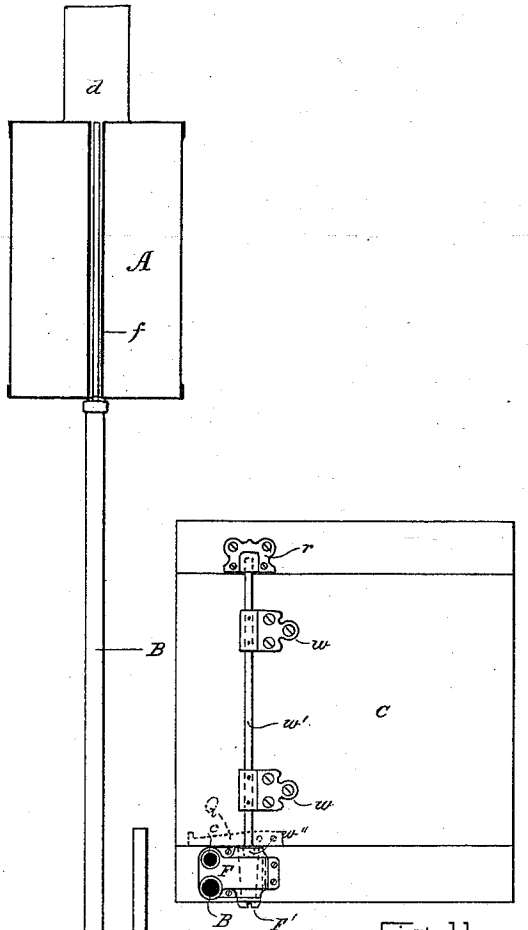
(No Model.) 2 Sheets—Sheet 1.

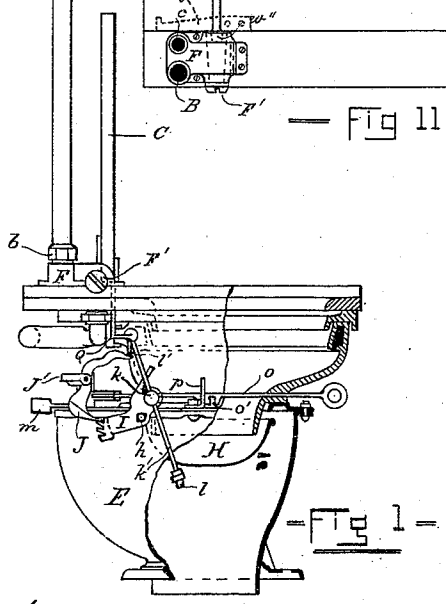
H. C. HART.

WATER CLOSET.

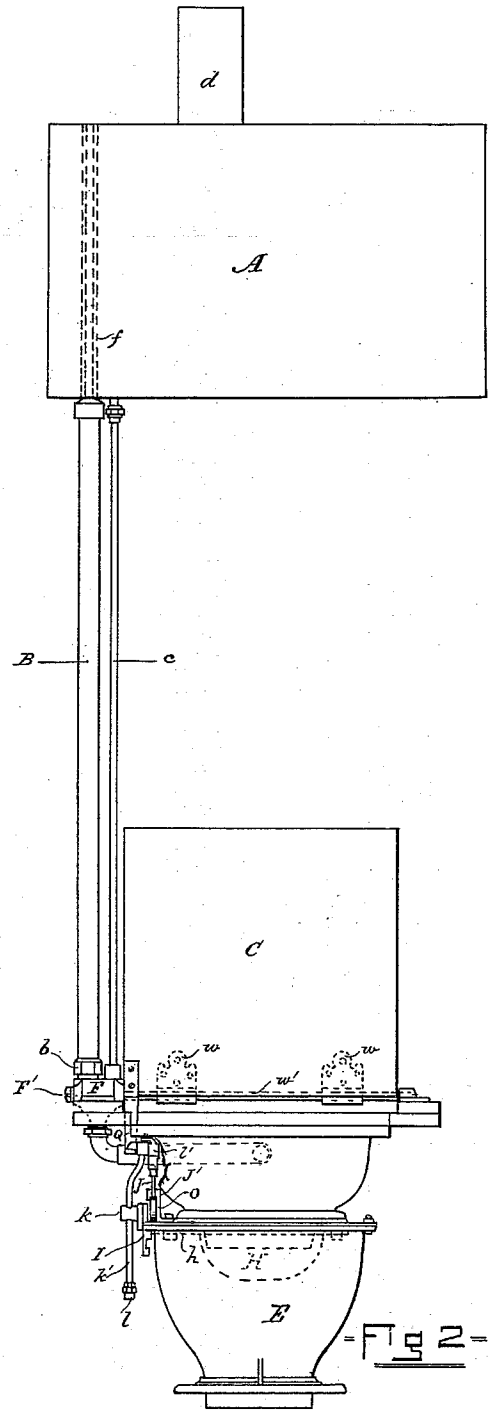
No. 440,030. Patented Nov. 4, 1890.



— Fig 11 —



— Fig 1 —



— Fig 2 —

Witnesses.
Geo. H. Lothrop
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Inventor.
H. C. Hart

(No Model.) 2 Sheets—Sheet 2.

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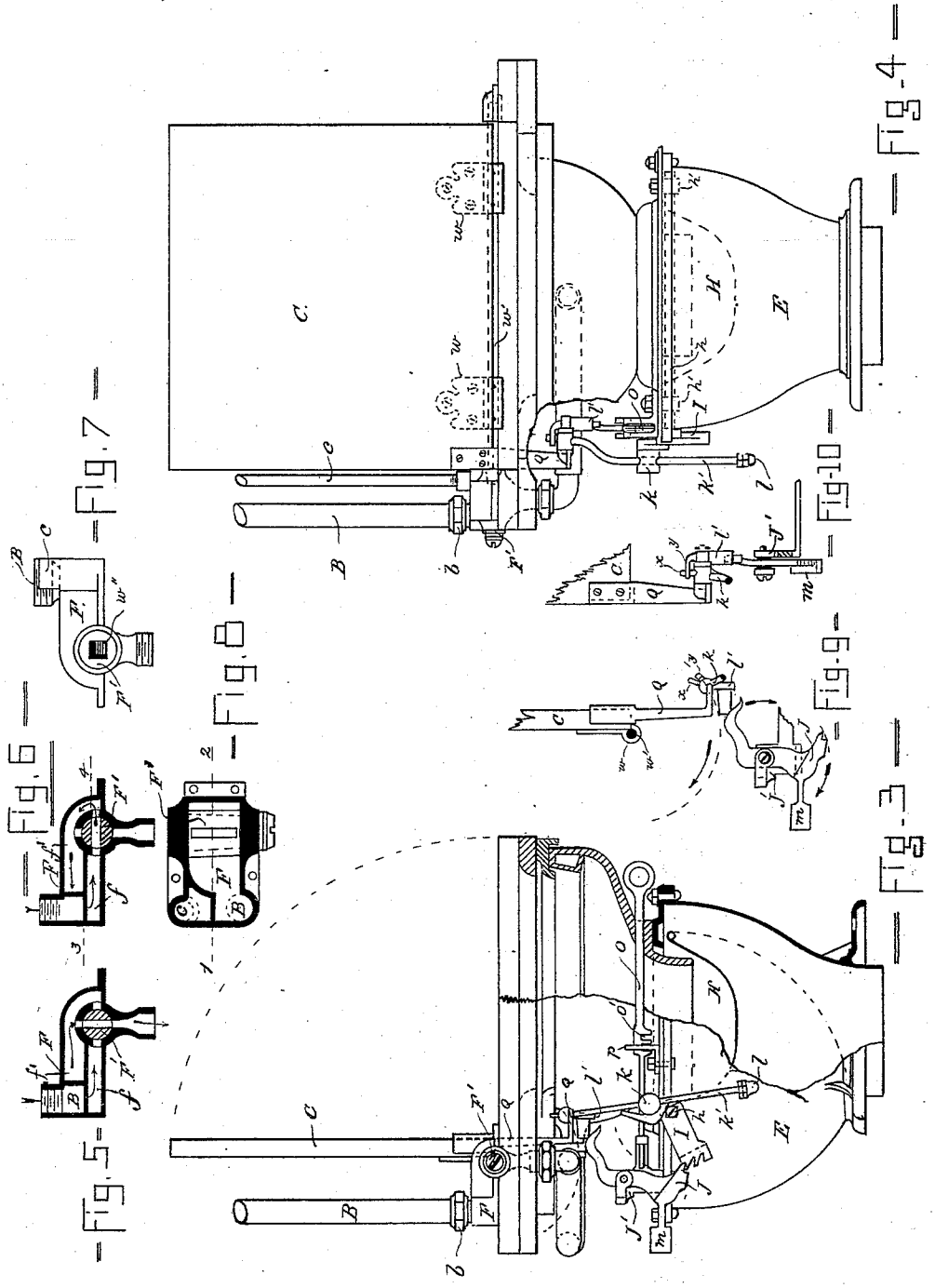

WITNESSES,
Geo. H. Lothrop
Gerstin & McAuliffe

INVENTOR
Henry C. Hart

UNITED STATES PATENT OFFICE.

HENRY C. HART, OF DETROIT, MICHIGAN.

WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 440,030, dated November 4, 1890.

Application filed May 12, 1890. Serial No. 351,503. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. HART, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Water-Closets, of which the following is a specification.

My invention consists in an improvement in water-closets designed principally for railway-cars and for other places in which the supply of water is limited, and where only a measured quantity of water is to be used with each use of the closets.

Figure 1 is a side elevation, partly in section. Fig. 2 is a front elevation. Figs. 3 and 4 are enlarged partial elevations similar, respectively, to Figs. 1 and 2. Figs. 5 and 6 are vertical sectional views of a three-way valve and the controlled passages, taken on the line 1 2 of Fig. 8. Fig. 7 is a side elevation of said valve; and Fig. 8 is a section thereof on the line 3 4, Fig. 6. Figs. 9 and 10 are details of some of the connections, and Fig. 11 is a plan view of the seat.

A represents an elevated water-tank. *c* represents an outlet-pipe leading from the bottom of said tank and terminating in the passages *f* in the shell of the valve F. (Shown in Figs. 5 and 6.)

The valve F consists of a shell having therein two passages *f f'*, a plug F' rotatable in the shell and having a water-passage therethrough and an outlet-pipe. The passage *f'* has two connections with the plug F', and the passage *f* one connection, as clearly shown in Figs. 5 and 6, Fig. 6 representing the plug in position to connect passages *f* and *f'* and to close the outlet-pipe, and Fig. 5 representing the plug in position to close the connection between passages *f* and *f'* and to connect passage *f'* with the outlet-pipe.

C represents the lid of a water-closet secured to the seat by the hinges *r w*, and in the arrangement illustrated I have extended the pintle *w'* of the lid and connected it by a squared end *w''* directly with the plug F', as shown in Fig. 7, though this arrangement may of course be modified, as any connection by which the motion of the lid operates the valve is within my invention.

B represents a stand-pipe, whose lower end is connected with the passage *f'* in valve F, and whose upper end extends above the high-water level in tank A. The pipe B is intended to contain the quantity of water to be expended at each use of the closet.

Closing the lid C rotates plug F' into the position shown in Fig. 6, establishing communication between pipes *c* and B, whereby pipe B is filled from tank A, and raising said lid rotates plug F' into the position shown in Fig. 5, opening connection between pipe B and the valve-outlet, thus discharging the contents of the pipe B into the closet.

To the lid C is attached an arm Q, extending through the rear part of the covering of the closet, this rear part being cut away on its inner side to permit the lid being closed without interference from the said arm.

E represents the hopper carrying a bowl of ordinary construction.

H represents a pan fastened rigidly to a shaft *h*, having bearings in the hopper E, one end of said shaft protruding through the side of the hopper and having attached to it the lever I. To the lever I is swiveled a projection *k*. The rear end of the lever I is provided with notched teeth, as shown.

J represents a weighted swinging clutch pivoted in a frame *j'*, attached to the upper part of the hopper E, and is provided with a weight *m* and a tooth for engaging in the teeth upon the lever I.

Q represents an arm, which is attached to the lid C and moves with it, and has pivotally attached to it a gravity-operated pawl *l'*, having the finger *y*, adapted to engage the stop *x* in such manner that when the lid *c* is raised and the arm moves downward the pawl will ride over the curved bearing on the clutch J, assuming the position shown in Fig. 9. When the lid is closed, the first few inches of its movement causes the pawl *l'* to force downward upon the curved bearing of the clutch J, swinging its tooth out of engagement with the lever I and allowing the pan to swing by its own gravity and the weight of its contents into such a position as to be immediately freed from its contents.

Pivotally attached to the arm Q is a rod *k'*. This rod passes through the projection *k*, which is attached to the lever I, and it (the rod) is provided at its lower end with an adjustable stop *l*.

As the lid moves downward after the pan

has been "dumped" by its first few inches of travel, the rod k' is drawn by its attachment to the arm Q through the hole in the projection k, until when the lid has passed through a portion of its motion the stop l on the end of the rod engages with the projection k and the rest of the movement of the lid raises the pan H to its original position. The tooth on the weighted clutch J then engages with the lever I and holds the pan in place while the lid is again raised, the arm q swinging forward and the rod k' passing through the projection k until the lid is at the end of its upward movement, when the parts again assume the position shown in Figs. 3, 4, 9, and 10. Attached to the upper part of the hopper E is a guide p, through which passes the adjustable sliding arm o, provided with notches o', arranged to engage in the guide p. This arm also passes through an extension of the frame j', to which is pivoted the swinging clutch J. In ordinary use the rod o is held in the position shown in the drawings by the engagement of the rear of one of the notches o' with the guide p; but if the water in the tank becomes at any time exhausted, the arm o, which is provided at its outer end with a convenient handle, can be raised out of its engagement with the guide P and forced backward and engaged with the guide P by the forward one of its notches o'. This change of position of the arm o forces the tooth on the swinging clutch J out of engagement with the lever I, and consequently when the lid is open the pan assumes a vertical position and the closet can be used "dry," as a free passage from the seat through the bowl and hopper is provided; but when the lid is closed the pan is swung upward to the position shown in the drawings, excluding the dust and cold air which otherwise could enter through the hopper and bowl.

It will be noticed that in the operation of this closet, while being used with water or "wet," the pan is always up, excepting while it is being dumped by the movement of the lid from "open" to "closed," and that while being used dry the pan is also always up, excepting while the lid is open for use.

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

1. In a water-closet, the combination, with an elevated tank and its outlet-pipe, of a measuring-chamber, and a valve permanently connected with and operated by the closet-lid and alternately connecting said measuring-chamber with said tank and the closet, substantially as and for the purposes set forth.

2. In a water-closet, the combination, with the lid, of a multi-way valve permanently connected therewith and with an elevated tank, with a measuring-chamber, and with the closet, substantially as shown and described.

3. In combination with the lid of a water-closet, a multi-way valve having its plug connected with the end of the hinge-pintle on which the lid turns and having ports connected with a water-supply, a measuring-pipe, and with the closet, substantially as described.

4. In a water-closet, a swinging pan normally raised, a clutch holding said pan in a raised position, a hinged lid connected with and opening said clutch as the lid moves downward, and a loose connection between said lid and pan, whereby the downward motion of said lid first dumps and then raises the pan, substantially as shown and described.

5. In a pan-closet, a service-pan normally raised, a connection from said pan to a hinged lid, whereby said pan is raised, a clutch for holding said pan raised, and a movable stop for throwing out said clutch at will, substantially as shown and described.

HENRY C. HART.

Witnesses:
CHARLES B. LOTHROP,
GERTRUDE H. ANDERSON.