

(No Model.)

W. J. LONGLEY & C. ELKIN.

AUTOMATICALLY DISINFECTING WATER CLOSETS, URINALS, &c.

No. 311,192.

Patented Jan. 27, 1885.

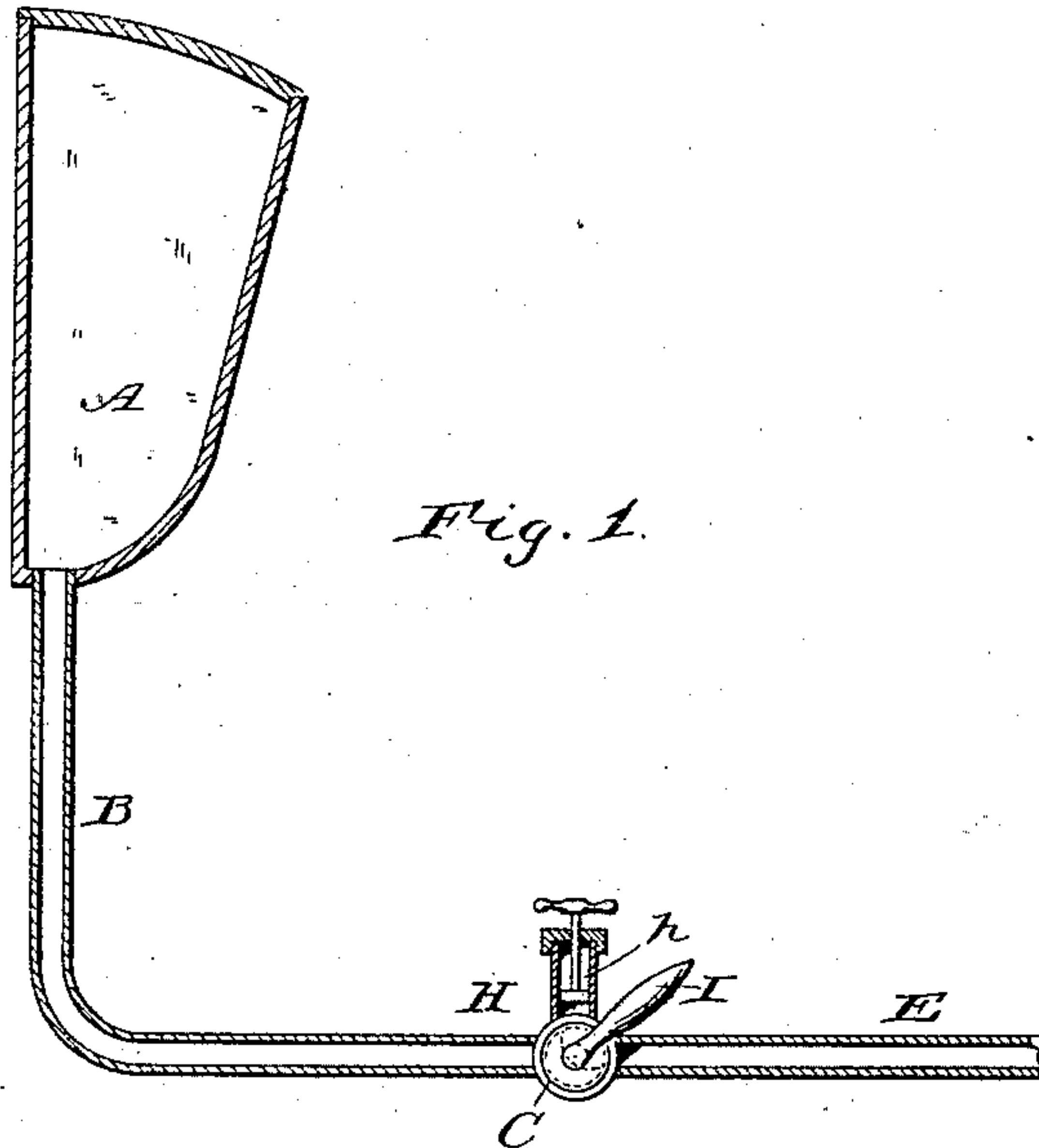


Fig. 1.

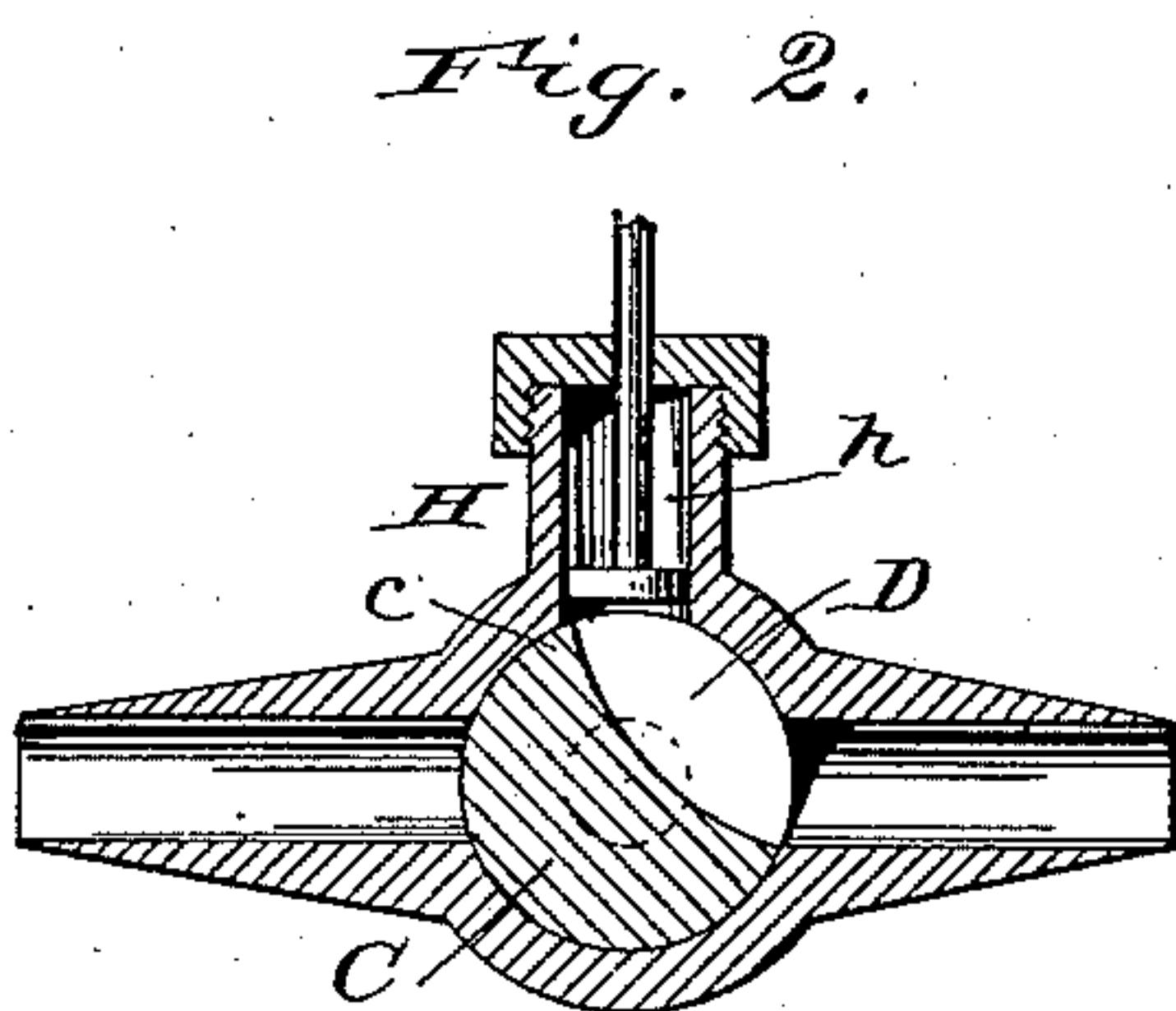


Fig. 2.

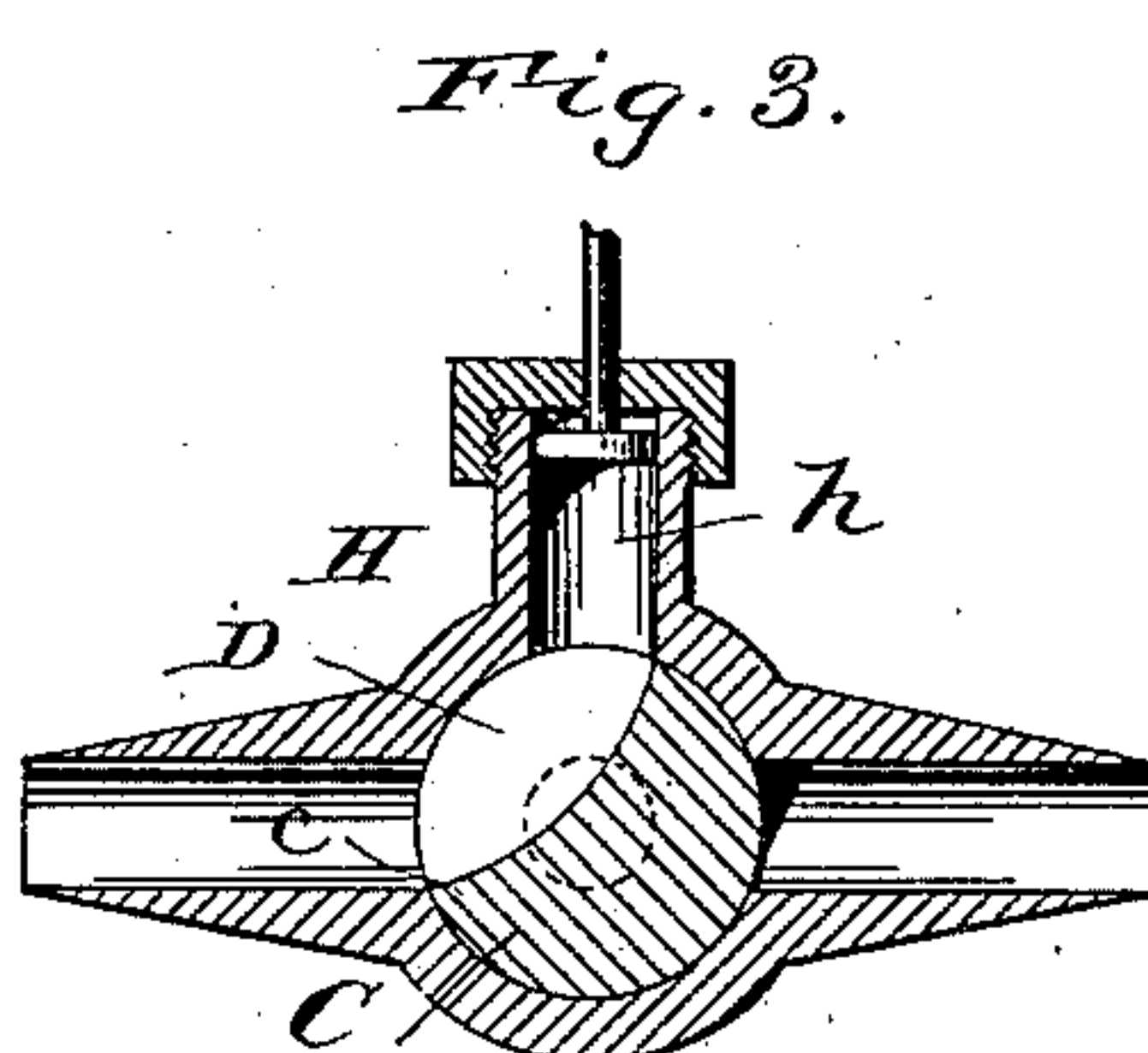


Fig. 3.

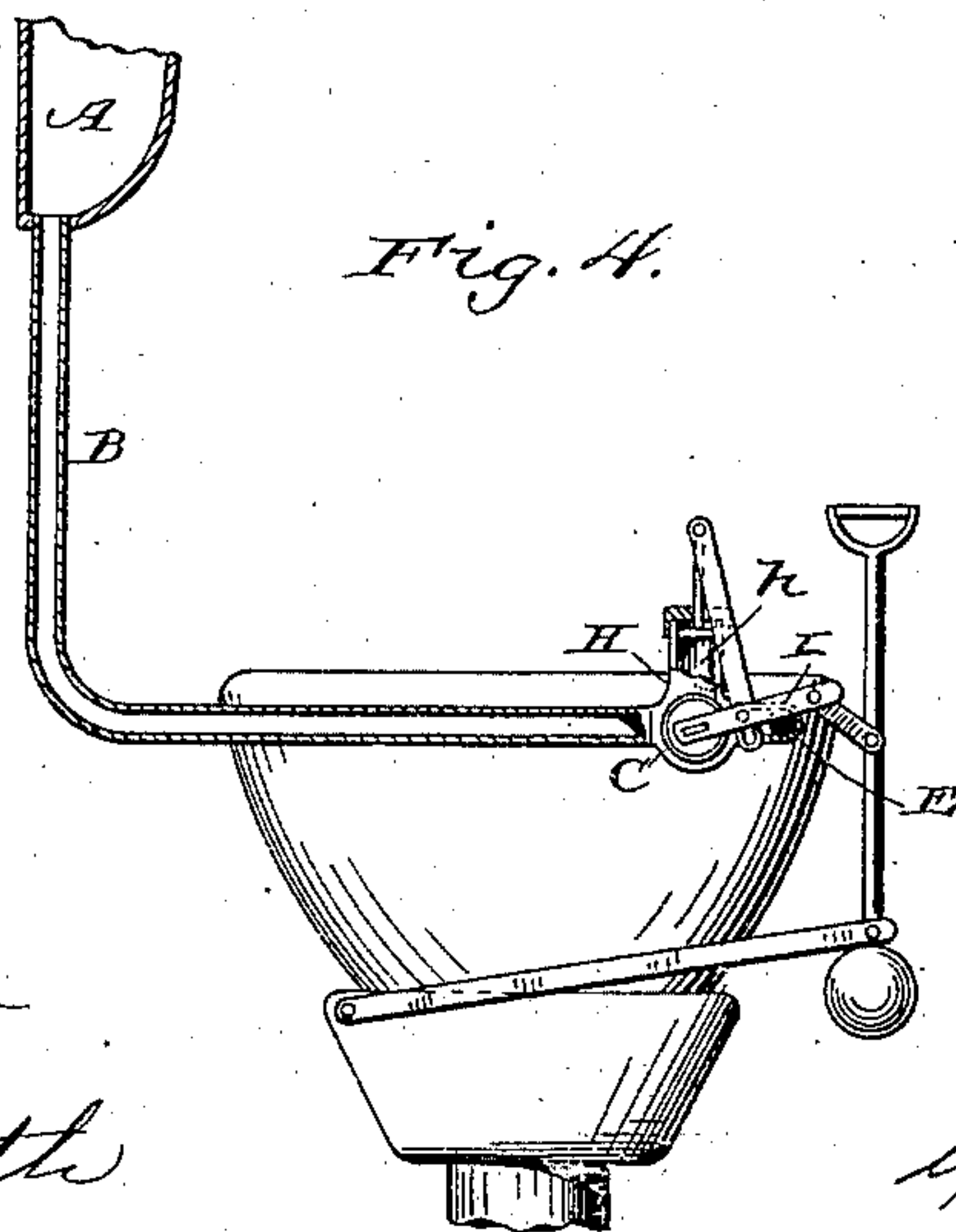


Fig. 4.

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UNITED STATES PATENT OFFICE.

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AUTOMATICALLY DISINFECTING WATER-CLOSETS, URINALS, &c.

SPECIFICATION forming part of Letters Patent No. 311,192, dated January 27, 1885.

Application filed November 20, 1883. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM J. LONGLEY, of Mount Vernon, in the county of Westchester and State of New York, and CHARLES ELKIN, of Jersey City, in the county of Hudson and State of New Jersey, have made an invention of a Method of Automatically Disinfecting Water-Closets, Urinals, Drain-Pipes, Sewers, and Analogous Receptacles; and we do hereby declare that the following is a full, clear, and exact description and specification of the same, reference being made therein to the accompanying drawings.

To facilitate the proper understanding of our invention, we will proceed to describe it as applied to an ordinary water-closet, into which water is caused to flow by mechanism actuated by a vertically-reciprocating rod, one end of which rod is attached to a handle level with the seat of the water-closet, though our invention can be adapted to any mechanism provided to cause a flow of water for the purposes of cleansing, or may be used without being connected with such mechanism.

Figure 1 is a sectional view of a reservoir, pipe, and valve embodying our invention. Fig. 2 is a vertical longitudinal section, on a larger scale, of the valve and chamber which govern the flow of the disinfecting-fluid. Fig. 3 is a similar view, the valve being in a position to connect the chamber with the reservoir. Fig. 4 is a side elevation of a water-closet having our invention applied thereto.

A in Fig. 1 is a reservoir. From the bottom of this reservoir A runs a supply-pipe, B, into the box H. The cock C is a circular cock, having an oscillating motion and revolving in the box H. To this cock C, at its axis, is attached one end of the lever I, the other end of said lever being connected, if desired, with the vertically-reciprocating rod of the water-closet. This cock C is also provided with a receptacle, D, cut or hollowed out from its periphery toward the center.

E is a pipe running from the box H to the water-closet pan or basin. The box H has at its top a chamber, *h*, into which a piston is inserted to be actuated by a connecting-rod from the lever I or otherwise. The reservoir A is filled with disinfecting-fluid, which

fluid is free to run into and along the supply-pipe B. When the vertically-reciprocating rod of the water-closet is down at its lowest point, the edge *c* of the cock C stops the flow of the fluid from the supply-pipe B. As the said rod is raised, the cock C, being controlled by the lever I, is caused to revolve backward until the receptacle D is open over the end of the supply-pipe B and over the chamber *h*, permitting the fluid to flow in and fill up the said receptacle D, and also the said chamber *h*. When the water-closet rod commences its downward stroke, the cock C is caused to revolve forward, in which operation the edge *c* of the cock C again passes over the end of the supply-pipe B, stopping the flow therefrom, and the fluid already in the receptacle D and in the chamber *h* is blocked up and cannot escape until the receptacle D has opened over the mouth of the pipe E. When the rod of the water-closet has reached again its lowest point, a free passage is afforded to the fluid held in the receptacle D and in the chamber *h* into the pipe E, by which pipe the said fluid is conveyed into the water-closet pan or basin, and into the water which has been blocked up in the said pan or basin by the water-closet trap or otherwise. It will be seen that should the water-closet rod in its downward movement be stopped and held stationary at half-way the fluid held in the receptacle D and in the chamber *h* is blocked up and cannot escape. It will also be seen that the fluid so held in the receptacle D and in the chamber *h* cannot reach the water-closet pan or basin before the water-closet trap has closed and has blocked up a certain amount of water in the said pan or basin. When the water-closet rod is again raised, the diluted fluid blocked up by the water-closet trap is allowed to pass into the water-closet pipe, from whence it flows into the drain-pipes and sewer, and our device commences another operation. It is thus shown that by our invention a system of disinfecting not only the water-closet pan or basin, or whatever other receptacle the fluid is caused to flow into, but also the drain-pipes and ultimately the sewers, is effected.

The piston which we insert into the chamber *h* of the box H can be used either to create

a suction by receiving a reciprocating motion from a connecting-rod attached to the lever I or otherwise, or it can be used merely to regulate the quantity of fluid to be blocked up, and be actuated by a thumb-screw or otherwise.

In regulating the quantity of the fluid to be discharged at each operation the piston may be raised positively a predetermined distance; or the pressure of the fluid in the reservoir A may be permitted to raise it. In the latter case an adjustable stop of any desired construction may be provided, by which the rise of the piston may be terminated at such point, determined by the adjustment of the stop, as to furnish the desired quantity of the fluid. It is obvious that the capacity of the box may be regulated in other ways than by a piston, as shown, as by making said box in sections telescoping upon one another.

The devices for governing the flow of the disinfecting-fluid may be so connected with the ordinary handle of the closet as to be operated thereby, as shown in Fig. 4; but it will be readily understood that the valve C may be operated by hand independently of said closet-handle.

We claim as our invention—

1. The herein-described disinfecting device, consisting of the combination, with a water-closet basin or analogous receptacle, of a reservoir, a pipe connecting the reservoir and basin, and a movable valve having a chamber communicating with said pipe, and adapted to hold a portion of the contents of said reservoir and to be placed in communication alternately with the reservoir and basin, substantially as set forth.

2. An automatic disinfecting device comprising a storage-reservoir, supply-pipe, and stop and carriage cock, box, and box-chamber, adapted to act in connection with mechanism provided to produce a flow of water for the purposes of cleansing, substantially as described.

3. The herein-described disinfecting de-

vice, consisting of the combination, with a water-closet basin or analogous receptacle, of a reservoir, a pipe connecting the reservoir and basin, a box having a chamber communicating with said pipe, and a valve adapted to place said box in communication alternately with the reservoir and with the basin, substantially as set forth.

4. The herein-described disinfecting device, consisting of the combination, with a water-closet basin or analogous receptacle, of a reservoir, a pipe connecting the reservoir and basin, a box having a chamber communicating with said pipe, a valve adapted to place said box in communication alternately with the reservoir and with the basin, and means for regulating the capacity of said box, substantially as set forth.

5. The herein-described disinfecting device, consisting of the combination, with a water-closet basin or analogous receptacle, of a reservoir, a pipe connecting the reservoir and basin, a box having a chamber communicating with said pipe, and a valve adapted to place said box in communication alternately with the reservoir and with the basin, said box being provided with a piston, substantially as set forth.

6. The herein-described disinfecting device, consisting of the combination, with a water-closet basin or analogous receptacle, of a reservoir, a pipe connecting the reservoir and basin, a box having a chamber communicating with said pipe, a valve adapted to place said box in communication alternately with the reservoir and with the basin, a piston in said box, and devices for connecting said piston with the operating-handle of the valve, substantially as set forth.

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