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PORTABLE URINAL

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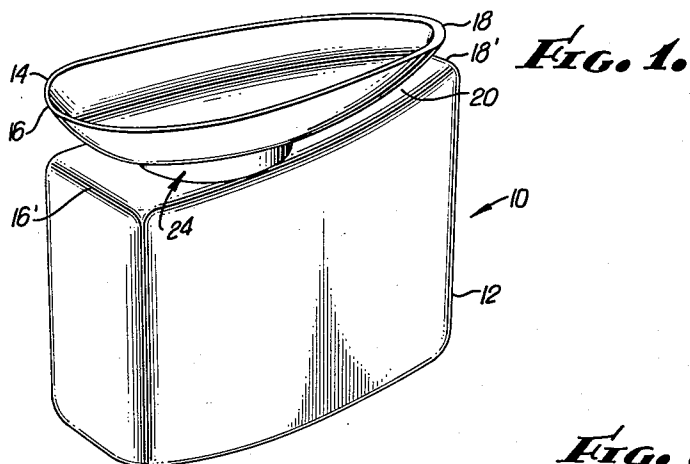


**Fig. 2.**

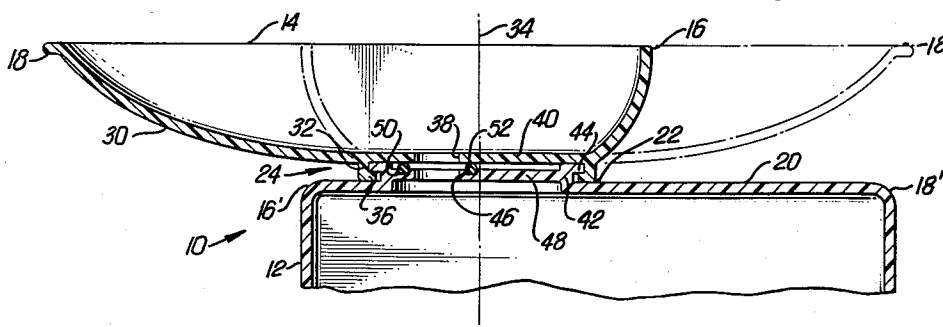


**Fig. 3.**

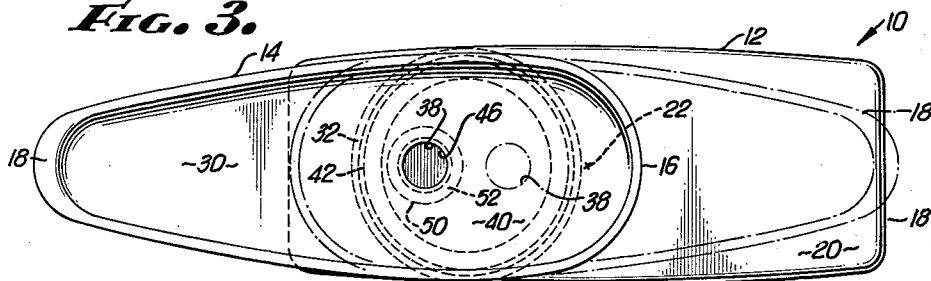
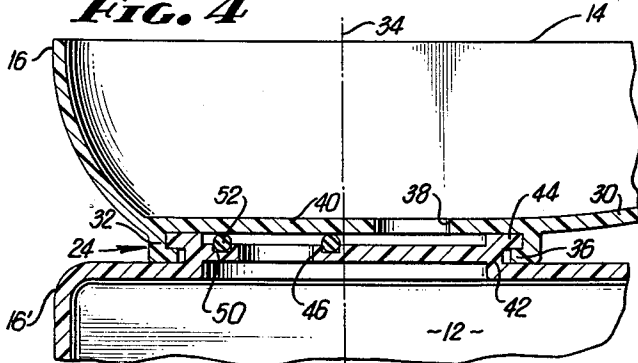


**Fig. 4**



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## PORTABLE URINAL

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This invention relates generally to toilet facilities, and more particularly to a compact urinal and storage bottle which may be carried among one's personal effects.

It is sometimes imperative, and often highly desirable, to have urinal facilities available at times and places where regular or satisfactory toilet facilities either do not exist or are not adequately close at hand. For example, after certain surgical operations, either temporarily or permanently the patient requires urination relief at extremely frequent intervals, such that his activities and travels must be limited to the proximity of available toilets. Older men with minor prostate diseases and young children often experience difficulty in the nature of frequent urination demands, particularly in a vibrating environment, such as a traveling vehicle.

In air raid shelters and in primitive sporting areas having, for example, ski shelters, there is often semi-private space available, for example, storage or dormitory areas, but no toilet facilities within the shelter.

Prior art attempts to solve these problems have typically been directed toward providing portable urinals which suffer the disadvantages of being bulky and therefore difficult to carry unobtrusively; cumbersome and therefore difficult especially for female children to use; sealable only with a drawstring or a screw cap, and therefore requiring extra handling and being vulnerable towards spilling if not properly sealed with considerable force; breakable either in the reservoir body or the sealing means and therefore not dependable against spilling; or have required additional funneling means in order to permit satisfactory utilization of the urinal.

It is therefore an object of the present invention to provide a portable urinal which is not subject to these and other disadvantages of the prior art.

It is another object to provide a portable urinal which is compact and unobtrusive.

It is another object to provide such a portable urinal which is non-breakable and is semi-rigid.

It is another object to provide a portable urinal which is versatile and convenient for use by all persons, young and old, male and female without requiring additional funneling means.

It is another object to provide a portable urinal which may be securely and completely sealed without requiring large forces or extensive handling.

It is another object to provide a portable urinal which may be readily emptied, cleaned, and re-used.

Briefly, these and other objects are achieved in accordance with one example of the present invention in which a portable urinal is provided having a container body portion which is oblong rectangular in horizontal section and is terminated with a substantially flat top surface which has a short circular neck projecting upwardly therefrom between the center and one end of the top surface. The neck includes a circular retaining flange disposed about its periphery. An opening is provided through the top surface within the retaining flange be-

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tween its center and one edge of its inner periphery.

A funnel member is provided which has substantially similar over-all horizontal dimensions as the horizontal cross-section of the container portion. The funnel member has a downwardly projecting short circular neck and further includes a second circular retaining flange which mates with and interlocks with the circular retaining flange on the body portion. The funnel member is oval shaped and vertically shallow. The interlocking retaining flanges which are snappable together or apart permit a rotation of the funnel member with respect to the body portion. The circular flange on the funnel portion is disposed toward one end thereof so that the funnel member may be rotated to a position which is contiguous to the top surface of the body portion.

An opening is provided in the bottom of the funnel member within the circular retaining flange between its center and one side of the flange in an angular disposition such that when the funnel member is rotated to a position opposite from its contiguous position with respect to the top surface of the body portion, the two holes, one in the top surface of the body portion and the other in the bottom surface of the funnel member, are in register and provide communication between the funnel member and the interior of the container portion. These are the relative dispositions of the two parts during utilization of the urinal.

When the urinal is not in use, the funnel member is rotated to its opposite position so that it is angularly aligned contiguously with the top surface of the body portion. In this latter position, the two openings are not in register and a sealing means, such as an O-ring disposed between the two surfaces around the opening into the body portion, seals the interior of the container portion to preclude any spilling of its contents until such time as the funnel member is rotated to its opposite angular position or is removed from the container portion by snapping apart the interlocked retaining flanges. Thus the oval funnel member not only functions as a funneling means to communicate with the interior of the container portion, but is also a secure, highly leveraged sealing means for the container portion. Further, when the two openings are in register to provide communication between the funnel member and the container portion, the oval funnel member projects conveniently away from the container portion and toward the body of the user.

Further details of these and other novel features and their operation, as well as additional objects and advantages, will become apparent and be best understood from a consideration of the following description taken in connection with the accompanying drawing which is presented by way of example only and in which:

FIG. 1 is a perspective view of one embodiment of a portable urinal constructed in accordance with the principles of the present invention;

FIG. 2 is a vertical longitudinal sectional view of a portion of another embodiment of the present invention;

FIG. 3 is a plan view of the structure depicted in FIG. 2; and

FIG. 4 is an enlarged sectional view of a portion of the structure depicted in FIG. 2.

Referring to the particular figures, it is stressed that the details shown are by way of example only and are

presented in the cause of providing what is believed to be the most useful and readily understood description of the principles of the invention. The detailed showing is not to be taken as a limitation upon the scope of the invention which is to be measured by the appended claims forming a part of this specification.

In FIG. 1 a portable urinal 10 is shown which includes a container portion 12 and a funnel member 14. Both the funnel member and the container portion are generally oblong in horizontal section. The funnel member 14 is oval with a first end 16 and an opposite second end 18.

While the container portion 12 is rectangularly oval with a top surface 20 having a first end 16' and a second end 18', the over-all lengths and widths of both the funnel member and the container portion are approximately equal so that in the angular disposition of the two parts as shown the funnel member does not significantly project beyond the length and width of the body portion 12. The top surface 20 has a center 22 which is disposed approximately mid-way between the ends 16', 18'. The funnel member 14 is rotatably connected to the container portion 12 by means of a pair of interlocked circular flanges 24 which are disposed between the ends 16 or 16' and the center 22. Thus the funnel member 14 may be rotated about the axis of the interlocked circular flanges 24 so that its end 18 is disposed angularly oppositely from the end 18' of the top surface 20 of the container portion 12. In this angular disposition, the end 18 of the funnel member projects well to the left of the container portion 12 and is thereby in convenient position for use as will be discussed more fully below.

The end 18' of the top surface 20 may extend upwardly, as shown in this embodiment to increase the capacity of the container portion 12 without increasing the over-all dimensions of the urinal 10 and to minimize the risk of the funnel portion 14 being inadvertently pried off or rotated and thereby accidentally opened.

The vertical sides of the container portion 12 may include depressions or ridges, not shown, for additional strength and rigidity as well as for providing more secure handling surfaces to prevent unintentional dropping of the portable urinal during use. Both the funnel member 14 and the container portion 12 are preferably fabricated of a semi-rigid non-breakable plastic, such as polyethylene or styrene.

Referring to FIG. 2, the longitudinal sectional view through the portable urinal 10 of FIG. 1 illustrates the details and functions of the interlocked circular flanges 24. The bottom surface 30 of the funnel member 14 includes a neck portion 32 which projects downwardly therefrom. The neck portion 32 is a short circular cylinder having an axis 34 and is terminated with a horizontal flange 36 which projects radially inwardly from the bottom end of the neck portion 32. An opening 38 is provided in the bottom surface 30 and the web portion 40 within the neck portion 32. The opening 38 is disposed between the axis 34 and the inner periphery of the neck portion 32.

The top surface 20 of the container portion 12 includes a neck portion 42 which is circular and which projects upwardly from the surface 20 between the center 22 and the end 16'. The short circular cylindrical neck portion 42 is terminated at its upper end by a circular flange 44 which projects radially outwardly from the periphery of the neck portion 42. The outer diameter of the flange 44 is equal to or slightly less than the inner diameter of the neck portion 32, while the outer diameter of the neck portion 42 is equal to or slightly less than the inner diameter of the flange 36. Thus the neck portions and retaining flanges provide an interlocking snap together and snap apart fastening means between the funnel member 14 and the container portion 12. It is also seen that the circular flanges permit a freedom of rotation of the funnel member 14 about the axis 34 with respect to the

container portion 12. An opening 46 is provided in an otherwise occluding web portion 48 disposed across the neck portion 42 of the top surface 20. Similarly to the disposition of the opening 38 in the funnel portion 14, the opening 46 is disposed between the axis 34 and the inner periphery of the neck portion 42.

The opening 46 is disposed further to be in register with the opening 38 when the funnel member 14 is rotated about the axis 34 so that the end 18 is angularly opposite from the end 18' of the top surface 20. An annular retaining channel 50 is provided about the periphery of the opening 46 in the top surface of the web portion 48. An O-ring 52 is shown disposed within the retaining channel 50 between the two web portions 40, 48 to isolate the opening 46 from the remainder of the space between the web portions and to seal the interior volume of the container portion 12 when the funnel member 14 is rotated so that the end 18 is angularly coincident with the end 18', as shown by the dotted lines in FIG. 2 and FIG. 3.

Referring to FIG. 4, some of the details of the interlocked circular flanges 24 are shown in enlarged section with the funnel member 14 rotated about the axis 34 to a position angularly opposite to that shown in FIG. 2 and FIG. 3. That is, in FIG. 4, the end 16 of the funnel member 14 is angularly coincident with the end 16' of the container portion 12. In this angular disposition of the two major parts, the opening 46 is seen to be sealed by the O-ring 52 securely against the bottom surface of the web portion 40 while the opening 38 is seen to communicate only between the funnel member 14 and the inter-web volume between the web portions 40, 48. The snap-on arrangement of the deformable interlocked circular flanges 24 is shown with more clarity in FIG. 4. It is to be noted that the O-ring 52 has a toroidal thickness, when not compressed, which is somewhat greater than the inter-web spacing and that the vertical thickness of the flanges 36, 44 are approximately equal to the cylindrical length of the opposite neck portions 42, 32 to provide adequate friction for the rotating interlocked flanges to prevent accidental rotation and spilling of the contents of the body portion 12 when the portable urinal 10 has been used and laid aside as among, for example, luggage or other effects.

It is to be noted that the retaining flanges 24 may have a form different from that of the example shown; for example, the geometric shapes of the two flanges may be interchanged so that the neck portion 32 is radially inside of the neck portion 42 and the flange 36 extends radially outwardly instead of inwardly.

There has thus been disclosed a portable urinal which, by virtue of the leverage afforded by the end 18 of the funnel portion 14, may be securely and completely sealed without requiring extensive force to be applied by the user. The portable urinal disclosed may be readily emptied and cleaned by simply snapping off the funnel member 14 from the body portion 12. As seen from the drawings and the above discussion, the urinal thus provided may be compact and unobtrusive and thereby be far more practical and generally useful than those heretofore available.

What is claimed is:

1. A portable urinal comprising: a plastic container body portion having an oblong cross-section and a top surface substantially parallel thereto, an oblong plastic funnel member disposed in juxtaposition to said top surface, coaxial short, deformable mating neck portions extending from said top surface and from said funnel member, said neck portions being removably interlockable with rotational freedom whereby said funnel member may be rotated about an axis through said neck portions which is substantially perpendicular to said cross-section, said axis being disposed between the center and one end of said oblong cross-section and similarly between the center

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and one end of said funnel member, web members partially occluding each of said neck portions and forming an opening disposed between said axis at the center of each of said neck portions and its periphery, said openings being disposed in register to provide communication through said neck portions between said funnel member and said body portion when said funnel member is rotationally disposed so that its said one end is disposed oppositely about said axis with respect to said one end of said cross-section of said body portion, and resilient sealing means supported on at least one of said web members, between said web members, and disposed about at least one of said openings to isolate said opening in said neck portion extending from said top surface from space between said web members.

2. A portable urinal comprising: an unbreakable semi-rigid container body portion having an oblong cross-section and having a top surface substantially parallel thereto; an oblong funnel enclosure member disposed in juxtaposition with said top surface; coaxial, short, deformable circular mating neck portions extending toward each other from said top surface and said funnel member, said neck portions being removably interlockable with rotational freedom whereby said funnel member may be rotated about an axis through said neck portions which is perpendicular to said cross-section, said axis being disposed between the center and one end of said oblong cross-section and similarly between the center and one end of said funnel member; web members partially occluding each of said neck portions and forming an opening disposed between said axis at the center of each of said neck portions and its periphery, said openings being disposed in register to provide communication through said neck portions between said funnel member and said body portion when said funnel member is rotationally disposed so that its said one end is disposed oppositely about said axis with respect to said one end of said cross-section of said body portion, and said openings being disposed to preclude communication between said funnel member and said body portion when said funnel member is rotationally disposed so that its said one end is angularly coincident with said one end of said cross-section of said body portion; and sealing means disposed between said web members, and supported on at least one of said web members and disposed about at least one of said openings to isolate said opening in said neck portion extending from said top surface from space between said web members.

3. A portable urinal comprising: a polyethylene molded container portion having an oblong rectangular horizontal cross-section and having a top surface, a polyethylene molded oblong funnel and enclosure member disposed contiguously to said top surface, coaxial short circular cylindrical deformable mating neck portions extending from said top surface and said funnel member, said neck portions being removably mutually interlockable with rotational freedom whereby said funnel member may be rotated about a vertical axis through said neck portions, said axis being disposed between the center and one end of said oblong rectangular cross-section and similarly between the center and one end of said funnel member, horizontal web members extending across and partially occluding each of said neck portions and forming an opening disposed between said axis at the center of each of said neck portions and its inner periphery, said openings being disposed in register to provide communication through said neck portions between said funnel member and said container portion when said funnel member is rotationally disposed so that its said one end is disposed oppositely about said axis with respect to said one end of said horizontal cross-section of said container portion, and said openings being disposed to preclude communication between said funnel member and said body portion when said funnel member is rotationally disposed so that its said one end is angularly coincident with said one end of said horizontal cross-section of said body portion, and

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resilient O-ring sealing means disposed between said web members, and supported on at least one of said web members and disposed about at least one of said openings to isolate said opening in said neck portion extending from said top surface from space between said web members.

4. A portable urinal comprising: a container portion having an oblong horizontal cross-section and a predominantly closed top surface with first and second ends, a length, a width, and a center, a first circular retaining flange projecting upwardly from said top surface disposed thereon symmetrically about a vertical axis between said center and said first end, said top surface being relieved within said flange to form a first opening in said container portion, said opening being disposed between said axis and the inner periphery of said first retaining flange, a shallow funnel member removably disposed in juxtaposition above said top surface and having first and second ends and a length and width approximately equal to said length and width respectively of said container portion top surface, a second circular retaining flange disposed on said funnel member between its center and said first end and projecting downwardly from the bottom surface of said funnel member and disposed thereon symmetrically about said vertical axis, said first and second flanges comprising removably interlocking horizontally extending annular rims which structurally secure said funnel member to said container portion with rotational freedom of said funnel member with respect to said container portion about said vertical axis, said bottom surface of said funnel member being relieved within said second flange to form a second opening in the bottom surface of said funnel member, said second opening being disposed between said axis and the inner periphery of said second flange in such disposition as to be in register with said first opening in said container portion when said funnel member is rotationally disposed so that its said second end is disposed angularly opposite from said second end of said top surface of said container portion.

5. A portable urinal comprising: an unbreakable semi-rigid plastic container portion having an oblong horizontal cross-section and a predominantly closed top surface with first and second ends, a length, a width, and a center; a first circular retaining flange projecting upwardly from said top surface disposed thereon symmetrically about a vertical axis between said center and said first end, said top surface being relieved within said flange to form a first opening in said container portion, said opening being disposed between said axis and the inner periphery of said first retaining flange; a shallow funnel member disposed in juxtaposition above said top surface and having first and second ends and a length and width approximately equal to said length and width respectively of said container portion top surface; a second circular retaining flange disposed on said funnel member between its center and said first end and projecting downwardly from the bottom surface of said funnel member and disposed thereon symmetrically about said vertical axis, said first and second flanges comprising removably interlocking horizontally extending annular rims which structurally removably secure said funnel member to said container portion with rotational freedom of said funnel member with respect to said container portion about said vertical axis, said bottom surface of said funnel member being relieved within said second flange to form a second opening in the bottom surface of said funnel member, said second opening being disposed between said axis and the inner periphery of said second flange in such disposition as to be in register with said first opening in said container portion when said funnel member is rotationally disposed so that its said second end is disposed angularly opposite from said second end of said top surface of said container portion; and O-ring sealing means disposed within said flanges between said bottom surface of said funnel member and said top surface of said container portion to seal

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said container portion and to preclude communication between said openings when said funnel member is rotationally disposed about said vertical axis so that its second end is disposed angularly coincident with said second end of said container portion.

6. A portable urinal comprising: an unbreakable semi-rigid plastic container portion having an oblong horizontal cross-section and a predominantly closed top surface with first and second ends, a length, a width, and a center; a first circular retaining flange projecting upwardly from said top surface disposed thereon symmetrically about a vertical axis between said center and said first end, said top surface being relieved within said flange to form a circular first opening in said container portion, said opening being disposed between said axis and the inner periphery of said first retaining flange; a shallow funnel member removably disposed contiguously above said top surface and having first and second ends and a length and width approximately equal to said length and width respectively of said container portion top surface; a second circular retaining flange disposed on said funnel member between its center and said first end and projecting downwardly from the bottom surface of said funnel member and disposed thereon symmetrically about said vertical axis, said first and second flanges comprising removably interlocking horizontally extending annular rims which structurally secures said funnel member to said container portion with rotational freedom of said funnel member with respect to said container portion about the said vertical axis, said bottom surface of said funnel member being relieved within said second flange to form a second opening in the bottom surface of said funnel member, said second opening being disposed between said axis and the inner periphery of said second flange in such disposition as to be in register with said opening in said container portion when said funnel member is rotationally disposed so that its said second end is disposed angularly opposite from said second end of said top surface of said container portion; resilient O-ring sealing means having a diameter greater than that of said circular opening and disposed within said flanges between said bottom surface of said funnel member and said top surface of said container portion to seal said container portion and to preclude communication between said openings when said funnel member is rotationally disposed about said vertical axis so that its second end is disposed angularly coincident with said second end of said container portion; and O-ring retaining means disposed on said top surface about said circular opening.

7. A portable urinal comprising: a body portion having an oblong horizontal cross-section with substantially flattened top and bottom surfaces, a short circular cylindrical neck portion affixed integrally with and projecting upwardly from said top surface between its center and a first end thereof, a horizontal retaining flange terminating at the top of and extending radially outwardly from said neck portion, a first circular web portion extending across said neck portion predominantly occluding its cross-section but being relieved to form a first opening communicating with the interior of said body portion, said first opening being disposed radially between the center and the outer extremity of said neck portion, an oblong shallow funnel member having horizontal dimensions approximately equal to those of said top surface, a funnel short circular cylindrical neck portion extending downwardly from the bottom surfaces of the funnel member disposed toward one end thereof, a horizontally extending retaining flange terminating said funnel neck portion and extending radially inwardly from the inner periphery thereof, a second circular web portion extending across said funnel neck portion occluding the major part of its cross-section but being relieved to form a second opening communicating from the funnel member through said funnel neck portion, said second opening being disposed radially between the center and the outer extremity of

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said funnel neck portion, said funnel neck portion being adapted to snap removably over said neck portion of said body portion and rotate thereabout with said retaining flanges in engagement, said first and second openings being angularly disposed in their respective web portions so that they are in register when said funnel member is rotationally disposed oppositely and away from said top surface of said body portion, and not in register when said funnel member is rotationally disposed over and in line with said top surface, and resilient sealing means retained about said first opening and between said web portions.

8. A portable urinal comprising: a body portion having an oblong horizontal cross-section with substantially flattened top and bottom surfaces, a first short circular cylindrical neck portion affixed integrally with and projecting upwardly from said top surface between its center and a first end thereof, a horizontal retaining flange terminating at the top of and extending radially inwardly from said neck portion, a first circular web portion extending across said neck portion predominantly occluding its cross-section but being relieved to form a first opening communicating with the interior of said body portion, said first opening being disposed radially between the center and the outer extremity of said neck portion, an oblong shallow funnel member having horizontal dimensions approximately equal to those of said top surface, a funnel short circular cylindrical neck portion extending downwardly from the bottom surfaces of the funnel member disposed toward one end thereof, a horizontally extending retaining flange terminating said funnel neck portion and extending radially outwardly from the inner periphery thereof, a second circular web portion extending across said funnel neck portion occluding the major part of its cross-section but being relieved to form a second opening communicating from the funnel member through said funnel neck portion, said second opening being disposed radially between the center and the outer extremity of said funnel neck portion, said first neck portion of said body portion being adapted to snap removably over said funnel neck portion and rotate thereabout with said retaining flanges in engagement, said first and second openings being angularly disposed in their respective web portions so that they are in register when said funnel member is rotationally disposed oppositely and away from said top surface of said body portion, and not in register when said funnel member is rotationally disposed over and in line with said top surface, and resilient sealing means disposed about said opening between said web portions.

9. A portable urinal comprising: an unbreakable semi-rigid molded plastic body portion having an oblong rectangular horizontal cross-section with substantially flattened top and bottom surfaces, a short circular cylindrical neck portion affixed integrally with and projecting upwardly from said top surface between its center and a first end thereof, a horizontal retaining flange terminating at the top of and extending radially outwardly from said neck portion, a first circular web portion extending across said neck portion predominantly occluding its cross-section but being relieved to form a circular first opening communicating with the interior of said body portion, said first opening being disposed radially between the center and the outer extremity of said neck portion, an oblong shallow funnel member having horizontal dimensions approximately equal to those of said top surface, a funnel short circular cylindrical neck portion extending downwardly from the bottom surfaces of the funnel member disposed toward one end thereof, a horizontally extending retaining flange terminating said funnel neck portion and extending radially inwardly from the inner periphery thereof, a second circular web portion extending across said funnel neck portion occluding the major part of its cross-section but being relieved to form a second opening communicating from the funnel member through said funnel neck portion, said second opening being disposed radially between the center and the outer

extremity of said funnel neck portion, said web portions being vertically separated by a predetermined distance, said funnel neck portion being adapted to snap removably over said neck portion of said body portion and rotate thereabout with said retaining flanges in engagement, said first and second openings being angularly disposed in their respective web portions so that they are in register when said funnel member is rotationally disposed oppositely and away from said top surface of said body portion, and not in register when said funnel member is rotationally disposed over and in line with said top surface, and resilient O-ring sealing means retained about

said first opening and between said web portions and having a mean diameter greater than that of said circular opening and having a toroidal thickness greater than said predetermined distance.

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