

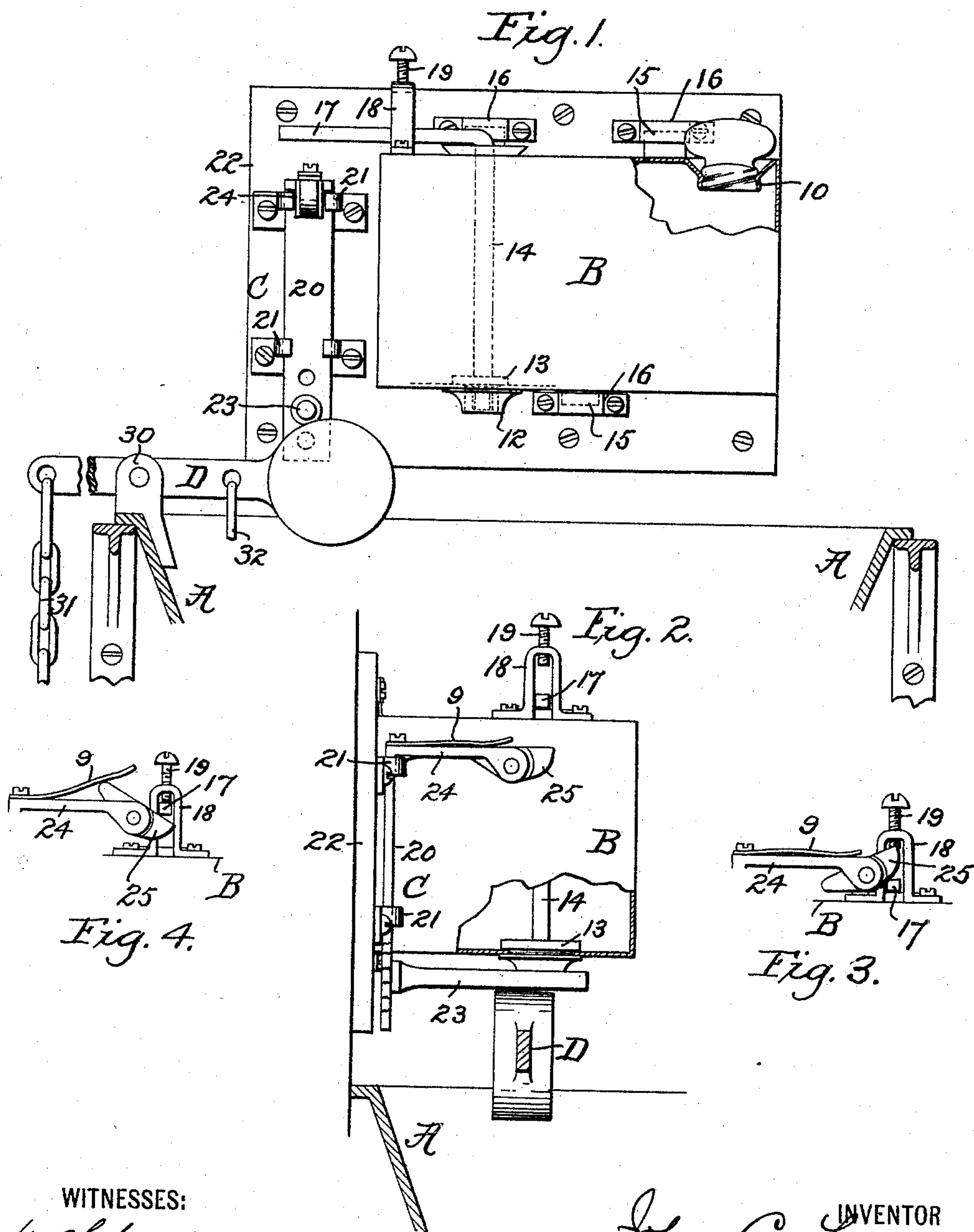
(No Model.)

2 Sheets—Sheet 1.

J. C. LYON.  
DISINFECTANT APPARATUS.

No. 497,100.

Patented May 9, 1893.



**WITNESSES:**

W. H. Graham.  
Chas L. Pashley

INVENTOR

John C. Lyon

BY

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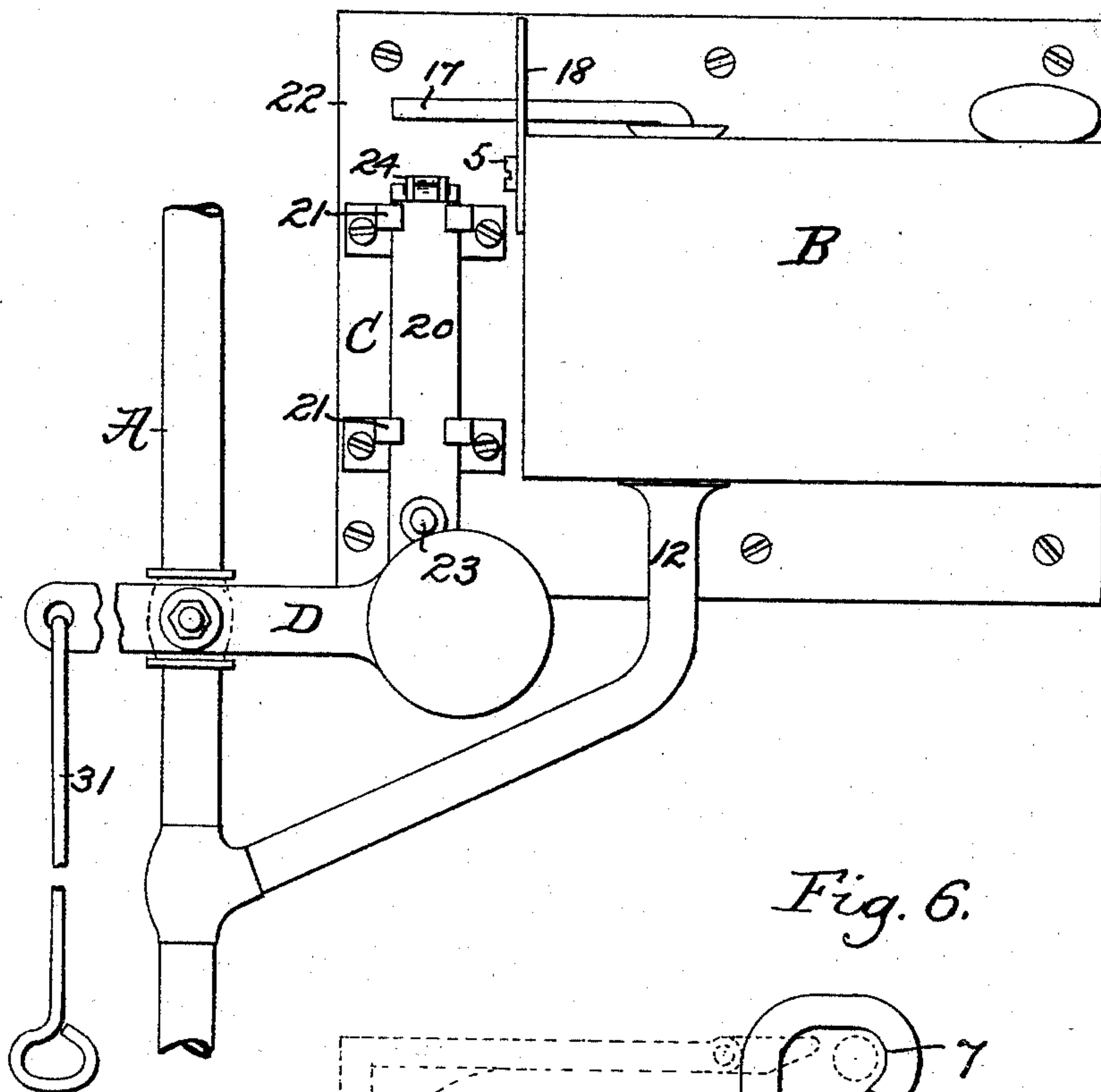


Fig. 5.

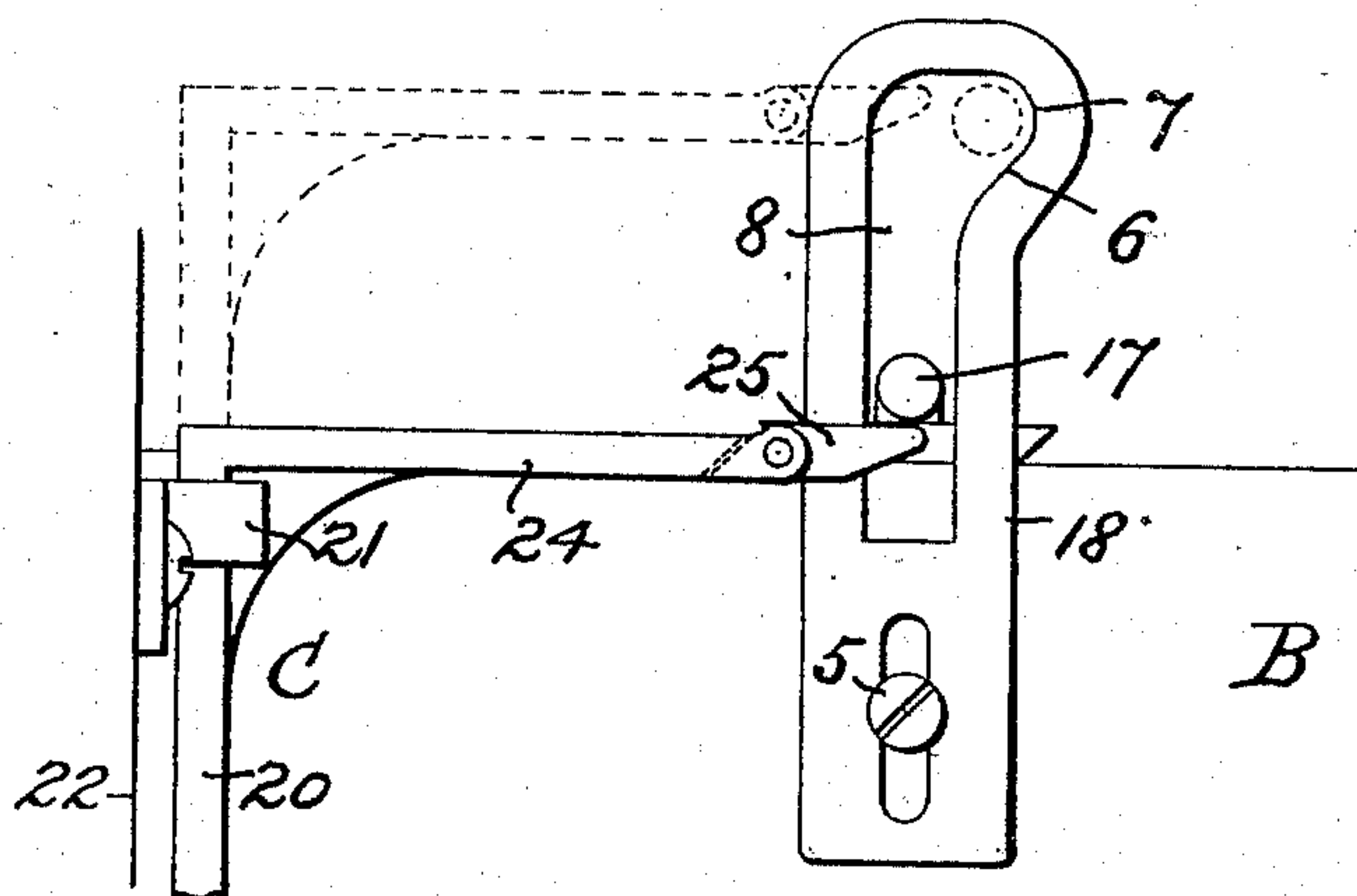


Fig. 6.

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# UNITED STATES PATENT OFFICE.

JOHN C. LYON, OF EAST ORANGE, NEW JERSEY.

## DISINFECTANT APPARATUS.

SPECIFICATION forming part of Letters Patent No. 497,100, dated May 9, 1893.

Application filed January 7, 1893. Serial No. 457,636. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN CHARLES LYON, of East Orange, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Disinfectant Apparatus, fully set forth in the following description and represented in the accompanying drawings.

This invention relates to an apparatus for feeding stated quantities of a disinfectant into a flushing tank or conduit for use with contrivances having connection with a sewer, cess-pool or the like.

The object of the present invention is to provide means by which suitable quantities of a disinfectant whether it be in liquid or powder form, may be positively fed into the water that is usually used for flushing closets, bowls, and the like, so that such disinfectant, preferably in a concentrated form, will be positively supplied to the water that is carried in contact with the parts that require disinfecting, and which disinfectant shall be insured in use each time the flushing water is used.

It also has for its object to provide a disinfectant supply that may be used as an attachment to the usual flushing tank or water conduit, so that the single connection for operating the valve of the flushing tank or conduit will also operate the disinfectant supply.

It furthermore consists in a novel construction and arrangement of parts for feeding the disinfectant, and in a detachable disinfectant holder that may be removed from its usual position without disturbing the operating connections.

With these ends in view, the improvement consists in the novel construction and arrangement of parts fully set forth in the following description and represented in the accompanying drawings, in which drawings—

Figure 1 is a front elevation of the improvement and of so much of an ordinary flushing tank as is necessary to understand the connection of the disinfectant apparatus with the flushing tank. Fig. 2 is a side view of the same, a portion of the disinfectant holder or tank being broken away to disclose the valve. Figs. 3 and 4 are details of the yielding finger of the upper arm of the operating

slide. Fig. 5 is a side elevation of a modified form of the means for operating the valve of the disinfectant holder or tank, and Fig. 6 is a similar view showing the parts in a changed position.

The improvement is shown in connection with an ordinary flushing tank A which may represent any suitable means for holding or directing a supply of water to be used in flushing a bowl or other contrivance, requiring disinfecting.

The improved apparatus consists essentially of a disinfectant holder, reservoir or tank B, having a supply orifice 10, closed by a removable screw plug 11, and an eduction orifice 12, controlled by a valve 13, the stem 14 of which rises and extends to the outside of the holder for connection with the operating device C, which is arranged to lift said valve a certain distance to permit the proper quantity of disinfectant to pass through the eduction orifice into the water supply tank or conduit, and to allow it to reseat to close such orifice and shut off further supply.

The disinfectant holder B, adapted to contain a concentrated disinfecting solution, is preferably a closed one, supported a short distance above the flushing tank A with its orifice 12 in position to direct the disinfectant into the tank A. The disinfectant holder is preferably made removable from its support for refilling, and for this purpose is provided with a number of tongues or lugs 15, (three are shown, two at the upper side of the holder and one at its under side,) which engage with sockets 16 in such manner that by raising the holder B the lowermost tongue will be removed from its socket, thus permitting the other tongues to be removed from their sockets upon lowering the holder for that purpose. Of course, any other means of supporting or removably supporting the disinfectant holder may be adopted without affecting the scope of the invention.

The operating device C consists of a vertically movable slide 20, mounted in guides 21, attached to some stationary part as the wall or back board 22, immediately adjacent one end of the disinfectant holder B. The slide 20 is provided with lower and upper arms 23, 24, projecting outward at right angles



thereto, the upper arm in position to strike and lift the projecting end 17 of the valve stem 14.

For the sake of cheapness in construction the end 17 is a portion of the valve stem bent at right angles to itself and projecting through a guide 18 secured to the top of the disinfectant holder B, which guide serves to hold the end of the valve stem to duty against the arm 24, and prevents it from turning laterally under the force of the arm in raising the valve. The extent of motion of the valve stem and the extent to which the valve 13 will be lifted off its seat may be regulated, changing the limit of its upward movement as by an adjusting screw 19 fitted into the end of the guide 18, by means of which screw the amount of disinfectant allowed to pass from the holder may be regulated. The end of the arm 24 is provided with a yielding finger 25 pivoted in the arm and held to duty or rigid with the arm in its upward movement by a spring or abutment 9 which should the vertical stroke of the slide 20 exceed the extent of movement permitted to the valve and determined by the set screw 19, such finger will yield against the pressure of the spring 9 so as to pass the end 17 of the valve stem 14, as in Fig. 4, and permit the valve and stem to return to their down position in advance of the return of the operating slide. This loose connection between the finger and the arm also permits the finger to pass to the under side of the end 17 of the valve stem as the operating slide returns to its normal down position, as is shown in Fig. 3. The other arm 23 of the slide 20 is arranged to be adjusted to different positions thereon according as the position of the actuating device may require.

A convenient means for actuating the operating slide 20 is provided by the flushing tank valve operating lever D, which, as usual, is pivoted to a bracket 30, one end connected with a chain or cord 31 extending down within reach of the operator, while the other end is weighted and connected to the flushing tank valve as by link 32. In the present construction the weighted end of the lever D lies beneath the lower arm 23 of the operating slide 20, and the arrangement is such that whenever the lever D is rocked to raise its valve and allow the flushing water to pass from the tank A, the operating slide 20 will be raised to lift the valve 13 of the disinfectant holder B and simultaneously with the supply of water from the tank A, a suitable quantity of disinfectant will be allowed to pass into the tank, so that such disinfectant will be carried by the water into the bowl or other place that the flushing water is led to.

From the construction and connection of the operating slide with the valve 13 it matters not how long the lever D may be rocked and remain rocked, lifting the operating slide 20, because, as soon as the arm 24 of the operating slide has raised the valve to the limit

of its movement determined by the adjusting screw 19 or other abutment and the arm passes above the end 17 of the valve stem the valve is immediately free to drop, reseating itself and shutting off further supply of disinfectant.

In the modification shown in Figs. 5 and 6, the end 17 of the valve stem projects through a slot 8 in the guide 18 which, in this case, is a plate adjustably secured by a set screw 5 to the end of the holder B so as to vary the height to which the valve may be raised by the end 17 abutting against the upper end of the slot 8.

Instead of adapting the finger 25 of the arm 24 to rock in both directions as in the previous construction, it is held in the end of the arm 24 rigid therewith in the upward movement of the arm and in its downward movement in passing the end 17 of the valve stem rocks upward as before. To permit the end of the arm 24 or its finger 25 to pass the end of the valve stem after it has been raised to its fullest extent, the upper end of the slot 8 is provided with a lateral enlargement or offset 7, which permits the end 17 of the valve stem to move laterally out of alignment and from contact with the finger 25 permitting the finger and arm to continue their upward movement free of the valve 13, and allowing the valve and valve stem to return by gravity to their normal position, the end 17 sliding down the incline 6 of the slot. The foregoing construction is the preferred one, as it reduces the number of parts needed to properly operate the valve 13.

If it be desired to change the extent of lift of the valve 13 the set screw 5 holding the guide 18 to the holder B will be loosened and the guide will be raised or lowered to bring the upper end of the slot 8 nearer or farther away from the end 17 of the valve stem according as it is desired to diminish or increase the quantity of disinfectant allowed to pass upon each raising of the valve. When so adjusted the guide 18 will be secured in place by refastening the set screw 5.

What is claimed is—

1. In a disinfectant apparatus, the combination with a water supply tank or conduit, of a disinfectant holder having communication with such tank or conduit, a valve controlling such communication, an operating device including a yielding finger for said valve to discharge the disinfectant from said holder into the supply tank or conduit and a connection therewith leading to the operator for positively moving said device, substantially as described.

2. In a disinfectant apparatus, the combination with the flushing tank having a valve therein, and connected with a closet or bowl, of a disinfectant supply holder above such tank, a valve for discharging a quantity of the disinfectant from the holder into the tank to pass onward with the water from the flushing tank, a lever for operating the flushing



tank valve and connections including a yielding finger with said lever for operating the valve of the holder substantially as described.

3. In a disinfectant apparatus, the combination with the flushing tank or conduit, of a disinfectant supply holder communicating with the flushing tank or conduit, a valve controlling such communication, a valve controlling the discharge from the tank, an arm having a yielding finger for moving the holder valve and a single operating device for opening the valve of the flushing tank and also moving the arm and finger for opening the disinfectant holder valve, substantially as described.

4. In a disinfectant apparatus, the combination with the tank or conduit, of the disinfectant holder communicating with said tank or conduit, a valve controlling such communication, an operating slide for moving the valve and means for varying the extent of lift of the valve, substantially as described.

5. In a disinfectant apparatus, the combination of the disinfectant holder, a valve controlling its eduction orifice, means for limiting the extent of lift of the valve, and an operating slide for the valve having a movement greater than the lift of the valve, substantially as described.

6. In a disinfectant apparatus, the combination of the disinfectant holder, a valve controlling its eduction orifice, an arm engaging the valve stem for moving the valve from its seat, and a guide for the valve stem adapted to permit a lateral movement of the stem at the end of its movement from engagement with the arm, substantially as described.

In witness whereof I have signed my name, in the presence of two witnesses, this 4th day of January, 1893.

JOHN C. LYON.

Witnesses:

GEO. H. GRAHAM,  
E. L. TODD.