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1,498,015

J. A. CORRY

RAILWAY WATER CLOSET

Filed Aug. 16, 1919

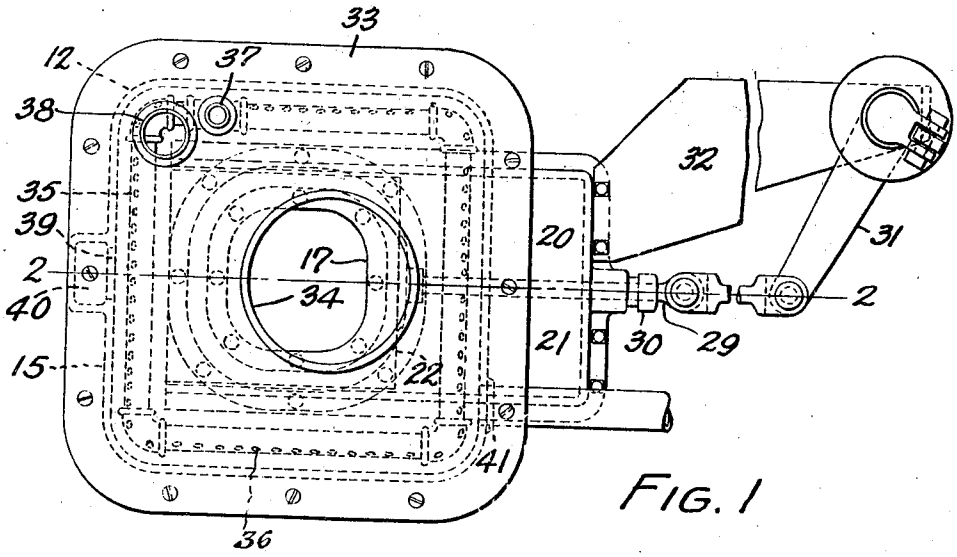


FIG. 1

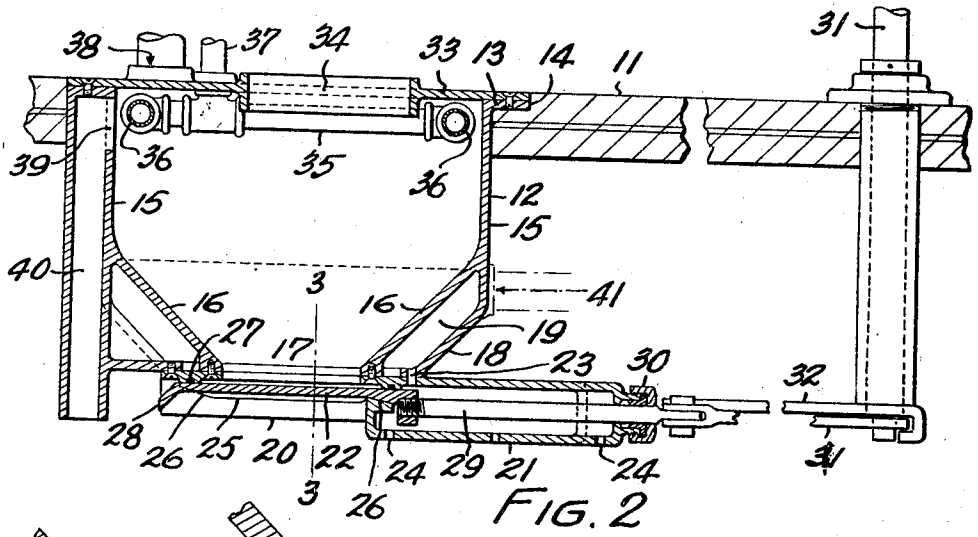


FIG. 2

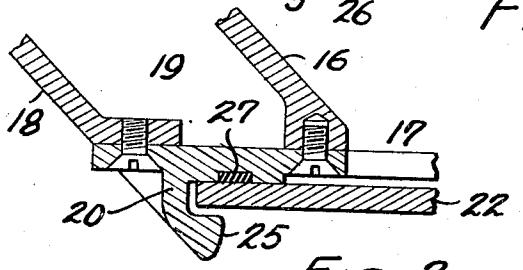


FIG. 3

Inventor
James A. Corry
By Atherton & Waughs Co
Attys.

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UNITED STATES PATENT OFFICE.

JAMES A. CORRY, OF OTTAWA, ONTARIO, CANADA, ASSIGNOR TO THOMAS BIRKETT, OF OTTAWA, ONTARIO, CANADA.

RAILWAY WATER-CLOSET.

Application filed August 16, 1919. Serial No. 317,996.

To all whom it may concern:

Be it known that I, JAMES A. CORRY, a subject of the King of Great Britain, and resident of the city of Ottawa, in the Province of Ontario and Dominion of Canada, have invented certain new and useful Improvements in Railway Water-Closets, of which the following is a full, clear, and exact description.

This invention relates to improvements in railway closets, and the object of the invention is to provide a reservoir and controlling means therefor of simple and durable construction which will be readily accessible, from the exterior of the car, for repairs.

A further object is to provide a device of this class which will be absolutely proof against freezing.

The device consists briefly of a reservoir having a double bottom forming a heating jacket. The reservoir is provided with a closure plate, the upper surface of which is at floor level and which is adapted to support the usual hopper. A valve casing is secured to the lower part of the reservoir and forms a closure and outlet for the heating jacket. A valve is located in the casing to control discharge from the reservoir.

In the drawings which illustrate the invention:—

Fig. 1 is a plan view of the device.

Fig. 2 is a section on the line 2—2, Figure 1.

Fig. 3 is a fragmentary section on the line 3—3, Figure 2.

Referring more particularly to the drawings, 11 designates the floor of a car and 12 a reservoir supported by an outwardly projecting flange 13 which rests in a rabbet 14 in the floor. The walls of this reservoir are substantially vertical in their upper portion 15 and converge towards the centre in their lower portion 16 leaving a comparatively large outlet aperture 17 at the bottom of the reservoir. Outside the converging reservoir walls 16 are surrounding walls 18 enclosing a jacket space 19 which is open at the bottom of the reservoir. A valve seat 20 is secured to the lower edges of the walls 16 and 18 and closes the jacket space. This seat includes a hollow casing portion 21 adapted to receive the valve gate 22 during open valve position. A passage 23 establishes communication between the jacket and the interior of the casing portion 21 and a suitable number of drainage holes 24 are provided in the said casing portion for the emission of spent heating agent.

The valve gate slides on guides 25 formed in the seat 20, which guides are provided at suitable intervals with cam portions 26 adapted to press the valve gate tightly against a gasket 27 mounted in the casing 20. The leading end of the valve is provided with a down-turned, inclined flange 28 which serves to stiffen the leading end of the gate where it is unsupported by the guides and where it obviously cannot be supported. The inclined flange also will not provide lodgement for matter escaping from the reservoir. The gate is operated by a spindle 29 passing out of the casing portion 21 through a stuffing box 30 and connected to any suitable operating mechanism 31 which may be in part supported by a plate 32 connected to the casing 20.

The reservoir is provided at the top with a cover plate 33 having a suitable flanged aperture 34 above which an ordinary hopper is mounted. Attached to the lower side of the cover is a flushing pipe 35 having outlet apertures 36 directed against the vertical sides of the reservoir. This pipe is connected with a water supply pipe 37. At any suitable point an aperture 38 is provided for the reception of a vent pipe. At the upper part of the reservoir an aperture 39 is provided communicating with a downwardly extending passage 40 open at its lower end. An opening 41 is provided below the converging walls 16 for the connection of a pipe to supply steam or any heating agent to the jacket 19.

The operation of the device is extremely simple. The reservoir and cover plate are secured to a car floor and will never require to be moved unless broken. The reservoir occupies the depth of the car underframe and is substantially protected thereby. The only point at which freezing is liable to prove troublesome is at the discharge where the contents are consolidated by the converging walls and are exposed to the outer air. This is overcome by the provision of an ample heating jacket which warms the reservoir, over-flow and valve. If it becomes necessary to clean or repair the device this may easily be accomplished from the outside of the car and the entire valve structure may be removed if desired, thus

exposing the interior of the steam jacket. The connection between the over-flow and reservoir may, if plugged, be cleared from the outside by inserting a suitable instrument through the straight over-flow pipe. When the valve is open it runs easily and freely on the guides 25 and without any friction on the gasket. In the final stages of the closing movement the valve rides up on the cams 26 and is thus pressed against the gasket making an absolutely tight joint. It will be noticed from Figure 1 that the link connection between the valve and operating gear will permit the gear to be placed in any position relative to the reservoir. If the reservoir is made square or circular the cover carrying the flush pipe and vent may be placed in any position relative to the body of the reservoir.

Having thus described my invention, what I claim is:—

1. In a device of the class described, a reservoir, a heating jacket surrounding the reservoir, the reservoir and jacket being open at the lower end, and a valve seat secured to the bottom of the reservoir and forming a closure for the heating jacket.

2. In a device of the class described, a reservoir, a heating jacket surrounding the reservoir, a valve seat and casing secured to the bottom of the reservoir and forming a closure for the heating jacket and a drainage outlet for the jacket established through said valve seat and casing.

3. In a jacket of the class described, a reservoir, a heating jacket surrounding the lower part of the reservoir, and an overflow passage leading from the upper part of the reservoir, the walls of said passage being formed integral with the reservoir walls and being coincident in part with part of the heating jacket wall.

4. In a device of the class described, a reservoir, a heating jacket surrounding the reservoir, an overflow pipe leading from the upper part of said reservoir, the lower part of said pipe being disposed to be heated from the reservoir heating jacket.

5. In a device of the class described, a reservoir including a heating jacket, a valve casing connected to said reservoir and arranged to be heated by the reservoir jacket, an outlet for the jacket established through said casing, and a valve gate slidable in said casing.

6. In combination with a device according to claim 5, guides for said valve gate and cams thereon adapted to press said valve against the casing in the final closing movement.

7. In combination with a device according to claim 5, guides supporting the gate at opposite edges and at one end, and a rib on the gate at the unsupported end extending between the guides and stiffening the gate.

8. In combination with a device according to claim 5, guides supporting the gate at opposite edges and at one end, and a rib on the gate at the unsupported end extending between the guides and stiffening the gate, said rib being inclined relatively to the plane of the gate and having the surfaces thereof continuous with the surfaces of the gate.

9. In combination with a device according to claim 5, an operating gear for said valve and a supporting bracket for said operating gear connected to the valve casing.

10. An under-car waste receptacle comprising a hopper, an external heating device surrounding the lower part of the hopper and attached thereto, a closure device for the hopper, and ports arranged to admit a heating agent from the heating device into contact with the closure.

In witness whereof, I have hereunto set my hand.

JAMES A. CORRY.