Sept. 5, 1939. C. E. PEARSON 2,172,292

MARINE TOILET

Original Filed April 15, 1937 2 Sheets-Sheet 1

Fig. 1.

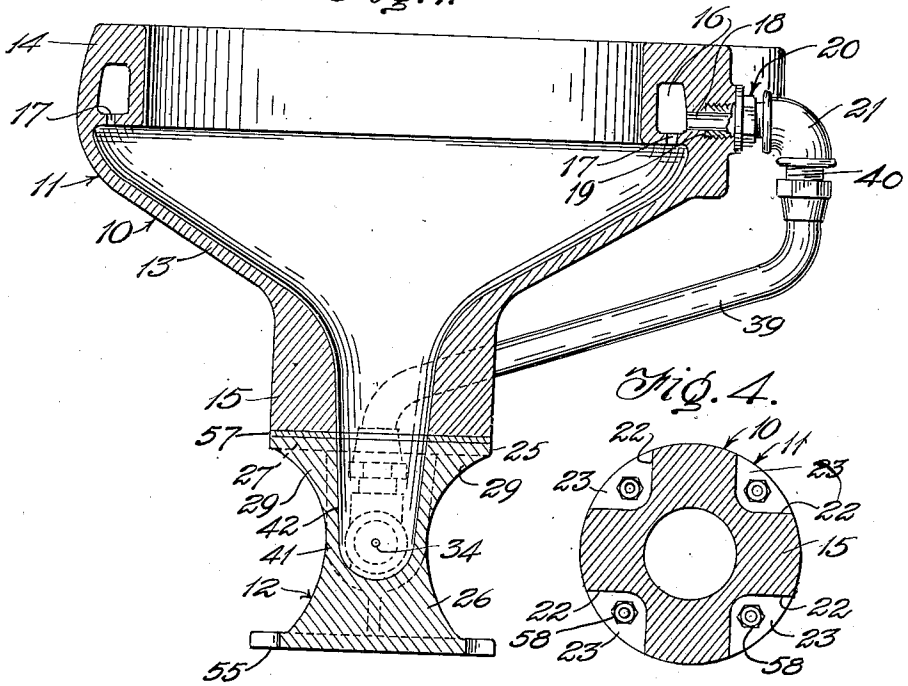


Fig. 4.

Fig. 2.

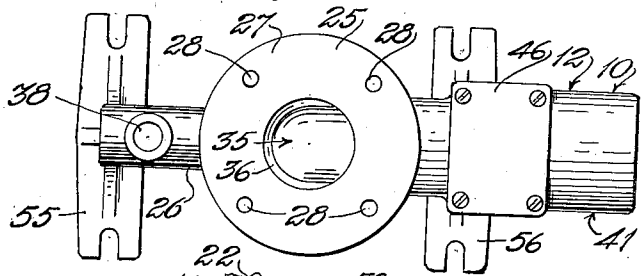
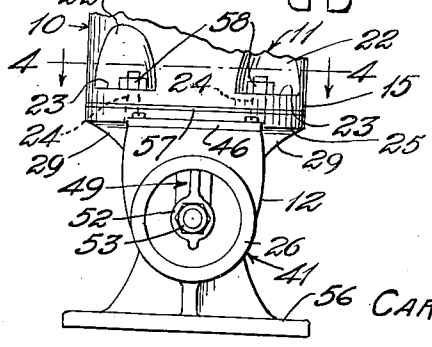


Fig. 3



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Original Filed April 15, 1937 2 Sheets-Sheet 2

Fig. 5.

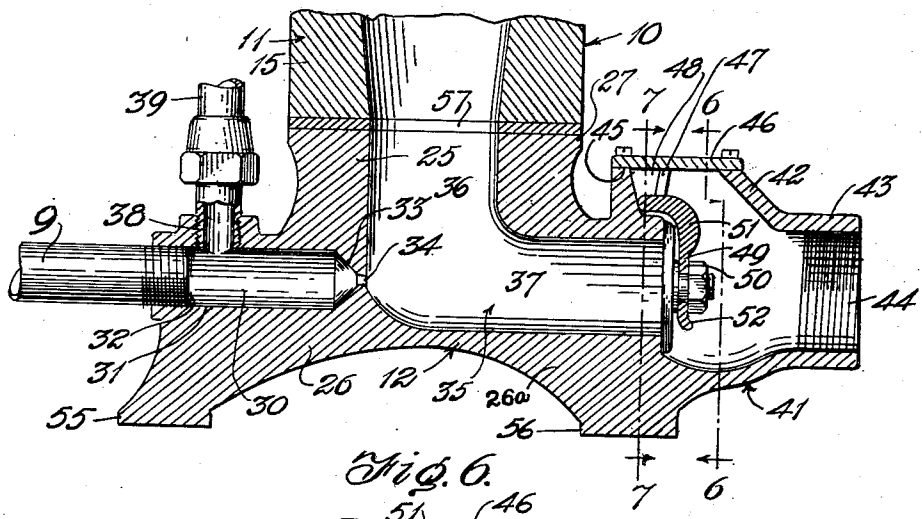


Fig. 6.

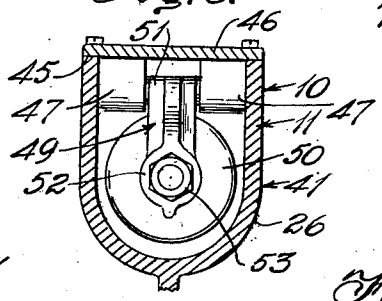


Fig. 7.

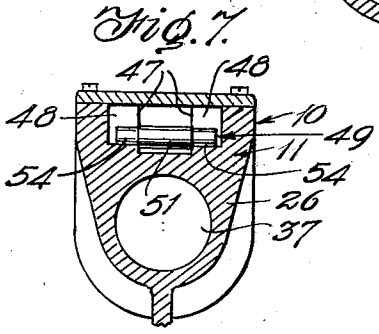
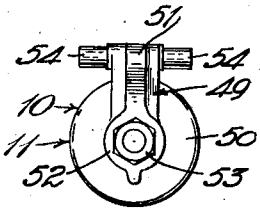


Fig. 8.



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MARINE TOILET

Carl E. Pearson, Richmond Hill, N. Y.

Application April 15, 1937, Serial No. 137,108
Renewed February 28, 1939

2 Claims. (Cl. 4—90)

This invention relates to a marine toilet.

The invention has for its object to provide, in a manner as hereinafter set forth, a toilet of the class referred to including a discharge passage and a normally closed valve positioned at the outlet end of the passage and opened by hydraulic pressure in the form of a jet travelling in a direction towards the valve simultaneously with the flushing of the bowl thereby providing for the discharge of the contents of the toilet.

A further object of the invention is to provide, in a manner as hereinafter set forth, a marine toilet including a discharge passage formed of a vertically and a horizontally disposed branch opening into each other and a normally closed pressure operated valve at the outlet end of said horizontal branch.

A further object of the invention is to provide, in a manner as hereinafter set forth, a marine toilet including bowl and base sections, a discharge passage in the base section formed of a vertically and a horizontally disposed branch, the vertical branch opening into the bowl section and the horizontal branch having a normally closed hydraulic pressure operated valve, a chamber for receiving flushing water under pressure, a permanently opened jet forming means at one end of the chamber opening into said horizontal branch and directing the jet towards the valve and a flushing water conducting line leading from said chamber to the bowl section.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a marine toilet which is simple in its construction and arrangement, strong, durable, compact, thoroughly efficient in its use, readily assembled, conveniently installed and comparatively inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as will be more specifically referred to and as illustrated in the accompanying drawings wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawings:

Figure 1 is a vertical sectional view of the closet structure,

Figure 2 is a top plan view of the base of the structure,

Figure 3 is a fragmentary view in elevation looking towards the discharge side of the structure,

Figure 4 is a section on line 4—4, Figure 3,

Figure 5 is a fragmentary view in longitudinal section taken at right angles to the showing of Figure 1,

Figure 6 is a section on line 6—6, Figure 5,

Figure 7 is a section on line 7—7, Figure 5, and

Figure 8 is an elevation of the outlet valve looking towards the outer face thereof.

The water employed for flushing and cleansing the structure is to be under a state of pressure and it is supplied from any suitable source by a pump, not shown, which may be manually operated or operated from an electrical motor or internal combustion engine. The pump is to communicate with a feed pipe line 9 which is anchored to and opens into the closet structure generally indicated at 10.

The structure 10 includes a bowl or upper section 11 and a discharge or base section 12 arranged in superposed relation. The bowl section consists of a flared intermediate portion 13, an upper portion 14 of any suitable contour in plan and an annular lower portion 15. The portion 14 constitutes a rim which is of greater thickness than the portion 13. The portion 14 overhangs the inner face of portion 13 and is formed with an endless flushing water conducting channel 16. The portion 14 is also provided with depending spaced sidewise aligned discharge ports 17 leading from the bottom of channel 16 and opening at the top of portion 13. The portion 14 at its rear is also formed with a horizontally disposed opening 18 having its wall of two different inner diameters, separated by a shoulder 19. The portion of largest inner diameter of the wall of opening 18 is threaded and arranged outwardly with respect to the other portion of the wall. Mounted in the opening 18, abutting the shoulder 19 and the outer side of portion 14, opening into the channel 16 and threadedly engaging with the threads of the portion of largest diameter of the opening 18 is a flushing water intake element 20 having attached to its outer end a depending elbow coupling 21. The upper end of part 13 merges into the outer side of the bottom of the part 14. The upper end of portion 15 of section 11 merges into the lower end of portion 14. The inner diameter of the portion 15 gradually increases from the lower to the upper end of such portion. The inner face of portion 15 forms a flush continuation of the inner face of portion 13. The outer face of portion 15 is cut-out at equally spaced points, as at 22 to form horizontal ledges 23. The portion 15 is provided

with openings 24 which extend from the ledges 23 to the bottom of such portion.

The base section 12 in longitudinal section is substantially of inverted T-shaped contour and is hollow. The section 12 includes a top portion 25 or vertical leg and a bottom portion which extends laterally in opposite directions with respect to the lower end of portion 25 and provides a pair of oppositely extending horizontal legs 26, 26a. The leg 26 is on the intake side and the leg 26a is on the outlet side of section 12. The portion 25 is of annular cross section and formed at its upper end with an outwardly directed annular flange 27 of a diameter corresponding to that of the lower end of the bottom of portion 15 of section 12. The flange 27 is provided with spaced openings 28 which align with the openings 24 in portion 15 of section 11. The portion 25 has on its outer face a pair of oppositely extending diametrically disposed flared ribs 29 merging at their upper ends into the lower face of the flange 27. The inner diameter of the leg 25 is uniform. The portion 26 lengthwise thereof is provided with a chamber 30 of cylindrical form for receiving flushing water under pressure. The chamber 30 is open at its outer end and has its wall 31 threaded as at 32. The wall 31 at its inner end is of conoidal contour, as at 33. The pipe line 9 extends and opens into chamber 30 at its outer end and engages with the threads 32. The leg 26 is formed with a jet opening 34 which extends from the apex of the conoidal shaped inner end of the wall 31. The section 12 is provided with an outlet passage 35 consisting of a vertical branch 36 formed throughout the leg 25 and a horizontal branch 37 formed in the leg 26a for a portion of the length thereof. The branch 36 at its lower end opens into the inner end of the branch 37. The latter lengthwise aligns with the chamber 30. The jet provided by the opening 34 discharges into the branch 37 lengthwise thereof. The leg 26 is formed with a vertical opening 38 communicating with chamber 30. The opening 38 has its wall threaded. Secured to the threads of the opening 38 is a flushing water conducting line 39 which leads from the chamber 30 and is connected at its upper end, as at 40 to the elbow coupling 21. The leg 26a is formed with a tubular lead-off 41 into which the outlet end of passage 35 opens. The lead-off 41 has its inner part 42 of greater diameter than its outer part 43 and with the latter provided with internal threads 44. The part 42 of the lead-off is of greater diameter than and surrounds the outer end of the passage 35. The inner part 42 is cutout at its top, as at 45 to provide an entrance opening therefor. The cutout is normally closed by a removable plate 46. The inner face of the part 42 at its inner end and sides has formed integral therewith a pair of spaced endwise aligned lugs 47 formed with aligned grooves 48 which open at the inner ends and tops of the lugs. These latter provide journals and suspensions for a depending pivotally mounted hanger arm 49 for a vertically disposed disc valve 50 arranged in the lead-off 41 for normally closing the outlet end of passage 30. The arm 49 consists of a curved upper part 51 and an apertured lower part 52. The latter is secured by the holdfast means 53 to the valve 50. The upper end of part 51 carries a pair of oppositely extending pintles 54 which are mounted in the grooves 48. The plate 46 permits of mounting the valve and its hanger arm within the lead-off 41. Integral with the lower faces of the intake and outlet sides of the base section 12 are the foot pieces 55, 56 which are disposed at right angles and extend laterally in opposite directions with respect to said sides. The ends of the foot pieces are notched for the passage of holdfast means, not shown for anchoring the structure 10 upon the floor or a support.

Interposed between the bottom of portion 15 of section 11 and the flange 27 is a washer 57. Extending through the aligned openings 24, 28 and through the washer 57 are holdfast means 58 for anchoring the sections 11, 12 together in superposed relation.

When the flushing water is supplied to the toilet structure, simultaneously with the flushing action, the jet is formed and acts in connection with that part of the water supplied to the bowl for opening the outlet valve and to force the contents of the bowl into the lead-off 41.

What I claim is:

1. In a marine toilet structure, a top section having its upper portion in the form of a bowl and its lower portion vertically disposed, said upper portion having a flushing water discharging means therein in proximity to its top, a hollow base section of inverted T-shape contour formed of a vertical leg, a horizontal intake leg and a horizontal outlet leg, said horizontal legs merging at their inner ends into the lower end of the vertical leg, said intake leg being provided with a chamber for receiving flushing water under compression, the body of said intake leg being formed with means at its inner end to provide a jet opening leading from the inner end of said chamber and opening into the inner end of the horizontal outlet leg, a pivotally suspended valve exteriorly of and for normally closing the discharge end of said outlet leg, and a flushing water conducting line leading from said chamber to the water discharging means in said upper portion, the said jet opening disposed in alignment with the axis of said valve when the latter is in closing position relative to the discharge end of said outlet.

2. A marine toilet including an upright bowl, a vertically arranged hollow supporting leg leading from the bottom of said bowl, the lower end of said leg gradually curved and horizontally extended to form a hollow outlet passage, a vertically disposed outwardly swinging valve for closing said outlet, a large inlet pipe for conducting water under pressure situated directly facing said passage and valve, said pipe being constricted to form a jet producing nozzle directed immediately against said valve to swing it outwardly, and a tube leading from said pipe to flushing means near the top of the bowl.

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