2 Sheets—Sheet 1.

S. PETERS & W. DONALD.

WATER-CLOSET TANKS, &c.

No. 180,059. Patented July 18, 1876.

Fig 1.

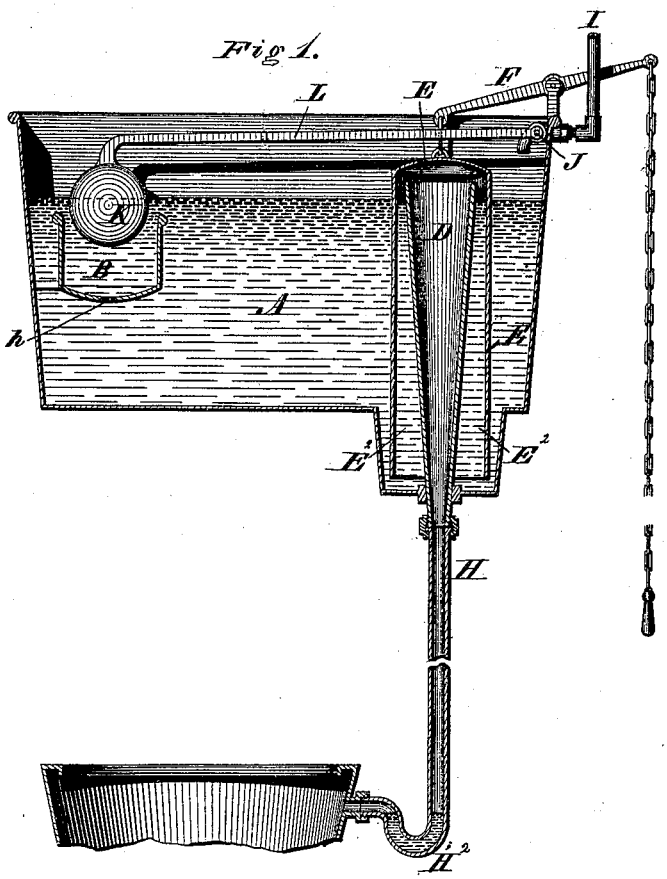
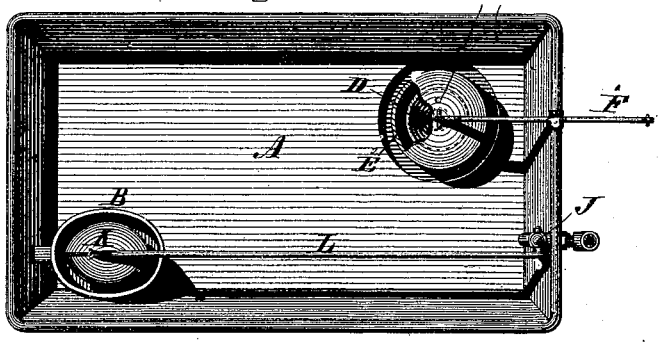


Fig 2.



WITNESSES

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2 Sheets—Sheet 2.

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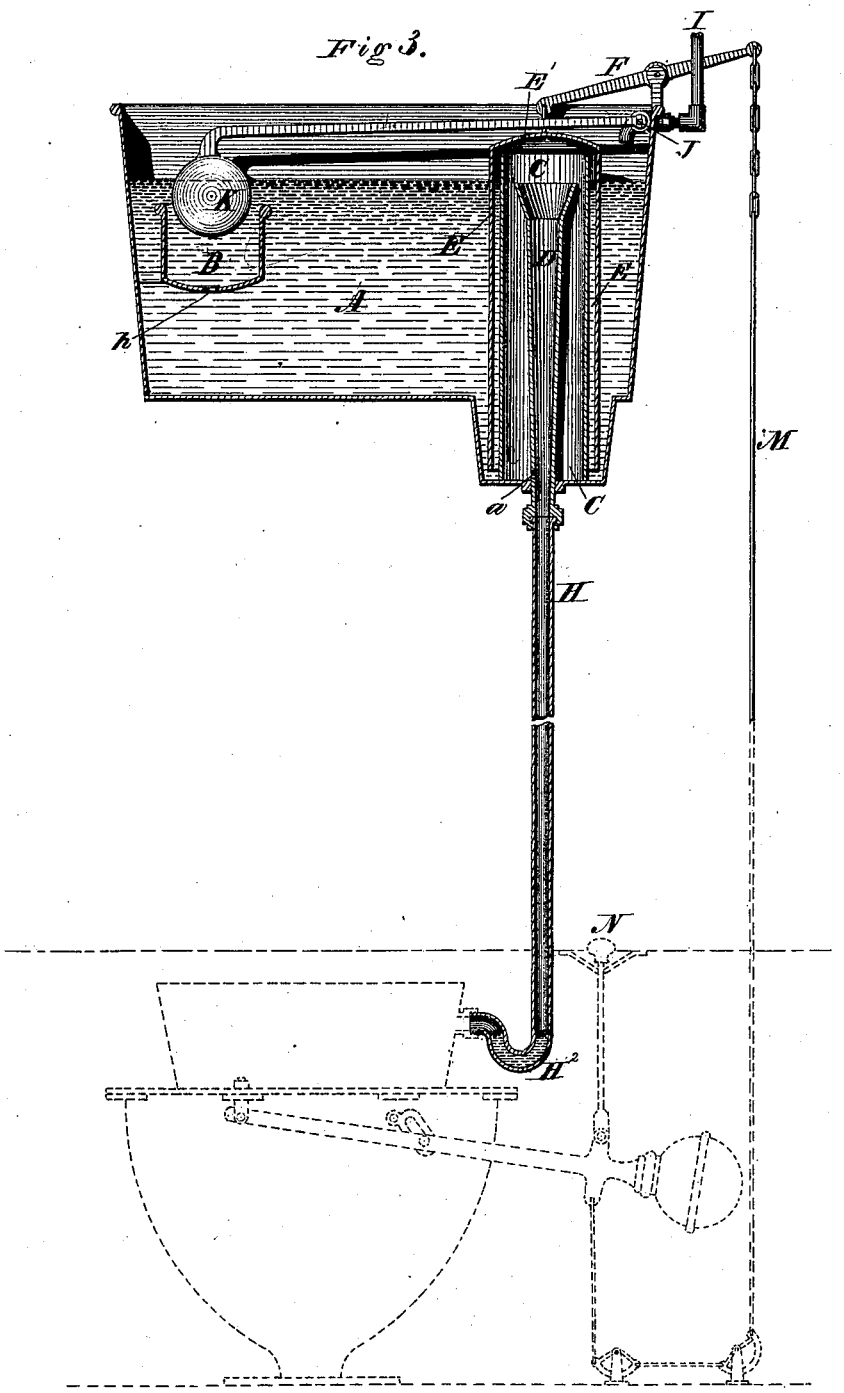
Fig 3.



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UNITED STATES PATENT OFFICE.

STEWART PETERS AND WILLIAM DONALD, OF GLASGOW, SCOTLAND.

IMPROVEMENT IN WATER-CLOSET TANKS, &c.

Specification forming part of Letters Patent No. **180,059**, dated July 18, 1876; application filed May 18, 1876.

To all whom it may concern:

Be it known that we, STEWART PETERS and WILLIAM DONALD, of Glasgow, Scotland, have invented certain Improvements in Water-Closet Tanks, and Apparatus for the Supply and Discharge of Liquids; and we do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of our improved apparatus as applied to what are known as "hopper" closets. Fig. 2 is a plan or top view of the same. Fig. 3 is a vertical section of our apparatus slightly modified, so as to be applied to a pan or valve closet.

The same part is marked by the same letter of reference wherever it occurs in the drawings.

The object of our invention is to simplify the construction of the working parts, and to prevent the waste of water, by limiting the amount of the discharge and after-flush.

The nature of our invention consists in providing the water-tank with a siphon, operated by a lever under control of the closet-handle, to deliver to the closet a fixed supply of water, with or without an after-flush, as may be required; and, in combination with said apparatus, a self opening and closing faucet, provided with a lever and ball-float, all constructed and operating substantially as hereinafter more particularly set forth.

In the accompanying drawings, A marks a small tank, made of cast-iron or other suitable material. From the bottom of the tank projects upward the conical tube D, made, preferably, of copper, and extending above the water-level. Over this tube is suspended a copper cap, E, hung to the cistern-lever F, which has its fulcrum in a stud attached to the side of the tank, and is connected by chain or rod M with the closet-handle N. (See Fig. 3.) A very small hole, E^1, is bored in the top of cap E, permits the escape of air from the cap, and allows the water in the space E^2, between the cap and tube D, to attain the same level as that in the tank A.

H is the service-pipe, provided near its junction with the closet with the ordinary siphon-trap H^2.

I is the supply-pipe, connected with the street-main or other source of supply. It has a valve or faucet, J, connected with a lever, L, provided with a ball-float, K, on its extremity. This float rises and falls in a chamber, B, having a small hole, *h*, in its bottom for the escape of water.

When the outer arm of the lever F is drawn down by the closet-handle, the cap E is drawn up over the tapered tube D, and a partial vacuum is formed in tube D and pipe H by reason of the lower end of the latter being trapped with water at the siphon H^2. The water from tank A, rushing in to fill the vacuum thus formed, starts the siphon, the longer arm of which consists of the down-pipe H and tube D, and the shorter arm of the space between cap E and tube D. When once the siphon is set in action, it will continue running until the whole of the water in the tank has been discharged, provided the cap E be held up; but the action will stop immediately on the cap being allowed to fall, so that a partial or complete flush may be had, as desired. The small hole *h* in the float-chamber B allows the water to escape from that chamber after the contents of the tank have been discharged. The fall of the ball-float K opens the supply-cock J, and the tank is again filled to a height at which the rise of the ball closes the cock.

The foregoing description applies specially to the arrangement shown in Figs. 1 and 2, in which a hopper-closet, without a pan, is to be supplied.

Fig. 3 illustrates the modification made to supply the after-flush required in pan or valve closets after the main flush has stopped. It consists of a copper tube, C, introduced between the tube D and the cap E, in the manner clearly represented in the figure. When the main discharge is in action the space between D and C will become filled with water; and after the cap E has been dropped to arrest the main discharge, the water in C escapes through a small hole, *a*, made in the side of tube D, and supplies the required after-flush to the pan-closet.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination, with the tank A and trapped service-pipe H, of the tube D, cap E,

and lever F, all constructed, arranged, and operating substantially in the manner and for the purpose described.

2. The combination, with the tank A and trapped service pipe H, of the tubes D and C, cap E, and lever F, all constructed, arranged, and operating substantially as and for the purpose specified.

3. The combination, with the tank A, of the supply-pipe I, cock J, lever L, ball K, and perforated ball-chamber B, all constructed, arranged, and operating substantially in the manner and for the purpose set forth.

The above specification of our said invention signed and witnessed at Glasgow this 9th day of March, A. D. 1876.

STEWART PETERS.
WILLIAM DONALD.

Witnesses:
JOHN MCGOWAN,
WILLIAM BLAIR.