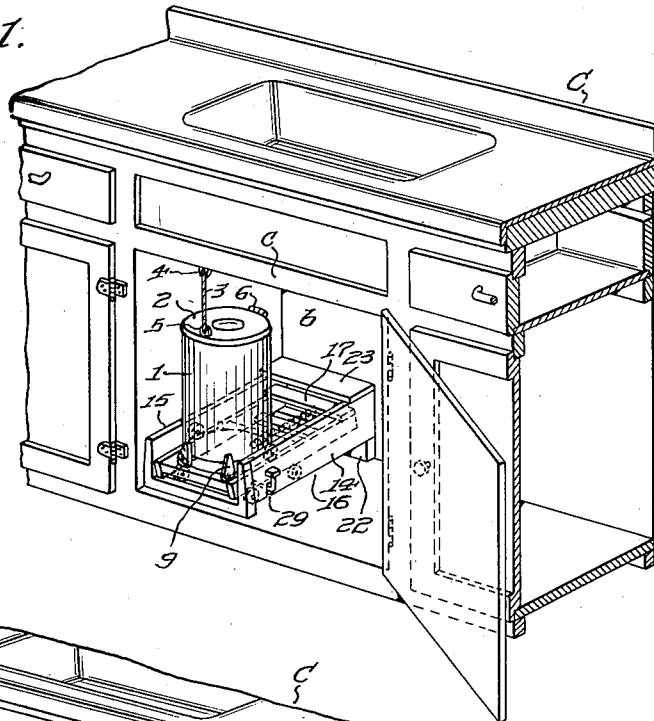


Fig. 2.

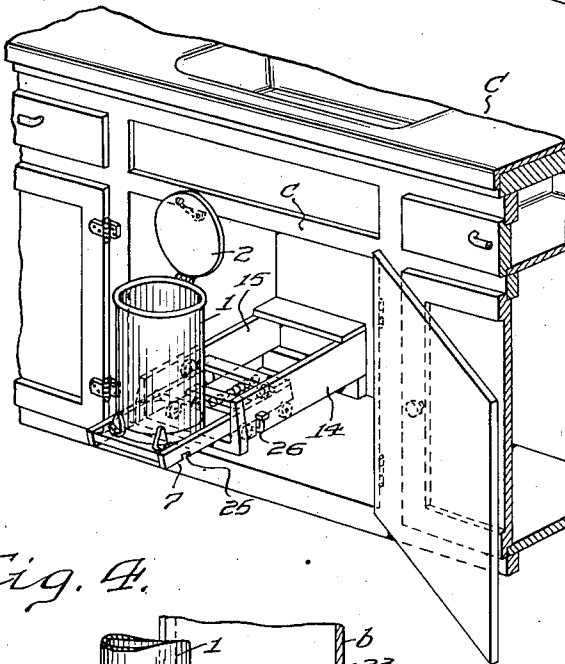


Fig. 3.

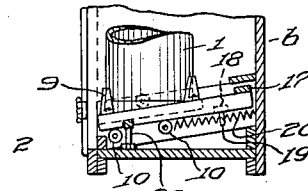


Fig. 5.

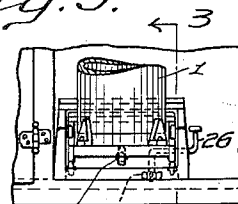
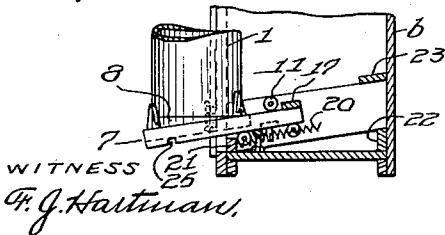


Fig. 4.



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SUPPORTING AND LID OPERATING MEANS
FOR REFUSE RECEPTACLES

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2 Claims. (Cl. 248—128)

This invention relates to refuse receptacles such as garbage cans, trash cans and the like adapted for use in domestic surroundings as repositories for waste materials and is particularly directed to means for enhancing the convenience and accessibility of such receptacles while minimizing the inconvenience usually associated with their presence in domestic kitchens and generally comparable places.

Refuse receptacles of the type used in domestic kitchens and the like have heretofore sometimes embodied closures adapted to open automatically upon operation of a foot treadle or the like but so far as I am aware it has heretofore been impossible to conveniently employ receptacles of this type except where they may be kept at a place providing sufficient space above them to permit the closure to be fully opened when desired and this has therefore usually resulted in their being placed on the floor of a room, where they constitute obstructions to passage over and/or other normal use of the floor space they occupy.

It is therefore a principal object of this invention to provide a refuse receptacle in combination with means whereby the receptacle may be normally kept in an out of the way position, as in the recess formed by a kitchen cabinet compartment or the like, when not required for use, and automatically projected therefrom for receiving refuse or other purposes and the receptacle closure automatically opened simultaneously with projection of the receptacle from its normally retracted position.

A further object is to provide mechanism of this character in which the force of gravity is utilized to project the receptacle from its recess and in which releasable means are provided for holding the receptacle in the recess against the force of gravity when not in use together with means for imparting an initial impetus to the receptacle on operation of said releasable means to overcome the inertia of the receptacle and enable the force of gravity to bring it quickly and automatically to position for use.

Another object is to provide in combination with such mechanism means for automatically opening the closure of the receptacle during projection of the latter toward said position.

Other objects, purposes, and advantages of the invention will hereinafter more fully appear or be understood from the following description of a preferred embodiment thereof in which reference will be had to the accompanying drawing.

In the said drawing

Fig. 1 is a front perspective view of a kitchen

cabinet of a common type in which mechanism embodying my invention is installed, the receptacle and its supporting slide being shown in retracted position in this figure.

Fig. 2 is a somewhat similar view showing the receptacle and its slide projected from the recess in which it is normally disposed and prepared for the reception of refuse or the like due to the automatic opening of its closure.

Figs. 3 and 4 are fragmentary vertical sections of the said mechanism in the positions respectively shown in Figs. 1 and 2.

Fig. 5 is a fragmentary front elevation thereof, the line 3—3 therein indicating generally the plane of section of Figs. 3 and 4.

In the several figures like characters are used to designate the same parts.

Referring now more particularly to the drawing, showing a kitchen cabinet C which in itself forms no part of the invention but is merely illustrative of a well known type of cabinet with which mechanism embodying the invention may conveniently be associated, it will be understood the mechanism is adapted for association and combination with any other suitable article of furniture or the like providing a space for it beneath a substantially horizontal stationary part. Said mechanism thus normally maintains a refuse receptacle 1 retracted into such space with its hinged closure or lid 2 connected to the horizontal part, such as the lintel c of the cabinet compartment opening, by a preferably non-stretchable link 3, loosely connected by brackets 4, 5 respectively to the lintel c and to the receptacle lid 2 at a point diametrically opposite the hinge 6 by which the lid is fastened to the receptacle.

The receptacle 1, within which a removable liner (not shown) may be positioned if desired, is supported on a movable slide 7 disposed at a small angle to the horizontal and the receptacle is held upright thereon by a wedge-shaped plate 8 which affords a substantially horizontal base for the receptacle and compensates for the angularity of the slide. Cleats 9 are disposed at spaced points around the base of the receptacle to prevent it from slipping from the slide but permit it to be lifted therefrom when desired.

The angularity at which the slide is supported is of course a matter of choice, but is preferably sufficient to cause it to move freely by gravity outwardly from the recess in which it is normally disposed, although as will hereinafter appear, means are provided for initially overcoming its inertia when released for outward movement so that its gravitational movement can begin sub-

stantially immediately upon such release. The slide is supported for reciprocatory movement on pairs of antifriction rollers 10 under its lateral edges and additional similar rollers 11 engaging its upper edges prevent it from tipping and these rollers are carried by the side panels 14, 15 of a main supporting frame 16 which rests on the floor of the cabinet compartment. The upper rollers 11 are preferably positioned adjacent the outer extremity of the path of movement of a transverse cleat 17 which extends across the rear part of the slide, and thus afford a positive stop to prevent the slide from moving too far out of its recess.

A second transverse cleat 18 on the under side of the slide carries a bracket 19 to which a compression spring 20 is attached at substantially its mid point so that the front portion of the spring forms a cushion stop for the slide which normally comes into play before the rollers 11 are engaged by the cleat 17 to gradually stop the normal outward movement of the slide and receptacle by engagement with the inner face of a cross bar 21 at the front of the main supporting frame. The opposite end of the spring projects rearwardly substantially parallel to and slightly beyond the back end of the slide and is thus adapted to be slightly compressed between the bracket and the inner face of the back wall of the recess as the slide is pushed to retracted position, the spring when so compressed providing, upon release of the slide from said position, an initial impetus sufficient to overcome its inertia and cause it to move by gravity downward and outward and thus bring the receptacle to accessible position for use.

The rear ends of the side panels 14 and 15 of the main frame are secured together by a transverse cleat 22 beneath the frame and of sufficient vertical height to afford the desired slope to the frame when it is positioned on a horizontal floor, while an upper transverse rear cleat 23 also assists in holding the panels together and insures substantial rigidity of the frame as a whole. It will be understood, however, that the structural members of the frame, slide and other parts may be made in any suitable way and while in the embodiment of the invention illustrated wood may be largely utilized in their construction it is contemplated that metal parts may be employed if desired, and their specific design correspondingly modified.

For retaining the slide in its recess when not in use, adjacent a front corner of one of its side rails there is a notch 25 adapted to receive a foot-actuated detent 26 supported from the cabinet floor on a spring hinge 27 and extending through a slot 29 in the adjacent side panel of the main frame, the slide being held retracted by engagement of the detent in the notch. It is thus adapted for convenient release upon foot operation of the detent to allow the spring 20, compressed against the back wall of the recess, as shown in Fig. 3, to come into play to overcome the inertia of the slide and initiate its forward and downward movement, which the force of gravity causes to continue until the opposite end of the spring engages the inner face of the cross bar 21 at the front of the main frame to gradually bring the slide and hence the receptacle to rest with the receptacle in an accessible position outside of the recess.

During this movement link 3 retains the outer edge of the lid at a fixed distance from lintel c although permitting the point on the lid to which

it is connected to move in an arc of a circle of which the connection of the link with the lintel is the center and the lid therefore automatically rises on its hinge so that when the receptacle has reached the limit of its outward movement the lid is substantially fully open, thus affording convenient access to the interior of the receptacle.

When the slide and receptacle are thereafter returned to retracted position, as by pushing the slide inwardly with the foot, the lid normally closes by force of gravity, but the link may if desired be a relatively rigid one, such as a metal rod pivoted to the lid and cabinet and the lid thereby closed somewhat more quickly and positively then if it is merely allowed to fall by gravity during rapid return of the receptacle and slide to retracted position, the detent automatically re-entering notch 25 in the slide to releasably hold it in said position.

While I have herein shown and described an embodiment of the invention in which the several parts are more or less conventional as to structure as well as in the materials used, this will be understood as merely for convenience and to facilitate an understanding of the invention and without restricting or confining the latter thereto in any way as its principles may be embodied in differently constructed mechanism and/or different materials may be employed and these and other changes and modifications of the form, structure and arrangement of the various parts as will readily occur to those skilled in the art, may be made if desired without departing from the spirit and scope of the invention as defined in the appended claims.

Having thus described my invention, I claim and desire to protect by Letters Patent of the United States:

1. Operating and supporting means for a refuse receptacle comprising a frame, anti-friction means carried thereby affording inclined substantially parallel ways, a slide movable in said ways having a detent receiving notch adjacent one of its ends and including receptacle receiving means, a receptacle received thereby having a hinged top closure, a spring pressed detent carried by the frame and releasably engaged in said notch when the slide and receptacle are in one position, means extending from the receptacle closure to a fixed support adapted to raise said closure about its hinge when the receptacle is moved with the slide to another position after disengagement of the detent from said notch, yielding means carried by the slide adapted to engage the frame during said movement to thereby gradually bring the slide to rest at the limit of said movement and an abutment disposed adjacent the limit of movement of the slide in the opposite direction adapted to be engaged by said yielding means when the slide is moved in said opposite direction toward position for engagement of said detent in said notch whereby when the detent is entered in the notch said yielding means is maintained under compression.

2. In means for supporting and operating a refuse receptacle having a hinged top closure, a frame, a movable slide, anti-friction means carried by the frame embracing the slide and supporting it from the frame at an angle to the horizontal, the slide having a notch in an edge of one of its sides, a spring pressed detent engageable in said notch to hold the slide in one position in the frame, yielding means carried by the slide and engageable with the frame at the limits

of travel of the slide to cushion termination of its movement in opposite directions, said yielding means storing energy when the slide is at one of said limits and said detent is engaged in said notch to thereby overcome inertia of the slide 5 when the detent is retracted from the notch, the force of gravity then operating to move the slide relatively to said anti-friction means to another position, means carried by the slide for receiving 10 the receptacle and holding it thereon against relative lateral movement, and flexible tension

means interconnected with a fixed support and said top closure operative to move said closure on its hinge during gravitational movement of the receptacle with the slide, said tension means being inoperative to move the closure during movement of the receptacle and slide in the opposite 5 direction, the closure being movable on its hinge when the receptacle and slide are at the limit of their travel in said opposite direction.

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