Abstract: The present invention relates to a folding toilet which allows additional space to be created in a small washroom. In particular, the toilet is produced in such a manner that the toilet bowl (1) is able to fold away into a receiving compartment (2) which also comprises a wash bowl (3), when the foldable toilet is not in use.

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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.
FOLDABLE TOILET

This invention relates to a folding toilet which allows additional space to be created in a small washroom. In particular, the toilet is able to fold away underneath a wash basin when not in use.

There are many instances when in buildings it is not feasible to provide a large washroom, and it necessary to fit a wash basin and toilet bowl into a limited amount of space. This is particularly common in places like nursing homes, prisons, hostels, etc., where a number of washrooms are required, but where space is limited.

Generally, the wash basin and toilet bowl are separate constructions within a washroom. This means that when the door to the washroom opens into the room, there is only a very limited amount of floor space left in which a person can manoeuvre. This can be particularly problematic in instances when a person is disabled or otherwise incapacitated.

There have been a number of previous inventions which have attempted to provide a fold away toilet which takes
up less space without a washroom when not in use. However, these systems tend to extremely complicated with the plumbing involved being overly complex to appeal to most perpetual users.

It is a first object of the present invention to provide a toilet that is able to fold away underneath a wash basin in order to create extra space in a washroom.

It is a further object of the present invention to provide a method of attaching a foldable toilet to an existing plumbing system while still allowing the toilet to be able to move back and forth freely.

A further object of the present invention is to provide a folding toilet that is appropriate for use by disabled or otherwise incapacitated persons.

According to the present invention, there is provided a folding toilet comprising a toilet bowl and a receiving compartment, wherein the bowl is within the receiving compartment when in the closed position, and outwith the receiving compartment when in the open position, and wherein the toilet bowl is attached to an existing waste pipe by means of a longitudinally compressible tube which will allow the toilet bowl to move back and forth from the open to the closed position.

Preferably the receiving compartment also comprises a wash basin.

Most preferably the receiving compartment contains the cistern.
Preferably, the receiving compartment is provided with a door mechanism which can be closed to obscure the toilet bowl from view when the toilet bowl is in the closed position.

Most preferably the opposite side of the receiving compartment from which the toilet bowl emerges in the open position comprises an aperture through which the compressed waste pipe may fit.

Alternatively, there is no wall covering present on the opposite side of the receiving compartment to that which the toilet bowl emerges through in the open position.

Preferably the cistern is attached to the toilet bowl by a flexible pipe.

Optionally the toilet may be made of ceramic, metal, plastic or any appropriate material.

Preferably there is a metal plate provided at the lower end of the toilet bowl from which the waste pipe will protrude. This holds the pipes in position in order to prevent undesirable movement of the waste pipe.

Preferably the bowl is provided with a hook or handle that can be used to pull or push the bowl from the open to the closed position or vice versa.

Alternatively the bowl may be provided with a side bar to pull or push the bowl into an open or closed position.
Most preferably the side bar will protrude through an aperture in one of the walls of the receiving compartment, wherein the aperture is present along the width of the receiving compartment wall in a direction that is parallel to the movement of the toilet bowl when it moves from its open to closed position and vice versa. Optionally the toilet bowl may be provided with ground engaging wheel means.

Preferably the ground engaging wheel means may be provided with rails onto which they slidably connects.

Preferably the movement of the bowl from the open to the closed position occurs by manual means.

Alternatively the movement of the bowl from the open to the closed positions may occur by mechanical means.

A further alternative is that the movement of the bowl from the open to the closed position may be provided by electronic means.

Preferably the longitudinally compressible sewage pipe is telescopic.

A further option is that the longitudinally compressible sewage pipe is provided with walls that can concertina when the toilet is in the closed position and which are substantially planar when the toilet is in its open position.
Optionally the toilet bowl is provided with temporary seat covers.

Most preferably a temporary seat cover is placed onto the toilet seat as it moves into the open position and is removed as the toilet is taken back into the closed position.

In order to provide a better understanding of the present invention, embodiments will now be described by way of example only, and with reference to the accompanying Figures, in which:

Figure 1 shows a perspective view of the foldable toilet in the open position;

Figure 2 shows a perspective view of the foldable toilet in the closed position;

Figure 3 shows a section view, showing the waste pipe and flush water pipe when the toilet is in the open position;

Figure 4 is a section view, showing the flush water and waste pipe when the toilet is in the closed in the closed position; and

Figure 5 is a section view which shows an alternative waste pipe embodiment.

According to the preferred embodiment of the present invention, there is provided a foldable toilet which comprises both a toilet bowl 1 and a wash bowl 3 in one unit, and wherein the toilet bowl 1 can be moved from an
open to a closed position in order to create extra space
when the toilet is not in use.

As can be seen in Figure 1, the foldable toilet comprises
a toilet bowl 1 and a receiving compartment 2. In the
open position, the toilet bowl 1 is outwith the receiving
compartment 2. The receiving compartment 2 also
comprises a wash bowl 3 and a cistern 4 as part of the
same unit.

Figure 2 shows the toilet in its closed position, where
the toilet bowl 1 is obscured from view, as it is inside
the receiving compartment 2. This leaves the person more
room to use the wash bowl 3 when the toilet bowl 1 is no
longer required.

In the preferred embodiment, the toilet bowl 1 can be
moved from the open to the closed position using a handle
7 located on the toilet bowl 1. As the toilet bowl is
provided on casters 9 in the preferred embodiment, a
simple pull or push on the handle 7 will allow the toilet
bowl 1 to move from one position to another. In order to
prevent any unwanted sideways or up and down movement of
the toilet bowl 1 when moving it from the open to closed
position, the toilet is also provided with guide rails 8
into which the casters 9 fit.

In order for the toilet bowl 1 to move from the open to
closed positions, it is necessary for the waste pipe 5
and flush water pipe 6 to be flexible in nature. Figure
3 shows the pipes in the open position. Preferably the
flush water pipe 6 is made of simple flexible material,
such as the plastics found on a typical garden hose.
This will allow the reasonably small diameter flush water pipe 6 to move with the toilet bowl 1 as it travels from the open to the closed position. The waste pipe 5 is typically of a larger diameter than the flush water pipe 6, and requires to be longitudinally compressible to allow the toilet bowl 1 to move from the open to closed position. As shown in Figure 3 in the open position, the walls of the waste pipe 5 are substantially planar, however in Figure 4 where the toilet is in the closed position, it can be seen that the walls of the waste pipe 5 take on a concertina shape.

In an alternative embodiment, as shown in Figure 6, the waste pipe 5 is telescopic, so that in the open position it is fully extended and in the closed position it is fully closed.

In the preferred embodiment, the movement of the toilet bowl 1 from the open to the closed position is facilitated by manual means by pulling the handle 7. However, in alternative embodiments, the movement may be mechanical or electronic with the toilet bowl 1 being mechanically or electronically pushed or pulled into the open position.

In an alternative embodiment of the toilet, a temporary toilet seat cover is placed onto the toilet bowl 1 as it is moved into the open position and removed from the seat as it is taken back into the closed position.

It can be seen that the embodiments disclosed above are merely exemplary of the invention which may be embodied in various forms. Therefore, the specific structural and
functional details disclosed herein are not to be interpreted as limiting, but merely as a basis for the Claims and for teaching one skilled in the art as to the various uses of the present invention in any appropriate manner.
CLAIMS

1. A foldable toilet comprising a toilet bowl and a receiving compartment, wherein the bowl is within the receiving compartment when the folding toilet is in the closed position, and outwith the receiving compartment when the folding toilet is in the open position, and wherein the toilet bowl is attached to an existing waste pipe by means of a compressible tube which will allow the toilet bowl to move back and forth from the open to the closed position.

2. A foldable toilet as described in Claim 1, wherein the compressible tube is a longitudinally compressible tube.

3. A foldable toilet as described in any of the previous Claims, wherein the receiving compartment also comprises a wash basin.

4. A foldable toilet as described in any of the previous Claims, wherein the receiving compartment contains the cistern.

5. A foldable toilet as described in any of the previous Claims, wherein the receiving compartment is provided with a door which can be closed to obscure the toilet bowl from view when the folding toilet is in the closed position.

6. A foldable toilet as described in any of the previous Claims, wherein the opposite side of the receiving compartment from which the toilet bowl
emerges in the open position comprises an aperture through which the compressed waste pipe may fit.

7. A foldable toilet as described in Claims 1 to 5, wherein there is no wall covering present on the opposite side of the receiving compartment to that which the toilet bowl emerges through in the open position.

8. A foldable toilet as described in any of the previous Claims, wherein a cistern is attached to the toilet bowl by a flexible pipe.

9. A foldable toilet as described in any of the previous Claims, which is made of ceramic, metal or plastic.

10. A foldable toilet as described in any of the previous Claims, wherein there is provided a metal plate at the lower end of the toilet bowl from which the waste pipe will protrude, which is able to hold the pipes in position.

11. A foldable toilet as described in any of the previous Claims, wherein the toilet bowl is provided with a hook or handle that can be used to pull or push the bowl from the open to the closed position or vice versa.

12. A foldable toilet as described in any of the previous Claims, wherein the bowl is provided with a side bar to pull or push the bowl into an open or closed position.
13. A foldable toilet as described in Claim 12, wherein the side bar protrudes through an aperture in one of the walls of the receiving compartment, and wherein the aperture is present along the width of the receiving compartment wall in a direction that is parallel to the movement of the toilet bowl when it moves from its open to closed position and vice versa.

14. A foldable toilet as described in any of the previous Claims, wherein the toilet bowl is provided with ground engaging wheel means.

15. A foldable toilet as described in Claim 13, wherein the ground engaging wheel means are provided with rails onto which they slidably connect.

16. A foldable toilet as described in any of the previous Claims, wherein the movement of the bowl from an open to a closed position occurs by manual means.

17. A foldable toilet as described in Claims 1 to 14, wherein the movement of the bowl from an open to a closed position occurs by mechanical means.

18. A foldable toilet as described in Claims 1 to 14, wherein the movement of the bowl from an open to a closed position occurs by electronic means.
19. A foldable toilet as described in any of the previous Claims, wherein the compressible tube is telescopic.

20. A foldable toilet as described in Claims 1 to 17, wherein the compressible tube is provided with walls that are able to concertina when the toilet is in the closed position, and which are substantially planar when the toilet is in its open position.

21. A foldable toilet as described in any of the previous Claims, wherein the toilet bowl is provided with temporary seat covers.

22. A foldable toilet as described in Claim 20, wherein the temporary seat cover is placed onto the toilet seat as it moves into the open position, and is removed as the toilet is taken back into the closed position.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 E03D11/12 E03D11/02 E03C1/01

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)

IPC 7 E03D E03C

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 practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Date of the actual completion of the international search

4 June 2003

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Name and mailing address of the ISA

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