

A WALL MOUNTABLE SHOWER HEAD

FIELD OF THE INVENTION

The present invention relates to a wall mountable shower head, and in particular although not solely the present invention relates to an improvement to wall mountable shower heads of a kind which when installed cannot be relied on for suicide attempts.

BACKGROUND TO THE INVENTION

Hospitals and prisons are locations where there is a high rate of incidents of suicide and attempted suicide.

It is for this reason that rooms in such institutions, particularly where patients/inmates may reside unsupervised, require careful design in ensuring that nothing can be used to aid suicide.

Such rooms may be provided with washing and bathing facilities including for example shower facilities which must be designed to prevent a person from using such facilities for the purposes of aiding suicide. For a shower room in particular, the design of a shower head must consider the fact that it should not include any sharp edges and should not include any surface relief which would allow for a rope to receive upward support from such a shower head. A shower head must hence be designed to protrude from a wall of a room to a maximum extent to provide an adequate flow of water in a direction which is usable to a person but it should not extend a distance and in manner so as to provide vertical support to a person.

A company called Albert Stirling and Associates indicate on their website www.albertsterling.com that they have available for sale a conical shaped shower head where the base of the cone is mounted directly onto a vertical surface and wherein a downward facing surface of the conical surface includes apertures through which a flow of water can be established. The upper surface of the cone is downward sloping, thereby preventing a rope from being hooked by the shower head.

However the downward sloping surface intermediate of the openings and base of the cone is a path along which any water which does not project from the showerhead, is able to travel. This water can travel to the base and since the base is attached to the vertical wall such water can run onto the wall. It would be an advantage in any such shower head being mounted directly to the wall, for such water to be prevented from running down the wall of the shower.

Accordingly it is an object of the present invention to provide a wall mountable shower head which achieves the above-mentioned advantage or which at least provides the public with a useful choice.

BRIEF SUMMARY OF THE INVENTION

Accordingly the present invention consists in a wall mountable shower head directly mountable to a vertical wall comprising:

a 3 dimensional body member having a planar external surface for engagement with said vertical wall and a wall projecting external surface at least one conduit through said 3 dimensional body having an inlet for engagement with a water delivery conduit and at least one outlet, said outlet provided at said wall projecting external surface to in use project water through said outlet in a downward direction, wherein a lower region of said wall projecting external surface, intermediate of said at least one outlet and said planar external surface, being a region of said wall projecting external surface along which water can naturally flow from the at least one outlet to the interface of said wall projecting external surface and said planar external surface, is provided with a drip channel or relief extending lateral to the direction of any such natural flow to release any such natural flow from said wall projecting surface.

Preferably said at least one outlet is provided at, in a shower head wall mounted orientation, a downwardly facing region of the wall projecting external surface.

Preferably the surface of said lower region between said at least one outlet and said planar external surface is, in a shower head wall mounted orientation, downwardly facing and slopes upwardly away from said vertical wall.

Preferably said drip channel or relief extends substantially parallel to the plane of the planar external surface.

Preferably said drip channel or relief is an elongate interruption in an otherwise planar or gradually curved shape of said lower region.

Preferably said drip channel or relief is "V" shaped in cross section.

Preferably said drip channel or relief is "U" shaped in cross section

Preferably said 3 dimensional body member is solid intermediate of said external surfaces save for said conduit(s).

Preferably said 3 dimensional body member includes fastening means at said planar external surface to fasten said 3 dimensional body member to a said vertical wall.

Preferably said fastening means is a threaded aperture extending into said 3 dimensional body member with which a complementary threaded bolt or machine screw can engage to clampingly engage said 3 dimensional body member to a said vertical wall.

Preferably said 3 dimensional body member is solid intermediate of said external surfaces save for said conduit and said fastening means.

Preferably said fastening means is a threaded rod extending outwardly from said planar external surface with which a complementary threaded nut can engage to clampingly engage said 3 dimensional body member to a said vertical wall.

Preferably said 3 dimensional body member is absent of any hookable surfaces to prevent a rope or the like from being securely supported at when said rope is under a downward tension.

Preferably at any upwardly extending normal of the wall projecting external surface at any vertical cross sections taken through the 3 dimensional body member parallel to the plane of the planar external surface, the slope of the wall projecting external surface at the point coinciding with any such normal is downwardly in a direction away from said planar external surface.

Preferably said wall projecting external surface presents all upwardly facing regions thereof in a downwardly sloping manner in a direction away from said planar external surface.

Preferably said upwardly facing regions of said wall projecting external surface is in two orthogonal directions of a generally convex shaped.

Preferably said conduct directs the water from said at least one outlet downwardly and outward from said wall.

Preferably said conduit extends between said planar external surface and said wall projecting external surface.

Preferably said wall projecting external surface is hemispherical or part hemispherical in shape.

In a second aspect the present invention consists in a shower head for mounting to a vertical wall comprising

a 3 dimensional body member which is of a shape to include (a) a convex shaped upwardly directed and downwardly sloping external capping surface, (b) a downwardly directed and downwardly sloping nozzle providing external surface which includes at least one opening to be connected via a conduit to a water delivery conduit to allow in use a downwardly directed stream or streams of water to flow therefrom, and (c) a wall mounting surface to mount said 3 dimensional body member to a said vertical wall such that said capping surface and said nozzle providing surface are projected from said wall,

wherein a surface relief or rebate is provided in downwardly directed and downwardly sloping nozzle providing external surface between said at least one opening and said wall mounting surface.

In a further aspect the present invention consist in a shower facility comprising

a floor on which person is able to stand

a vertical wall upwardly extending from said floor

a shower head mounted to said vertical wall said shower head comprising:

a 3 dimensional body member having a first surface abutting said vertical wall and

a second surface or surfaces which project external of said vertical wall

at least one conduit through said 3 dimensional body having an inlet for

engagement with a water delivery conduit and at least one outlet, said outlet

provided at said second surface to in use project water through said outlet in a downward direction,

wherein a lower region of said second surface, intermediate of said at least one outlet and said first surface, being a region of said second surface along which water can naturally flow from the at least one outlet reach said vertical, is provided with a drip channel or relief extending lateral to the direction of any such natural flow to release any such natural flow from second surface.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective view of one configuration of a shower head,

Figure 2 is a front view of Figure 1,

Figure 3 is a side view of Figure 1 and wherein the shower head of Figure 1 is shown engaged with a wall,

Figure 4 is a perspective view of an alternative shower head,

Figure 5 is a side view of yet another alternative shower head, mounted against a vertical wall,

Figure 6 is a front view of the shower head of Figure 5,

Figure 7 is a front view of a hemispherical shower head,

Figure 8 is a side view of Figure 7,

Figure 9 is a bottom view of Figure 7,

Figure 10 is a cross sectional view through section A-A of Figure 7,

Figure 10A is a sectional view through a shower head and wall,

Figures 11-16 illustrate a preferred nature of the upper surface of a shower head to prevent such from being used in an attempt of suicide in conditions to explain the nature of the non hookable surface.

DETAILED DESCRIPTION OF THE INVENTION

With reference to Figure 1, there is shown a shower head which consists of a three-dimensional body 1. The body provides external surfaces including a wall mountable surface 2 which is substantially planer so as to engage with a substantially planar vertical wall. Such

engagement is for example shown in Figure 3 and with the use of a bolt 3 the three-dimensional body 1 can be clamped against the vertical wall.

The wall mountable surface 2, although substantially planar may include upstands which project into the exterior surface of the vertical wall. The 3 Dimensional body is preferably solid but may alternatively be made from a sheet material or be moulded of a thin walled material. The 3 Dimensional body also includes a wall projecting surface 5.

The three-dimensional body has a conduit passing there through having an inlet and at least one outlet, the inlet being connectable to a water supply pipe or reservoir or the like and the outlet providing opening(s) in the wall projecting surface 5 through which the water can be projected in downward direction to be usable for a person to be showered. The outlet openings are preferably provided in a downwardly facing region of the wall projecting surface. The flow of water projected from the outlets is downwardly and preferably also outwardly from the wall.

Intermediate of the outlet region, and the planar wall mounting surfaces, the wall projecting surface 5 continues to be downwardly directed and also sloping downwardly towards the wall. A channel or relief 10 extends across part of the three-dimensional body member at this region in a manner and location to intercept any flow of water not projected from the outlets. Such water would otherwise naturally run along the intermediate region and towards and onto the wall. The channel or upstand 10 provides an interruption to this flow and prevents the continuation of this flow along the wall projecting surface 5 at this intermediate region towards the wall. The channel or upstand provides a surface of the three-dimensional body which (in an otherwise generally downwardly directed and sloping surface) is upwardly sloping and hence over which the water cannot travel. The water is here encouraged to drip from the three-dimensional body and towards the floor below. The channel is positioned sufficiently from the wall so that any drips being formed at and falling from the channel or upstand will fall downwardly without touching the vertical wall.

With reference to Figure 7 there is shown a front view of a preferred hemispherical shower head of the present invention. The hemispherical shower head as seen from the front, includes an outlet region 20. With reference to Figure 8, this outlet region 20 is provided on a downwardly facing surface of the hemispherical body. Below the outlet region 20 is provided a

channel 10. It can be seen in Figure 9 that the channel is substantially parallel to the wall mountable surface 2.

With reference to Figure 10, this hemispherical shower head is substantially solid save for the provision for the conduit and the securing means 21. The conduit itself consists of a bore which is in fluid connection with a plurality of delivery conduits 22 which extend from the bore to a plurality of outlets directed downwardly and preferably outwardly from the wall direction. These delivery conduits 22 are provided by drilling the material of the shower head in the appropriate directions to extend into the major bore 23. The major bore 23 itself is connectable to a water supply conduit which extends through a wall to which the shower head of the present invention is to be secured. Whilst the shower head of the present invention may for example be adhered to the wall, most preferably a fastening means is used to secure the shower head. It is important in applications where potential vandalism might occur, that such securing of the shower head is vandal proof. Figure 10A illustrates how the shower head of Figures 7-10 may be secured to a wall. A threaded rod is able to extend into the fastening provision 21 and by the use of a nut on the other end of the threaded rod, the shower head is able to be clampingly engaged to the wall. Alternatively the fastening provision may be an upstand from the wall mountable surface 2 with which, a nut can locate.

The conduit to supply the water to the shower head is preferably threadingly engaged with the shower head. It is important that such threaded engagement cannot be undone by a person from the shower head projecting side of the wall. Accordingly by having a two point engagement of the shower head to the wall, it will not be possible for the shower head to be rotated about the axis with which the water supply conduit is engaged with the shower head. This prevents the shower head from being unscrewed from the water supply conduit. With the provision of the threaded rod engaged to the shower head (this being away from the axis on rotation of the showerhead about the water supply conduit), the shower head cannot be rotated.

With reference to the nature of the shower head which in the preferred form prevents it being used in aiding suicide, we now refer to Figures 11-16. It is important for the design of a shower head to serve such purpose, to not include any regions which can be hooked by a rope or the like to thereby receive support from the shower head at least in a downward direction. Accordingly the shower head should not include any hookable surface. By a hookable surface we mean any surface which can be relied on to allow a rope to be attached, looped or hooked or otherwise secured and by which the shower head can support a downwardly directed force

applied to the rope. The shower head of the present invention may be able to be hooked and provide a support to a rope to which an upwardly directed force is applied (such not being useful in aiding suicide), in the most preferred form the shower head design will provide surfaces which will also prevent this. As an example of the nature of such a non-hookable surface, we refer to Figures 11-16. Figure 11 is a perspective view of one example of a shower head shape of the present invention. If we take a section through this shower head which is parallel to the wall mountable surface at any distance from wall, we end up with a section such as shown in Figure 12. In viewing this section front on, we can take any point on the perimeter of the section wherein the normal to this perimeter is pointing upwardly such as for example at point X, the normal thereto being N_1 . The normal N_2 to the perimeter of a cross section which is also vertical but at 90 degrees to the first cross section at point X, will also be pointing upwardly and the slope T of the perimeter at point X will be sloping downwardly. In designing a shower head to provide a non-hookable surface to support a rope with a downward force, this approach in the design can be applied to ensure that the surfaces will not support such a rope. Condition may need to be paid to ensuring friction will not aid in supporting a rope and the downward slope may need to remain below a certain level or the surface may need to be sufficiently curved to avoid any snagging of the rope. Another example is shown with reference to Figures 15 and 16 being of a conical shape shower head. Here at any points where the normal N_1 is directed upwardly, taking a cross section transverse through the first at such a point X, the normal to the perimeter as shown in Figure 16 as N_2 is directed upwardly and the slope on tangent T to the perimeter at point X is directed downwardly.

The outward shape of the shower head should preferably also be such as to avoid any sharp edges or corners which may be sharp enough to cut the skin of a person. Hence rounded edges or a sufficient radius to avoid a person being cut should be incorporated.

Claims

1. A wall mountable shower head directly mountable to a vertical wall comprising:
a 3 dimensional body member having a planar external surface for engagement with said vertical wall and a wall projecting external surface
at least one conduit through said 3 dimensional body having an inlet for engagement with a water delivery conduit and at least one outlet, said outlet provided at said wall projecting external surface to in use project water through said outlet in a downward direction,
wherein a lower region of said wall projecting external surface, intermediate of said at least one outlet and said planar external surface, being a region of said wall projecting external surface along which water can naturally flow from the at least one outlet to the interface of said wall projecting external surface and said planar external surface, is provided with a drip channel or relief extending lateral to the direction of any such natural flow to release any such natural flow from said wall projecting surface.
2. A wall mountable shower head as claimed in claim 1 wherein said at least one outlet is provided at, in a shower head wall mounted orientation, a downwardly facing region of the wall projecting external surface.
3. A wall mountable shower head as claimed in claims 1 or 2 wherein the surface of said lower region between said at least one outlet and said planar external surface is, in a shower head wall mounted orientation, downwardly facing and slopes upwardly away from said vertical wall.
4. A wall mountable shower head as claimed in claim 1 wherein said drip channel or relief extends substantially parallel to the plane of the planar external surface.
5. A wall mountable shower head as claimed in claim 1 wherein said drip channel or relief is an elongate interruption in an otherwise planar or gradually curved shape of said lower region.
6. A wall mountable shower head as claimed in claim 1 wherein said drip channel or relief is "V" shaped in cross section.

7. A wall mountable shower head as claimed in claim 1 wherein said drip channel or relief is "U" shaped in cross section
8. A wall mountable shower head as claimed in claim 1 wherein said 3 dimensional body member is solid intermediate of said external surfaces save for said conduit(s).
9. A wall mountable shower head as claimed in claim 1 wherein said 3 dimensional body member includes fastening means at said planar external surface to fasten said 3 dimensional body member to a said vertical wall.
10. A wall mountable shower head as claimed in claim 1 wherein said fastening means is a threaded aperture extending into said 3 dimensional body member with which a complementary threaded bolt or machine screw can engage to clampingly engage said 3 dimensional body member to a said vertical wall.
11. A wall mountable shower head as claimed in claim 1 wherein said 3 dimensional body member is solid intermediate of said external surfaces save for said conduit and said fastening means.
12. A wall mountable shower head as claimed in claim 1 wherein said fastening means is a threaded rod extending outwardly from said planar external surface with which a complementary threaded nut can engage to clampingly engage said 3 dimensional body member to a said vertical wall.
13. A wall mountable shower head as claimed in claim 1 wherein said 3 dimensional body member is absent of any hookable surfaces to prevent a rope or the like from being securely supported at when said rope is under a downward tension.
14. A wall mountable shower head as claimed in claim 1 wherein at any upwardly extending normal of the wall projecting external surface at any vertical cross sections taken through the 3 dimensional body member parallel to the plane of the planar external surface, the slope of the

wall projecting external surface at the point coinciding with any such normal is downwardly in a direction away from said planar external surface.

15. A wall mountable shower head as claimed in claim 1 wherein said wall projecting external surface presents all upwardly facing regions thereof in a downwardly sloping manner in a direction away from said planar external surface.

16. A wall mountable shower head as claimed in claim 1 wherein said upwardly facing regions of said wall projecting external surface is in two orthogonal directions of a generally convex shaped.

17. A wall mountable shower head as claimed in claim 1 wherein said conduit directs the water from said at least one outlet downwardly and outward from said wall.

18. A wall mountable shower head as claimed in claim 1 wherein said conduit extends between said planar external surface and said wall projecting external surface.

19. A wall mountable shower head as claimed in claim 1 wherein said wall projecting external surface is hemispherical or part hemispherical in shape.

20. A shower head for mounting to a vertical wall comprising a 3 dimensional body member which is of a shape to include (a) a convex shaped upwardly directed and downwardly sloping external capping surface, (b) a downwardly directed and downwardly sloping nozzle providing external surface which includes at least one opening to be connected via a conduit to a water delivery conduit to allow in use a downwardly directed stream or streams of water to flow therefrom, and (c) a wall mounting surface to mount said 3 dimensional body member to a said vertical wall such that said capping surface and said nozzle providing surface are projected from said wall,

wherein a surface relief or rebate is provided in downwardly directed and downwardly sloping nozzle providing external surface between said at least one opening and said wall mounting surface.

21. A shower facility comprising

a floor on which person is able to stand

a vertical wall upwardly extending from said floor

a shower head mounted to said vertical wall said shower head comprising:

a 3 dimensional body member having a first surface abutting said vertical wall and

a second surface or surfaces which project external of said vertical wall

at least one conduit through said 3 dimensional body having an inlet for engagement with a water delivery conduit and at least one outlet, said outlet provided at said second surface to in use project water through said outlet in a downward direction,

wherein a lower region of said second surface, intermediate of said at least one outlet and said first surface, being a region of said second surface along which water can naturally flow from the at least one outlet reach said vertical, is provided with a drip channel or relief extending lateral to the direction of any such natural flow to release any such natural flow from second surface.