

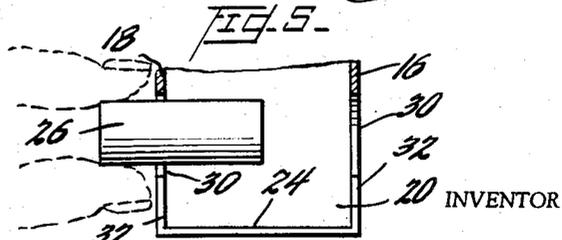
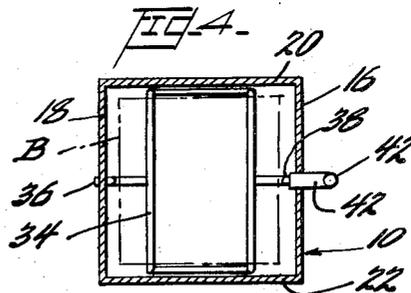
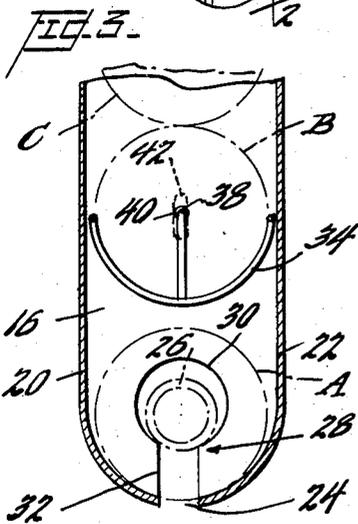
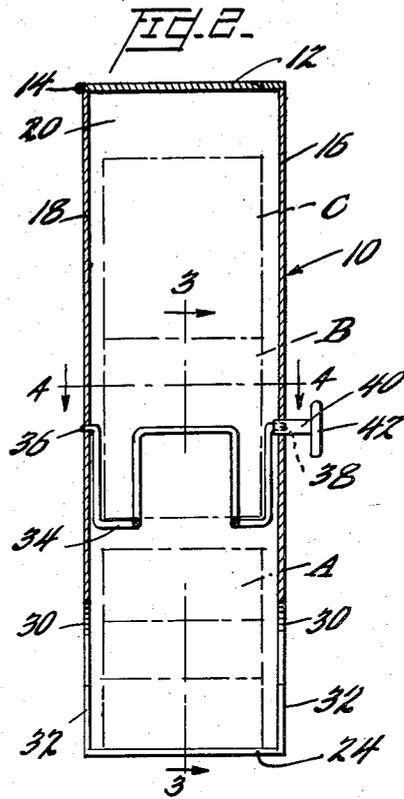
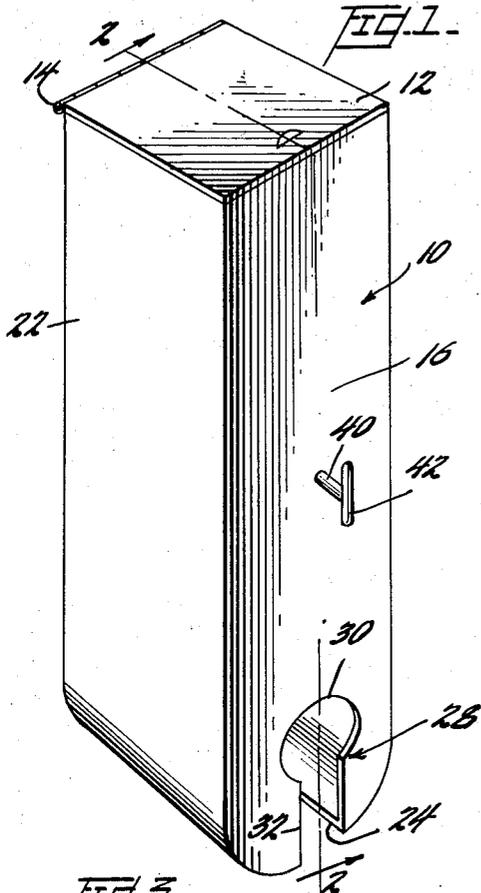
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COMBINATION STORAGE AND DISPENSING DEVICE FOR WOUND MATERIAL

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2,871,078

COMBINATION STORAGE AND DISPENSING  
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8 Claims. (Cl. 312—39)

The present invention relates generally to a combination storage and dispensing device for wound material wherein a plurality of rolls of such material may be stored in a cabinet or container with the bottom roll alone in dispensing position.

More particularly, the present invention relates to a combination storage and dispensing device of the type described especially adapted to contain at least three rolls of toilet tissue and incorporating a simple mechanism for positioning one roll at a time into the bottom of the container where it will be out of contact with the other rolls which may be in the container.

It is common knowledge that the utilitarian function of storing and dispensing toilet tissue is usually accomplished by inserting a wooden or metal roller or shaft through the hollow hub of the tissue roll and supporting the roller or axle in a convenient open bracket provided for that purpose. The rolled tissue is thus available one roll at a time so that when a roll has been completely used it is generally necessary to secure a new roll from a relatively remote location, remove the old hub from its supporting bracket and, finally, reinsert the axle into the new hub and reposition the new roll within the same bracket.

The foregoing method presents certain disadvantages which may be overcome by the practice of the present invention. For instance, in accordance with the present invention it is unnecessary to store the extra, unused rolls of toilet tissue at a relatively remote location since they are maintained in a clean and dry condition ready for instant use in the same container from which they are dispensed. This is particularly advantageous both in the case of small bathrooms as found in many apartments or smaller dwellings where extra storage space is always at a premium, and is equally advantageous for use in hotels or busy public places where the labor involved in frequently replacing a single roll at a time in the usual fixture is of considerable magnitude. In addition, wherever the device of the present invention is employed, it presents a clean, neat and generally attractive appearance.

Although it has been proposed in the past to arrange more than a single roll of toilet tissue for dispensing from a single container, the teaching, in substantially all such cases, has tended to follow the basic concept of dispensing from a single roll fixture. In other words, even where such multiple storage has been provided, it has been the practice to also provide either a series of axles on which the hubs may be placed, or equivalent structure including some form of guiding devices for the axles or other relatively complicated mechanism for accomplishing the same journal type of support. Needless to say, such devices have not generally found wide public acceptance due to their complicated and expensive nature as well as the difficulty and expense of maintenance and even difficulty in using such devices.

It is, accordingly, a principal object of the present invention to provide a combination storage and dispensing

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device of the type described which is extremely simple in construction and may be inexpensively fabricated with a minimum of working parts which will be unlikely to get out of order in normal use.

Another object of the invention is to provide a device of the type described which is free of any axles, spindles, or the like so that the roll which is being dispensed rests merely on the bottom of the container and may be withdrawn as desired from a downwardly open slot in the latter.

A further object of the invention is to provide a combination storage and dispensing device incorporating a simple and virtually foolproof feeding element which serves both to position one roll at a time into the bottom portion of the container and also to maintain such roll out of contact with the other rolls in the container when it is in dispensing position.

Yet another object of the invention is to provide a device of the type described incorporating a special slot arrangement in the lower portion of the container so that the empty hub of a used roll of tissue may be readily removed from the container but will not accidentally drop through the dispensing slot, while at the same time either a new or partially used roll in the dispensing position may be manually rotated to initiate a dispensing action.

The foregoing together with other and further objects and advantages of the invention will become more readily apparent to one skilled in the art from a consideration of the following detailed specification taken in conjunction with the accompanying figures of drawing in which:

Figure 1 is an overall perspective view illustrating a preferred embodiment of dispensing container in accordance with the present invention;

Figure 2 is a longitudinal cross-sectional view through the dispensing container taken substantially along the line 2—2 of Figure 1;

Figure 3 is a vertical transverse cross-sectional view through a portion of the dispensing container of Figures 1 and 2, taken substantially along the line 3—3 in Figure 2;

Figure 4 is a horizontal cross-sectional view taken substantially along the line 4—4 of Figure 2; and

Figure 5 is a fragmentary cross-sectional view similar to Figure 2 but illustrating the lower portion only of the dispensing container to show an empty hub being withdrawn therefrom.

Referring now in somewhat greater detail to the various figures of the drawing, and in particular to Figure 1, the improved combination storage and dispensing device in accordance with the present invention is seen to comprise an elongated, generally rectangular container 10 which is hollow and adapted to loosely hold a plurality of rolls of wound material. The container 10 is preferably made of light gauge metal of any suitable kind but may also be formed of a molded plastic or other material if desired. In the preferred embodiment of the invention as illustrated in the drawings, the container is suitably proportioned to hold three rolls of ordinary toilet tissue of standard shape and size although it will be apparent that other shapes and sizes of wound material such as, for example, paper toweling, may be similarly handled simply by changing the shape and dimensions of the parts.

As shown in Figure 1, the container 10 is provided with a flat open top having a suitable lid 12 hingedly mounted along one edge at the top of the container as indicated by reference numeral 14. The front and rear walls of the container 10 designated by reference numerals 16 and 18, respectively, in Figures 2, 4 and 5, are preferably flat. However, the vertical side walls 20 and 22, respectively, are curved at their lower ends so that the bottom portion of the container 10 is of semi-cylindrical shape. The lowermost surface of the container is suitably cut or

otherwise formed to provide a downwardly open, center slot 24 which extends continuously across the curved surface of the container in a direction substantially parallel to the axis of generation of the semi-cylindrical bottom portion of the latter. It will be particularly noted that the width of the slot 24 is smaller than the width or diameter of any of the winding hubs of rolled material within the container, one such hub being designated by numeral 26 in Figure 5.

Referring particularly to Figures 1 and 3, it will be noted that in the preferred form of the device in accordance with the present invention, each of the front and rear walls 16 and 18, respectively, is provided with a keyhole slot adjacent the bottom of the container formed as a vertical continuation of the downwardly open center slot 24. In the preferred embodiment illustrated, the keyhole slot is designated generally by reference numeral 28 and is seen to comprise an upper circular portion 30 and a lower straight portion 32. Again it will be particularly noted that the width of the lower straight portion 32 of the keyhole slots is less than the width or diameter of the disposable winding hubs 26 whereas the width or diameter of the upper circular portion 30 of each of the keyhole slots is substantially greater than the width or diameter of the winding hubs 26 so that the latter may be withdrawn through the circular slot portions 30 in the manner indicated diagrammatically in Figure 5. While I have illustrated keyhole slots as constituting a preferred embodiment of the invention, it is to be understood that various other slot shapes may be employed so long as the desired relationship between the upper and lower portions of the slots and the width or diameter of the winding hubs 26 is maintained. It is also to be understood that, while I have illustrated a keyhole slot 28 in both the front and rear walls 16 and 18 of the container 10, it is possible to employ only a single such slot without departing from the principles of the invention.

Referring now particularly to Figures 2, 3, and 4, there is illustrated a preferred mechanism for selectively maintaining the lowermost of the rolls within the container out of contact with the other rolls therein while at the same time being manually operable to position a single one of the rolls into the bottom portion of the container. As shown in these figures, this mechanism takes the form of a generally hollow, semi-cylindrical cradle 34, preferably formed of wire which has been bent and soldered or otherwise suitably secured together into the form as shown. At the opposite ends of the longitudinal axis of the cradle 34, the wire is bent outwardly to form stub shafts 36-38. The stub shaft 36 is journaled within a suitable aperture provided in the rear wall 18 of the container and is freely rotatable therein. The opposite stub shaft 38 projects outwardly through a similar aperture in the front wall 16 of the container and is surrounded and firmly secured to the operating shaft 40 of a manually operable handle 42. The handle 42 is thus rotatably mounted on the exterior of the container 10 while the cradle 34 is freely rotatable within the middle portion of the container.

It is believed that the operation of the device may be generally understood from the foregoing description. In brief, however, it will be understood that the container 10 may be mounted in any convenient manner, as by means of screws, nails, or the like, upon a wall or other structure conveniently located adjacent the point of use of the rolled material. The container 10 is preferably mounted in a substantially vertical position as illustrated in Figure 1 and, when thus secured in position, a plurality of rolls of wound material, which in the present case are shown in dotted lines in Figures 2 and 3 as conventional rolls of toilet tissue A, B and C, may be inserted into the container 10 by first lifting the lid 12.

Although the container 10 is adapted to hold three full rolls of toilet tissue, if the container is entirely empty at the beginning of the loading operation, it will be necessary

to operate the cradle 34 at some point during the loading operation. For example, when the first roll A is inserted through the open top of the container, it will fall into the cradle 34 which must be rotated by means of the handle 42, either one full turn or two half turns, in order to position roll A into dispensing position in the bottom of the container. Thereafter the two upper rolls, B and C, may be inserted into the positions as illustrated in dotted lines in Figure 2 and the lid 12 closed to maintain all of the toilet tissue in a clean and dry condition.

It will be particularly noted in Figures 2 and 3 that the lowermost roll A is maintained at all times out of contact with either of the upper rolls B or C which are supported by the cradle 34. The lowermost roll A may thus be rotated manually by inserting a finger through the slot 30 so as to bring a free edge of the wound material through the downwardly open slot 24 from which it may be dispensed by merely pulling upon it. When the bottom roll A has been completely used up, the empty winding hub 26 will not fall out the bottom slot 24 since it is of larger diameter than the latter, but may be manually moved upwardly and withdrawn through a slot 30 in the manner indicated in Figure 5. Thereafter the roll B may be positioned downwardly into the dispensing position by rotating the handle 42 either a full turn in one direction or two half turns in opposite directions, in either of which cases the uppermost roll C will then rest upon the cradle 34 and will be prevented by the latter from moving into contact with the roll in dispensing position. It will be apparent that the container 10 may be refilled after either one, two or all of the rolls have been consumed in use.

It will be apparent from the foregoing description that the combination storage and dispensing device in accordance with the present invention is of extremely simple and economical construction and employs a minimum of moving parts in its operation. By reason of the fact that the lowermost roll in dispensing position is maintained out of contact with the upper rolls and is thus relieved of the pressure or weight of the latter, it is not necessary to provide any special axle or spindle for the rolls which will turn freely as the wound material is pulled therefrom through the slot 24. Furthermore, it is virtually impossible to operate the cradle 34 in an incorrect manner as any inadvertent attempt to position a second roll into dispensing position while another roll is already in such position will produce either no effect, or, if the lowermost roll has been largely consumed at the time, a jamming of the operating handle 42 which will immediately inform the user that a simple adjustment should be made by manually raising the lowermost roll so as to push the upper roll back into position where it may be reengaged by the cradle 34.

While I have shown and described herein a preferred embodiment of the invention solely for the purpose of illustration, it will be apparent that numerous modifications, alterations and deviations from the specific structure disclosed will occur to those skilled in the art without departing from the spirit or scope of the invention. Having thus described my invention, what I claim as new and desire to secure by Letters Patent is as follows:

1. A combination storage and dispensing device comprising an elongated, generally rectangular, hollow container adapted to loosely contain three rolls of toilet tissue and having a flat open top and a semi-cylindrical bottom portion provided with a downwardly open, center slot extending continuously across the lowermost surface of said container in a direction substantially parallel to the axis of generation of said semi-cylindrical bottom portion, a lid hingedly mounted along one edge at the top of said container for closing the top end of the latter, a wire cradle of generally hollow, semi-cylindrical shape pivotally mounted at the opposite ends of its longitudinal axis for free rotation within the middle portion of said container, a handle rotatably mounted on the exterior of

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said container and having an operating shaft extending through the container wall and connected to the axis of said cradle for rotating the latter, and a pair of keyhole slots formed in the opposite flat walls of said container adjacent the bottom thereof as vertical continuations of said center slot, the width of said center slot and the lower portions of said keyhole slots being smaller, and the diameter of the upper, circular portions of said keyhole slots being greater, than the diameter of any of the winding hubs of said rolls.

2. A combination storage and dispensing device comprising a container adapted to loosely contain a plurality of rolls of toilet tissue and having a flat open top and a semi-cylindrical bottom portion provided with a downwardly open, center slot extending continuously across the lowermost surface of said container in a direction substantially parallel to the axis of generation of said semi-cylindrical bottom portion, a wire cradle of generally hollow, semi-cylindrical shape pivotally mounted at the opposite ends of its longitudinal axis for free rotation within the middle portion of said container, a handle rotatably mounted on the exterior of said container and having an operating shaft extending through the container wall and connected to the axis of said cradle for rotating the latter, and a pair of keyhole slots formed in the opposite flat walls of said container adjacent the bottom thereof as vertical continuations of said center slot, the width of said center slot and the lower portions of said keyhole slots being smaller, and the diameter of the upper, circular portions of said keyhole slots being greater, than the diameter of any of the winding hubs of said rolls.

3. A combination storage and dispensing device comprising a container adapted to loosely contain a plurality of rolls of toilet tissue and having a semi-cylindrical bottom portion provided with a downwardly open, center slot extending continuously across the lowermost surface of said container in a direction substantially parallel to the axis of generation of said semi-cylindrical bottom portion, a cradle of generally hollow, semi-cylindrical shape pivotally mounted at the opposite ends of its longitudinal axis for free rotation within said container, a handle rotatably mounted on the exterior of said container and having an operating shaft extending through the container wall and connected to the axis of said cradle for rotating the latter, and a pair of keyhole slots formed in the opposite flat walls of said container adjacent the bottom thereof as vertical continuations of said center slot, the width of said center slot and the lower portions of said keyhole slots being smaller, and the diameter of the upper, circular portions of said keyhole slots being greater, than the diameter of any of the winding hubs of said rolls.

4. A combination storage and dispensing device comprising a container adapted to loosely contain a plurality of rolls of wound material and having a semi-cylindrical bottom portion provided with a downwardly open center slot extending continuously across the lowermost surface of said container in a direction substantially parallel to the axis of generation of said semi-cylindrical bottom portion, a cradle of generally hollow, semi-cylindrical shape pivotally mounted in the container above said lowermost roll, at the opposite ends of its longitudinal axis for free rotation within said container, manually operable means for rotating said cradle, and a pair of keyhole slots formed in the opposite flat walls of said container adjacent the bottom thereof as vertical continuations of said center slot, the width of said center slot and the lower portions of said keyhole slots being smaller, and the diameter of the upper, circular portions of said keyhole slots being greater, than the diameter of any of the winding hubs of said rolls.

5. A combination storage and dispensing device comprising a container adapted to hold a plurality of rolls

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of wound material and having a semi-cylindrical bottom portion provided with a downwardly open, center slot extending continuously across the lowermost surface of said container in a direction substantially parallel to the axis of generation of said semi-cylindrical bottom portion through which wound material from the lowermost of said rolls may be withdrawn, means within said container for selectively maintaining the lowermost of said rolls out of contact with the other rolls and manually operable to position a single one of said rolls into the bottom portion of said container, and means forming a pair of keyhole slots in the opposite flat walls of said container adjacent the bottom thereof as continuations of said center slot, the width of said center slot and the lower portions of said keyhole slots being smaller, and the width of the upper portions of said keyhole slots being greater, than the diameter of any of the winding hubs of said rolls.

6. A combination storage and dispensing device comprising a container adapted to hold a plurality of rolls of wound material and provided with a downwardly open, center slot through which wound material from the lowermost of said rolls may be withdrawn, means within said container for selectively maintaining the lowermost of said rolls out of contact with the other rolls and manually operable to position a single one of said rolls into the bottom portion of said container, and means forming a pair of keyhole slots in the opposite flat walls of said container adjacent the bottom thereof, the width of said center slot and the lower portions of said keyhole slots being smaller, and the width of the upper portions of said keyhole slots being greater, than the diameter of any of the winding hubs of said rolls.

7. A combination storage and dispensing device comprising a container adapted to hold a plurality of rolls of wound material and provided with a downwardly open slot through which wound material from the lowermost of said rolls may be withdrawn, means within said container for selectively maintaining the lowermost of said rolls out of contact with the other rolls and operable to position a single one of said rolls into the bottom portion of said container, and means forming a generally upwardly extending slot in at least one wall of said container adjacent the bottom thereof, the width of said downwardly open slot and the lower portion of said upwardly extending slot being smaller, and the width of the upper portion of said upwardly extending slot being greater, than the diameter of any of the winding hubs of said rolls.

8. A combination storage and dispensing device comprising a container adapted to hold a plurality of rolls of wound material and provided with a downwardly open slot through which wound material from the lowermost of said rolls may be withdrawn, and means forming a generally upwardly extending slot in at least one wall of said container adjacent the bottom thereof, the width of said downwardly open slot and the lower portion of said upwardly extending slot being smaller, and the width of the upper portion of said upwardly extending slot being greater, than the diameter of any of the winding hubs of said rolls.

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