# HORIZONTALLY MOUNTED SHELF ASSEMBLY AND ACCESSORIES THEREFOR

## TECHNICAL FIELD

**[0001]** The present invention relates generally to wall mountable storage and organizing articles and, more particularly, to a shelf assembly that can be adhesively mounted to, for example, a vertical wall surface in a bathroom or the interior surface of a bath or shower enclosure to hold a variety of items commonly used in the bathroom or shower.

## BACKGROUND

**[0002]** Shower and bath storage devices, often referred to as shower or bath caddies, are commonly used to hold and/or store items such as soap, shampoo, and other bath items in shower and bath enclosures. Because of the weight of the stored items and because it is generally not practical to mount such items in shower or bath enclosures using mechanical fasteners, such as nails and screws, such devices are typically hung from the shower nozzle fixture. Such devices are known in the prior art. U.S. Patent No. 4,969,580 (Mikhail Essatt), U.S. Patent No. 4,108,314 (Racca), U.S. Patent No. 5,255,401 (Sambrookes et al.), and U.S. Patent No. 6,520,351 (Zadro), for example, disclose such devices. It is also known to mount such devices using suction cups as disclosed in, for example, U.S. Patent No. 5,289,927 (Emery).

**[0003]** Such devices, however, suffer from certain drawbacks and shortcomings. Devices that hang from the shower nozzle fixture, for example, tend to be large and cumbersome and because such devices must hang down from the shower nozzle fixture below the shower head so the items in the caddy can be accessed by a user, they are unstable and tend to swing sideways or slide off of the shower nozzle fixture. In addition, the mounting location is limited by the location of the shower nozzle fixture such that they cannot be moved, and, because they must be mounted immediately below the shower head, they tend to interfere with the use of the shower. Devices mounted with suction cups, on the other hand, have limited holding capacity and tend to lose their holding ability over time. As a result, devices mounted with suction cups frequently fail, thereby causing the device and its contents to fall off the wall. The need therefore exists for a storage device that can be

adhesively mounted to the wall surface of a shower or bath enclosure that is inexpensive, easy to install, is adjustable, and holds strongly enough to support items commonly stored in such devices.

**[0004]** The need therefore exists for a storage device that can be adhesively mounted to the wall surface of a shower or bath enclosure that is inexpensive, easy to make and use, is adjustable and versatile, and holds strongly enough to support items commonly stored in such devices.

## SUMMARY

**[0005]** The invention overcomes the above-identified limitations in the field by providing an adjustable shelving system that can be adhesively mounted to, for example, the wall surface of a shower or bath enclosure, that is versatile, inexpensive, easy to install, and holds strongly enough to support items commonly stored in such devices.

**[0006]** In one embodiment, the present invention provides a horizontally mounted shelf assembly including an elongated support rail, at least one accessory removably connected with the support rail, and at least one stretch releasing adhesive strip arranged between the support rail and the wall for securing the shelf assembly to the wall. The elongated support rail includes a body portion and a pair of leg portions extending at an angle from the ends of the body portion, thereby to space the body portion from the wall when the shelf assembly is mounted on the wall. In one embodiment, the elongated support rail includes back plate portions at the ends of the leg portions, the back plate portions having generally planar surfaces opposite the leg portions. The at least one stretch releasing adhesive strip is arranged on the back plate planar surfaces. In another aspect of the invention, each accessory includes a front retaining wall portion, a shoulder portion, and a rear retaining wall portion arranged to define an elongated mounting channel that allows for sliding engagement of the accessory on the support rail.

**[0007]** In another aspect, the present invention provides an accessory that can be adhesively mounted directly on a wall surface using a stretch releasing adhesive strip having a non-adhesive pull tab, the accessory including a front retaining wall portion, a shoulder portion, and a rear retaining wall portion arranged to define an elongated channel between the front retaining wall portion and the rear retaining wall portion.

## BRIEF DESCRIPTION OF DRAWINGS

**[0008]** The present invention will be further described with reference to the accompanying drawings, in which

**[0009]** FIG. 1 is a perspective view of a horizontally wall mounted shelf assembly according to the invention;

**[0010]** FIG. 2 is side plan view of an accessory for mounting on the shelf assembly;

**[0011]** FIG. 3 is an exploded detailed view of one end of the shelf assembly; and

**[0012]** FIG. 4 is an exploded perspective view of an accessory that can be mounted directly on a wall surface.

## DETAILED DESCRIPTION

**[0013]** Referring now to the drawings, wherein like reference numerals refer to like or corresponding parts throughout the several views, FIGS. 1-3, show a horizontally wall mounted shelf assembly 2 for holding items such as soap, shampoo and the like in, for example, a shower or bath enclosure. The shelf assembly 2 includes an elongated support rail 4, a plurality of accessories 6,8,10,12,14 slidaby connected with the support rail 4, and a pair of stretch releasing adhesive strips 16 affixed to the rear surface of the support rail 4, thereby to adhesively bond the support rail 4 to a wall surface 18.

**[0014]** The support rail 4 includes a generally linear body portion 4a and a pair of leg portions 4b that extend generally rearwardly from the body portion 4a toward the wall surface 18. In this manner, the leg portions 4b serve to space the body portion 4a from the wall surface 18 when the assembly 2 is mounted on the wall surface 18, and thereby allow the accessories 6,8,10,12,14 to be mounted on the support rail 4. In the illustrated embodiment, the support rail 4 includes back plate portions 4c (FIG. 3) at the terminal ends of the leg portions 4b. Each back plate portion 4c includes generally planar surfaces opposite the leg portion 4b to which the stretch releasing adhesive strips 16 are adhered, thereby serving to adhesively bond the support rail 4 to the wall surface 18.

**[0015]** In one embodiment, the back plate portions 4c are formed as separate feet which are pivotally connected with the leg portions 4b. Connecting the back plate "feet" to the legs in this manner allows the feet to move independently relative to the legs, and thereby

allows the feet to have increased surface contact with a curved surface, such as the curved surfaces commonly found on fiberglass shower and bath enclosures.

**[0016]** Each accessory 6,8,10,12,14 includes a front retaining wall portion 6a,8a,10a,12a,14a, a shoulder portion 6b,8b,10b,12b,14b, and a rear retaining wall portion 6c,8c,10c,12c,14c, which combine to define an elongated mounting channel 20 and allow the accessories to be slidably mounted on the support rail 4. That is, the sliding connection between the support rail 4 and the mounting channel 20 allows the position of each accessory 6,8,10,12,14 to be laterally adjusted along the length of the support rail 4 as indicated by arrow A.

**[0017]** As shown most clearly in FIG. 2, the distance between the front retaining wall portion 10a and the rear retaining wall portion 10c increases in the direction away from the shoulder portion 10b, such that channel 20 is tapered in the direction of the shoulder portion 10b. When formed in this manner, each accessory 6,8,10,12,14 will tend to slope downwardly in the direction toward the wall surface 18, thereby causing items arranged on the accessory to tip backward toward the wall surface 18.

**[0018]** Alternatively, the rear retaining wall portion 10c may be formed in the shape of a "closed hook," such that the end of the rear retaining wall portion 10c is arranged adjacent to the front retaining wall portion 10b. Formed in this manner, the rear retaining wall portion 10c and front retaining wall portion 10b are manually separated to connect or remove the accessory 10 from the support rail, and in so doing, a small force is created to more securely connect the accessory 10 to the support rail 4. In addition, the rear retaining wall portion 10c may include a detent (not shown), such that the rear retaining wall portion 10c snaps into place on the support rail 4, thereby providing a more secure attachment between the accessory 10 and the support rail 4.

**[0019]** In the illustrated embodiment, accessory 6 is a unitary hook including a curved hook portion 6d extending outwardly and upwardly from the lower end of the front retaining wall portion 6a. Accessory 8 is a unitary toothbrush holder including spaced top 8d and bottom 8e shelf portions extending outwardly from the front retaining wall portion 8a. The top shelf portion 8d contains openings 22 for receiving the handle of a toothbrush 24.

**[0020]** Accessory 10 is a unitary shelf structure configured to hold, for example, a bottle of shampoo or hair conditioner. The shelf structure 10 includes a bottom wall portion 10d extending outwardly from the front retaining wall portion 10a. Accessory 12 is a unitary tray including a dish portion 12d extending outwardly from the front retaining wall portion 12a configured to hold a bar of soap 26. And accessory 14 is a unitary hook including a pair of spaced raised regions 14d defining a recessed region 28 there between configured to hold a conventional razor. Other accessories, such as a mirror or caddies designed for specific purposes, may also be provided.

**[0021]** As shown in FIG. 3, stretch releasing adhesive strips 16 are arranged between the back plate portions 4c of the support rail 4 and the wall surface 18, and thereby adhesively bond the shelf assembly 2 to the wall surface 18. A suitable stretch releasing adhesive is the double-sided stretch releasable adhesive strips available from 3M Company, St. Paul, Minnesota under the COMMAND trade designation. Commercially available COMMAND adhesive strips are currently manufactured as discrete strips with one end of the strip including a non-adhesive pull tab to facilitate stretching of the strip during removal.

**[0022]** Stretch releasing adhesives are high performance pressure-sensitive adhesives that combine strong holding power with clean removal and no surface damage. The double-sided adhesive strips 16 may be any conventionally known stretch releasing adhesive tape including a stretch releasing adhesive tape with an elastic backing, a stretch releasing adhesive tape with a highly extensible and substantially inelastic backing, or a stretch releasing adhesive tape comprising a solid elastic pressure sensitive adhesive, but are preferably stretch releasable adhesive strips that are moisture resistant (i.e. they maintain their holding power in the presence of water and/or in high humidity environments).

**[0023]** Specific tapes suitable for use in the various embodiments of the present invention include the pressure sensitive adhesive tapes with elastic backings described in U.S. Patent No. 4,024,312 (Korpman), the pressure sensitive adhesive tapes with highly extensible and substantially inelastic backings described in U.S. Patent Nos. 5,516,581 (Kreckel et al.) and 6,231,962 (Bries et al.), 6,569,521 (Sheridan et al.), 7,078,093 (Sheridan et al.), and the solid elastic pressure sensitive adhesive described in German Patent No. 33 31 016. Other suitable stretch releasing adhesive constructions include the stretch removable

adhesive tape laminate including a separable fastener described in U.S. Patent No. 6,972,141 (Bries et al.), and the elongate stretch removable tape constructions described in U.S. Patent Nos. 6,641,910 (Bries et al.), and 6,541,089 (Hamerski et al.).

**[0024]** The stretch releasing adhesive strips 16 include an adhesive portion 16a, which is typically concealed by the support rail 4 when the support rail 4 is mounted to the wall surface 18, and a non-adhesive pull tab portion 16b that extends outwardly beyond the bottom of the back plate portion 4c as shown in FIG. 3. In the illustrated embodiment, the shelf assembly 2 further includes an optional cover plate 30 arranged over the back plate portion 4c of the support rail 4. When the cover plate 30 is connected with the support rail 4, it serves to conceal the non-adhesive pull tab portions 16b of the stretch releasing adhesive strips 16, but, when removed from the support rail 4, the non-adhesive pull tabs 16b are visible and may be readily accessed by a user wishing to stretch remove the adhesive strips 16 from the wall surface 18.

**[0025]** If the adhesive strips 16 include a separable fastener, such as is described in U.S. Patent No. 6,972,141 (Bries et al.), the back plate portions 4c can be designed to conceal both the adhesive portion 16a and the non-adhesive pull tab portion 16b of the adhesive strips. This is because each adhesive strip can be removed by first separating the adhesive strip via the separable fastener and then stretch removing each remaining half from its respective surface.

**[0026]** In accordance with another aspect of the invention, each of the accessories 6,8,10,12,14 may also be separately and individually mounted directly to the wall surface 18 using stretch releasing adhesive strips 16. This is illustrated in FIG. 4 with respect to accessory 8, the unitary toothbrush holder, but is applicable to each accessory 6,8,10,12,14. In this aspect of the invention, stretch releasing adhesive strips 16 are bonded to the rear retaining wall portion 8c on the surface opposite the front retaining wall portion 8a with the non-adhesive pull tab portions 16b extending downwardly beyond the bottom end of the rear retaining wall portion 6c, such that the non-adhesive pull tab portions 16b are accessible to a user wishing to stretch remove the adhesive strips 16 from the wall surface 18.

**[0027]** To allow the non-adhesive pull tab portions 16b of the adhesive strips 16 to be concealed by the accessory 8 when the accessory 8 is mounted on the wall surface 18, the

front retaining wall portion 8a may be made longer than the rear retaining wall portion 8c. In this manner, the front retaining wall portion 8a extends in overlapping relation with the rear retaining wall portion 8c and also extends in overlapping relation with the non-adhesive pull tab portion 16b of the adhesive strip 16. Thus, the design of the accessories 6,8,10,12,14 provides a unitary structure that conceals the non-adhesive pull tab portion 16b of the adhesive strips 16 when the accessories are mounted on the wall surface 18, but also provides a design whereby the non-adhesive pull tabs can be readily accessed by a user wishing to stretch remove the adhesive strip(s) 16 from the wall surface 18. That is, because the front retaining wall portion 8a overlays the non-adhesive pull tab 16b, the pull tab 16b is generally concealed from view when the accessory 8 is viewed directly from the front, but because the front retaining wall portion 8a is spaced from the rear retaining wall portion 8c, a user can readily access the pull tab 16b by reaching behind the front retaining wall portion 8a.

**[0028]** The shelf assembly 2, including both the support rail 4 and the accessories, 6,8,10,12,14 may formed of any suitable material including, metals and synthetic plastic materials. In one embodiment, the support rail 4 and the accessories, 6,8,10,12,14 are formed from an injected molded synthetic plastic material.

**[0029]** Persons of ordinary skill in the art may appreciate that various changes and modifications may be made to the invention described above without deviating from the inventive concept. For example, it will be recognized that although the shelf assembly 2 is illustrated as being mounted with two adhesive strips, one or more such strips may be used. Thus, the scope of the present invention should not be limited to the structures described in this application, but only by the structures described by the language of the claims and the equivalents of those structures.

What is claimed is:

1. A horizontally wall mountable shelf assembly, comprising:

(a) an elongated support rail;

(b) at least one accessory transversely movably connected with the support rail; and

(c) at least one stretch releasing adhesive strip arranged between the support rail and the wall for securing the shelf assembly to the wall.

2. A shelf assembly as defined in claim 1, wherein the elongated support rail includes a body portion and a pair of leg portions extending at an angle from the ends of the body portion, thereby to space the body portion from the wall when the shelf assembly is mounted on the wall.

3. A shelf assembly as defined in claim 2, wherein the elongated support rail includes back plate portions at the ends of the leg portions, the back plate portions having generally planar surfaces opposite the leg portions and further wherein the at least one stretch releasing adhesive is arranged on the back plate planar surfaces.

4. A shelf assembly as defined in claim 3, wherein the back plate portions are pivotally connected with the leg portions.

5. A shelf assembly as defined in claim 1, wherein the accessory includes a front retaining wall portion, a shoulder portion, and a rear retaining wall portion arranged to define an elongated mounting channel for mounting sliding engagement with the support rail.

6. A shelf assembly as defined in claim 5, wherein the distance between the front retaining wall portion and the rear retaining wall portion increases in the direction away from the shoulder portion.

7. A shelf assembly as defined in claim 5, wherein the end of the rear retaining wall portion is arranged adjacent the front retaining wall portion, and the front and rear retaining wall portions form a snap fit with the support rail.

8. A shelf assembly as defined in claim 1, wherein the stretch releasing adhesive strip is a double-sided adhesive strip including a non-adhesive pull tab at one end, and wherein when the support rail is mounted horizontally on a vertical wall surface, the non-adhesive pull tab extends outwardly beyond the end of the back plate portions, whereby the non-adhesive pull tab is accessible to a user wishing to stretch remove the adhesive strip from the wall surface.

9. A shelf assembly as defined in claim 8, further comprising a cover plate removably connected with the back plate portions, whereby when the cover plate is connected with the back plate portions, the cover plate serves to conceal the non-adhesive pull tab portion of the stretch releasing adhesive strip.

10. A shelf assembly as defined in claim 1, wherein the support rail and accessory are formed of an injected molded synthetic plastic material.

11. An accessory to be adhesively mounted on a wall surface using a stretch releasing adhesive strip including a non-adhesive pull tab, the accessory comprising a front retaining wall portion, a shoulder portion, and a rear retaining wall portion arranged to define an elongated channel between the front retaining wall portion and the rear retaining wall portion.

12. An accessory as defined in claim 11, wherein the front retaining wall portion extends in overlapping relation with both the rear wall retaining portion and the non-adhesive pull tab of the stretch releasing adhesive strip, thereby to conceal the non-adhesive pull tab when the accessory is mounted on a wall surface.