SQUATTING TOILET EQUIPPED WITH FOLDED URINAL PAN.

(57) Abstract: The squatting toilet comprises a platform(2) mountable over the toilet bowl(1) and formed with the main opening(3) there through aligned with the toilet bowl, the middle front part of the platform is occupied by urinal pan, at the sides of the pan pivotally mounted the side shields(13), in front of the urinal pan and the platform pivotally mounted the front shield(9), in the platform adjacent the external faces of side shields there are small openings(14) through which the external faces of side shields connected by ropes(15) with external parts of front shield, the springs(12) attached with one end to front shield while the other end to front edge of the platform. Legs(5) mounted pivotally to under face of the platform, the springs(6) attached with one end to legs and with other end to the platform.
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.
Squatting toilet equipped with folded urinal pan

The present invention relates to squatting toilet combined with usual toilet bowl and equipped with folded urinal pan preventing the splashing of urine outside the pan. The author of the present invention described earlier the squatting toilet (US Patent number 4,819,277), equipped with urinal pan. However the previous device as is now clear to the author has the drawbacks of low hygienic standards. And these relates to the fact that concomitantly with defecation the urinary bladder is empties and splashes of urine soil the legs and clothes of defecating man and spread all over the surface of the squatting toilet. The same drawbacks are typical for all squatting defecation toilets. In previous US Patent described a urinal pan preventing only the splashing of urine outside the squatting toilet, however as noted it is also necessary to prevent splashing of urine on the legs and closes of the user and the surface of squatting toilet itself. In order not to interfere with rising on the squatting toilet it is provided a solution for folding of the pan. The author of this invention described in several medical articles the importance of squatting defecation posture for the health of human being.

Brief summary of the invention

According to present invention there is provided a squatting toilet comprising a platform mountable over a toilet bowl and formed with a main opening there through aligned with the toilet bowl, said platform being constructed to support a user in a natural squatting defecation posture over said opening and over the toilet bowl, the middle front part of a said platform in front of a main opening occupied by a pan located to serve as a urinal pan when the user is in the squatting position, the surface
of the floor of the urinal pan is lower than the upper surface of the rest parts of the
platform and inclined downwardly towards the main opening thus forming a channel
for drainage of urine through the urinal pan into main opening and toilet bowl, said
urinal pan include side and front shields which in operative position prevent urine
splashing outside of the urinal pan, the side shields mounted pivotally to said platform
at the borders of the pan to either operative approximately vertical or inoperative
horizontal position, said side shields mounted to platform in the space approximately
from main opening to front edge of the platform, the said front shield mounted
pivotally in front of the urinal pan and the platform to either operative inclined
forwardly or to inoperative folded to under face of the platform position, said platform
comprise small openings adjacent the external faces of side shields through which the
external faces of side shields are connected by ropes with external parts of front shield
thus securing concordant transverse of front and side shield from inoperable to
operative position and vice versa, the urinal pan comprise springs which attached with
one end to external surfaces of front shield and with the other end to front parts of the
said platform, said springs serve for fixation of the front shield and concomitantly the
side shields in an operative position, said squatting toilet further includes two or more
legs pivotally mounted to under face of said platform for supporting it and the user
thereon when the platform is in operable horizontal position, said squatting toilet
further comprise springs fasten with one end to legs and with the other end to
platform on the sides of axles attaching the legs to platform, said springs serve for
attracting the legs backwardly to under face of platform in inoperable position or
forwardly to engage the floor and to support the platform in an operable position.
The urinal pan further includes a water discharge nozzle in form of pipes extending along the outer ends of shields and is formed with a plurality of water discharge openings for rinsing the pan into toilet bowl.

**Brief description of the drawings**

Fig 1 illustrates a toilet bowl with an attached platform in horizontal operable position. The front part of platform occupied by urinal pan in operable position with the side shields in vertical position and front shield in inclined forwardly position. Fig 2 illustrates the squatting toilet of Fig 1 while the urinal pan is in inoperable position with the shields in inoperable folded position. Fig 3 illustrates the squatting toilet of Fig 1 and Fig 2 with platform in vertical inoperable position.

**Description of a preferred embodiment**

Fig 1 illustrates a squatting toilet in the form of conventional toilet bowl 1 and an attachment in the form of a platform generally designated 2 mountable over the toilet bowl 1 and formed with main opening 3 there through aligned with the toilet bowl. The platform is constructed to support a user in a natural squatting position over main opening 3 and the toilet bowl. The main section of the platform 2 is of generally planar construction except of front middle space 7 in Fig 1 in front of main opening 3. The middle space 7 is the floor of urinal pan. The upper surface of floor of urinal pan is lower then the upper surface of rest parts of platform and inclined downwardly towards main opening 3 thus forming a channel for collecting and drainage of urine through urinal pan into main opening and bowl. The front edge of the floor of urinal pan, which is also the front edge of the platform formed with a raised, inclined
upwardly rim 8 in Fig 2. Adjacent the front edge of the platform and the urinal pan pivotally fixed a plate 9 in Fig 1,2,3 which has raised borders 10 in Fig 1,2,3 except the border 11 in Fig 1 adjacent the rim 8. This border 11 is directed backwardly and exactly coincides with curvature of raised upwardly rim 8. The described plate is a front shield of urinal pan and when in operable inclined forwardly position prevents splashing of urine outside the platform. To either side of front shield attached a spring 12 in Fig 1,2,3. The other end of springs attached to front part of platform. This springs guaranteeing the retaining of the front shield in inclined forwardly as in Fig 1 or folded to under face of platform position as shown in Fig 2,3. The borders of urinal pan occupied by plates 13 in Fig 1,2,3 which are the side shields and continue from main opening 3 to front end of platform. The side shields mounted pivotally to platform by axles 16 and when in operable vertical position as shown in Fig 1 they are prevent splashing of urine on the platform and on the legs of user. There are two small openings 14, Fig 1,2,3 in the platform one on each side adjacent to the external face of side shields. These openings serve for connecting by ropes 15 the external face of the side shields to external parts of front shield. Thus when the front shield pivoted by user to operative inclined forwardly position the rakes stretch and turn the side shields from horizontal folded to vertical operative position. The basis of the side shields on their external face provided with extensions and when the shields in vertical operable position they engage the surface of the platform maintaining the shield in vertical but slightly inclined inside of urinal pan position Accordingly the side shields tend to fold to inoperable horizontal position on the floor of urinal pan. Only the force of springs of front shield secure that the side shields will stay in operative vertical but slightly inclined forwardly position. When user release the front shield it folded to under face
of the platform position as is seen in Fig 2, 3 and the ropes fixing the side shields in operable vertical position are relaxed. Consequently the side shields return spontaneously to their horizontal folded on floor of urinal pan position as seen in Fig 2. The climbing on the platform for assuming squatting posture or getting down the platform possible only when front and side shields are in inoperative folded position. 

The platform mounted pivotally by pins 4 to the rear side of the toilet bowl as is shown in Fig 3. When the platform is in inoperative vertical position as shown in Fig 3 toilet bowl 1 may be used for usual sitting defecation posture.

The squatting toilet further includes two or four legs 5 pivotally mounted to under face of the platform. When the platform is lowered to its operative horizontal position as illustrated in Fig 1, 2 legs would be pivoted forwardly to engage the floor and thereby to support the platform and the user thereon. When the platform is in inoperative vertical position as shown in Fig 3 the legs would be pivoted against the under face of the platform. This is ensured by springs 6 in Fig 1, 2, 3 which are attached with one end to sides of legs 5 and with the other end to the platform at the sides of axles attaching the legs to the platform. When the platform is lifted the center of gravity of legs shifted back and springs attract the legs to the under face of the platform. On the contrary when the platform is lowered the center of gravity of legs shifted forwardly and springs pivot the legs forwardly to engage the floor and thereby to support the platform in operable horizontal position.

The urinal pan is provided with a water discharge nozzle for rinsing it into the toilet bowl 1 via main opening 3 in the platform. The nozzle is in the form of tubes 17 as seen in Fig 1, 2 extending transversely across the free upper ends of shields and is
formed with a plurality of water discharge openings along the length of tubes. Nozzle is connected to the water supply pipe and is controlled by a valve 18 in Fig 1,2.

The manner of using the squatting toilet

The platform has to be pivoted from vertical to horizontal position. The condition for rising on the platform is holding rods fastened to wall in the area of toilet bowl. The user stands with his back to squatting toilet then lift one foot on platform and by leaning on holding rods rise on the platform. All parts of the upper surface of the platform except of urinal pan are at the same level thus the user may put the feet at any most convenient for him position. After assuming squatting posture the user pull the front shield that owing to springs immediately assume inclined forwardly operable position. The side shields due to connection by ropes with front shield turns concomitantly to vertical but slightly inclined inside the pan position. After completion both defecation and urination the user release the front shield, which returns to folded to under face of platform position. As a consequence the ropes connecting the front and side shields are relaxes and the sides shields returns spontaneously to horizontal folded on floor of urinal pan position.

The coming down of the platform may be by two options: 1 After finishing defecation cleaning and dressing the user returns again to squatting position then let down one leg from the platform by leaning on holding rods and then the other one.2. The second options for living the platform is conditioned by using footstool fastened to wall in area of toilet bowl which specially developed for these purpose.

The low part of the footstool in the form of plate fastened permanently to the wall while the upper part also in the form of plate mounted pivotally by pins to upper edge of low part of footstool. A leg mounted pivotally by axles to proximal area of upper
part of footstool. The upper part of footstool may be in vertical parallel to wall
inoperable position with its leg folded on it. When the user pivot the upper part of
footstool to operable horizontal position the leg turned downwardly to engage the
floor and thereby to support the upper part of footstool and the user thereon. The
springs between the edges of leg and upper part of footstool at the sides of axles
attaching the leg to upper part guaranteeing fast turning the leg downwardly to engage
the floor or folding on under face of upper part of footstool position.
Claims

1. A squatting toilet comprise a platform mountable over a toilet bowl and formed with a main opening there through aligned with the toilet bowl, said platform being constructed to support a user in a natural squatting position over said opening and over the toilet bowl, the middle front part of a said platform in front of main opening occupied by a pan constructed to serve as a urinal pan when the user is in said squatting position, said urinal pan include side and front shields which in operative position prevent urine splashing outside the urinal pan, the side shields mounted pivotally to platform at the borders of the pan to either operative approximately vertical or inoperative horizontal position, the front shield mounted pivotally in front of the urinal pan and the platform to either operative inclined forwardly or to inoperative folded to under face of the platform position, said squatting toilet further include springs attached with one end to front part of the platform and with the other end to side parts of front shield, said platform comprise small openings adjacent the external faces of side shields through which the external faces of side shields are connected by ropes with the external parts of front shield.

2. The urinal pan accordingly to claim 1 wherein the surface of the floor of the pan is lower than the upper surface of the rest parts of the platform and inclined downwardly towards the main opening thus forming a channel for drainage of urine through the urinal pan into main opening and toilet bowl.

3. The urinal pan accordingly to claim 1 includes side shields mounted pivotally at the borders of urinal pan in the space approximately from main opening to front edge of the platform, said side shields provided with extensions on basis of there external face
for maintaining the shields when operative in vertical but slightly inclined inside the pan position.

4 The urinal pan accordingly to claim 1,3 wherein a rope connect the side and the front shields through small openings in the platform adjacent to the side shields securing concordant transverse of front and side shields from inoperative to operable position and vice versa.

5 The urinal pan accordingly to claim 1,3,4 wherein the front shield includes springs attached with one end to the external surfaces of front shield and with the other end to front part of the platform and serve for fixation of the front shield and concomitantly the side shields in an operable position.

6 A squatting toilet comprise a platform mountable over a toilet bowl and formed with a main opening there through aligned with the toilet bowl, said platform being constructed to support a user in a natural squatting position over said opening and over the toilet bowl, the middle front part of said platform in front of main opening occupied by a pan constructed to serve as a urinal pan when the user is in said squatting position, said urinal pan include side and front shields which in operative position prevent urine splashing outside the urinal pan, the side shields mounted pivotally to platform at the borders of the pan to either operative approximately vertical or inoperative horizontal position, the front shield mounted pivotally in front of the urinal pan and the platform to either operative inclined forwardly or to inoperative folded to under face of the platform position, said squatting toilet further include springs attached with one end to front part of the platform and with the other end to side parts of front shield, said platform comprise small openings adjacent the
external faces of side shields through which the external faces of side shields are connecting by ropes with external parts of front shield.

7 A Squatting toilet accordingly to claim 6 further includes two or more legs pivotally mounted to under face of platform for supporting it and the user thereon when the platform is in operable horizontal position.

8 A squatting toilet accordingly to claims 6,7 further include springs fasten with one end to legs and with the other end to platform on the sides of axles attaching the legs to platform.
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**
- IPC(7): E04D 11/00
- US CL: 004/234

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**
- Minimum documentation searched (classification system followed by classification symbols)
  - U.S.: 004/237,239,254,905

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used):

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

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<tbody>
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<td>US 4,819,277 A (SIKIROV) 11 April 1989, see entire document.</td>
<td>1-8</td>
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<td>A</td>
<td>US 6,256,800 B1 (ISBIT) 10 July 2001, see entire document.</td>
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