

(No Model.)

R. MURPHY & C. W. ATKINSON.  
FLUSHING DEVICE FOR WATER CLOSETS, &c.

No. 401,576.

Patented Apr. 16, 1889.

FIG. I.

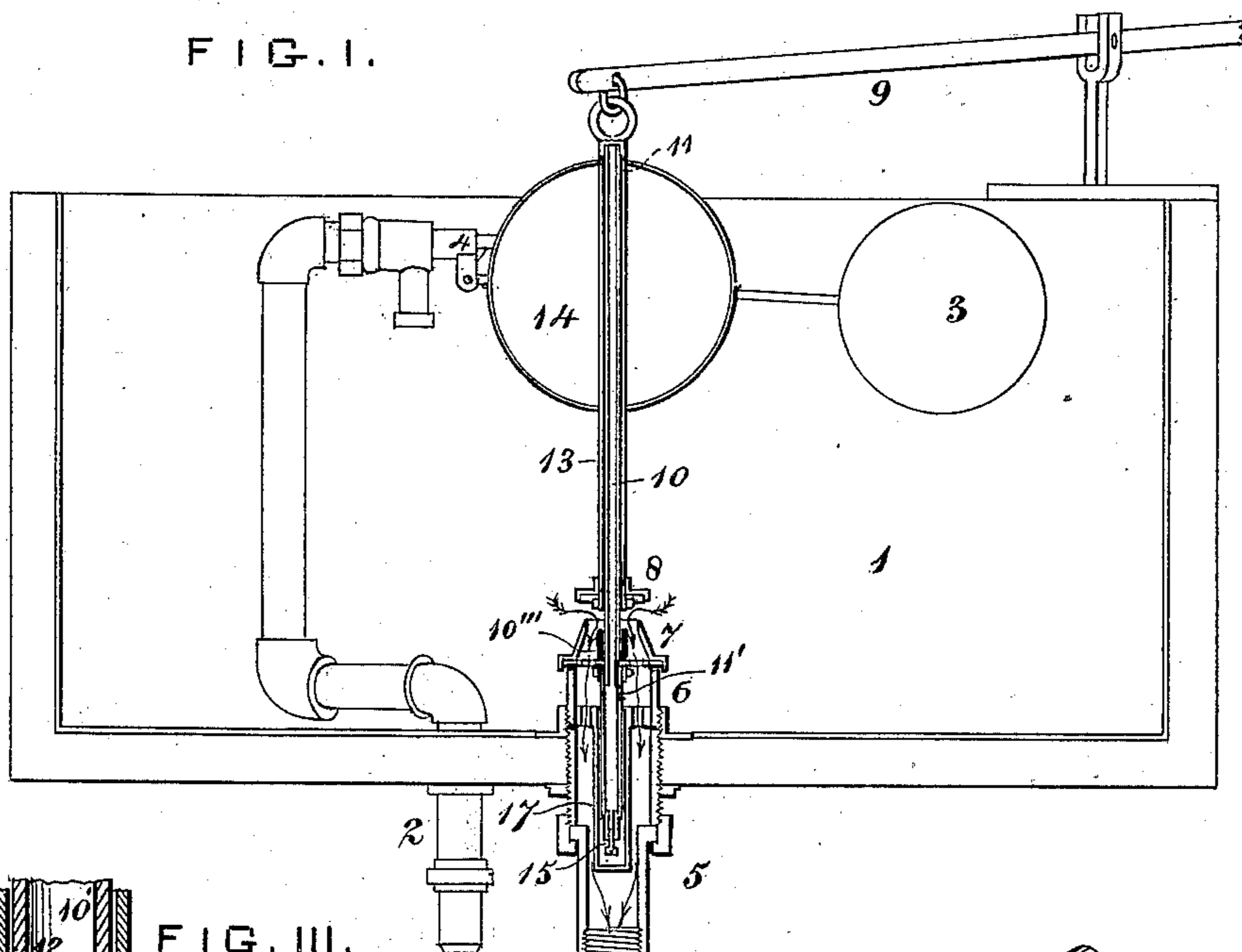


FIG. III.

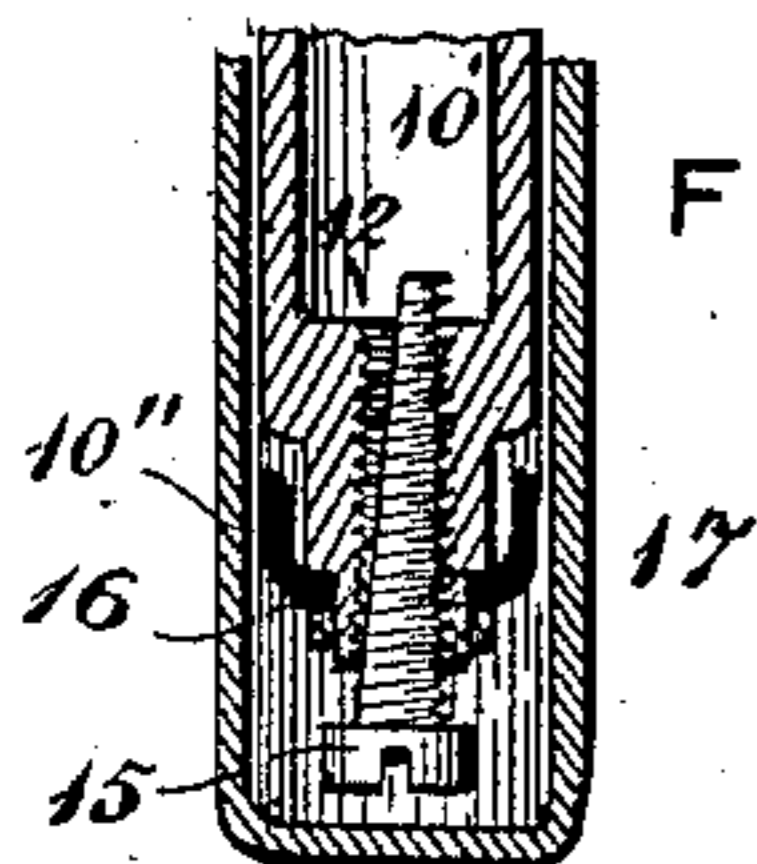


FIG. II.

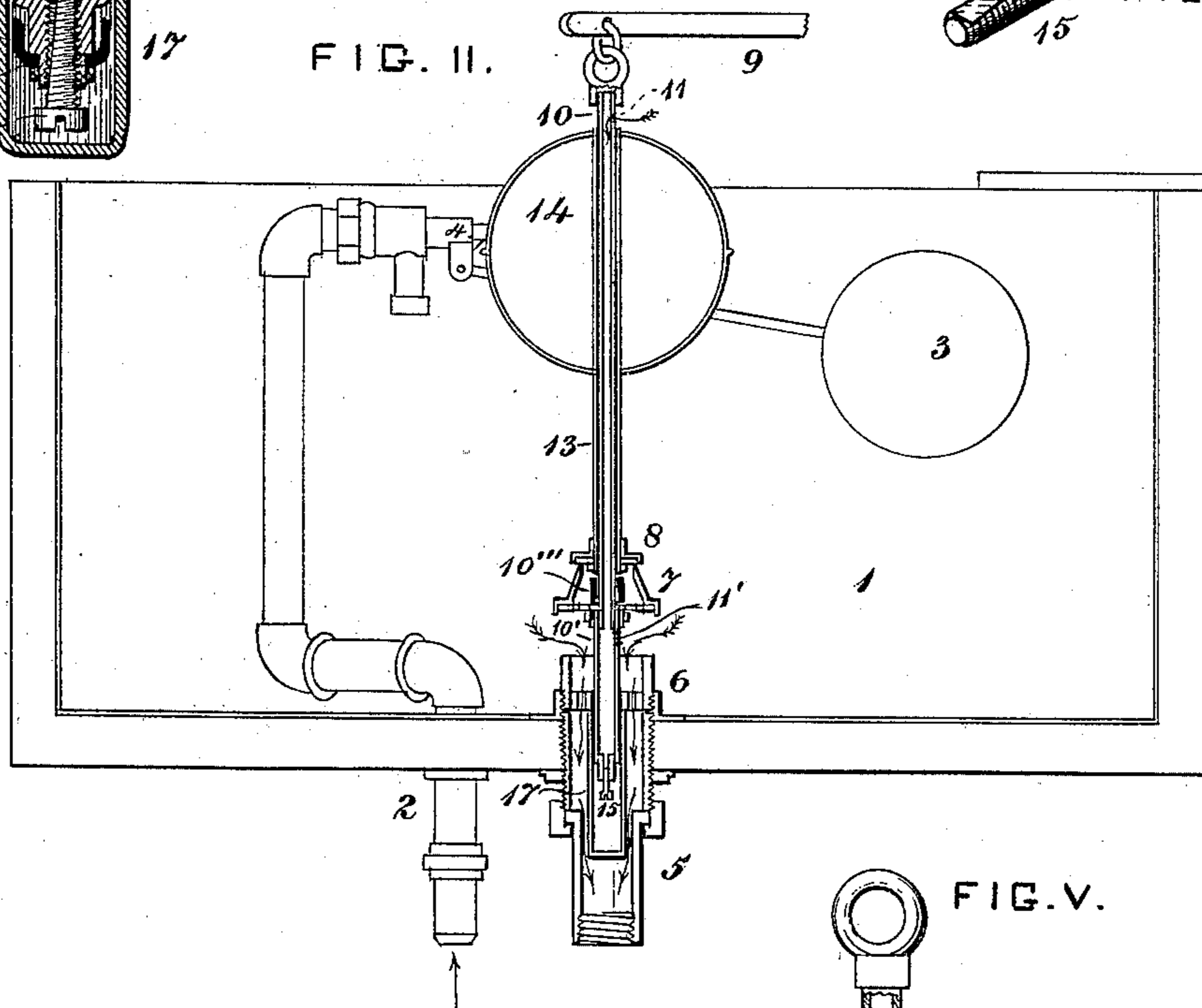
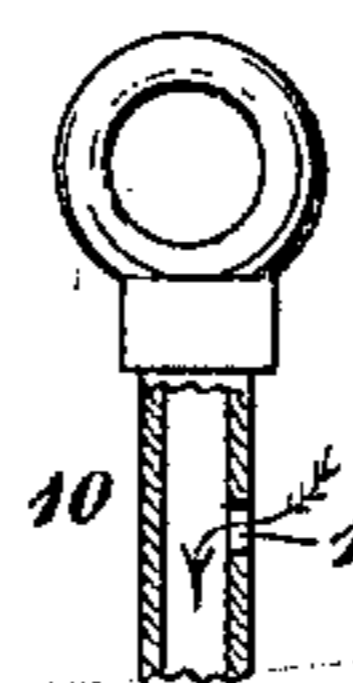


FIG. V.



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# UNITED STATES PATENT OFFICE.

RICHARD MURPHY AND CHARLES W. ATKINSON, OF CINCINNATI, OHIO.

## FLUSHING DEVICE FOR WATER-CLOSETS, &c.

SPECIFICATION forming part of Letters Patent No. 401,576, dated April 16, 1889.

Application filed October 31, 1888. Serial No. 289,593. (No model.)

*To all whom it may concern:*

Be it known that we, RICHARD MURPHY and CHARLES W. ATKINSON, both of Cincinnati, Hamilton county, Ohio, have jointly invented a new and useful Improvement in Flushing Devices for Water-Closets, of which the following is a specification.

Our invention includes a submerged noiseless discharge for the automatic relief of excess of water in the tank, (such, for example, as would arise from leakage in the ball-cock,) instead of the customary overflow. The object is accomplished through instrumentality of an auxiliary valve, hereinafter fully described.

In the accompanying drawings, Figure I is a vertical section showing the auxiliary valve in operation. Fig. II is a similar section, which shows the valve proper in operation. Fig. III is a vertical section of portions of the dash-pot and of the plunger with its regulating-screw. Fig. IV shows a regulating-screw detached. Fig. V represents (partly in section) the upper end of the stem of the valve proper.

1 may represent any suitable elevated tank or water-head, 2 the supply-pipe of the same, and 3 the float of an ordinary ball-cock, 4, for the customary automatic replenishment of the tank.

The flushing-nozzle 5 rises through the tank-floor in form of a submerged stand-pipe, 6, which, except at the instant of flushing, is closed by the compound valve 7 8. For manual flushing, the entire valve 7 8 is lifted through instrumentality of lever 9 and stem 10. For purposes hereinafter explained, this stem of the valve proper is tubular and has three ports, to wit: an air-port, 11, near its upper end, and two water-ports, of which 11' is located just underneath the valve proper, and port 12 is at the extreme lower end of that portion 10' of the stem which extends below the valve proper, and called by us the "plunger." The purpose of the port 11' is to prime or charge the dash-pot (to be presently described) at the first action of the apparatus, and to allow escape of any excess of water. The size of the port 12 is capable of being increased or diminished by means of regulating-screw 15,

having the tapering channel 16. Said plunger has a cup-leather, 10'', which plays snugly within a dash-pot, 17.

Manual flushing (see Fig. II) can, of course, be accomplished at any moment and at any stage of tank-water.

In order to relieve the tank, which (from leakage of its ball-cock or other causes) is in danger of overflowing, (such relief being also utilized as an automatic flush,) the valve proper or manual valve 7 has a cap or auxiliary valve, which whenever the water-level exceeds the desired limit is by its connection 13 with the auxiliary float 14 lifted from its seat on the open crown of the valve proper. (See Fig. 1.) Whenever this action takes place, water escapes from the tank into the flushing-nozzle and continues to flow until the lowering of the tank-water reseats the auxiliary valve and stops the flush. As the contents of the dash-pot after the first charge remain intact, merely flowing back and forth through the port 12 of the plunger 10 as the plunger advances and recedes within the dash-pot, said pot may be charged with clean water, or with any suitable fluid—such as glycerine—and hence the port 12 will never become clogged by grit or other impurities from the tank.

The air-port 11 may be so minute as to be practically noiseless in operation.

The flush-inlet being submerged and well below the water-level is noiseless, and at the same time constitutes a more effective flush than the comparatively weak but continuous dribble of the ordinary overflow.

For use with those closets—such as the "Sanites" closets—which require the fall (or flush) pipe to stand constantly full of water, a rubber seat, 10''', may be employed to prevent inrush of air into said pipe on closure of the valve.

We claim as new and of our joint invention—

1. In a flushing device for water-closets, the combination, with auxiliary float 14 and a submerged flush-passage, 5, of the following elements, to wit: the open-crowned valve proper, 7, the auxiliary valve 8, constituting a cap thereto, and which it normally closes, and a

sleeve, 13, which surrounds the stem 10 of the valve proper and connects said cap to said float.

2. In a flushing device for water-closets, the combination of the following elements, to wit: the open-crowned valve proper, 7, having the tubular stem 10, the operating-lever 9, the dash-pot 17, the submerged stand-pipe 6, the flush pipe or nozzle 5, which communicates therewith and constitutes the seat of the said open-crowned valve proper, 7, whose tubular stem 10 carries the said operating-lever 9 and contains the ports 11 11' and the regulatable port 12, the auxiliary valve 8, with its float 14, and the sleeve 13, which surrounds said stem and which connects the said valve with its said float.

3. In a flushing device for water-closets, the combination, with the automatically-operated auxiliary valve 8, of the open-crowned valve proper, 7, and a rubber seat, 10'', constituting a double seat to said auxiliary valve.

4. In a flushing device for water-closets, the

combination of the following elements, to wit: the submerged overflow consisting of the stand-pipe 6, extending through and secured to the tank-floor, and to whose lower end is secured the flushing-nozzle 5, having the automatic auxiliary float 14, the auxiliary valve 8, and the sheath 13, having the manually-operated lever 9, stem 10, and valve proper, 7, and a dash-pot, 17, containing a fluid and having the hollow plunger 10', said plunger being provided with channeled set-screw 15, which allows the fluid to flow from dash-pot into plunger when valve proper descends, and vice versa when valve proper ascends, for the purposes set forth.

In testimony of which invention we hereunto set our hands.

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CHARLES W. ATKINSON.

Attest:

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L. C. BLACK.