March 7, 1967 C. H. FANT 3,307,740

SHEET DISPENSER HAVING MEANS TO VARY THE POSITION OF THE COVER UPON DEPLETION OF THE SHEETS THEREIN

Filed Feb. 9, 1965

FIG - 1

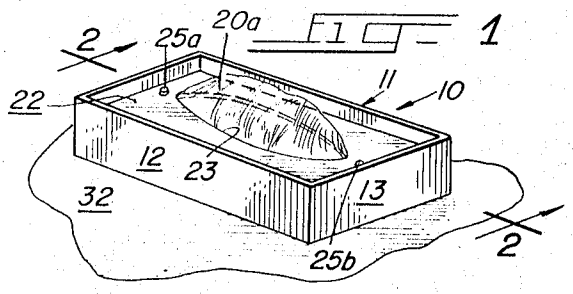


FIG - 3

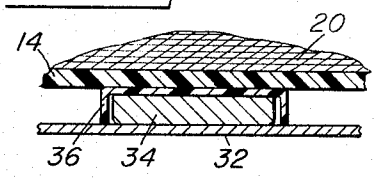


FIG - 2

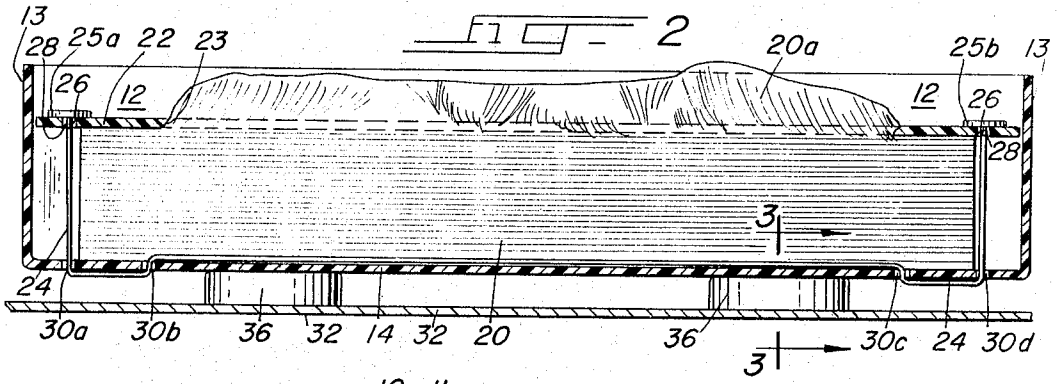


FIG - 4

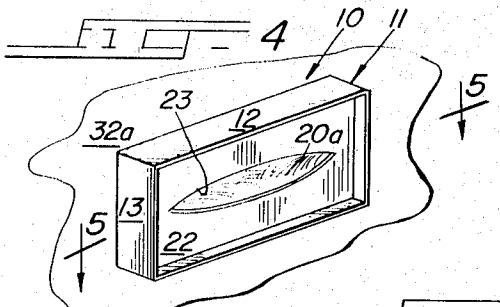


FIG - 6

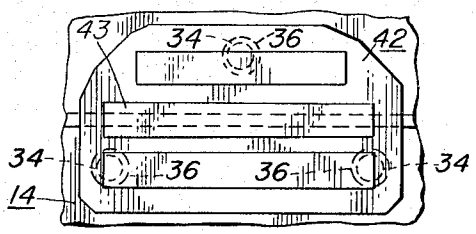
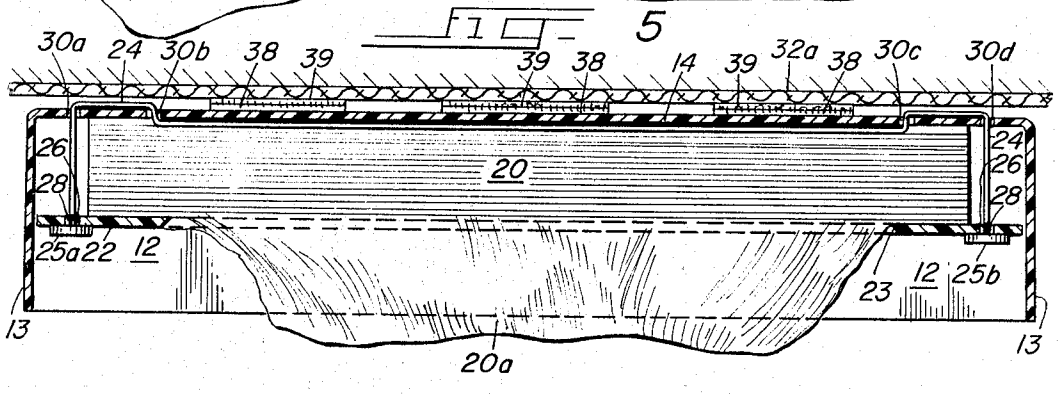


FIG - 5



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SHEET DISPENSER HAVING MEANS TO VARY THE POSITION OF THE COVER UPON DEPLETION OF THE SHEETS THEREIN

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5 Claims. (Cl. 221—45)

This invention relates generally to dispensers and more particularly to dispensers of stacked products such as sheets of paper, plastic or similar materials or folded bags or the like.

It is of course well known that numerous products are packaged and stacked in layers superposed on, or interleaved with, each other so that the same are dispensable, one at a time, through a slot or enlarged opening formed in a side or the top of a dispenser. These products are usually made from plastic or paper and comprise such products as facial tissues, napkins, waxed paper, folded bags, etc. In many instances, the particular products are packaged in a dispenser in a simple stacked relationship, one sheet on top of the other. However, quite often, the sheets of the product are folded in an overlapping or interleaved relationship so that the dispensing of one such sheet from the dispenser results in the emergence therefrom of a portion of the next one of the same.

Heretofore, in either of the described modes of packaging, it was sometimes extremely difficult to remove the sheets one at a time, especially after a substantial portion of the contents within the dispenser had been depleted. The problem was even more troublesome and occurred with greater frequency when the products were pulp paper products such as sheets of thin facial tissue which have a natural tendency to cling one to the other. This difficulty may be attributed to the fact that as the sheets were consumed and the uppermost sheet was spaced increasingly farther from the dispenser opening, the remaining sheets, which were previously compactly stacked, became more loosely stacked as air seeping in between the sheet layers caused them to expand apart. This resulted in a decrease of the contacting area between adjacent sheet. Therefore, as the uppermost sheet was pulled from the dispenser, it would also lift other sheets therewith, aided by the buoyant force of the air and the fact that there was insufficient clinging contact with the stack to counter the upward force on the uppermost sheet. To prevent this, it thus often became necessary to reach into the dispenser and grasp a substantial portion of only the uppermost sheet.

Oftentimes, however, the loss in upward pressure on the uppermost sheets due to the gradual emptying of the dispenser caused less than the desired number of sheets to be pulled therefrom. Particularly in those dispensers wherein the sheets were stacked in an overlapping manner, the emergence of the uppermost sheet was not always accompanied with the emergence of a portion of the next sheet. This was due primarily because of the lack of clinging contact or looseness between the uppermost sheet and the next one thereto.

To overcome the undesirable feature of having more or less than the intended number of sheets removed at a time, a dispenser was introduced having a plate member resiliently bearing upwardly against the bottom of a stack of sheets to urge the same toward the top of the dispenser. This prior dispenser, although comprising some improvement, did not alleviate to any substantial degree, the aforementioned undesirable feature. This was because the upward pressure exerted on the bottom of the stack was dissipated. The air was compressed or expelled from between the bottom sheets. Since little, if any, pressure was transmitted to the uppermost sheets, these remained substantially unchanged in their loose association with each other. Consequently the objective of this prime improvement was never achieved.

It is therefore an important object of this invention to provide a sheet dispenser which maintains the uppermost sheets near the dispensing opening in a compact relationship with one another.

It is another important object to provide a sheet dispenser which maintains the uppermost of a stack of sheets in close proximity to the dispensing opening at all times.

It is still another object to provide a sheet dispenser which maintains the uppermost sheet in close frictional contact with the wall having the dispensing opening therein.

It is another object of this invention to provide a sheet dispenser which dispenses the intended number of sheets during each dispensing operation.

In prior sheet dispensers heretofore used, the supply of the product contained therein was not readily ascertainable. Usually, it was necessary to first reach into the dispenser and feel therewithin the approximate distance the uppermost sheet was spaced from the dispensing opening. The remaining supply was then estimated or guessed. However, this approximation was extremely inaccurate since, as above pointed out, the sheets expand apart when the stack becomes depleted thereby misleading the estimator. This was especially a problem with those dispensers having their sheets interleaved so that the removal of the uppermost sheet would result in causing a portion of the next to protrude outward.

It is therefore another object to provide a sheet dispenser in which the supply of the product therein is readily ascertained at all times during its use.

It was a common occurrence with the prior dispensers that during their use, or due to some inadvertence, they were moved from one location to another and their whereabouts, oftentimes, became unknown or time consuming to locate. There were means heretofore provided to securely mount the dispensers to a surface to eliminate the possibility of misplacement. However, the time and effort, in most instances, discouraged their use.

It is therefore still another object to provide a sheet dispenser which can be quickly and easily secured to either a vertical or horizontal supporting surface.

It is an important feature of this invention to provide a sheet dispenser having a resilient means urging the cover of the dispenser in continuous contact with the uppermost of a stack of sheets contained therewithin.

It is another feature to provide a sheet dispenser in which the distance the dispenser cover moves inward under the urging of a resilient means is visually ascertainable for readily determining the supply of sheets remaining in the receptacle.

It is still another feature to provide a sheet dispenser having a resilient cord associated with the dispenser cover for urging the same against, and into continuous contact with, the uppermost of a stack of sheets therewithin.

It is still another feature to provide a sheet dispenser having magnetic means associated with the dispenser outside surface for securing the dispenser to a magnetic attracting material.

It is a related feature to attach a dual face adhesive tape to the dispenser outside surface for securing the dispenser to a wall surface.

It is still another related feature to attach bristle-like material to an outside surface of the sheet dispenser for securing the dispenser to a wall surface having material adapted to cooperate with the bristle-like material. Said bristle-like material comprising a plurality of hooked gripping members.

For the purpose of facilitating an understanding of the invention, preferred embodiments are illustrated in the accompanying drawings, from an inspection of which,

when considered in connection with the following description, the invention, its mode of operation, assembly and operation, objects, features, and many of its advantages should be readily understood and appreciated.

Referring to the drawings, in which like characters of reference indicate corresponding or similar parts throughout the several figures of the drawing:

FIG. 1 is a perspective view of the improved sheet dispenser embodying the principles of the invention;

FIG. 2 is a cross-sectional view taken substantially on the plane of line 2—2 in FIG. 1 and viewed in the direction indicated to show the resilient cord urging the cover into contact with the uppermost of the stack of tissues within the dispenser;

FIG. 3 is a fragmentary sectional view taken substantially on the plane of line 3—3 in FIG. 2, viewed in the direction indicated, and showing the magnetic mounting means associated with the bottom surface of the dispenser;

FIG. 4 is a perspective view of another embodiment of the improved sheet dispenser of this invention;

FIG. 5 is a sectional view taken substantially on the plane of line 5—5 in FIG. 4, viewed in the direction indicated, and showing strips of bristle-like material associated with the bottom surface of the dispenser and in engagement with cooperating material attached to a vertical wall; and

FIG. 6 is a bottom view of the dispenser in FIG. 1 showing a plate magnetically attracted to the magnetic means for securing the dispenser to a non-magnetic surface.

Referring now to FIGS. 1 and 4 of the drawings, the reference character **10** indicates generally a sheet dispenser of primarily paper products, embodying the principles of the invention. The dispenser **10** includes a receptable **11**, preferably of a rectangular shape, which may be constructed of a plastic type material. The receptacle **11** comprises side walls **12,12** end walls **13,13** and a bottom wall **14**. The top of receptacle **11** is open. The interior of the receptacle **11** contains a supply or stack of sheets **20** which, in the embodiment illustrated, comprises sheets of facial tissue paper.

A cover **22**, dimensioned slightly less than the cross-sectional area of the receptacle **11**, is inserted into the opening at the top of receptacle **11**. Preferably, cover **22** is dimensioned so that if properly position within receptacle **11**, it moves inwardly and outwardly therewithin without frictionally engaging the side and end walls **12,12** and **13,13**. Formed in cover **22** is a dispensing slot **23** through which the uppermost individual sheet or tissue **20***a* may be extracted. In the illustrated embodiments, the sheets are interleaved so that pulling out of the uppermost tissue **20***a* is accompanied by the extraction of a portion of the next tissue leaving the same protruding out from the dispenser **10**.

A resilient means urges cover **22** into continuous contact with the uppermost tissue **20***a*. As shown in FIGS. 2 and 5, such resilient means comprises a resilient cord **24** and buttons **25***a*, **25***b*. The ends of resilient cord **24** are fixedly associated with buttons **25***a* and **25***b* respectively. Buttons, **25***a*, **25***b*, under the influence of resilient cord **24**, forcibly bear against the cover **22** to pull the same inwardly toward the bottom wall 14 of the receptacle **11** and in continuous contact with the uppermost tissue **20***a*. Tissues **20**, especially those which are uppermost near the dispensing slot **23**, are compactly contained between cover **22** and bottom wall **14** regardless of whether the supply is ample or substantially completely depleted.

Buttons **25***a*, **25***b* include hooks **26** extending through each aperture **28** of cover **22** whereat resilient cord **24** is securely attached. Alternatively, other attaching means such as hooks instead of buttons, could be used to removably secure the resilient cord **24** to the cover **22**.

The resilient cord **24** is limited in its positioning along a prescribed path, as defined by the manner in which the resilient cord is associated with the receptacle **11**. Referring again to FIGS. 2 and 5, the resilient cord **24** extends inwardly toward the bottom wall **14** from each of the buttons **25***a*, **25***b* in a substantially parallel direction with respect to end walls **13**, **13** and spaced from the ends of the stack of tissues **20**. The bottom wall **14** is formed with two sets of apertures, one set **30***a* and **30***b* near one end of the receptacle and another set **30***c* and **30***d* near the other end. The resilient cord **24** extends out from the interior of the receptacle, through apertures **30***a* and **30***b*, and contacts the outside surface of bottom wall **14** for a short span between this set of apertures and the other set **30***c* and **30***d*. The resilient cord **24** then extends through apertures **30***b* and **30***c* respectively and contacts the inside surface of bottom wall **14** for the distance therebetween. By interweaving the resilient cord **24** through the various bottom apertures, a substantial part of the bottom portion of resilient cord **24** is protectively sheathed within the receptacle **11** without interfering with the operative association of the cord with the receptacle. Obviously, but less desirably, other means of association of the cord and receptacle could be utilized if desired. In some instances, the passing of the cord through two apertures would be satisfactory.

Instead of the single resilient cord **24** shown in the drawings, a pair of resilient cords **24** could be used in its stead. For example, the resilient cord **24** could be broken off at the point adjacent to apertures **30***a* and **30***d* and fixedly attached to the bottom of the receptacle. In this manner, two cords would be resiliently urging the cover **22** inwardly. Moreover, it is within the contemplation of this invention to use other resilient elements, such as spring means or the like, for urging the cover inwardly.

Since cover **22** is in constant contact with the uppermost tissue **20***a*, the continued removal of uppermost sheets **20***a* causes the stack of tissues **20**, with the cover **22** resting thereon, to move progressively farther from the top of receptacle **11**. As seen from FIGS. 2 and 5, the supply of tissues **20** remaining in the receptacle **11** could be determined visually by noting the distance that cover **22** is spaced from the bottom wall **14**. Therefore, the receptacle **11** and cover **22** could be translucent or opaque as well as transparent without preventing the user from easily and quickly ascertaining when it is necessary to replenish the supply of tissues.

To replenish the tissues **20**, it is only necessary to raise the cover outward above the top of receptacle **11** and insert a new stack. The size of the stack of the tissues **20** inserted could be greater than the depth of the receptacle to include a portion extending outward from the open top, since the same would be held in stable association with the remainder of the stack by the cooperation of the cover **22** and resilient cord **24**.

Mounting means may be rigidly attached to the outside surface of the bottom wall **14** for securely but removably attaching the dispenser **10** to a surface **32**. In the embodiment illustrated in FIGS. 2 and 3, the mounting means includes a magnetic device **34**. The magnetic device **34** comprises a permanent magnet encased within a cup shaped seat **36**. The seat **36** is rigidly affixed to the bottom wall **14**. To insure a secure and balanced contact, three spaced magnets **34** may be used.

FIG. 5 illustrates a tissue dispenser **10** having mounting means comprising strips of material **38** attached to the outside of bottom wall **14**. Material **38** has a multiplicity of bristle like gripping elements which cooperate with material made from felt, wool or the like for making a firm and secure contact therewith. A strip **39** of such cooperating material may be associated with a vertical wall **32***a* for securely engaging the strip **38** attached to the receptacle. This provides a secure but readily disengageable attachment of the dispenser **10** to the vertical wall **32***a*. The cooperating means for attaching strips

38 and 39 together may be similar to the securing means defined in Patent No. 3,075,521.

The tissue dispenser 10 having a mounting means including a magnetic means 34 could be adapted for mounting to a non-magnetic attracting surface. FIG. 6 shows a metal plate 42 which is magnetically attracted to the magnetic means 34. Plate 42 has strips of adhesive tape 43 attached thereon. Each strip includes a bottom and top adhesive layer superimposed on each other. The top layer has an inner adhesive side sticking to the bottom layer. The bottom layer has adhesive on both sides thereof, one side of which is in contact with plate 42. Therefore, when the top layer is removed from the bottom layer, the sheet dispenser 10 may be secured to a non-magnetic surface by means of the exposed adhesive side of the bottom layer. Also, strip 38 may be attached to plate 42 for releasable connection to an external surface having strip 39.

From the foregoing description and drawings, it should be apparent that I have provided a novel dispenser of greatly simplified and improved construction which accomplishes the aforestated objects and features in a remarkably unexpected fashion. The downward moving cover member, under the force of a resilient cord, maintains the same in continuous bearing contact with the uppermost tissue adjacent the dispensing opening, to thereby insure that the desired number of tissues are invariably extracted from the receptacle. Furthermore, the position of the cover with respect to the top of the receptacle indicates the amount of tissues that have been consumed and the supply of tissues still remaining in the receptacle portion of the dispenser.

Moreover, the placement of the resilient cord through a series of apertures at the bottom of the receptacle and in an interweaving manner, minimizes the lateral movement of the resilient cord and provides a simple and efficient means for providing a resilient force to urge the cover inwardly toward the bottom wall.

The invention herein also provides a plurality of means for quickly and easily removably attaching the sheet dispenser to either a magnetic or non-magnetic surface.

It is believed that my invention, its mode of construction and assembly, and many of its advantages should be readily understood from the foregoing without further description, and it should also be manifest that while preferred embodiments of this invention have been shown and described for illustrative purposes, the structural details are nevertheless capable of wide variation within the purview of my invention as defined in the appended claims.

What I claim and desire to secure by Letters Patent of the United States is:

1. A sheet dispenser comprising: a receptacle for a stack of substantially flat sheets having side walls, a bottom wall and an open top; a cover dimensioned somewhat less than the cross-sectional area of said receptacle; and a resilient means associated with said cover to urge the same inwardly toward said bottom wall of said receptacle for maintaining the uppermost sheet in close proximity to said cover; a permanent magnet; attached to the receptacle a magnetic attracting plate; and a contacting means, said permanent magnet drawing said magnetic attracting plate into contact therewith, said contacting means attaching said plate to a non-magnetic surface, said plate and said contacting means cooperating to permit said attracting plate to be releasably secured to a non-magnetic surface.

2. A sheet disipenser as defined in claim 1, wherein said contacting means includes an adhesive tape having a bottom adhesive layer and top adhesive layer superimposed, said bottom layer having adhesive on both sides, one adhesive side of said bottom layer contacting said plate and the other adhesive side contacting the only adhesive side of said top layer, said top adhesive layer being removed from said bottom layer to expose the same for contacting to a non-magnetic surface for releasably securing thereby said sheet dispenser to a non-magnetic surface.

3. The sheet dispenser as defined in claim 1, wherein said contacting means includes a multiplicity of gripping elements extending outward therefrom; and

cooperating material is secured to an external surface for attachment with said gripping elements, said gripping elements being releasably attached to said cooperating material for releasably securing said attracting plate to said external surface.

4. A facial tissue dispenser comprising:

a receptacle having side walls, a bottom wall and an open top, said bottom wall including a first, second, third and fourth aperture formed substantially centrally therein and in substantial alignment, said second and third apertures being positioned between said first and fourth apertures, said second aperture being adjacent said first aperture and said third aperture being adjacent said fourth aperture;

a stack of tissues positioned within said receptacle;

a cover having an area less than the cross-sectional area of said receptacle, said cover including a dispensing slot through which said tissues are dispensed and two apertures;

a pair of buttons, each of said buttons having hooks, said hooks extending through said apertures of said cover; and

a resilient cord having both its ends fixedly connected to said hooks, said cord extending inward from said cover toward said bottom wall and through said bottom wall at said first and fourth aperture, said resilient cord spanning the distance between said first and second apertures and between said fourth and third apertures on the outside surface of the bottom wall, said resilient cord re-entering said reseptacle through said second and fourth apertures and extending therebetween on the inside surface of said bottom wall, said resilient cord being braced to said receptacle by interweaving through said apertures of said bottom wall, said resilient cord urging said cover toward said bottom wall and in continuous contact with the uppermost of said stack of tissues as said tissues are dispensed from said dispenser.

5. The facial tissue dispenser as defined in claim 4 wherein:

a multiplicity of gripping elements extends outward from said receptacle; and

cooperating material secured to an external surface for attachment with said gripping elements, said gripping elements being releasably attached to said cooperating material for releasably securing said tissue dispenser to said external surface.

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