

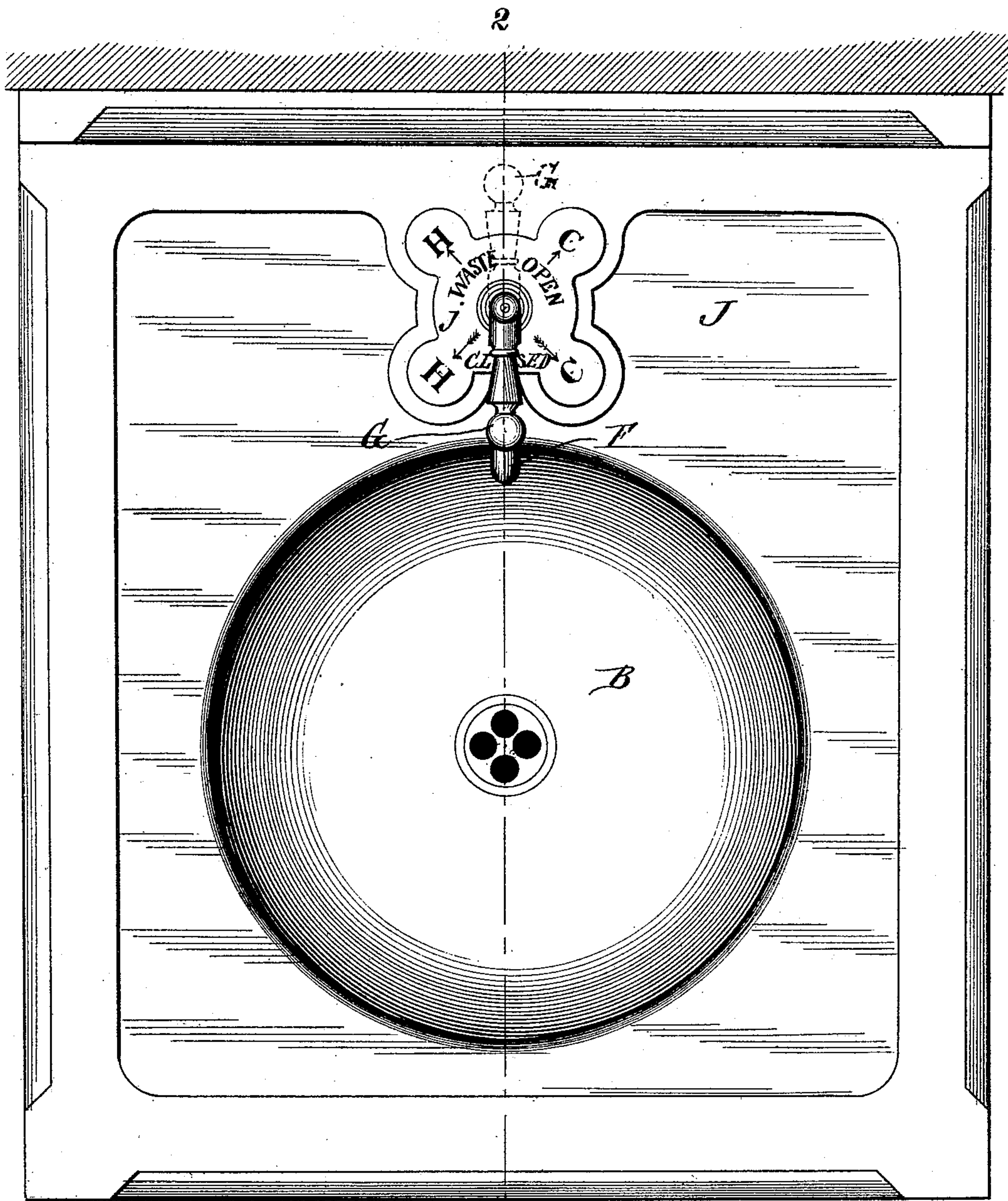
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4 Sheets—Sheet 1.

C. S. HILL.  
LAVATORY APPARATUS.

No. 500,234.

Patented June 27, 1893.



2  
Fig. 1

Witnesses:  
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John L. Timmon.

Inventor:  
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By Lyander Hill  
his atty.



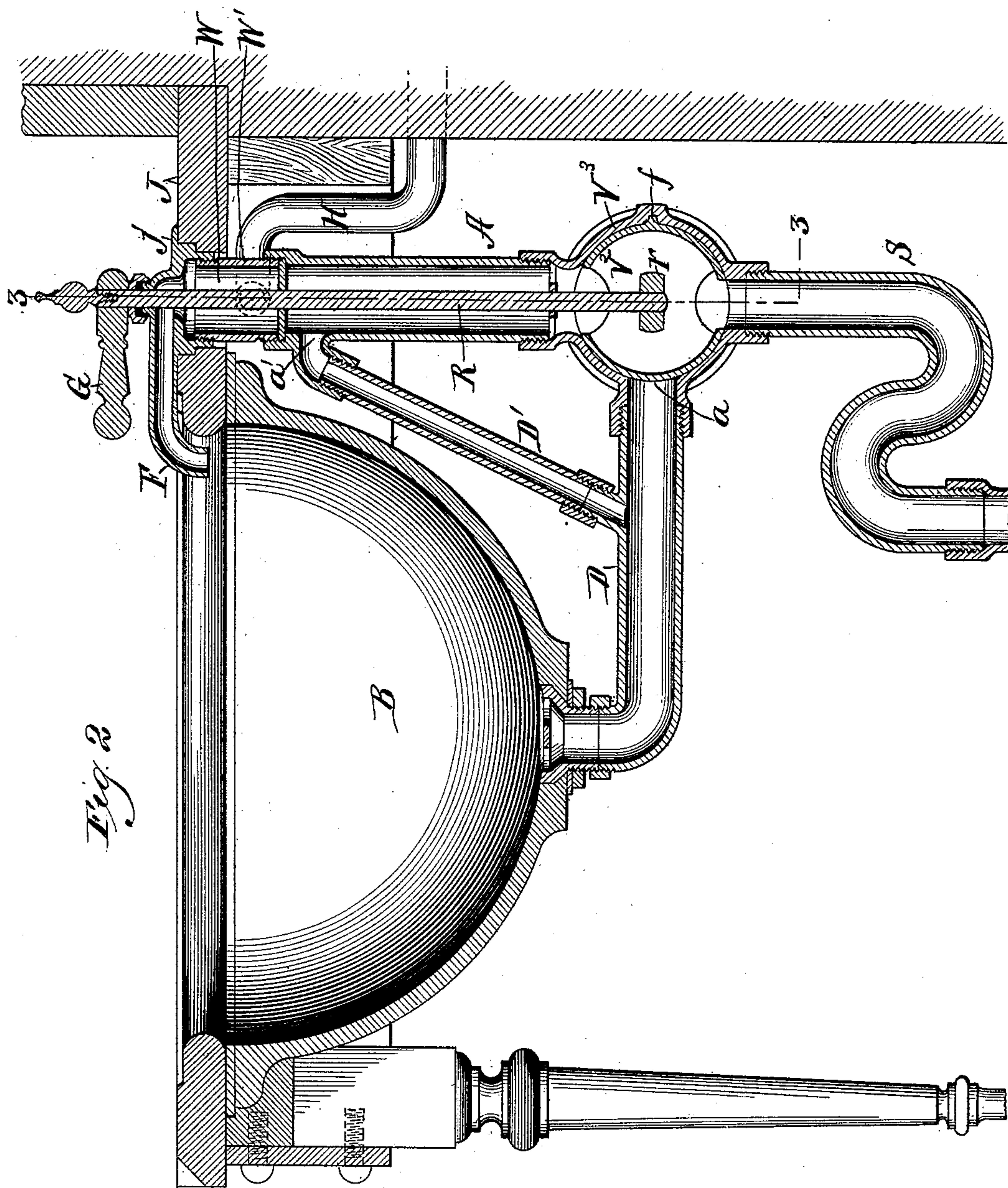
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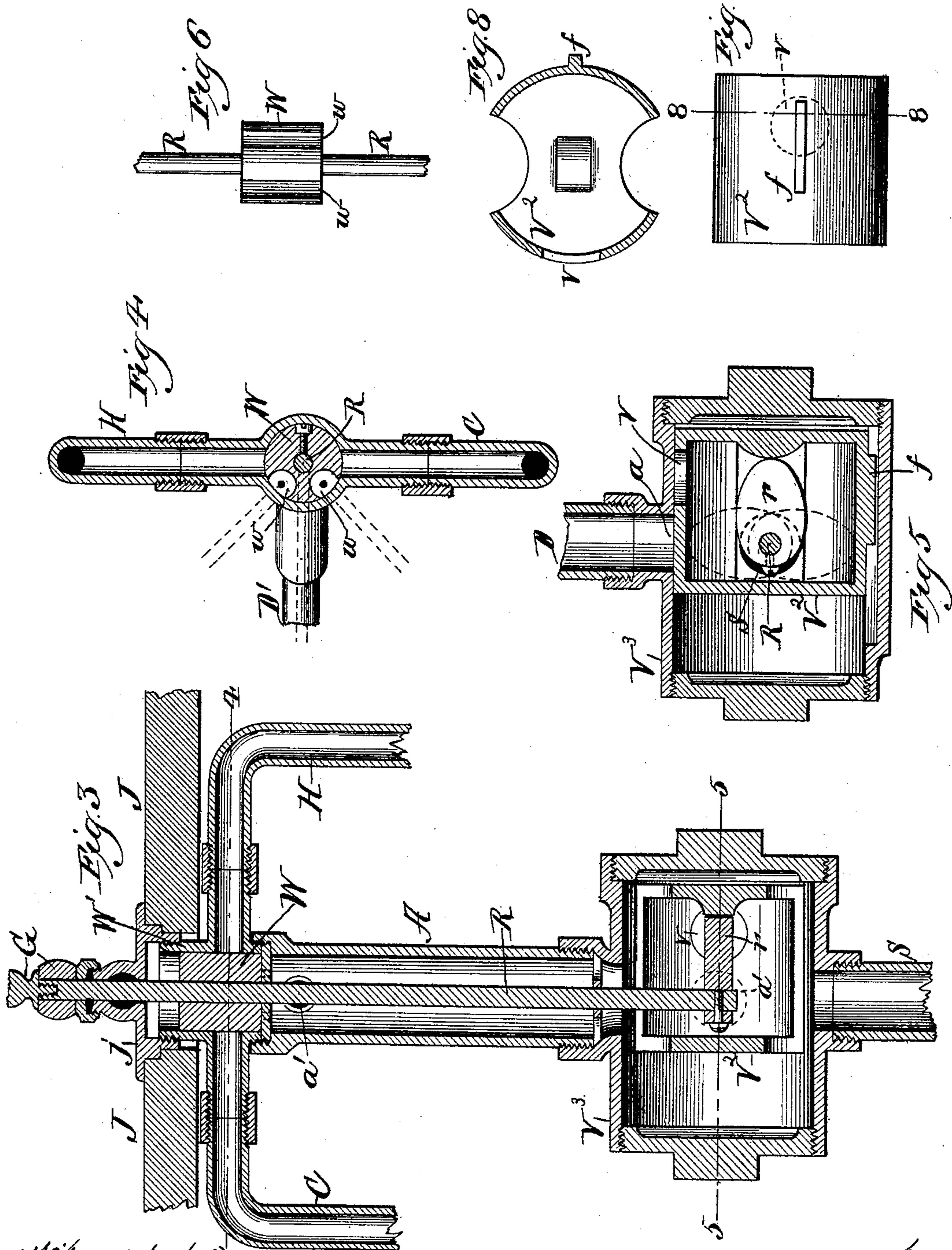
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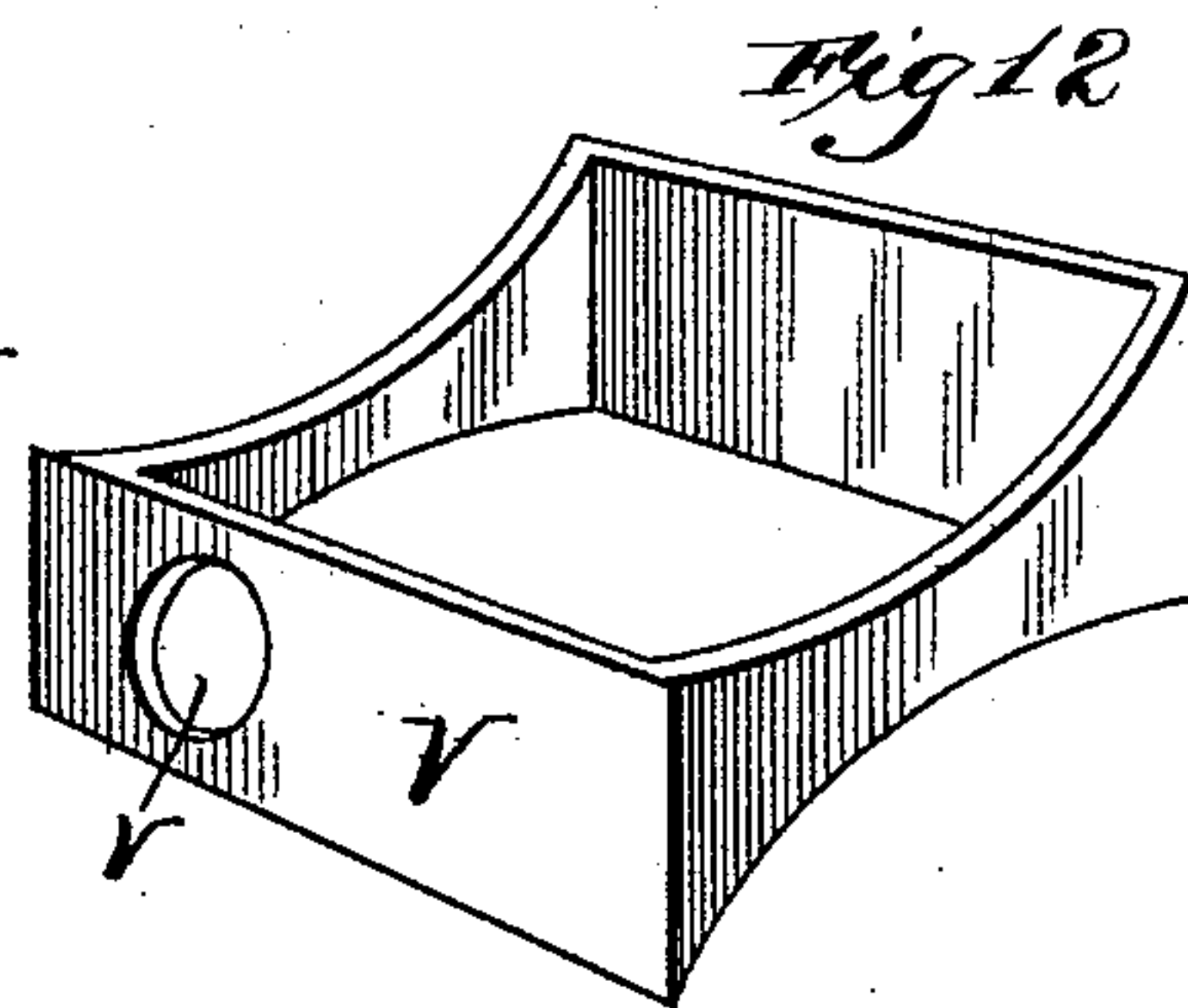
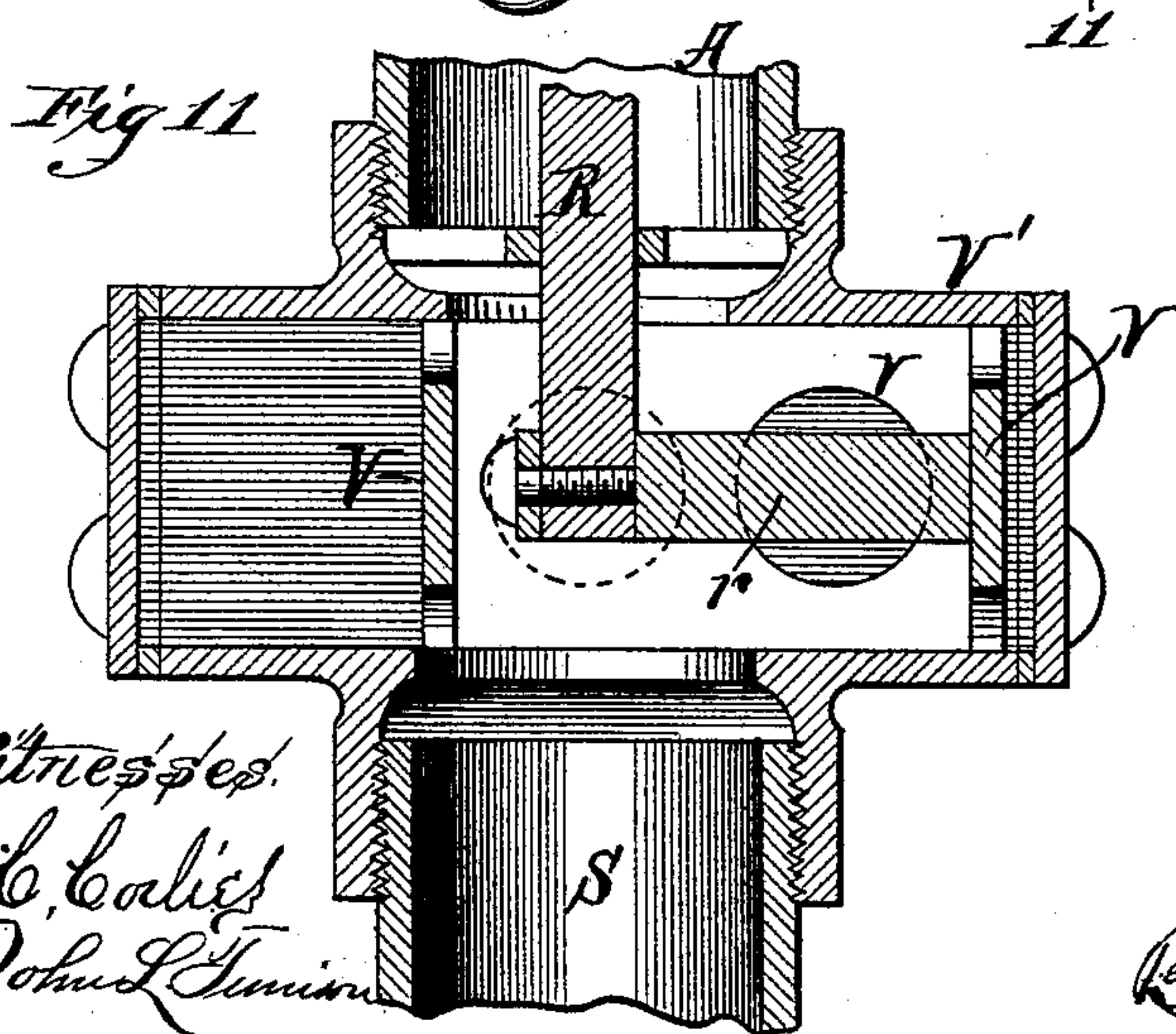
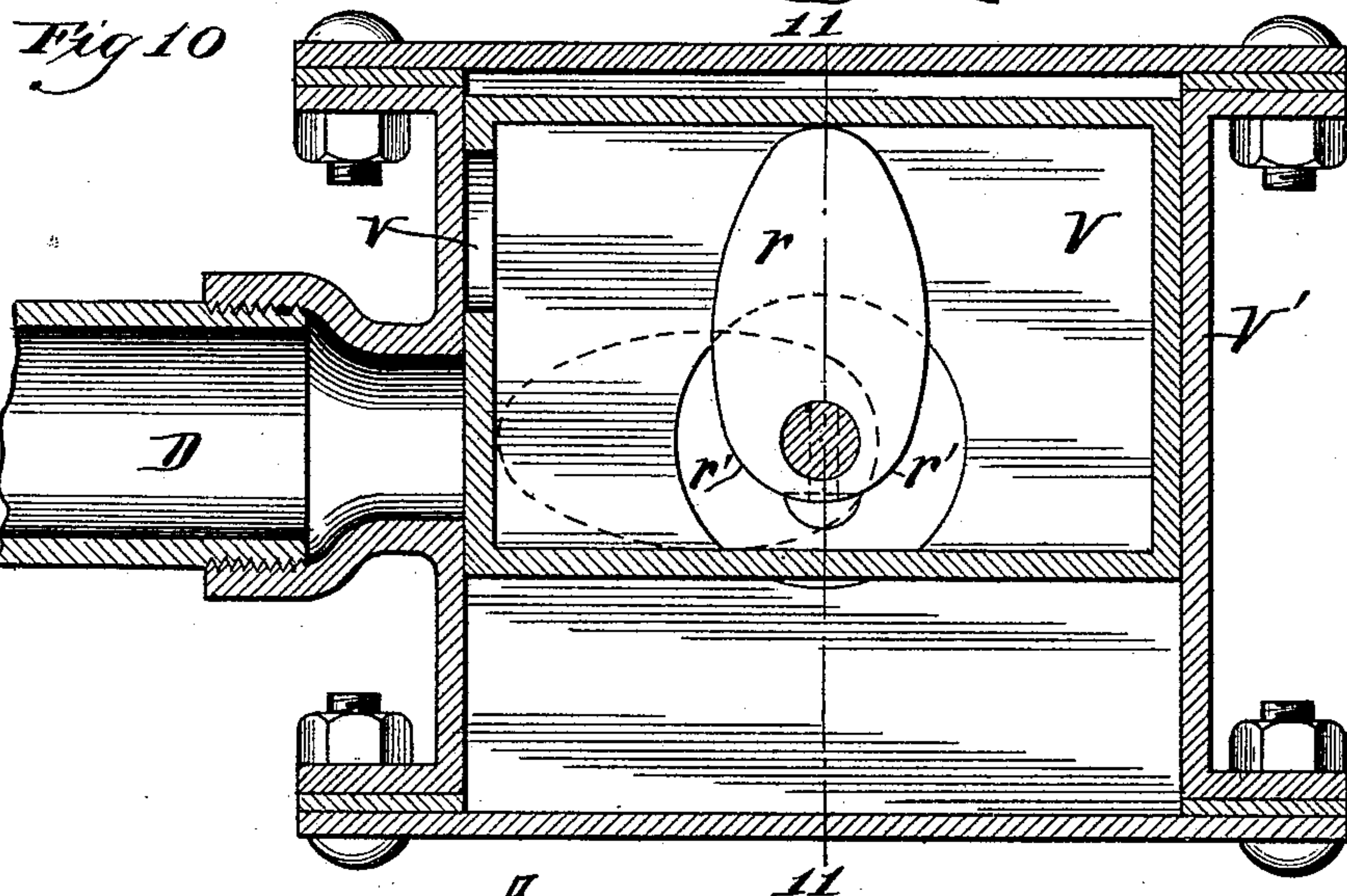
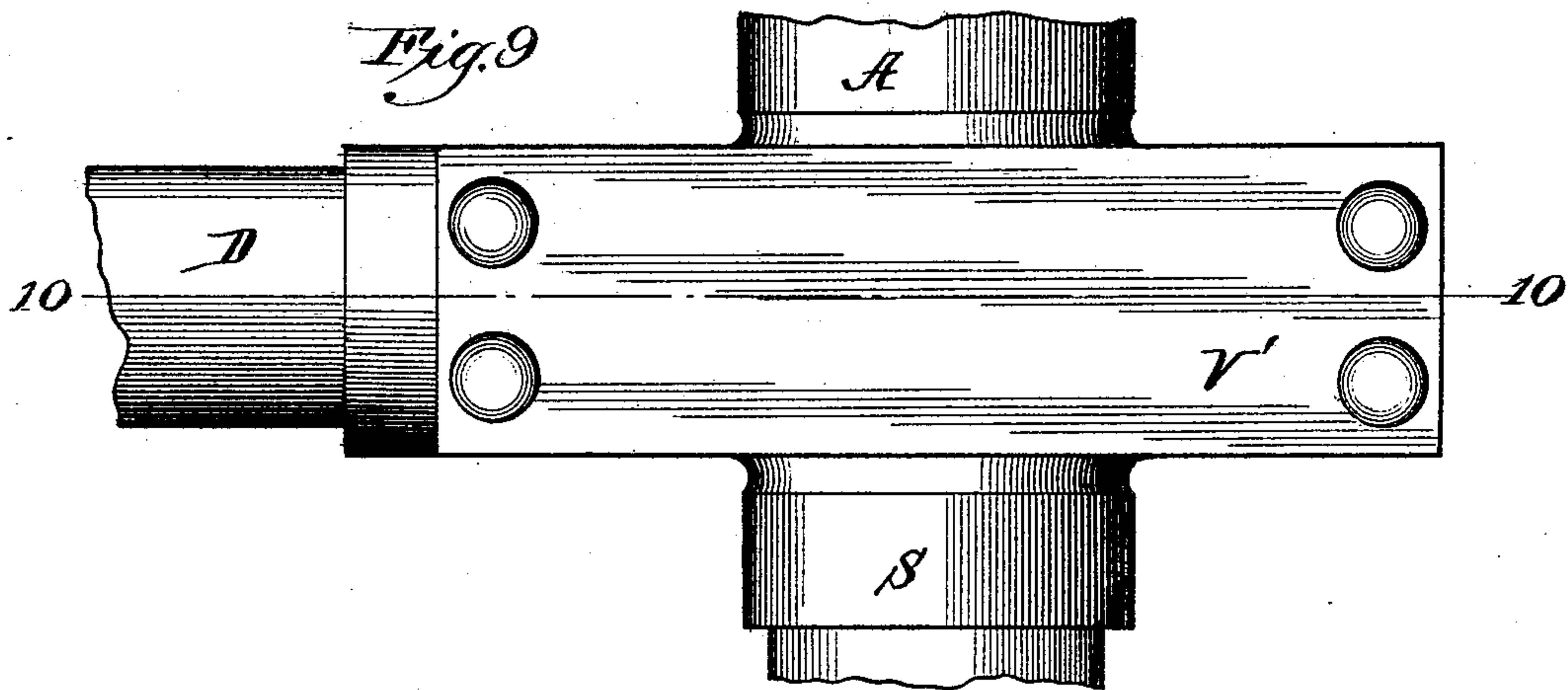
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No. 500,234.

Patented June 27, 1893.



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# UNITED STATES PATENT OFFICE.

CHARLES S. HILL, OF CHICAGO, ILLINOIS.

## LAVATORY APPARATUS.

SPECIFICATION forming part of Letters Patent No. 500,234, dated June 27, 1893.

Application filed August 11, 1892. Serial No. 442,847. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES S. HILL, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Lavatory Apparatus, of which the following is a specification.

Referring to the accompanying drawings, wherein like reference-letters indicate the same or corresponding parts,—Figure 1. is a top plan; Fig. 2. a vertical section in line 2—2 of Fig. 1.; Fig. 3. a vertical section in line 3—3 of Fig. 2.; Fig. 4. a horizontal section in line 4—4 of Fig. 3.; Fig. 5. a horizontal section in line 5—5 of Fig. 3.; Fig. 6. a side elevation of the supply-valve; Fig. 7. a side elevation of the cylindrical form of discharge-valve; Fig. 8. a transverse vertical section in line 8—8 of Fig. 7.; Fig. 9. a side elevation of the discharge-valve box; Fig. 10. a horizontal section in line 10—10 of Fig. 9.; Fig. 11. a vertical section in line 11—11 of Fig. 10.; and Fig. 12. a perspective view of the rectangular form of discharge-valve.

This invention relates to means for charging water into, and discharging it from, a wash-bowl B., a bath-tub, or other similar receptacle. For practical use, such an apparatus should be able to hold the supply and discharge ports simultaneously open, or simultaneously closed, or either of them open while the other is closed; and, to perform these apparently inconsistent functions, it has been customary to use separate supply and discharge valves, operated independently of each other by different handles. The object of my invention is to so combine said valves that, by the manipulation of a single handle, they may be made to perform all of said functions; and my main invention consists, broadly, in such combination. Subordinate improvements are indicated in the description and claims.

The principle of my main invention consists in combining the supply and discharge cocks or valves of a lavatory apparatus with a single handle controlling both of said valves, said parts being so connected that, by operating the handle, the discharge-port may be opened or closed at will, and while it is held so open or closed, the supply-port or ports may be opened or closed at will, without in-

terfering with the discharge. This principle may be embodied in a variety of means, which are the general equivalents of each other, for the purposes of the broad combination above referred to. I prefer, however, to connect the two valves and the handle in such a way as to give the supply-valve a larger traverse than the discharge-valve, and, therefore, more or less "lost-motion" with respect to the latter, and to cause the supply-valve to open and close its own port or ports during that part of its traverse in which the "lost-motion" is taking place; and, accordingly, this is the form in which my invention is herein illustrated. This form of embodiment also admits various modifications of construction, some of which are shown in the drawings.

I will first describe the form represented in Figs. 9., 10., 11. and 12., in which a rectangular discharge-valve is used. In this form, W. indicates an ordinary cock, which, turned to one position, admits hot water from pipe H., and turned to another position admits cold water from pipe G. to flow through spout F. to the bowl, or other water-receptacle. The handle G. is preferably attached to the stem of this valve, and the stem packed by any suitable means; and letters "C" and "H," or other marks, on the top-slab J., or on the metal cap j. surrounding said stem, will serve to visually indicate the positions to which the handle must be turned to admit cold or hot water, respectively. To the casing W'. of valve W. I connect the sewer-pipe S. by a tube or hollow casting A., provided with a lateral port a., opening into the discharge pipe D. at or below the level of the bottom of the bowl, so that, when said port is open, it will drain the bowl; and I control said port by the discharge-valve V. From the valve W. a stiff rod R. extends downward for the purpose of operating the valve V. by the turning of handle G. and valve W. In this form, valve V. is a hollow slide-valve, rectangular in shape, sliding horizontally endwise in a suitable casing V', and preferably provided at one side with a port v., registering with the port a.

My preferred provision for giving the valve W. a "lost-motion," with respect to the valve V., is as follows: On the lower end of rod R., and within the hollow slide-valve V., is an arm r., which rotates with the rod R., valve W., and



handle G., and is so proportioned that when rotated it will not strike the side walls, but will strike the end walls, of the hollow slide-valve V., and will thus slide the latter longitudinally to open and close the discharge-  
 5 port *a*.—said port being fully open when the arm *r*. is in line with the longitudinal axis of the slide-valve, and pointing toward one end of the valve, and fully closed when the arm  
 10 is in the reverse position. It will be observed from Figs. 10., 11., that when the arm *r*. has thus brought the slide-valve to either extremity of its traverse, the arm itself may be turned back or forward about ninety degrees  
 15 without striking the opposite end-wall of the valve, and, therefore, without disturbing the position of said valve. Inasmuch as the supply-valve turns with the arm, this gives the supply-valve the necessary lost-motion with  
 20 relation to the discharge-valve, so that, by arranging the former to open and close its ports during the "lost-motion" part of its traverse, it is enabled to fully control the flow of water into the bowl, whether the discharge be open  
 25 or closed at the time, and, when the bowl is filled, to close the flow and retain or discharge the water at will; also, when the discharge is either opened or closed, the operator is enabled to turn the supply-valve to one of  
 30 the water ports, and then to the other, and thus charge the bowl with either hot, cold, or tepid water, without disturbing the discharge-valve. To simplify the operation, I prefer to connect the handle to the valves in such way  
 35 that when it points straight forward or back, the discharge-valve will hold its port fully open or closed, respectively, and when the handle is about forty-five degrees to the right of such positions, it will admit to the bowl  
 40 cold water, and forty-five degrees to the left hot water, as indicated by the arrangement of the supply-valve ports *w*., shown in Fig. 4.; and I prefer to mark the slab J., or cap *j*. with the words "Closed" and "Open," to indicate  
 45 the position to which the handle must be brought in order to close or open the discharge.

The operation is simple, and is as follows: To close the discharge, turn the handle over the word "Closed;" then, if the bowl is to be  
 50 charged, turn the handle to the right, over the nearest letter "C" for cold water; to the left, over the nearest letter "H" for hot water; and first to one and then the other for tepid water—turning it back to the word "Closed"  
 55 to stop the flow, and retain the water in the bowl. To open the discharge and drain the bowl, turn the handle to the opposite side, between the words "Waste" and "Open;" then, if it be desired to let water flow into the bowl  
 60 and run off, turn the handle back to the nearest letters "C" or "H," respectively.

In the form above described, the discharge-valve is made rectangular, but it may be made in any other suitable form, for example,  
 65 cylindrical, as shown in Figs. 2, 3, 5, 7, 8, in which case it can more easily be fitted to its casing. When cylindrical, it should be feath-

ered, as shown at *f*., Fig. 7., to prevent it from turning. To enable the arm *r*. to strike the end-walls of the valve nearer their middle, 70 and therefore with less tendency to cramp the valve, the arm may be made with projecting lateral shoulders *r'*., as shown in Figs. 5., 10.

To provide for a concealed overflow, and visible water-seal, I extend a passage D'. from 75 the discharge-pipe D. upward, and thence to the sewer—said passage communicating, preferably, with the pipe A. at a point *a'*., Fig. 2., sufficiently elevated to enable the bowl to be properly filled with water when the discharge- 80 valve V<sup>2</sup>. is closed. This passage is independent of the valve V<sup>2</sup>., and always open. When valve V<sup>2</sup> is closed, water will rise in the bowl till it flows off through the opening *a'*., but no higher than that. When valve V<sup>2</sup> 85 is opened, it drains the passage backward through pipe D. When the passage D'. is arranged to open into the pipe A. above valve V<sup>2</sup>., the latter valve is made vertically tubular, to enable water flowing through open- 90 ing *a'*. to pass readily to the sewer. Passage D'. and opening *a'*. can be made of as ample size as may be desired, far exceeding the capacity of the spout F., if preferred, and absolute protection against damage from overflow 95 be thereby secured, without exposing any unsightly orifices to view.

Having thus described the principle of my invention and one way in which it may be carried into practice, what I claim as new, and 100 desire to secure by Letters Patent, is—

1. In a lavatory apparatus, the combination of the following elements, viz.: a water-receptacle; a spout or passage for delivering water into said receptacle at or near its upper edge; 105 a valve controlling the flow of water through said supply spout or passage; a pipe or passage for exhausting the water from the bottom of said receptacle; a valve controlling the escape of water through said discharge pipe 110 or passage; a single handle adapted to actuate both of said valves; said valves and their ports being so coordinated to each other and to the actuating handle as to hold said discharge pipe or passage either open or closed, 115 at the will of the operator, while said supply spout or passage is either open or closed; substantially as described.

2. In a lavatory apparatus, the combination of the following elements, viz.: a water-receptacle; a spout or passage for delivering water into said receptacle at or near its upper edge; 120 a valve arranged above the level of the overflow from said receptacle and controlling the flow of water through said spout or passage 125 into said receptacle; a pipe or passage for exhausting the water from the bottom of said receptacle; a valve arranged at or below the level of said bottom and controlling the escape of water through said discharge pipe or 130 passage; a single handle adapted to actuate both of said valves; a tube connecting the casings of said two valves; and an overflow pipe or passage communicating at its lower



end with the discharge pipe or passage, and at its upper end with said connecting-tube; substantially as described.

3. In a lavatory apparatus, the combination  
5 of the water-receptacle, the supply pipe or pipes, the discharge pipe, the supply valve, the discharge valve, the handle G. adapted to operate the supply valve, and the rod R. connected to the supply valve and provided with

the arm r. adapted, by its rotary movement, 10 to operate the discharge valve; the operative parts being so constructed as to permit a lost motion between the two valves; substantially as described.

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