Aug. 31, 1965 D. M. OLSON 3,203,007

PORTABLE-COLLAPSIBLE TOILET

Filed June 24, 1963

FIG.1

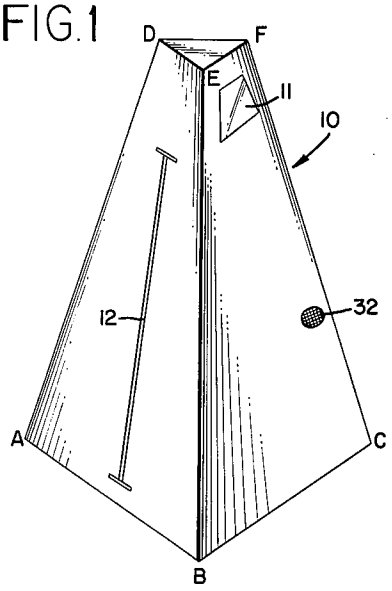

FIG.2

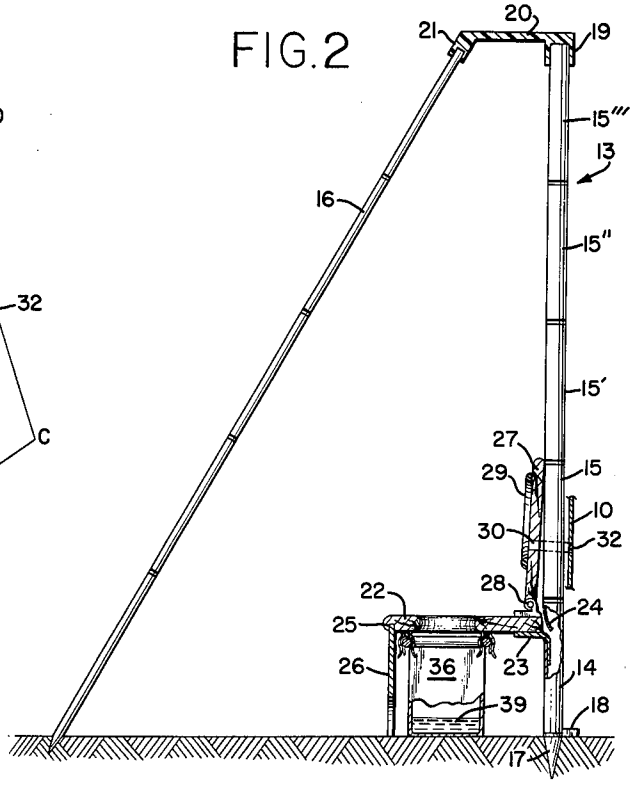

FIG.3

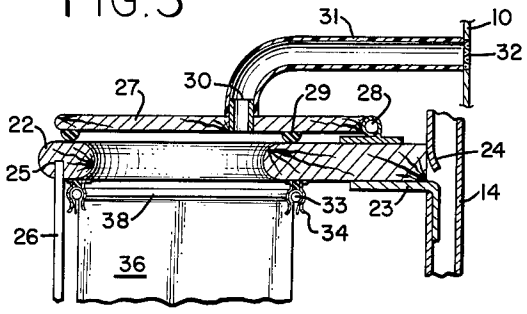

FIG.4

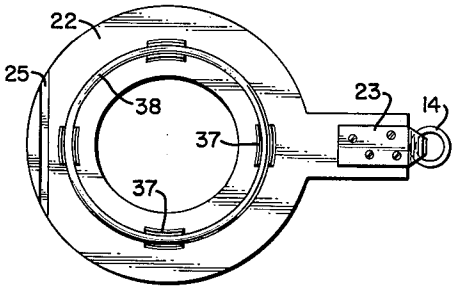

FIG.5

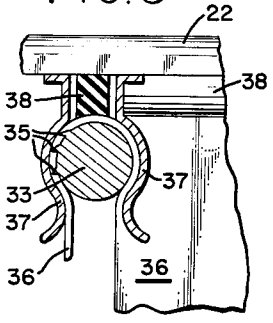

FIG.6

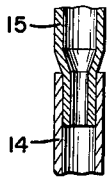

FIG.7

INVENTOR

DONALD M. OLSON

BY Donald E. Payne

ATTORNEY

United States Patent Office 3,203,007 Patented Aug. 31, 1965

3,203,007

PORTABLE-COLLAPSIBLE TOILET

Donald M. Olson, 613 Pinon Drive, P.O. Box 2165, Santa Fe, N. Mex.

Filed June 24, 1963, Ser. No. 289,872
6 Claims. (Cl. 4—116)

This invention relates to an improved camper's toilet and it pertains more particularly to a temporary toilet structure offering a remarkably high degree of cleanliness, privacy and protection, which structure may be quickly and easily erected or disassembled and packed into a luggage-sized carrier.

An object of the invention is to provide a simple, economical, temporary toilet structure which insures privacy, which can be easily erected by man, woman or child and which will fully meet their requirements. A further object is to provide a portable toilet structure in which there is no possibility of the seat tipping or moving with respect to the unit. Another object is to provide a structure which will not only keep out wind, rain and insects but which will vent to the outside any odors from the refuse container and supply fresh air thereto while the structure is not in use. Other objects will become apparent from the following detailed description.

Briefly, the invention may be described as toilet seat and lid therefor mounted above an annular or closed angular support for a plastic bag which extends upwardly through, across, and downwardly around the outside of said support and which is held in sealed position below the seat opening. The seat-support-bag structure is set up inside an opaque or translucent (but not transparent), waterproof tent which is provided with an entrance slit held normally in closed position, the tent being supported over a frame comprising a substantially vertical pole, a plurality of inclined poles, and a tie plate for securing their upper ends. All of the poles are in sections about 16 to 22 inches long tapered or swaged at one end so that the sections may be secured together. The lowest section of the vertical pole is provided with a foot-rest for pushing the pole down and then holding it, and with a bracket or other holding means for holding one end of the seat in a fixed upright position with respect to the tent frame. The front end of the seat is preferably held up by a panel which provides two front legs therefor and which also functions to hide from view the refuse-containing plastic bag. When the lid is closed, it too is sealed against the seat by a gasket or other means. A flexible, preferably bellows-shaped tube is secured at one end to the edge of a corresponding opening in the back or upper part of the tent, said opening being covered by a screen to keep insects out, and removably attached at its other end to a tube which provides an opening through the lid so that when the lid is closed, all odors are vented outside the tent. It is very easy to set up or to take down the described structure, even without the use of any tools or accessory materials. When it is disassembled and packed in a bundle, the structure occupies a space no larger than an ordinary piece of hand luggage and the bundle is very light and easy to handle. Other features of the invention will become apparent as the detailed description of a preferred example thereof proceeds.

In the accompanying drawings, which form a part of this specification and which illustrate a preferred example of the invention:

FIG. 1 is a view of the tent structure,

FIG. 2 is a vertical section showing the seat structure in relationship to the tent-supporting frame,

FIG. 3 is a larger sectional view of the seat structure,

FIG. 4 is a bottom view of the seat showing the sealing gasket, support-holding clamps and panel-holding slot,

FIG. 5 is a sectional detail of the clamp holding the bag-containing support against the rubber seal,

FIG. 6 is a sectional detail showing the joint between the tube sections which form the poles for the tent-holding frame, and

FIG. 7 is a front view of the panel supporting the front end of the seat.

The toilet structure is housed in a tent **10** (see FIG. 1) which may be of canvas or other waterproof fabric or of a plastic film or sheet, the tent material being non-transparent but preferably translucent or opaque with translucent areas, preferably in its upper part as represented by translucent window **11**. The tent in this example is of a triangular frusto-pyramidal shape, angle ACB being a right angle, edge CF being substantially vertical, and edges BE and AD being at an angle with the ground of about 60° (see FIG. 2). The tent may be about 6½′ high and at their lower edges sides AC and BC may be about 40″ long. In the front side ABED of the tent there is a reinforced vertical slit **12** for entrance and exit, the tent preferably being made of a material which will stretch or flex to provide access. The unitary 3-sided tent with its triangular top DEF may be rolled or folded into a compact bundle for transport, and in operative use it simply fits over a frame which will now be described.

The frame consists of three poles and a top plate, each of the poles being formed in sections. The main pole **13** is provided with a tubular steel bottom section **14**, the four upper sections **15**, **15′**, **15″** and **15‴** being aluminum tubes swaged at ther lower ends to fit snugly and/or lock in the upper part of the subadjacent tube section as shown in FIG. 6. Pole **13** holds tent edge CF, pole **16** holds edge AD and the third pole (not shown) holds tent edge BE. When the sections of pole **13** are assembled, the lower point **17** thereof is pushed into the ground by stepping or stamping on a flat foot-rest **18** until it is flush with the ground; thereafter this foot-rest **18**, which is secured to section **14**, prevents the pole from sinking further into the ground when the toilet seat is used. Socket **19** of plastic cover plate **20** fits over the top of pole **13**. Pole **16** is then similarly assembled and is pushed into the ground so that its top will fit into socket **21** and the remaining pole is secured to a socket of similar nature. All of the poles are in sections so that when disassembled, the tubular aluminum sections and triangular cover-plate form a very small and light-weight package.

The toilet seat **22** has a bracket **23** secured to its rear edge and the downwardly extending portion of this bracket fits into an opening **24** formed in tube **14** by slitting and bending as shown in FIG. 3 so that tube **14** holds the rear of the toilet seat at the proper elevation and prevents it from tipping or moving with respect to the tent frame. There is a slot **25** in the bottom front of the seat and this slot holds panel **26** which provides two front legs for the seat and which conceals the refuse-containing plastic bag from view.

Lid **27** is hinged at **28** and is provided with a rubber seal or gasket **29** so that when the lid is closed, there is a seal between lid **27** and seat **22**. A rigid tube **30** extends through the lid **27** near the rear part thereof and a flexible, bellows-shaped tube **31** slidably fits over rigid tube **30** at one end and is secured to the edges of an opening in the tent **10** around a screen **32** so that odors from beneath the seat are vented to the outside without letting insects in.

The support for the plastic bag in this example is an aluminum tube or rod **33** which is bent into an oval shape like that of the toilet seat, which has a downwardly extending end portion **34** which serves as a handle,

and which has outwardly protruding burrs, points or prongs **35** struck out thereon on its outer periphery by a strike die. In use, the open end of a plastic bag **36**, preferably of Mylar film, is passed up through support **33**, smoothed over the upper surface thereof and pressed against prongs **35** or other holding means. The bag-containing support is then pressed upwardly against clamps **37** which spring outwards to permit its entrance and which then hold the support **33**, with the smooth portion of bag **36** extending across it, against the lower resilient surface of rubber ring **38** which is cemented or otherwise secured to the bottom of the seat and which is of the same curvature as support **33** so that it forms a seal around the opening. Clamps **37** may be designed to hold that portion of bag **37** which lies across support **33** directly against the bottom of seat **22**, but rubber ring **38** gives a better seal.

A small amount of liquid **39** may be poured into bag **36** when in use, such for example as water, any known refuse-decomposing liquid, a deodorant, an insecticide or insect repellant, etc. Usually the paper normally employed is effective in preventing such liquid from splashing on a user, but if desired, a non-splash device can be built into the structure. For example, lifting the back of lid **27** may actuate a system of levers (not shown) to slightly elevate the central portion of the bottom of the bag so that the liquid will all run to a narrow outer annulus, and after usage, closing of the lid may insure that the liquid covers any newly deposited material.

While a specific example of the invention has been described in considerable detail, it should be understood that alternative arrangements and structural details may be employed as will be apparent from the foregoing description to those skilled in the art. Support **33** may be substantially rectangular instead of oval and it may be mounted on a bracket like **23** with its front supported on a panel like **26**, in which case the seat **22** could rest on and be supported by the same support that holds the top of bag **36**. Instead of using prongs **35** or roughened areas on the support for holding the top of the bag **36**, the outer periphery of the support may be designed to receive a rubber band or other type of holding means. Instead of sealing the top of the bag by using brackets **37** and rubber seal strip **38**, the support itself may be of rubbery material and it may be held up against the bottom of the seat by "jack-in-the-box" type spring structures or other known means. Vent tube **31** may discharge from the top of the tent instead of from the lower part of the back thereof. In use, the entrance slit may be held closed by nylon tie strings, but the preferred fastener is one in which one side is faced wih a nylon nap or pile while the other is faced with wire loops or burrs (a Velcro fastener) so that when one is pushed against the other, it holds against lateral pulls but can easily be stripped apart. For cold or hot climates a double-walled tent may be used which is quilted and inflatable to provide an insulating dead air space. The panel supporting the front of the seat may be hinged thereto and may have openings to fit around the clamps when it fits against the bottom of the seat. Any other types of clamps or holding means may be used instead of those shown in FIG. 5.

From the foregoing description it will be seen that the objects of the invention have been accomplished.

I claim:

1. A toilet which comprises:

(a) a substantially vertical supporting pole, in sections, with a seat-support near but spaced from its base,

(b) other supports adapted to be removably fastened to the upper part of the pole for supporting a tent containing a translucent area and a normally closed entrance opening,

(c) a panel comprising front legs for holding up the front of a toilet seat,

(d) a support having an opening therethrough for a plastic bag, the open end of said bag extending up through, across and around the periphery of the support when in use,

(e) said toilet seat supported by said vertical pole and by said panel, there being a seal between the lower part of the seat and the portion of the bag which extends across the top of the support, and

(f) a lid for covering and substantially sealing the opening in the seat when said seat is not in use.

2. The structure of claim **1** which includes a tent having a small screened opening, a flexible tube secured at one of its ends to the periphery of said opening, the other of its ends being removably secured to a tube having an opening extending through said lid.

3. The structure of claim **1** in which the bottom section of the vertical pole is sharp at its base and which includes a flat foot-rest secured thereto for pressing the pole into the earth and for limiting the distance the pole may penetrate into the earth.

4. The structure of claim **1** which includes means for holding the support in a fixed position below said seat.

5. The structure of claim **1** which includes a rubber strip interposed between the bottom of the seat and the top of the support.

6. A camper's toilet which comprises a demountable frame and a tent supportable thereon, said frame including a sectional vertical pole designed to hold up the back of a toilet seat, means for holding up the front of said seat, said toilet seat having a lid adapted to fit thereagainst to form a seal therebetween, a plastic bag support, means for holding the supported end of the plastic bag in sealed relationship with the bottom of the seat, and a screened vent for discharging any odors from the vicinity of the seat to the exterior of said tent.

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LAVERNE D. GEIGER, *Primary Examiner.*

LEWIS J. LENNY, *Examiner.*