

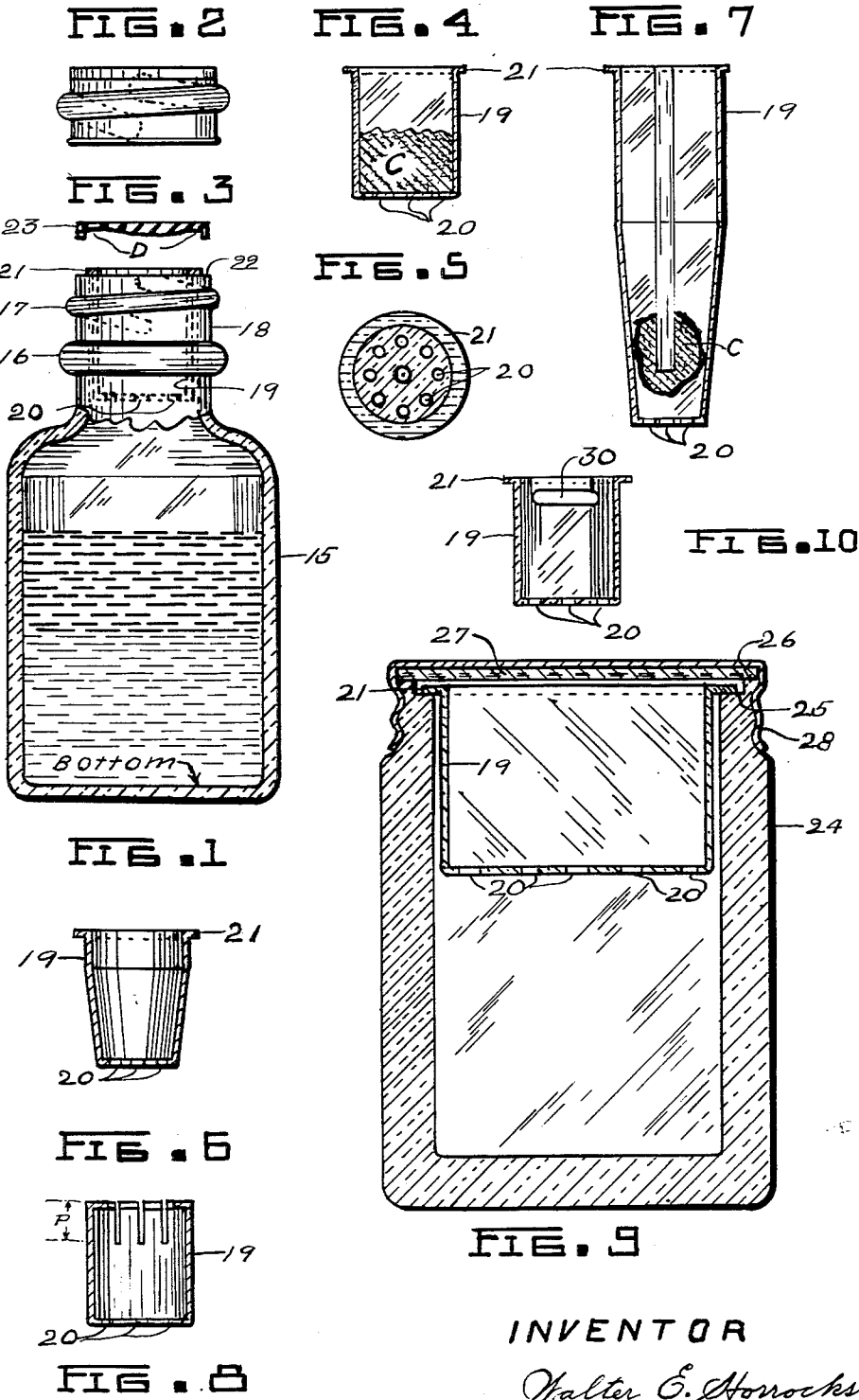
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CONTAINER ASSEMBLIES

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8 Claims. (Cl. 128-272)

My invention relates to new and useful improvements in screw capped container assemblies for draining excess liquids from cotton and the like without the mass liquid contents seeping around the threaded portions of the containers.

In using metallic screw caps on containers for packaging boric acid solutions, and various other corrosive solutions the metallic screw cap is provided with a flat type of washer which is compressed against the under side of the screw cap, and against the top end of the container outlet; to provide a leak proof receptacle, boric acid solutions and various other solutions, are thus prevented from coming in direct contact with the metallic screw cap, but, in containers that are utilized to include a suspended drainage cup as is disclosed herewith, a flat type of washer will not prevent the seepage of the solutions from passing between the under side of the cup's suspended flange 21 and the top surface 22 or 25 of the containers shown in Fig. 1, and Fig. 9, respectively. The seepage of corrosive solutions allows of the solutions to contact the metallic screw caps and rust the threads around the caps which renders them un-sanitary and eventually useless for providing a leak immunized container assembly as outlined and disclosed herewith.

An important object of the invention is to provide a leak-immunized container assemblage having a one piece draining cup freely suspended in the container and arranged in a manner to segregate wads of cotton or the like from the mass liquid contents within the container.

Another object is to provide a leak-immunized container assemblage having a one piece draining cup that is free from any appendages.

Another object is to provide a leak-immunized container assemblage having a one piece draining cup that is freely suspended in the container after the cover of the container has been removed.

Another object is to provide a leak-immunized container assemblage having a one piece draining cup that can be easily removed, with its contents being either freely inserted into, or removed from the drainage cup while the drainage cup remains suspended in the container structure.

Another object is to provide a one piece draining cup that may be quickly removed and quickly cleaned.

Other objects and advantages of the invention will be apparent during the course of the following description when taken in conjunction with the accompanying drawings in which:

Fig. 1 is a side view, partly in section, showing a bottle type container assembly partly embodying my invention before it is completely assembled.

Fig. 2 is a side elevation of a screw cap cover adapted to be secured around the outlet neck of the partly illustrated assemblage shown in Fig. 1.

Fig. 3 is a sectional view of a distortable sealing washer having a ring portion formed on its under side such as it is shaped after being coined over and around the outer and inner edges of the cup's flange portion 21 so as to seat

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against the top edge 22 of the container structure shown in Fig. 1.

Fig. 4 is a sectional view showing the one piece perforated drainage cup holding a wad of cotton which is to be inserted into the neck of the container structure shown in Fig. 1.

Fig. 5 shows a top view of the perforated cup shown in Fig. 4, such as viewed with the cotton wad C removed therefrom.

Fig. 6 is a sectional showing a modified perforated drainage cup having a tapered body portion.

Fig. 7 is a sectional view showing a perforated drainage cup modified to hold cotton swaged sticks.

Fig. 8 is a sectional view showing a modified perforated drainage cup having the flange at the top end of the cups turned inward with the upper portion of the cups provided with a series of kerfs arranged therearound which provides of utilizing a metallic cup having the kerfed end P sprung slightly outwardly in a manner to support the cup inside the neck 18 by frictional contact, instead of providing a projecting flange to support the cup in the container outlet.

Fig. 9 shows a sectional view of a leak-immunized jar container assemblage having the supporting flange of the drainage cup suspended on a ledge which extends below the top open end of the jar container.

Fig. 10 shows a sectional view of the perforated drainage cups provided with oblong apertures extending through its side wall portion.

In the drawings wherein for the purpose of illustration, is shown preferred embodiments of my invention, the numeral 15 designates a bottle type container structure provided with a rounded seating bead 16 and a threaded portion 17 extending about and around its neck portion

18. The numeral 19 designates a drainage cup of one piece construction provided with a clean bottom portion having perforations 20 therethrough, and a flange 21 projecting horizontally from its top open end, and in which a wad of cotton C is to be inserted, and the drainage cup

19 together with the cotton wad is to be inserted in the neck portion 18 of the bottle container 15 with its projecting flange 21 resting on the top open end of the neck portion 18 with the outer edge of the flange 21 being of substantially less diameter than the outer diameter of the neck 18 provides a ledge 22 which provides a distortable seating surface to allow of the sealing washer

23 to be coined around the outer edge of the drainage cup's flange 21 as shown at D, to seat against the top end 22 of the neck 18 to provide a leak-immunized joint between the under surface of the flange 21, and the top face of the ledge 22, when the screw cap shown in Fig. 2, having the distortable washer 23 inserted therein is screwed down tightly so as to coin the washer

23 over the edge of the flange 21 to seat against the top edge 22 of the neck 18 in a manner to provide a leak-immunized seep proof container assembly. The washer 23 possessing flowable characteristics such as is inherent in rubber, or rubber and cork combined, including elements having like flowable characteristics which lend them to be coined as shown in the Fig. 3, or the washers may be initially provided with a ring portion to provide the sealing washer. The cups shown in Figures 4, 6, 7, and 10 can be suspended in the bottle container shown in Fig. 1, in the same manner as described above to allow of providing a leak proof and seepage proof joint in the bottle assembly as shown in Fig. 1. The oval apertures 30 shown in the cup at Fig. 10 provides a means to insert finger tips so as to initially raise the projecting flanges 21 from contact with the top end of the container outlets; in order to break any wet seal that may occur between the under side of the flanges 21 and the top edges 22 or 25 of the container outlets, and they are intended to be in-

Fig. 11 is a sectional view showing a modified drainage cup having a tapered body portion and a flange 21 projecting horizontally from its top open end, and in which a wad of cotton C is to be inserted, and the drainage cup 19 together with the cotton wad is to be inserted in the neck portion 18 of the bottle container 15 with its projecting flange 21 resting on the top open end of the neck portion 18 with the outer edge of the flange 21 being of substantially less diameter than the outer diameter of the neck 18 provides a ledge 22 which provides a distortable seating surface to allow of the sealing washer 23 to be coined around the outer edge of the drainage cup's flange 21 as shown at D, to seat against the top end 22 of the neck 18 to provide a leak-immunized joint between the under surface of the flange 21, and the top face of the ledge 22, when the screw cap shown in Fig. 2, having the distortable washer 23 inserted therein is screwed down tightly so as to coin the washer 23 over the edge of the flange 21 to seat against the top edge 22 of the neck 18 in a manner to provide a leak-immunized seep proof container assembly. The washer 23 possessing flowable characteristics such as is inherent in rubber, or rubber and cork combined, including elements having like flowable characteristics which lend them to be coined as shown in the Fig. 3, or the washers may be initially provided with a ring portion to provide the sealing washer. The cups shown in Figures 4, 6, 7, and 10 can be suspended in the bottle container shown in Fig. 1, in the same manner as described above to allow of providing a leak proof and seepage proof joint in the bottle assembly as shown in Fig. 1. The oval apertures 30 shown in the cup at Fig. 10 provides a means to insert finger tips so as to initially raise the projecting flanges 21 from contact with the top end of the container outlets; in order to break any wet seal that may occur between the under side of the flanges 21 and the top edges 22 or 25 of the container outlets, and they are intended to be in-

Fig. 12 is a sectional view showing a modified drainage cup having a tapered body portion and a flange 21 projecting horizontally from its top open end, and in which a wad of cotton C is to be inserted, and the drainage cup 19 together with the cotton wad is to be inserted in the neck portion 18 of the bottle container 15 with its projecting flange 21 resting on the top open end of the neck portion 18 with the outer edge of the flange 21 being of substantially less diameter than the outer diameter of the neck 18 provides a ledge 22 which provides a distortable seating surface to allow of the sealing washer 23 to be coined around the outer edge of the drainage cup's flange 21 as shown at D, to seat against the top end 22 of the neck 18 to provide a leak-immunized joint between the under surface of the flange 21, and the top face of the ledge 22, when the screw cap shown in Fig. 2, having the distortable washer 23 inserted therein is screwed down tightly so as to coin the washer 23 over the edge of the flange 21 to seat against the top edge 22 of the neck 18 in a manner to provide a leak-immunized seep proof container assembly. The washer 23 possessing flowable characteristics such as is inherent in rubber, or rubber and cork combined, including elements having like flowable characteristics which lend them to be coined as shown in the Fig. 3, or the washers may be initially provided with a ring portion to provide the sealing washer. The cups shown in Figures 4, 6, 7, and 10 can be suspended in the bottle container shown in Fig. 1, in the same manner as described above to allow of providing a leak proof and seepage proof joint in the bottle assembly as shown in Fig. 1. The oval apertures 30 shown in the cup at Fig. 10 provides a means to insert finger tips so as to initially raise the projecting flanges 21 from contact with the top end of the container outlets; in order to break any wet seal that may occur between the under side of the flanges 21 and the top edges 22 or 25 of the container outlets, and they are intended to be in-

Fig. 13 is a sectional view showing a modified drainage cup having a tapered body portion and a flange 21 projecting horizontally from its top open end, and in which a wad of cotton C is to be inserted, and the drainage cup 19 together with the cotton wad is to be inserted in the neck portion 18 of the bottle container 15 with its projecting flange 21 resting on the top open end of the neck portion 18 with the outer edge of the flange 21 being of substantially less diameter than the outer diameter of the neck 18 provides a ledge 22 which provides a distortable seating surface to allow of the sealing washer 23 to be coined around the outer edge of the drainage cup's flange 21 as shown at D, to seat against the top end 22 of the neck 18 to provide a leak-immunized joint between the under surface of the flange 21, and the top face of the ledge 22, when the screw cap shown in Fig. 2, having the distortable washer 23 inserted therein is screwed down tightly so as to coin the washer 23 over the edge of the flange 21 to seat against the top edge 22 of the neck 18 in a manner to provide a leak-immunized seep proof container assembly. The washer 23 possessing flowable characteristics such as is inherent in rubber, or rubber and cork combined, including elements having like flowable characteristics which lend them to be coined as shown in the Fig. 3, or the washers may be initially provided with a ring portion to provide the sealing washer. The cups shown in Figures 4, 6, 7, and 10 can be suspended in the bottle container shown in Fig. 1, in the same manner as described above to allow of providing a leak proof and seepage proof joint in the bottle assembly as shown in Fig. 1. The oval apertures 30 shown in the cup at Fig. 10 provides a means to insert finger tips so as to initially raise the projecting flanges 21 from contact with the top end of the container outlets; in order to break any wet seal that may occur between the under side of the flanges 21 and the top edges 22 or 25 of the container outlets, and they are intended to be in-

Fig. 14 is a sectional view showing a modified drainage cup having a tapered body portion and a flange 21 projecting horizontally from its top open end, and in which a wad of cotton C is to be inserted, and the drainage cup 19 together with the cotton wad is to be inserted in the neck portion 18 of the bottle container 15 with its projecting flange 21 resting on the top open end of the neck portion 18 with the outer edge of the flange 21 being of substantially less diameter than the outer diameter of the neck 18 provides a ledge 22 which provides a distortable seating surface to allow of the sealing washer 23 to be coined around the outer edge of the drainage cup's flange 21 as shown at D, to seat against the top end 22 of the neck 18 to provide a leak-immunized joint between the under surface of the flange 21, and the top face of the ledge 22, when the screw cap shown in Fig. 2, having the distortable washer 23 inserted therein is screwed down tightly so as to coin the washer 23 over the edge of the flange 21 to seat against the top edge 22 of the neck 18 in a manner to provide a leak-immunized seep proof container assembly. The washer 23 possessing flowable characteristics such as is inherent in rubber, or rubber and cork combined, including elements having like flowable characteristics which lend them to be coined as shown in the Fig. 3, or the washers may be initially provided with a ring portion to provide the sealing washer. The cups shown in Figures 4, 6, 7, and 10 can be suspended in the bottle container shown in Fig. 1, in the same manner as described above to allow of providing a leak proof and seepage proof joint in the bottle assembly as shown in Fig. 1. The oval apertures 30 shown in the cup at Fig. 10 provides a means to insert finger tips so as to initially raise the projecting flanges 21 from contact with the top end of the container outlets; in order to break any wet seal that may occur between the under side of the flanges 21 and the top edges 22 or 25 of the container outlets, and they are intended to be in-

incorporated in any of the cups if so desired such as when liquids are used having sticky characteristics: The numeral 24 designates a jar type of container structure provided with a recessed ledge 25 extending below the top edge 26 and around the inside of the jar container 24 providing a means to support the projecting flange 21 of a cup 19 so that the top end of the flange 21 is positioned below the top edge 26 of the jar container 24 in a manner to insert a washer 27 to overlie the top side of the flange 21 and rest upon the top edge 26 of the container 24 in such a manner as to allow of the screw cap 28 to be screwed tightly against the top side of the washer 27 and compress the washer 27 against the top edge 26 of the jar container 24 to provide a leak-immunized container assembly of the conventional type to prevent of any seepage or evaporation of liquid contents from the container such as when the container is positioned in any position, and further allowing of a multiple number of cotton swabs, or other elements to remain in the container when the cover is removed from the container assembly.

In order to lift the drainage cup 19 out of the container structures, a thumb is positioned across 22 or 26 in which the thumb serves as a fulcrum as when the end of the adjoining index finger is inserted in the oblong apertures 30 to pry the flange 21 away from any wet or sticky seal that holds the cups in the container structures.

In the foregoing specification and drawings I have shown preferred examples of practicing my concept for providing leak-immunized container assemblies in which the one piece draining cups eliminates the possibilities of holding any foreign matter between any appendaged elements in the draining cups and allows of the cups to be easily removed and easily cleaned, with their contents also being easily inserted or easily removed as the case may be. The assembled containers may be used to carry various medicated liquids together with preinserted cotton swabs in which the surplus liquids can be easily drained off, and the entire outfit can be carried in any position, such as in a traveling bag, or suit case without the liquid contents, or any of the corrosive contents being spilled from the disclosed assemblies. In the case of using boric acid solutions for swabbing the eyes, and eye cup is not always available, whereas a leak-immunized container equipped with the disclosed draining cups having cotton swabs stored therein provides a means where all of the necessities for cleaning the eyes are contained in one sanitary leak-immunized package.

In lieu of using the washer 27 shown in the Fig. 9, it is intended when corrosive solutions are used, to use a washer similar to that shown in the Fig. 3, with the ring portion of the washer that extends below the bottom of the washer, arranged in a manner to be compressed around the periphery 21 of the flange, and seat against the top end of the recessed ledge 25, in the same manner as described for utilizing the distortable washer with the bottle container structure shown in Fig. 1.

It is to be noted and it is intended to use a distortable blind washer initially shaped to a contour as described in the Fig. 3, whereby a slight torsional twist will compress the washer around both the inner and outer peripheries of the drainage cup's flange 21.

It is to be understood that the forms of my invention, herewith shown and described, is to be taken as preferred examples of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit and concept of my invention, or the scope of the subjoined claims.

This application is a continuation in part of my now abandoned application, Serial No. 400,995, filed December 29, 1953, for Container, which application has been abandoned in view of its being superceded by this present application.

Having described my invention, what I desire to secure by Letters Patent as new, is as follows in which I claim:

1. A screw capped leak-immunized container structure

having outlet means with a drainage cup suspended therein, comprising a one piece cup structure having a clean perforated bottom supporting a tubular wall, a clean flange projecting horizontally from the top open end of said cup, said flange freely supporting said cup in the outlet means while suspending the said bottom within the said container structure to allow of liquids to drain in and out of said cup, said flange being sealed around its inner and outer peripheries with a distortable blind washer in a manner to arrest the seepage of liquids from their mass contents so that they will not seep around the threaded portions of said cap, said washer having an over all flat top side arranged to fit in said cap, a straight ring portion formed at the periphery of said washer and extending vertically therefrom, the under side of said washer being bulged downwardly from the inner periphery of said ring portion in a manner to be torsionally compressed around the inner periphery of said cup.

2. A screw capped container assembly comprising in combination, a body portion having an open end neck portion having threads therearound, a screw cap screwed around the neck portion, and a one piece tubular drainage cup suspended in said neck, comprising a tubular wall supported on a clean perforated base, a horizontally disposed clean flange around the open end of said cup supported on a rim of said neck with its outer periphery terminating substantially within the outer periphery of the said neck portion, and a distortable blind washer in said cap, comprising a body portion having a ring portion projecting away from its under side including a portion of said body diverging downwardly from the inner periphery of the ring portion, said washer being arranged in a manner to be torsionally compressed against the outer rim of the said neck and around the outer and inner peripheries of the said flange to provide a leak proof seal extending all around the outer and inner peripheries of the said flange and over all of the under side of said cap.

3. In an assembly as described in claim 2 said one piece drainage cup being provided with a tubular wall having diametrically disposed oblong apertures through the said wall.

4. A screw capped leak-immunized container assembly comprising in combination, a container structure having an open neck portion with threads therearound, a screw cap screwed around the outside of said neck portion, and a one piece tubular draining cup suspended in said neck comprising a tubular wall supported on a clean perforated base, a horizontally disposed clean flange arranged around the open end of said cup, said wall having diametrically disposed oblong apertures therethrough below said flange, said flange being supported on the top end of said neck with its outer periphery terminating substantially within the outer periphery of said neck for providing a ledge between its outer periphery and the outer periphery of said neck portion, and a distortable blind washer arranged in the said cap having a ring portion projecting downwardly from its under side and having a bulged portion extending downwardly around the inner periphery of said ring, said washer arranged in a manner to be torsionally compressed around the inner and outer peripheries of said flange and seat against the ledge on said neck provided around the outer periphery of said flange.

5. A screw capped leak-immunized container structure having outlet means with a perforated cup suspended therein, comprising a one piece cup structure having a clean flange projecting horizontally from its top open end with the said cup having a clean perforated bottom supporting a solid tubular wall, the wall of said cup having diametrically disposed oblong apertures below its projecting flange, said flange arranged in a manner to freely support said cup in the outlet means and suspend the said bottom within the said container structure in a manner to allow of liquids to drain in and out of said cup, said flange being sealed with a blind washer around

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its outer and inner periphery in a manner to arrest the seepage of corrosive liquids from their mass contents so they will not disperse around the threaded portions of said cap.

6. In a screw capped container assembly, comprising in combination, a body having an open neck portion, a screw cap screwed around the outside of the neck portion, a one piece tubular draining cup suspended in said neck, comprising a solid tubular wall supported on a clean perforated base, said wall having diametrically disposed oblong apertures through the said wall, a horizontally disposed clean flange arranged around the open end of the said cup, said flange being supported on a rim of said neck with its outer periphery terminating substantially within the outer periphery of said neck and providing a seat between its outer periphery and the outer periphery of the neck portion, and a distortable blind washer arranged in said cap provided with a flat surface on its top side and a ring portion projecting downwardly from its under side arranged in a manner to be torsionally

compressed around the outer and inner peripheries of said flange and seat against the ledge provided around the outer periphery of the said flange on the said neck.

7. A container assembly as described in claim 2, in which the container has a bottle neck outlet means.

8. A drainage cup as specified in claim 1, in which the tubular wall of said cup has diametrically disposed oblong apertures therethrough.

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References Cited in the file of this patent

UNITED STATES PATENTS

422,934	Gunkle	Mar. 11, 1890
712,049	Du Bois	Oct. 28, 1902
807,388	Leffingwell	Dec. 12, 1905
2,557,648	Gerson	June 19, 1951
2,699,780	Rudnick et al.	Jan. 18, 1955
2,800,240	Will	July 23, 1957

FOREIGN PATENTS

996,864	France	Sept. 5, 1951
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