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DISPOSABLE SEAT COVERS

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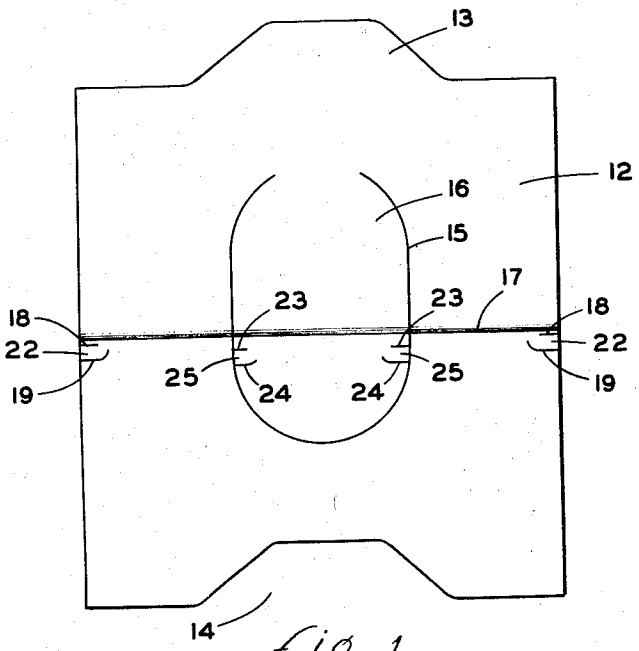


fig. 1

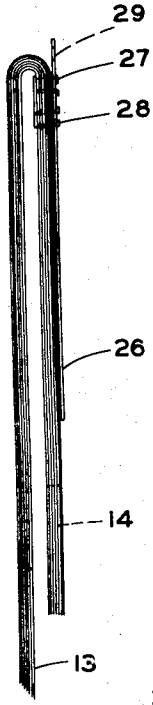


fig. 3

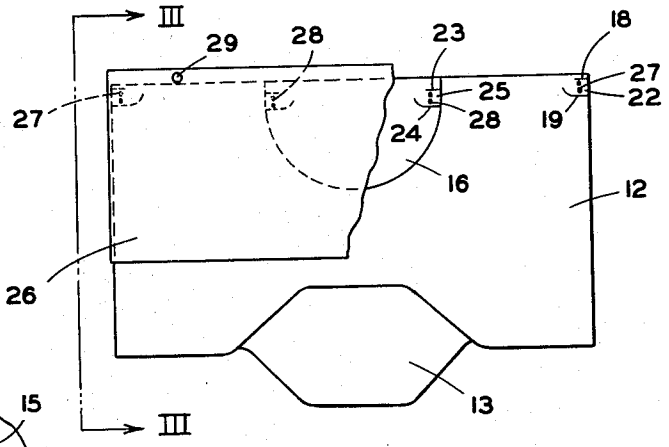


fig. 2

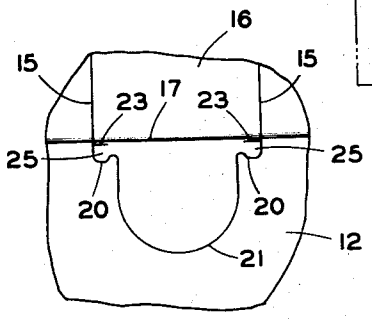


fig. 4

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DISPOSABLE SEAT COVERS

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This invention relates to a disposable toilet seat cover, particularly to a cover adapted to be assembled into a multi-cover pack from which individual covers can be dispensed in trouble-free manner.

It is common practice to provide disposable toilet seat covers in public rooms for sanitary purposes. Such covers are generally made of tissue paper which can be disposed of easily after use and are often contained in a mechanical dispenser from which they can be withdrawn as needed and placed on the toilet seat.

One common method of preparing such covers for mechanical dispensing is to staple or otherwise secure a plurality of superposed covers to a backing member, such as a piece of heavy cardboard, in such a manner that when the backing member is hung in the dispenser, e.g. by way of suitable holes along one edge, the entire pack of covers is folded horizontally roughly along its center with both ends of the covers hanging downward in nested relationship. The covers are then removed one at a time by grasping the lower edge of the unstapled half of the innermost cover and pulling it downward. Mechanical means are often provided to facilitate this operation. When a cover is removed in this manner it is torn around the staples or other means of securing it to the backing member, small sections of each cover thus being retained as a "stump" under the securing means so that the remaining covers are still held tightly to the backing member. Heretofore, a great deal of difficulty has been experienced in this manner of dispensing disposable toilet seat covers due to the difficulty occasioned by uneven tearing of the sheet around the fastening means. This difficulty is probably accentuated by the fact that the "grain" or texture of the tissue used in making the covers is generally uneven and tearing of the sheet evenly under the best of conditions is difficult to accomplish.

In United States Patent No. 2,230,395 there is described a seat cover of the type just referred to in which pairs of straight, essentially parallel slits extending transversely of each cover on each side of the staples are provided as a means for initiating and, to some extent, for guiding the tearing of the sheet. The cover described is intended to be assembled into a multi-cover pack, mounted on a backing strip of cardboard or the like with the pack folded transversely approximately at its center, from which the inner cover can be dispensed by pulling downward on its free end and the operation repeated until the pack is exhausted. However, even when such slits are provided it is found that, as successive covers are torn from the pack, the stubs of the paper tongues between the slits which remain under the staple become longer and longer along their lower edges and eventually interfere with the tearing operation to such an extent that the last covers in a pack do not tear evenly. They may even tear entirely across the cover and the cover thus be ruined.

The tearing of one cover in this manner makes it practically impossible for the next cover to be withdrawn without it, too, being torn so badly as to be unusable. This is especially true in the case of covers having a central flap which is connected with the main body of the cover by strips or tongues of paper which must be torn during the dispensing operation to separate the flap from the main body at these places, such as is illustrated in the patent referred to. Such tearing at these places not only gives the main body of the cover an unsightly appearance but generally is accomplished with even greater difficulty than is the tearing at other locations, e.g. at the extreme edges of the cover. When such a condition arises it is necessary to discard the rest of the pack and to install a new pack in the dispenser. The aggravating nature of the situation is all the more apparent when it is remembered that mechanical dispensers are generally employed, the efficient operation of which requires smooth, trouble-free tearing of each cover in the place desired until the entire pack is exhausted. In the past it has been possible to overcome this wasteful and otherwise highly undesirable condition only by limiting the number of covers in the pack to such an extent that the pack must be renewed more frequently than is economical or desirable. It is apparent that any improvement in disposable toilet seat covers which would overcome the difficulties inherent in hitherto known covers would be of value.

It is, therefore, an object of the present invention to provide a disposable toilet seat cover which is free from the disadvantages of hitherto described covers.

An additional object is to provide a disposable toilet seat cover, a desirably large number of which can be assembled into a pack from which they can be withdrawn singly until the pack is exhausted without injury to the individual covers.

An additional object is to provide a pack of disposable toilet seat covers suitable for mechanical dispensing of the individual covers.

An additional object is to provide a disposable toilet seat cover having a central flap which is suitable for dispensing mechanically from a pack thereof and in which separation of the central flap from the main body of the cover by tearing during the dispensing operation is avoided.

These and related objects are accomplished readily and economically according to the present invention in the way which will be described. The invention can be understood readily by reference to the accompanying drawing wherein, in the interest of clarity, certain features are shown on a somewhat exaggerated scale and wherein:

Figure 1 is a plan view of disposable toilet seat cover employing features of the invention,

Figure 2 is a plan view of a pack of disposable toilet seat covers of the type illustrated in Figure 1,

Figure 3 is a side elevation taken along the line III—III of Figure 2,

Figure 4 is a fragmentary illustration corresponding to a part of Figure 1 but showing an alternate arrangement of the parts.

Referring to Figure 1, the disposable toilet seat cover illustrated comprises a sheet 12 of an easily torn suitable material, such as a sheet of tissue paper. The sheet 12 can be of any suitable size and shape and is conveniently rectangular. The sheet 12 is conveniently provided with a projecting tab 13 along one of its edges, herein referred to as its forward edge. In the interest of economy the sheet is formed along its rearward edge opposite its forward edge with a recession 14 corresponding to the shape and size of the tab 13. When formed in this way no material is wasted in the cutting of the individual sheets from a continuous supply.

The sheet 12 is also provided with an elongated, gen-

erally curved slit 15 defining and separating from the main body of the sheet 12 a central flap 16 of suitable dimensions, the flap 16 being separated by the slit 15 entirely from the main body of the sheet 12 except for a suitable distance along the forward end of the flap where the ends of the slit 15 are spaced from one another. In use the flap 16 thus depends at its forward end from the main body of the sheet 12.

The sheet 12 is also provided with tear slits which are located in pairs rearwardly of a fold line, 17 of Figure 1, extending transversely of the sheet approximately midway between its forward and rearward edges, frequently somewhat nearer the forward edge than the rearward edge. Each pair of tear slits in the main body of the sheet 12, herein referred to as the first pair of tear slits, consists of two slits 18 and 19 defining between them a tongue 22 integral at its inner end with the main body of the sheet. The forward slit 18 of the pair, which may be so close to the fold line 17 as to be practically coextensive therewith, extends from the lateral edge of the sheet 12 transversely for a suitable distance and terminates in a closed end. The rearward slit 19 of the pair comprises a section of approximately the same length as the forward slit 18 which extends from the lateral edge of the sheet 12 essentially parallel with the slit 18. The slit 19 is, however, prolonged to form a section of the slit adjacent its closed end which converges toward a projection of the line of the forward slit 18. Although the convergent section of the slit 19 adjacent its closed end can be of any suitable configuration, it is convenient and satisfactory to form it in the shape of a curve of approximately constant radius with the center of curvature approximately at the closed end of the forward slit 18. It has been found that when the slits 18 and 19 have the configurations just described the subsequent tearing of single covers from a pack thereof, as will be described, is facilitated and tearing of the sheet is limited to tearing of the tongue 22 defined by the slits 18 and 19 from the main body of the sheet 12 with no tendency for the sheet to tear elsewhere. First pairs of tear slits are provided opposite one another transversely of the sheet 12.

The flap 16 is provided at each of its lateral edges with a second pair of tear slits which can be essentially identical with the first pair insofar as configuration is concerned. Thus the slits 23 and 24 of Figures 1 and 2 form such a second pair of tear slits. The forward slit 23 of the pair extends from a lateral edge of the flap 16 transversely of the flap for a suitable distance and terminates in a closed end. The rearward slit 24 of the pair comprises a section essentially parallel with and of approximately the same length as the forward slit 23. However, the rearward slit 24 is prolonged to provide a section adjacent its closed end which is convergent toward a projection of the line of the forward slit 23. Although the convergent section of the slit 24 can be of any suitable configuration, it is convenient and satisfactory, as in the case of the convergent section of the slit 19, to form it essentially in the form of a curve of constant radius with its center of curvature approximately at the closed end of the forward slit 23. The slits 23 and 24 thus define between them a tongue 25 integral at its inner end with the flap 16 and essentially identical in configuration with the tongue 22.

The slits 18 and 19 and, similarly, the slits 23 and 24 are spaced from one another and are of sufficient length to accommodate between them any suitable fastening means, e.g. a staple, by means of which a plurality of the slitted sheets can be secured to a backing member to form a pack which can be loaded into a dispenser, such a pack being illustrated in Figures 2 and 3. Any backing member 26 of suitable rigidity can be employed in forming the pack. Generally, a cardboard sheet can be employed satisfactorily. The backing member 26 is of generally rectangular shape having a length approximately the same as the width of the sheet 12 and having a width sufficient to give it the required strength. The backing member 26 is provided along one of its edges with two or more holes 29 by means of which it can be hung on suitable pegs or hooks, e.g. in a dispenser.

In making the pad of Figures 2 and 3 it is convenient to cut and slit a desired plurality of seat covers at one operation from a stack of the requisite number of superposed sheets. The stack of superposed covers is then secured, e.g. stapled, to the backing member, the fastening means passing through the tongues 22 and 25 and not through any other part of the main body of the sheet 12 or of the flap 16. The backing member 26 is positioned with respect to the stack of superposed covers before the stapling operation so that the tongues 22 and 25 are secured by the staples 27 and 28 to the backing member adjacent the same edge of the member as the holes 29 but somewhat further removed from the edge than are the holes. The backing member extends toward the rearward edges of the covers rather than toward their forward edges. Following the stapling operation and prior to hanging the pack in a dispenser, the stack of superposed sheets is folded approximately along the transverse line 17 in such a way that the forward ends of the covers are folded away from the backing member 26 the folded pack then being as illustrated in Figures 2 and 3.

It will be noted from Figures 2 and 3 that when the pack is hung on suitable pegs, i.e. by means of the holes 29, the backing member 26 and both halves of the stack of covers hang in closely positioned relationship and that the entire pack occupies a minimum of space. Furthermore, the several covers are in nested relationship with one another and are supported on the backing member 26 by the staples 27 and 28 with the member 26 on the outside of the nested covers. To dispense a cover from the pack it is only necessary to grasp the tab 13 of the innermost cover of the pack and pull it downward, whereupon the tongues 22 and 25 tear from the main body of the sheet 12 and from the flap 16, respectively, adjacent the respective staples and the entire cover can then be removed for use. It will be noted, especially from Figure 2, that grasping of the tab 13 of the innermost of the nested covers is facilitated by the fact that the rearward edge of each sheet is cut away in forming the tab of another sheet thus affording ample room for performing the operation described. In mechanical dispensing, it is merely necessary to provide a rubber tipped slider adapted to engage the surface of the tab 13 of the innermost cover and to forward the tab downward through a suitable opening in the bottom of the dispenser case so that it can be grasped and the entire cover withdrawn readily from the case. The holes 29 and the staples 27 and 28 are preferably located so that in the folded and hung pack pegs passing through the holes 29 will clear the folded covers and not interfere with the dispensing operation. It will be apparent, also, that any suitable securing means can be employed to secure the tongues 22 and 25 to the backing member 26. The invention has been described with respect to the use of staples as being convenient and economical but it is understood that the particular securing means employed is not limiting. The tongues 22 and 25 can be riveted to the backing member 26, if desired.

It will also be observed from the drawing that in the modification illustrated the second pairs of tear slits 23 and 24 are located somewhat closer to the rearward edge of the sheet 12 than are the first pairs of tear slits 18 and 19. This relative positioning of the tear slits is often of advantage since when a cover is withdrawn from the pack it causes tearing of the tongues 22 to start before tearing of the tongues 25 begins. In the case of very thin sheets of low strength this avoids any tendency for the cover to tear other than across the tongues

due to the tension which would otherwise be required to initiate tearing of all of the tongues of a single cover at the same time.

It will be noted that in the modification of Figures 1 and 2 one end of each of the tear slits **23** and **24** forms an angular juncture with the slit **15**. It is often difficult in cutting paper involving such an arrangement of slits to form the cutting die in such a way that clean cutting of the paper entirely through a pack of sheets is effected without undue disturbance of the sheets. This is especially true when two such arrangements of slits are located close together as is the case in the modification of Figures 1 and 2. To overcome this situation and to provide for greater ease of manufacture, it is sometimes preferable to form the slit **15** so that it includes as one section thereof the rearwardmost slit **24** of the second pairs of tear slits which, as stated previously, define between them tongues which are joined at one end to the flap **16**. Such a modification is illustrated in Figure 4 wherein the slit **15** includes a section **20** having a configuration and location essentially the same as, and functioning essentially the same as, the rearwardmost slit **24** of Figure 1, the slit **15** then continuing rearwardly of the sheet as shown at **21** of Figure 4 to complete the separation of the rearward end of the flap **16** from the main body of the sheet **12**. This modification avoids the use of a cutting die having two angular knife intersections located close to one another. It will be observed that the section **20** of the slit curves smoothly at its ends into the slits **15** and **21** and that one of the angular knife intersections is thus avoided. The modification of Figure 4 can be assembled in pack form and dispensed from a dispenser in a manner identical with that described in connection with the modification of Figures 1 and 2. When a cover is withdrawn from a dispenser in the manner described utilizing the modification of Figure 4, the flap tears easily from the inner end of the slit **23** across the tongue **25** to the curved slitted sections **20**, the only difference in the finally dispensed seat cover being that it is somewhat wider around its forward half than is the case when the modification of Figures 1 and 2 is employed.

We claim:

1. In a disposable toilet seat cover, the combination including: a sheet of disposable, easily torn material of suitable dimensions having forward, rearward and lateral edges; a generally curved slit in the sheet separating a centrally located flap of suitable dimensions partially from the main body of the sheet; a pair of tear slits extending transversely of the sheet from a lateral edge thereof defining between them a tongue of the sheet adapted to accommodate a securing means whereby a plurality of the superposed slitted sheets can be secured in pack form to a backing member, the rearward slit of the pair being longer than the forward slit and being formed with a section adjacent its closed end generally convergent toward a projection of the line of the forward slit; and tear slit means in the central flap associated with an edge thereof and separate from the main body of the sheet defining a tongue of the flap adapted to accommodate a securing means whereby the flaps of a plurality of superposed sheets can be secured to a backing member.

2. A cover as claimed in claim 1 wherein the convergent section of the rearward slit of the pair is in the form of a curve of approximately constant radius with the adjacent end of the forward slit as its approximate center of curvature.

3. A cover as claimed in claim 1 wherein the pair of tear slits is located rearwardly of the mid-point of the lateral edge of the sheet.

4. In a pack of disposable toilet seat covers, the combination including: a backing member of suitable rigidity; a plurality of superposed sheets of easily torn material of suitable dimensions having forward, rearward and lateral edges; registering, generally curved slits in the separate sheets separating a centrally located flap of suitable dimensions partially from the main body of each sheet; registering pairs of tear slits in the several sheets extending transversely of the sheets from the edges thereof defining between them superposed tongues of the several sheets, the rearward slit of each pair being longer than the forward slit of the pair and being formed with a section adjacent its closed end generally convergent toward a projection of the line of the forward slit; registering tear slit means in the several central flaps each associated with an edge of the flap and separate from the main body of the sheet defining superposed tongues of the several flaps; and means securing the superposed tongues of the main bodies of the sheets and of the flaps tightly to the backing member.

5. A pack of seat covers as claimed in claim 4 wherein the superposed sheets are folded transversely approximately midway between their forward and rearward edges with the backing member on an outer side of the pack and the tongues of the main bodies of the sheets and of the flaps are located rearwardly of the sheets with respect to the fold.

6. In a disposable toilet seat cover, the combination including: a sheet of disposable easily torn material of suitable dimensions having forward, rearward and lateral edges; an elongated, generally curved slit in the sheet separating a centrally located flap of suitable shape and dimensions from the main body of the sheet except along its forward edge; a first pair of tear slits extending transversely of the sheet from an edge of the main body therof; a second pair of tear slits extending transversely of the flap from an edge thereof, the tear slits of each pair being spaced from one another defining a tongue of the main body of the sheet and of the flap, respectively, adapted to accommodate a fastening means whereby a plurality of superposed slitted sheets can be secured in pack form to a backing member, and the rearward slit of each pair being longer than the forward slit and being formed with a section adjacent its closed end convergent toward a projection of the line of the forward slit.

7. A cover as claimed in claim 6 wherein the pairs of tear slits are each located rearwardly of approximately the center of the sheet.

8. A cover as claimed in claim 7 wherein the forward slit of the first pair of tear slits is located nearer the center of the sheet than is the forward slit of the second pair of tear slits.

9. A cover as claimed in claim 7 wherein the rearward slit of the second pair of tear slits is a suitably curved section of the elongated, generally curved slit.

10. A cover as claimed in claim 6 having first pairs of tear slits approximately opposite one another extending transversely from opposite lateral edges of the sheet and second pairs of tear slits approximately opposite one another extending transversely from opposite edges of the flap.

11. In a pack of disposable toilet seat covers, the combination including: a backing member of suitable rigidity having perforations adjacent one of its edges for hanging; a plurality of superposed sheets of easily torn material of suitable dimensions having forward, rearward and opposite lateral edges; registering, generally curved, elongated slits in the separate sheets separating a centrally located flap of suitable dimensions from the main body of each sheet except along its forward edge; registering first pairs of tear slits in the several sheets extending transversely of the sheets from the edges thereof defining between them a first set of superposed tongues integral with the several sheets; registering second pairs of tear slits in the several flaps extending transversely of the flaps from the edges thereof defining between them a second set of superposed tongues integral with the several flaps, the rearward slit of each pair being longer than the forward slit of the pair and being formed with a section adjacent its closed end generally convergent toward a

projection of the line of the forward slit; and means securing the sets of superposed tongues to the backing member adjacent the same edge thereof as the perforations.

12. A pack of covers as claimed in claim 11 wherein the pairs of tear slits are located rearwardly of the center of the superposed sheets whereby, when the superposed sheets are folded along approximately their transverse centers away from the backing member and the pack hung by way of the perforations with the forward and rearward sections of the sheets depending essentially vertically in nested relationship from the secured sets of tongues, the forward edges of the sheets project downward beyond the rearward edges of the sheets.

13. A pack of covers as claimed in claim 12 wherein the slits of the second pairs of tear slits are removed from the line of folding by a distance greater than the corresponding slits of the first pairs of tear slits whereby forced downward travel of the downwardly projecting forward edge of the innermost of the nested sheets in the folded and hung pack initiates tearing across the tongue of the first set integral with the sheet and, subsequently, tearing across the tongue of the second set integral with the flap.

14. A pack of covers as claimed in claim 11 wherein the rearward slit of each of the second pairs of tear slits in the several flaps is a suitably curved section of the elongated, generally curved slit in the respective sheet.

15. In a disposable seat cover, the combination including: a sheet of disposable easily torn material of suitable dimensions having forward, rearward and lateral edges; an elongated, generally curved slit in the sheet separating a centrally located flap of suitable shape and

dimensions from the main body of the sheet except along its forward edge; a first pair of tear slits extending transversely of the sheet from an edge of the main body thereof, defining between them a tongue of the sheet adapted to accommodate a fastening means whereby the main bodies of a plurality of superposed slitted sheets in pack form can be secured to a backing member, the rearward slit of the pair being longer than the forward slit and being formed with a section adjacent its closed end convergent toward a projection of the line of the forward slit; a flap tear slit extending transversely of the flap from an edge thereof, the elongated, generally curved slit having a section in the vicinity of the flap tear slit extending in a direction roughly parallel with the flap tear slit and adapted to cooperate therewith as a second pair of tear slits defining between them a tongue of the flap adapted to accommodate a fastening means whereby the superposed flaps of the pack can be secured to said backing member.

16. A seat cover as claimed in claim 15 wherein the part of the section of the elongated, generally curved slit in the vicinity of the flap tear slit adjacent the closed end of the flap tear slit is convergent toward a projection of the line of the flap tear slit.

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