Feb. 15, 1955 B. D. GOLDBERG 2,702,224

PLATFORM FOR CONTAINERS WITH AUTOMATIC COVERS

Original Filed Feb. 4, 1950 2 Sheets-Sheet 1

Fig. 1.

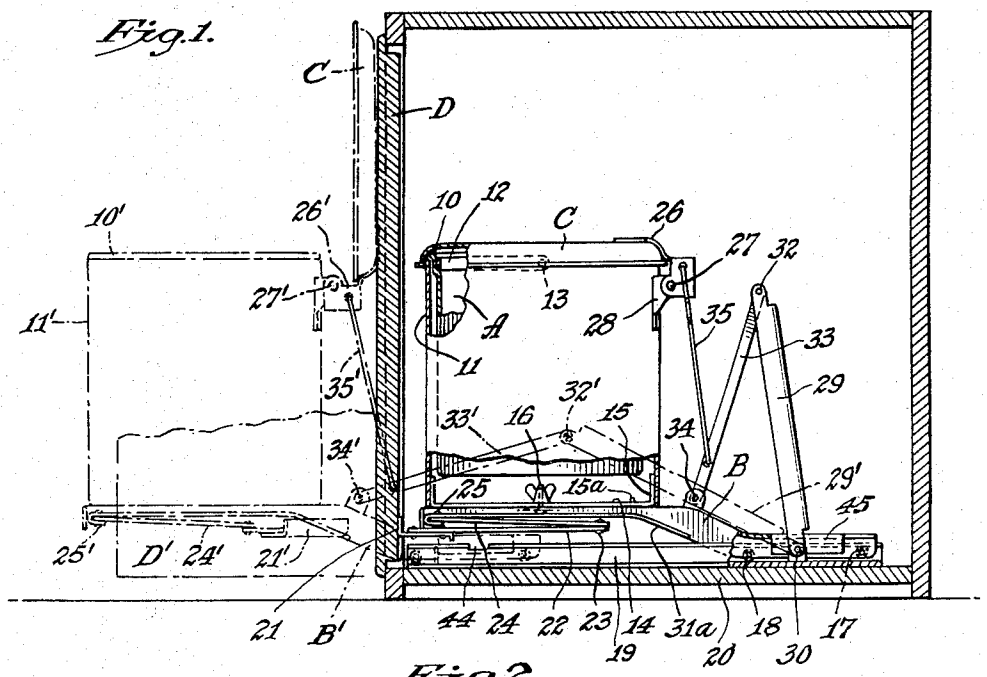


Fig. 2.

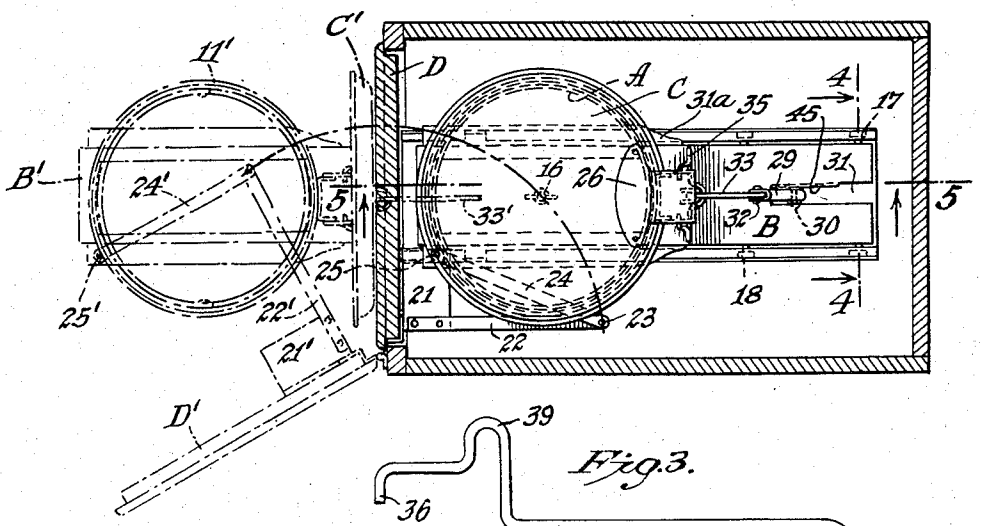
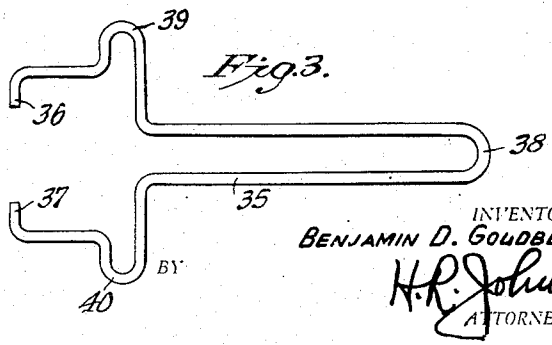


Fig. 3.



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Fig. 4.

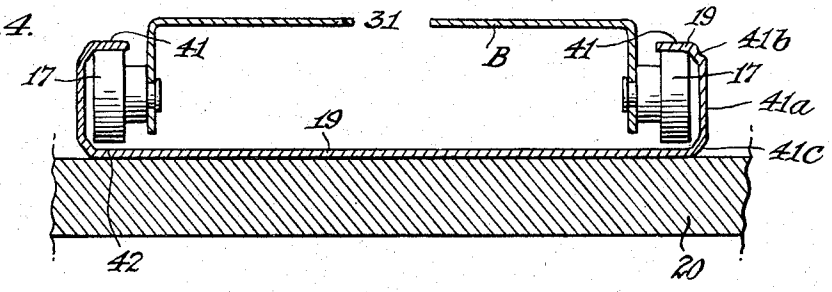


Fig. 5.

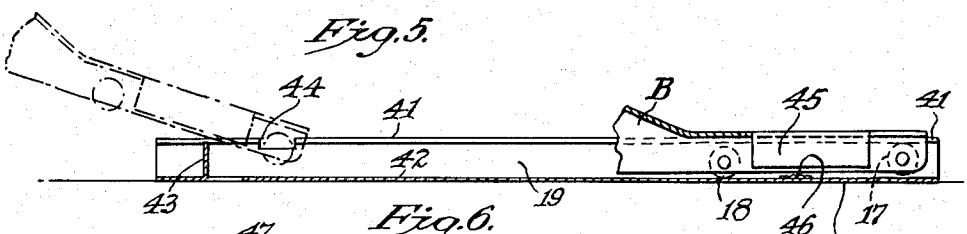


Fig. 6.

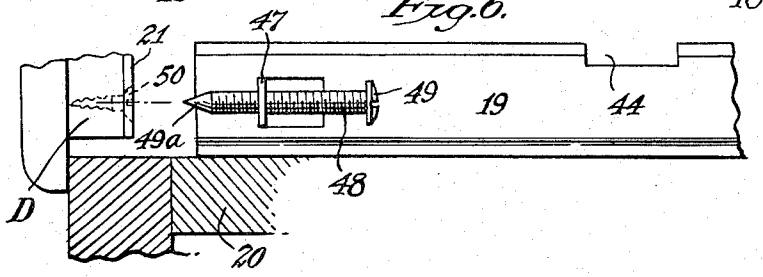


Fig. 7.

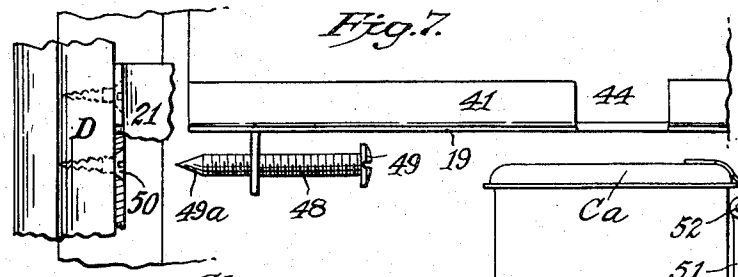


Fig. 8.

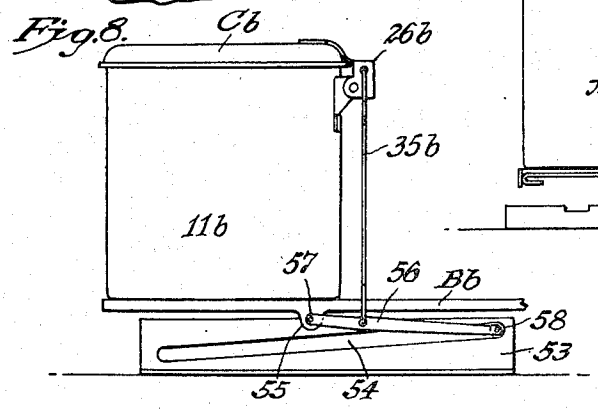
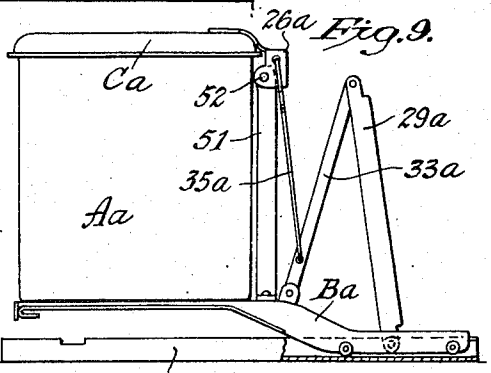


Fig. 9.



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PLATFORM FOR CONTAINERS WITH AUTOMATIC COVERS

Benjamin D. Goldberg, Brooklyn, N. Y.

Original application February 4, 1950, Serial No. 142,482, now Patent No. 2,597,722, dated May 20, 1952. Divided and this application September 15, 1951, Serial No. 246,836

3 Claims. (Cl. 312—274)

This invention relates to apparatus for opening and closing a cover of a container such as is frequently used for holding garbage or trash in the kitchen. The cover opens in response to the opening of a door behind which the container is placed in a cabinet, as is shown in my previous Patent No. 2,343,409, dated March 7, 1944, for Container and Support Therefor.

An object of this invention is to provide a container of the aforementioned type having a sliding carriage, which unit is salable and attractive, and adapted for ready insertion in a kitchen or elsewhere. A further object is to provide a supporting platform for the container which is of improved cantilever construction and shaped to be as saving of space in the rear portion thereof as practicable, as well as having a platform raised from its track at the front portion. Still another object is to simplify the insertion of the apparatus in a cabinet and its permanent attachment in position, and for locating the position of a bracket on the cabinet door to which a pivotal link from the moving platform is to be attached.

Figure 1 is a side elevation partly in section of a preferred embodiment of this invention after it has been inserted in an existing cabinet, the dotted lines showing the position of the container in its forward position with the cover raised.

Figure 2 is a top plan view of Figure 1.

Figure 3 is a detail of the yieldable and detachable link for actuating the cover.

Figure 4 is a section on the line 4—4 of Figure 2.

Figure 5 is a section on the line 5—5 of Figure 2, showing in dotted line position, the slidable carriage as it may be removed from the track on which it slides.

Figure 6 is a detail of the forward end of the track provided with a marking device.

Figure 7 is a top plan view of the device shown in Figure 6.

Figure 8 illustrates a modified construction for the cover actuating mechanism.

Figure 9 is a modified construction of the supporting track, platform, and cover actuating mechanism.

As shown in Figure 1, the container A is positioned on a platform or carriage B, and a cover C for the container is automatically raised as the container is slid out of the cabinet in response to the door D being opened. As is the case in my aforementioned patent, the cover actuating mechanism is located in the rear of the container and the container moves outwardly on a platform mounted on rollers.

The container A is provided at its top edge with an outwardly extending flange 10, whereby this container is supported on a cylindrical enclosing wall or projection 11, which is secured to the platform. A bail or handle 12 is pivoted to the container at 13 to facilitate removal of the container for emptying it and replacing it while the cover C is open. The cylindrical projection or guide 11 is secured to the platform B by means of a bottom strip 14, shown as being provided with upstanding flanges 15, which are welded to the cylindrical projection 11. For ease in positioning the guide or projection 11 on the platform, a pin 15a extends upwardly from the platform and is received within a hole in the bottom strip 14. A bolt 16 also extends upwardly from the platform B and is provided with the wing nut illustrated for securing the strip 14, the guide wall 11 and the container in position on the platform. As shown in Figure 1, the bottom of the container A is spaced from the top of the wing nut on the bolt 16.

At the rear of the platform B is a pair of rear rollers 17 and a pair of front rollers 18 on which the platform moves along a channel-shaped track 19 fastened to the floor 20 of the cabinet. A metal bracket 21 is secured to the door D by screws or in any other manner, this bracket being provided with a plurality of holes to facilitate attachment of a rigid arm 22 for actuating the platform to its forward position in response to opening the door D. This arm 22 is pivotally connected at 23 to the platform moving link 24, and the latter is pivotally connected to the forward end of the platform at 25.

On the cover C an extension 26 is welded in place and provided with a pair of downturned ears which are pivoted at 27 to a pair of cooperating ears 28 attached to the guide projection 11.

A lever 29 is pivoted at 30 to the bottom of the cabinet or in this case, to a projection extending above the bottom of the track on which the platform rides. The rear portion of the platform B is provided with a slot 31 so that the pivotal lever 29 does not interfere with the platform being moved inwardly as far as may be desired. At its upper or forward end the lever 29 is pivotally connected at 32 to a rigid link 33 which, in turn, is pivoted at 34 to the platform in the rear of the container. A slightly yieldable link 35 of the shape shown in Figure 3 is connected between the link 33 and the ears on the cover extension 26.

The opposite ends 36 and 37 of the link 35 engage perforations in the ears of the extension 26, as shown in Figure 1. The opposite end 38 of this link passes through the rigid link 33. Oppositely disposed U-shaped bends 39 and 40 are provided in the sides of the link 35. In this way, the link 35 is made slightly yieldable, both laterally and longitudinally. This link 35 is of such length that the cover is actuated to its open position when the container is in its forward position, as shown in dotted lines in Figures 1 and 2. On closing the cabinet door D, the platform is moved inwardly and the cover automatically lowered. It has been found desirable to have the cover reach its fully closed position when the door is about 5° from its fully closed position. The remaining travel of the platform and the cover actuating mechanism imposes a slight stress upon the cover, holding it closed under pressure, that pressure being due to a slight yield and resiliency in the length of the link 35 due to the U-bends. For disengaging the cover from the link 35, the opposite sides are separated by manually separating the ends 36 and 37 until they are free of the cover extension 26. In this way, the cover, the cylindrical guide 11 and the container A, may all be removed from the platform for cleaning, if desired.

As shown in Figure 4, the track 19 has on each side channel-shaped portions in which the rollers are moved. The upper flange 41 is engaged by the rear portion of rollers 17. The web portion of the channeled rails is bent outwardly at 41a to provide a clearance or space between this web and the side of the rollers. The outwardly bent part 41a is connected with the upper and lower flanges by web portions of shallow depth 41b and 41c. In this way, the rear rollers 17 have their side faces in contact with the channel web only at the upper shallow portions 41b to guide and direct movement of the platform. The main side face portion of the rollers is not in contact with the web portions 41a and 41c. The forward rollers 18 rest on the lower flange portion 42, while the rear rollers engage only the upper flanges 41. The platform B has downwardly extending flanges on each side, as shown in Figure 4. As shown in Figures 1 and 2, the platform also is provided with strengthening flanges 31a which extend at right angles to the side flanges of the platform.

At a forward portion the track flange 41 is interrupted to provide a recess 44 wide enough to enable the rollers to be withdrawn and the platform to be removed from the track in shipment. A bent up lug 43 constitutes a forward stop to limit outward movement of the platform. This stop engages a bent down flange 45 for that purpose. Rearward movement of the platform is limited by

the end of the slot 31 engaging the lever 29 or upstanding lugs 46 from the track floor to which the lever 29 is pivoted, or by the door.

An ear 47 is shown in Figures 6 and 7 as being stamped out of the web portion 41a of the track and threaded for reception of the screw 48. A slotted head 49 enables this screw 48 to be easily adjusted with the aid of a screwdriver. The opposite end of the screw 48 is tapered as shown at 49a. After the track 19 has been secured to the bottom 20 of the cabinet with the forward end of the track close to the door D, the screw 48 is adjusted so that the point 49a is far enough forward to engage and make a small dent or mark in the door, upon closing the door. This mark is the guide to indicate where a supporting screw 50 for the metal bracket 21 is to be located. After the bracket 21 has been properly positioned, the screw is rotated to withdraw its pointed end 49a back from contact with the door and preferably back of the forward end of the track 19.

In Figure 9 the cover Ca is pivoted to an upstanding post 51 secured to the platform in place of the cylindrical guide wall 11. In this embodiment, the container Aa rests directly on the platform. The corresponding parts in Figure 9 are designated by an exponent *a*. The cover pivot 52 is carried by the upstanding post 51, which is an equivalent to a construction in which the cover pivot is carried by the surrounding cylindrical wall 11.

In Figure 8 the embodiment there illustrated has corresponding parts designated by an exponent *b*. The track may be of the type described above but of greater height, that is, the channel webs are higher, so that an upstanding rib 53 may be placed between the track sides and provided with a cam slot 54 of the general shape illustrated. The bent down projection 55 from the platform receives a pivot 57 for the link 56 whose opposite end is secured to a roller 58 sliding in the cam slot 54; as the roller moves down the slot, the cover is actuated in the expected manner through the yieldable link 35b.

Among the advantages of this invention may be mentioned the provision of the new shape given the platform, which is made low in the rear to provide adequate clearance above the rear end of the platform for any pipes or other obstacles. The front end of the platform is elevated as illustrated, to a position above the track so that adequate clearance is provided for strengthening the platform, actuating link 24 and arm 22 moving freely between and over the top of the track and the end side of the platform at its forward end. For installation the platform is removable from the track by sliding the platform forward until the forward rollers are right under the recess 44 when they may be raised and moved out from the track. When the rear rollers reach the recess 44, they may similarly be withdrawn, so that the entire platform can be removed or may be inserted again in the track. The marking means or indicator 49a provides a simple and ready way in which the bracket 21 on the door may be properly positioned without having to measure over so much from one side and down something else or up some distance. The marking means may be mounted on the movable platform or on the container or its guide wherever convenient to the front end of the track and platform.

Instead of a punch type point some form of marking pencil may be used.

Another feature of this invention is the fact that the track flanges for guiding the platform rollers, at its sides are of short or shallow depth, the rear rollers engaging the shallow web portion 41b and the front rollers, the shallow web portion 41c. Due to the cantilever action of the platform the rear rollers 17 are always in contact with the top flange 41 of the track, and the front rollers 18 are always held in contact with the lower flange 42 of the track, in any position of the platform. If lever 29 is outside or pivoted on opposite sides of the track, then a rear stop similar to the front stop 43 is necessary or the door may act as such. Outward movement of the platform is smaller for a given angular movement of the door D compared to similar angular movement when the door is nearly parallel with the direction of platform movement. This reduces the degree of flexibility required in the yieldable link.

This application is a division of my prior application S. N. 142,482, filed February 4, 1950, for Slidable Container with Automatic Cover, now Patent 2,597,722 dated May 20, 1952.

The reason and importance for incorporating the marking or locating tool 48 is due to the inability of the installer to see behind the door D when closed and know just where the bracket 21 and its arm 22 should be located in order that the platform may be moved fully forward when the door is fully open. Some cabinet doors may open only 90° and others more. The lateral distance from the track to a door hinge varies with different installations. Due to pipes or other obstacles in a cabinet the track may sometimes need to be at an angle to the front of the cabinet or door when closed. Due to the wide variety of contingencies encountered it has been found impracticable to lay down general rules in dimensions as to where the bracket and arm should be located and the only practicable and simple solution has been the embodiment of tool 48 to locate on the door when closed where a bracket fastening screw is to go. A definite distance must exist between the bracket and that side of the platform and track which is nearest the hinge side of the door when the door is closed. The track and platform are placed in any suitable space and the door bracket must follow its fixed distance from the side of the platform and track nearest the hinge side. If the track is moved laterally the bracket must be similarly moved.

What is claimed is:

1. In an apparatus for moving a platform out of a recess, in response to the opening of a door at the front of said recess, said apparatus comprising a platform, a track along which said platform is movable, a pivotal link for moving said platform out of a recess in response to opening of a hinged door, and a bracket for attachment to the inside of such a door and to which an arm is secured, said link being pivotally attached to said platform and to said arm, the combination therewith of the improvement for increasing the headroom over the rear portion of said platform for pipes and the like, said improvement including said platform being of sheet metal having a rearwardly and downwardly inclined portion behind a raised portion of the platform on which a container may be supported, a generally horizontal portion to said platform in rear of said inclined portion, and supporting rollers for the platform located on said rear horizontal portion.

2. Apparatus according to claim 1 in which said forward platform portion is raised above said track enough to provide clearance for said arm and pivotal link when located beneath the platform and above the track, said downwardly inclined portion of the platform having substantially parallel flanges for making the same rigid, and said rear horizontal portion of the platform being adjacent a top of said track.

3. In an apparatus for moving a platform out of a recess in response to the opening of a vertically hinged door at the front of said recess, said apparatus including a sheet metal track for location in said recess extending in a direction away from said door and along which a platform may be movable, a bracket for attachment to the inside of a door across the front of said recess, a projection extending inwardly from said bracket, and a link for connecting a forward portion of a platform with an inner end portion of the bracket projection, the combination therewith of the improvement for facilitating the location of the place for attachment of said bracket to the inside of a door at a height for said link and projection to clear said track and be below a platform on said track and at a lateral location for said track and irrespective of whether said track, bracket, and link may be moved from one recess to another, said improvement including a pointed and threaded locating tool carried by said track, supporting means between the track and tool, and stamped out from an upstanding portion of said track, said supporting means being threaded for cooperation with said tool to guide forward and rearward movement of said tool within said supporting means longitudinally with respect to said track, the threads of said tool and its supporting means holding said tool against a longitudinal thrust on it and transmitting such a thrust to said tool supporting means and track, the pointed end portion of said tool being forward and longitudinally aligned with a body portion of said tool and with said supporting and guiding means whereby said tool may be advanced toward and from a door when closed across a front of said recess for marking a location on a rear face of such a door to which said bracket is to be attached, and means whereby rotation may be applied to said threaded tool for advancing or

retracting it in said stamped out supporting means, said track and said tool supporting means restraining said tool against movement laterally of said track as long as said tool is held by said supporting means.

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