

July 7, 1953

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WASTE RECEPTACLE

2,644,737

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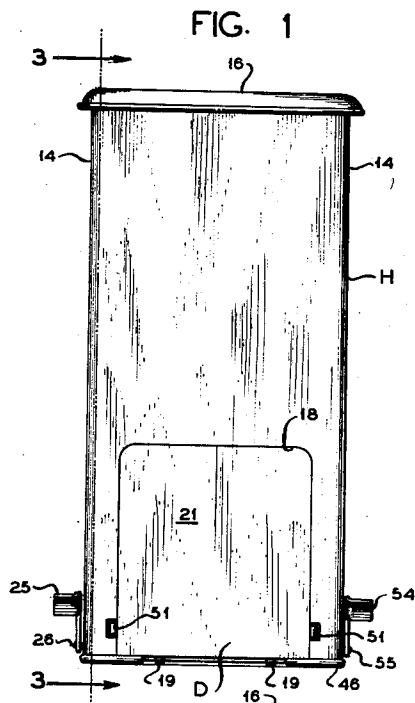
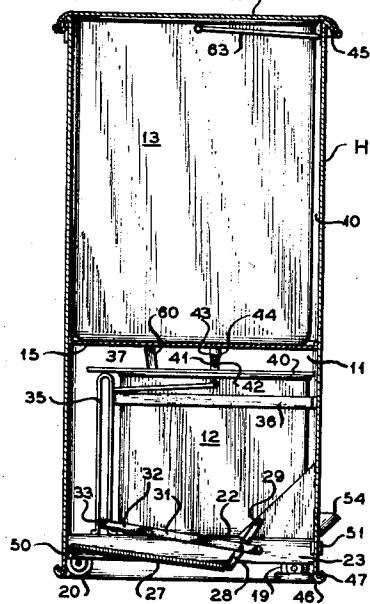
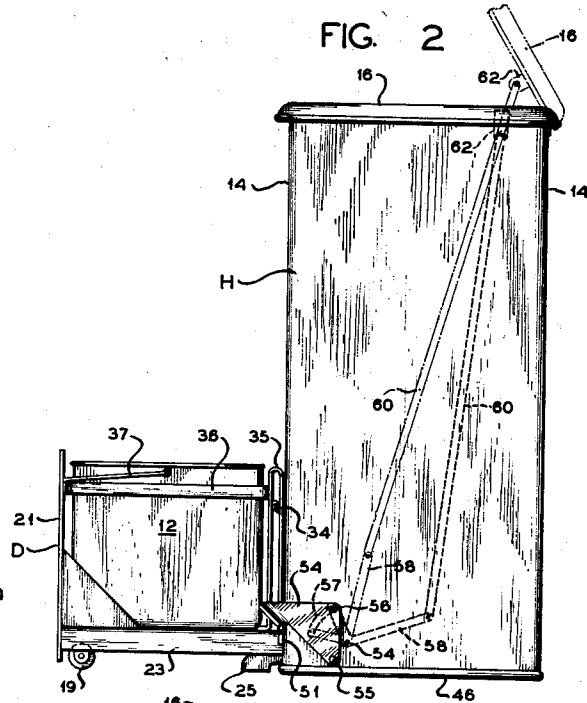
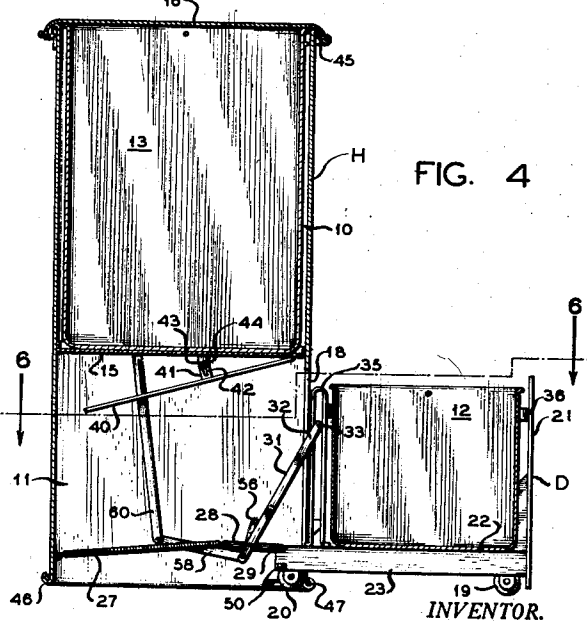


FIG. 3



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2 Sheets-Sheet 2

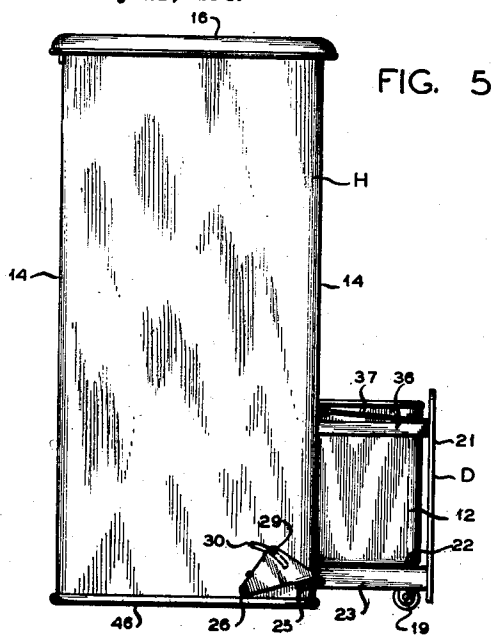
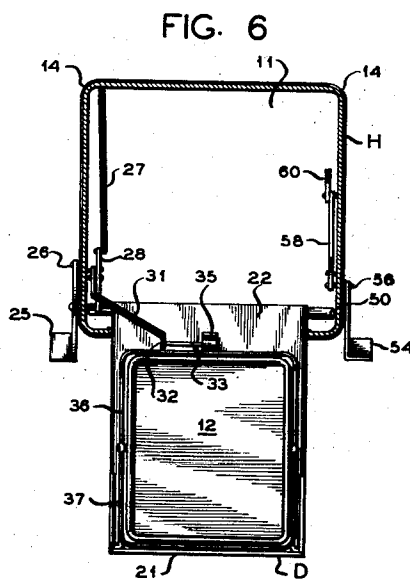


FIG. 7

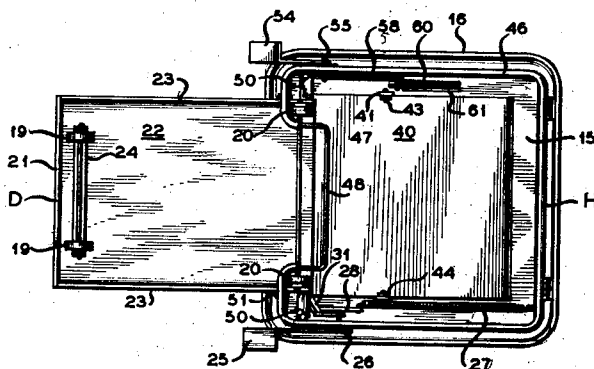
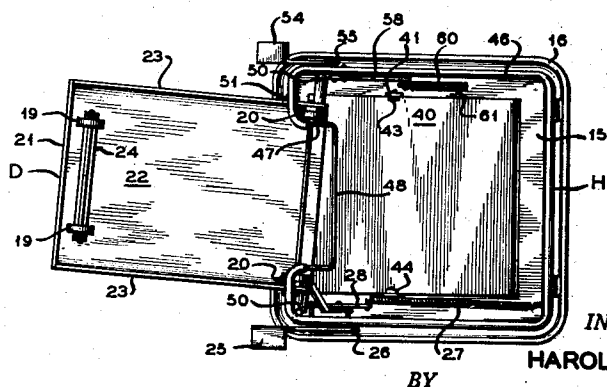


FIG. 8



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WASTE RECEPTACLE

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4 Claims. (Cl. 312-270)

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This invention relates to waste receptacles, and more particularly to a combined receptacle adapted to receive not only waste food or the like, normally at least potentially odoriferous, and therefore preferably placed in a sealed container, but also combustible or similar waste material, such as paper and other articles or materials commonly placed in a waste basket.

Among the objects of this invention are to provide a combined waste receptacle which provides ready access to either one, or both, of two waste containers; to provide a receptacle in which access to a waste container may be obtained by foot pressure; to provide a receptacle in which a waste container is moved from a position of storage or rest to an access or waste-receiving position; to provide such a container which may be locked in access position, but readily returned to storage position; to provide a waste container for waste food products and the like, which is adequately sealed during storage; to provide such a waste container which is automatically sealed upon being returned to storage position; to provide a waste receptacle which will contain a maximum volume of waste, with respect to the area of floor space occupied by the receptacle; and to provide a waste receptacle which is sturdy, yet relatively light in weight and simple in construction. Additional objects and the novel features of this invention will become apparent from the description which follows, taken in connection with the accompanying drawings, in which:

Fig. 1 is a front elevational view of a waste receptacle constructed in accordance with the present invention, with the parts in closed position;

Fig. 2 is a right side elevational view of the receptacle of Fig. 1, showing the lower compartment and container in open position;

Fig. 3 is a vertical sectional view taken substantially along the line 3-3 of Fig. 1, looking in the direction of the arrows;

Fig. 4 is a vertical sectional view, partly in elevation of the left side of the receptacle as shown in Fig. 2;

Fig. 5 is a left side elevational view of the waste receptacle of the preceding views, showing the lower compartment and its removable container in partially open position;

Fig. 6 is a horizontal sectional view taken substantially along the line 6-6 of Fig. 4, looking in the direction of the arrows;

Fig. 7 is a bottom plan view of the waste receptacle in open position; and

Fig. 8 is a view similar to Fig. 7, showing the

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outwardly projected parts in their laterally shifted position to maintain said parts in open position.

As shown in Figs. 1 and 2, a waste receptacle constructed in accordance with this invention may comprise a housing H having an upper compartment 10 and a lower compartment 11, the lower compartment receiving a drawer D, in which is disposed a lower waste container 12 for waste food products or the like, normally potentially odoriferous. The upper compartment 10 is adapted to receive an upper waste container 13, for paper and similar combustible or substantially non-odoriferous and other waste bulky objects. The housing H is preferably formed of sheet metal or the like, and is square or rectangular in cross section but provided with rounded corners 14 for a purpose hereinafter set forth. The upper and lower compartments are separated by a partition 15 on which upper waste container 13 rests, and which may be attached to the housing H by spot welding or the like. The housing H is also provided at its upper end with a hinged lid 16 which, when in open position, permits access to upper waste container 13.

The housing H is adapted to rest upon a floor or similar supporting surface, and an outstanding feature of this invention lies in the fact that drawer D, instead of being pivoted or otherwise movable on or supported by housing H, moves inwardly and outwardly in a linear path through an opening 18 formed in housing H, as shown more clearly in Fig. 1, and is supported by front rollers 19 and rear rollers 20, substantially independently of the housing H. The possibility of tipping the housing H is considerably minimized, and also the possibility of the drawer D tipping or falling out of the housing is negligible. The drawer D includes a sheet metal front 21 and bottom 22, suitably reinforced, as by a framework 23 formed of channel or bar stock, and to which the roller brackets 24 are attached. In effect, drawer-like waste food container D has its own carriage.

The drawer D is moved outwardly by downward pressure on a foot pedal 25, which is pivoted on a pin 26 (Figs. 1 and 6) at one side of the housing H, while the drawer is returned to storage position within the housing by a spring 27 which, as in Fig. 6, is attached at its rear end to the rear wall of housing H and at its front end to a link 28. Link 28, in turn, is pivoted at its forward end on a pin 29 connecting link 28 with foot pedal 25, pin 29 moving in an arcuate slot 30 in housing H.

As will be evident, forward and rearward movement of link 28 causes a corresponding movement

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of drawer D, but the total movement of link 28 is less than the total movement of the drawer, and a lever 31 provides a considerably greater total movement of the drawer than of link 28. Link 28 is pivotally attached to lever 31 adjacent the lower end of the latter, which is pivoted on housing H, while lever 31 is provided with an inwardly offset upper end 32 adapted to clear housing H in movement into opening 18, as in Fig. 8. The upper end 32 of lever 31 carries a rod 33, provided at its opposite end with a roller 34 adapted to move upwardly and downwardly within a vertical yoke 35, preferably formed of channel or other flanged shape. Yoke 35 is welded or otherwise suitably attached at its lower end to bottom 22 of the drawer, and attached adjacent its upper end to a bracket 36, which in turn is attached at its forward end to front 21 of the drawer. Bracket 36 defines the space for reception of lower waste container 12, which is provided with a handle 37 for removal of the waste container from the drawer, as for emptying.

Due to the small amount of friction produced by rollers 19 and 20 of drawer D, during movement of the drawer over the floor or other supporting surface, the force necessary to move the drawer to open position is relatively small, as is also the force necessary to return the drawer, so that spring 27 need not be unduly strong. The distance of traverse of the drawer D requires that the upper end of lever 31 move through a relatively large arc, and link 28 is therefore pivoted on lever 31 much closer to the lower end of the latter than to the upper end thereof. The pressure on foot pedal 25, of course, not only moves the drawer out of the housing H, but also overcomes the force of spring 27, but again due to the small amount of friction required for movement of the drawer D, the force required to depress foot pedal 25 is relatively small.

A further important feature of this invention is a "floating" sealing plate 40 for lower waste container 12, which automatically seals the container 12 when it is moved rearwardly into storage position, as in Fig. 3. Sealing plate 40 rests upon the top of the container in storage position, and to insure the desired engagement of the plate 40 with the top of waste container 12, plate 40 is pivotally supported from above, but in offset position. Thus, as in Fig. 4, the plate 40 will ordinarily be tipped rearwardly, so that when the drawer D is moved inwardly, the rear edge of the lower waste container 12 will first engage the plate 40 and tend to push it upwardly. As soon as the rear edge of the container passes the center of gravity of the plate during such movement, the plate 40 will tend to tip forwardly onto the container, and the container slides underneath the plate, the plate being supported by the container, so that an adequate seal is assured, as when the drawer and container reach the position of Fig. 3. The plate 40 is preferably relatively light so that very little friction (which would add to the force necessary to move the drawer) is produced by such sliding movement. When the drawer is pulled to open position, the container 12 slides out from underneath the plate 40, and the plate merely hangs in the position of Fig. 4 until the drawer is again closed.

Suitable means for supporting plate 40 in a floating, offset position, may include brackets 41 attached to and extending upwardly from plate 40 on each side thereof but slightly forwardly of the center of gravity thereof. Each bracket 41 is provided with a vertical slot 42 adapted to receive a pin 43, the latter being mounted on a sup-

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porting bracket 44 depending from partition 15. As will be evident, slots 42 not only permit pivotal movement of plate 40, but also vertical movement, thereby providing in effect, a "lost motion" connection. The length of slots 42 and position of pins 43 are readily made so the plate 40 floats, as it were.

The housing H is preferably made of relatively light metal, which construction is made stronger by partition 15. Housing H may be further strengthened by a rolled upper edge 45, which may be rolled about a reinforcing rod or wire. Similarly, the lower end of the housing may be provided with a rolled edge 46, which is preferably rolled around a rod 47, since due to the opening 18 for drawer D, there will normally be greater need for reinforcement at the lower end of the housing than at the upper end. To permit the drawer D to be moved inwardly and outwardly a maximum distance, so as to provide a maximum dimension for waste container 12, in comparison with the floor space required by the housing H, the rear rollers 20 of the drawer D are preferably adapted to move as close to the outer periphery of the housing as possible. To accommodate such movement, as in Fig. 7, and also to accommodate the front rollers 19 so that the drawer D may be closed flush with the housing, i. e., to obviate the necessity for the front rollers 19 passing over the reinforcing rod 47, the front rollers 19 are spaced inwardly with respect to the rear rollers 20, and rod 47 is provided with a rearwardly displaced, offset section 48. As will be evident from Fig. 7, offset section 48 accommodates the front rollers 19 when the drawer is moved to closed position.

In further accordance with this invention, the rear end of the drawer D is provided with side rollers 50, adapted to move along the interior of the side walls of the housing, to guide the drawer D toward and from open position. The rollers 50 also engage the rear, rounded corners 14 of housing H, to place the drawer D in more exact alignment, so that the drawer is substantially self-centering as it moves back to closed position. Thus, there will be no tendency for the drawer to become twisted or misaligned, and only the minimum amount of pressure on foot pedal 25 will be required the next time the drawer is opened. Housing H, at each edge of opening 18, may also be provided with rollers 51 which are adapted to engage the sides of the drawer at the bottom, such as the sides of framework 23. The normal clearance between the rollers 50 and 51 and the parts engaged thereby is preferably relatively liberal, not only to reduce construction costs, but also to provide an additional valuable feature of this invention, i. e., the locking of the drawer D when in open position, as shown in Fig. 8.

When the drawer D is moved outwardly to open position, as in Fig. 7, in the event that pressure on foot pedal 25 is released, spring 27 will immediately return the drawer to closed position. However, it often happens that the user will desire that the drawer shall remain open for a period of time, and this may be accomplished quite readily, merely by shifting or twisting the drawer to one side or the other, as by the foot, so that the front of the drawer will be shifted laterally, as to the position of Fig. 8. In this position, one of the rollers 50 tends to wedge against the inside of the housing, and the drawer is wedged against roller 51 on the opposite side, or the drawer is wedged between housing side rollers 51. The drawer D can be maintained in open position for any desired length of time,

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merely by leaving it in the position of Fig. 8. When the drawer is to be closed, it is only necessary for the user to shift the drawer a short distance laterally in the opposite direction, as again with the foot, until the drawer is again in alignment, whereupon spring 27 will return the drawer to closed position.

The top lid 16 of the receptacle may be opened by hand, or by pressure on a foot pedal 54, disposed on the opposite side of the housing H from foot pedal 25, and preferably similar in construction to the latter. Lid foot pedal 54 may be pivoted at its lower end on a pin 55 mounted on housing H, as in Fig. 2, and provided at its upper end with a pin 56 extending through and movable in an arcuate slot 57 in the housing. Pin 56 is pivotally attached at its inner end to the front arm of a double-arm lever 58, which is pivoted at its lower end on the housing H by means of a pin 59, as in Fig. 7. The upper end of the rear arm of lever 58 is pivotally attached to the lower end of a rod 60 which extends upwardly through a slot 61 in partition 15 and is pivotally attached at its upper end to a bracket 62, in turn attached to lid 16, as in Fig. 2.

In the position shown in Fig. 6, foot pedal 54 has been pressed to the floor, thereby moving the forward arm of lever 58 downwardly and producing a corresponding rise in the rear arm of lever 58. This movement of lever 58 has, in turn, moved rod 60 upwardly, to raise lid 16 to the position shown. The proportions of foot pedal 54 and lever 58 are preferably such that, in the position shown in Fig. 6, the upper end of the rear arm of lever 58 will have travelled slightly past dead center, so that the lid 16 will remain locked in open position. When the lid 16 is open, access to upper waste container 13 is obtained, so that the desired waste may be placed therein, or the container may be removed for emptying, as by a handle 63, and the container 13 later replaced in the upper compartment 10. At the desired time, the lid 16 may be closed by pushing the lid upward slightly, thereby moving lever 58 back to dead center—i. e., wherein pin 59, the rear arm of lever 58, and rod 60 are in alignment. In such position, the weight of rod 60 will tend to swing lever 58 past dead center, and a slight downward pressure on the lid will cause the lid to close, foot pedal 54 moving back to closed position, as in Fig. 3. It will be evident, of course, that other means for opening the lid 16 may be provided, and that, if desired, such means may be dispensed with altogether.

From the foregoing, it will be evident that the waste receptacle of this invention fulfills to a marked degree the requirements and objects hereinbefore set forth. For example, the combination of a housing and a drawer provided with rollers moving on the same surface supporting the housing, insures stability of the drawer, and minimizes the necessity for weight of the housing. The force required to move the drawer inwardly and outwardly is relatively small, and also permits a spring of only nominal strength to be used for closing the drawer. This again reduces the force necessary to open the drawer, which ordinarily also must overcome the force of the return spring. A floating sealing plate for the waste receptacle disposed in the drawer insures a relatively tight seal with a minimum of interference with the movement and operation of the drawer or waste container disposed therein. The partition which divides the housing into upper and lower compartments not only provides support for

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the upper waste container, but also a support for the sealing plate for the lower waste container. The incorporation of two waste containers in a single housing, with quick and easy access to either or both, conserves floor space and also provides a more ready access to each container. The alignment and guiding rollers, mounted on the drawer and on the housing, contribute to the ease and smoothness of operation, and the curved corners on the rear of the housing cooperate with the guide rollers on the drawer to insure rearward alignment of the drawer, in turn insuring a minimum of force necessary to reopen the drawer. Also, the mere shifting of the drawer to lock it in position facilitates considerably the use of the receptacle. Additional valuable features have been pointed out herein.

It will be understood, of course, that various features of the present invention may be utilized without the remaining features. For instance, the drawer carrying the lower waste container may be an individual unit, installed in a cabinet or the like. Also, other types of opening and closing devices for the drawer may be used, or the drawer, as well as the lid for the upper compartment, may be opened by hand. It will further be understood that various other changes may be made, and that different embodiments of this invention may exist, all without departing from the spirit and scope thereof as defined in the appended claims.

What is claimed is:

1. A waste receptacle comprising a drawer provided with an upstanding front and a bottom having a pair of front and a pair of rear rollers mounted on the underside thereof and side rollers adjacent the rear end thereof, said drawer also including an upstanding yoke attached to said bottom adjacent the rear end thereof and a bracket attached to said yoke and to each side of said front adjacent the upper ends thereof; a waste container adapted to be supported on said bottom, said bracket defining a space for receiving said container; housing means for said drawer, said underside bottom rollers supporting said drawer for movement on a floor or the like substantially independently of said housing means; a lever pivoted at its lower end on said housing means at one side of the path of movement of said drawer and provided at its upper end with a laterally extending rod having a roller engageable with said yoke, for moving said drawer inwardly and outwardly upon corresponding movement of said lever; a link pivotally connected to said lever adjacent the lower end of the latter; a pedal pivotally mounted on said housing means and having a portion accessible to a user of said receptacle for depression to cause forward and downward movement of said pedal; a pin pivotally connecting said pedal with the forward end of said link, whereby said drawer is moved forwardly upon depression of said pedal; a spring attached at its front end to the rear end of said link and at its rear end to said housing means, said spring also being adapted to pull said drawer rearwardly; and a sealing plate for said container suspended from said housing means by a pivotal, lost motion connection forwardly of the center of gravity of said plate.

2. A waste receptacle comprising a housing having side walls and a front wall provided with an opening adjacent the bottom thereof, a drawer reciprocable in said housing, said drawer including a bottom wall and an upstanding front wall adapted to close said opening when the

drawer is in normal retracted position, rollers carried by said drawer and projecting therebeneath for supporting said drawer upon a surface, side rollers mounted on said drawer at opposed sides of the rear thereof, rollers carried by said housing in the vertically disposed edges of the opening therein for guiding said drawer in the reciprocable movement thereof, an upstanding bracket on the rear edge of said drawer, linkage pivotally mounted in said housing and engaging said bracket for moving said drawer from normally retracted to extended position, manually operable means extending outwardly of said housing and connected to said linkage for moving said drawer into open position in a path substantially parallel to the side walls of said housing, means for normally urging said drawer into retracted position through substantially the same path, said drawer being shiftable when in open position to an angular position with respect to the axis of movement thereof whereby one of the side rollers engages the inner surface of an adjacent side wall of the housing and the rollers mounted within the vertical edges of the opening in the housing engage the sides of said drawer wedging said drawer in open position and preventing the urging means from returning the drawer to normal retracted position.

3. A waste receptacle comprising a housing having side walls and a front wall provided with an opening adjacent the bottom thereof, a drawer reciprocable in said housing through said opening, said drawer including a bottom wall and an upstanding front wall adapted to close said opening when the drawer is in normal retracted position, a plurality of rollers carried by said drawer and projecting below the bottom wall thereof for supporting said drawer upon a surface independently of said housing, side rollers mounted on said drawer at opposed sides of the rear thereof, rollers carried by said housing in the vertical edges of the opening therein for guiding said drawer in the reciprocable movement thereof, lever engaging means secured to the drawer adjacent the rear thereof, a lever pivotally mounted in said housing and connected to the lever engaging means for moving said drawer from normally retracted position to extended position in a path substantially parallel to the side walls of the housing, manually operable means extending outwardly of said housing and connected to said lever for imparting outward movement to said drawer, means for normally urging said drawer into retracted position, said drawer being shiftable when in open position to an angular position with respect to the axis of reciprocable movement thereof whereby one of the side rollers en-

gages the inner surface of the adjacent side wall of the housing and the rollers mounted in the vertical edges of the opening in said housing engage the side walls of said drawer locking said drawer in open position and preventing the urging means from returning the drawer to normal retracted position.

4. A waste receptacle comprising a housing having side walls and a front wall provided with an opening adjacent the bottom thereof, a drawer reciprocable in said housing, said drawer including a bottom wall and a front wall adapted to close said opening when said drawer is in normal retracted position, a plurality of rollers carried by said drawer and projecting below the bottom wall thereof for supporting said drawer upon a surface, side rollers mounted on said drawer at opposed sides of the rear end thereof, rollers carried by said housing in the vertically disposed edges of the opening therein for guiding said drawer in the reciprocable movement thereof, means for normally urging said drawer into said housing in a path substantially parallel to the side walls of the housing, and manually operable means for moving said drawer into open position through substantially the same path, said drawer being shiftable when in open position to an angular position with respect to the normal axis of movement thereof whereby one of the side rollers engages the inner surface of the adjacent side wall of the housing and the rollers mounted within the vertical edges of the opening in the housing engage the sides of the drawer locking said drawer in open position and preventing the urging means from returning the drawer to normal retracted position.

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