

**No. 679,299.**

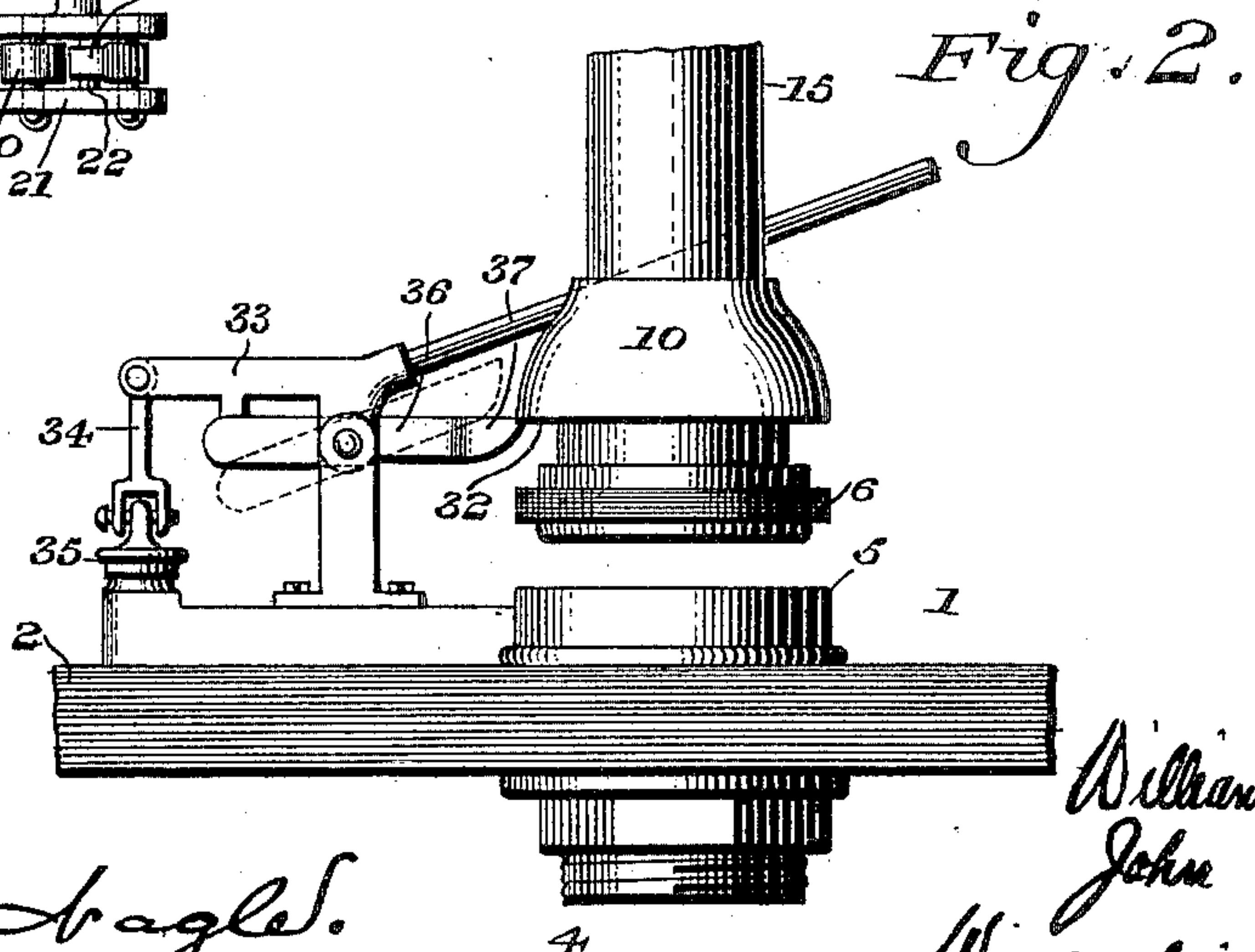
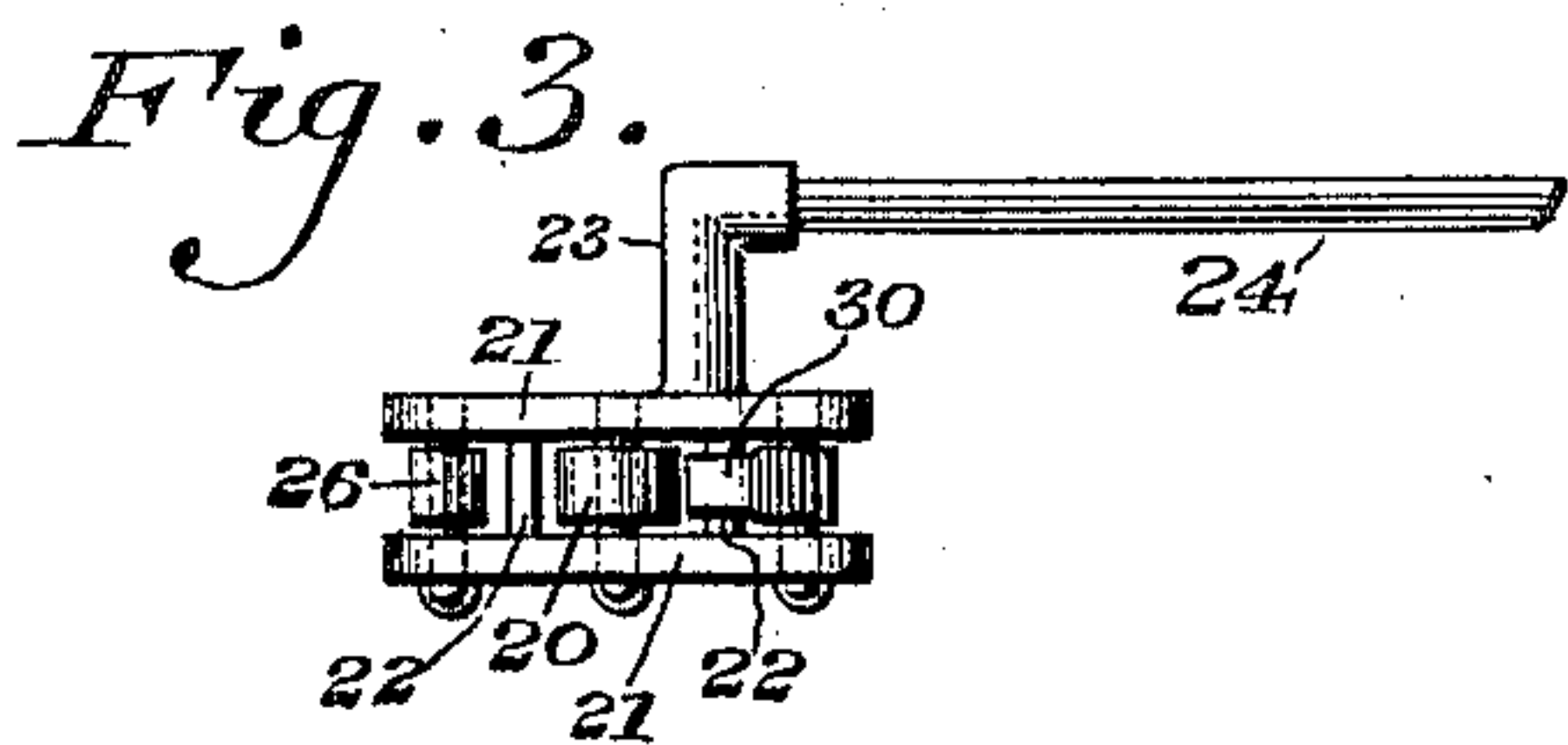
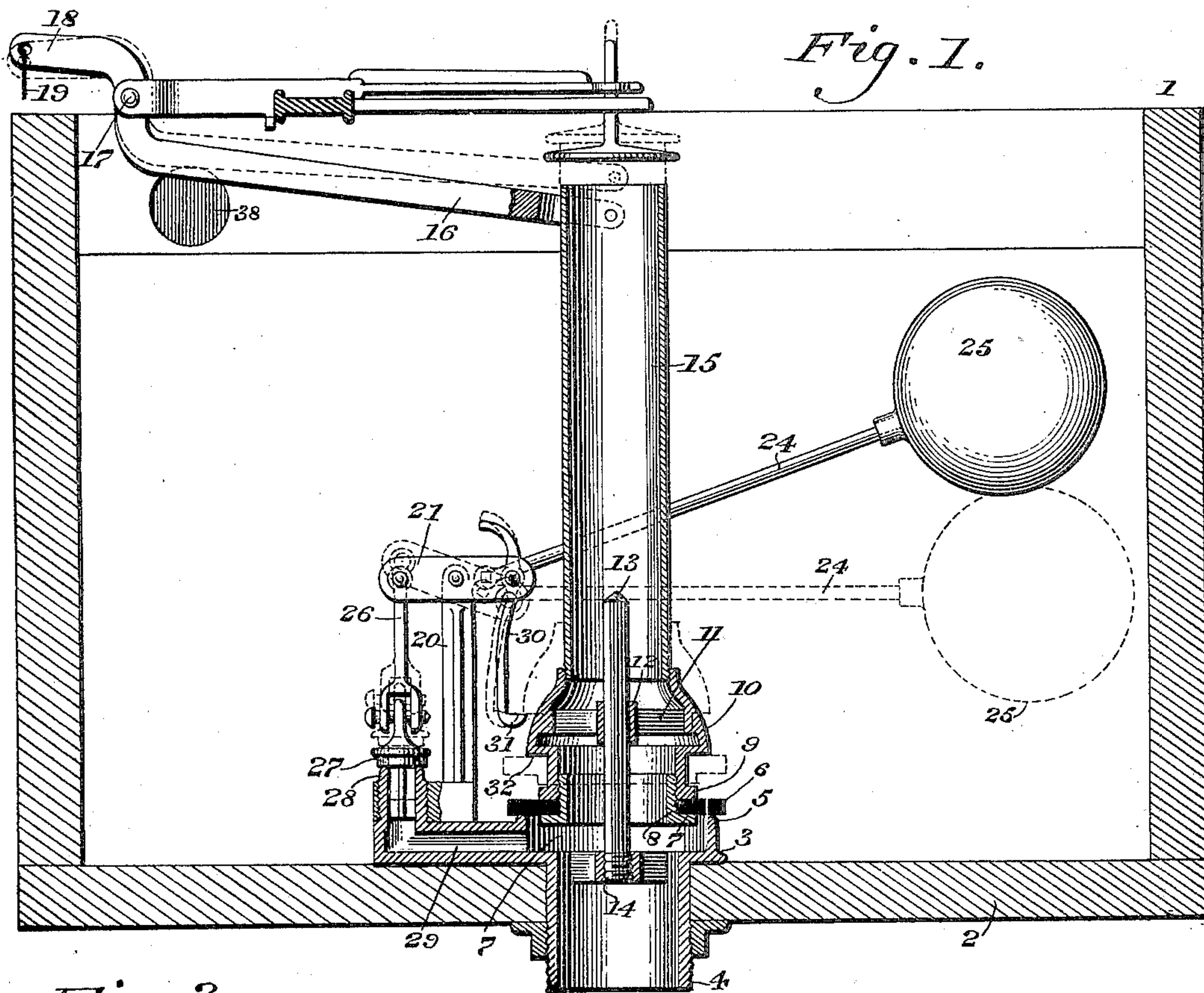
Patented July 30, 1901.

W. S. COOPER, JR. & J. DORRICOTT.

**WATER CLOSET TANK.**

(Application filed July 10, 1900.)

(No Model.)



## Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM S. COOPER, JR., AND JOHN DORRICOTT, OF PHILADELPHIA,  
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## WATER-CLOSET TANK.

SPECIFICATION forming part of Letters Patent No. 679,299, dated July 30, 1901.

Application filed July 10, 1900. Serial No. 23,103. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM S. COOPER, Jr., a citizen of the United States, and JOHN DORRICOTT, a subject of the Queen of Great Britain, both residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Water-Closet Tanks, which improvement is fully set forth in the following specification and accompanying drawings.

Our invention consists of an improved construction of a water-closet tank wherein the flow and supply of the water thereto may be regulated by simple and novel mechanism which can be easily actuated and is not liable to get out of order, all as will be hereinafter fully set forth, and particularly pointed out in the claims.

Figure 1 represents a sectional view of a water-closet tank embodying our invention, certain portions of the apparatus being shown in elevation. Fig. 2 represents a side elevation of another embodiment of the principle of our invention. Fig. 3 represents a plan view of a portion of the actuating mechanism seen in Fig. 1, to be hereinafter referred to.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates a tank, to the bottom 2 of which is secured the frame 3, the latter having the outlet 4, which may project through said base and is provided with the upwardly-extending wall or flange 5, which serves as a valve-seat and is adapted to coact with the washer 6, which latter is held in position by means of the flange 7 of the nut 8, whereby said washer is held in contact with the flange 9 of the plunger 10.

11 designates a spider located within said plunger and provided with the opening 12, through which passes the stem 13, the latter being secured to any fixed point, as 14, wherefrom it will be seen that the plunger and the pipe 15, connected therewith, and their adjuncts will always move in a vertical line, and the valve will be properly guided, seated, and unseated under all conditions. The pipe 15 has pivotally connected with the upper portion thereof the lever 16, which is fulcrumed at the point 17, the free end 18 of said lever

having the cord connection 19 attached thereto, whereby the lever is actuated as desired.

20 designates a post or standard upon which is pivotally supported a lever 21, having the bridges 22 and having integral therewith or secured thereto the arm 23, from which projects the rod 24, which carries a float 25.

26 designates a rod depending from the pin or other connection with the lever 21 and having attached to the lower portion thereof the valve 27, which is adapted to rest upon its seat 28, whereby a closure is formed for the passage 29, which leads to the main outlet 4.

30 designates a latch which is pivotally mounted on the lever 21, the nose 31 of said latch hanging so that it is adapted to engage the shoulder 32 of the plunger 10 at the proper intervals, as will be hereinafter explained.

In Fig. 2 we have shown another embodiment of the principle of our invention, wherein the lever 21 is replaced by a frame or casting 33, which is pivotally supported and has attached to one end thereof the rod 34, which actuates the valve 35, and instead of the dependent latch 30 we employ the dog 36, whose nose 37 is adapted to engage the shoulder 32 of the plunger 10, as already described, it being understood that in this figure we have shown the plunger 10 in elevated position.

The operation is as follows: The parts being in the position seen in full lines in Fig. 1 and the cord or connection 19 being pulled, the end 18 of the lever 16 is depressed, the opposite end being elevated and carrying with it the pipe 15, the plunger 10, and the washer 6, together with the other adjuncts. The water in the tank 1 is now permitted to flow through the opening 4, it being noticed that as the plunger 10 is elevated the curved face thereof strikes the curved face of the nose 31 of the latch 30 and pushes the same aside until the plunger 10 is above the nose, when the latter will engage the lower edge or shoulder 32 of the plunger and hold the same in elevated position, as seen in dotted lines, Fig. 1. As the water in the tank 1 descends the float 25 will be carried down, and as the lever 21 is connected with said float 25 by the arms 23 and 24 the said lever will be depressed,



as will also the latch 30, which will descend in a vertical line until the upper end of the same strikes the bridge 22 of the lever 21, when it will be forced aside and remove the  
 5 nose 31 from the shoulder 32, permitting the plunger 10 and washer 6 to still further descend and seat the latter, whereby the flow of water through the opening 4 will cease. The valve 27 has meanwhile been opened by  
 10 the movement of the lever 21, so that water from the tank is now permitted to flow through the passage 29 into the outlet 4 and from thence into the bowl, this constituting the afterflow, the said valve 27 being resealed as  
 15 the water from the supply which enters through the opening 38 refills the tank 1 and raises the float 25, so that the parts assume their normal position, it being understood that suitable connection is made with the  
 20 water-supply and with the bowl, so that these parts are operated at the proper time. The same operation is applicable to the construction shown in Fig. 2, the dog 36 and the nose 37 acting in the same capacity and in the  
 25 same manner as the latch 30. By this method it will be noticed that the reseating of the plunger 10 is in a slow manner as it falls with the water and is not released until near the valve-seat, whereby the closing will be quiet  
 30 and comparatively noiseless.

It will be evident that various changes may be made in the construction as herein shown and described, and we do not desire to be limited in every instance as to the exact construction.  
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Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a device of the character named, a  
 40 tank having an outlet, a valve therefor, one means for opening said valve, another means for holding the same in elevated position and means operated by the escape of water from said tank carrying with it said valve and the  
 45 means for holding it in elevated position, whereby the same will be entirely and gradually closed during the passage of the water from said tank.

2. In a device of the character named, a  
 50 valve, means for raising the same, a latch adapted to hold the same in elevated position and a float suitably connected with said latch, said float, latch and valve being adapted to descend as the water in the tank falls and  
 55 said latch being adapted to release said valve when near the seat thereof.

3. In a device of the character named, a valve, means for raising the same, a latch, a lever carrying said latch, a float connected  
 60 with said lever and adapted to lower said valve as the water descends, and a second valve suitably connected with said lever, whereby the same will be operated when the first-mentioned valve is closed.

65 4. In a device of the character named, a main outlet, a plurality of passages leading

thereto, valves for said passages, one of which serves as a flush-valve and the other as an afterflush-valve, a single float for actuating  
 70 both of said valves, said float being adapted to fall as the water in the tank descends and carry with it the flush-valve which is resealed slowly and quietly and said float being adapted to open the afterflush-valve and then close  
 75 the same as the water rises in the tank.

5. In a device of the character named, a valve, means for raising the same, a latch adapted to engage with and hold said valve in elevated position, a pivoted lever to which  
 80 said latch is movably secured and a float which is connected with said lever, whereby when said float falls with the water, it will depress said lever and carry with it said latch, which carries with it the valve which thus falls  
 85 slowly as the water descends in the tank.

6. In a device of the character named, a valve, means for raising the same, a latch adapted to engage with and hold said valve in elevated position, a pivoted lever to which  
 90 said latch is movably secured, an afterflush-valve also secured to said lever and a float which falls with the water and thus depresses said lever and latch which permits the flush-valve to fall slowly and opens the afterflush-valve which will be closed as the float rises  
 95 in the tank when the same is filled with water.

7. In a device of the character named, a valve, means for raising the same, a post, a latch, a lever and a float connected with said  
 100 lever, which is adapted to fall when the water in the tank falls and carry with it said lever and latch, said latch being adapted to hold said valve in elevated position until carried down by said float.

8. In a device of the character named, a  
 105 valve, means for raising the same, a guide for said valve, a pivoted lever, a latch carried by said lever and adapted to engage said valve when in elevated position, and a float connected with said lever adapted to fall with  
 110 the water in the tank and to carry down the said lever and latch and permit the valve to fall slowly and thus descend as the water in the tank descends.

9. In a device of the character named, a  
 115 flush-valve, means for raising the same, a pivoted lever suitably supported, a latch, adapted to hold said valve in elevated position, secured to said lever, an afterflush-valve connected with said lever and a float secured to  
 120 said lever which is adapted to fall with the water, said lever being so arranged that as the flush-valve is closed during the falling of the water, the afterflush-valve is opened and will be closed as the float rises in said tank.  
 125

10. In a device of the character named, a valve, means for raising the same, means for holding the same in elevated position, means connected with said valve which descends as  
 130 the water falls and carries with it said valve and the means for holding the said valve in elevated position, and a second valve adapted



to be operated while said first-mentioned valve is closing.

5 11. In a device of the character named, a valve, means for raising the same, a latch, a lever, a float connected with said lever which is adapted to fall when the water in the tank falls and carry with it said lever and latch, said latch being adapted to hold said valve in

an elevated position until carried down by said float.

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