



US 20170226722A1

(19) **United States**

(12) **Patent Application Publication**
Marcel

(10) **Pub. No.: US 2017/0226722 A1**

(43) **Pub. Date: Aug. 10, 2017**

(54) **PORTABLE RESTROOM SAFETY CENTER**

E03D 1/00 (2006.01)

E03D 5/00 (2006.01)

(71) Applicant: **The Modern Group, Ltd.**, Beaumont, TX (US)

(52) **U.S. Cl.**

CPC *E03D 7/00* (2013.01); *E03D 1/00*

(2013.01); *E03D 5/003* (2013.01); *E03D*

13/00 (2013.01); *E03B 1/042* (2013.01);

E04H 1/1216 (2013.01); *E03B 2001/045*

(2013.01)

(72) Inventor: **Eric P. Marcel**, Mamou, LA (US)

(21) Appl. No.: **15/017,671**

(22) Filed: **Feb. 7, 2016**

(57)

ABSTRACT

The disclosed invention improves on portable toilets for use in hostile environments. The improvements also provide a mechanism for the portable toilet to interface with transportation devices to facilitate transport. The portable toilet is constructed to withstand wind and explosive forces to protect the user. Equipment is also installed in the portable toilet for user safety.

Publication Classification

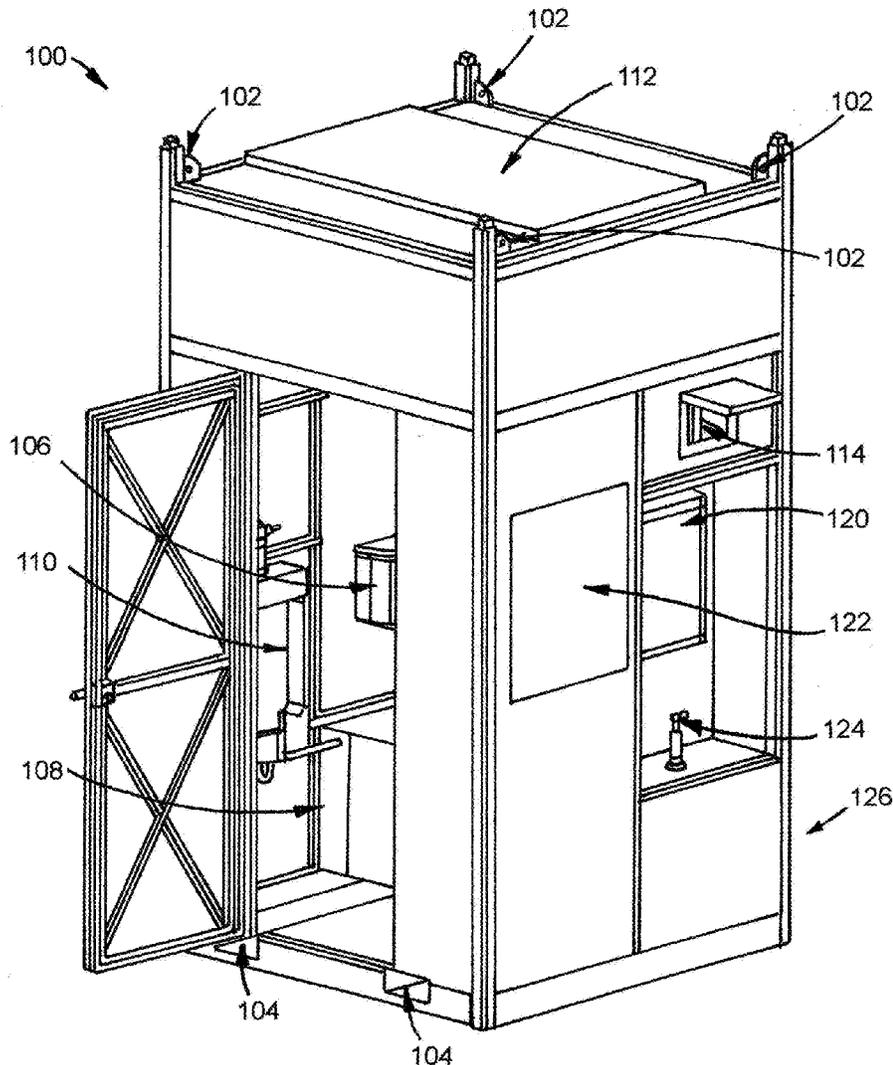
(51) **Int. Cl.**

E03D 7/00 (2006.01)

E04H 1/12 (2006.01)

E03D 13/00 (2006.01)

E03B 1/04 (2006.01)



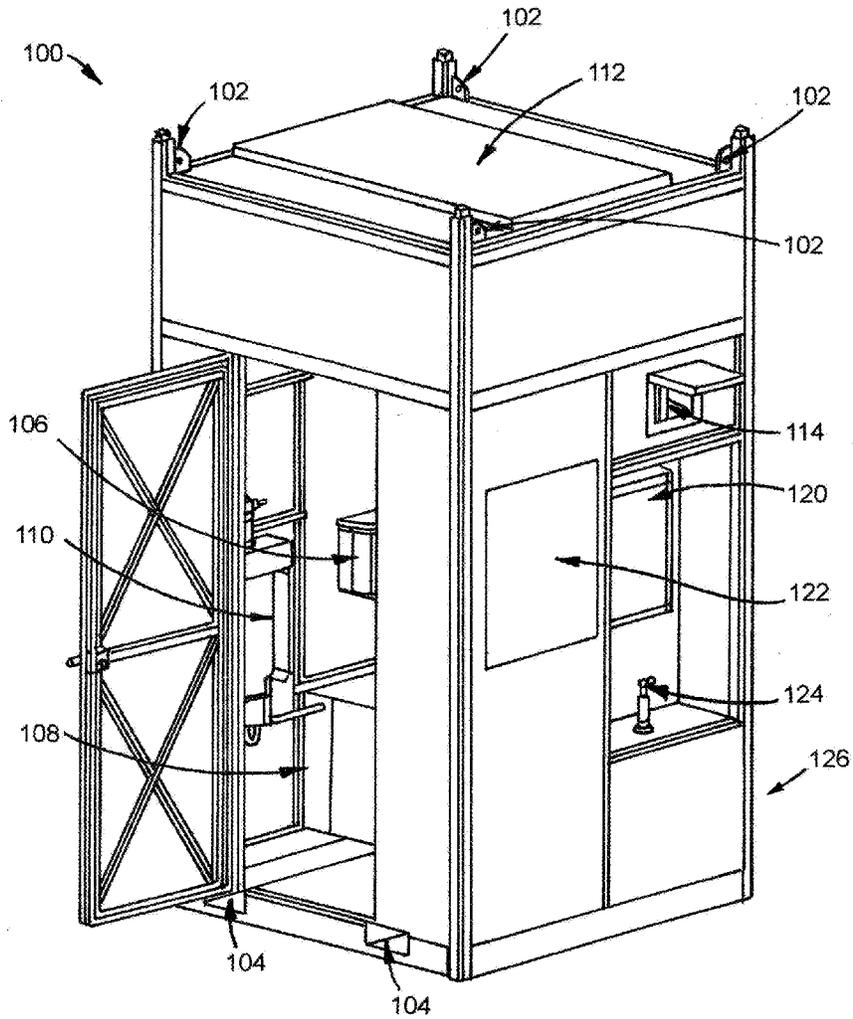


FIG.1

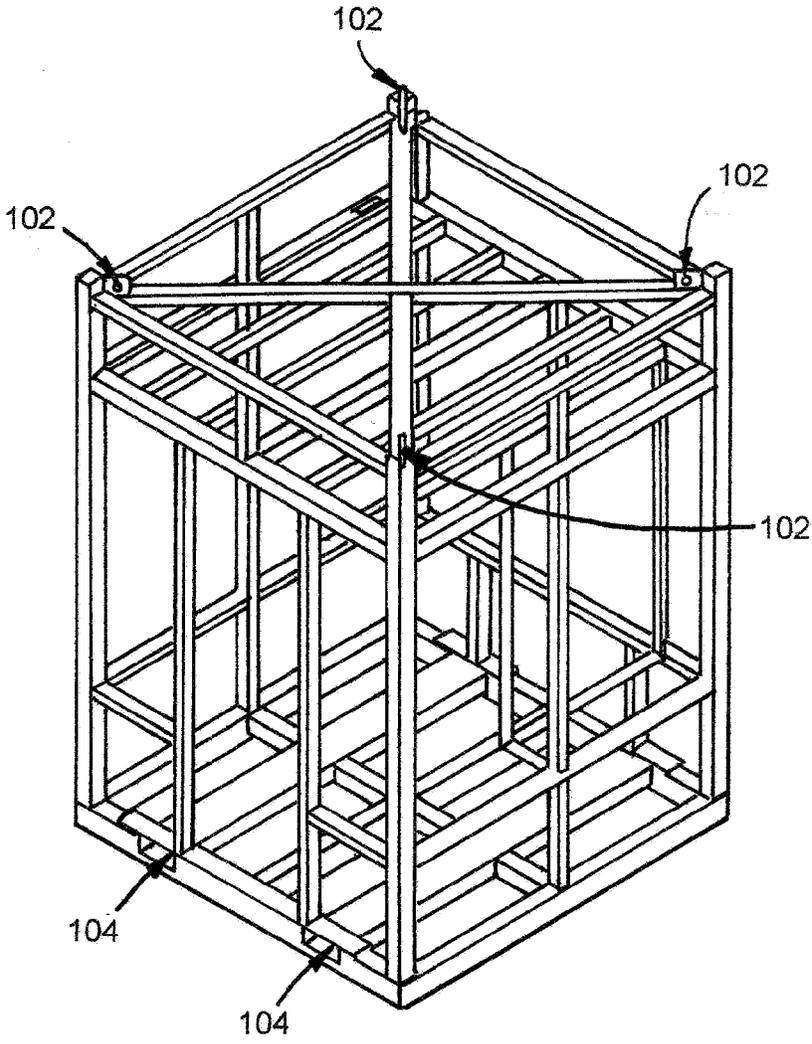


FIG.2

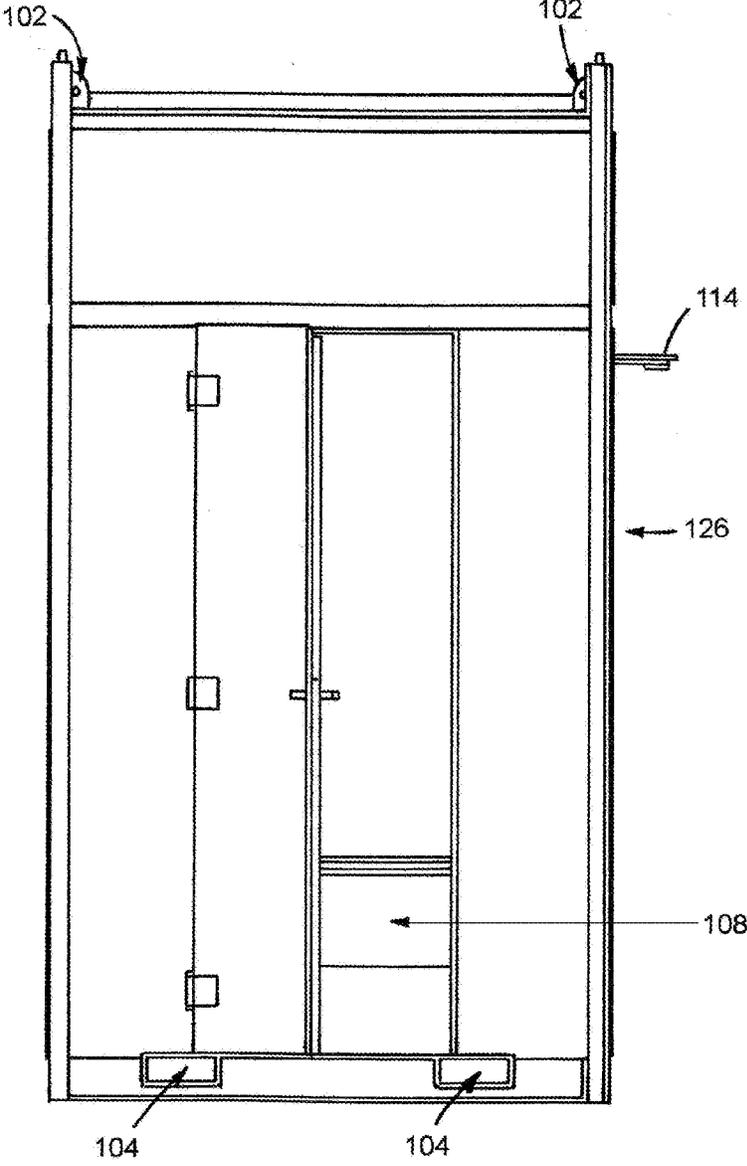


FIG.3a

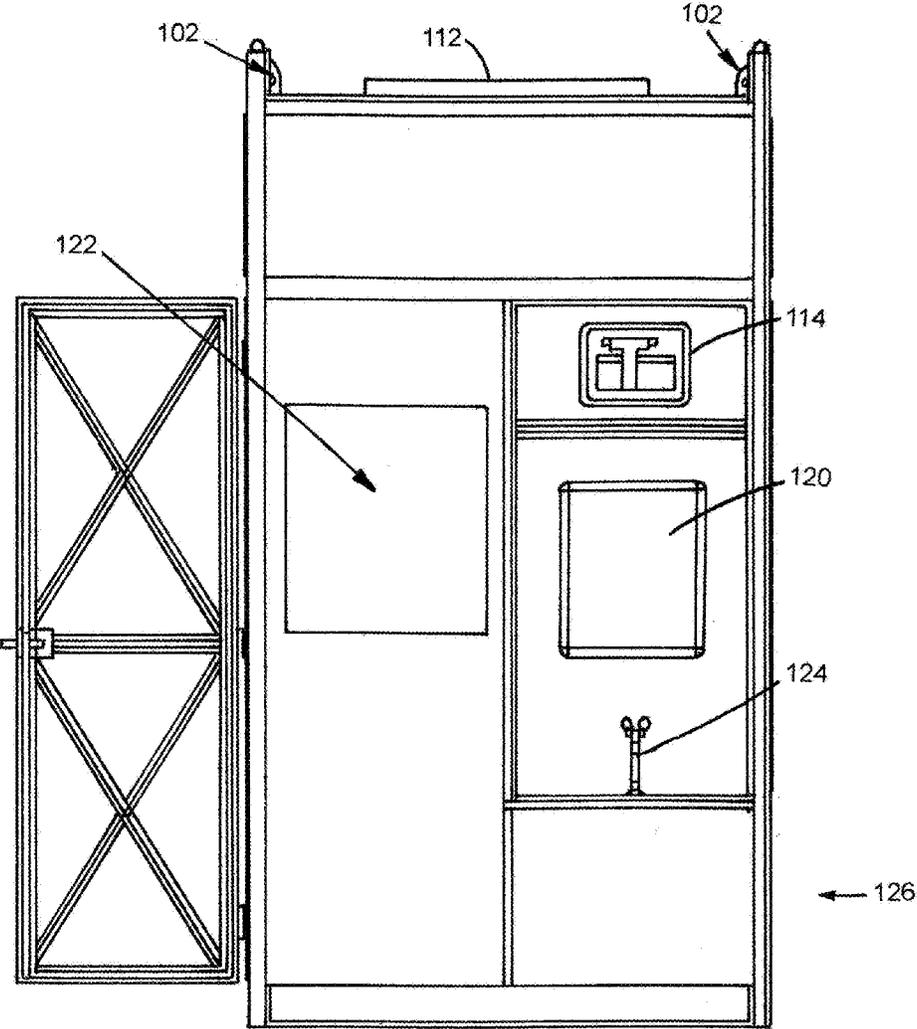


FIG.3b

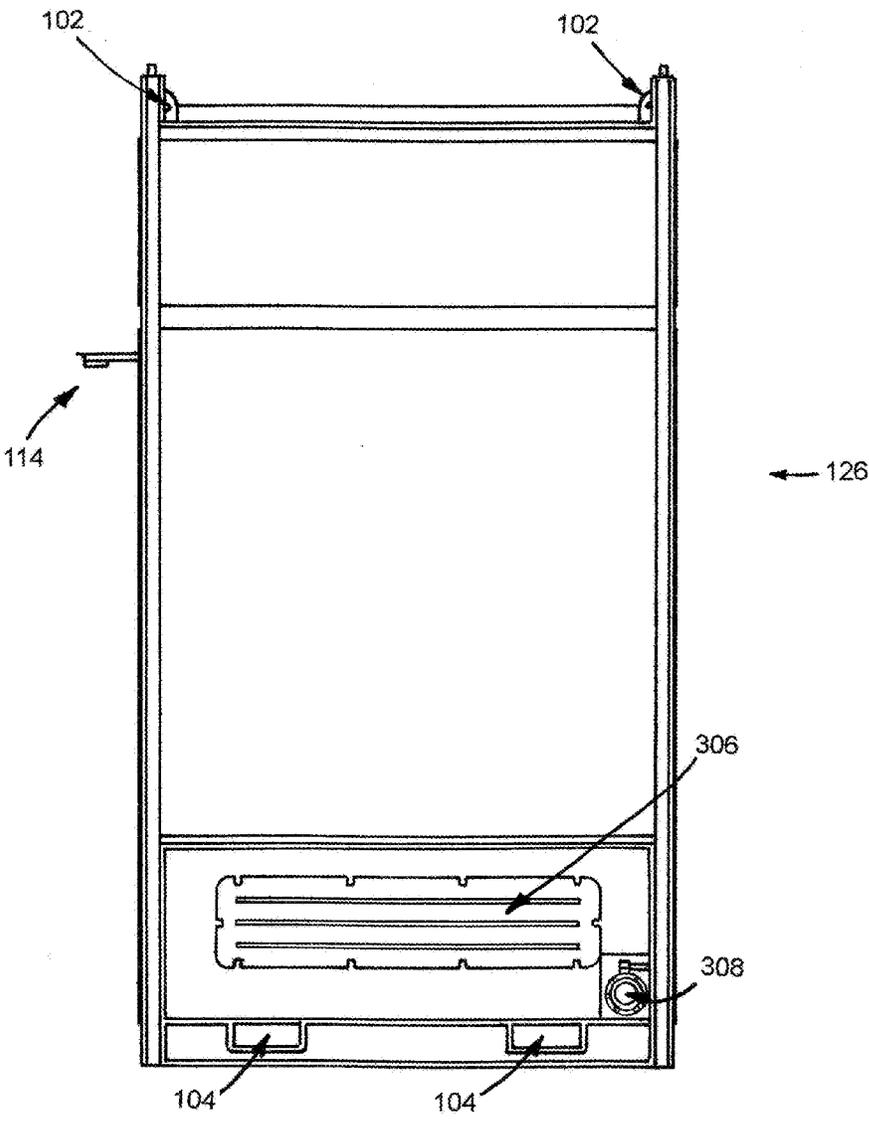


FIG.3c

PORTABLE RESTROOM SAFETY CENTER

BACKGROUND

[0001] Portable toilets (hereinafter portalets) allow users to have the benefit of a toilet without an established waste management system. Portalets are utilized in many environments, including construction sites, outdoor festivals, and remote locations. Some of these environments can be hazardous, such as off shore oil platforms. Hazardous environments can include dangers such as high winds knocking over an unsecured portalet, explosions close to the portalet location, and toxic gases in the area. If a portalet is in hostile environment, the user may be exposed to dangers related to the environment when near the portalet.

[0002] Portalets suffer from several design related issues. First, they are difficult to transport. Due to the nature of their contents (water, chemicals, or waste), they need to be transported in an upright orientation. This is typically accomplished by some form of manual transportation (a person actually pushing or pulling the portalet), or using a machine to move the portalet when the portalet was not designed to interface with the machine. Another issue related to the use of portalets is they are typically used in a setting where there is little existing infrastructure for power and safety equipment, meaning that a user may not be able to access those items if needed.

[0003] These issues and others have led to the development of the present invention.

FIELD OF THE INVENTION

[0004] The present invention relates to an improved portalet **100**, and specifically to improvements in the design to increase user safety in a hostile environment and facilitate ease of transport.

SUMMARY

[0005] The disclosed invention relates to improvements in a portalet to increase user safety and facilitate ease of transport. The structure of the improved portalet **100** is reinforced with materials to increase the survivability of the improved portalet **100** in the event of a nearby explosion. The improved portalet **100** also has multiple points where machinery can connect to the improved portalet **100** for transport, notably by crane and forklift. Additionally, first aid and safety gear are installed to increase user safety in the event of a hazardous situation near the improved portalet **100**.

BRIEF DESCRIPTION OF DRAWINGS

[0006] For a more complete understanding of the present invention and advantages thereof, reference is now made to the following description taken in conjunction with the accompanying drawings in which like reference numbers indicate features and wherein:

[0007] FIG. **1** is an isometric view of an exemplary embodiment of the improved portalet **100**;

[0008] FIG. **2** is an isometric view of the main supports of an exemplary embodiment of the improved portalet **100**;

[0009] FIG. **3a** is a front view of an exemplary embodiment of the improved portalet **100**;

[0010] FIG. **3b** is a side view of an exemplary embodiment of the improved portalet **100**; and

[0011] FIG. **3c** is a rear view of an exemplary embodiment of the improved portalet **100**.

DETAILED DESCRIPTION

[0012] The invention relates to an improved portalet **100** that may be easily transported and has additional features related to safety in a hazardous environment. Specifically, the disclosed invention may be designed with various international standards in mind, such as DNV standards for equipment used in the oil and gas industry. The improved portalet **100** comprises an enclosure **126** containing several items, such as the toilet flush tank **106**, the toilet, and the toilet catch basin **108** along with a sink and urinal **110**. The improved portalet **100** is reinforced to withstand the force generated by an explosion on an offshore oil platform. Such mechanisms of reinforcement are known to those skilled in the art, such as the use of high strength materials with the appropriate level of strength and elasticity to build the structure and outer surface of the improved portalet **100**. In an exemplary embodiment, the improved portalet **100** may be capable or resisting a six pound per square inches of force.

[0013] In an exemplary embodiment, the weight distribution of the improved portalet **100** is designed to favor the base. While other portalets are designed to be oriented upright, they are not designed with sufficient weight in the base to prevent them from being knocked over due to winds above a certain minimal level without extra support. In an exemplary embodiment, the improved portalet **100** will remain upright during sustained forces from both storms and explosions due to the weight of the improved portalet **100** concentrated in the base.

[0014] The interior in the improved portalet **100** may be in any configuration of a portalet currently in use. In the exemplary embodiment, there is a flush toilet, a urinal **110**, and a sink. The toilet comprises a toilet flush tank **106** to hold the water used by the toilet, a toilet catch basin **108** to collect the used “grey” water from the toilet, and a commode resting on top of the toilet catch basin **108** for the user to sit on. The toilet and urinal **110** share the toilet flush tank **106** and a toilet catch basin **108**. In operations, a user uses the toilet or urinal **110** and flushes. Water discharges from the toilet flush tank **106** and removes the contents of the commode or urinal **110** along with the water. The solid waste and grey water is collected in the toilet catch basin **108**. As the solids collect in the toilet catch basin **108**, they may be withdrawn through a clean out hatch **306**. If fluids need to be drained from the toilet catch basin **108**, a drain port **308** may be opened to drain the grey water and other fluids. The toilet flush tank **106** may be refilled as needed.

[0015] When the toilet catch basin **108** begins to fill, the level of waste is indicated by a waste level indicator in the interior of the enclosure **126**. The waste level indicator operations can be based on any mechanism known to those skilled in the art. In an exemplary embodiment, a sensor can determine the level of waste in the toilet catch basin **108** and illuminate the appropriate indicator. In an alternative embodiment, there can be a waste level indicator in the exterior of the enclosure **126**.

[0016] In an alternative embodiment, the grey water in the toilet catch basin **108** is treated for use in the system again. A toilet pump may send the grey water back into the toilet flush tank **106** when the next flush occurs, or it may immediately pump the grey water to the toilet flush tank **106**,

allowing gravity to power the toilet flush. The grey water may be recycled for multiple toilet flushes. Additionally, a chemical additive may be incorporated into the grey water system to reduce the growth of bacteria.

[0017] A sink may also be installed in the improved portalet 100 according to an exemplary embodiment. The sink may draw water from the toilet flush tank 106 and discharge the water to the toilet catch basin 108. In an alternative exemplary embodiment, the sink has a sink water tank independent of the toilet flush tank 106. When the sink is operated, the sink water leaves the sink and goes into a sink catch basin. From the sink catch basin, the sink water may be recycled by any means known to those skilled in the art for later use in the sink, such as being filtered and pumped back into the sink water tank.

[0018] In an additional exemplary embodiment, the improved portalet 100 may be connected to a water supply that provides and disposes of water as needed. In an alternative exemplary embodiment, the toilet may be a chemical toilet. In further alternative exemplary embodiments, the may be no urinal 110 and just a toilet. In a further alternative exemplary embodiment, the sink may dispense a waterless sanitizer in place of water. In further alternative exemplary embodiment, the may be no sink.

[0019] The exemplary embodiment of the invention provides power for improved portalet 100 operations. In an exemplary embodiment, the improved portalet 100 is a self-contained system, using a solar panel 112 to collect energy to be used in the improved portalet 100 operations. In an alternative embodiment, a wind turbine 114 may be incorporated to provide power. Power generated by an element of the improved portalet 100 may be stored in any way known to those skilled in the art, including batteries. The power may be used for any function needed, including lights and pump operations. In an alternative exemplary embodiment, the improved portalet 100 couples to an external power source, such as the generator powering an offshore oil platform.

[0020] Mechanisms may be incorporated into the improved portalet 100 to prevent accidental electrocution while the equipment is in service. Access to any electrical systems in the exemplary embodiment may only occur via a safety mechanism, such as a “lock out/tag out” system to make sure that only the user who shut down an element to perform maintenance is the only one who can release the element to return to service. Further, all electrical system and wiring may be configured to comply with DNV standards in an exemplary embodiment.

[0021] The improved portalet 100 is designed to be used in a hazardous environment. Multiple items and features are incorporated into an exemplary embodiment for user safety. In the interior of the enclosure 126 is a fire extinguisher. An alternative embodiment may locate the fire extinguisher on the exterior of the enclosure 126. Inside the enclosure 126 are various items, such as a defibrillator for use with cardiac emergencies. Also installed within the enclosure 126 in an exemplary embodiment is a limited air supply in the event that toxic gases are in the area. In a further exemplary embodiment, a basic communication device is available to request help.

[0022] In an exemplary embodiment, one side of the enclosure 126 may include an instruction panel 122 with safety information including, but not limited to, CPR instructions. Adjacent to the instruction panel 122 is a first

aid kit 120 that contains typical first aid supplies. Co-located to the first aid kit 120 is an eye wash station 124 to help rinse foreign matter out of a user’s eyes if needed. The eye wash station 124 may use a water supply independent of any others used by the improved portalet 100, or may draw on the water in toilet flush tank 106. Additionally, the exemplary embodiments may contain receptacles to hold safety equipment, such as life vests, emergency blankets, ear plugs, and safety glasses.

[0023] In an exemplary embodiment, there are structural elements that assist in the transportation of the improved portalet 100. The disclosed structures are independently operable of each other or may be used in concert. In the base of the improved portalet 100 are channels 104 that are dimensioned to accommodate the forks of a forklift. The forklift may drive up to the improved portalet 100, inset the projections into the appropriate channel 104, lift the improved portalet 100 off of the surface, and drive the improved portalet 100 directly to where it is needed. The improved portalet 100 may then be lowered and secured in any way known to those skilled in the art.

[0024] An alternate mechanism for transportation comes from crane couplers 102 atop the improved portalet 100. Crane couplers 102 connect the improved portalet 100 to a crane or the crane hoist line to lift and place the improved portalet 100 directly where needed. In an exemplary embodiment, the crane couplers 102 are integrated into the corner supports of the improved portalet 100. In an alternative exemplary embodiment, the crane couplers 102 may be located anywhere on the improved portalet 100 that allows the crane to attach to the improved portalet 100.

[0025] One of skill in the art will appreciate that embodiments provide improvements to a portalet. Although specific embodiments are illustrated and described herein, it will be appreciated by those of ordinary skill in the art that any arrangement which is calculated to achieve the same purpose can be substituted for the specific embodiments shown. This specification is intended to cover any adaptations or variations of embodiments. For example, although described in terms of the specific embodiments, one of ordinary skill in the art will appreciate that implementations can be made in different embodiments to provide the required function. In particular, one of skill in the art will appreciate that the names and terminology are not intended to limit embodiments. Furthermore, additional apparatus can be added to the components, functions can be rearranged among components, and new components corresponding to future enhancements and future physical devices used in embodiments can be introduced without departing from the scope of embodiments. The terminology used in this application is intended to include all embodiments and alternatives which provide the same functionality as described herein.

1. A portalet, comprising:
 - an enclosure comprising:
 - at least one panel with an exterior surface and an interior surface; and
 - at least one transportation interface; and
 - a toilet residing in said enclosure.
2. The portalet of claim 1, wherein said at least one panel is made from materials capable of resisting sudden increases in force.
3. The portalet of claim 1, wherein said exterior surface is made from materials capable of resisting sudden increases in force.

4. The portalet of claim 1, wherein said interior surface is made from materials capable of resisting sudden increases in force.

5. The portalet of claim 1, wherein said enclosure is made from materials capable of resisting sudden increases in force.

6. The portalet of claim 1, wherein said at least one transportation interface comprises a channel.

7. The portalet of claim 1, wherein said at least one transportation interface comprises a crane coupler.

8. The portalet of claim 1, wherein said toilet comprises:

- a commode;
- a toilet flush tank; and
- a toilet catch basin,

wherein water in said toilet flush tank enters said commode; and

wherein said water and contents of said commode enter said toilet catch basin.

9. The portalet of claim 8, further comprising a toilet pump to transport said water in said toilet catch basin into said toilet flush tank.

10. The portalet of claim 9, further comprising a filter capable of removing said contents of said commode from said water in said toilet catch basin before said toilet pump transports said water into said toilet flush tank.

11. The portalet of claim 1, further comprising a urinal residing in said enclosure, wherein said urinal is coupled to a toilet flush tank and a toilet catch basin, wherein water from said toilet flush tank enters said urinal, and contents of said urinal and said water enter said toilet catch basin.

12. The portalet of claim 1, wherein said toilet is a chemical toilet.

13. The portalet of claim 1, further comprising a sink residing in said enclosure.

14. The portalet of claim 1, further comprising a power generation element coupled to said enclosure.

15. The portalet of claim 14, wherein said power generation element comprises a wind turbine.

16. The portalet of claim 14, wherein said power generation element comprises a solar panel.

17. The portalet of claim 14, further comprising a power storage element capable of retaining power generated by said power generation element.

18. The portalet of claim 14, further comprising a safety mechanism to prevent an electrical mechanism incorporated in said enclosure from being accessed while under power.

19. The portalet of claim 1, further comprising a receptacle coupled to said exterior surface of said enclosure containing safety equipment, wherein said safety equipment comprises at least one of:

- emergency blanket;
- safety goggles;
- ear plugs;
- life vest; or
- defibrillator.

20. The portalet of claim 1, further comprising a receptacle coupled to said interior surface of said enclosure containing safety equipment, wherein said safety equipment comprises at least one of:

- emergency blanket;
- safety goggles;
- ear plugs;
- life vest; or
- defibrillator.

* * * * *