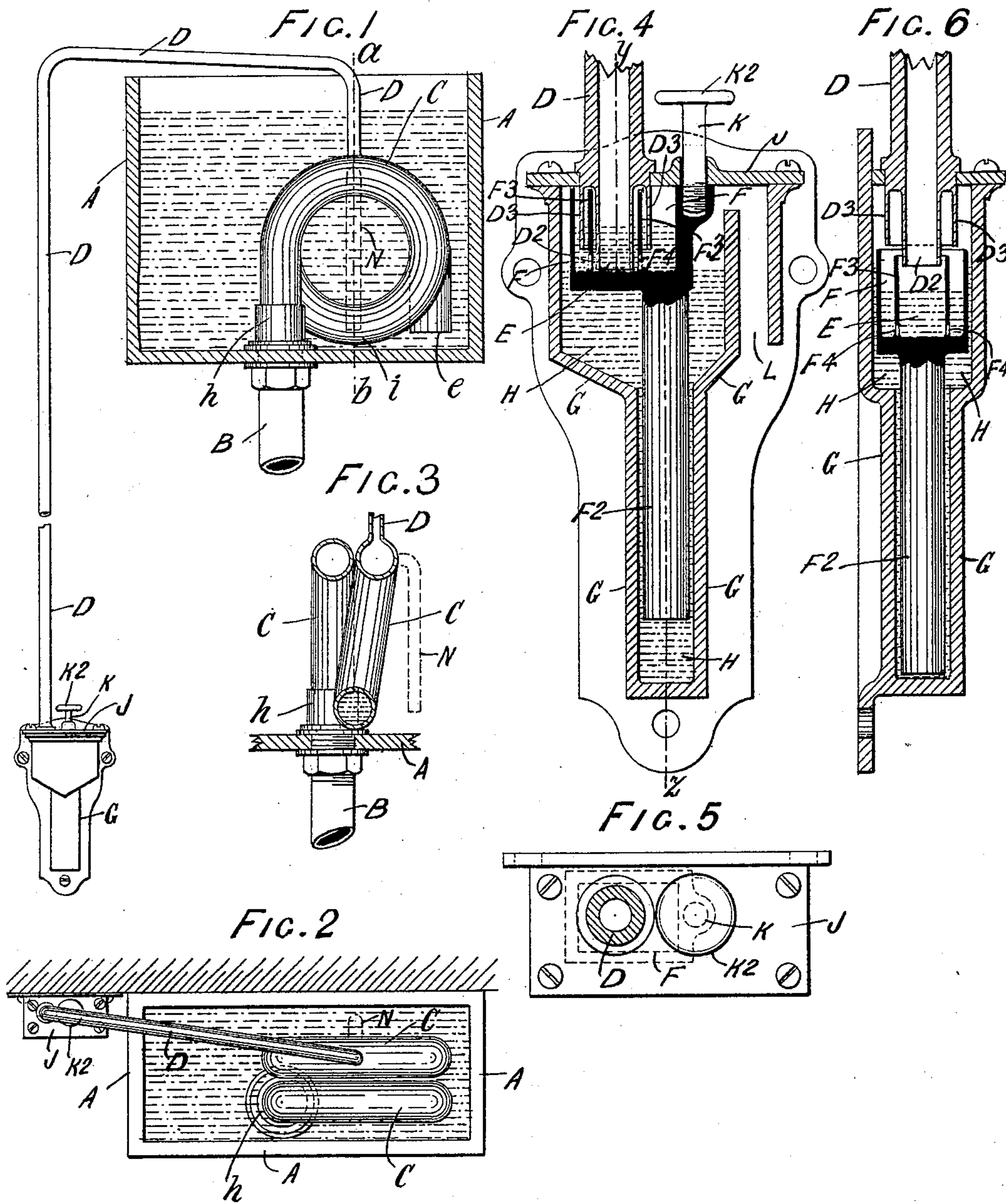


(No Model.)

E. H. PARKINSON.
FLUSHING CISTERN.

No. 605,972.

Patented June 21, 1898.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDGAR HARRISON PARKINSON, OF BRADFORD, ENGLAND.

FLUSHING-CISTERN.

SPECIFICATION forming part of Letters Patent No. 605,972, dated June 21, 1898.

Application filed August 17, 1896. Serial No. 603,040. (No model.)

To all whom it may concern:

Be it known that I, EDGAR HARRISON PARKINSON, a subject of the Queen of England, residing at Bradford, England, have invented certain new and useful Improvements in Flushing-Cisterns, of which the following is a specification.

This invention relates to improvements in siphon flushing-cisterns for water-closets, urinals, or the like.

To carry out my invention, I employ two siphons, with the longer or delivery leg of the first siphon discharging into a bend or sealed vessel in connection with the bottom of the shorter or suction leg of the second siphon. The height from the bottom of the shorter or suction leg of the first siphon to the maximum level of the water in the cistern is a little less than the aggregate length of the two shorter or suction legs of the siphons. Consequently when the cistern is full the longer leg of the first siphon is more or less filled with air, and to discharge the contents of the cistern I allow the air to escape from this air-space. To allow the air to escape from the said air-space when required, I connect an air-pipe (which is carried above the level of the water in the cistern) to it, which air-pipe extends into a suitable vessel of mercury or its equivalent in a convenient position below. Then to release air I lower the level of the mercury below the lower orifice of the air-pipe, thus leaving the air in said air-space free to escape, and the contents of the cistern are at once discharged.

Reference is to be had to the accompanying sheet of drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in each of the figures.

Figure 1 represents a sectional view of a cistern fitted with my improvements. Fig. 2 represents a plan view of the same. Fig. 3 represents a diametrical section of the double siphon on the line *a b*, Fig. 1. Fig. 4 represents a sectional elevation, on a larger scale, of a device I may employ to allow the air to escape when it is required to discharge the cistern. Fig. 5 represents a plan view of the same. Fig. 6 represents a vertical section on the line *y z*, Fig. 4.

The cistern A may be of any convenient

construction, and the flush-pipe B is fitted with two siphons or a double siphon consisting of a coil-pipe C. The portion of the coil C from the opening or inlet end *e* to the central point *i* of the coil forms the first siphon, while the remainder of the coil from *i* to *h* forms the second siphon, and the air imprisoned in the bend of the first siphon, in conjunction with the water on each side of it, forms an "air-trap" and prevents the water rising high enough in the first siphon to flow over the top of the bend into the second one notwithstanding that the top of the water in the cistern is above the level of both, as shown by the broken lines, Fig. 1.

The air-pipe D, connected to the top of the bend of the first siphon, passes over the top of the cistern, and its lower end D² is hermetically sealed by dipping into the mercury E, contained in the cup F. Consequently to discharge the cistern it is simply necessary to lower the mercury below the end D² of the pipe to allow the air imprisoned in the siphon to escape. A convenient arrangement for this purpose and one not liable to get out of order is to float the cup F in a vessel G containing mercury H. The vessel G is provided with a lid J, through which the pipe D passes, and also with an opening for the push-stem K, secured to the vessel G. A push or button K² is formed on the top of K. An air-passage L is made in the side of the vessel G. The cup F and vessel G may be made of aluminium, and F has a piece F² projecting down into the mercury by which to float it.

To prevent any possibility of particles of mercury being blown or carried out of the cup F by the escaping air, I provide the annular shield or baffle F³, surrounding the end D² of the air-pipe. This shield has openings F⁴ at the bottom to allow the mercury from the cup free ingress and egress. An annular shield D³, surrounding the shield F³, is also formed around the bottom of the pipe D². It is evident that in case particles of mercury should be blown out of the cup F they will be directed by the shield F³ into the annular space between the shield D³ and the bottom D² of the air-pipe and will consequently fall back into either the inside or outside of F².

A pipe (shown by the broken lines N) of the usual type and commonly termed an "air-

pipe" is connected to the crown of the siphon C.

When the main or service pipe pressure is not sufficient for a full-sized siphon of this class to work satisfactorily, one of a smaller caliber may be employed to start an ordinary single siphon, in which case the double siphon would be connected to the long leg of the ordinary siphon and its suction end preferably located at a little higher level than the suction end of the ordinary single siphon.

It is obvious that other means may be adopted to break the mercury seal to admit air to the air-tube.

Two siphons may be constructed with the second one below the other, or they may be arranged in any other suitable way, so as to form an air-trap between them.

I claim—

In a flushing-cistern, the combination with a tank, and two siphons having an air-trap

between them, of a pipe communicating at one end with the air-trap, a vessel into which the other end of the pipe leads, said vessel containing mercury surrounding and sealing the said end of the pipe, a second vessel containing mercury into which latter the first vessel dips and in which it floats, means for depressing the first vessel to break the seal around the end of the pipe, an annular shield or baffle-plate carried by the first vessel and surrounding the sealed end of the pipe and having openings, and an annular shield on the said end of the pipe surrounding the shield on the vessel.

In testimony whereof I have hereunto set my hand in the presence of the two subscribing witnesses.

EDGAR HARRISON PARKINSON.

Witnesses:

DAVID NOWELL,

SAMUEL A. DRACUP.