

(No Model.)

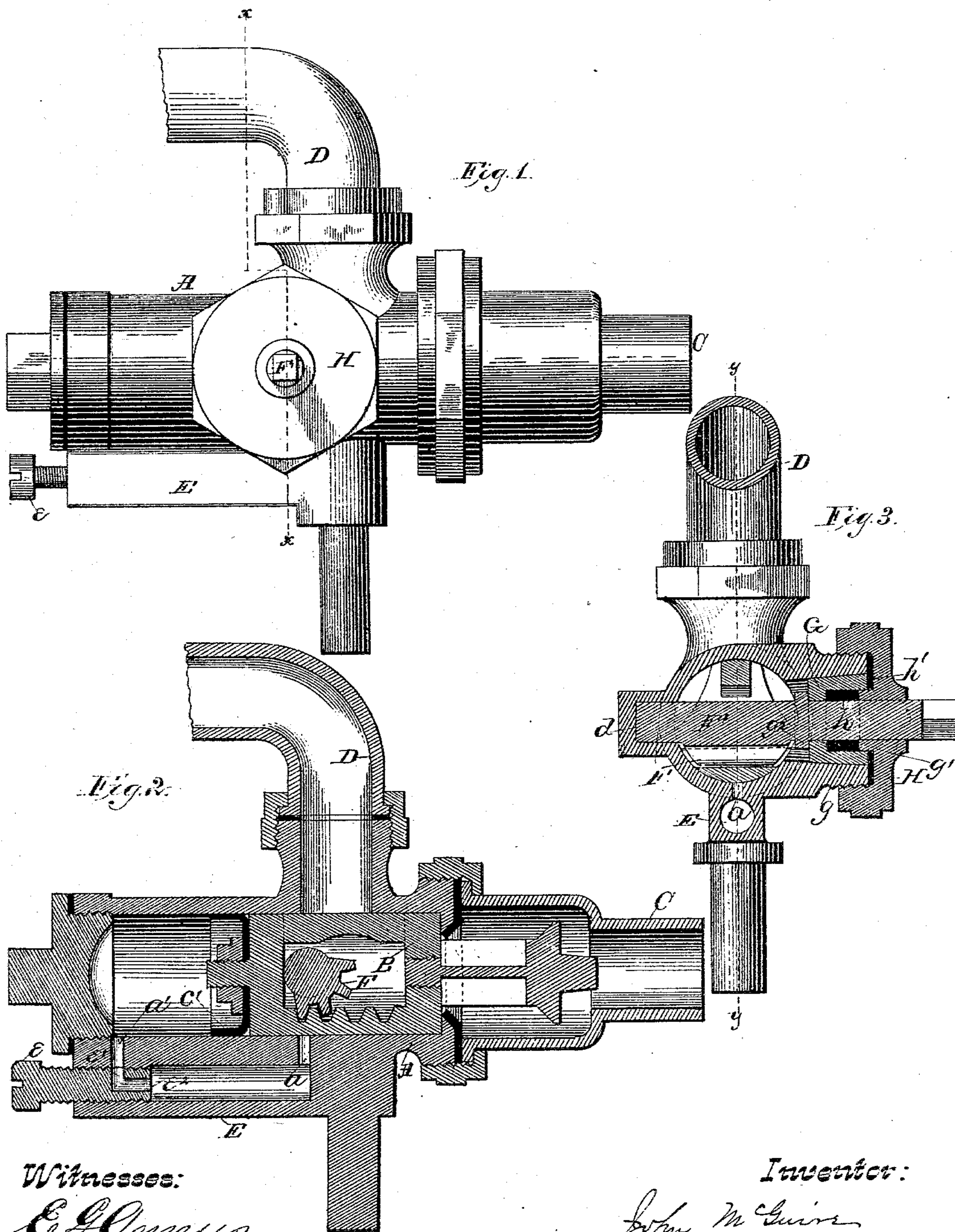
2 Sheets—Sheet 1.

J. MCGUIRE.

WATER CLOSET VALVE.

No. 274,628.

Patented Mar. 27, 1883.



*Witnesses:*

E. G. Lamm  
Carl Pickhardt

*Inventor:*

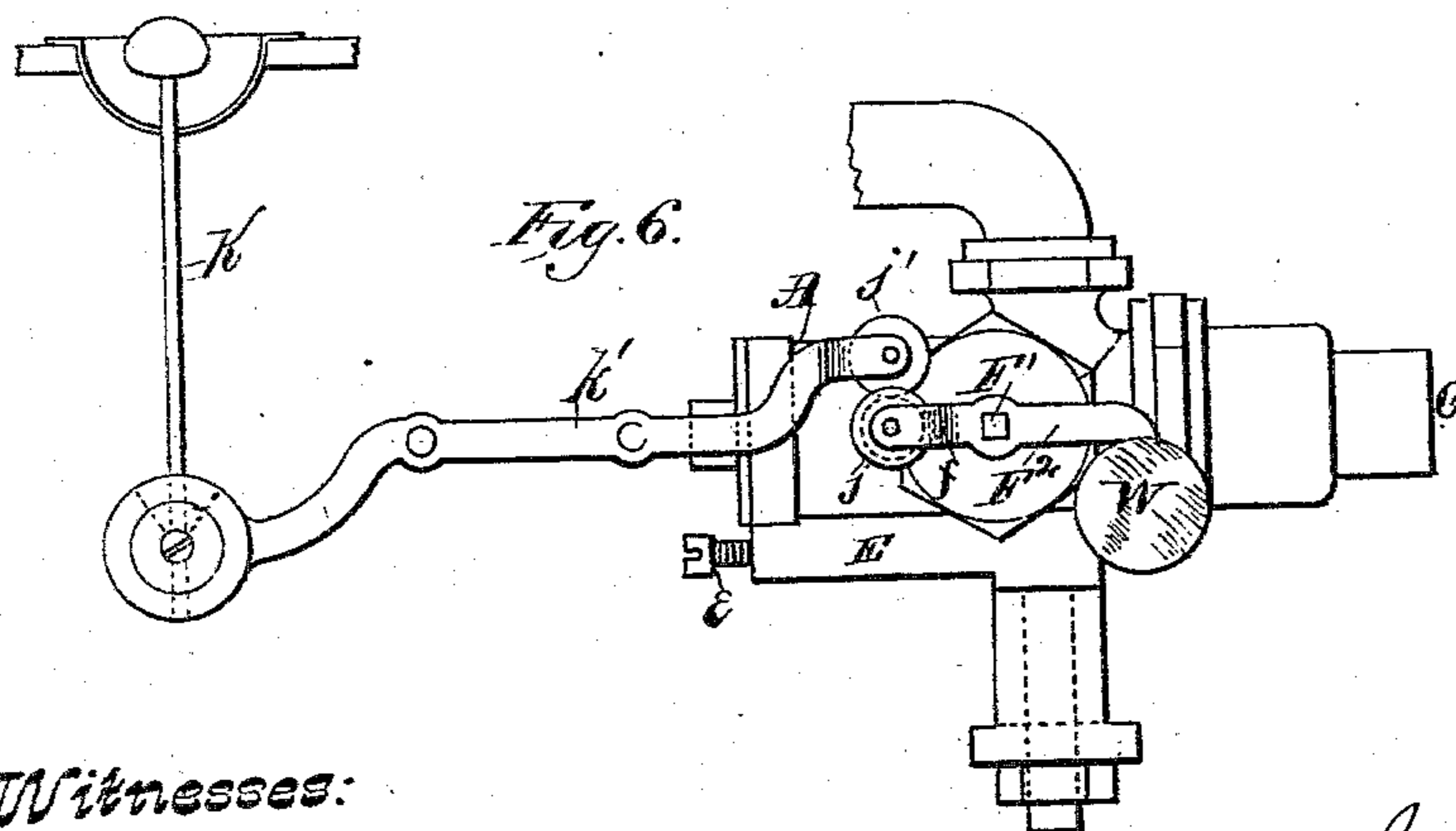
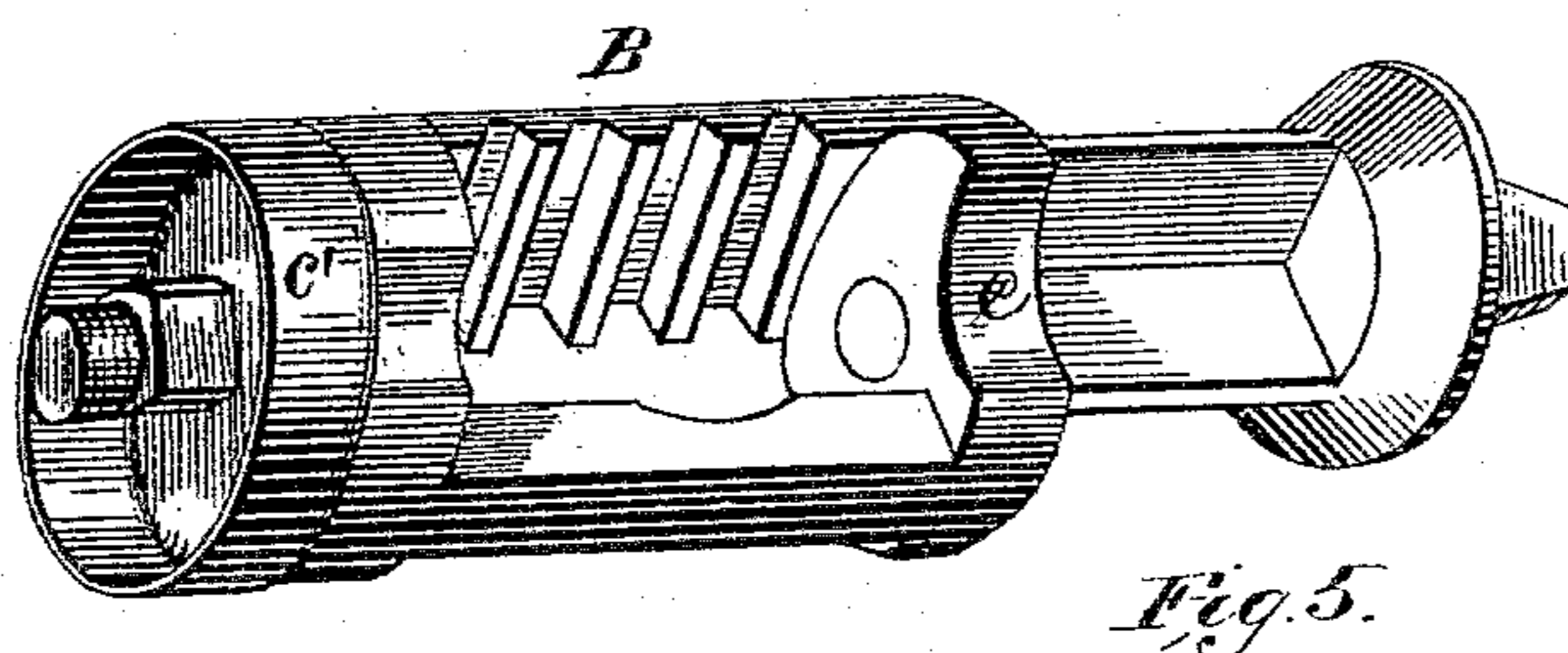
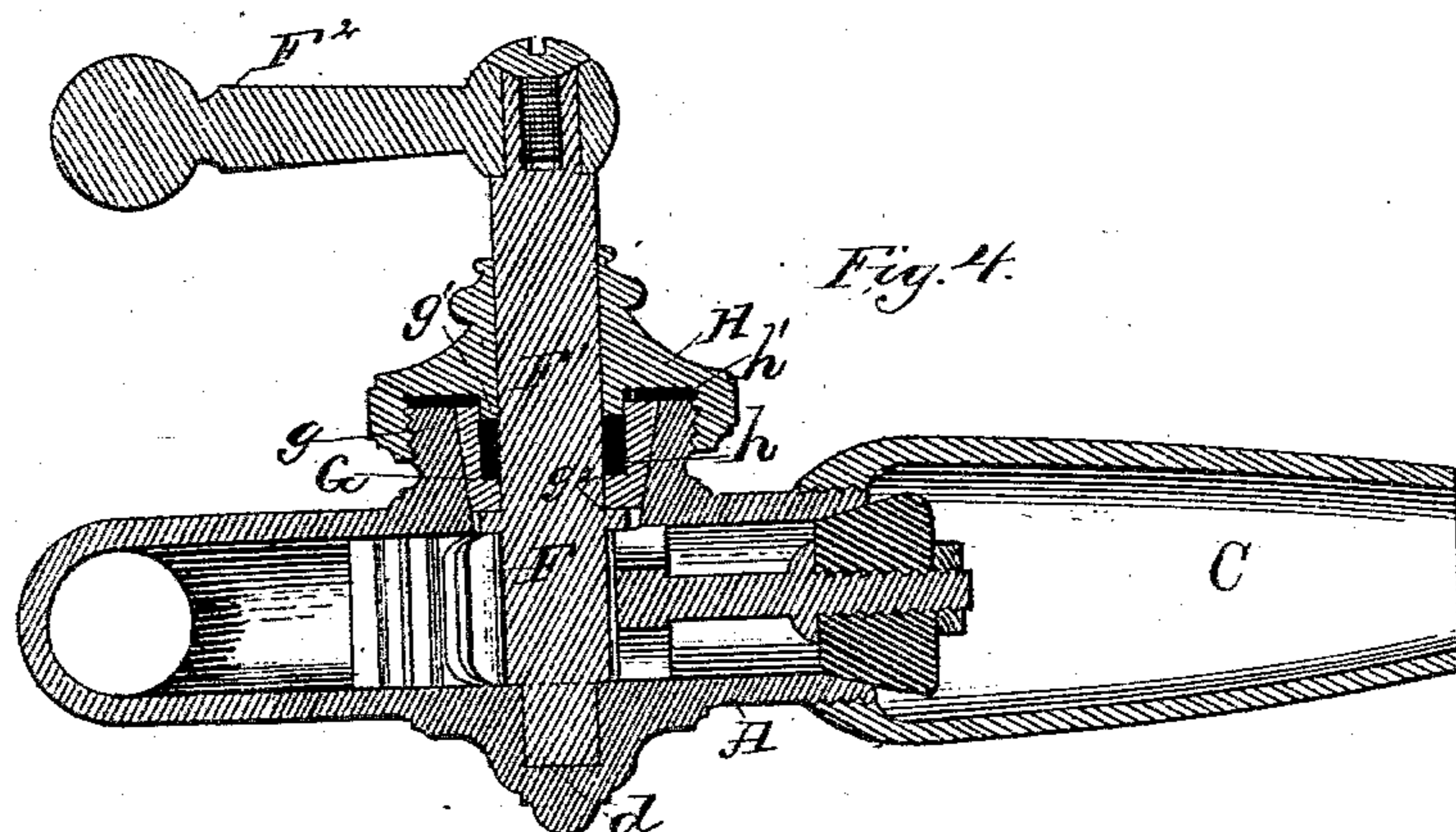
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2 Sheets—Sheet 2.

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# UNITED STATES PATENT OFFICE.

JOHN MCGUIRE, OF MILWAUKEE, WISCONSIN.

## WATER-CLOSET VALVE.

SPECIFICATION forming part of Letters Patent No. 274,628, dated March 27, 1883.

Application filed April 4, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN MCGUIRE, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain  
5 new and useful Improvements in Cocks and Valves for Water Closets, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to valves for water-closets and draw-cocks, and will be fully described hereinafter.

In the drawings, Figure 1 is a side view of my improved water-closet valve. Fig. 2 is a vertical longitudinal section through the center thereof, on the line *y y*, Fig. 3, showing the valve open. Fig. 3 is a transverse section taken on the line *x x*, Fig. 1. Fig. 4 shows my improved valve applied to draw-cocks. Fig. 5 is a perspective view of the valve proper, and  
20 Fig. 6 is a side view of my device and the operating-levers of a water-closet.

A is the casting that forms the valve-chamber, and B is the valve. C is the service-pipe, and D the delivery-pipe. E is a chamber, having an opening, *a*, that leads into the valve B, and another, *a'*, that leads into the chamber back of the valve-head. F is a cog-segment by which the valve is worked, its shaft *F'* extending into a bearing, *d*, on one side and out  
30 through a stuffing-box, G, on the other, and having a flange, *g*<sup>2</sup>, which bears against said box. This box has tapering sides and fits in a collar, *g*, that has a correspondingly-tapered interior. Inside of the box I place a suitable  
35 bushing, *h*, and over the collar *g*, I fit a cap, H, that has an interior rim, *g'*, that fits into the cap about the shaft, a bushing, *h'*, being also interposed between this rim *g'* and the outer rim of the cap.

40 The interior of my valve B is open, so as to admit the water from the service through it, and its rear end has one or more concaves, *c*, to admit the water to the cup-leather valve *c'*, which allows water to rush past it when the  
45 valve is opened, but will not allow it to flow back, and it can get out only through the aperture *a'*; and to regulate its flow I screw a plug, *e*, into the chamber, and this plug has a hole, *e'*, entering its side at right angles to it,  
50 and joining another, *e*<sup>2</sup>, that enters its end, and the rapidity of this flow can be regulated by

turning the plug to the right or left, so as to make its aperture either full or partly open to the aperture *a'*, the said plug *e* being screw-threaded on its exterior, so as to enable it to  
55 be readily turned either way, whereby its transverse hole *e'* (which, as stated, communicates with its longitudinal hole *e*<sup>2</sup>, leading into the chamber E below the valve-chamber) may either wholly or partially coincide with the de-  
60 scribed aperture *a'*, and hence regulate at any time the amount of water passing from the rear of the valve-chamber through these passages *a'*, *e'*, and *e*<sup>2</sup> into the chamber E, whence the water finds its outlet from chamber E back  
65 into the valve through aperture *a*.

The shaft *F'* has keyed to its outer end a weighted arm, *F*<sup>2</sup>, and by it is turned when it is being opened and closed; and when my valve is being used for water-closets I provide the  
70 weighted lever *F*<sup>2</sup> with a short arm, *f*, that projects in front of its shaft *F'* and carries a wheel, *j*, and I provide the water-closet handle *k* with a lever, *k'*, that has also a wheel, *j'*, in its free arm, and this wheel is arranged to rest upon the  
75 wheel *j*, so that when the handle is pulled up it will depress the free arm of the lever and cause it in turn to depress the short arm *f* of the lever *F*<sup>2</sup>, and, overcoming the weight *W*, turn the shaft *F'* and open the valve. Then  
80 as soon as the levers have been released the weight *W*, aided by the head of water in the main, will begin to turn shaft *F'* back and close the valve as it expels the water from the rear of the valve-head into chamber E through ap-  
85 erture *a'* and plug E. When shaft *F'* is in place in the casting it passes through the stuffing-box G, which, resting upon its collar *g*<sup>2</sup>, will confine it against any longitudinal play.

My invention is particularly adapted for wa-  
90 ter-closets, since it belongs to that class of valves which close automatically, after being opened, against an opposing pressure behind them, this opposing pressure being capable of regulation to determine the length of time each  
95 valve shall permit the water to flow through it.

The operation of my valve is as follows: The opening of the valve is accomplished by lifting the weighted arm of lever *F*<sup>2</sup>, (which is done, in the form of valve shown in Fig. 6, by  
100 pulling up the handle *k*, which in turn, through pivoted lever *k'* and wheel *j'*, bears upon the

wheel  $j$  and depresses the free end of this lever  $F^2$ , as already described,) and this upward movement of the weighted arm of said lever revolves the shaft  $F'$  partially and causes the cog-segment  $F$  on said shaft to take into the rack on the lower portion of the interior of the valve  $B$  and open it against the pressure of the water in pipe  $C$ , as shown in Fig. 2. The water will then rush through past the valve-head and through the valve into the delivery-pipe  $D$ , while a small quantity forces itself past the cup-valve  $c'$  into the chamber beyond it. Now, when the weighted arm of the lever  $F^2$  is released, it will begin to fall, and, aided by the pressure of water in pipe  $C$ , will close the valve against the pressure of the water in the chamber behind the valve, which must be expelled through aperture  $a'$  and passage  $e' e^2$  in screw-plug  $e$  into chamber  $E$  before the valve can close, the said water finding its way back to the valve through the aperture  $a$ , as hereinbefore fully described.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The valve-casting having seat  $d$  and tapering collar  $g$ , the tapering box  $G$ , having packing  $h$  and  $h'$ , and screw cap  $H$ , having interior rim,  $g'$ , in combination with the shaft  $F'$ , extending from the seat  $d$  entirely through the valve-chamber, box, and screw-cap, and having flange  $g^2$  bearing against the end of box  $G$ , all substantially as set forth.

2. In combination with shaft  $F'$ , the weighted lever  $F^2$ , carrying a wheel on its short arm, and the water-closet lever having a wheel on its arm adjacent to the short arm of lever  $F^2$ , as set forth.

3. In combination with the valve-casting  $A$ , having longitudinal valve-chamber, and the chambered and apertured casting  $E$  and its perforated screw-plug  $e$ , all communicating therewith, the valve  $B$ , having concaves  $e$ , and cup-leather valve  $c'$ , substantially as shown and described, and for the purpose set forth.

4. In combination with the casting  $A$ , having longitudinal valve-chamber, the valve  $B$ , fitting snugly within the valve-chamber, and having an interior rack and concaves  $c$  to permit free water-passage, and the cog-segment  $F$  and shaft  $F'$ , independent tapered box  $G$ , and screw-cap, through which said shaft passes, and suitable packing, all substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, on this 20th day of March, 1882, in the presence of two witnesses.

JOHN MCGUIRE.

Witnesses:

STANLEY S. STOUT,  
HAROLD G. UNDERWOOD.