(No Model.) 2 Sheets—Sheet 1.

# F. W. CROSS.

## SHIP'S WATER CLOSET.

No. 354,503. Patented Dec. 14, 1886.

Fig. 2.

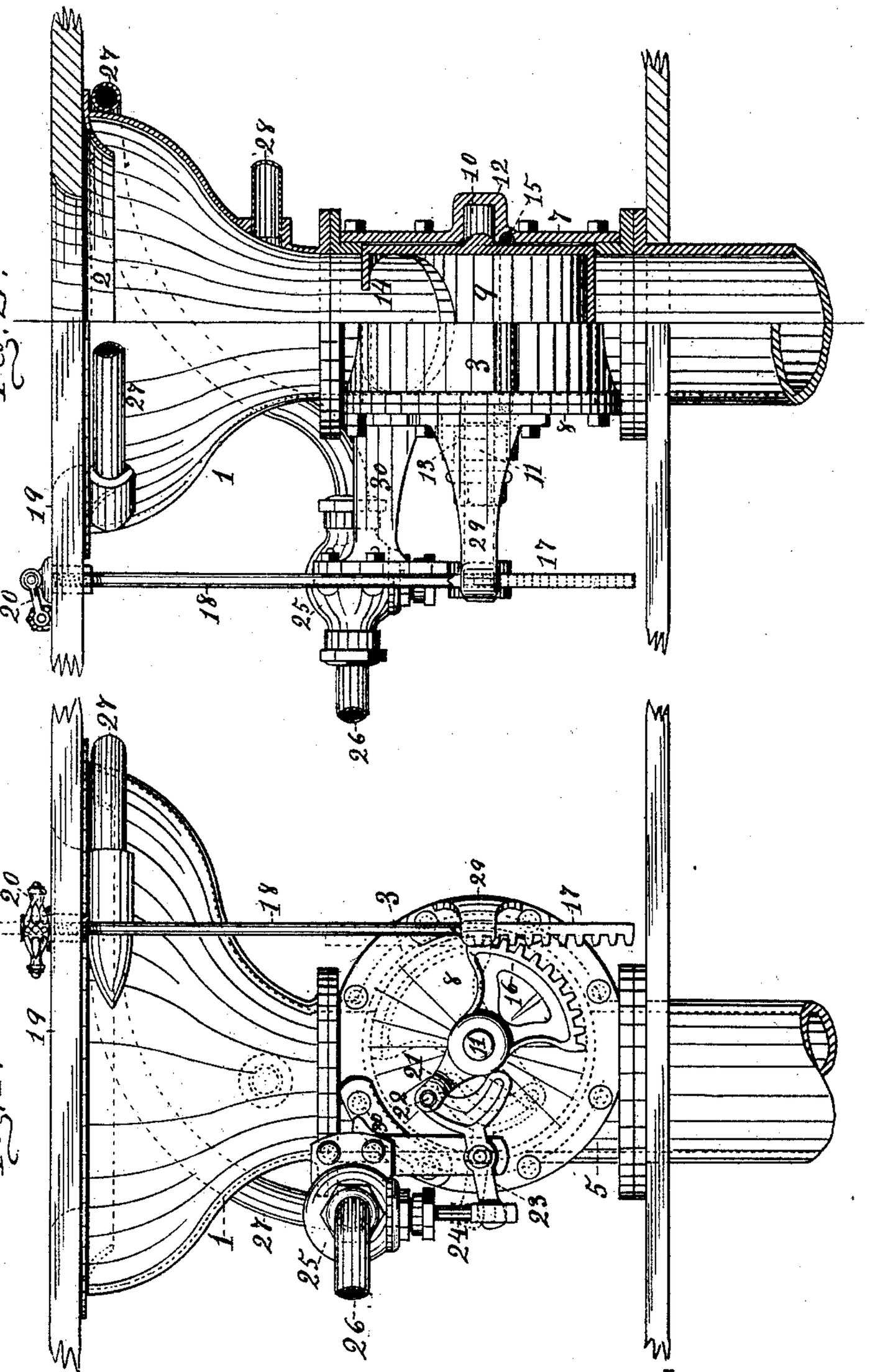


Fig. 1.




WITNESSES

J. W. Ellsworth

Geo. W. Evans

INVENTOR

Frank W. Cross,

By Fenner, Brown & Taylor atty's

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2 Sheets—Sheet 2.

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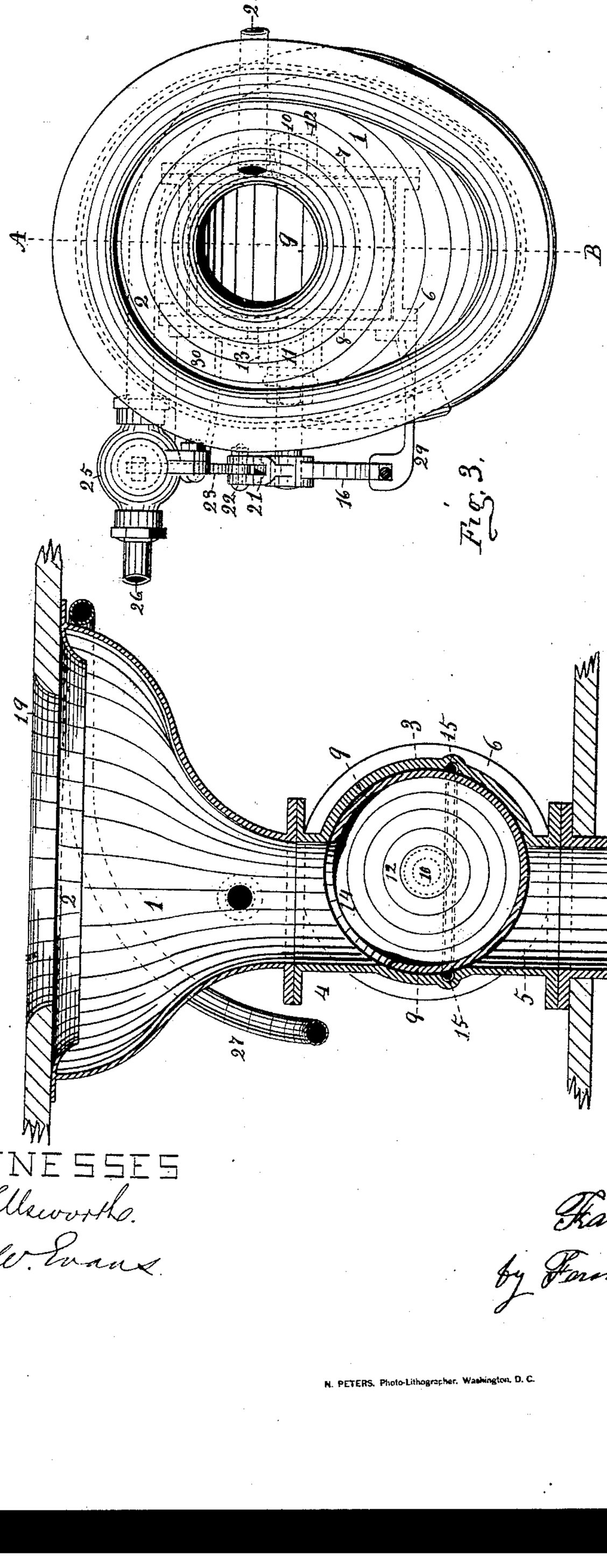

Fig. 3.



Fig. 4.

WITNESSES

J. H. Ellsworth.

Geo. W. Evans.

INVENTOR

Frank W. Cross

by Farrow, Taylor & Luby

# UNITED STATES PATENT OFFICE.

FRANK W. CROSS, OF WASHINGTON, DISTRICT OF COLUMBIA.

## SHIP'S WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 354,503, dated December 14, 1886.

Application filed July 6, 1886. Serial No. 207,241. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK W. CROSS, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Ships' Water-Closets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in ships' water-closets when arranged or set above the water-line, and applicable not only to ships but also to dwellings and other buildings where such closets are required.

The objects of my invention are, first, the construction of a closet that shall perfectly preclude drafts or undue circulation of air when placed in ships, or the escape of gas or noxious vapors from traps or sewers when placed in dwellings; second, a closet that can be easily worked and kept in order, and of simple and durable construction. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation, showing the mechanism or devices for operating the different parts of the closet. Fig. 2 is a sectional elevation at right angles to Fig. 1. Fig. 3 is a plan view, and Fig. 4 a vertical transverse section through the line A B in Fig. 3.

Similar figures refer to similar parts throughout the several views.

1 in the drawings is the bowl, made in the usual form, having a flange, 2, projecting inward and turning downward to prevent the jet of wash-water from flowing over the top of the bowl.

3 is a chamber or base supporting the bowl, cylindrical in form, having an inlet-pipe, 4, to which is secured the bowl 1 and a discharge-pipe, 5, communicating with the soil-pipe. These pipes are arranged not in line with the center of the cylinder 3 but near to one side, for the purpose hereinafter described. This chamber is provided with flanges 6, to which the heads 7 and 8 are secured by bolts or screws closing both ends. Within this chamber is placed a working drum or cylinder, 9, closed at both ends, which is made to fit the chamber 3 on all sides by boring and turning, but yet free to turn on its journals 10 and 11, which are supported in bearing 12 and stuffing-gland 13, formed in the heads 7 and 8.

In one side of the central cylinder, 9, is formed an opening, 14, corresponding in size and form with the inlet and discharge pipes 4 and 5. When this opening is in register with the inlet-pipe 4, the closet is in readiness for use, or in its natural position when at rest, with the discharge-pipe 5 closed, shutting off communication from below; but when turned so as to register with the discharge-pipe 5 the communication from above is shut off and the contents of the cylinder discharged.

In order to prevent any escape of gas between the cylinders by wear or any other cause, packing 15 is placed in grooves formed in the outer chamber, composed of flexible rubber tubing, which will cause the least possible amount of friction in turning the inner cylinder.

Upon the journal 11, which passes through the stuffing-gland 13 extending outside, is secured a quadrant or segment of a toothed wheel, 16, the teeth of which engage with a vertical rack, 17. To the upper end of this rack is attached a rod, 18, extending upward through the seat 19, to which is hinged a handle, 20. Directly opposite, and in line of the quadrant, is formed an arm, 21, terminating in a fork-shaped end having a cross-pin, 22, which works in the slot in the T-shaped lever 23. This slot is so formed that the arm 21 can pass through half of its arc without moving the lever 23. On the outer end of this lever is formed a cam, working in a slot in the end of the valve-spindle 24 of the valve 25, which valve controls the supply of water for the closet. 26 is the supply-pipe, 27 the pipe discharging into the bowl, 28 the overflow, and 29 and 30 are brackets supporting the rack, water-supply valve, and lever 23.

The operation of this mechanism is very simple and easy. By raising the handle and rack the quadrant 16 and inner cylinder, 9, are turned and the contents of the cylinder discharged. The arm 21 acts upon the lever 23, which lifts the valve-spindle, opening the valve 25, admitting water supplying the closet, when the different working parts will have the position shown in dotted lines in Fig. 1. When

on returning the rack downward, they will assume their normal position.

I am aware that prior to my invention water-closets have been made with drums and devices to prevent drafts and the escape of gases and odors. Therefore such combinations I do not broadly claim, but—

What I do claim as new and my invention, and desire to secure by Letters Patent, is—

1. In a ship's water-closet having a cylindrical or drum-shaped valve, 9, in combination with the quadrant or segment 16, rack 17, arm of quadrant 21, lever 23, pivoted in the center, having a slotted T-shaped head, guide-bracket 29, supporting-bracket 30, and water supply-valve 25, substantially as arranged and for the purposes herein set forth.

2. In a ship's water-closet having a bowl, 1, chamber 3, admission-passage 4, discharge-passage 5, in combination with the valve 9, opening 14, packing 15, quadrant 16, rack 17, arm 21, lever 23, guide-bracket 29, supporting-bracket 30, and water-supply valve 25, substantially as arranged, and for the purposes herein set forth and described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK W. CROSS.

Witnesses:

JAMES H. ELLSWORTH,

GEO. W. EVANS.