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DISPOSABLE URINAL

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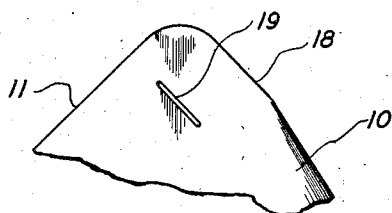


FIG. 3.

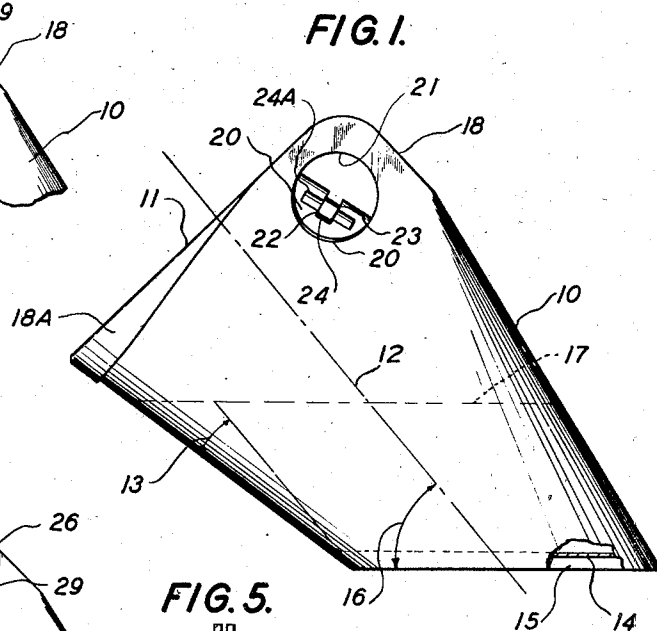


FIG. 1.

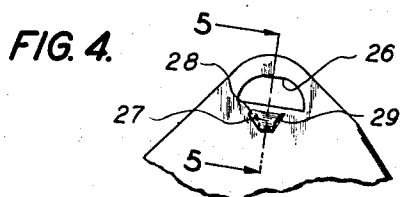


FIG. 4.

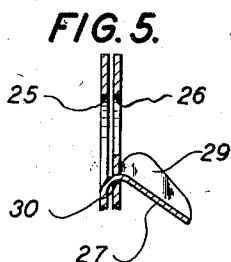


FIG. 5.

FIG. 7.

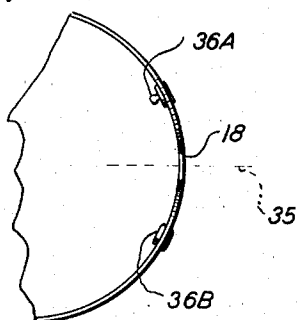


FIG. 8.

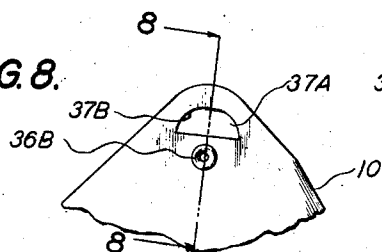


FIG. 6.

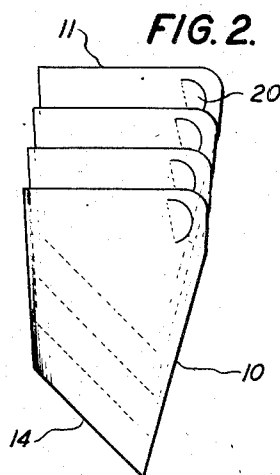
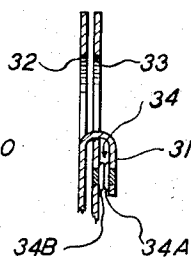


FIG. 2.

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DISPOSABLE URINAL

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7 Claims. (Cl. 4—110)

This invention is concerned with disposable urinals and provides new and improved structures to this end.

It has been proposed heretofore to provide disposable urinals, particularly for hospital use. Conventional urinals are not disposable and present a sanitary problem, as well as a labor difficulty, for the cleansing of such equipment is a disagreeable task which most people do not assume willingly. However, the structures heretofore proposed have not been successful for a number of reasons. Some have been too complicated and expensive and those within economic reach have been flimsy or require excessive storage space.

The disposable urinals of my invention are not subject to the objections which have ruled out prior proposals. They are adequately rugged and can be mass produced from inexpensive and readily available materials. They are convenient to use and handle both by the patient and the attendant, and require relatively little storage space. They may be made of material having low thermal conductivity so that they are not cold to touch, and when made of non-metallic material are not as noisy as conventional types.

In essence, my invention contemplates a urinal having an inverted frusto-conical wall of relatively flexible and impermeable material, such as plastic, say polystyrene, or cardboard water-proofed with wax or other water impermeable coating composition. The bottom of the container is an impermeable disc disposed obliquely to the axis of the frusto-conical side wall, which tapers inwardly toward the bottom. The disc may be made of rigid material such as sheet metal, but preferably is formed of the same sheet stock, say waxed cardboard, which is employed to form the wall. The wall projects forward of the bottom when the latter is level.

Disposable urinals constructed as described above are nestable, so that a large number of them can be stacked one within the other in relatively small space. When the urinals are put into service it is convenient to provide a handle, and this is formed conveniently by bending the side wall longitudinally at the top in line with the deepest portion of the urinal, which may be considered as the back portion. The bending is continued until adjacent portions of the side walls on opposite sides of the bend or crease abut each other. In other words, these portions are squeezed together. If desired, the handle portion thus formed may be secured by stapling or otherwise fastening the two wall portions to each other.

In the preferred form of my invention the upper rim of the urinal is notched at the back to facilitate bending in the proper place, i. e. along a longitudinal rear fold-line, and fastening means for the two side portions (which are squeezed together to make the handle) are incorporated in the structure.

These and other aspects of the invention will be understood completely in the light of the following detailed description of presently preferred examples. The description is illustrated by the accompanying drawings, in which:

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Fig. 1 is a side view of one form of the urinal of the invention, with the handle formed at the back and secured by substantially integral fastening means;

Fig. 2 is a side view of a group of the urinals of Fig. 1 stacked or nested within each other and prior to the bending operation which forms the handles;

Fig. 3 is a fragmentary side view of a urinal of the type of Fig. 1 in which the two wall portions which form the handle are stapled together instead of being held by integral fastening means;

Fig. 4 is a fragmentary side view of a urinal constructed as in Fig. 1, but employing an alternate integral fastening means;

Fig. 5 is a section taken along the line 5—5 of Fig. 4;

Fig. 6 is a section taken through the handle portion of a urinal such as that of Fig. 1, but equipped with still another alternate form of integral fastening means;

Fig. 7 is a fragmentary plan view of a urinal like that of Fig. 1, but employing a snap-fastener for the handle portion; and

Fig. 8 is a fragmentary side view of the structure of Fig. 7, with the two wall portions bent together and held by the snap fastener.

The urinal of Fig. 1 has a frusto-conical wall 10 which flares upwardly to a rim 11 defined by a plane approximately perpendicular to the longitudinal axis 12 of the wall section. The angle 13 of flare may vary considerably, but should be relatively slight, say 15°. If the flare angle is substantially less than 15°, the nesting is insufficient. If the flare angle is much greater than 15°, the urinal is difficult to use and handle.

The urinal of Fig. 1 has an elliptical bottom 14 set obliquely to the longitudinal axis of the wall and joined to the wall by a downwardly extending annular flange 15. The bottom may be fastened to the side wall by cementing or crimping, or both. The angle 16 which the plane of the bottom makes with the longitudinal axis of the wall may vary, but I have found that an angle of about 50° is satisfactory and tends to lend stability to the structure when it is filled with the usual amount of liquid, say to the level 17. If the angle 16 is too great, the urinal tends to tip forward when filled, because the center of gravity is too far forward and beyond the vertical projection of the bottom.

The wall of the urinal of Fig. 1 has a notched portion 18 on its rim at the back. This notch facilitates folding adjacent portions of the side wall together, so that they form a handle, this bending operation being conducted after the urinal has been removed from the stack and prior to use.

The upper rim of the urinal is reinforced at the front by an integrally formed folded portion 18A. This not only reinforces the front of the urinal but avoids a sharp edge at this point.

It is not essential that the two portions of the wall which are folded to form the handle be secured to each other, for the fingers in grasping the handle, tend to hold them together. However, it is sometimes convenient to secure them to each other. Perhaps the simplest means of securing them together is by means of a staple 19 as illustrated in Fig. 3. Such a staple is easily inserted with a convenient office-type stapling machine. I prefer, however, to incorporate fastening means such as those illustrated in Figs. 1, 4, 5, 6, 7 and 8. Such fastening means make the fastening operation independent of a stapling machine or the like, which may not be available when and where it is needed.

As shown in Figs. 1, 4, 5, 6, 7 and 8, it is desirable to provide an aperture through the handle for the fingers, as in the handle of a teacup, and this adds to the convenience and security of handling and reduces the danger of dropping or tipping, with resultant spillage.

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In the urinal of Fig. 1, the handle portion is provided with matching flaps 20, which are bent downwardly over each other, after the two side portions have been bent together, leaving a finger aperture 21. If desired, each flap may be provided with parallel slits 22, 23, so that the portion 24 of the flaps between the slits may be bent outwardly to receive a key 24A, such as a match stick. The key is inserted through the keyway thus formed and anchors the two flaps together.

In the structure illustrated in Figs. 4 and 5, the two wall portions which form the handle are again provided with matching finger apertures 25, 26, but only one of the apertures has a flap 27. This flap is shaped like a blunt spear head. The curved side portions of the flap are bent to form ears 28, 29. When the ears are folded over the flap will pass through a slit 30, which is not as long as the flap (including the ears) is wide. After the flap has been inserted in the slit, the ears are bent out again and hold the flap in the slit.

In the structure of Fig. 6, a flap 31 is joined to the lower edge of an aperture 32 on one side of the fold line (not shown) of the handle. This flap is folded down, passed through a matching aperture 33 on the other side of the fold line and held in place by a snap fastener 34, consisting of two parts, one 34A fastened to the flap, the other 34B embedded in the side of the container immediately below the matching aperture 33.

Perhaps the most practical and convenient means of holding the handle portions of the container wall together is that illustrated in Figs. 7 and 8. In this modification, the wall portions on the two sides of the fold line 35 defined by the notch are provided respectively with the male and female members 36A, 36B of a snap fastener 36. The members are firmly affixed to the wall portions and since they are disposed symmetrically with respect to the fold line they come together when the container is folded. Then the male member snaps into the female member and the two wall portions are held together. If desired, matching orifices 37A, 37B may be provided in the respective wall portions between the snap members and the fold line, so that the fingers of the user may be inserted after the handle is formed.

I claim:

1. A disposable urinal which comprises a container having an inverted frusto-conical wall of impermeable relatively flexible sheet material and an impermeable bottom disposed obliquely to the longitudinal axis of the frusto-conical wall with the front portion of said wall projecting forward of the bottom when the latter is level, and with the rear portion of said wall projecting over the bottom when the latter is level.

2. A disposable urinal which comprises a container having an inverted frusto-conical wall of impermeable relatively flexible sheet material and an impermeable bottom disposed obliquely to the longitudinal axis of the frusto-conical wall, the front portion of the wall projecting forward beyond the bottom when the latter is level and the rear portion of the wall projecting over the bottom when the latter is level, the upper rim of the wall being notched at the rear to facilitate folding of the wall.

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3. A disposable urinal which comprises a container having an inverted frusto-conical wall of impermeable relatively flexible sheet material and an impermeable bottom disposed obliquely to the longitudinal axis of the frusto-conical wall so that the wall projects forward beyond the bottom when the latter is level, the upper rim of the wall being notched at the rear and there being an aperture in the wall adjacent the notch on one side thereof and a flap in the wall adjacent the notch on the other side thereof, the flap and the notch being located substantially symmetrically with respect to the notch.

4. A disposable urinal which comprises a container having an inverted frusto-conical wall of impermeable relatively flexible sheet material, an impermeable bottom disposed obliquely to the longitudinal axis of the frusto-conical wall, and means for holding adjacent portions of the wall near the upper rim of the wall together to form a handle.

5. A disposable urinal which comprises a container having an inverted frusto-conical wall of impermeable relatively flexible sheet material and an impermeable bottom disposed obliquely to the longitudinal axis of the frusto-conical wall, adjacent portions of the wall near the upper rim of the wall at the back being provided respectively with mating members of a snap fastener, the members being affixed respectively to the two portions so that when the two portions of the wall are squeezed together the mating members are engaged.

6. A disposable urinal which comprises a container having an inverted frusto-conical wall of impermeable relatively flexible sheet material, a bottom disposed obliquely to the longitudinal axis of the frusto-conical wall so that the wall projects forward of the bottom when the latter is level, and mating members of a fastening means disposed near the upper rim of the wall near the rear thereof for fastening together adjacent portions of the wall the members being located respectively on the two portions so that they may be engaged when the two portions of the wall are squeezed together.

7. A disposable urinal which comprises a container having an inverted frusto-conical wall of impermeable relatively flexible sheet material, an impermeable bottom disposed obliquely to the longitudinal axis of the frusto-conical wall so that the wall projects forward of the bottom when the latter is level, and a flap formed integrally with the wall near the upper rim thereof near the rear for fastening adjacent wall portions when they are squeezed together.

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