

July 23, 1968

P. E. BREFKA

3,393,948

DISPENSING

Filed May 5, 1966

2 Sheets-Sheet 1

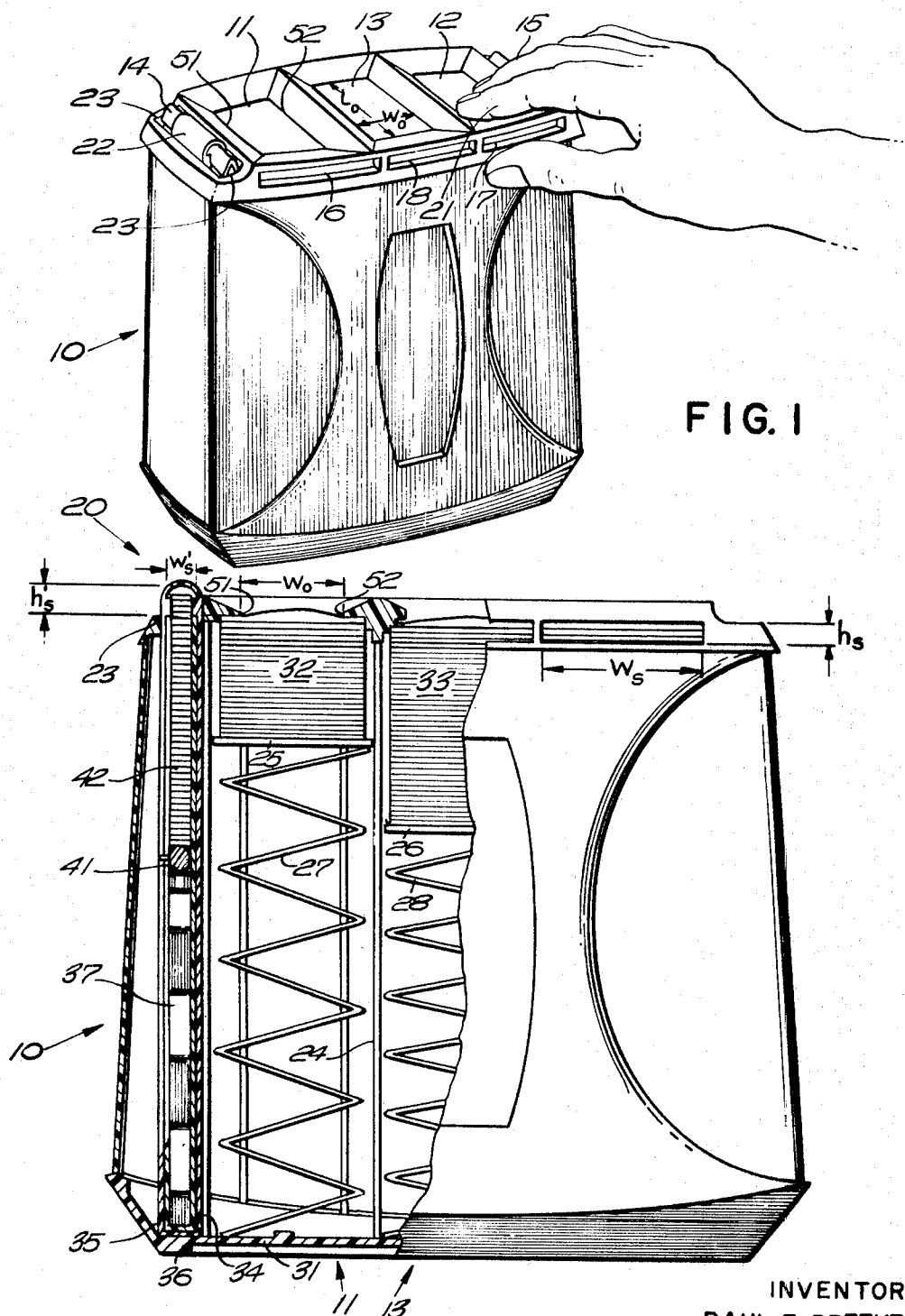


FIG. 2

INVENTOR
PAUL E. BREFKA

BY *Hoff, Fenfield & Hickm*
ATTORNEYS

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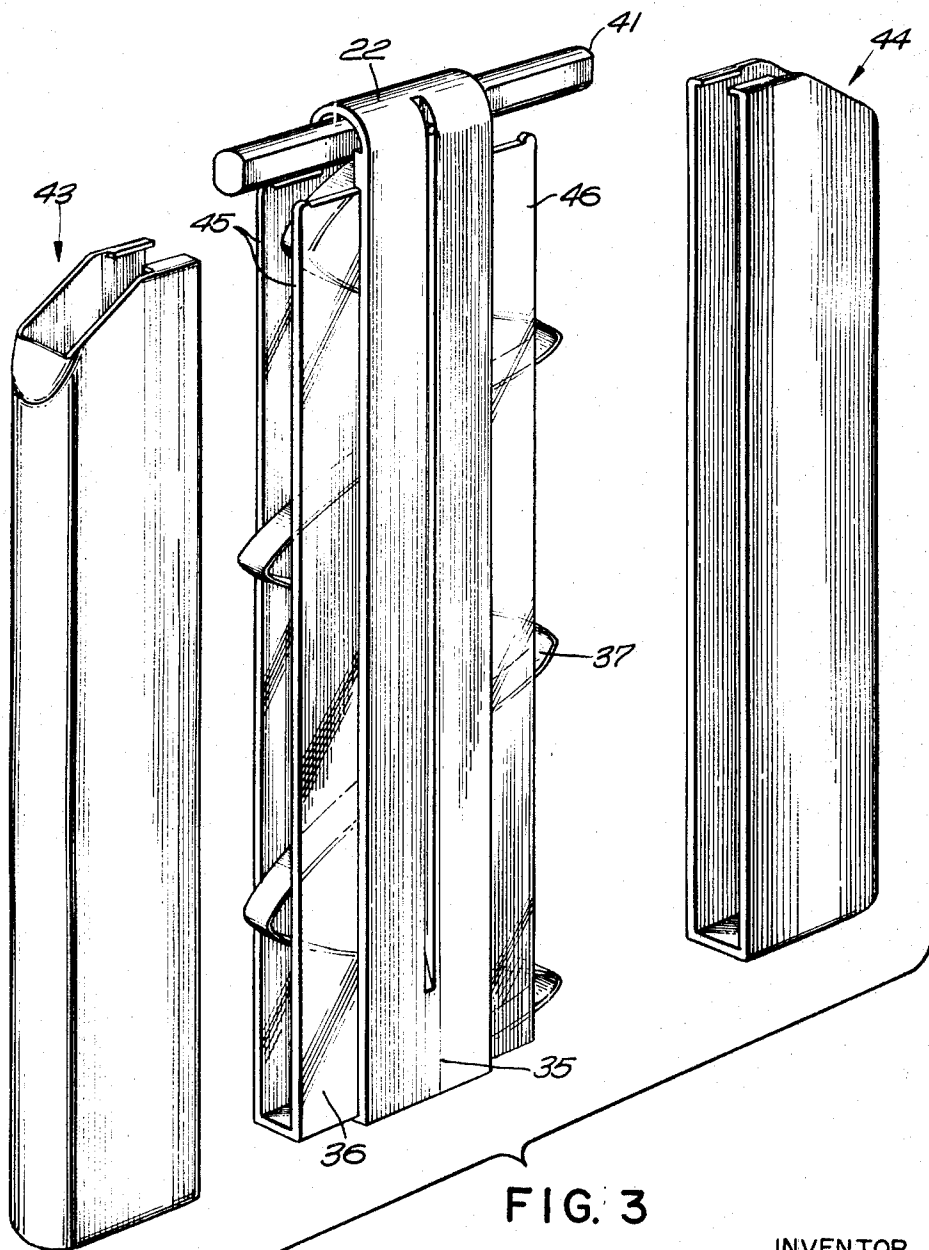
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INVENTOR

PAUL E. BREFKA

BY

Nolf, Greenfield & Hicken

ATTORNEYS

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DISPENSING

Paul E. Brefka, Framingham, Mass., assignor to LDA Inc., Natick, Mass., a corporation of Massachusetts
Filed May 5, 1966, Ser. No. 547,963
5 Claims. (Cl. 312-61)

ABSTRACT OF THE DISCLOSURE

A condiment dispenser includes a number of side-by-side rectangular compartments having framed openings at the top of cross sectional area slightly smaller than the cross sectional area inside the compartment and the area of a packet to be dispensed so that packets may be inserted through these framed openings but are restricted from being expelled upward through the openings. Each compartment is formed with a front slit slightly wider than the width of each packet and slightly higher than the thickness of each packet so that a movement of the fingers on the uppermost packet exposed in the framed opening toward the front dispenses a packet through the slit to dispense a single packet through the slit and move the next packet for dispensing to the top and in contact with the framed upper opening as a constant pressure spring in the lower portion of each compartment urges the packets upward.

The present invention relates in general to dispensing and more particularly concerns novel apparatus for dispensing items such as individual prepackaged condiments for restaurant table and counter use with relatively inexpensive structure that is easy to fill, easily dispenses individual packages and firmly retains the undispensed packages in place.

According to the invention, the dispenser includes at least first means defining a packet storage compartment. The packet storage compartment is formed with means at the top of the compartment arranged to normally obstruct packets within the compartment from being ejected along a direction parallel to the lengthwise axis of the compartment while allowing selective withdrawal, a packet at a time, along a direction perpendicular to said lengthwise axis. Resilient means, such as a substantially constant force accordion spring, inside the compartment urges the packets upward. The compartment is formed with means defining an outlet opening through which the packets may be withdrawn one at a time having a cross sectional area normal to the cross sectional area of the compartment that is sufficiently large to allow the free passage of a packet; that is, slightly larger than the endwise cross sectional area of an individual packet while being sufficiently small to preclude the passage of two individual packets therethrough simultaneously; that is, slightly smaller than twice the endwise cross sectional area of an individual packet.

It is an important object of this invention to provide means for dispensing condiments of a size that is as compact as practical yet sufficiently large to store quantities of individually packed condiments sufficient for use at a restaurant table and counter for a reasonable time.

It is another object of the invention to provide means for dispensing in accordance with the preceding object that facilitates ease of packet identification and dispensing.

It is still another object of the invention to achieve the preceding objects with means for dispensing individual packets that may be slippery and flexible to an unskilled user one at a time.

It is a further object of the invention to provide dispensing apparatus in accordance with the preceding objects

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that may be easily loaded by unskilled restaurant personnel.

It is still a further object of the invention to provide means for dispensing in accordance with the preceding objects that is relatively inexpensive to manufacture and relatively easy to clean while still being sufficiently sturdy to function over relatively long periods of time.

It is still a further object of the invention to provide dispensing means in accordance with the preceding objects that is constructed so as to discourage pilfering of packets.

Numerous other features, objects and advantages of the invention will become apparent from the following specification when read in connection with the accompanying drawing in which:

FIG. 1 is a perspective view of an exemplary embodiment of the invention showing a hand about to withdraw a packet;

FIG. 2 is a view partially in section as seen from the front helpful in understanding the principles of the invention; and

FIG. 3 is an exploded perspective view of a removable end compartment especially suited for small salt and pepper packets.

With reference now to the drawing and more particularly FIG. 1 thereof, there is shown a perspective view of a condiment dispenser according to the invention. The dispenser 10 includes compartments 11 and 12 of like substantially rectangular cross section and center compartment 13, also of rectangular cross section, but slightly larger. Typically compartments 11 and 12 may contain sugar and mustard packets while compartment 13 may contain ketchup packets. The narrow compartments at the extreme ends, such as left compartment 14 and right compartment 15, may contain salt and pepper packets.

Compartments 11, 12 and 13 are formed with front slits 16, 17 and 18, respectively, slightly wider than the width of each packet and slightly higher than the thickness of each packet so that a movement of the fingers 21 toward the front dispenses a packet through the slit 17 (or through a similar rear slit not shown upon moving the fingers toward the rear) to dispense a single packet through the slit and move the next packet for dispensing to the top and in contact with the compartment rim.

The end compartments, such as 14 and 15, which may comprise removable compartments for storing the narrow salt and pepper packets are formed with an inverted U-shaped portion 22 whose bight contacts the uppermost packet to be dispensed. The uppermost edge 23 of a compartment like 14 or 15 is cut away to be sufficiently low to allow a single packet to be dispensed over such edge while being sufficiently high so that only a single salt or pepper packet is dispensed.

Referring to FIG. 2, there is shown a view from the front with the front wall partially cut away to illustrate how the individual packets are stored within the compartments and urged upward with substantially constant force by the accordion spring. The same reference symbols designate corresponding elements throughout the drawing.

Compartments 11 and 13 are separated by an inner vertical wall 24 and have packet support platforms 25 and 26, respectively, urged upward by accordion springs 27 and 28, respectively. The bottom of springs 27 and 28 rest against and are preferably fastened to the bottom 31 of the dispenser 10. Packets 32 and 33 are generally represented seated on packet support platforms 25 and 26, respectively.

Left end compartment 14 is separated from compartment 11 by wall 34 and may include a removable sub-compartment whose walls 35 and 36 are seen in section in FIG. 2. This removable compartment 20 also includes an accordion spring 37 whose plane is oriented at right angles to the side-to-side dimension of container 10 so

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that the hinge lines of spring 37 are adjacent to the front and back walls of the dispenser 10. Accordion spring 37 presses upward upon a packet dispenser platform 41 which supports a column of individual salt or pepper packets 42.

The accordion springs in each compartment preferably have a cross sectional area that correspond substantially to the cross sectional area of the respective compartment. Thus, an accordion spring substantially fills each compartment below the respective packet support platform. This arrangement helps prevent tilting of the packet support platform. If the platform were to tilt upon exertion of downward pressure, packets might jam and a number of packets would be available to a user tempted to pilfer. The preferred arrangement thus minimizes jamming and discourages pilfering. At the same time relatively little material is used, keeping weight and costs relatively low, at least partly because the ratio of expanded to contacted volume of the accordion spring is so high. The resultant structure may be easily and rapidly filled with a large number of individual packets, packets that may be flexible and slippery, and dispense the packets individually with ease.

The removable compartment 20 upon removal may be easily filled as will be better understood from the partially exploded perspective view of removable compartment 20 best seen in FIG. 3. The removable compartment 20 comprises a central band comprising the U-shaped portion 22 at the top surrounding the accordion spring 37 and the packet support platform 41 together with like front and rear removable portions 43 and 44 of generally U-shaped cross section that fit over a pair of front tabs 45 and rear tabs 46 extending from mid portion 42 for nearly the entire height thereof. Thus, one of the front or back portions may be easily removed, the packet support platform 41 moved downward and salt or pepper packets inserted. Compartment 15 may include soda straws or also include a removable container 20 containing packets of salt or pepper or other condiments.

If the thickness of a packet is designated t_p , the width of a packet designated w_p and the length of a packet designated l_p , the height h_s of a slit is preferably greater than the thickness t_t of a packet stored in the associated compartment but less than twice the thickness t_p while the width w_s of a slit is preferably slightly greater than the packet width w_p . In the case of the compartment 14 the height h'_s between surface 23 and the bight of U-shaped portion 22 is preferably slightly greater than the thickness t_p of a salt or pepper packet while the width w'_s is preferably slightly greater than the width w_p of a salt or pepper packet.

The width w_o of a compartment opening at the top is preferably slightly less than the packet width w_p and the opening length l_o is preferably slightly less than the packet length l_p . Edges such as 51 and 52 then comprise lips tending to urge the uppermost pack of the column of packets downward. By choosing the opening width w_o and opening length l_o only slightly smaller than the packet width w_p and packet length l_p , it is easy to push flexible packets downward upon the uppermost packet and thereby refill each compartment.

There has been described novel dispensing apparatus characterized by compactness, relatively large storage capabilities, ease of dispensing and refilling, each of cleaning, ease of fabrication and relatively low cost. It is evident that those skilled in the art may now make numerous modifications of and departures from the specific embodiment described herein without departing from the inventive concepts. Consequently, the invention is to be construed as embracing each and every novel feature and novel combination of features present in or possessed by the apparatus and techniques disclosed herein and limited solely by the spirit and scope of the appended claims.

What is claimed is:

1. Apparatus for dispensing items comprising,

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at least first means defining a first item storage compartment,

said first item storage compartment being formed with means at the top of said compartment including obstructing means arranged to normally obstruct packets within the compartment from being ejected along a direction parallel to the normally vertical axis of said compartment while including means defining an outlet opening allowing selective withdrawal through said outlet opening, a predetermined number of items at a time, along a direction perpendicular to said normally vertical axis,

resilient means inside said compartment for normally urging said items upward with the uppermost item substantially at the same vertical level as said outlet opening and adjacent to and just below said obstructing means,

the top of said compartment comprising means including said obstructing means defining a normally horizontal inlet opening through which the uppermost of said items is visible and engageable for receiving a horizontal ejecting force urging said uppermost item through said outlet opening,

said compartment being removable and formed with a central band having a bottom portion, a pair of opposed generally parallel walls extending substantially for the normally vertical length thereof and joined at the top by an inverted U-shaped portion that comprises said means for obstructing,

and said compartment includes a pair of sections of generally U-shaped cross section coextensive with and of substantially same vertical length as said generally parallel walls each with a bottom portion coextensive with said central band bottom portion,

at least one of said sections being detachably secured to said central band to facilitate loading said compartment with elements.

2. Apparatus for dispensing items in accordance with claim 1 wherein said pair of parallel walls include tabs for frictionally engaging said at least one of said sections.

3. Apparatus for dispensing items comprising a plurality of side-by-side structures defined in accordance with claim 1.

4. Apparatus for dispensing items comprising,

a unitary structure having a front wall, a rear wall and at least three front-to-back walls between said front wall and said rear wall coating with said front wall and said rear wall for defining at least two normally vertical side-by-side item storage compartments separated by the intermediate one of said front-to-back walls,

rim means at the top of each of said item storage compartments defining a normally horizontal inlet opening slightly smaller than the associated storage compartment cross sectional area through which the uppermost one of an item stored therein is visible and engageable,

each inlet opening being sufficiently small to oppose upward ejection of an item stored in the associated compartment while being sufficiently large to permit downward entry of an item into the associated compartment for storage,

at least one of said front and back walls being formed with a slit therein at the top of each of said compartments defining a normally vertical outlet opening of width slightly less than the distance between the front-to-back walls defining the associated compartment and slightly greater than the width of an item stored in the associated compartment and of height greater than the thickness and less than twice the thickness of the latter item,

and resilient means in each of said compartments urging the items stored therein upward against said rim means,

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whereby a column of items may be inserted into each compartment through the associated inlet opening and ejected one-by-one through the associated outlet opening upon application of a horizontal ejecting force applied through the associated inlet opening.

5. Apparatus for dispensing items in accordance with claim 4 wherein said rim means comprises a lip for engaging the uppermost one of an item stored in the associated compartment just inside substantially the entire perimeter of such uppermost item.

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10 BOBBY R. GAY, *Primary Examiner*.
J. KOHNEN, *Assistant Examiner*.