

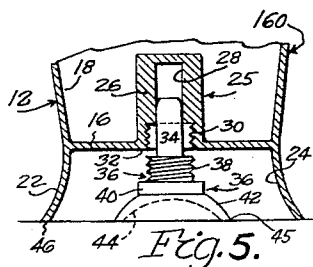
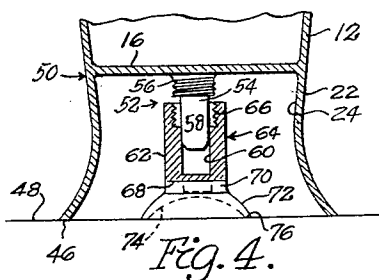
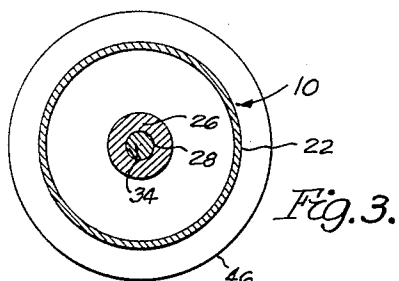
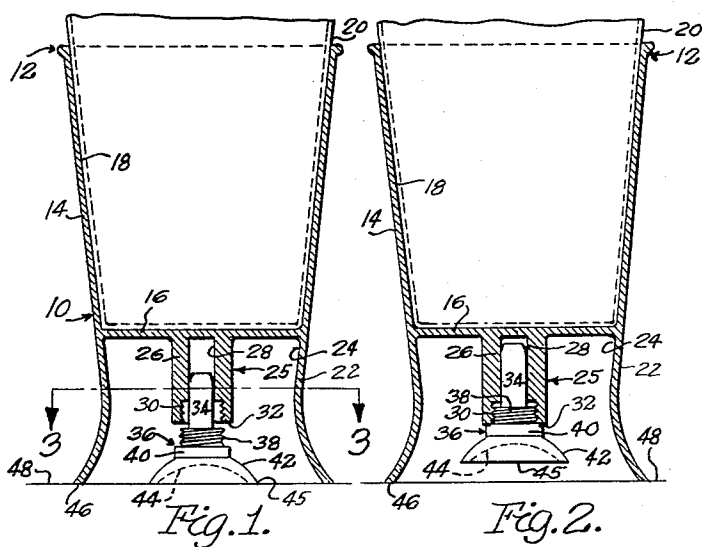
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NON-DISPLACEABLE RECEPTACLE

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NON-DISPLACEABLE RECEPTACLE

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3 Claims. (Cl. 248—146)

This invention relates to receptacles for solids or liquids, and, in particular, to such receptacles which are provided with means for preventing them from overturning or sliding off tables or other surfaces on which they are placed.

One object of this invention is to provide a receptacle unit for solids or liquids having a holder on the bottom thereof for preventing accidental displacement of the receptacle yet instantly permitting the intended removal of the receptacle from the surface upon which it is placed.

Another object is to provide a receptacle unit for solids or liquids having a lateral-displacement-preventing holder thereon of the foregoing character wherein the bottom of the receptacle is provided with a recess in which is mounted a suction cup having a downwardly-extended position in which it is engaged with the table or other sustaining surface upon which the receptacle is supported, but which permits instant separation of the cup from the holder when the user desires to lift the receptacle from the table, and which has means for retracting and securing the holder within the recess and out of contact with the table or other sustaining surface when it is desired to remove the receptacle.

Another object is to provide a receptacle unit of the foregoing character for solids or liquids wherein the holder has a stem which slidably engages a correspondingly-shaped portion on the bottom of the receptacle when the holder is in its extended position, but which detachably engages that portion when the holder is in its retracted position, such detachable engagement being variously provided as by a threaded connection or yielding detent.

Other objects and advantages of the invention will become apparent during the course of the following description of the accompanying drawings, wherein:

Figure 1 is a central vertical section through a receptacle unit including a receptacle for solids or liquids or for disposable receptacles for such foods or liquids, equipped with a releasable holder for preventing displacement or overturning of the receptacle, according to one form of the invention, with the holder in its extended position;

Figure 2 is a view similar to Figure 1, but showing the holder raised and secured;

Figure 3 is a horizontal section taken along the line 3—3 in Figure 1;

Figure 4 is a fragmentary central vertical section through the lower part of a modification of the invention shown in Figures 1 to 3 inclusive, with the holder extended; and

Figure 5 is a fragmentary central vertical section of another modification of the invention, with the holder shown in its extended position.

This is a division of my copending application Serial No. 408,651 filed February 8, 1954 for Non-Displaceable Receptacle, which was issued as U. S. Patent No. 2,839,260 on June 17, 1958.

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Receptacles, such as cups, tumblers, dishes and bowls or the like for solids or liquids have been easily overturned accidentally either by being accidentally hit or, when used in a vehicle, such as a ship, airplane, train or automobile, by being jolted or tilted and thereby caused to slide or overturn. Suction holders have hitherto been provided in the effort to prevent such accidents, but such holders have found little acceptance because of the effort required to detach them from the table or other sustaining surface whenever the user wishes to lift the receptacle, such as to drink from the receptacle.

The present invention provides a receptacle unit including a receptacle equipped with a holder which prevents lateral displacement or overturning of the receptacle when under all ordinary circumstances or jouncing or jolting, but at the same time permits the user instantly and without special manipulation to lift the receptacle free from the table or other sustaining surface and away from the suction cup part of the holder. The invention, however, additionally enables raising the holder into a recess in the base of the receptacle where it is secured by a threaded or frictional resilient connection so as to be out of sight yet instantly available when the user next desires to make use of the holder. The receptacle may itself contain the solids or liquid, or it may receive a supplementary removable receptacle, such as a paper cup or other supplementary receptacle.

Referring to the drawings in detail, Figures 1, 2 and 3 show a non-displaceable removable receptacle unit, generally designated 10, consisting of a cup-shaped receptacle 12 having a side wall or side walls 14 and a bottom wall 16 forming a recess or chamber 18 for receiving solids or liquids directly, or for receiving a supplementary receptacle, generally designated 20, preferably of similar shape so as to fit the recess 18. The supplementary receptacle 20 may, for example, be a permanent receptacle, such as a dish or cup made of glass, ceramic material, plastic or the like, or it may be a disposable receptacle of paper or the like. The side wall or side walls 14 extend downward below the bottom wall 16 to form a supporting portion 22, such as a skirt or flange which, with the bottom wall 16, encloses a recess 24 at the bottom of the cupped or dished receptacle 12. The later-displacement-preventing holding device, generally designated 25, includes a tubular portion 26 extending downwardly within the recess 24 from the bottom wall 16 and preferably integral therewith. The tubular portion 26 has a bore or socket 28 therein with an enlarged threaded counterbore 30 adjacent the lower end 32 thereof.

The holding device 25 also includes a holder 36 having a smooth stem 34, slidably engaging the bore 28. The holder 36 has an enlarged threaded portion 38 adjacent the base of the stem 34 at its point of connection with the base 40 of suction cup 42. The suction cup 42 is preferably of elastic deformable material, such as natural or synthetic rubber or resilient plastic, and has a suction cavity 44 in the bottom thereof surrounded by an annular edge or rim 45. The tubular portion 26 and its threaded counterbore 30 are so located relatively to the lower edge 46 of the skirt 22 as to permit the stem 34 to smoothly and slidably engage the bore or socket 28 while the suction cup 42 is in engagement with a sustaining surface 48, such as a table top, chair arm or the like, while positioning the threaded portion 38 of the holder 36 below and out of engagement with the threaded counterbore 30.

In the use of the form of the invention shown in Figures 1, 2 and 3, let it be assumed that the holder 36 is in its raised position (Figure 2) with the threaded enlarged portion 38 screwed into the threaded counterbore 30 so as to raise the suction cup 42 above and out

of contact with the sustaining surface 48. This is the position in which the receptacle 10 is assembled for transportation or storage, and maintains the holder 36 in a position where it cannot be lost, where it is out of sight, yet where it is instantly available for its purpose of preventing displacement or overturning of the receptacle.

To make use of the holder 36 to prevent overturning, sliding or other displacement of the receptacle 12, the user grasps the latter in one hand and unscrews the holder 36 by grasping the suction cup 42 in the fingers of the other hand and rotating it until the threaded enlarged portion 38 is completely out of the threaded counterbore 30, enabling the stem 34 to be completely withdrawn from the bore 28. Holding the stem 34 between his thumb and forefinger, the user applies the suction cup 42 to the table or chair arm surface 48 and pushes downward upon it to flex the suction cup 42 and expel air from the cavity 44 by partially flattening the cup 42. This creates suction within the cavity 44 and causes the edge or rim 45 of the suction cup 42 to securely grip the supporting surface 48.

With the holder 36 thus firmly but detachably secured to the sustaining surface 48, the user then lowers the tubular portion 26 of the receptacle 12 upon the holder 36, causing the upstanding stem 34 to loosely and slidably enter the bore 28. The lower rim 46 of the receptacle 12, however, being spaced a sufficient distance below the lower end 32 of the tubular portion 26, prevents the threaded counterbore 30 from coming into contact with the threaded enlarged portion 38. Thus, the user can easily raise and lower the receptacle 10 relatively to the holder 36 in order to drink or otherwise use the contents, replacing the tubular portion 26 upon the stem 34 each time after such use. Thus, if the invention is being used in a train, aircraft, boat, automobile or the like, the holder 36 prevents sliding or overturning of the receptacle 12 while permitting free raising and lowering thereof.

When the traveller or other use of the device has finished his meal or drink, or has otherwise completed his use of the invention, he removes the receptacle 12 by raising it away from the holder 36, breaks the suction between the cavity 44 and sustaining surface 48 by pulling the stem 34 away from the surface 48, and then raises the holder 36 by screwing the portion 38 into the threaded counterbore 30 after inserting the stem 34 in the socket 28.

The modified non-displaceable removable receptacle unit, generally designated 50, shown in Figure 4 is generally similar to that shown in Figures 1 to 3 inclusive, except for the construction of the holding device, generally designated 52. The receptacle 12 of Figure 4 and its component parts are the same as in Figure 1, hence bear the same reference numerals. In the Figure 4 modification, however, the bottom wall 16 carries a downwardly-extending member 54 consisting of a threaded enlargement 56 below which is an elongated smooth stem 58 of reduced diameter. The stem 58 engages a smooth bore or socket 60 within the tubular shank 62 of a holder, generally designated 64, the upper end of the socket or bore 60 having a threaded counterbore 66 adapted to receive the threaded enlarged portion 56. Secured to the lower end 68 of the tubular shank 62 is the base 70 of a suction cup 72, similar to the suction cup 42 and similarly having a suction cavity 74 with a lower rim 76. The dimensions of the various components of the holding device 52 are so proportioned that when the suction cup 72 is engaged with the table top or other sustaining surface 48, the threaded counterbore 66 lies below and out of engagement with the threaded enlarged portion 56 but the elongated stem 58 slidably and releasably engages the socket or bore 60.

The use of the modified non-displaceable removable receptacle unit 50 of Figure 4 is similar to that shown

in Figures 1, 2 and 3, and hence requires no additional description. The device is used as shown in Figure 4, but is removed and secured to the threaded portion 56 in the same manner as described and shown in connection with Figure 2. The devices differ in that in Figure 4 the stem is attached to the cup or dish 12 and the tubular member 62 to the suction cup 72 instead of vice versa as in Figures 1 and 2.

Figure 5 shows another modification of the invention, generally designated 160. The modified receptacle unit 169 is similar to the receptacle 10 of Figures 1 and 2, except that the holding device 25 has its tubular portion 26 extending upwardly into the recess 18 so that the bottom wall 16 is much closer to the bottom edge 46 of the supporting portion 22 than in Figures 1 and 2. Since the parts are otherwise the same, they bear the same reference numerals as the corresponding parts in Figures 1 and 2. The operation of the modified receptacle unit 160 is also identical with that of Figures 1 and 2, accordingly the modified receptacle unit 160, for a given capacity of liquid in the container 12, would have a somewhat less overall height than the receptacle 10 of Figures 1 and 2, since the bottom recess 24 is lower than the corresponding recess in Figures 1 and 2.

What I claim is:

1. A laterally non-displaceable separable receptacle unit comprising a receptacle having a raised bottom with a supporting edge thereon defining a recess beneath said bottom, upper and lower separable lateral-displacement-preventing holding components disposed within said recess, said upper component being connected to said receptacle, said lower component having a portion extending upwardly into sliding separable engagement with said upper component, and a suction cup secured to said lower component and adapted to releasably anchor said lower component to a smooth sustaining surface, said components also having releasable interlocking elements thereon disposable selectively in locked and unlocked positions respectively, said elements including interfitting threaded portions spaced axially apart from one another on different levels in said unlocked position when said suction cup is in anchoring engagement with said sustaining surface and movable upward into interlocking engagement with one another when said suction cup is moved upward above the level of said supporting edge farther into said recess into a retracted temporarily-inoperative position disposed out of anchoring engagement with said sustaining surface.

2. A laterally-non-displaceable separable receptacle unit comprising a receptacle having a raised bottom with a supporting edge thereon defining a recess beneath said bottom, upper and lower separable lateral-displacement-preventing holding components disposed adjacent said bottom, said upper component being connected to said receptacle bottom and extending upwardly therefrom, said lower component being disposed within said recess and having a portion extending upwardly into sliding separable engagement with said upper component, and a suction cup secured to said lower component and adapted to releasably anchor said lower component to a smooth sustaining surface.

3. A laterally non-displaceable separable receptacle unit comprising a receptacle having a raised bottom with a supporting edge thereon defining a recess beneath said bottom, upper and lower separable lateral-displacement-preventing holding components disposed adjacent said bottom, said upper component being connected to said receptacle bottom and extending upwardly therefrom, said lower component being disposed within said recess and having a portion extending upwardly into sliding separable engagement with said upper component, and a suction cup secured to said lower component and adapted to releasably anchor said lower component to a smooth sustaining surface, said components also having releasable interlocking elements thereon disposable

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selectively in locked and unlocked positions respectively, said elements being spaced axially apart from one another on different levels in said unlocked position when said suction cup is in anchoring engagement with said sustaining surface and movable upward into interlocking engagement with one another when said suction cup is moved upward above the level of said supporting edge farther into said recess into a retracted temporarily-in-

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operative position disposed out of anchoring engagement with said sustaining surface.

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