Feb. 6, 1968 C. W. SWANSON 3,366,976

PORTABLE TOILET UNIT

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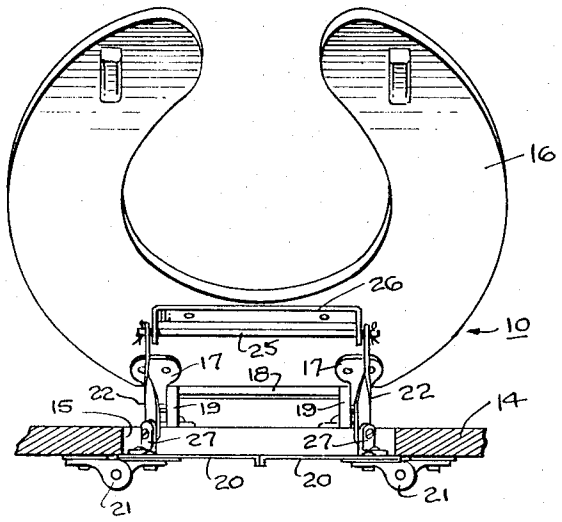



Fig. 9.

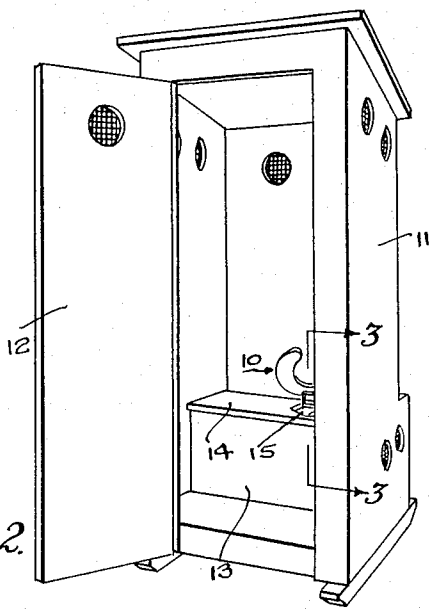



Fig. 2.

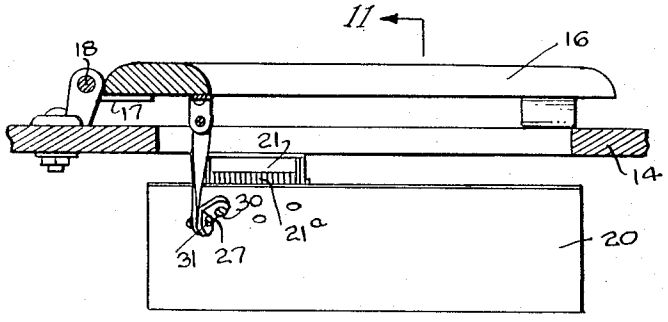



Fig. 10.

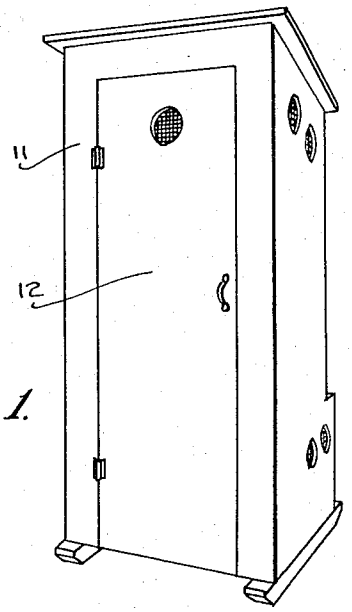



Fig. 1.

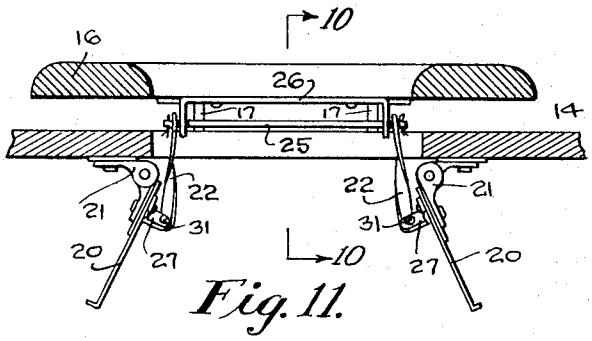



Fig. 11.

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PORTABLE TOILET UNIT

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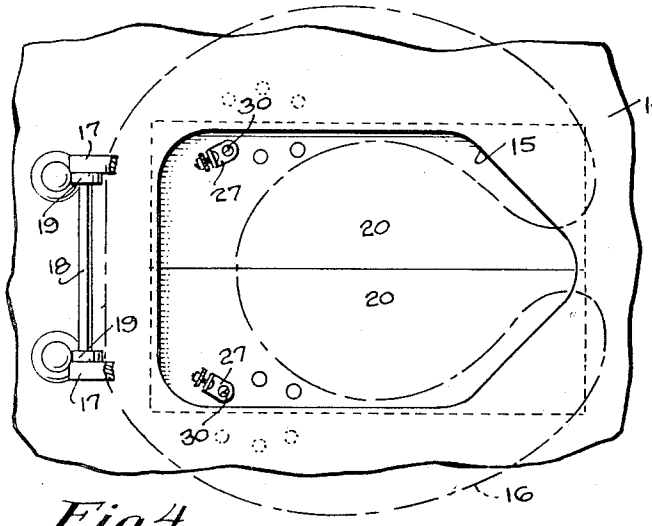



Fig. 4.

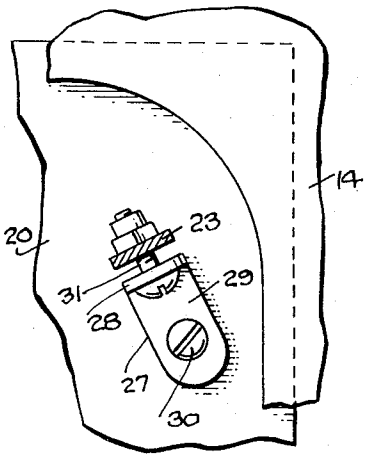



Fig. 8.

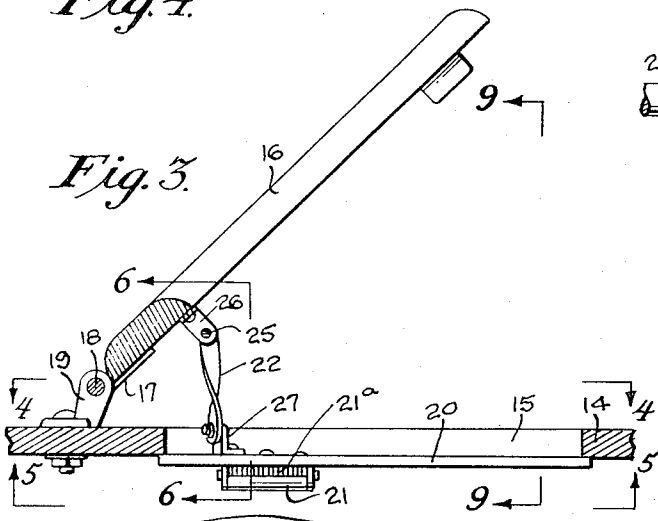



Fig. 3.

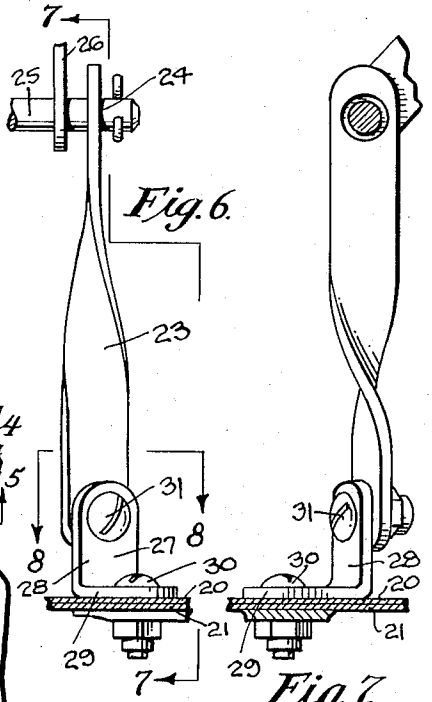



Fig. 6.




Fig. 7.

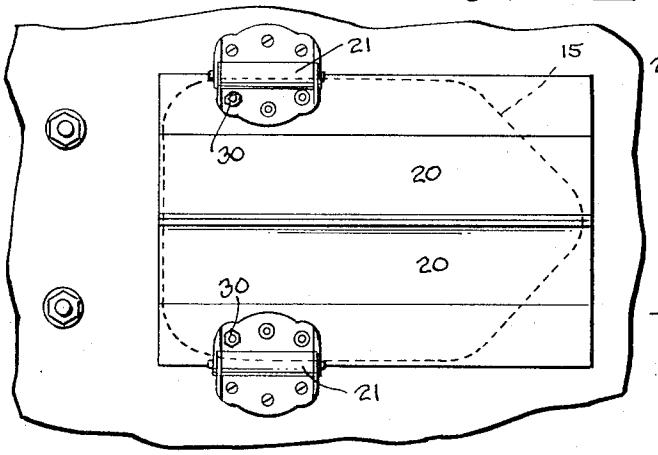



Fig. 5.

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3,366,976

# PORTABLE TOILET UNIT

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3 Claims. (Cl. 4—144)

## ABSTRACT OF THE DISCLOSURE

A sanitary portable toilet unit having an apertured panel upon which is hingedly mounted a toilet seat for registry of its opening with the panel aperture, the panel having also mounted upon its underside a pair of members which are normally spring-pressed into position for closure of the panel aperture and simultaneous raising of the toilet seat. Upon depressing the seat the closure panels are forced open against the closing bias of the closure panels. Special linkage means is provided for interconection of the toilet seat and the panel aperture closure members which are well outside the confines of the toilet seat opening to minimize any likelihood of the unit being soiled during use of the toilet.

This invention relates generally to toilets and more particularly to improvements in portable toilet units which may be readily transported from place to place and installed for use to meet temporary toilet needs in places where sewerage facilities are not immediately available and it is neither desired nor practicable to make provision for a permanent toilet facility.

Among the principal objects of the present invention is to provide a simple and inexpensive toilet unit which is readily transportable and may be quickly set up as needed at any desired location, as at the site of a construction job in progress, and which, due to its construction and arrangement, may be operated for a long period of time under maximum sanitary conditions.

A further and important object of the invention is to provide a toilet unit of the character above described having self-closing means operative automatically in conjunction with a toilet seat which is normally biased into open position to provide an effective closure for the toilet when it is not in use and which closure means are shiftable well out of the area of the central opening through the toilet seat so as to minimize any likelihood of the closure means being soiled during use of the toilet.

Other objects and advantages of the present invention will be apparent hereinafter, it being understood that the present invention consists substantially in the combination, construction, location and relative arrangement of parts, all as described more fully in the following specification, as shown in the accompanying drawings and as finally pointed out in the appended claims.

In the accompanying drawings:

FIGURE 1 is a perspective view showing an enclosure or stall-type housing for the toilet of the present invention;

FIGURE 2 is a perspective view of the toilet unit as it would appear with the housing door open;

FIGURE 3 is a sectional view of the toilet unit as taken along the line 3—3 of FIGURE 2;

FIGURE 4 is a partial top plan view of the toilet unit showing the same with parts of the hinged toilet seat broken away for clarity of illustration;

FIGURE 5 is a bottom plan view of that portion of the unit which is shown in FIGURE 4;

FIGURE 6 is a detail view as taken along the line 6—6 of FIGURE 3;



FIGURE 7 is an elevational view of the detent of FIGURE 6 as taken along the line 7—7 of FIGURE 6;

FIGURE 8 is a partial plan view as taken along the line 8—8 of FIGURE 6;

FIGURE 9 is a front elevational view of the toilet seat in its raised position, said view showing parts of the toilet unit in transverse section, as taken along the line 9—9 of FIGURE 3;

FIGURE 10 is a longitudinal cross-sectional view of the toilet unit as taken along the line 10—10 of FIGURE 11; and

FIGURE 11 is a transverse cross-sectional view as taken along the line 11—11 of FIGURE 10.

Referring now more particularly to the drawings, it will be observed that the toilet facility of the present invention, designated generally by the reference numeral 10, is adapted to be housed within a stall-type enclosure 11 as shown in FIGURES 1 and 2, which enclosure, provided with a door 12 for privacy, may be of any desired construction for quick and easy assembly and disassembly at any convenient location. This housing essentially includes within its interior a hollow box-like structure 13 having a normally horizontally disposed top panel 14 which is suitably cut-out to provide an opening 15 therethrough. The apertured top panel 14 may be hinged by any suitable means (not shown) to enable it to be swung open to afford access to the interior of the structure 13 in which is removably disposed a suitable toilet waste receptacle (also not shown).

The opening 15 in the top panel 14 is substantially of the same size as that of the top of a conventional toilet bowl. Hingedly supported upon this apertured top panel 14 is a conventional toilet seat 16 having laterally spaced hinge elements 17—17 pivotally journalled upon a hinge bar 18, which latter in turn is supported between laterally spaced hinge brackets 19—19 secured to the top panel 14.

The opening 15 in the panel 14 is adapted to be closed by a pair of hinged closure members 20—20 each of which is of a rectangular shape and size to underlie and close one-half of the opening 15 when the members swing into horizontal, coplanar relation as shown in FIGURES 5 and 9, in which position the inner edges of the members 20—20 extend in substantially abutting relation along the central medial line of the opening 15. Each of these bottom closure members 20—20 is hingedly secured to the under surface of the apertured panel 14 by a conventional screen door type hinge 21 having spring means 21*a* which operates to resiliently bias the hinged member upwardly into a horizontal position underlying the apertured panel 14.

As most clearly appears in FIGURES 3 and 4, these spring-pressed hinges 21—21 for the closure members 20—20 are mounted well toward the rear end of the opening 15 in the panel 14 so that they underlie the top-mounted toilet seat 16 when the latter is swung into lowered horizontal position as shown in phantom in FIGURE 4. The closure members 20—20 are swingable downwardly, when the toilet seat 16 is depressed, into substantially parallel relation to straddle the opening 15 of the panel 14 against the normal bias of the hinges 21—21 tending to swing the members into their coplanar, closed relation.

This downward swinging movement of the closure members 20—20 to uncover the opening 15 is effected automatically upon movement of the toilet seat 16 into its horizontal, i.e. use position, through the intervention of linkages 22—22 interconnecting the toilet seat 16 and the hinged closure members 20—20. These linkages, one at each side of the toilet seat, operate in unison to effect simultaneous operation of the closure members 20—20, each linkage including a strap-type link 23 having its

upper end pivotally connected, as at **24**, to one end of a rod **25** which is carried by a U-shaped bracket **26** fixed to and extending transversely across the underside of the rear end portion of the toilet **16**. The rod **25** is so disposed that the links **23—23** depend therefrom in substantial vertical alinement with the rear ends of the hinges **21—21** for the closure members **20—20**, the lower ends of the links being respectively connected to the hinges **21—21** through the intervention of L-shaped connectors **27—27** each having angularly related portions **28** and **29**. Preferably, the portions **28** of these connectors **27—27** are each secured to the inner leaf of each hinge **21** by the same bolt, such as that designated **30**, which secures said hinge leaf to its associated closure member **20**, while the portions **29** of said connectors are respectively pivotally connected to the lower ends of the links **23—23** by pivot bolts **31**.

It will be noted that when the toilet seat is depressed into its lowered use position, it necessarily swings about the transversely extending horizontal axis of the toilet seat hinge bar **18**. At the same time, however, the closure panels **20—20** swing into their open position about the horizontal axes of their spring-pressed hinges **21—21** which extend normal to the axis of the seat hinge bar. In order to permit simultaneous swinging movement of the toilet seat and the closure members about their orthogonally related swinging axes, the links **23—23** are each twisted lengthwise so that their opposite ends are respectively in position to permit simultaneous pivoting of the toilet seat **16** and of the bottom closure members **20—20** about their respective angularly related pivotal axes, namely, those of the rod **25** and the connector pivot bolts **31**. Thus, downward thrust of the toilet seat results in simultaneous downward and outward movement of the closure members to freely uncover the opening **15** in the panel **14** for communication with the waste receptacle (not shown) stationed in the structure **13**. When the toilet seat is not in use, it is automatically returned to its raised position as shown in FIGURES 3 and 9 by the spring-pressed hinges acting through the linkages **22—22** simultaneously as the closure members **20—20** are swung, also under the influence of the spring-pressed hinges, into their closed, coplanar relation.

It is important to note that the operating linkages interconnecting the toilet seat and the bottom closure members are so disposed as to be outside of the central open area of the toilet seat and are thus always effectively covered by the seat against contact with the toilet waste, thereby providing maximum sanitary use of the toilet facility.

It will be understood that the present invention is susceptible of various changes and modifications which may be made from time to time without departing from the general principles or real spirit of the invention and it is accordingly intended to claim the same broadly, as well as specifically, as indicated by the appended claims.



What is claimed as new and useful is:

**1.** A toilet unit of the character described comprising, in combination, a hollow structure for receiving therewithin a receptacle for toilet waste material, said structure having an apertured top panel, a toilet seat hingedly mounted upon said top panel with its central opening in registry with the aperture in said top panel, a pair of closure members respectively hinged to the underside of said top panel at opposite sides of its aperture for swinging movement into coplanar, substantially abutting relation to closely underlie and close the panel aperture, spring-pressed hinge means for normally biasing said closure members into said aperture-closing position, and linkage means interconnecting said toilet seat and said hinge means, said linkage means being operative upon downward movement of said toilet seat into use position to swing said closure members downwardly and outwardly against their normal aperture-closing bias into substantially parallel positions extending normal to the plane of said top panel to open the aperture therethrough, said hinge and linkage means being all respectively disposed well toward the rear end and at opposite sides of said aperture so that they underlie the portions of the toilet seat which marginally define the opening therethrough, said linkage means including a pivot rod extending transversely across the rear portion of the toilet, a pair of link members having corresponding ends thereof pivotally mounted upon said pivot rod at opposite ends thereof, and pivot means respectively connecting the opposite ends of said link members to said closure members.

**2.** In a toilet units as defined in claim **1** wherein the opposite ends of the link members pivot about orthogonally related axes and said link members are in the form of strap members each having their opposite ends angularly related to provide for simultaneous swinging movement of the toilet seat and closure members about said orthogonally related axes.

**3.** In a toilet seat as defined in claim **1** wherein said last-mentioned pivot means at each side of the toilet opening is commonly connected to the corresponding side closure member and its spring-pressed hinge means.


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