No. 761,021. PATENTED MAY 24, 1904.

J. H. VENNERS.

WATER PRESSURE INJECTOR.

APPLICATION FILED JUNE 7, 1902.

NO MODEL.

FIG. 1.

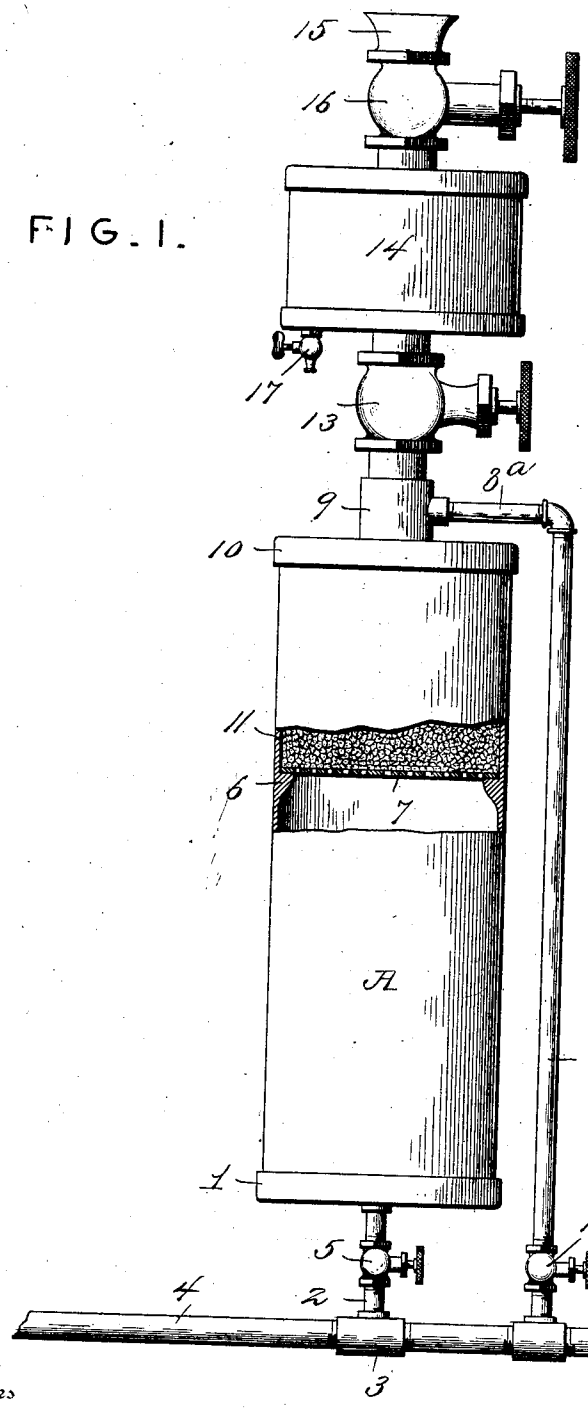
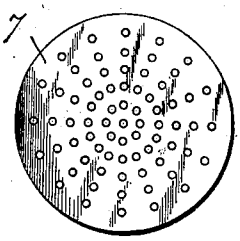


FIG. 2.



Witnesses

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No. 761,021. Patented May 24, 1904.

UNITED STATES PATENT OFFICE.

JAMES H. VENNERS, OF BROOKLYN, NEW YORK.

WATER-PRESSURE INJECTOR.

SPECIFICATION forming part of Letters Patent No. 761,021, dated May 24, 1904.

Application filed June 7, 1902. Serial No. 110,694. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. VENNERS, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Water-Pressure Injectors, of which the following is a specification.

My invention has relation to improved means for chemically charging water mains or pressure pipes with disinfecting or antiphlogistic solutions.

The invention is particularly adapted for connection to urinals and basins having no flush-tanks associated therewith and also for sprinkling floors and applications to garbage to prevent or destroy the deleterious effects thereof.

The object of the invention is to provide an apparatus embodying a vessel charged with a chemical solution and provided with a feed pressure-pipe leading from the main into the upper portion of the vessel and a discharge-pipe to carry the solution back into the main and thence through the main to the point required.

It is also the object to provide an apparatus for the purposes intended which is of simple construction and is efficient and durable in use.

The apparatus may be readily arranged in operative position in connection with the main water-pipe to feed the disinfecting or antiphlogistic solution to the places to be acted upon.

With these purposes in view my invention consists in the novel construction of the apparatus and the aggroupment of the parts in operative combination, as will hereinafter be fully described and the novelty thereof be particularly pointed out and distinctly claimed.

I attain the objects by the means illustrated in the accompanying drawings, in which similar reference-notations indicate similar parts throughout both views, and wherein—

Figure 1 is a view of the complete device in side elevation, showing it as connected to a main water-conduit pipe. Fig. 2 is a detail plan view of the perforated disk removed from its seal in the vessel.

Referring to the drawings, A designates a cylindrical vessel or casing made of suitable non-corrodible material and of such dimensions as will provide the capacity to adapt it for the purposes required. The lower end of the vessel A is closed by a bottom 1, secured and sealed in position in any well-known way, and from the bottom extends a vertical discharge or delivery pipe 2, having a T-coupling 3 on its lower end which connects it to the main water-pipe 4. In the pipe 2 is mounted a valve 5 of any proper construction, whereby the flow of the chemically-charged solution from the vessel may be regulated to suit the desire or by which the flow may be entirely shut off. At a proper location in the vessel is an annular flange 6, on which is seated a perforated plate 7, dividing the vessel into two compartments and constituting the bottom of the chamber wherein the chemical material is contained and also a partition between this chamber and the chamber below it wherein the charged solution is deposited and held.

8 designates a by-pipe serving as the water-feed pipe opening from the main pipe 4 and extending vertically and then horizontally, as at 8^a, opens into a neck-piece 9, which opens into the vessel A through the cover 10, substantially as shown in the drawings, the purpose being to convey the requisite quantity of water to the material-chamber 11 to permeate, saturate, or dissolve the material therein and then pass out of the chamber through the perforated plate into the fluid-chamber below charged with the chemical. To regulate the flow of water through the pipe 8, a valve 12 is placed at any convenient point therein.

As heretofore indicated, the device is designed for injecting a charge of disinfectant into a moving stream of water used to cleanse and purify urinals, water-basins, closets, and similar appliances at desired times and as occasions may require, it being understood that except at the times when the water in the main pipe is being used for the purpose mentioned it is at rest in the pipe, so that when the valve 12 is opened the pressure in the main pipe will force the water up the pipe 8 and into the chamber 11 onto the chemical material therein. Thence the water percolates through the chemical material and falls

into the larger chamber below the stationary perforated plate 7, rising upward in this chamber until the desired quantity has accumulated, when the flow is stopped by cutting it off at valve 12. Now when it is desired to use the accumulated charged fluid in the vessel a valve in the main pipe is turned to start the water coursing therethrough, and at the same time the valve 5 is opened to permit the chemical solution to discharge by gravity into the main pipe. After the flushing and disinfection have been accomplished the water in the main pipe is cut off and the valve 5 closed. The valve 12 may then be opened and the vessel again charged anew, the valve 12 being again closed, when the charge is completed.

To the neck-piece 9, opening through the cover of the vessel A, is connected a valve-chamber 13, in which is arranged a suitable valve, the upper end of the valve-chamber being secured to the bottom of a charging-tank 14 and opens therein. The tank 14 is of such capacity as may be required to keep a sufficient supply of material ready to be let down through the valve 13 into the chamber 11.

A charging pipe or funnel 15 is mounted on the tank 14 and opens into it. The pipe 15 is provided with a valve 16, which is opened and closed as occasion requires. A drip-cock 17 is provided in the tank 14, whereby any deposits may be drawn off.

It will be perceived that if the tank 14 is charged with a disinfectant or with an antiphlogistic material it will on opening the valve 13 automatically pass by gravity down into the chamber 11 until the requisite quantity has been served, when the valve 13 may be closed.

The functions of the parts have been stated in connection with the description of them; but the operation may be now rehearsed and stated, as follows: The tank 14 may be first charged and the material then permitted to descend through valve 13 into the chamber 11 until the required quantity has been deposited therein, when the valve 13 can be closed and the charge into tank 14 continued until it is filled ready for future use. The valve 12 may then be opened and the water left free to rise through pipe 8 and discharge on the material in the chamber 11, through which it percolates and descends through the perforated plate 7 into the lower chamber of the vessel A and there accumulates. The valve 12 is now closed. Now when it is proposed to charge the water in the main with the charged fluid in the vessel the main pipe is opened and the valve 5 is opened and the chemically-charged contents are injected into the main with accumulated force, as heretofore specified.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination with a water-supply pipe, of a vessel having a stationary perforated partition dividing the same into an upper compartment for holding a soluble chemical substance, and a lower compartment for holding a solution of such substance, a valved water-feed pipe rising from the supply-pipe, and communicating with the upper compartment to discharge water onto the chemical substance therein, a valved connection between the bottom of the lower compartment and said supply-pipe, a valve-chamber mounted on top of the vessel, and provided with a valve, and a feed-tank mounted in turn upon said valve-chamber and provided with a hopper, the said tank being provided with a draw-off cock, and the said hopper having a valve for opening and closing communication between the same and the tank.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES H. VENNERS.

Witnesses:
THOMAS R. VENNERS,
SAMUEL C. BROOKS.