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(73) Titulaire(s) : POLYSHEET A/S
41-43, Marielundvej
2730 HERLEV
(Danemark)

(72) Inventeur(s) :
SOLBECK Peter
203 Rungsted Strandvej
2960 RUNGSTED KYST
(Danemark)

(74) Mandataire : CABINET CAZENAVE
B.P. 500
YAOUNDE - Cameroun

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(57) Abrégé :

A latrine device for field use comprising a plate (1) with a drainage hole (7) which is placed over a latrine hole (2) or trench dug in the ground. The plate has foot supporting areas (30) on each side of the drainage hole (7).

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A LATRINE DEVICE FOR FIELD USE

The present invention relates to a latrine device for field use, in particular for temporary aid purposes.

In connection with the accommodation of victims of catastrophes of nature and war acts in camps, which often hold a very big number of people and which may be very primitively established in respect of sanitary conditions, bad sanitary conditions without access to water constitute a considerable health risk and often entail epidemics also on account of bad nutrition and inadequate access to medicine and medical attention.

Particularly such bad sanitary conditions present especially in case of bigger reception camps the risk of a considerable number of victims.

Various embodiments of latrines are known from US Patents Nos. 1,575,131, 1,574,339, 3,410,092, and 3,203,007, which describe primitive portable latrines in connection with foldable tents suited for camping, military exercises and the like. These latrines are, however, space demanding even when stowed and are, therefore, less suited for use in connection with war acts, catastrophes of nature, etc., where a big number in a relatively short time is to be transported to often remote places. Due to the often impassable country this transport is normally carried out by air plane, and low weight in combination with good stackability is in this connection an important property, which distinguishes the latrine device according to the invention from the prior art.

The object of the present invention is to present a solution which under the circumstances constitutes an improvement for use in places, where it is not possible to establish water flushing toilets or to deliver and erect more effective chemical closets.

The latrine device according to the invention is with a view to this characteristic in comprising, for use as a

cover plate over a latrine hole or trench dug in the ground, a substantially rectangular, comparatively thin, but rigid, moulded plate of plastics provided with a drainage hole and foot supporting areas on each side of the drainage hole.

With a plate of the type described an improved covering of a latrine hole or a latrine trench is attained, whereby the risk of infection is considerably reduced.

To ensure a minimum of space requirement during transport a preferred embodiment of the latrine device according to the invention is characteristic in that the plate is provided with a pendent, circumferential skirt with oblique walls and a supporting rib structure underneath. Thus, the plate constitutes a rigid, but light construction which is well suited for use under primitive conditions.

For hygienic reasons the latrine device may comprise a lid for covering the drainage hole. By placing this lid after use over the drainage hole made in the plate, a closing of the latrine hole in the ground is created in combination with the plate, and the risk of infection is further reduced.

Another embodiment of the latrine device according to the invention is characteristic in that at the corners the plate is provided with connecting members for a supporting frame for a shielding enclosure of tarpaulin for the provision of a cabin closed at least at the side walls.

The connecting members may according to the invention comprise flanged sockets with tapering diameter extending from the surface of the plate, the skirt and said flanged sockets being constructed with a view to an organized stacking of a number of plates. Hereby it becomes possible to stack a considerable number of plates, which may be moulded plastic plates, on top of each other.

In connection with this second embodiment the supporting frame may be provided with vertical corner tubes for connection with said flanged sockets and upper and

lower horizontal fastening tubes for the shielding enclosure, said vertical and horizontal tubes being mutually connected by means of splicing sleeves. Such tubes may be made from plastics and with standard dimensions, which makes them both cheap in manufacture and low in weight. Additionally, the detachable supporting frame for the shielding enclosure makes it possible to transport the second embodiment of the invention comparatively easy in considerable numbers even to places, which can only be reached by air plane.

The shielding enclosure may according to the invention advantageously be made from reinforced plastic foil with embedded eyelets for connection with fastening members for fastening the enclosure to the supporting frame.

Apart from functioning as a visual shielding from other persons, such tarpaulins, which are a relatively cheap standard article used i.a. to a great extent for the covering of scaffolds, give a fair protection against the weather.

The invention will be described in detail in the following with reference to the drawing, in which

Fig. 1 is a plane view of a simple embodiment of the invention,

Fig. 2 is a sectional view along the line II-II of Fig. 1,

Fig. 3 is a plane view of a lid for the covering of a drainage hole in the embodiment shown in Fig. 1,

Fig. 4 is a sectional view along the line III-III in Fig. 3,

Fig. 5 is a perspective view of a second embodiment of a latrine device according to the invention,

Fig. 6 is a vertical sectional view of the second embodiment,

Figs. 7 and 8 are examples of fastening members for connection of a shielding enclosure with the supporting frame for the latrine device according to the second

embodiment, and

Fig. 9 shows an example of an arrangement with a considerable number of erected latrine devices according to the second embodiment under primitive camping conditions.

Figs. 1 and 2 show a simple embodiment of the latrine device according to the invention comprising a plate 1 designed to function as a cover plate for the covering of a latrine hole 2 dug in the ground or a trench dug for the same purpose, which makes it possible to erect a number of latrines side by side. The plate 1 is provided with a substantially centrally mounted drainage hole 7 and with foot supporting areas 30 on each side of the drainage hole 7 for the person using the latrine.

The plate 1 may be a plate moulded from a suitable plastic material and with a comparatively small thickness in order to attain a low weight. To get sufficient rigidity and to simultaneously make it possible to stack a considerable number of plates on top of each other with a view to transport, the plate 1 is in the embodiment shown moulded with an integral, pendent skirt 3 with oblique side walls. The plate shown in Figs. 1 and 2 is moreover designed with a supporting rib structure 31 on the under side of the plate 1. The surface of the plate 1 is substantially plane, but slopes for cleaning reasons from the foot supporting areas 30 towards the drainage hole 7. For the covering of the drainage hole 6 after use the plate 1 may comprise a detachable lid 33 having substantially the same shape as the drainage hole 7 in the plate 1. The lid shown in Figs. 3 and 4 for use in connection with the first embodiment of the invention has on the top side a tubular handle 34 having a length, which makes it easy to use. The handle 34 is mounted by means of resilient pins 35 extending from the top side of the lid, said pins being provided with a hook 36 which at the mounting engages a hole (not shown) in the handle 34. Thus the handle 34 can be demounted for transport.

Moreover, the plate 1 may according to a second

embodiment of the invention shown in Figs. 5 and 6 in consideration of the user be provided with a rib contouring 5 with a treading or foot plate 6 placed around said drainage hole 7.

A further supporting of the plate 1 according to the second embodiment can be attained by means of separate crossbeams 8, for instance of wood, which in connection with the erection is placed under the plate 1 between opposite walls of the pendent skirt 3.

According to the second embodiment of the invention shown in Figs. 5 and 6 the plate 1 is connected with a supporting frame for a shielding enclosure for the formation of a latrine cabin, and the plate 1 is in this second embodiment provided with flanged sockets 9 extending from the four corners of the generally rectangular plate 1. For the above-mentioned stacking reasons it is preferable that the diameter of the flanged sockets 9 is tapering, i.e. the end part having smaller diameter than the part integral with the plate 1, whereby the flanged sockets on stacked plates may come to rest in each other. With a view to fastening to the ground the plate 1 may in connection with the pendent skirt 3 be provided with a horizontal circumferential edge flange 4.

Moreover, the plate 1 is provided with a passage 24 for a vent tube 25, which from the dug out latrine hole 2 is passed up through the cabin with an outlet opening situated above the upper edge of the shielding enclosure. The vent tube 25 may advantageously be made from heat-absorbing material, for instance black or dark plastic, whereby a chimney effect improving the venting from the latrine hole 2 is attained and consequently a reduction of obnoxious smells in the cabin itself.

The supporting frame may be a tube frame made in a manner known per se from plastic tubes in standard dimensions and comprising vertical corner tubes 10 fitting on the flanged sockets 9 and lower and upper horizontal fastening tubes 11, 12 connected with the vertical corner

tubes 10 by means of tube splicing sleeves 13 known per se.

The shielding enclosure is preferably made from a tarpaulin 14 of reinforced plastic foil, for instance polyethylene foil, of the standard make normally used for instance for the covering of scaffolds, and which during the manufacture is provided with embedded eyelets 15 in form of flat plastic rings which can be used for the fastening of the tarpaulin 14 to the lower and upper horizontal fastening tubes 11, 12 in the supporting frame.

Such a shielding enclosure may as shown in Fig. 7 be fastened to the horizontal fastening tubes 11, 12 in the supporting frame by means of a fastening member comprising a plug-like member 16 which is placed in an eyelet 15 and which has a head 17 abutting the outer side of the tarpaulin 14. In the end part 18 extending through the eyelet and on the opposite side of the tarpaulin a hole 19 is provided, through which a resilient loop 20 is taken, said loop being of the same design which is known per se from DK Patent Application No. 933/92. The loop 20 may be provided with a locking member 21 at one end, said locking member having a hole 22 for receiving the opposite, free end of the loop, whereby the locking member 21 and the loop 20 may be designed with corresponding engagement members, for instance in form of a resilient catch and a toothing for securing the tarpaulin 14 to the fastening tube 11, 12.

As for the cabin which in the second embodiment shown is made without ceiling, it may when fastening the tarpaulin 14 to the upper fastening tubes 12 be preferable to bend the upper edge of the tarpaulin around the tube 12. With a view to this the tarpaulin 14 may be provided with two rows of eyelets 22 comparatively close to each other, which by a bending of this kind will be brought to a position substantially opposite one another. A suitable connecting member may in this case as shown in Fig. 8 be a substantially H-shaped anchor 23, the transverse leg of which is inclined relative to the legs, which at the mounting are brought to abut against one side of each of

the eyelets 22 substantially facing each other.

The simple construction of the latrine device according to the preferred embodiment and the complete detachability of the latrine device according to the second embodiment makes it possible to easily transport a considerable number of latrines with or without supporting frame as stacked plates and demounted supporting frames even with a limited transport capacity to remote and isolated areas.

The erection of the latrine may be performed easily and quickly also by unskilled persons, and the latrines may likewise easily be moved, when the capacity of the latrine in question is fully exhausted.

According to requirement a considerable number of cabins 26 may as shown in Fig. 9 be erected side by side and in several rows, for each of which a common latrine trench has been dug.

C L A I M S

1. A latrine device for field use, in particular for temporary aid purposes, c h a r a c t e r i z e d in comprising, for use as a cover plate over a latrine hole or trench dug in the ground, a substantially rectangular, comparatively thin, but rigid, moulded plate of plastics provided with a drainage hole and foot supporting areas on each side of the drainage hole.

2. A latrine device according to claim 1, c h a r a c t e r i z e d in that the plate is provided with a pendent, circumferential skirt with oblique walls and a supporting rib structure underneath.

3. A latrine device according to claim 1 or 2, c h a r a c t e r i z e d in that the surface of the plate slopes from the foot supporting areas towards the drainage hole.

4. A latrine device according to claim 1, 2 or 3, c h a r a c t e r i z e d in comprising a lid for covering the drainage hole.

5. A latrine device according to claims 1-4, c h a r a c t e r i z e d in that at the corners the plate is provided with connecting members for a supporting frame for a shielding enclosure of tarpaulin for the provision of a cabin closed at least at the side walls.

6. A latrine device according to claims 2 and 5, c h a r a c t e r i z e d in that said connecting members comprise flanged sockets with tapering diameter extending from the surface of the plate, the skirt and said flanged sockets being constructed with a view to an organized stacking of a number of plates.

7. A latrine device according to claim 5 or 6, c h a r a c t e r i z e d in that the plate is provided with a passage for a vent tube, which from the dug out latrine hole or trench is passed up through the cabin with an outlet opening situated at a height above the shielding enclosure.

8. A latrine device according to claim 6, c h a r a c t e r i z e d in that the supporting frame is provided with vertical corner tubes for connection with said flanged sockets and upper and lower horizontal fastening tubes for the shielding enclosure, said vertical and horizontal tubes being mutually connected by means of splicing sleeves.

9. A latrine device according to any of the preceding claims, c h a r a c t e r i z e d in that the shielding enclosure is made from reinforced plastic foil with embedded eyelets for connection with fastening members for fastening the enclosure to the supporting frame.

10. A latrine device according to claims 8 and 9, c h a r a c t e r i z e d in that said fastening members comprise plug-like members mounted in said eyelets and with a head abutting the outer sides of the enclosure and at the inner side a protruding side portion in connection with a resilient loop for surrounding the fastening tubes.

11. A latrine device according to claims 8 and 9, c h a r a c t e r i z e d in that the enclosure is passed around the upper fastening tubes and provided with two rows of eyelets, which, when passed around the tubes, are brought into a position substantially opposite one another for mutual connection by means of a connecting member.

12. A latrine device according to claim 10, c h a r a c t e r i z e d in that said connecting member is a substantially H-shaped anchor, the transverse leg of which is inclined relative to the legs which at the mounting are brought to abut against one side of each of the eyelets facing each other.

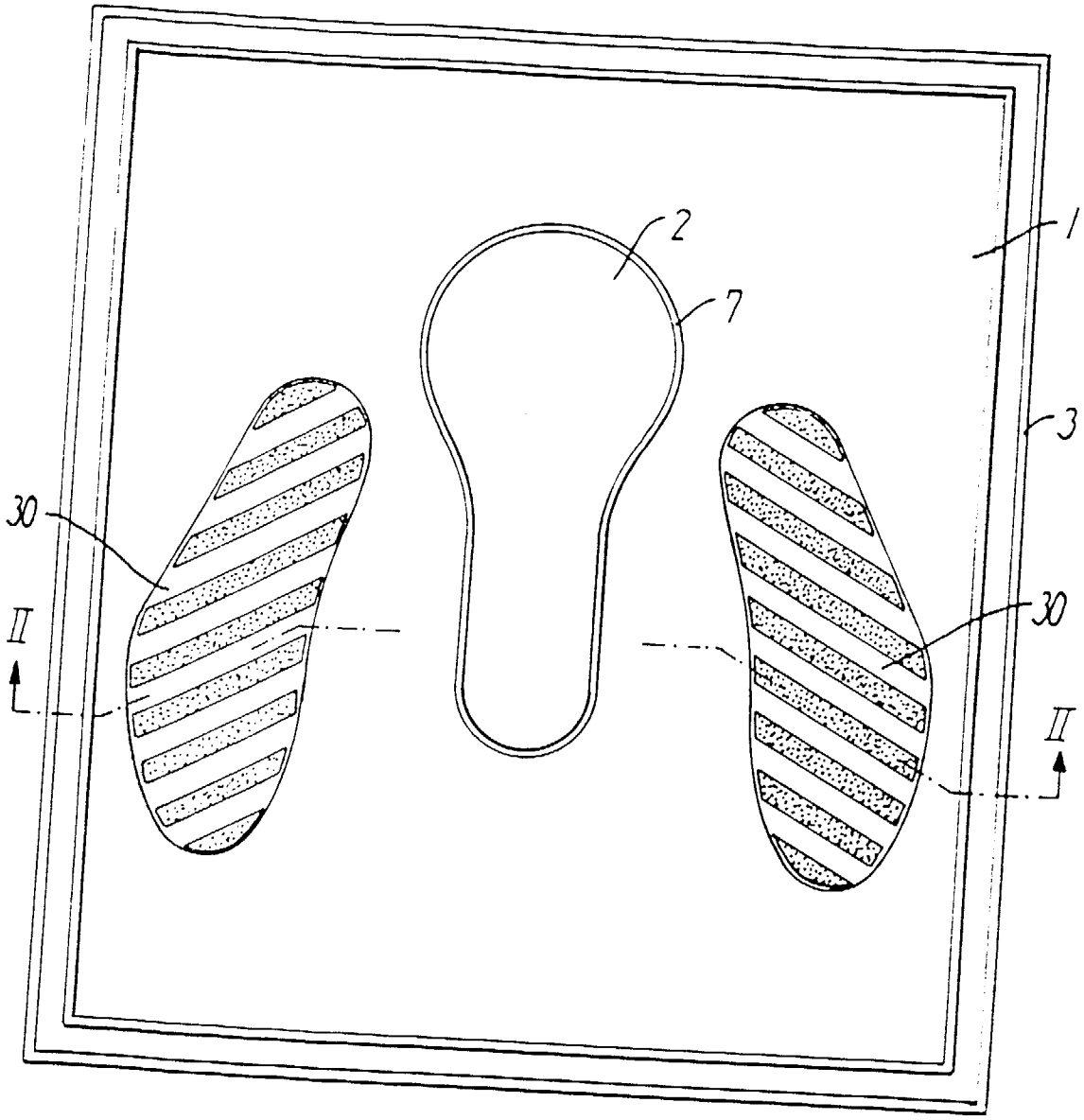

FIG.1

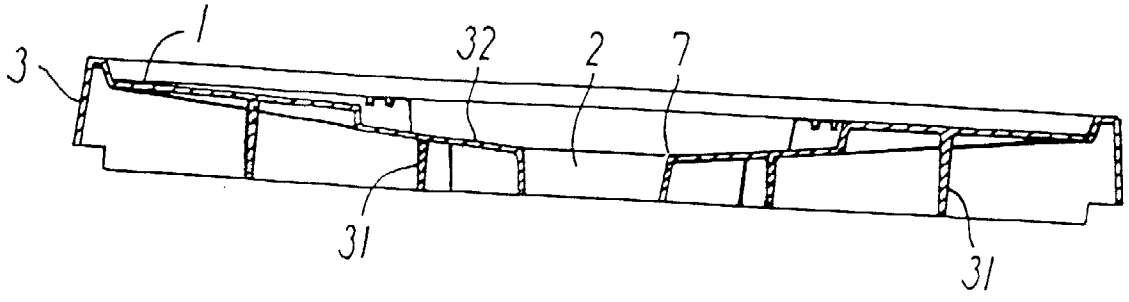

FIG.2

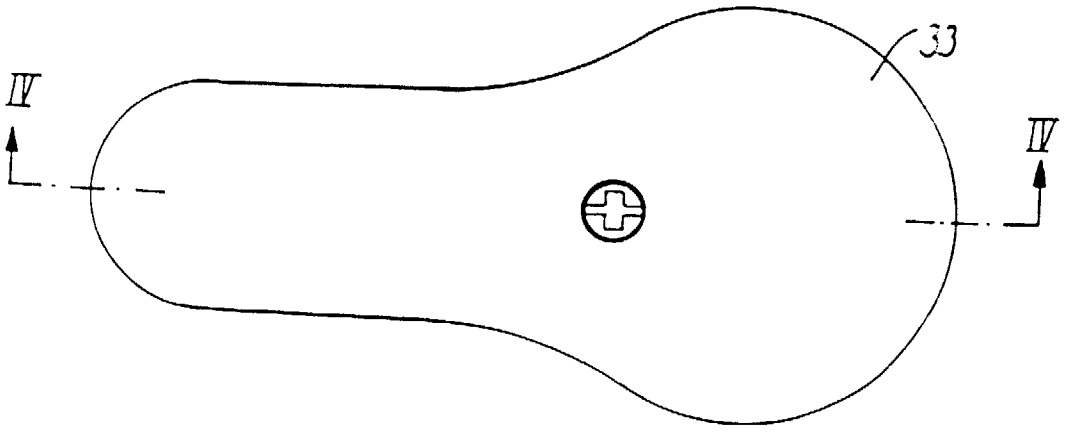

FIG.3

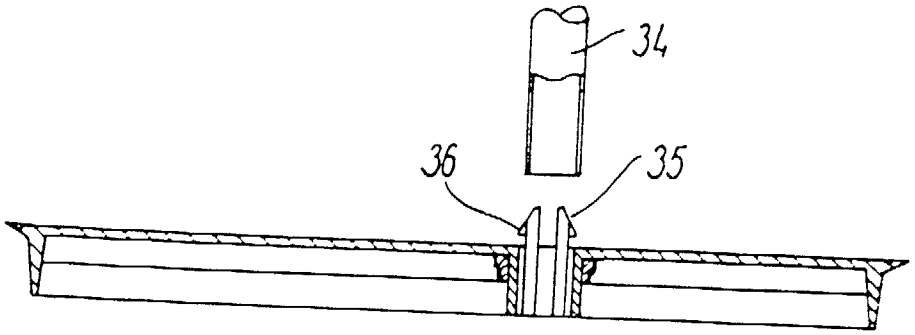

FIG.4

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Planche III—o

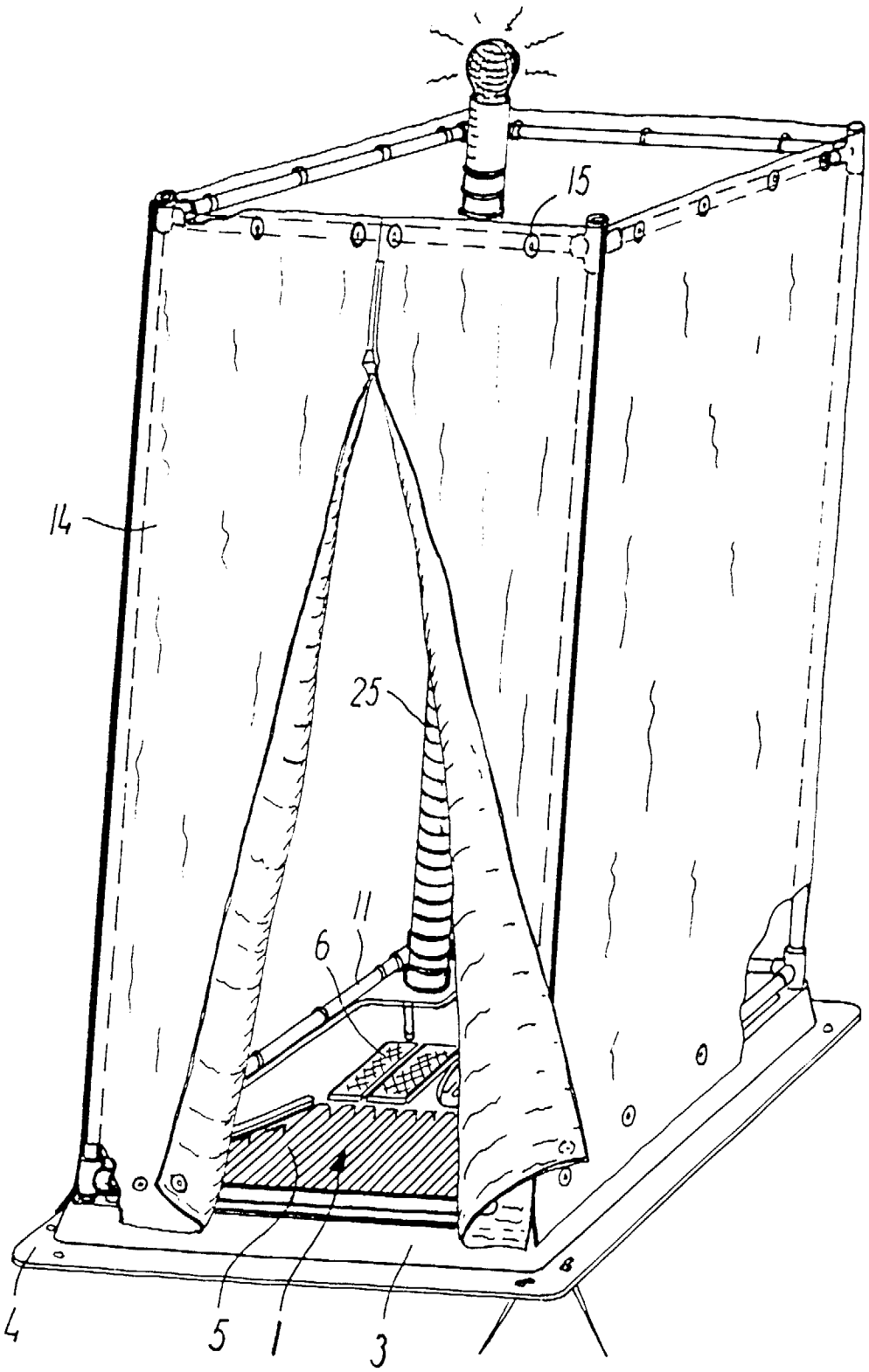

FIG.5

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Planche IV-6

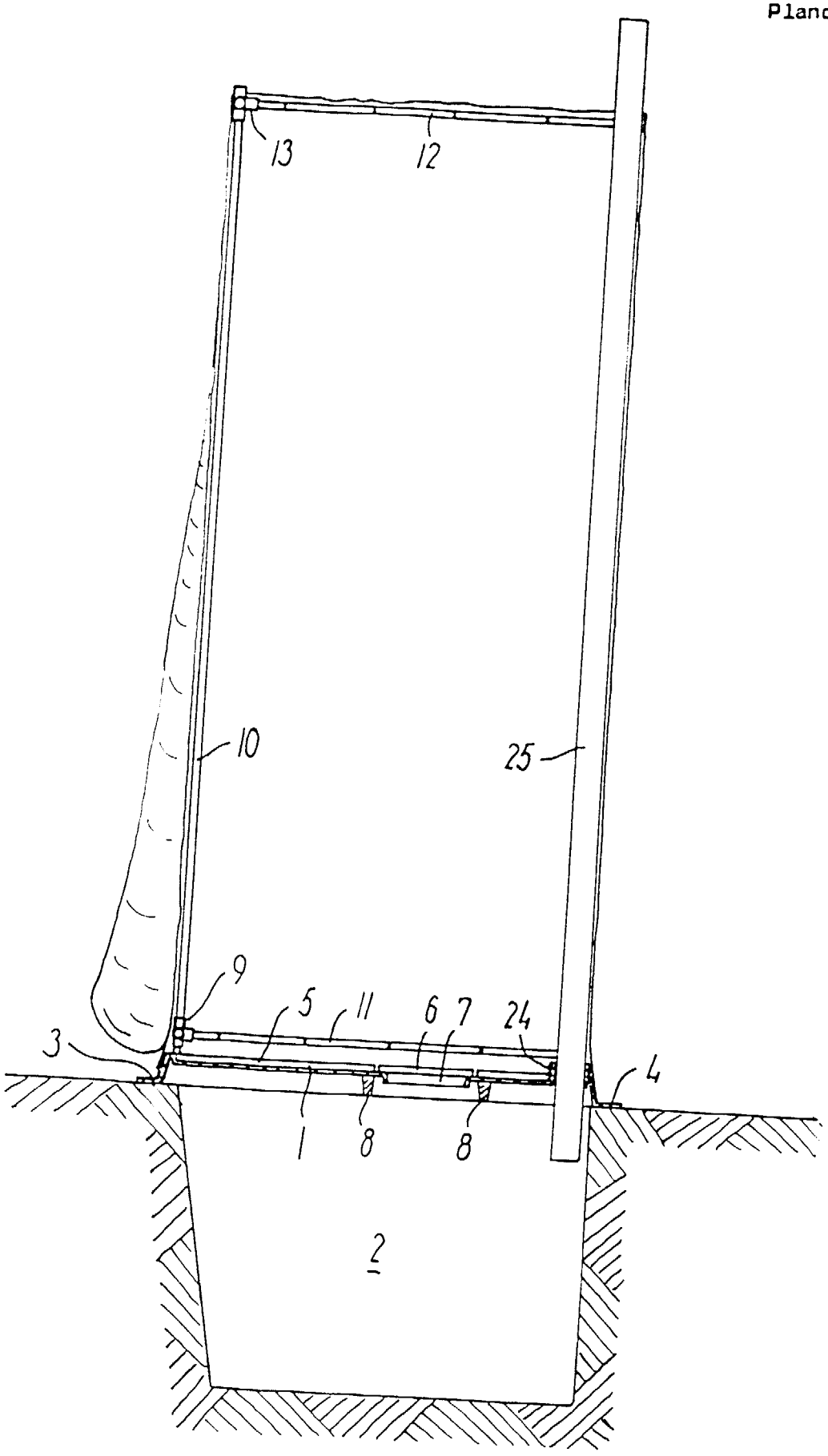

FIG.6

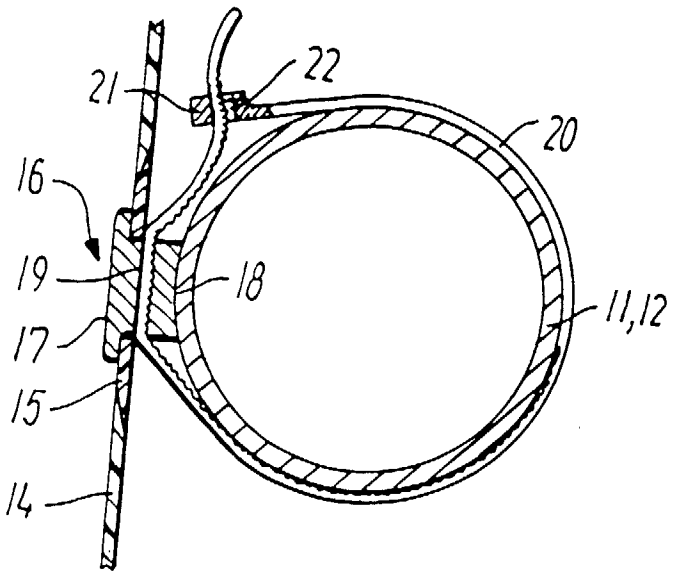

FIG. 7

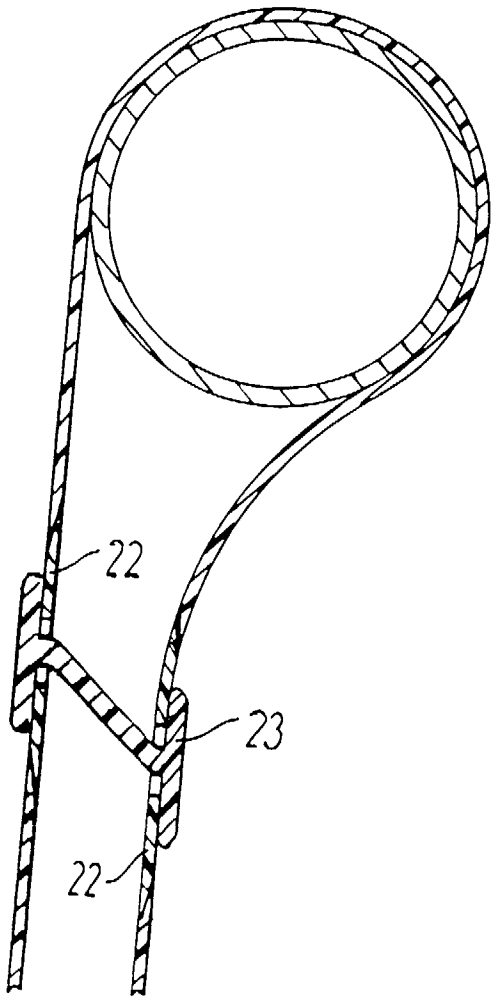

FIG. 8

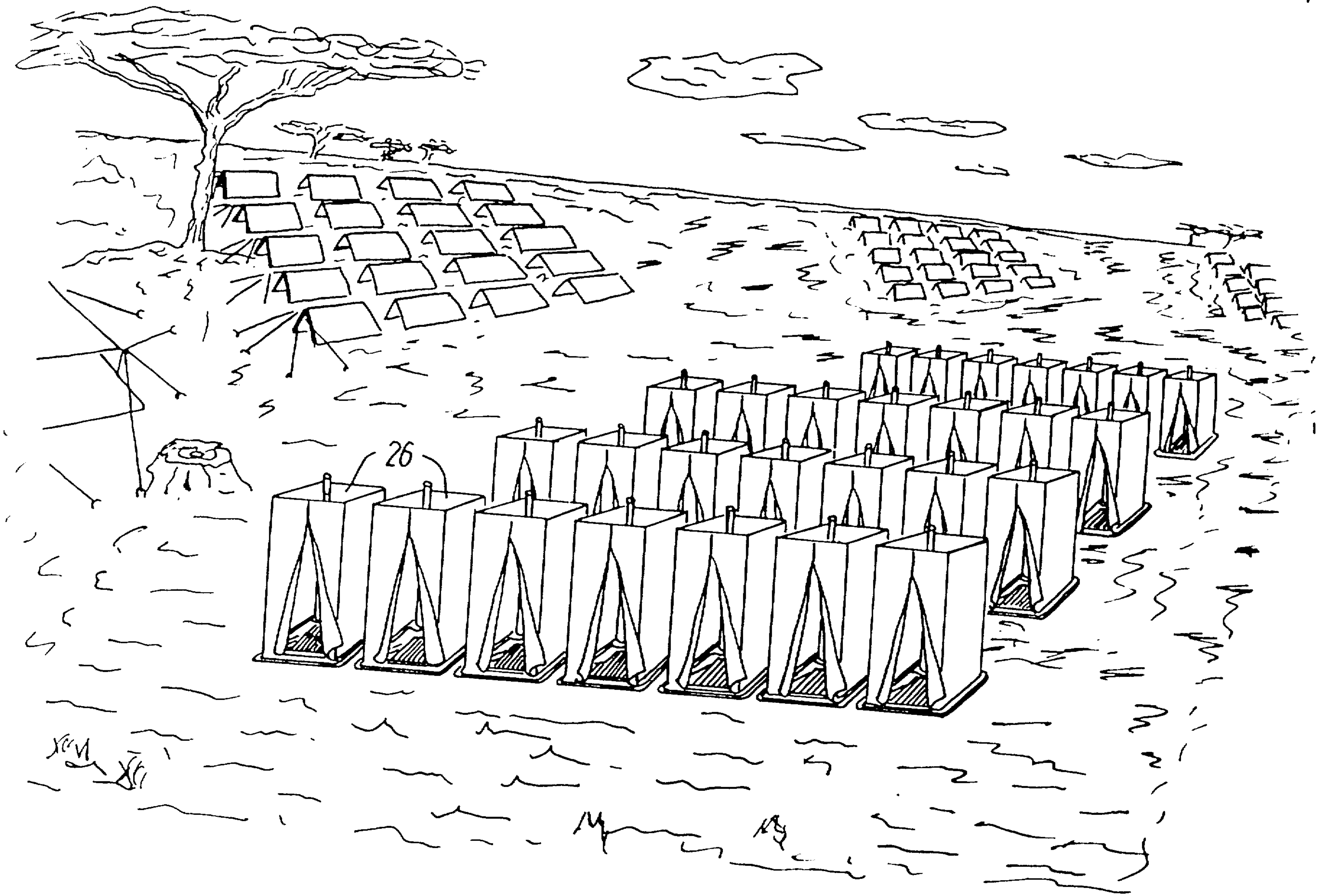

FIG. 9