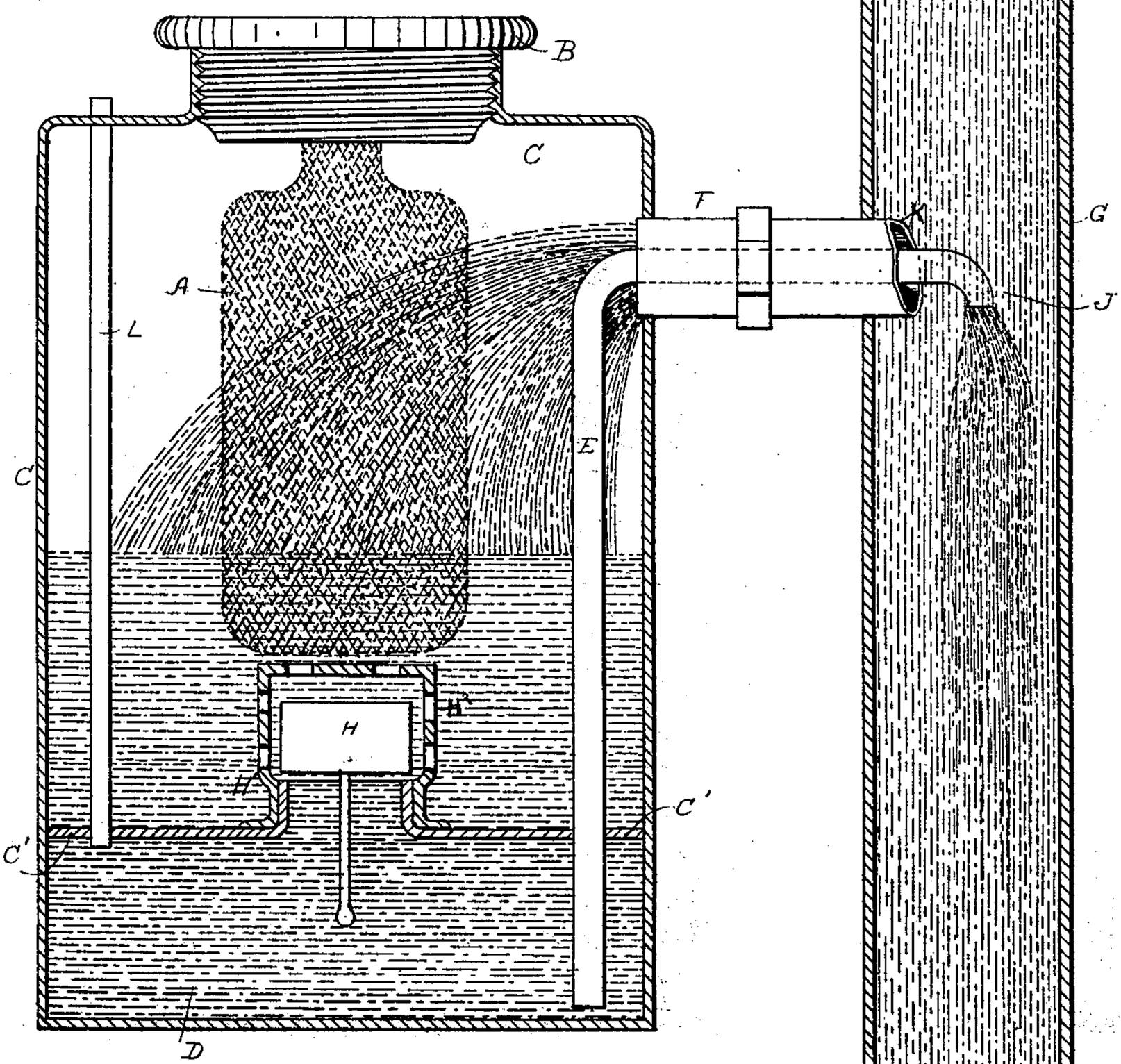
(No Model.)

S. A. JOHNSON.

SANITARY ARRANGEMENT FOR AUTOMATICALLY DISINFECTING WATER CLOSETS, &c.

No. 521,411. Patented June 12, 1894.

Fig. 1



Inventor

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SAMUEL A. JOHNSON, OF LONDON, ENGLAND.

SANITARY ARRANGEMENT FOR AUTOMATICALLY DISINFECTING WATER-CLOSETS, &c.

SPECIFICATION forming part of Letters Patent No. 521,411, dated June 12, 1894.

Application filed May 17, 1893. Serial No. 474,592. (No model.) Patented in England May 14, 1892, No. 9,206; in Germany November 1, 1892, No. 27,193; in France November 7, 1892, No. 212,249, and in Belgium November 8, 1892, No. 77,273.

To all whom it may concern:

Be it known that I, SAMUEL ALBERT JOHNSON, a subject of the Queen of Great Britain, residing at Poplar, in the county of Middlesex, England, have invented new and useful Improvements in Sanitary Arrangements for Automatically Disinfecting Water-Closets, Urinals, or the Like, (for which I have obtained patents in Great Britain, No. 9,206, dated May 14, 1892; in France, No. 212,249, dated November 7, 1892; in Belgium, No. 77,273, dated November 8, 1892, and in Germany, No. 27,193, dated November 1, 1892,) of which the following is a specification.

My invention relates to an improved sanitary arrangement for automatically disinfecting water closets, urinals or the like, and has for its object to automatically disinfect same by causing a predetermined quantity of disinfecting or deodorizing liquid to mingle with the down flush at each operation of flushing, the whole performed in a novel and effective manner.

According to my invention I provide a vessel of circular or other shape formed with two chambers; the larger or upper chamber is intended to hold the bulk of the disinfecting matter, and the lower or smaller chamber to contain the required quantity to be used in a fluid state each time the flushing takes place. Leading to the lower or smaller chamber a suction pipe is provided, which empties the lower chamber each time that the closet, urinal or other receptacle or place is flushed, this lower chamber is shut off from the upper chamber by means of a floating valve, placed in the center of the division plate, which separates the two chambers and closes when the operation of emptying the contents of the lower chamber is going on, thereby uniformly regulating the desired quantity necessary for effecting the particular object desired. The lower or smaller chamber is provided with a small air pipe leading outwardly at the top of the upper chamber. A further small pipe is also provided leading into the side of the flushing pipe of the water-closet or the like, requiring to be disinfected (as from time to time needed) and having a V-shaped slot or lip upon it to catch a similar amount of liquid to that withdrawn, which is in turn replied to the upper chamber, the latter being therefore uniformly full.

The disinfecting material I propose employing may be inclosed in a bag, in which case it would preferably be made of asbestus or other like, or suitable material for the purpose, suspended or held by means of a metal screw from the center of the cap of the upper chamber, or may be otherwise inserted within the said upper chamber as hereinafter described. The particular class of disinfectant I prefer to employ would be in a highly concentrated form, such as permanganate of potash or other suitable material that will gradually mix or combine with the surrounding water. The said disinfectant when once supplied will be found to last for a long period and when it is found necessary to replenish the same, it can be readily done by simply removing the cap of the vessel for recharging.

In the accompanying drawing the figure shows a sectional view of the apparatus as fitted to and in connection with an ordinary "flush pipe" direct from the main tank or cistern, without the intervention of the "waste water regulator."

In the drawing, A is a small bag of asbestus, canvas, or other suitable material, in which the necessary disinfecting or deodorizing property may be placed either in a solid, crystalline or other highly concentrated form and of such a nature as to be readily and easily soluble in water, such as permanganate of potash or other substance or matter that I may find in practice most suitable to use for the particular purpose intended.

B. is a cap, which may have a screw-thread formed on its lower part and be capable of being screwed into the neck of the upper or larger chamber C and to which the bag of asbestus or the like may be suspended or held in position. A smaller or lower chamber D, is connected with and forms part of the said upper chamber C, by means of a division plate C′. A suction tube or pipe E. is provided as shown with a coupling or nipple piece F having a thread thereon and a "V-cut" formed at the end thereof which is screwed or fitted into the upper chamber C likewise to the down or flush-pipe G; and through the said coupling-piece F the up-

per portion of the suction pipe or flush pipe E protrudes or dips downward in the flush pipe G.

The lower chamber D, is at times shut off from the upper chamber C, by means of a small floating valve H, which has a seating H′. and perforated guard H^2 provided for it to work in, formed in and on the division plate C′, so that at each operation which takes place when the down flush of water occurs the quantity of disinfecting fluid that has been permitted to enter and pass into the lower chamber D, is exhausted or taken therefrom through the medium of the suction tube or pipe E, and issues from the projecting or dip end thereof as at J, and freely intermingles with the down flush of water occurring in the pipe G. The terminal portion of the coupling piece F, is formed with an open lip or V-cut or lip recess opening at the upper portion, care being taken when inserted to keep the "V-cut," or open recessed protruding end portion as at K upward, for the purpose of catching a similar quantity of water, at each flushing operation, and resupplying the upper chamber C, to that amount of the disinfecting fluid withdrawn from the lower chamber D.

I am well aware that there have been other attempts to give or discharge a disinfecting liquid or property so as to mix either with the down flush of water or to be placed in the cistern or otherwise, and in similar disinfecting arrangements whereby, when the use of such a disinfectant as permanganate of potash is employed, the passages get quickly choked or clogged up and the supply materially retarded. But by my invention I provide a very simple improved sanitary arrangement for automatically and effectively discharging or distributing in a liquid form, certain disinfecting or deodorizing properties as may be preferred and in no way liable to derangement.

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

1. In a disinfecting apparatus, the combination with a casing provided with an inlet and having its interior divided into two compartments, connected by a valved passage, of an outlet tube, connected to one of said compartments and having a bent end adapted for insertion in the flush pipe, substantially as set forth.

2. In a disinfecting apparatus, the combination with a casing having its interior divided into two compartments connected by a valved passage, one of which compartments is provided with a liquid inlet and the other of which compartments is provided with an air inlet, of an outlet tube connecting with the last named compartment at one end and having its other end bent and adapted for insertion in the flush pipe, substantially as set forth.

3. In a disinfecting apparatus, the combination with a casing having its interior divided into two compartments connected by a valved passage, of a liquid inlet pipe connecting at one end with one of said compartments and having its other end beveled and adapted for insertion in the flush pipe, and a liquid outlet pipe connecting at one end with the other compartment and having its other end bent downwardly and adapted for insertion in the flush pipe, substantially as set forth.

4. In a disinfecting apparatus, the combination with a casing having its interior divided into two compartments connected by a valved passage, said compartments lying in different horizontal planes, of liquid inlet pipe connecting at one end with the upper of said compartments and having its other end beveled and adapted for insertion in the flush pipe, and a liquid outlet pipe connecting at one end with the lower compartment, said outlet pipe being carried upwardly through the liquid inlet pipe and having its other end bent downward and adapted to lie within the flush pipe, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 4th day of May, 1893.

S. A. JOHNSON.

Witnesses:
V. HUGHES,
G. PRINGLE.