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54 **A system for dispensing paper towels and collecting used paper towels, and containers for the same.**

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Description

The present invention relates to a system for dispensing paper towels and collecting used paper towels, where the paper towel roll lies in a first container which on the underside thereof is provided with a tear-off device for tearing off the paper, and where beneath the first container is provided a second container to receive the used paper towels, and where the first container and the second container are placed in a fixed relationship to one another, for example in a common rack. Further, the invention relates to a container for dispensing paper towels, where the container on one side thereof is provided with a spiked tear-off aperture for tearing off the paper, and a container of recyclable cardboard material, preferably for collecting paper waste for recycling, for example used paper towels.

The invention also relates to the utilization of an apparatus for dispensing paper towels and collecting used paper towels.

In this description and in the patent claims, cardboard material should be understood to mean corrugated cardboard, solid pasteboard or cardboard, these being of varying qualities and construction according to structural requirements.

Previously known is the use of paper towels where the container for dispensing the paper towels is on the underside thereof provided with a tearing edge, so that when drawn out of the container the paper can readily be torn off against the tearing edge. Such containers are often made, at least partially, of transparent plastic material. In other cases the container is made of opaque plastic material, optionally with some metal parts. It is practical for such containers to be screwed solidly to a wall, and the paper must then be placed in the container. The paper towel rolls are most often supplied in larger or smaller cartons, perhaps packed in plastic, and must be removed from the packaging before being placed into the container, which procedure is often considered cumbersome.

A second significant problem with such paper towel containers that are mounted on a wall is that they cause considerable littering of a lavatory if the collection container is situated at a different place in the room, or is too small to receive all the paper that is thrown into the container. This necessitates, not least, a constant supervision of the lavatory in order to ensure that the paper is not thrown on the floor or has not fallen out of the container because the latter has become full.

A further significant problem with the known solutions is that the containers must be emptied, and cleaning personnel must pick up the waste paper that has been used for all imaginable cleaning purposes in a lavatory, including drying of

hands and other bodily parts or wiping up bodily fluids such as blood or saliva, wiping the nose, or the like. For cleaning personnel, this represents a major question of hygiene.

EP-A-147 214 discloses such a system for dispensing paper towels, where the paper towel roll lies in the top portion of a cabinet. A baffle extends across the top of the open front of the cabinet and slopes inwardly from top to bottom with a serrated bottom lip to form a tear-off device. The bottom portion of the cabinet is occupied by a container to receive the used paper towel.

The purpose of the present invention is therefore primarily to ensure that the hygiene in the lavatory is as good as possible and, not least, that the replacement of paper towel rolls and removal of waste paper is as simple as possible.

In its rolled-up form, paper toweling has a volume that is considerably smaller than the volume the paper assumes after its intended use. This makes it necessary for the waste receptacle to have a considerably greater volume than that of the paper towel roll.

According to the invention, the system is characterized in that said first and second containers are both made of recyclable cardboard material, and that the first container serves both as a container for transport and as a dispenser for the paper towels. In the case that a common rack is not utilized, it is practical that the container for dispensing paper towels be situated on a wall rack, and the container for receiving used paper towels is situated in a second rack, preferably fixed to the wall, below the first container.

The container for dispensing the paper towels is characterized in that it consists of a box of recyclable cardboard material, that the container is designed to serve both as packaging for transport and as holder for the paper towels during dispensing thereof, that a surface section of the box has a star-shaped section adapted to be torn out of said surface to form the spiked aperture, and that the points of the cardboard material thus formed which point in toward the center of the aperture are stiff enough that the paper towel drawn out of the aperture may be torn off against these points. Hence, one obtains the considerable advantage that the paper towel roll need not be removed from its packaging to then be placed in a separate container with a tearing edge. This simplifies to a considerable degree the replacement of the paper towels when there is a need for this.

The container of cardboard material, preferably for collecting waste paper, is characterized in that the top section of the container in its folded-together state for closing of the container (fig. 3) has two interfolded triangular or trapezoidal sections that project out from two respective sides of the

container, that said respective sides have a panel area capable of being pushed or bent inward, which is perforated along all edges thereof except along the upper edge, and that the outermost end of said section is adapted to be pressed into the opening formed by said panel area and to snap in there behind the lower edge of the opening. This panel area capable of being pushed or bent inward may preferably have a trapezoidal shape.

Thus, when the paper towel roll is used up, the container for used paper towels would normally be full or nearly full. Since both the container for dispensing paper towels and the receptacle for collecting the used paper towels are both made of cardboard material, both the paper towels that are used and the cardboard material in the container would be recyclable. Therefore, before the collection container is closed, it would be expedient for the person responsible for replenishing the lavatory to place the container for dispensing paper towels -- possibly in a collapsed or knocked-down state, into the collection container, at the same time that a new collection container and a new container for dispensing paper towels are put into place. The full collection container with the empty paper towel roll or box, together with the used paper towels, can then be sent to a receiving station for processing and recycling of paper waste.

With this solution, the personnel who undertake replacement of the paper towel roll and fetching of the collected waste paper, would be able to close the collection container in a secure manner without using tape or other solutions that would make closing of the container a cumbersome operation.

To facilitate carrying of the container or even several containers, it would be expedient to provide the top and adjacent vertical sides of the container with panel areas that may be pressed or bent inward to form a hand grip.

The invention will be elucidated further with reference to the enclosed illustrations.

- Figure 1 illustrates the system for dispensing paper towels and collecting used paper towels,
- Figure 2 illustrates the container for dispensing of paper towels, and
- Figure 3 illustrates the container for collecting paper waste.

In fig. 1 the container for dispensing the paper towels is designated with reference numeral 1. The paper towel 4 projects downward from the underside of container 1, and the container is placed in a rack section 13, for example, a tray having an opening in the center thereof so that the paper 4 may pass therethrough.

Beneath container 1 is a container 2 for waste paper 4'. Container 2 has uppermost on its wide sides respective top sections 14,14' which are to

form the cover of the receptacle when it is closed. At the same time that sections 14,14' are folded inward and partially overlap with each other, as shown in fig. 3, sections 7,7' at the top of the container's narrow sides are simultaneously folded together outwardly to form triangular or trapezoidal sections, as is clearly depicted on fig. 3. The narrow sides of the container are provided with panel areas 6,6' adapted to be pushed or bent inward, and said triangular or trapezoidal sections projecting out from the two respective sides of the container are pressed into said panel areas 6,6'. Since said triangular or trapezoidal sections extend slightly below the lower edge of said area 6,6' that may be pressed or bent inward, the pushing inward of said triangular or trapezoidal sections 7,7' will result in a snap fastening engagement with the lower edge of the opening. The receptacle will thus be closed in an effective manner without any difficult manipulations, the use of adhesive tape, or the like.

By providing the container's top section 14 and adjacent vertical side 2' with panel areas adapted to be pressed or bent inward, designated by reference numerals 8 and 9, respectively, there can be formed in the container a practical hand grip/handle, which will facilitate the removal of the container. Such a solution for the hand grip also makes it possible for the person who removes the collection container to carry two such containers at one time.

It would be expedient to utilize a common rack for containers 1 and 2, although this should in no way be regarded as a limiting solution for the invention.

The rack shown in fig. 1 is therefore to serve merely as an illustration of one of many possible solutions for positioning containers 1 and 2 in a fixed relationship with one another.

The rack may expediently consist of a bottom section 10 having frame section 11 for holding container 2 in place. To prevent premature closing of the container, i.e., prior to removing the container from the rack, and to simultaneously accommodate the desire to brace the top of container 2, a pair of arms 15 may be arranged on said rack, one on each side thereof. The rack will be provided with uprights 12,12' and, if necessary, horizontal braces 12". It is expedient to complete the rack at the top with a tray 13.

When the paper toweling is delivered from the manufacturer, it is found inside a box 1 made of cardboard material. The design of the box, such as is shown in fig. 2, shall not be regarded as a limiting feature for the idea of the invention, since other box designs are also conceivable. The box is sealed when it reaches the consumer. On one surface of the box is provided a star-shaped sec-

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tion 3' which is adapted to be torn out of said surface to form thereby a star-shaped aperture. This is done by first pushing in a circular section 3 in the star-shaped section 3', whereafter a finger may be inserted into the hole 3 thus formed, in order to pull out the star-shaped section 3'. This gives access to the paper towel. The points of cardboard material thus formed which point in toward the center of the aperture will be stiff enough (determined by the nature of the cardboard material) that the paper towel 4 drawn out through the aperture can easily be torn off on these points.

Claims

1. A system for dispensing paper towels and collecting used paper towels, where the paper towel roll lies in a first container (1) which on the underside thereof is provided with a tear-off device (3') for tearing off the paper, and where beneath the first container (1) is provided a second container (2) to receive the used paper towels (4'), and where the first container (1) and the second container (2) are placed in a fixed relationship to one another, for example in a common rack (10,11,12,13,15) **characterized** in that said first and second containers (1,2) are both made of recyclable cardboard material, that the first container (1) serves both as a container for transport and as a dispenser for the paper towels, that the first container, when empty, is collapsible, and that a surface section of the box has a star-shaped section (3') adapted to be torn out of said surface to form a spiked aperture, and that the points of the cardboard material thus formed which point in towards the center of the aperture are stiff enough that the paper towel (4) drawn out of the aperture may be torn off against these points.
2. A system according to claim 1, **characterized** in that the second container (2) for collection of paper waste for recycling, e.g. used paper towels (4') has a top section (14,14'; 7,7') which in its folded-together state for closing of the container (Fig. 3) has two interfolded triangular or trapezoidal sections (7,7') that project out from two respective sides of the container, that said respective sides have a panel area (6,6') capable of being pushed or bent inward, which is perforated along all edges thereof except along the upper edge, and that the outermost end of said section (7,7') is adapted to be pressed into the opening formed by said panel area (6,6') and to snap in there behind the lower edge of the opening.

3. A system as disclosed in claim 2, **characterized** in that said panel area (6,6') has a trapezoidal shape.
4. A system as disclosed in claim 2, **characterized** in that said second container (2) is so dimensioned that it is capable of receiving said first container (1) in its collapsed state.

10 Patentansprüche

1. System zum Abgeben von Papierhandtüchern und zum Sammeln von benutzten Papierhandtüchern, bei dem die Papierhandtuchrolle in einem ersten Behälter (1) liegt, der an seiner Unterseite mit einer Abreißeinrichtung (3') zum Abreißen des Papiers versehen ist, und bei dem unterhalb des ersten Behälters (1) ein zweiter Behälter (2) zum Aufnehmen der benutzten Papierhandtücher (4') vorgesehen ist, und bei dem der erste Behälter (1) und der zweite Behälter (2) in einer zueinander feststehenden Beziehung, zum Beispiel in einem gemeinsamen Gestell (10,11,12,13,15) angeordnet sind, dadurch gekennzeichnet, daß die ersten und zweiten Behälter (1,2) beide aus recycelbarem Kartonmaterial hergestellt sind, daß der erste Behälter (1) sowohl als Behälter für den Transport als auch als Abgebeeinrichtung für die Papierhandtücher dient, daß der erste Behälter, wenn er leer ist, zusammenklappbar ist, und daß ein Oberflächenbereich des Kastens einen sternförmigen Abschnitt (3') aufweist, der aus der Oberfläche herausgerissen werden kann, um eine mit Spitzen versehene Öffnung zu bilden, und daß die Spitzen des so gebildeten Kartonmaterials, die zur Mitte der Öffnung zeigen, steif genug sind, daß das aus der Öffnung herausgezogene Papierhandtuch (4) gegen die Spitzen abgerissen werden kann.
2. System nach Anspruch 1, dadurch gekennzeichnet, daß der zweite Behälter (2) zum Sammeln von Papierabfall zum Recyclieren, zum Beispiel von gebrauchten Papierhandtüchern (4'), einen oberen Abschnitt (14,14'; 7,7') aufweist, der in seinem zusammengeklappten Zustand zum Schließen des Behälters (Fig. 3) zwei ineinandergefaltete dreieckige oder trapezförmige Abschnitte (7,7') aufweist, die von den entsprechenden Seiten des Behälters nach außen vorstehen, daß die entsprechenden Seiten einen Wandbereich (6,6') aufweisen, das nach innen gestoßen oder gebogen werden kann und daß entlang allen Rändern mit Ausnahme des oberen Randes perforiert ist, und daß das äußerste Ende des Abschnittes

(7,7') so ausgebildet ist, daß es in die durch den Wandbereich (6,6') gebildete Öffnung hineingedrückt werden kann und dort hinter dem unteren Rand der Öffnung einrasten kann.

3. System nach Anspruch 2, dadurch gekennzeichnet, daß der Wandbereich (6,6') trapezförmige Form hat.

4. System nach Anspruch 2, dadurch gekennzeichnet, daß der zweite Behälter (2) so dimensioniert ist, daß er den ersten Behälter (1) in dessen zusammengeklapptem Zustand aufnehmen kann.

Revendications

1. Système de distribution de serviettes en papier et de récupération des serviettes en papier usagées, dans lequel le rouleau de serviettes en papier est situé dans un premier récipient (1) qui sur sa face inférieure est doté d'un dispositif de déchirage (3') pour déchirer le papier, et dans lequel sous le premier récipient (1) est disposé un second récipient (2) pour recevoir les serviettes en papier usagées (4'), et dans lequel le premier récipient (1) et le second récipient (2) sont disposés de manière à être fixes l'un par rapport à l'autre, par exemple dans une étagère commune (10, 11, 12, 13, 15) caractérisé en ce que lesdits premier et second récipients (1, 2) sont tous les deux en carton recyclable, en ce que le premier récipient (1) sert à la fois de récipient pour le transport et de distributeur pour les serviettes en papier, en ce que le premier récipient, lorsqu'il est vide, est pliable, et en ce qu'une section de surface de la boîte comporte une section en forme d'étoile (3') adaptée à être déchirée de ladite surface pour former une ouverture à pointes, et en ce que les pointes de carton ainsi formées qui sont orientées vers le centre de l'ouverture sont suffisamment rigides pour que la serviette en papier (4) tirée par l'ouverture puisse être déchirée contre ces pointes.

2. Système selon la revendication 1, caractérisé en ce que le second récipient (2) pour récupérer les déchets de papier à des fins de recyclage, par exemple des serviettes en papier usagées (4'), comporte une section supérieure (14, 14'; 7, 7') qui dans sa condition pliée pour fermeture du récipient (figure 3) comporte deux sections triangulaires ou trapézoïdales interplis (7, 7') qui se projettent vers l'extérieur depuis deux côtés respectifs du récipient, en ce que lesdits côtés respectifs comportent une

zone de pan (6, 6') pouvant être enfoncée ou repliée vers l'intérieur, qui est perforée le long de tous ses bords excepté le long du bord supérieur, et en ce que l'extrémité la plus externe de ladite section (7, 7') est adaptée à être enfoncée dans l'ouverture formée par ladite zone de pan (6, 6') et à s'engager dans celle-ci derrière le bord inférieur de l'ouverture.

3. Système selon la revendication 2, caractérisé en ce que ladite zone de pan (6, 6') a une forme trapézoïdale.

4. Système selon la revendication 2, caractérisé en ce que ledit second récipient (2) est dimensionné de manière à pouvoir recevoir ledit premier récipient (1) dans sa condition pliée.

FIG.1

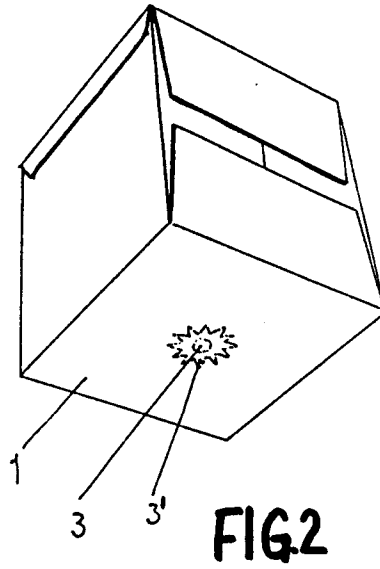
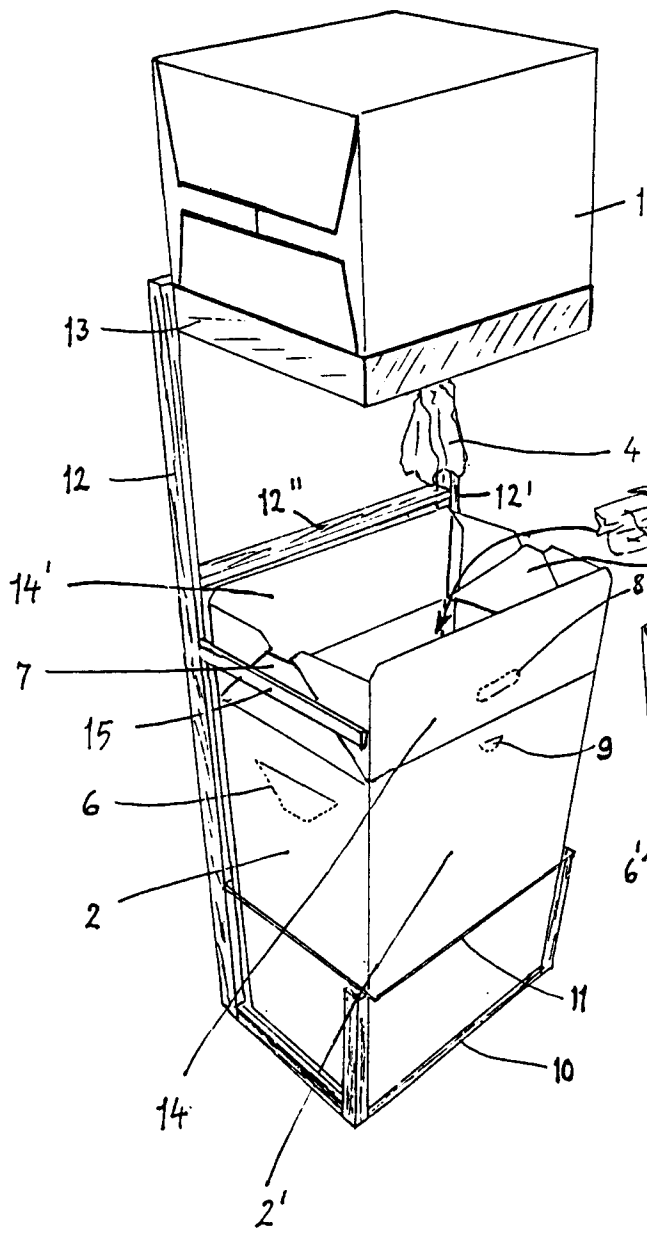


FIG.2

FIG.3

