March 7, 1944. B. D. GOLDBERG 2,343,409

CONTAINER AND SUPPORT THEREFOR

Filed May 23, 1942

Fig. 1.

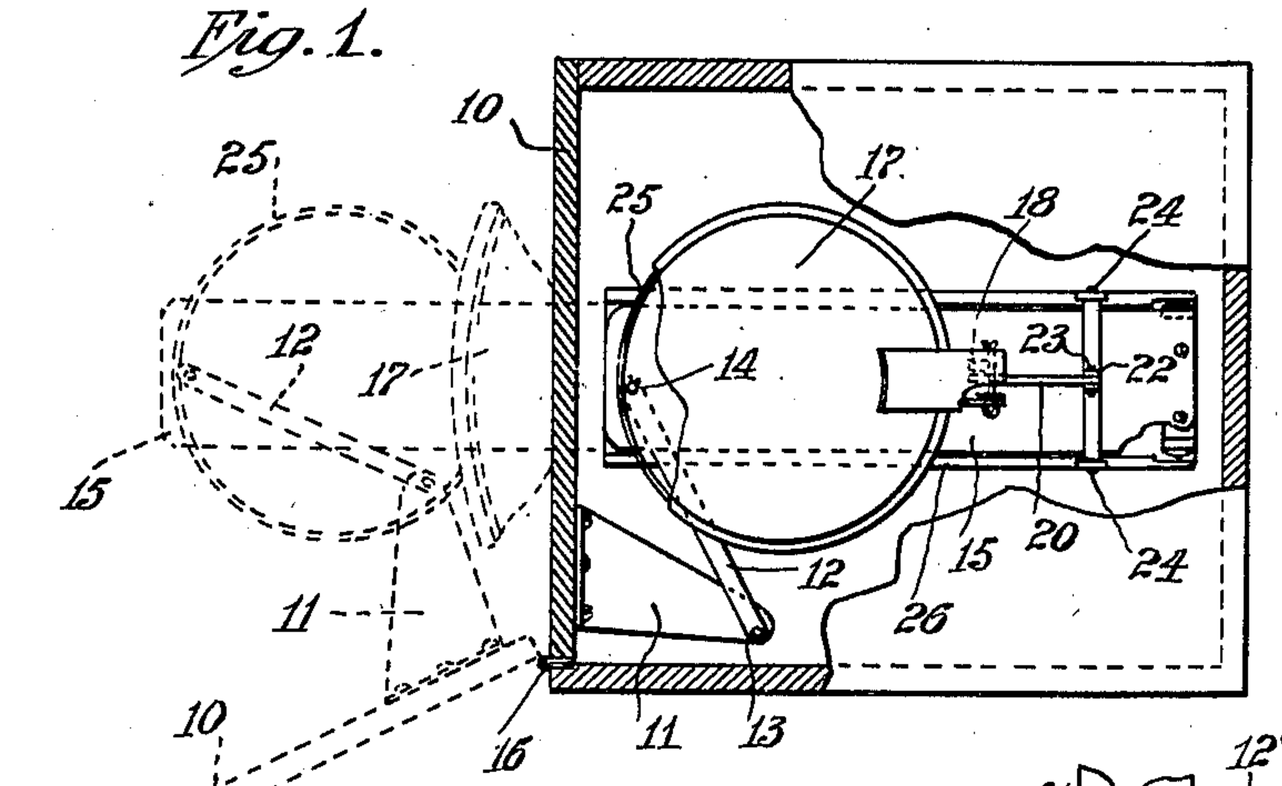


Fig. 5.

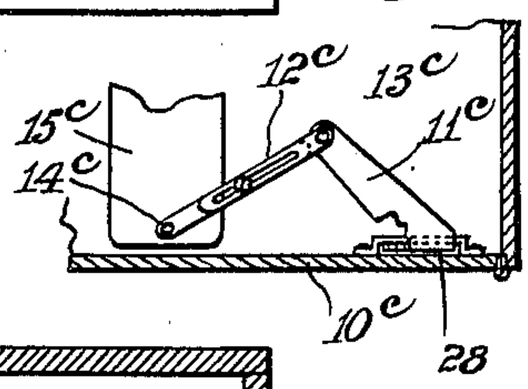


Fig. 2.

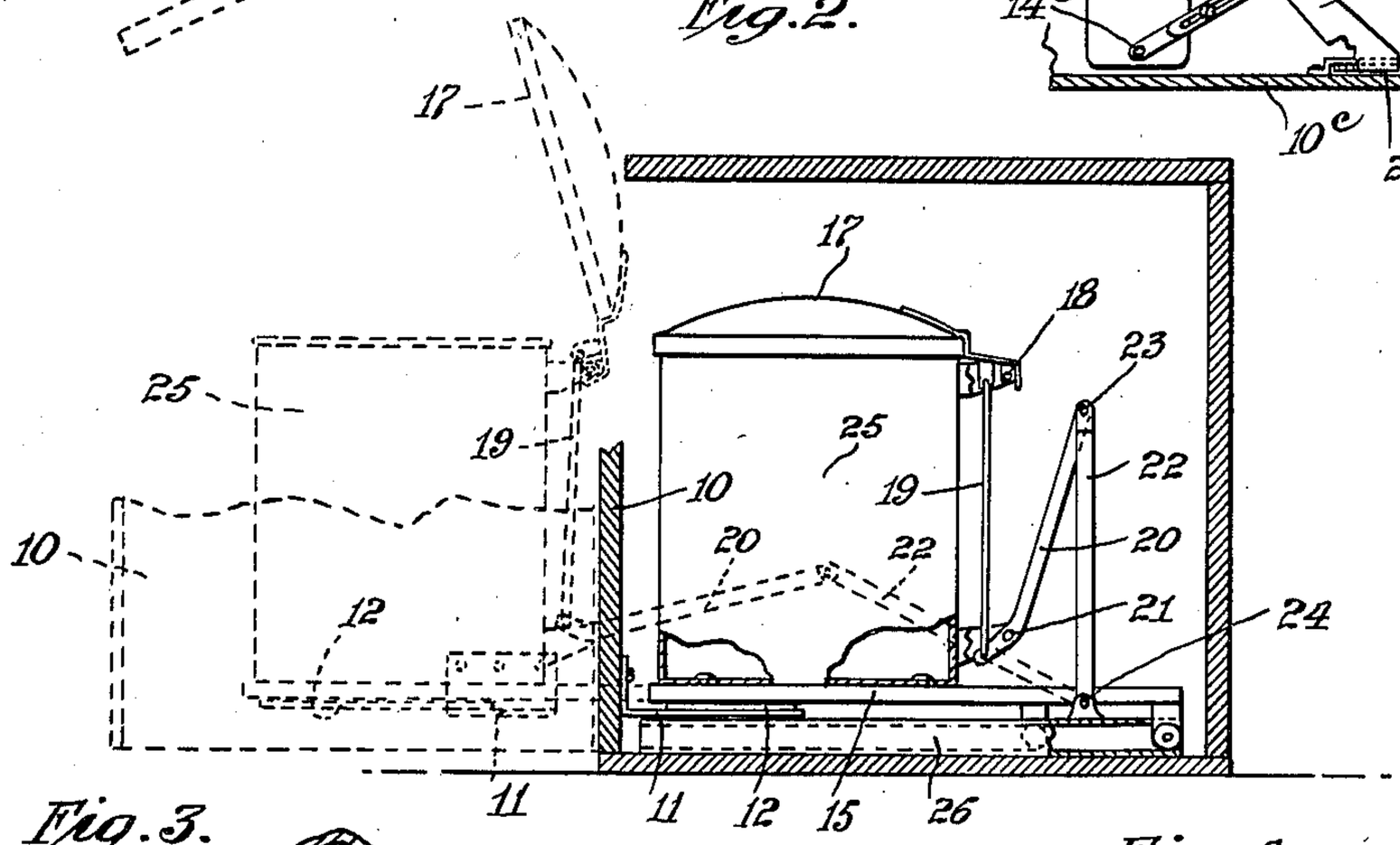


Fig. 3.

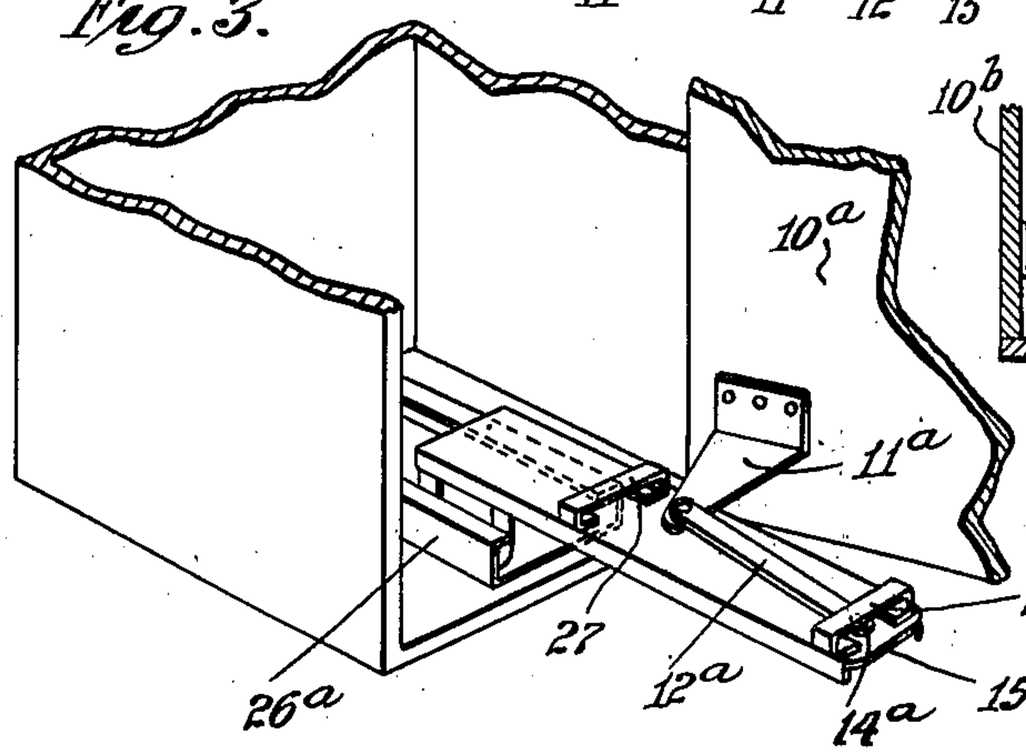
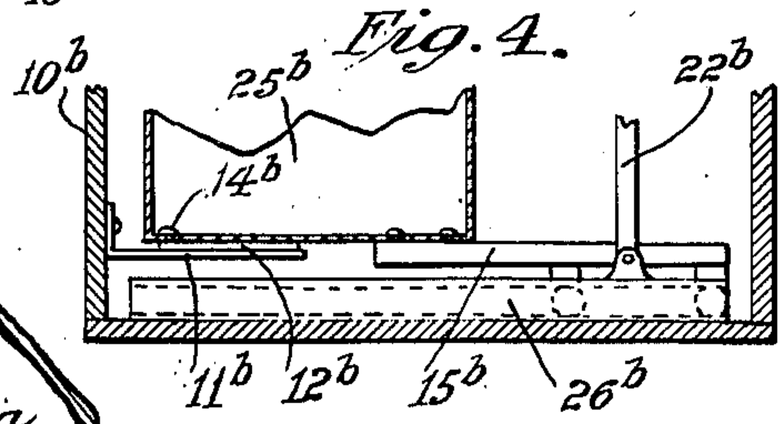


Fig. 4.



INVENTOR

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Patented Mar. 7, 1944

2,343,409

UNITED STATES PATENT OFFICE

2,343,409

CONTAINER AND SUPPORT THEREFOR

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Application May 23, 1942, Serial No. 444,249

8 Claims. (Cl. 312—150)

This invention relates to a guided movable body supporting a container and other objects concealed behind a door, and is movable by said door through its opening, and has for an object to provide a simple and efficient device of this class. Another object is to provide a mechanism connecting a door with a guided movable body in such a manner, that a given movement of the body results with a relatively small angular movement of the door, in proportion to width of body and recess closed by said door, avoiding collision between body and door. Yet a further object is to provide automatic mechanism for raising and lowering a cover for a container which is attached to a body, and moved a given distance in response to angular travel of a door or other actuating means. Still another object is to provide means within easy reach for enabling a body placed behind a door, to be adjustably located any desired distance from said door when closed.

This application is a continuation in part of my prior application Serial No. 395,345, filed May 27, 1941, now Patent No. 2,288,477, dated June 30, 1942, for Container and support therefore, and is an improvement upon my prior Patent 2,247,232 dated June 24, 1941, for Container and support therefor.

Fig. 1 is a top plan view of one embodiment of this invention.

Fig. 2 is an elevational view of the device of Fig. 1.

Fig. 3 is a perspective of a modified construction.

Fig. 4 is an elevational view of another embodiment of this invention.

Fig. 5 is a plan view of a further form of this invention.

In Figs. 1 and 2 is shown a door 10 extending across the opening illustrated and having on the inner face thereof a projection 11 extending inwardly. A link 12 is connected at one end to a pivot 13 on the extension 11, and at its opposite end the link 12 is pivoted at 14 to the underside of a body 15 which is movable in and out of the opening on guides of an appropriate construction such as are shown in said prior Patent 2,247,232. The door 10 closing said opening is hinged on a vertical axis 16 so that on opening the door 10, the link 12 pushes the body or platform 15 forward while on closing the door the link 12 pulls the body 15 rearward. Resting on or secured to the body 15 is a container 25 having a cover 17 pivoted at 18 to the container. The body 15 and container 25 form a movable unit. For actuating the cover a link 19 is pivotally secured to the cover and extends downwardly to some appropriate type cover actuating mechanism such as is shown and described in said prior Patent 2,288,447. In the embodiment shown such mechanism includes a lever 20 fulcrumed at 21 to a projection from the movable unit. The link 19 is pivoted to the lower portion of said lever 20, while a link 22 is pivoted at 23 to the upper end of said lever 20. The lower end of link 22 is pivoted at 24 to a support that is fixed and does not move with the body. The dotted lines in Figs. 1 and 2 show how the door opening movement serves to push the body 15 and container 25 forward causing the cover 17 to be opened as a result of the links and lever assuming the dotted line position in Fig. 2.

An advantage of this present construction over that disclosed in said Patent 2,247,232 is that greater travel of the body and container is obtainable with a lesser angular movement of the door, yet avoiding collision between body and door when in operation. This also permits a larger angular swing of door if desired, with no obstruction to interfere. It also causes greater opening of the cover for a given angular door displacement. If the door were opened enough to aline link 12 and hinge 16 of door 10, then any further opening would have a tendency to pull the body slightly sideways and not permit it to extend further. The reverse action takes place when the door is closed. The recess or opening closed by door 10 may be in a wall or cabinet. Some type guide 26 as shown in said patent and application directs the inward and outward travel of the body 15 and container 25. The initial compressive thrust on the link 12 to open the door tends to laterally displace the body and such tendency is opposed by said guide 26, and therefore the body must travel forward as directed by the guide 26 and pushed with link 12. The pivots 13 and 14 are displaced both laterally and longitudinally from each other.

In Fig. 3 is shown the link 12*a* for actuating the body 15*a* located above instead of below such body. The door 10*a* is provided with the inward projection 11*a* as shown. A container or other object not illustrated is raised above the body 15*a* by means of a support 27 of suitable height. Desirable guide means 26*a* are provided to direct the in and out movement of the body 15*a*.

The construction of Fig. 4 is like that shown in Fig. 2 except that the body 15*b* does not extend as far forward and the rear part of the container 25*b* is fastened to only the forward part of the body. In this case link 12*b* is en-

gaged to a forward part of the container. The same guide means 26*b* for the body is provided and likewise the same cover actuating mechanism including the link 22*b*.

The embodiment illustrated in Fig. 5 is the same as that of Fig. 2 except that the projection 11*c* on the rear side of the door 10*c* extends laterally toward the body 15*c* and the link 12*c* whereby such construction is better adapted to wide doors. Although the link 12*c* is shown above the body 15*c* it may also be located below it as in Fig. 2. It also illustrates that link 12*c* can be adjustable in length to regulate the distance between front of body or container and door when closed and that projection 11*c* can be detachably attached at 28 to door 10*c*.

Each embodiment constitutes a simple device for automatically bringing the unit body or container from a recess through a door opening avoiding collision between the body of the container and the door in response to movement of the door and also opening a cover for a container when the container is moved a given distance, with a minimum angular displacement of the door. In a reverse movement the body is moved into its recess in response to door movement in closing.

I claim:

1. The combination with a compartment closed by a door, a body movable forward and backward therein, a guide along which said body is movable, said door extending across a front portion of said body and pivoted substantially vertically for movement to enable said body to be moved forward and backward across the opening closed by said door, an extension projecting rearwardly from the rear face of said door and a link pivotally secured to the fore part of said body forwardly of its pivotal connection with the extension of the door in closed position of said door whereby said link is adapted for pushing the body forward on opening the door and is adapted to pull the body inward on closing the door.

2. A combination according to claim 1 in which said link and door tend to form an acute angle when the door is closed.

3. A combination according to claim 1 in which the door, link and door extension tend to form a triangle when said door is closed.

4. A combination according to claim 1 in which the distance between the end of the link adjacent the fore part of the body and the hinge of the door is increased on opening movement of the door and decreased on closing movement of the door, while said end of the link is out of the compartment.

5. The combination with a door, of a body movable through an opening closed by said door, guide means for directing movement of said body within said opening, a substantially rigid extension projecting away from the inner face of the door, and a link pivotally connected to the forepart of said body and to said extension, its connection to the forepart of said body being forwardly of its pivotal connection with the extension on the door in the closed position of said door, said link extending both longitudinally and laterally of the direction of body movement whereby on opening said door a compressive stress is applied to said link for moving said body outwardly and on closing said door a tensional stress is applied to said link for moving said body inwardly, and a substantial increment of travel of said body results from a relatively small increment of angular displacement of said door.

6. A combination according to claim 5 in which the extension and the link, together with the pivotal connection at each end of said link, function as means for limiting movement of the door and body in door-opening movement.

7. In an apparatus including a compartment having a hinged door for closing an opening therein, a container and a movable support for the container forming one movable unit, guides for the movable unit within the compartment, a cover for the container, a link connecting with the cover for actuating same, means for moving said link in response to the movement of the unit, the improvement for moving the unit through the opening and bringing the cover to its fully open position without door and unit collision, which improvement comprises a projection on the inner face of the door, a second link having one end engaged to said projection extending laterally and forwardly and engaged to said unit in front of the place at which the second link is engaged to the door projection.

8. A combination according to claim 1 in which the angle formed by the link and projecting extension increases upon opening of the door and decreases upon closing of the door, when that end of the link which is engaging the fore part of the body is outside of the compartment.

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