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DISPOSABLE URINE CONTAINER

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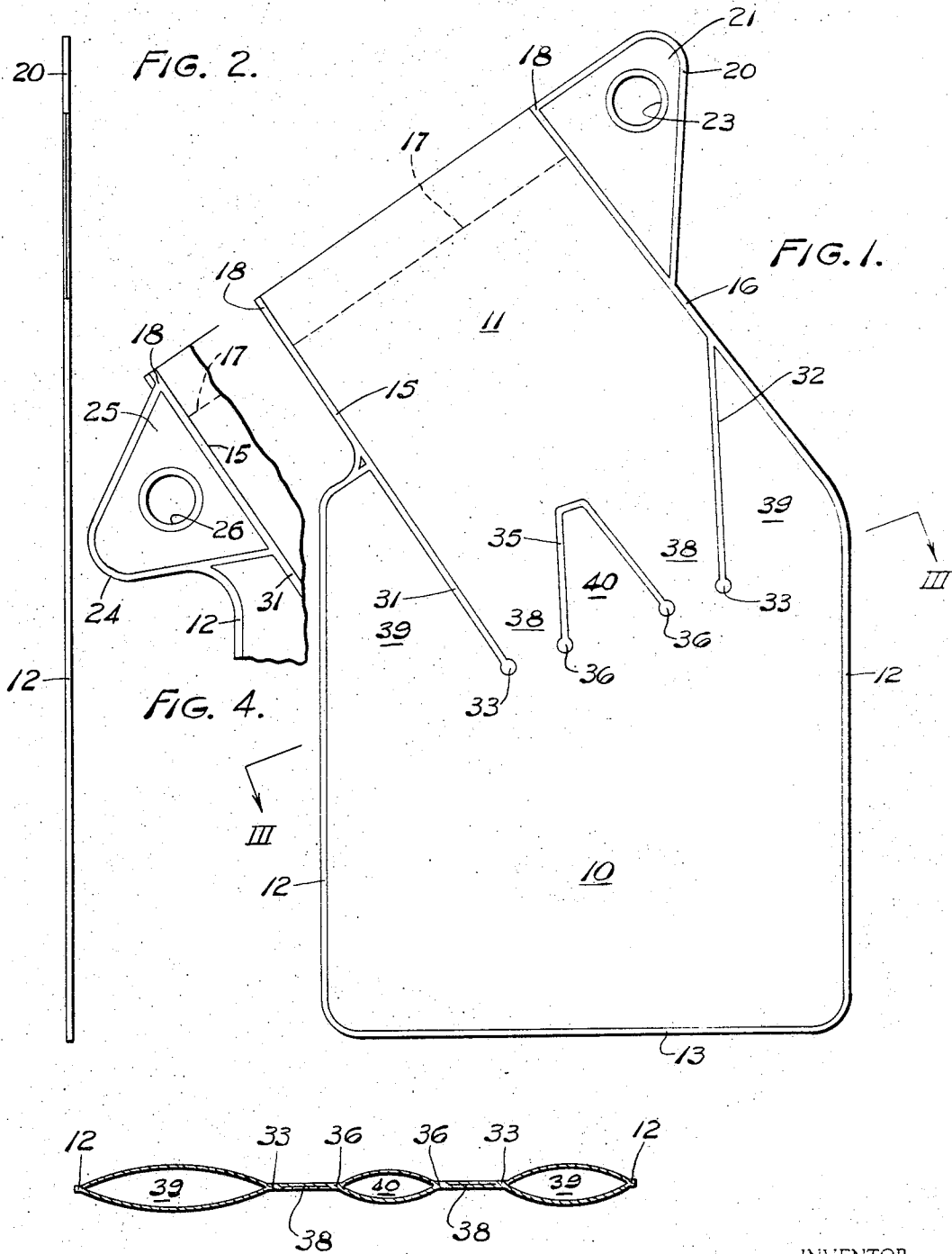


FIG. 3.

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3,403,715

DISPOSABLE URINE CONTAINER

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8 Claims. (Cl. 150-9)

ABSTRACT OF THE DISCLOSURE

A disposable plastic urine bag comprising a body and neck with a self-sealing valve formed across the neck by heat sealing opposite sides of the bag together to form a pair of seams extending inwardly from the bag edges providing a pair of pockets opening toward the body and a generally V-shaped seam diverging downwardly in the inlet between the pair of seams, the seams terminating in a straight line across the inlet and the pressure of fluid in the pockets and cavity of the V-seam laterally tensioning the sides of the bag to preclude outflow of fluid through the inlet.

Background of the invention

This invention relates to a new and useful fluid container and in particular to a portable, disposable urinal.

Containers of this general type are known but problems have remained in connection with the closing and sealing thereof. A self-sealing urinal free of any need for attachment to a separate closure or manipulation of an attached closure arrangement is highly desirable. However, an effective, automatically operable, self-sealing urinal arrangement heretofore has proven difficult of solution.

Summary of the invention

Accordingly, it is a primary object of the present invention to provide a disposable urine container which is automatically self-sealing without manipulation by a user.

Another object of the present invention is to provide a self-sealing disposable urine container which is compact, readily stored and can be carried about inconspicuously.

Still another object of the present invention is to provide a self-sealing disposable urine container adaptable for convenient use by a user in prone, sitting or standing position.

Yet another object of the present invention is to provide a self-sealing disposable urine container which is inexpensively and easily constructed.

In one aspect thereof, a disposable urine container of the present invention is characterized by the provision of a flexible bag having normally generally flat side face portions in close juxtaposition, the bag having neck and body portions with the neck portion providing an opening at its outer end, a self closing valve adjacent the inner end of the neck portion providing an inlet into said body portion, the valve including a pair of fluid tight seams joining the side face portions on opposite sides of the inlet and extending to opposite edges of the bag, the valve permitting fluid flow through the inlet into the body portion and automatically closing against the outflow of fluid from said body portion.

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The foregoing and other objects, advantages and characterizing features of the disposable urine bag construction of the present invention are pointed out in the following detailed description of two typical embodiments thereof considered in conjunction with the accompanying drawing depicting the same wherein like numerals represent like parts throughout the various views.

Brief description of the drawing

FIG. 1 is a side elevational view of one form of a disposable urinal constructed in accordance with the present invention;

FIG. 2 is an end elevational view thereof, looking from left to right as view in FIG. 1;

FIG. 3 is a cross sectional view thereof taken about on line III—III of FIG. 1 illustrating the self-sealing action of the inlet arrangement; and

FIG. 4 is a fragmentary elevational view of another form of disposable urinal of this invention, illustrating a different placement of the tab.

Description of the preferred embodiments

Referring to the drawings, there is shown a urine container constructed in accordance with the present invention comprising a bag of flexible, waterproof material, such as polyethylene, formed to provide a body portion 10 and a neck portion 11. The bag is conveniently fabricated by heat sealing together two sheets of bag material cut to the shape indicated in FIG. 1 completely and continuously along the opposite side edges 12, the bottom edge 13 and the opposite side edges 15 and 16 of neck portion 11 to thereby provide a normally flat, planar bag with its sides in close juxtaposition when not in use, as seen in FIG. 2.

The sheets of material are cut so that neck portion 11 inclines upwardly toward the left hand edge of the bag, as seen in FIG. 1, and in the plane of the bag, the outer end of neck portion 11 being open and providing an access opening into the bag. The two sheets of material are turned inwardly at the opening, prior to heat sealing, to form oppositely disposed inner cuffs 17 having their lateral edges sealed with the edges 15, 16 of neck portion 11, as indicated at 18. The sheets also are cut to provide tab formations which are heat sealed together about their peripheries as shown at 20 in FIG. 1, to form a tab 21 projecting laterally from the upper, outer edge of neck portion 11 adjacent the opening between cuffs 17. The tab formations have registering openings, the peripheries of which are sealed together to provide an opening 23 through tab 21.

In the form illustrated in FIG. 4, the sheets of material are cut to provide tab formations which are heat sealed together at their peripheries as at 24 to form a tab 25 projecting laterally from the lower, inner edge of neck portion 11, adjacent the opening between cuffs 17. These tab formations also have registering openings with the peripheries thereof heat sealed together to provide an opening 26. The two forms of bag illustrated differ only in the relative placement of the tabs 21, 24 as shown in FIGS. 1 and 4 for reasons as will presently appear.

A self-sealing valve is formed at the inner end of neck portion 11 and provides an inlet into body portion 10. The valve comprises a series of fluid tight, heat sealed seams joining the side faces of the bag inwardly of the edges thereof and arranged to permit inflow of fluid be-

tween the seams and to prevent outflow of fluid automatically without any manipulation or handling of the bag. To this end, a pair of seams 31 and 32 extend downwardly and inwardly, as illustrated in FIG. 1, from the respective side edges 15 and 16 of neck portion 11 and terminate in enlarged, laterally spaced, heat sealed areas or beads 33 to comprise an inlet area therebetween into body portion 10. Seam 31 is a continuation of the seam on edge 15, while seam 32 extends inwardly from the seam of edge 16 toward seam 31, being joined to edge seam 16 in the manner of a continuing branch thereof. A continuous seam 35, in the outline form of an inverted, truncated V, joins the opposite side faces of the bag between seams 31 and 32, with the downwardly diverging legs of the V seam terminating in enlarged, heat sealed areas or beads 36 adjacent beads 33. A pair of funnel configured inlet openings 38 are thus formed between seams 31 and 32 and the legs of seam 35.

As seen in FIG. 1, the reinforcing beads 33 and 36 on the end of their respective seams lie on a straight line which extends in the plane of the bag between its edges 12 and, in the form of bag herein illustrated, as inclined relative to both the body 10 and the neck 11 of the bag. Also it will be noted that edges 15 and 16 are not parallel.

Seam 31 and its reinforcing bead 33 form a channel-sectioned pocket 39 with the adjacent edge 12 of the bag while seam 32 and its bead 33 form a similar channel or pocket with the adjacent edges 12 and 16. Seam 35 and its beads 36 form a cavity or pocket 40 between its legs, the pockets 39 and 40 being formed on the neck side of the line through beads 33 and 36 and opening into body portion 10, for reasons as will presently appear.

Prior to use, the entire bag is flat with its opposite sides lying against each other whereby the bag can be stored in a minimum of space. The bag can also be folded upon itself to provide a compact package whereby one or more thereof can easily fit within a pocket and be carried about by an individual in an inconspicuous manner.

In use, the opposite sides of neck portion 11 are spread apart forming a funnel, and fluid flows from neck portion 11 into body portion 10 through inlet openings 38. After use, the bag can be simply placed on its side, prior to disposal. Even if the bag should be tipped upside down, or inadvertently dropped, the valve formation will automatically prevent outflow of fluid from bag portion 10. This occurs because with the bag on its side fluid in body portion 10 will accumulate in pockets 39 and cavity 40 and will spread apart the side face portions of the bag in these areas. This spreading action tensions the side face portions of the bag at paired inlets 38, between beads 33 and 36, as indicated in FIG. 2. In other words, the sides of the bag are tensioned along a straight line passing through beads 33 and 36 and, since the beads join the opposite side portions of the bag together, these tensioned side portions come together to provide an effective seal between beads 33 and 36 preventing outflow of fluid through inlets 38. Spreading of the side faces between beads 36 and between beads 33 and the side edges of the bag tends to pull beads 36 toward each other and beads 33 toward the bag edges. This, in turn, tends to pull beads 33 and 36 away from each other stretching or tensioning the sheet material therebetween to effectively seal the inlet openings against outflow. Should any fluid remain in neck portion 11, it will be trapped by the returned cuffs 17.

Thus, no handling or manipulation of the bag is required to seal its contents, and the bag is sealed automatically and effectively regardless how it is handled.

With tab 21 positioned along the upper inclined edge of neck portion 11, as seen in FIG. 1, the bag can be held by tab 21 in a generally upright position with its opening and neck inclined as illustrated for convenient use by an individual in either a standing or sitting position, with the neck portion 11 providing a substantially downwardly directed conduit into body portion 10. The tab placement

illustrated in FIG. 4 is particularly suitable where the bag is for use by an individual in a prone position. When the bag is held by tab 25, it will assume a generally horizontal position with neck portion 11 again providing a substantially downwardly directed conduit into body portion 10.

Reverse flow of liquid from body portion 10 is effectively precluded even when the bag is held in an "on edge" position, because pockets 39 are provided on the opposite side edges thereof in position to tension the adjacent inlet against the outflow of fluid.

It is thus seen that the objects of my invention are fully accomplished and that the foregoing provides a disposable urinal which is automatically self-sealing, compact, easily stored and can be inconspicuously carried about by a user thereof. The two forms of self-sealing bag illustrated herein adapt the same for use by individuals in either prone or upright positions and, with the cuffed opening, the bag will not drip or otherwise allow outflow of fluid therefrom.

If desired, a sponge or other material can be provided in body portion 10 to absorb liquid therein.

Having thus described and illustrated two preferred forms of the present invention, it will be understood that such description and illustration is by way of example only and that such modifications and changes as may suggest themselves to those skilled in the art are intended to fall within the scope of the present invention only by the appended claims.

What I claim as new is:

1. A disposable fluid container comprising a flexible bag having normally generally flat side face portions in close juxtaposition, said bag having neck and body portions with said neck portion providing an opening at its outer end, a self closing valve adjacent the inner end of said neck portion providing an inlet into said body portion, said valve including a pair of fluid tight seams joining said side face portions on opposite sides of said inlet and extending to opposite edges of said bag, said seams forming with said edges a pair of pockets opening toward said body portion on opposite sides of said inlet, the pressure of fluid within said pockets tensioning said side face portions across said inlet, said valve permitting fluid flow through said inlet into said body portion and automatically closing against the outflow of fluid from said body portion.

2. A container according to claim 1 including another fluid tight seam joining said side face portions of said bag spaced between said pair of seams to provide a pair of inlet openings on opposite sides of said other seam, said other seam being formed to provide a cavity opening toward said body portion.

3. A container according to claim 1 including another fluid tight seam joining said side face portions of said bag spaced between said pair of seams to provide a pair of inlet openings on opposite sides of said other seam, the ends of all of said seams lying in said inlet substantially in a straight line extending between the edges of said bag in the plane of said bag.

4. A container according to claim 3 wherein said other seam forms a cavity opening into said body portion, said paired seams forming with said edges a pair of pockets on opposite sides of said inlet, also opening into said body portion, the pressure of fluid within said pockets and said cavity tensioning said side face portions across said inlet openings.

5. A container according to claim 1 wherein said flat side portions have inwardly turned cuffs at said outer end opening into said neck portion.

6. A container according to claim 1 wherein the edges of said neck portion incline in the plane of the bag toward one of the side edges of the bag and provide an inclined opening at its outer end, said bag including a tab projecting from the inclined edge of said neck portion remote from said one side edge and adjacent said opening.

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7. A container according to claim 1 wherein the edges of said neck portion incline in the plane of the bag toward one of the side edges of the bag and provide an inclined opening at its outer end, said bag including a tab projecting from the inclined edge of said neck portion on the same side as said one side edge and adjacent said opening.

8. A container as set forth in claim 1, said bag being formed of normally flat synthetic plastic sheet material heat sealed together to provide said seams.

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References Cited

UNITED STATES PATENTS			
2,036,845	4/1936	Young	150—2.1
2,800,269	7/1957	Smith	229—62.5
3,189,252	6/1965	Miller	150—9
3,313,472	4/1967	Tjerneld	229—62.5
3,263,903	8/1966	Waller et al.	229—62.5

10 DAVID M. BOCKENEK, *Primary Examiner.*

U.S. DEPARTMENT OF COMMERCE

PATENT OFFICE

Washington, D.C. 20231

**UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION**

Patent No. 3,403,715

October 1, 1968

Charles P. Trudel

It is certified that error appears in the above identified patent and that said Letters Patent are hereby corrected as shown below:

In the heading to the printed specification, line 4, "Automatic" Sprinkler Corporation" should read -- "Automatic" Sprinkler Corporation of America --.

Signed and sealed this 24th day of February 1970.

(SEAL)

Attest:

Edward M. Fletcher, Jr.

Attesting Officer

WILLIAM E. SCHUYLER, JR.

Commissioner of Patents