

No. 894,662.

PATENTED JULY 28, 1908.

J. W. KENNEDY.

FLUSH VALVE.

APPLICATION FILED MAY 18, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

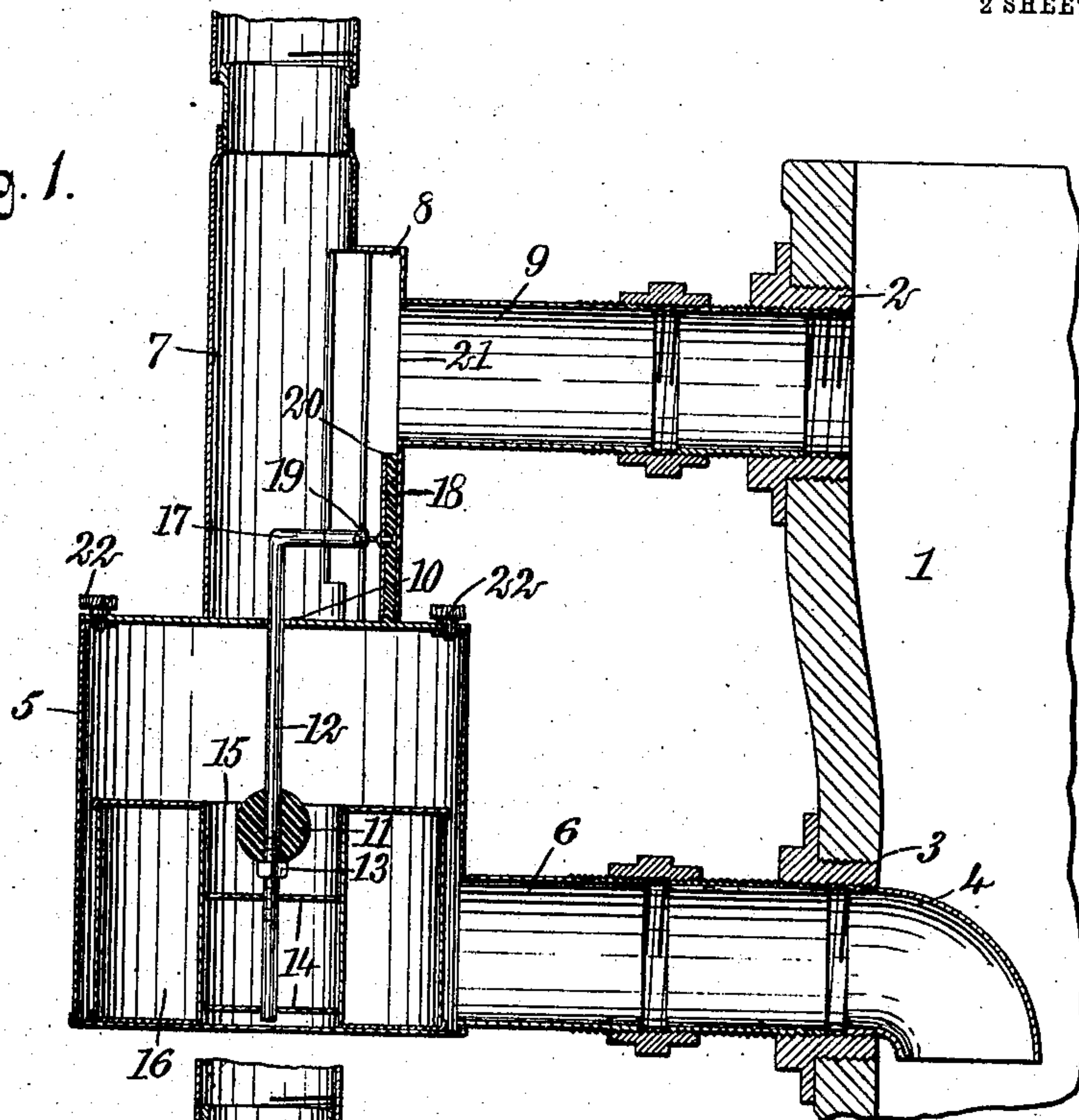
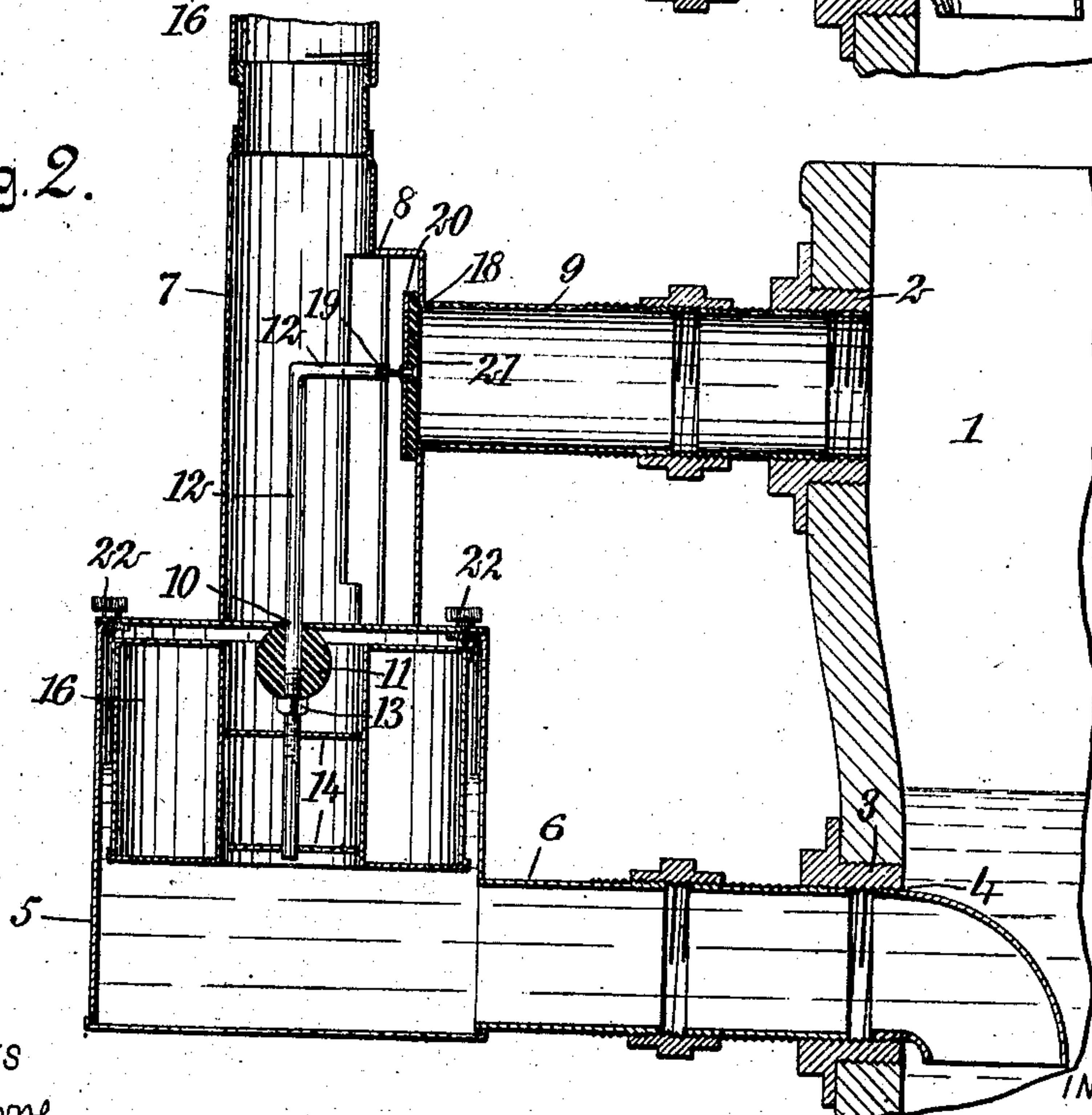


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

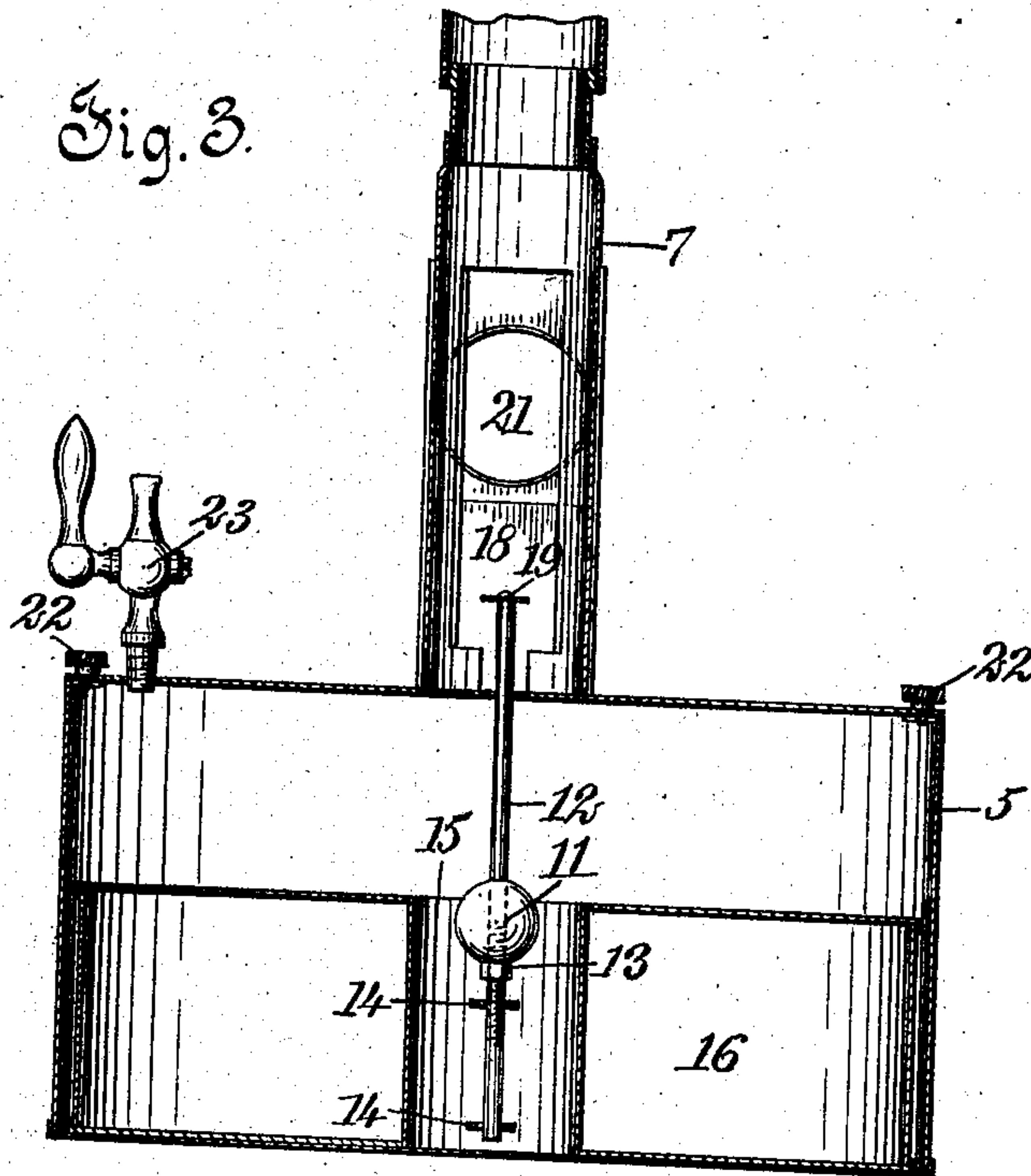


Fig. 4.

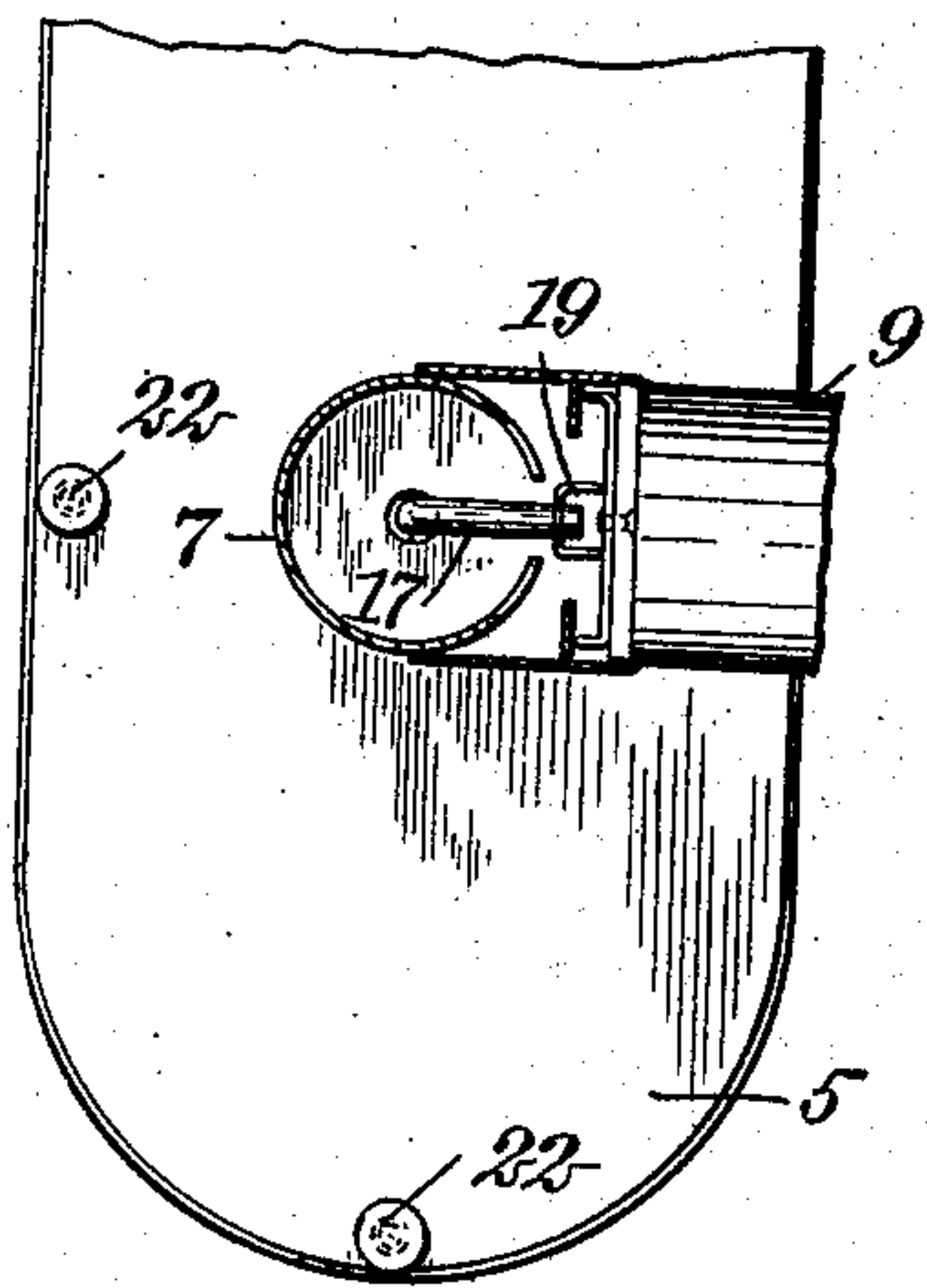
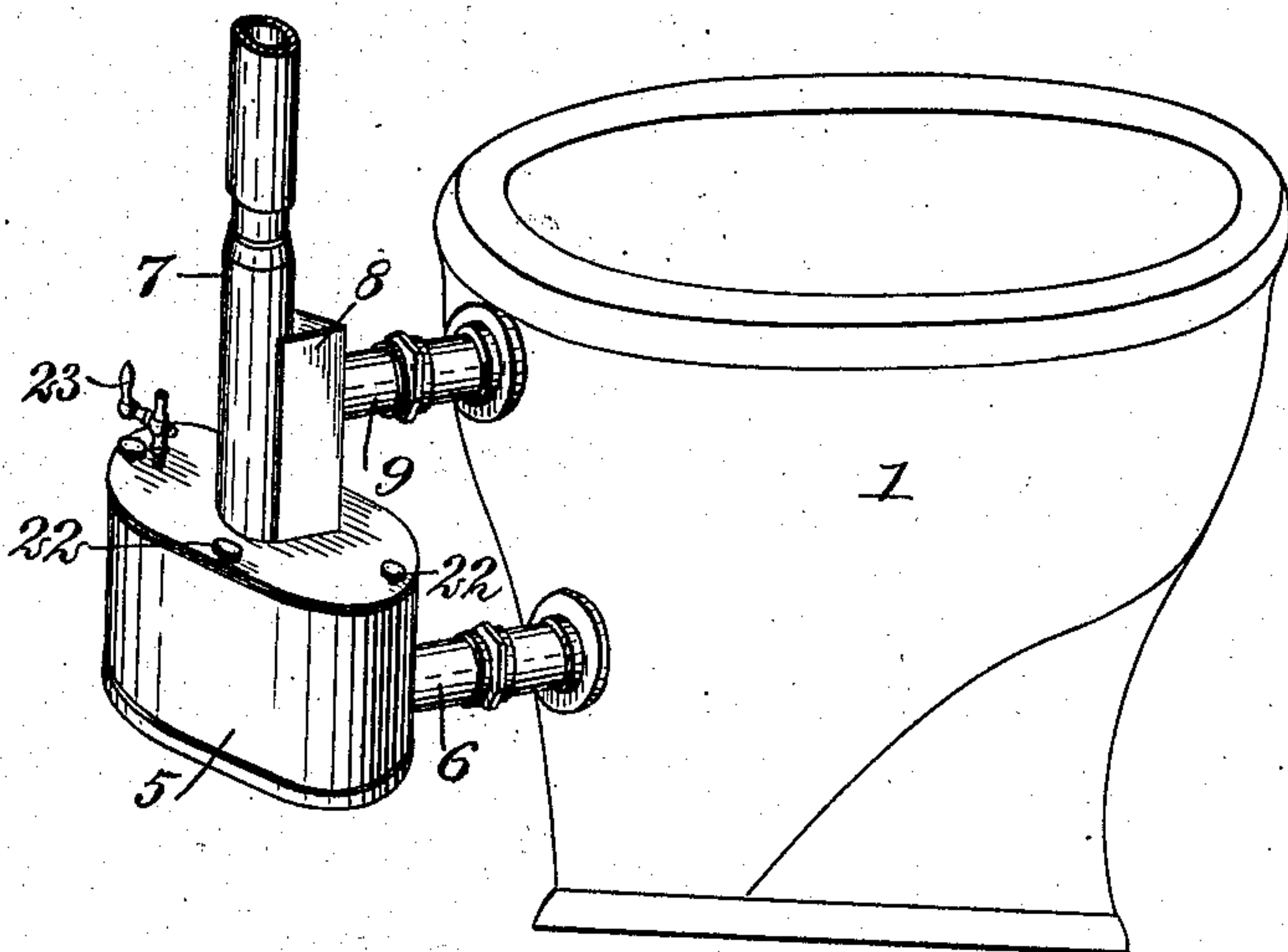


Fig. 5.



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# UNITED STATES PATENT OFFICE.

JOHN WILLIAM KENNEDY, OF MISSOULA, MONTANA.

## FLUSH-VALVE.

No. 894,662.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed May 18, 1907. Serial No. 374,417.

*To all whom it may concern:*

Be it known that I, JOHN WILLIAM KENNEDY, a citizen of the United States, and a resident of Missoula, in the county of Missoula and State of Montana, have invented new and useful Improvements in Flush-Valves, of which the following is a full, clear, and exact description.

My invention relates to flush valves for water closets, and has for its principal object to provide a reservoir connected with the bowl of the water closet, valves admitting water from the inlet pipe to the reservoir and to the bowl of the water closet, the water supply being shut off when the water in the said bowl reaches a predetermined level. By the use of my invention, it is therefore impossible for the water to overflow the bowl.

Other objects of my invention are to provide a flush valve which is comparatively inexpensive to construct, one that is certain in its operation and one which will in its operation keep the several parts clear and free from foul water and excretion.

Still other objects of greater or minor importance will appear hereinafter in the following description.

The construction shown in the drawings, forming part of this application, shows the approved form of my flushing valve, but I do not wish to limit myself thereto, as I consider myself entitled to all forms and embodiments of the invention, which may be held to fall within the scope of the appended claims.

Similar characters of reference refer to similar parts in all the figures, in which

Figure 1 is a sectional view showing the reservoir and bowl of the closet, the valves being open; Fig. 2 is a similar view showing the valves closed; Fig. 3 is a sectional elevation taken from the left side of Fig. 1; Fig. 4 is a plan view showing in section the connections above the reservoir; and Fig. 5 is a perspective view showing my flushing device applied to the bowl of a water closet.

By referring to the drawings, it will be seen that the bowl of the water closet has two orifices for pipes, 2 and 3 respectively, one above the other, with their centers about five and one-half inches apart. It will be seen that the orifice 3 has a short elbow 4 pointing downwardly to prevent any body from falling into this connection.

My flushing valve has a reservoir 5, which may be oval or of any other approved shape,

with a pipe 6 at the bottom of its wall, the said pipe 6 being adapted to be connected to the lower orifice 3 in the basin. This connection may be made by the use of short pipes with suitable couplings, as shown in the drawings. Above the reservoir, there is a pipe 7 with an extension 8 on the side nearest the bowl, this extension 8 having a pipe 9, which is adapted to be connected with the orifice 2 in the same way that the pipe 6 is adapted to be connected to the orifice 3. The top of the reservoir 5 is screwed down with thumb-screws 22, so that it can be removed at any time to examine the interior of the reservoir. A cock 23 may also be adjusted on the reservoir, to remove air or other gas when desired.

Communication between the reservoir 5 and the pipe 7, is permitted through an annular opening 10, which forms a valve seat, which is commanded by a "fuller" ball 11, which is adjusted on the rod 12, to any desired relative height by the nut 13, which fits on the threaded portion of the said rod. This rod 12 is rigidly secured to two cross pieces 14, which are secured in the central annular opening 15, in the float 16, which is inclosed in the reservoir and fits easily the walls thereof, but which does not extend to the top of the reservoir. This permits the float to move upwardly when water enters the reservoir, and the reservoir and float being both oval in shape, one is unable to rotate relatively to the other, and as the reservoir is firmly secured to the bowl by the pipe 6, the rod 12 of the float 16 may move up and down with the float, but it always has the same surface turned toward the bowl. The upper end of the rod 12 is bent at right angles toward the bowl and this terminal 17 is secured to a slide valve 18 by a swivel 19. This slide valve 18 is preferably made of copper, to which is affixed a piece of rubber 20, of the same size and shape as the slide valve. The communication of the extension 8 with the pipe 9 forms a valve seat 21, which is commanded by the valve 18, the movement of the float 16 to the top of the reservoir 5 seating the valve 18 by means of the rod 12 connecting the two. By this upward movement of the float, the "fuller" ball 11 closes the annular opening 10, and in order to insure that the valve seat 21 and the annular opening or valve seat 10 will be closed simultaneously, the "fuller" ball is adjusted to the



proper height on the rod 12 by means of the nut 13 previously mentioned.

In the operation of the flushing valve, it will be observed that when the outlet in the bowl is opened, the water level in the bowl is lowered, with the result that the float 16 falls to the bottom of the reservoir 5, and the valve seats 21 and 10 are opened, permitting the water from the inlet pipe to pass through the pipes 9 and 6 to the bowl until the opening in the bottom of the bowl is closed, when the water will enter the top of the pipe 7 from the inlet pipe or water supply, and that the outlet in the bowl being closed, the water will run into the bowl through the pipe 9 and also through the pipe 6 from the bottom of the reservoir, although this latter communication is more or less impeded by the float 16. As the water rises in the bowl, the float in the reservoir in communication with the bowl through the pipe 6, is raised until the valve 18 and the "fuller" ball 11 on the rod 12, which is fastened to the float, close respectively the valve seats 21 and 10. The supply of water is thereby cut off, and the water will remain at a level in the bowl, which will keep the float 16 in the reservoir 5 at such a height as to close the valve seats 21 and 10.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A flush-valve, having two communications with an outlet pipe, a communication between the said two communications, a valve commanding the said communication, a second valve commanding one of the said two communications, and means to actuate the valves simultaneously.

2. A flush-valve, having two communications at different levels in a bowl, a communication outside the bowl between the said two communications, a valve commanding said communication, a second valve commanding one of the said two communications, and means to actuate the valves simultaneously.

3. A flush-valve, having a plurality of communications with the bowl of a water closet, an outlet, all of said communications being adapted to supply water through the bowl to the outlet, valves commanding the said communications, and means to open and close the valves by the variation in the level of the water in the bowl.

4. A flush-valve, having a plurality of communications which are adapted to be connected with the bowl of a water closet to supply water thereto when the outlet is opened, and valves adapted to command the said communications, the said valves being adapted to be operated by means of a back pressure in one of the said communications.

5. A flush-valve, having two communications which are adapted to be connected

with the bowl of a water closet at different levels, to supply water thereto when the outlet is opened and valves adapted to command the said two communications, the said valves being adapted to be operated by means of a back pressure in one of the said two communications.

6. A flush-valve, having a plurality of communications adapted to be connected with the bowl of a water closet at different levels to supply water thereto when the outlet in the bowl is opened, and valves commanding the said communications, the said valves being adapted to be operated by a back pressure in the communications.

7. A flush-valve, having a reservoir, a communication from the reservoir, adapted to be connected with the bowl of a water closet, an inlet pipe in communication with the reservoir, a communication from the inlet pipe, adapted to be connected with the said bowl of a water closet, a valve commanding said communication, a second valve commanding the communication between the inlet pipe and the reservoir, and means to operate the said valves by a back pressure in one of said communications adapted to be connected with the bowl of a water closet.

8. A flush-valve, having a reservoir, a communication from the reservoir, adapted to be connected with the bowl of a water closet, an inlet pipe in communication with the reservoir, a communication from the inlet pipe, adapted to be connected with the said bowl of a water closet, a valve commanding said communication, a second valve commanding the communication between the inlet pipe and the reservoir, and means to operate the said valves by the variation in the level of the water in the bowl of the water closet.

9. A flush-valve, having a reservoir, a communication from the reservoir which is adapted to be connected with the bowl of a water closet, an inlet pipe which is in communication with the reservoir, a communication from the inlet pipe which is adapted to be connected with the said bowl of the water closet, a valve commanding said communication, a second valve commanding the communication between the inlet pipe and the reservoir, a float in the reservoir which is adapted to operate the said valves, and means to operate the float.

10. A flush-valve, having a reservoir, a communication from the reservoir which is adapted to be connected with the bowl of a water closet, an inlet pipe which is in communication with the reservoir, the said inlet pipe having a communication which is adapted to be connected with the said bowl of a water closet, a valve commanding said communication, a second valve commanding the communication between the



inlet pipe and the reservoir, a float actuating the said valves, and means to vary the level of the water in the reservoir.

11. A flush-valve, having a reservoir, a communication from the reservoir which is adapted to be connected with the bowl of a water closet, an inlet pipe having a communication which is adapted to be connected with the said bowl of a water closet, a valve commanding said communication, a second valve commanding the communication between the reservoir and the inlet pipe, and a float adapted to actuate the said valves.

12. A flush-valve, having a reservoir, an inlet pipe in communication therewith, a communication from the reservoir which is adapted to be connected with the bowl of a water closet, a communication from the inlet pipe which is adapted to be connected with the said bowl of a water closet, a valve commanding this latter communication, a second valve commanding the communication between the reservoir and the inlet pipe, and a float in the reservoir, the said float having a rod to which the two valves are secured.

13. In a flush-valve, a reservoir having a communication which is adapted to be connected to the bowl of a water closet, an inlet pipe communicating with the reservoir and the said bowl of the water closet, valves commanding said two communications, the communications from the reservoir and the inlet pipe being adapted to be connected to the said bowl at different levels, and a float which is adapted to operate the said valves.

14. A flush valve having a plurality of communications with the bowl of a water closet above and below the normal water line which are adapted to supply water to the bowl when the outlet therein is opened, valves commanding the said communications, and means to open and close the

valves by the variation in the level of the water in the bowl.

15. A flush valve having two communications with an outlet pipe, a communication between the said two communications, a valve commanding the said communication, a second valve commanding one of the said two communications, and means to actuate the valves simultaneously by back pressure in one of the said two communications.

16. A flush valve having two communications with an outlet pipe, a communication between said two communications, a valve commanding the said communication, a second valve commanding one of the said two communications, and means to actuate the valves by the back pressure in one of the communications.

17. A flush valve having two communications at different levels in a bowl, a communication outside of the bowl between the two said communications, a valve commanding the said communication, a second valve commanding one of the said two communications, and means to actuate the valves by back pressure in one of the said two communications.

18. A flush valve having two communications at different levels in a bowl, a communication outside of the bowl between the said two communications, a valve commanding said communication, a second valve commanding one of the said two communications, and means to actuate the valves simultaneously by back pressure in one of the said two communications.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN WILLIAM KENNEDY.

Witnesses:

WILLIAM L. MURPHY,  
S. G. MURRAY.