# United States Patent [19]

**Smith et al.**

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[54] **ARTICLE MOUNTING ARRANGEMENT**


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[52] **U.S. Cl.** ..... **211/75**, 211/59, 220/23.4, 248/309

[51] **Int. Cl.** ..... **A47g 73/00**

[58] **Field of Search** ..... 211/75, 57, 59, 89; 206/DIG. 8; 215/1 C; 220/23.4; 248/309, 311, 314, 359, 360



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[57] **ABSTRACT**

A racklike mounting plate is adapted for securement onto a generally vertical wall surface and provided on its outwardly directed surface with one or more protruding mounting pegs or studs, each of which studs has a keyed cross-section and is tapered toward its outermost end. One or more of the sides of a mounting stud has an elongated slot, all of which slots lie in the same general vertical plane. A container has an opening passing completely through its body portion of dimensions generally suitable for accommodating receipt onto the stud. The internal walls defining the container opening taper from both opposite outer surfaces to a maximum located substantially midway through the container forming protruding ridges or keys of such geometry as to permit fitting receipt within the slot on the mounting studs.


**5 Claims, 4 Drawing Figures**

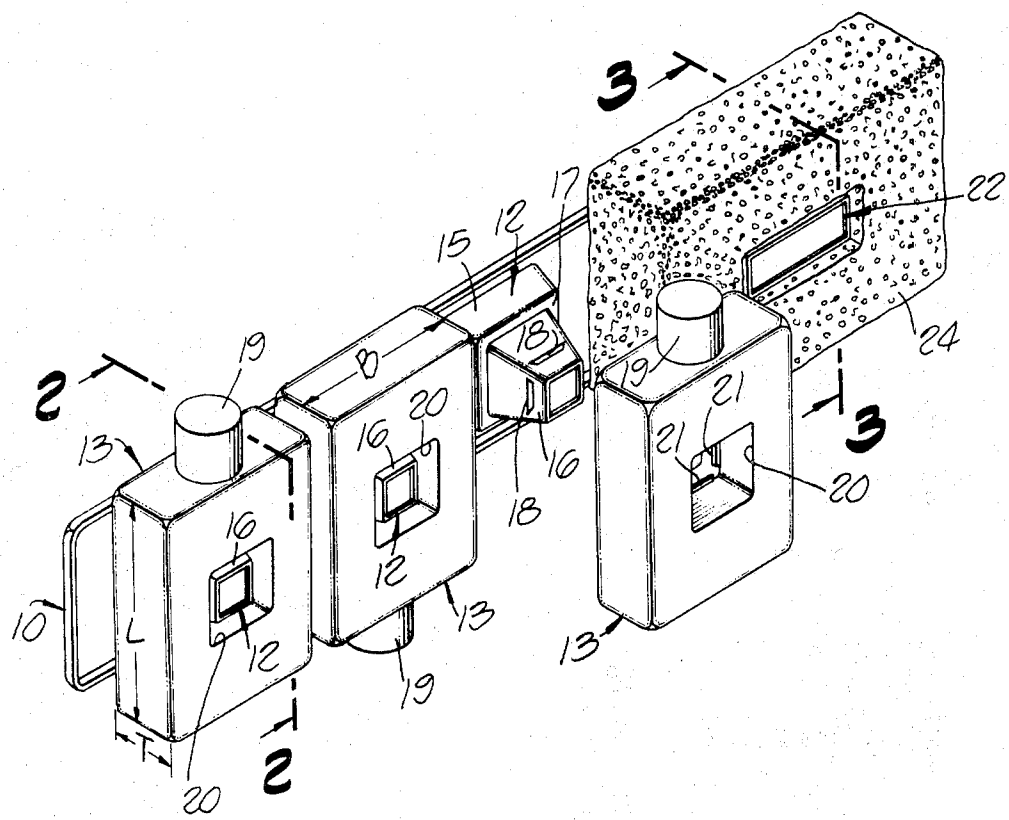
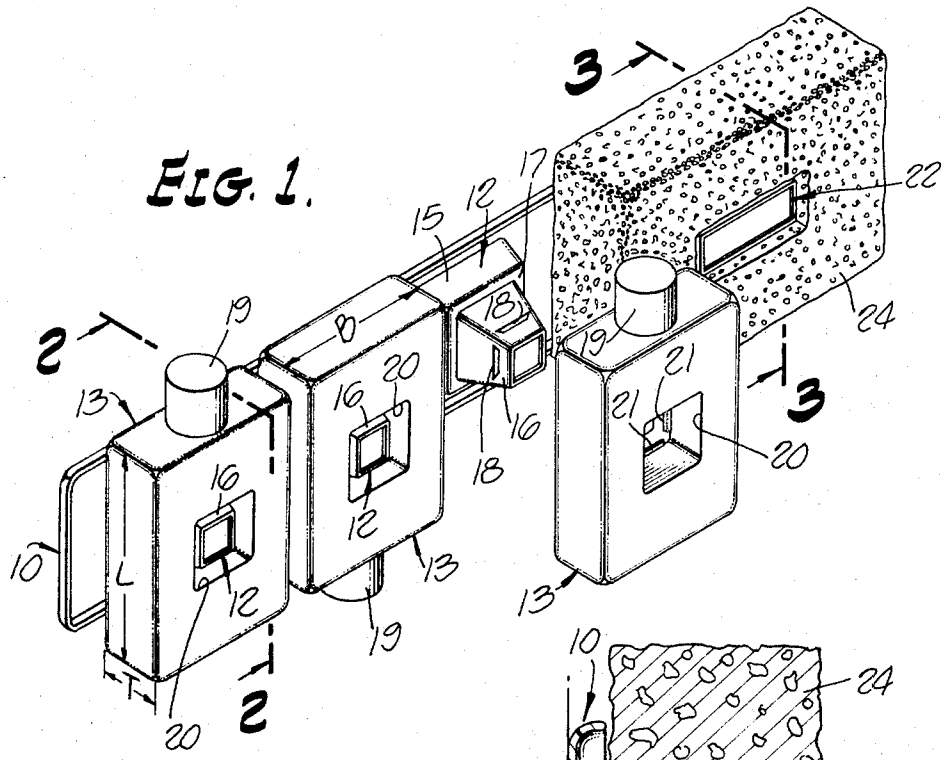


FIG. 1.



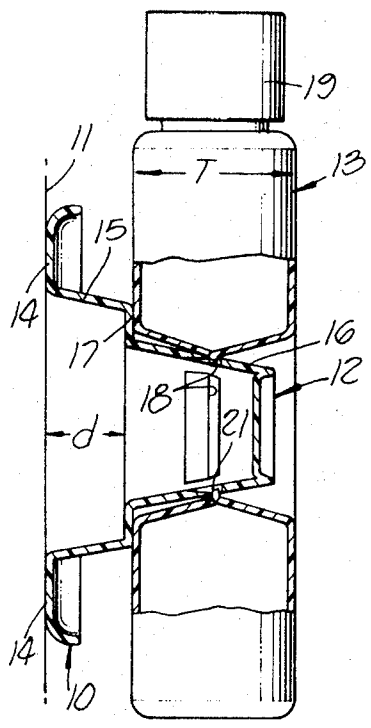




FIG. 2.

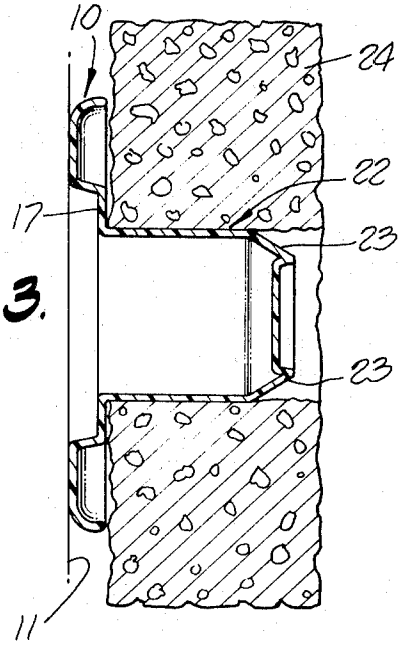



FIG. 3.

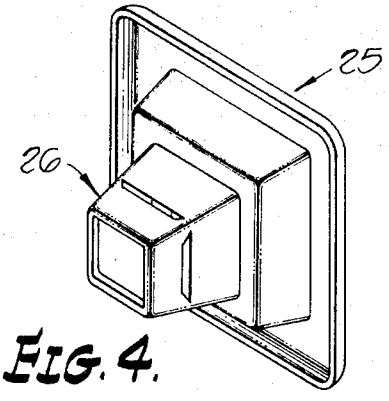



FIG. 4.

# ARTICLE MOUNTING ARRANGEMENT

The present invention pertains generally to the mounting of articles onto a wall surface, and, more particularly, to a mounting arrangement for bottles and other containers on a rack which is applied to a generally vertical wall surface.

Typically in home bathrooms, toiletries of all kinds are to be found in cabinets, or racks supported on the wall, on shelves, or, not unusually, particularly in the case of a shower stall, merely sitting on the floor. Not only are such random container assortments and arrangements frequently displeasing to the eye, but where the items are left on the floor they can be hazardous to a bather or other person in the area.

Similarly, many containers for foodstuffs, spices, condiments and the like in the conventional domestic kitchen, are customarily arranged in a somewhat random association on shelves or in cupboards.

## OBJECTS AND SUMMARY OF THE INVENTION

It is, therefore, a primary object and aim of the present invention to provide an improved mounting apparatus and technique for mounting containers in an orderly and grouped arrangement onto a vertical wall surface.

A further object is the provision of a racklike container mounting arrangement in which the containers are removably retained in a general upstanding relation with stability against rocking displacement in a vertical plane.

A still further object of the invention is the provision of rack mounting apparatus for containers in which the containers have openings passing completely through the body portion thereof for accommodating studlike means on a wall mounted rack.

In summary, the present invention includes a racklike mounting plate which is adapted for securement onto a generally vertical wall surface and is provided on its outwardly directed surface with one or more protruding mounting pegs or studs. Each of these studs has a keyed cross-section and is tapered toward its outermost end. One or more sides of each mounting stud has an elongated stud spaced from its outer end, with all such slots lying in the same general vertical plane. Each container has an opening passing completely through its body portion of dimensions generally suitable for accommodating receipt onto the stud. Specifically, the internal walls defining the container opening are tapered from both opposite outer surfaces to a maximum located substantially midway through the container forming protruding ridges or keys of such geometry as to permit fitting receipt within the slots on the mounting studs.

In use the container opening is received onto a rack stud and pushed thereon sufficiently for the ridges or keys to be engaged within the slots. The coaction of the keys and slots secure the container not only from inadvertent removal by movement of the container in a direction outwardly along the stud, but also provide a stability of container orientation with respect to the bracket or rack in the vertical plane.

## DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the rack and container mounting apparatus of the present invention.



FIG. 2 is a sectional, elevational view through a container and mounting means of the present invention, taken along line 2—2 of FIG. 1.

FIG. 3 is a sectional, side elevational view of an article other than a container mounted on a rack of this invention, taken along the line 3—3 of FIG. 1.

FIG. 4 is a perspective view of a single mounting stud such as that included on the rack shown in FIG. 1.

## DESCRIPTION OF A PREFERRED EMBODIMENT

With reference now to the drawings and particularly FIG. 1, the invention is seen to comprise in its preferred form a racklike mounting plate 10 adapted for being secured to a vertical wall surface 11, a plurality of individual peg or stud means 12 on an outer surface of the plate 10, and a corresponding plurality of containers 13 having specially formed openings therein for retentive receipt upon a means 12 in a manner and by means that will be described.

More particularly, and as is best understood by additional reference to FIG. 2, the plate 10 and peg means 12 are constructed of relatively thin sheetlike plastic which is molded as a single piece. The plate 10 has a flat back surface which in use is abutted against the vertical surface of the wall 11 and affixed thereto by a suitable cementitious material or other conventional mechanical fastening means. Each stud or peglike means 12 for carrying a container includes a substantially rectangular base 15 which projects outwardly from the plate a distance *d*.

Extending outwardly of the base 15 and substantially normal to the plate 10 are the stud or peg means 12 which have a multi-sided body member 16 of keyed cross-section and of diminishing sectional area on moving from the base outwardly. The word keyed as used herein refers to a stud shape such that when a container having an opening of similar dimensions and geometry is received thereon it cannot be rotated about the stud axis. In the preferred construction, at the base four body member sides are provided parallel to four base sides and spaced inwardly therefrom forming a base rim or margin area 17. The body member side walls slope toward their opposite member such that the outer end of the body member 16 has a significantly smaller sectional area than at the base. One or more of the four stud means side walls (preferably all four) includes an elongated slot 18 spaced inwardly of the stud means outer end and extending in a straight line generally parallel to the plate 10 and base outer surface. These slots all lie in substantially the same vertical plane and terminate short of the associated side wall edges. Moreover, as shown, the slots extend completely through the body wall forming openings therein; however, these slots may optionally be molded declivities in the body wall.

Containers 13 may have a variety of different outline configurations, however, preferably they are in the form of a right-angle parallelepiped with relatively long length and breadth measurements L and B, respectively, and a lesser thickness, T. A conventional threaded mouth and similarly threaded closure means 19 is provided on the narrow container side as shown.

The central body portion of each container includes an opening 20 which passes completely through the container and is of such geometry and so dimensioned as to permit sliding and fitting receipt onto a stud means 12. More particularly, the inner container walls defining the opening 20 slope inwardly from the front

and back major surfaces and terminate at approximately the midpoint (as measured across dimension T) in a raised bead or ridge **21** of a length about that of a slot **18** or slightly shorter. That is, in the preferred form, each container has on the inner walls of the opening four such beads or ridges, one on each of the four sides of the rectangular opening, and all lying in substantially the same plane parallel to a major outer (front or back) base surface.

Although other materials may be satisfactory, best results have been obtained to date where the container and stud means are constructed of a slightly flexible plastic with the relative dimensions of the parts being such that a container may be snapped onto and off its associated stud means. Not only is it made clear to the user by "feel" when the container ridges snap into the receiving slots, but also the snapping sound informs of proper seating.

In use, the container opening **20** is received on the stud means **12** and the container pressed onto the means until the beads **21** snap into an associated slot **18,** in which manner the container is removably retained on the stud means and mounting plate. By virtue of the coaction of the beads and slots on all four sides of the container opening, each container is not only held on the stud means generally, but it is also maintained in a fixed orientation square with the plate **10** and, therefore, there is no tendency to wobble either vertically or horizontally. That is, with each stud means **12** carrying a container, the front surfaces of the containers reside in a single fixed plane.

Although a rack may be constructed solely of a set of spaced stud means **12** and containers, it is contemplated that other types of articles may be similarly mounted onto a wall rack. For example, as shown in FIGS. **1** and **3,** another form of stud means **22** includes a shaft of substantially uniform rectangular cross-section with chamfered outer end portions **23** for receiving thereon a bathing sponge **24.** The chamfered stud means end permits easy receipt of the sponge thereon obviating catching or hanging up as might occur if the end edges and corners were left at the same dimensions as the rest of the stud means.

As a further version of this invention it is considered that back plate **25** may be of such dimensions as to accommodate only one stud means **26** for mounting a single container. Thus, there may be many situations in which it is desirable to mount a single container rather than a plurality of containers in the manner of the invention, and in which case the embodiment depicted in FIG. **4** would possess its primary utility.

What is claimed is:

**1.** A container and rack assembly adapted for removably mounting a plurality of containers on a vertical wall surface, comprising, in combination:

an elongated platelike member having a first relatively flat major surface for abutting securement against the wall surface;

a plurality of outwardly extending studlike means affixed to the platelike member other major surface in a mutually spaced arrangement along the member long dimension, each such means having at least one transverse slot therein;

each container having walls defining an opening passing completely through its containing body portion for being received onto one of said studlike means, said opening defining walls including a protruding bead which is snappingly received within the studlike means slot when said container is fully received thereon.

**2.** A container and rack assembly as in claim **1,** in which said studlike means has a generally rectangular transverse section and each of the four side walls includes a slot, said slots on each means lying in the same general plane; said container opening being rectangular and the walls defining said opening each having a bead for being received within an associated slot when said container is fully received on a studlike means.

**3.** A container and rack assembly as in claim **1,** in which said studlike means has a generally rectangular transverse section, the four side walls of each such means sloping along the means long dimension such that the sectional area is less at the means outer end than it is spaced inwardly of said end, and each of the four side walls including a slot therein, said slots lying in the same general vertical plane; said container opening being rectangular and the walls defining said opening each having a bead for receipt into an associated slot when said container is fully received on a studlike means.

**4.** A container and rack assembly as in claim **3,** in which the container opening is tapered from the outer surfaces inwardly to a centrally located restricted opening, at which restricted opening are located the beads.

**5.** A container and rack assembly as in claim **1,** in which there is further provided a continuous surface studlike means with a chamfered outer end affixed to said platelike member onto which studlike means is received an article other than a container having an accommodating opening passing therethrough.

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