United States Patent [19]

Thomas

[11] **3,883,024**

[45] **May 13, 1975**

[54] **DISPENSER COMBINED WITH HANGING CLIP FOR INVERTED SUPPORT**

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[21] Appl. No.: **449,796**

[52] **U.S. Cl.** **215/100;** 222/181

[51] **Int. Cl.** **B65d 23/12**

[58] **Field of Search** ..... 215/100 R, 100 A; 222/181; 4/227; 248/359, 360

[56] **References Cited**

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3,698,021	10/1972	Mark	4/227

Primary Examiner—Herbert F. Ross

Attorney, Agent, or Firm—Joseph Martin Weigman

[57] **ABSTRACT**

The disclosure is directed to the combination of a container for dispensing liquid from an inverted position and a hanger device for suspending the container in an inverted position from the wall of a water closet. The hanger device is an L-shaped metal strip rotatably connected to the end wall off-center to the container. In the closed, or storage, position the end portion of the hanger device fits snugly against the side of the container end wall. In the open position the end of the hanger device extends beyond the end wall and engages the wall of the water closet.

7 Claims, 9 Drawing Figures

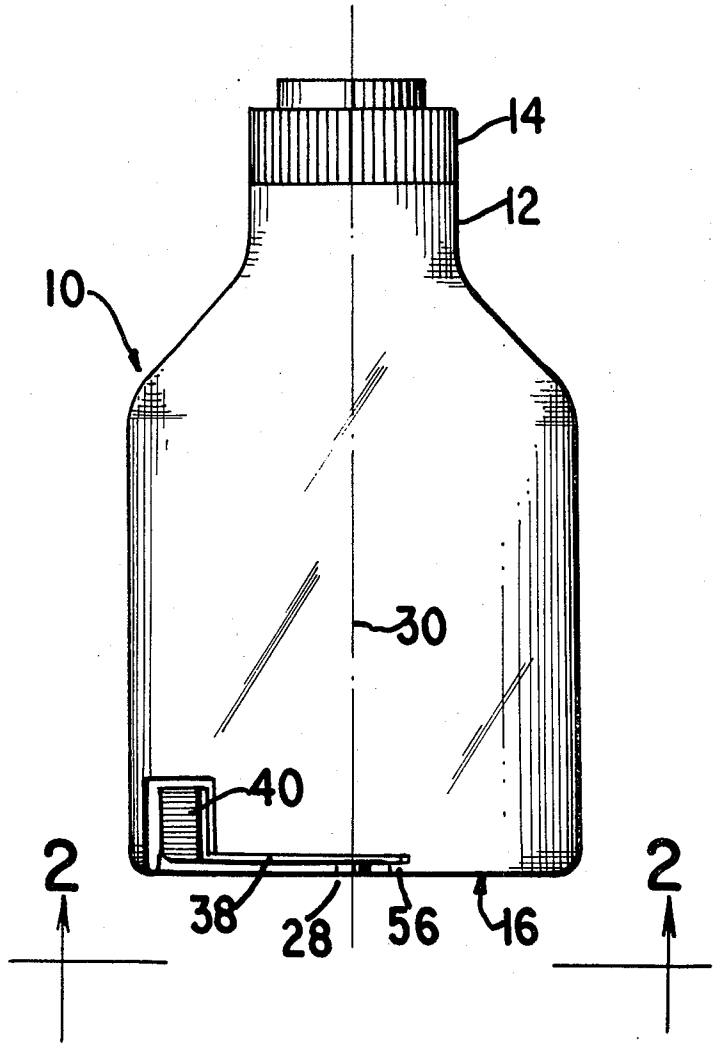


FIG. 1

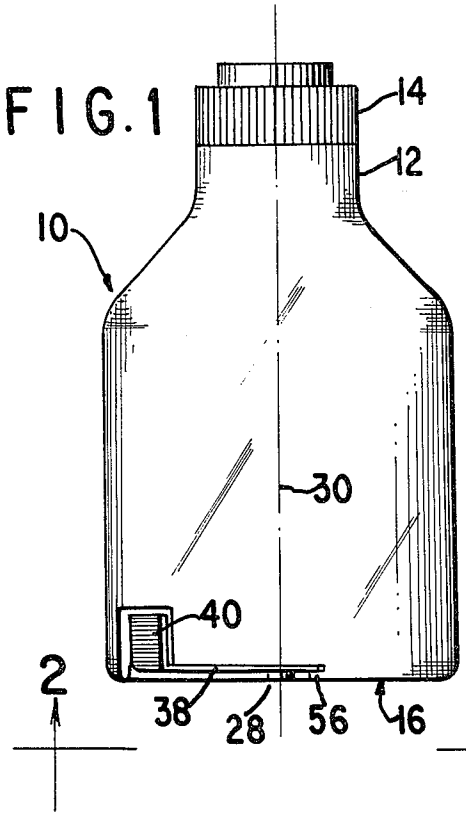


FIG. 2

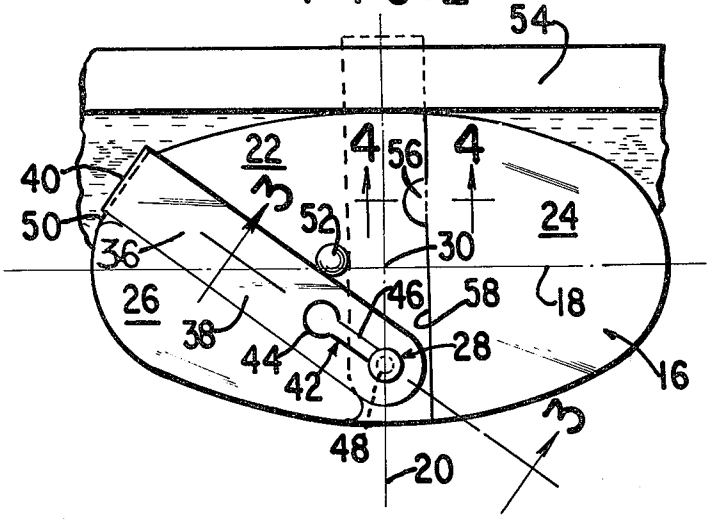


FIG. 3

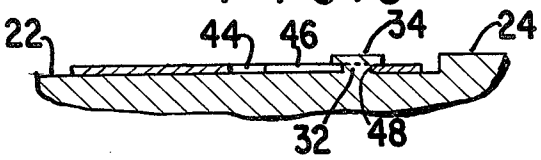


FIG. 4

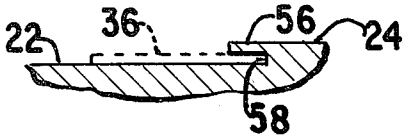


FIG. 5

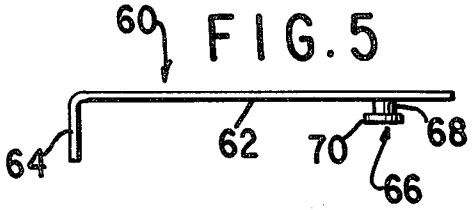


FIG. 6

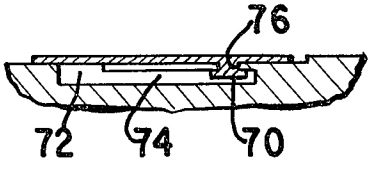
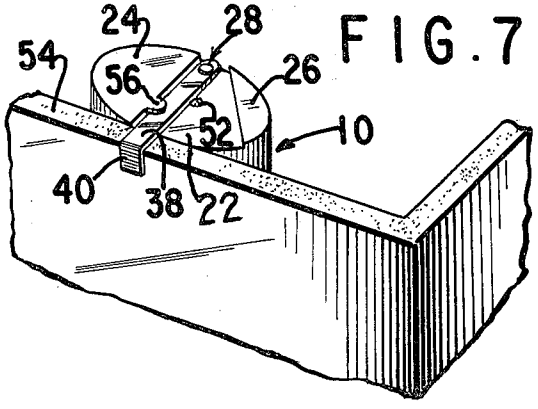


FIG. 7



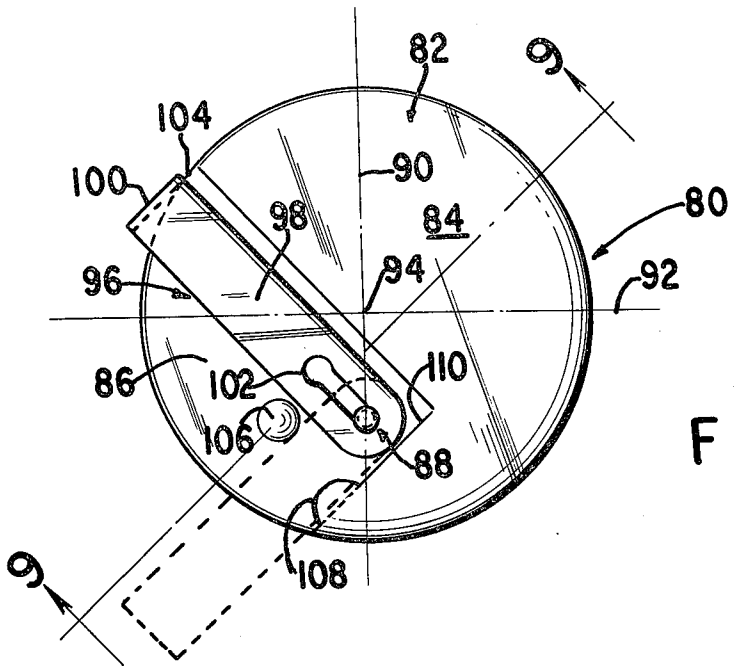

82
9
104
100
90
80
98
84
96
94
92
86
102
110
106
88
108
9

FIG. 8

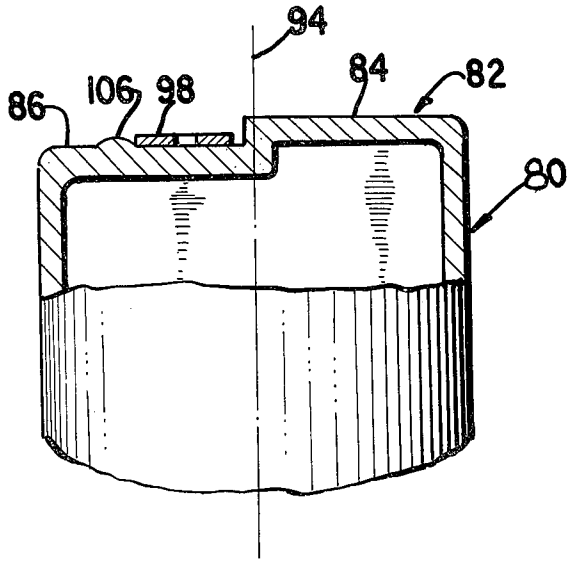

94
84
82
86
106
98
80

FIG. 9

DISPENSER COMBINED WITH HANGING CLIP FOR INVERTED SUPPORT

This invention relates to dispensing containers and more particularly relates to the combination of a container adapted for automatic dispensing of its contents in an inverted position and a hanger device for firmly supporting the dispensing container in an inverted position.

Many compositions are sold for the treatment of water in a water closet. Many of the compositions are sold in containers which have a dispensing mechanism that is adapted to automatically discharge measured portions of the composition in response to varying levels in the water closet. That is, a measured amount of the composition is discharged each time the water closet is flushed. Many of these containers are fitted with hanger devices to suspend the container in an inverted position. Some hanging devices are clips of metal having a portion which may be bent into shape to fit the water closet wall by the user. Some hanger devices are plastic or metal which slide in and out of a groove located in the end wall. Other hanger devices are plastic coated wire which are made to be bent over the water closet wall. Still other hanger devices swivel or rotate into position and require the formation of feet on them in order to maintain the support for the container in an upright position, such as when displayed on a shelf prior to sale. Other swivel or rotating type clips have been limited to use with elliptical containers.

The most closely related U.S. Pats. are No. 2,980,277, which is typical of the devices having a deformable metal strip hanger, No. 3,627,177 which utilizes an L-shaped clip reciprocably movable in a groove, and No. 3,698,021 which also uses an L-shaped bracket reciprocable in a slot.

It is object of the present invention to provide a support device and container adapted to dispense in an inverted position in which the container has a minimum of critical tolerances.

It is another object of the present invention to provide a simply formable hanger device which swivels from a closed position to an open position.

Other and further objects of the invention will be apparent to those skilled in the art from reading the following description in conjunction with the drawings in which:

FIG. 1 is an elevational view of a dispensing bottle utilizing the present invention shown in the upright position;

FIG. 2 is a plan view of the bottom end wall of the dispensing container of FIG. 1;

FIG. 3 is a partial sectional view taken generally along lines 3—3 of FIG. 2 showing one means of connecting the hanger device to the end wall;

FIG. 4 is a partial sectional view taken generally along lines 4—4 of FIG. 2 showing an intermediate support means;

FIG. 5 is a side elevational view of an alternate embodiment of the hanger device showing an alternate connecting means;

FIG. 6 is a partial sectional view showing the alternate embodiment of the end wall used in connection with the connecting means of FIG. 5;

FIG. 7 is a perspective view of a dispensing bottle utilizing the present invention as shown in the inverted position in use;

FIG. 8 is a bottom view of a round bottle utilizing the present invention; and

FIG. 9 is a partial sectional view taken generally along line 9—9 of FIG. 8.

As may be seen in FIGS. 1, 2 and 7 a dispensing container 10 has a discharge orifice 12 at one end which, prior to use, is sealed by closure 14, and an end wall 16 opposite the discharge portion. The end wall 16 is elliptic in shape having a major axis 18 and a minor axis 20. A recess 22 is defined between a first portion 24 and a second portion 26 of the end wall 16. A connecting means 28 is located in the recess 22 along the minor axis 20 but off center of the vertical axis 30 and the major axis 18. In the preferred embodiment shown the connecting means 28 is formed from the same material as the end wall and has a generally circular segment 32 ending in a larger segment 34.

The hanger device 36 has a first planar portion 38 and a second planar portion 40 at right angles to the first planar portion. A connecting means 42 is defined in the first portion 38, adjacent the end opposite the second portion 40. The connecting means 42 is made up of a relatively large orifice 44 which is sufficiently large to pass over the large segment 34 of the connecting means 28, a connecting channel 46 which is sized to pass around the small circular segment 32 of the connecting means 28, and a relatively small orifice 48 which is sized to permit the hanger device 36 to swivel freely about the connecting means 28.

As is best seen in FIG. 2, the length of the first portion 38 of the hanger device 36 is such that when the hanger device is in the closed, or storage, position shown in FIG. 2, the second portion 40 of the hanger device 36 fits snugly against portion 50 of end wall 16, adjacent one end of the major axis 18. If desired the second portion 40 may be shaped to conform to the shape of that portion of the container which it abuts in the storage position. A projection 52 may be defined in the recess 22 to retain the hanger device 36 in the closed, or storage, position. Projection 52 is relatively short and the hanger device 36 slides over it in rotating from the closed position to the open position shown in FIG. 7 and in phantom in FIG. 2. If desired, the position of the projection 52 may be selected so as to retain the hanger device in the open position as well as in the closed position.

When rotated to the open position along minor axis 20, the second portion 40 of the hanger device 36 extends past the end wall and is adapted to engage a wall 54 of a support device, typically the tank wall of a water closet, thus permitting the container 10 to be suspended in an inverted position in the water closet tank.

An additional point of support is preferably provided by a projection 56 defined along wall 58 between the recess 22 and the first portion 24 of the end wall, as is best seen in FIG. 4. In a preferred embodiment, the projection 56 is formed of the same material as the end wall. However, the projection 56 may be formed by a metal insert integrally formed into the end wall. Such an insert would typically resemble a nail head. In another advantageous embodiment the projection 56 may extend along the entire wall 58.

An alternate embodiment of a connecting means for the hanger device is shown in FIGS. 5 and 6. In FIG. 5 the hanger device 60 has a first portion 62 and a second portion 64 at right angles to the first portion. A connecting means 66 is comprised of a generally circular

first portion **68**, and a larger second portion **70**. The cooperating connecting means of the end wall as shown in FIG. **6** consists of a large recess **72** which is generally circular and is sufficiently large to permit passage of the second portion **70** of the connecting means **66**, a slot portion **74** which is sized to pass the first portion **68** of the connecting means **66**, and a relatively small second portion **76** in which the first portion **68** of connecting means **66** may rotate freely but through which the second portion **70** may not pass.

The material of construction of the container including the end wall **16**, is preferably plastic but other materials, such as glass, may be used. The hanger device **36** is preferably formed from a semi-rigid plastic but a suitable metal may be used, if preferred. The means for connecting the hanger device to the end wall may be of any suitable configuration. Those described above are for illustration purposes and point out the important features of freedom of the hanger device to rotate from the closed, or storage, position to an open, or use, position. The foregoing also points out the desirablity of a second point of support for the hanger device in addition to the connecting means.

The use of the invention with a round container is shown in FIGS. **8** and **9**. There that container **80** has an end wall **82** which has a first surface **84** adjacent a recessed surface **86**. A connecting means **88** is located on one diametric axis **90** off center of the intersection of the diametric axis **92** which is at right angles to axis **90**. The intersection of axes **90** and **92** occurs on vertical axis **94**. The connecting means **88** is preferably similar to the connecting means **28**, described above.

A hanger device **96** has a first planar portion **98** and a second planar portion **100** at right angles to the first planar portion. A connecting means **102** is defined in the first portion **98** adjacent the end opposite the second portion **100**. The connecting means **102** is preferably similar to connecting means **42**, described above.

As is best seen in FIG. **8**, the length of the first portion **98** is such that when the hanger device **96** is in the closed, or storage, position, the second portion **100** fits snugly against portion **104** of the end wall **82**. If desired, the second portion **100** may be shaped to conform to the shape of that portion of the container **80** which it abuts in the storage position.

A projection **106** may be defined on the recessed surface **86** to retain the hanger device in the closed, or storage, position. Projection **106** is relatively short and the hanger device **96** slides over it in rotating from the closed position to the open position. If desired, the position of the projection **106** may be selected so as to retain the hanger device in the open position as well as the closed position.

When rotated to the open position shown in phantom in FIG. **8**, the second portion **100** of the hanger device **96** extends past the end wall **82** and is adapted to engage the tank wall of a water closet.

If desired an additional point of support **108** may be provided in wall **110** which is between the first surface **84** and the recessed surface **86**.

What is claimed is:

1. An assembly for supporting a container in an inverted position comprising:

A. A container having a discharge orifice at one end and an end wall at the opposite end;

1. A recess defined in said end wall;

2. Means on said end wall to support a hanger device located in the said recess section off center of the vertical axis of said container;

B. A hanger device rotatably connected to said support means and further comprising:

1. A first planar portion, and a second planar portion substantially at right angles to said first planar portion;

2. Means defined in said first planar portion adjacent the end opposite said second planar portion to rotatably connect said hanger device to said container support means whereby said hanger rotates in the plane of said first planar portion;

3. The length of said first planar portion from said connecting means to said second portion being greater than the distance from said connecting means to the most distant portion of said end wall.

2. An assembly as described in claim **1** further comprising a projection defined in said recess adapted to yieldably retain said hanger device in the storage position.

3. An assembly as defined in claim **1** in which said connecting member is comprised of male and female members, respectively defined on said hanger device and said end wall.

4. An assembly as defined in claim **1** in which said connecting means comprises a post connected to said end wall and a hole defined in the first portion of said hanger device adapted to engage said post, and an end portion of said post larger than the hole in said first position.

5. An assembly as defined in claim **1** further comprising second support means connected to said end wall and adopted to engage said first planar portion, when in the open position, between said connecting and said second planar portion whereby intermediate support is provided to said hanger device.

6. As assembly as defined in claim **5** wherein said second support means comprises a projection connected to said end wall.

7. An assembly for supporting a container in an inverted position comprising:

A. A container having a discharge orifice at one end and an end wall at the opposite end;

1. Said container end wall having an elliptic cross-section;

2. A recess defined in said end wall;

3. Means on said end wall to support a hanger device located in the said recess section off center of the vertical axis but on the minor ellipse axis of said container;

B. A hanger device rotatably connected to said support means and further comprising:

1. A first planar portion, and a second planar portion substantially at right angles to said first planar portion;

2. Means defined in first planar portion adjacent the end opposite said second planar portion to rotatably connect said hanger device to said container whereby said hanger rotates in the plane of said first planar portion;

3. The length of said first planar portion being such that when rotated in one direction the second planar portion snugly engages the end wall adjacent one of the longer elliptic axis and when rotated to the other position extends beyond the end wall at one of the minor axes of the ellipse to form a clip adapted to engage a support member.

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