Oct. 28, 1952 W. C. VAN CLIEF, JR 2,615,774

ARTICLE CONTAINER AND DISPENSING DEVICE

Filed Jan. 31, 1950 2 SHEETS—SHEET 1

Fig. 1.

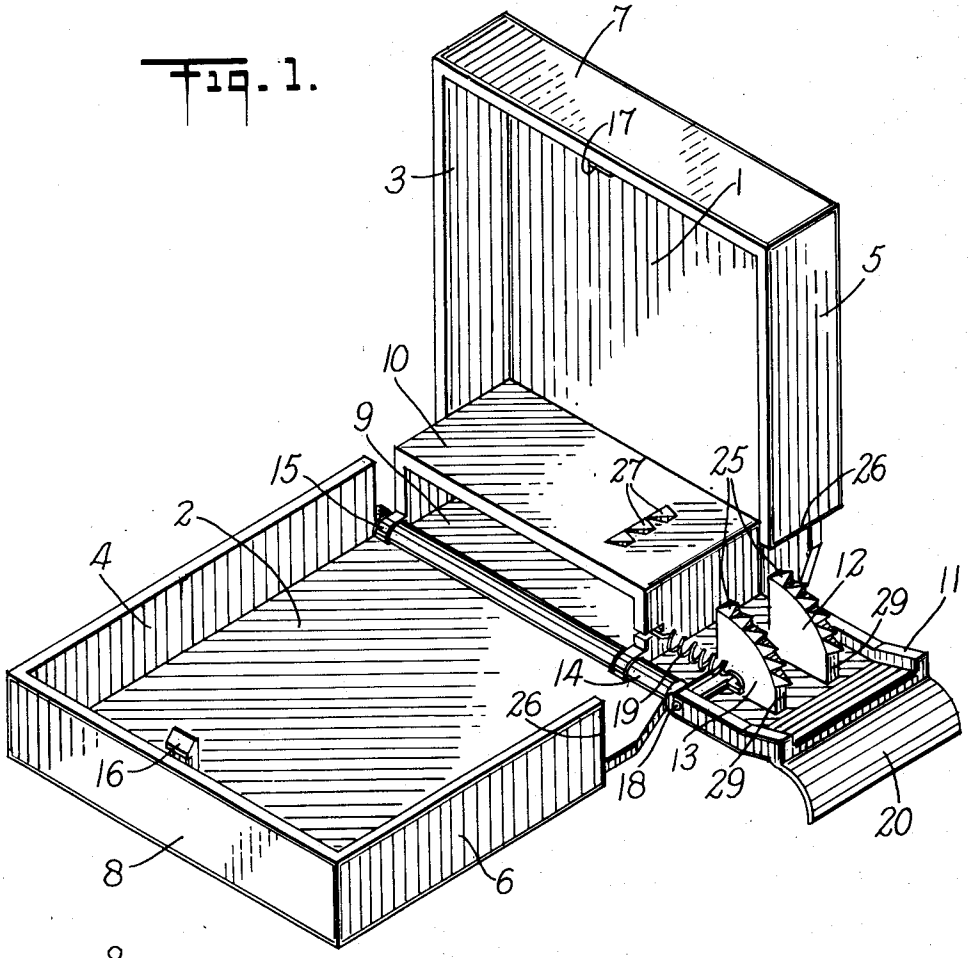
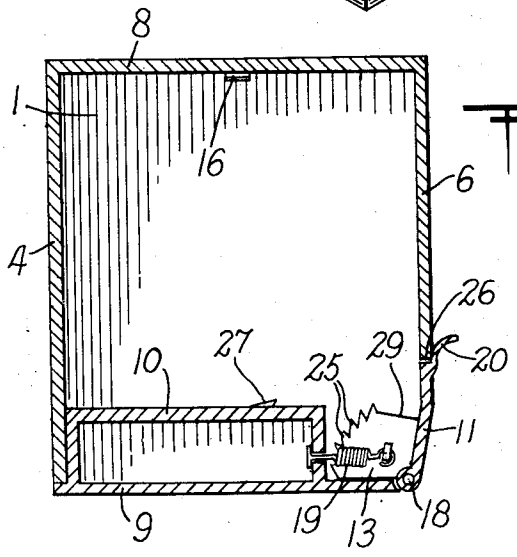


Fig. 2.



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Fig. 3.

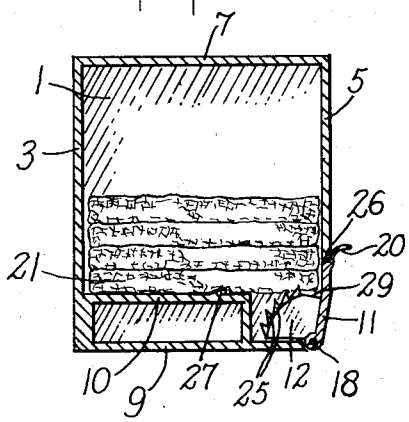


Fig. 4.

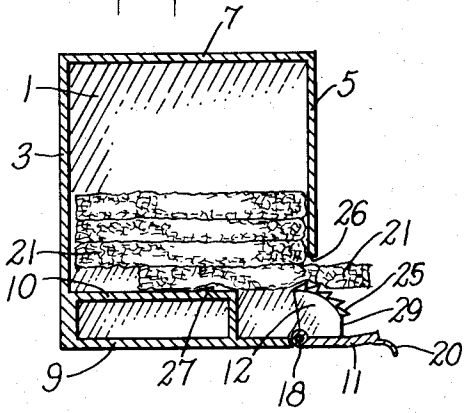


Fig. 5.

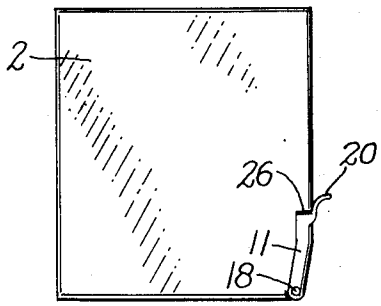


Fig. 6.

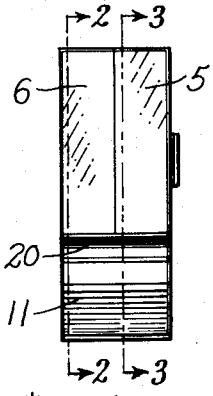


Fig. 7.

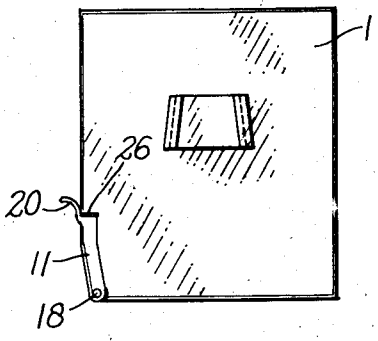
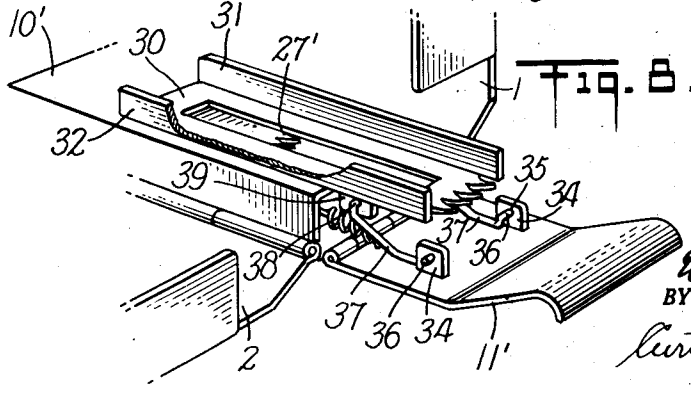


Fig. 8.



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UNITED STATES PATENT OFFICE

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ARTICLE CONTAINER AND DISPENSING DEVICE

William C. Van Clief, Jr., Ridgewood, N. J.

Application January 31, 1950, Serial No. 141,418

8 Claims. (Cl. 312—63)

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This invention relates to storage and dispensing article containers and more particularly to a dispensing device for sanitary napkins, bandages and the like.

Articles of this nature are usually packaged by the manufacturer in cardboard boxes or cartons. While satisfactory for shipping purposes and supply storage, such cartons are not suitable or convenient for use either in the home, or more especially in public places, for the dispensing of individual napkins at the place where and time when they are most likely to be desired.

One of the objects of this invention is to provide a simple, inexpensive and practical device for storing and dispensing sanitary napkins, and the like, one at a time in a positive and convenient manner. A further object is to provide simple means for accomplishing the delivery of the single articles from storage by one hand operation of the delivery means. A further object is to provide a delivery device which will retain the article after a projection of same part way free from the container to enable the operator to grasp the article with the same one hand and complete its removal. A further object is to provide a dispensing storage device of the said character which is easy to fill and refill, is substantially dustproof and which may be conveniently carried by a shelf or be mounted upon a wall.

Other objects will be in part obvious or in part pointed out hereinafter.

The invention accordingly consists in the novel arrangement and combination of parts hereinafter set forth in the specification and shown in the drawings, in which:

Fig. 1 is a perspective view of the device with the filling and dispensing doors or closures both shown in open condition;

Fig. 2 is a vertical section thereof, taken on the line 2—2 of Fig. 6 in the direction of the arrow;

Fig. 3 is a vertical section on line 3—3 of Fig. 6 showing articles stacked in position ready for delivery;

Fig. 4 is a vertical section similar to Fig. 3 but showing the protruding and removable position of the lowermost article after the dispensing door has been operated into open position;

Fig. 5 is a left side elevation of the dispenser;

Fig. 6 is a front elevation thereof, and

Fig. 7 is a right side elevation, showing a dovetail bracket on the dispenser, designed to serve as a wall mount.

Fig. 8 is a perspective view of a modified form of the device, in part broken away and sectioned.

Referring to Fig. 1, it will be seen that the dispenser consists generally of sides 1 and 2, back sections 3 and 4, front sections 5 and 6, top sections 7 and 8, bottom 9, a false bottom 10, a dispensing door 11 and ejecting means 12 and 13.

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As illustrated in Fig. 1, the left side section 2, together with the adjoining parts 4, 6 and 8 constitute the filling door or closure of the container, which, as will be seen, is of rectangular form. This door is hinged, as at 14 and 15, to the left edge of the bottom 9. The right side 1 of the container is disposed rigidly at right angles to the bottom 9. In Fig. 1 the filling door is shown in open position, whereas in Figs. 5 and 6 it is in its normal closed position. A latch 16 on the door top section 8 engages a plate 17 on the adjacent edge of top section 7 of the container to hold the parts in closed condition.

The dispensing or delivery door 11 is hinged to the front edge of the bottom 9 and pivots on hinge pin 18 to swing outwardly for the delivery of a stored article. A tension spring 19 tends to keep the dispensing door in closed position, as in Fig. 2. A lip 20 extends outwardly from the upper edge of the door 11 to facilitate the dispensing operation.

Two quadrant-shaped ejector elements 12 and 13 are secured on the inside face of the door in any suitable manner. The circumferential edges of the quadrant plates are provided with series of upstanding teeth 25, which are formed and adapted graspingly to engage the lower surface of an article occupying the bottom position of a stack of such articles disposed within the container, while the door 11 is being opened, and yet be capable of slipping past such a surface without becoming entangled therein, as the door is being closed. The center of revolution of each quadrant as it moves with the door is the axis line of the hinge 18 and the radius is such that the material resting on the false bottom 10 will lie in operative relation to teeth 25 when the dispensing door is in the closed position, as shown in Fig. 3.

Projecting upwardly and forwardly from the false bottom 10 is a member, or series of teeth 27. The projecting member, which may comprise one or more teeth or a sharp ridge, assists in positioning the napkin material, as will appear hereinafter.

The purpose of the false bottom 10 is, as will be obvious, to hold the material to be dispensed at the proper height to be engaged by the teeth 25 of the quadrants 12 and 13.

The manner of use and operation of the dispensing container device will be clear from the following brief description thereof.

To fill the container with sanitary napkins or pads or other articles having similar characteristics, ready for use as required, the filling door or side 2 is opened to the position of Fig. 1. Pads are then stacked on the false bottom 10 inside the container, as indicated generally by reference number 21 in Figs. 3 and 4.

The filling door is then closed and the dis-

penser is ready for use. Its outward appearance is then similar to that shown in Figs. 5, 6 and 7.

To operate for delivery of an article, the dispensing door 11 is opened by depressing lip 20. As the door opens, teeth 25 engage the bottom surface of the bottom pad or other article 21 and pull it forward out from beneath the stack. As the opening movement progresses, the forward end of the pad, in engagement with the teeth, tends to bend downward around the arc of the quadrants. However, the rigidity of the pad offers sufficient resistance to this downward bending to cause the outer end of the pad to pull away from the teeth. As the door 11 and quadrants 12 and 13 continue to rotate, the pad continues to move outward until the condition shown in Fig. 4 is reached. The outer end of the pad is now projecting considerably beyond the front of the container and may be conveniently grasped for removal from the dispensing device. Since the teeth 25, in the open position of the door 11, point forward and the backs of the teeth are smooth, they do not interfere with the removal of the pad.

As will be seen by reference to the drawings, the front sides 5 and 6 of the box-like sections of the container are cut short enough at the lower end to permit the bottom pad to pass forward beneath but offers a lip 26, Fig. 1, at a sufficient height above the top of the false bottom to prevent any pad above the bottom one from being dispensed with the latter.

After the pad is removed, the stack moves down upon the false bottom to replace the removed pad. Spring 19 returns the dispensing door 11 and the parts operating therewith to their initial position, as in Fig. 2, and the dispenser is ready to deliver the next pad. As the quadrants 12 and 13 return from open position, as in Fig. 4, to the closed position, as in Fig. 3, the teeth 25 tend to move the bottom pad toward the back end of the container, and would cause a bunching up of the bottom pad, were it not for the projecting tooth or teeth 27. These teeth point forward and grip the pad to counteract the force tending toward rearward movement. This prevents the lowest pad from being moved back out of reach of the quadrant teeth 25.

To prevent the possibility of injury to the user's finger during operation, by contact with teeth 25, the quadrants 12 and 13 are cut away, as at 29, and are therefore without teeth immediately inside the lip of the door.

It will be noted that the front edges of the sides 1 and 2 are cut back somewhat so that the axis of rotation of the dispensing door lies somewhat behind the plane of the front faces 5 and 6 of the dispenser body. This is done so that the point of tangency (point of contact) between the quadrants and the bottom surface of the bottom pad 21 will be back of the front edge of the pad. This ensures a proper gripping contact between pad and dispenser teeth.

In the modified form, as shown in Fig. 8, the quadrant members are omitted and the article ejecting means comprises a suitable tray 30 having upstanding sides 31 and 32, spaced apart a distance sufficient to receive therebetween one of the pads or other articles stored in the container. This tray is disposed to slide forwardly and backwardly upon the false bottom wall 10' of the container, and is provided with a longitudinal slot 33, through which teeth 27' may project for the purpose of preventing rearward movement of the bottom article, in relation to the false bottom.

In Fig. 8 there are shown spaced lugs 34 extending inwardly from the dispensing door 11'. Each lug is pierced as at 35 to receive one of the outwardly turned ends 36 of a wire member or link 37 formed in a U-shape and having the base of the U as 38 suitably pivoted, as at 39 to the tray 30.

The front edge of the bottom of the tray 30 is provided with upwardly and forwardly projecting teeth, or the like, adapted to engage the bottom pad stored in the container when the tray is moved forwardly by the opening of the door 11'. Thus the bottom pad is ejected to a position for convenient removal by the operator of the device; as happens when the door 11 of the embodiment shown in Fig. 1, is opened.

From the foregoing description it will be seen the present invention provides a novel storage and dispensing container which may be economically manufactured in any suitable material and which is highly convenient in use.

I claim:

1. In combination, a boxlike container having rectangularly disposed front and bottom walls, means for supporting a stack of flat articles above said bottom wall, an opening in said front wall adjacent the bottom thereof, a door pivotally mounted at the bottom of said opening to swing outwardly away from said opening, means cooperative with said door and the lowermost of said stacked articles to seize and eject said article upon an opening movement being imparted to said door, and means on the upper surface of said article-supporting means to obstruct and prevent rearward movement of the bottom article of said stack while said door is being closed.

2. A device as in claim 1, in which the ejecting means comprises at least one quadrant member extending inwardly from the inner surface of said door and having a serrated arcuate upper edge for gripping engagement with said article.

3. A device as in claim 1, in which the ejecting means comprises a plurality of members projecting inwardly from said door, each having a toothed edge for gripping engagement with said article.

4. A device as in claim 2, in which said arcuate upper edge is centered on the door pivot.

5. A device as in claim 4, in which the pivot of said door is disposed rearwardly of the plane of said front wall.

6. A device as in claim 1, in which said door cooperative means comprises a tray or slide member normally disposed beneath the bottom article in said stack, and means connecting said tray with said door to move said tray toward said opening, during the opening of said door.

7. A device as in claim 6, in which the tray is supported upon the said article-supporting means and is slotted to provide for the projection therethrough of said article obstructing means.

8. A device as in claim 6, in which means is provided at the forward end of said try to engage said pad for ejection upon forward movement of the tray.

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