

No. 668,999.

W. H. OSBORN.

Patented Feb. 26, 1901.

WATER CLOSET FLUSHING APPARATUS.

(Application filed May 29, 1900.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

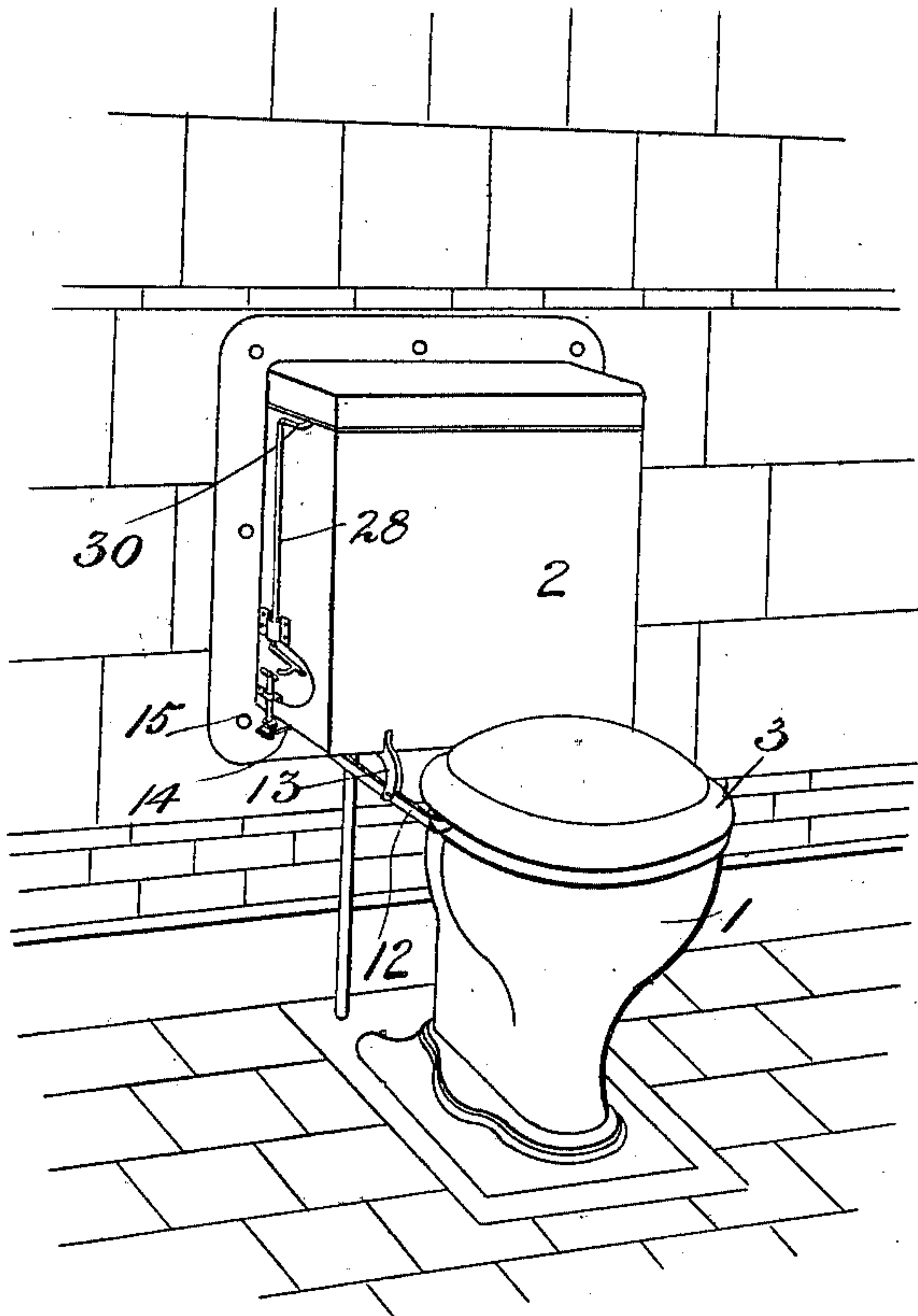
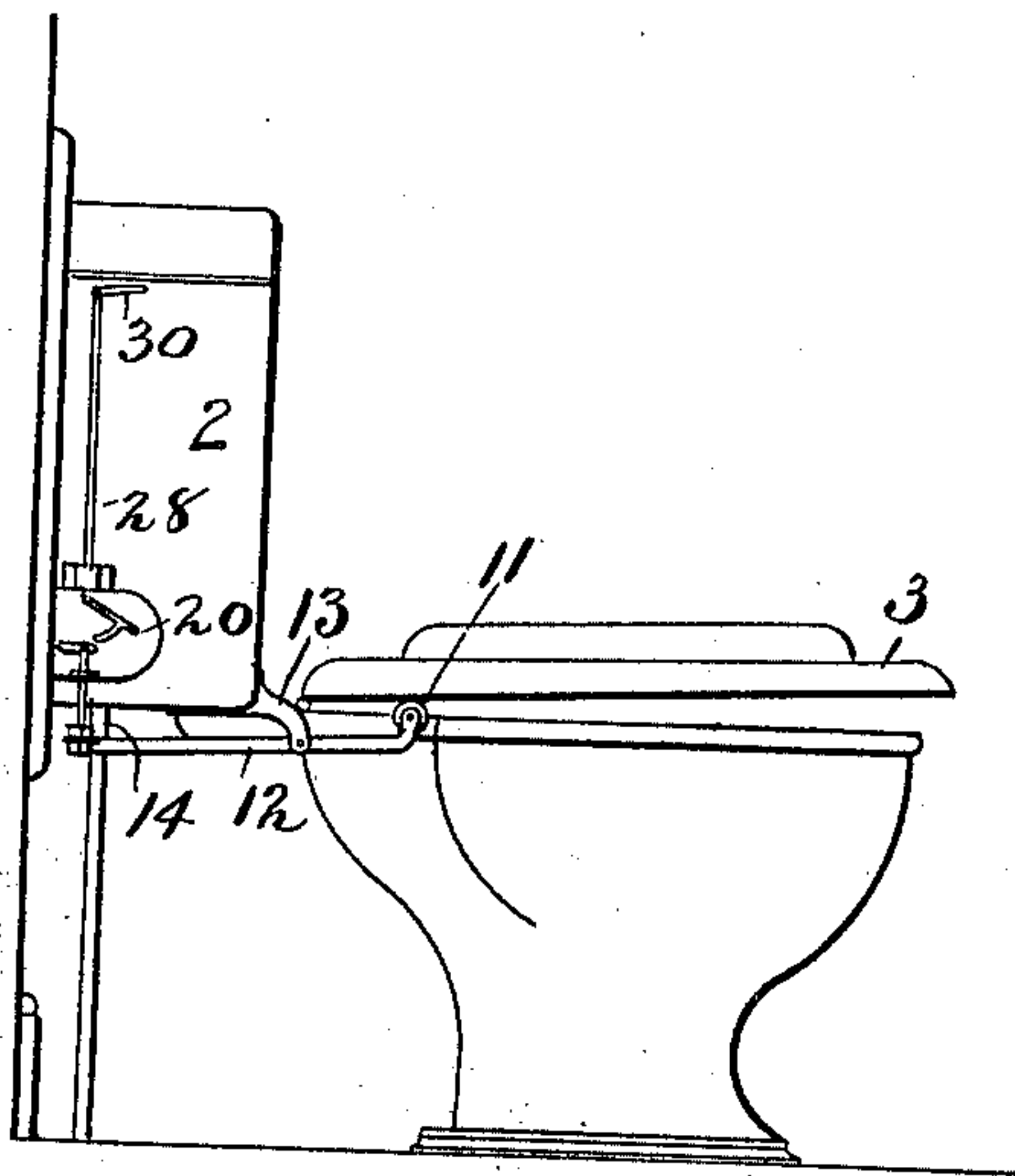


Fig. 2.



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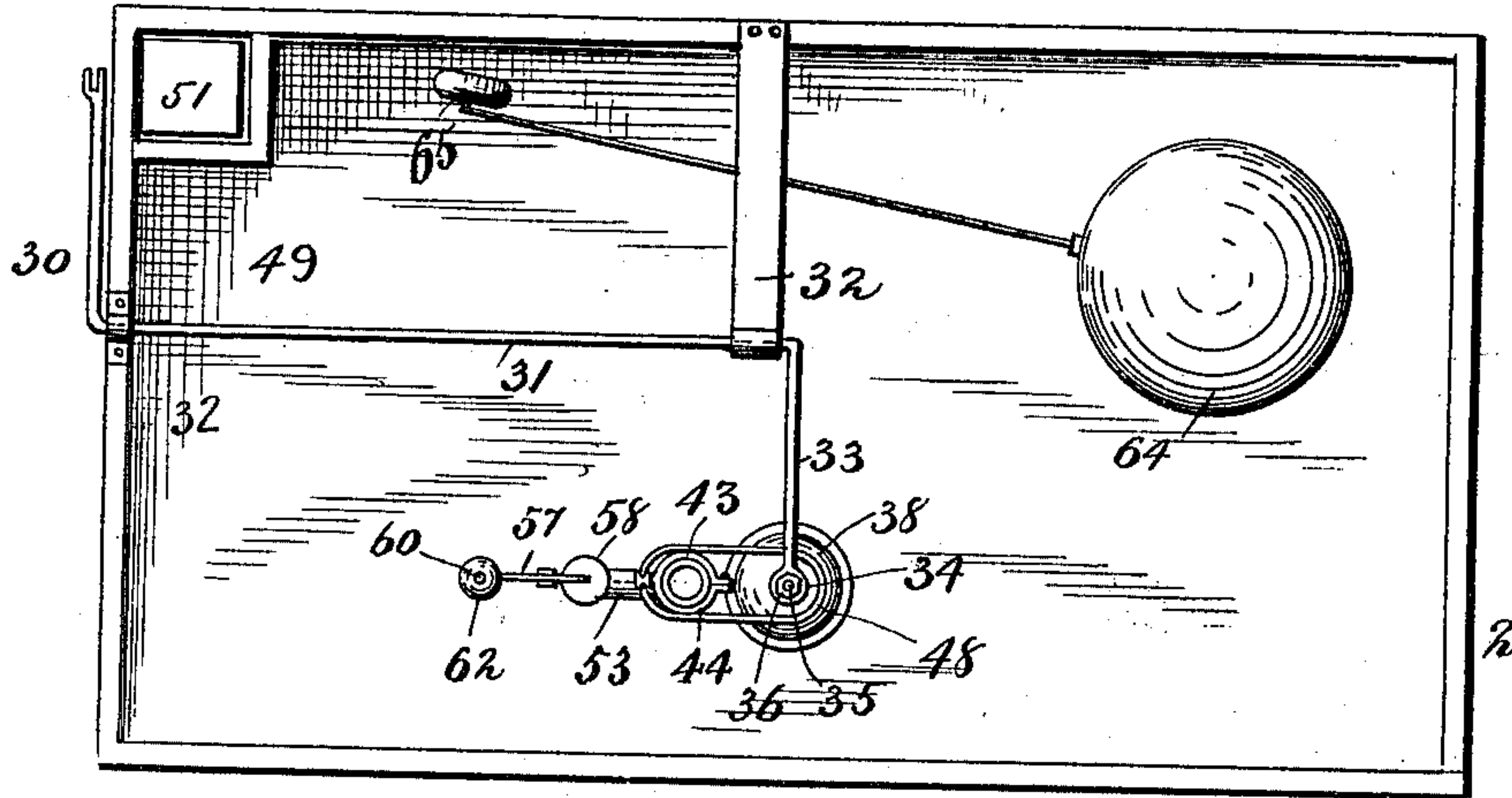


Fig. 3.

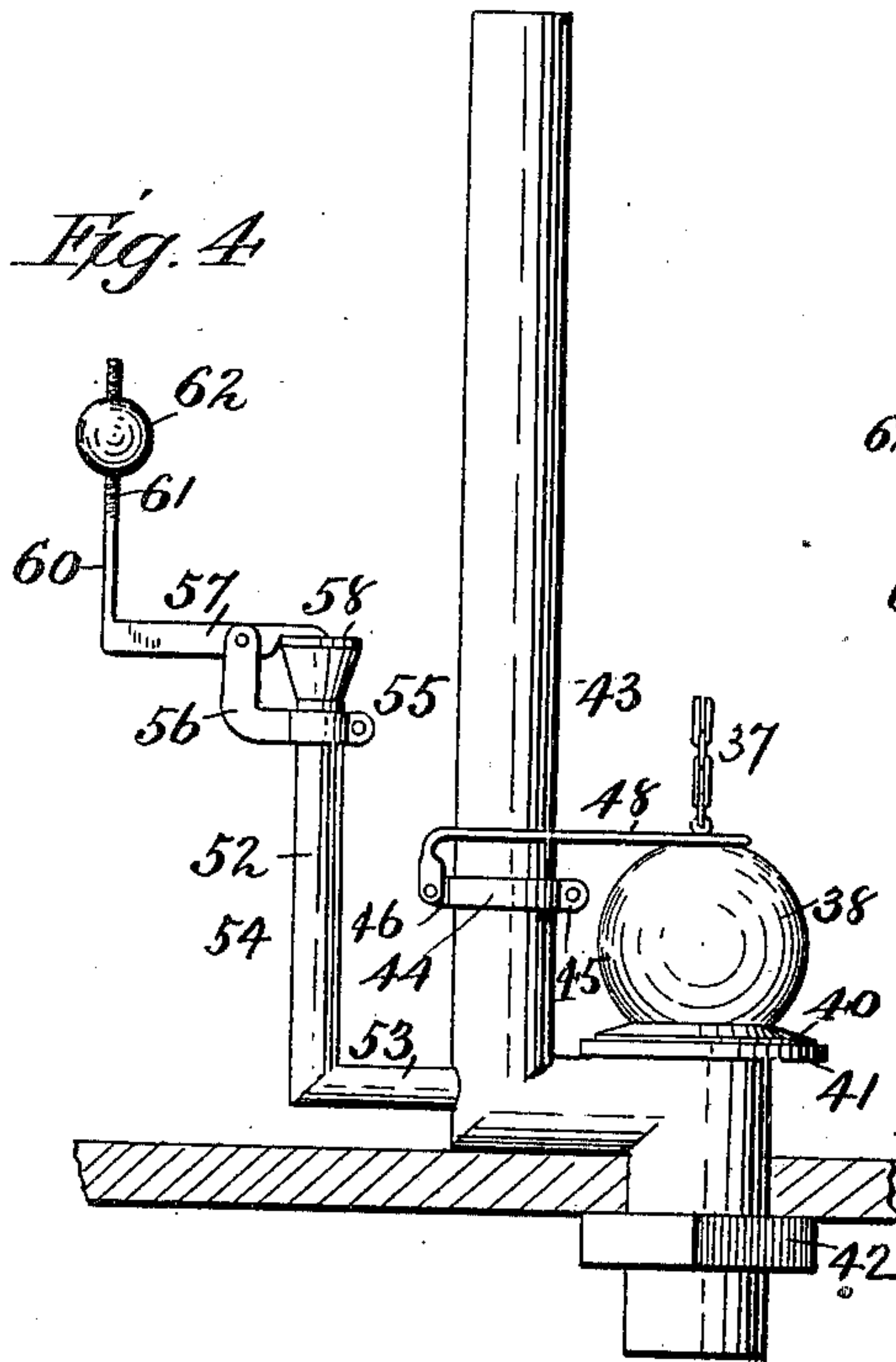


Fig. 4.

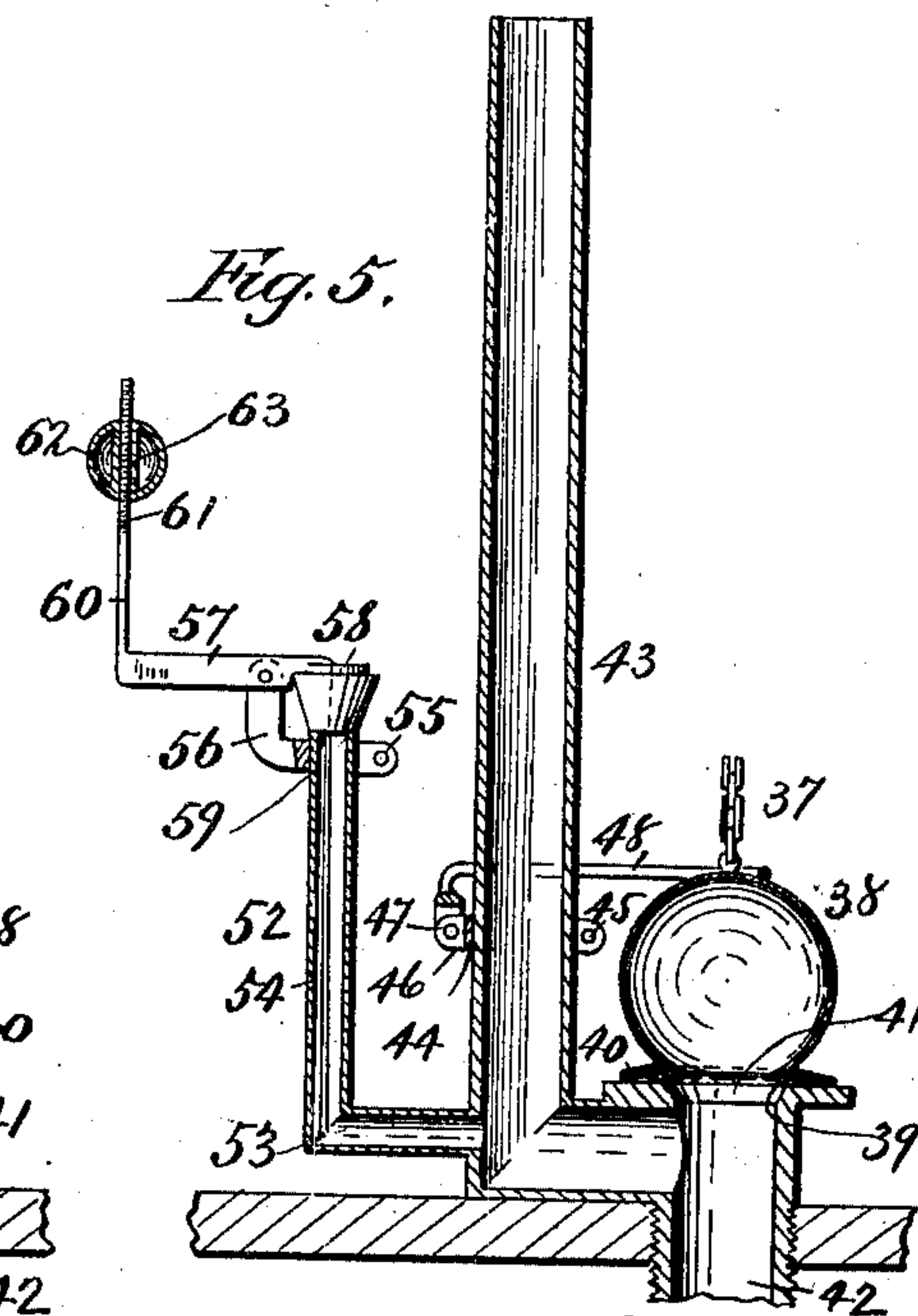


Fig. 5.

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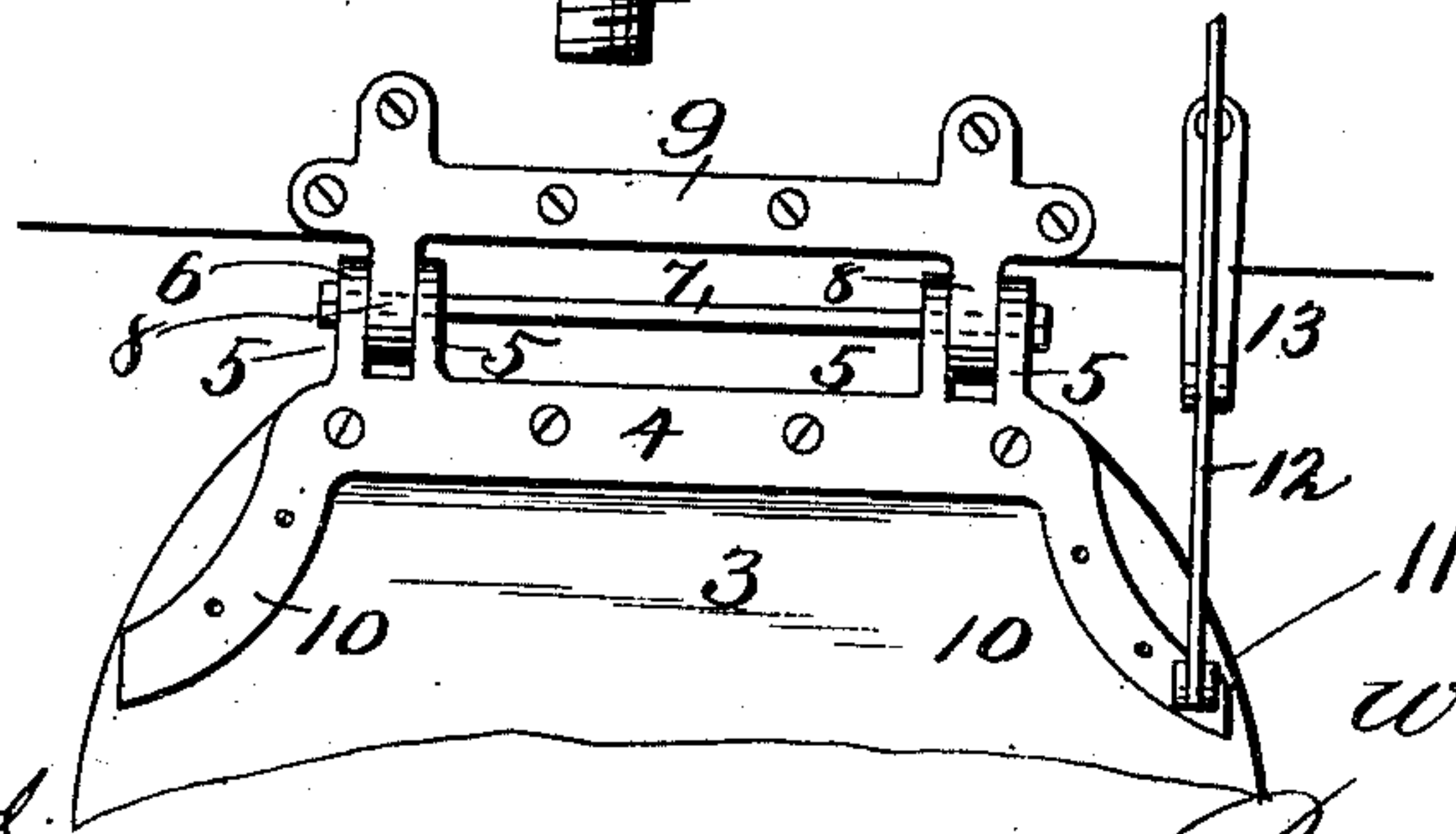
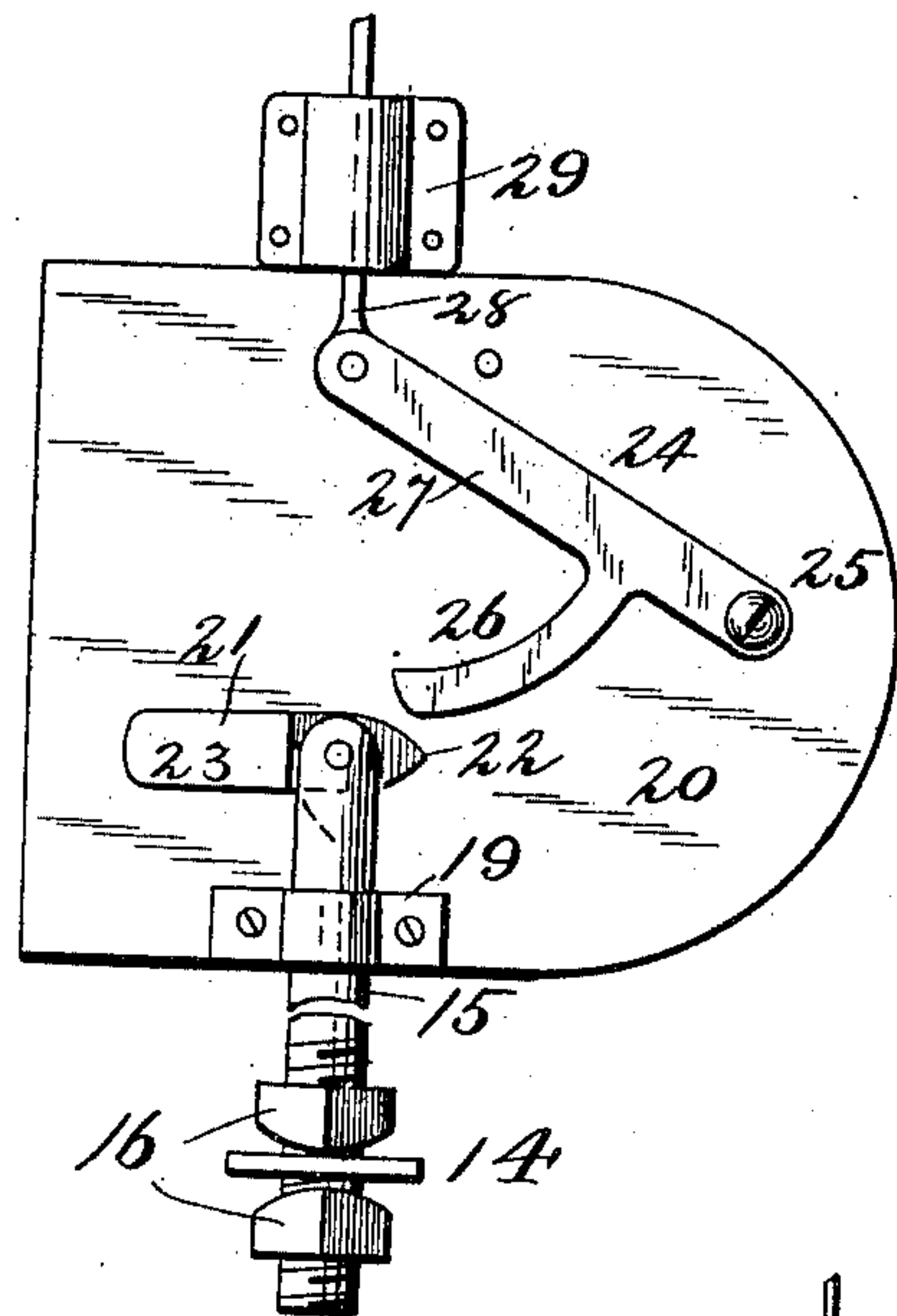
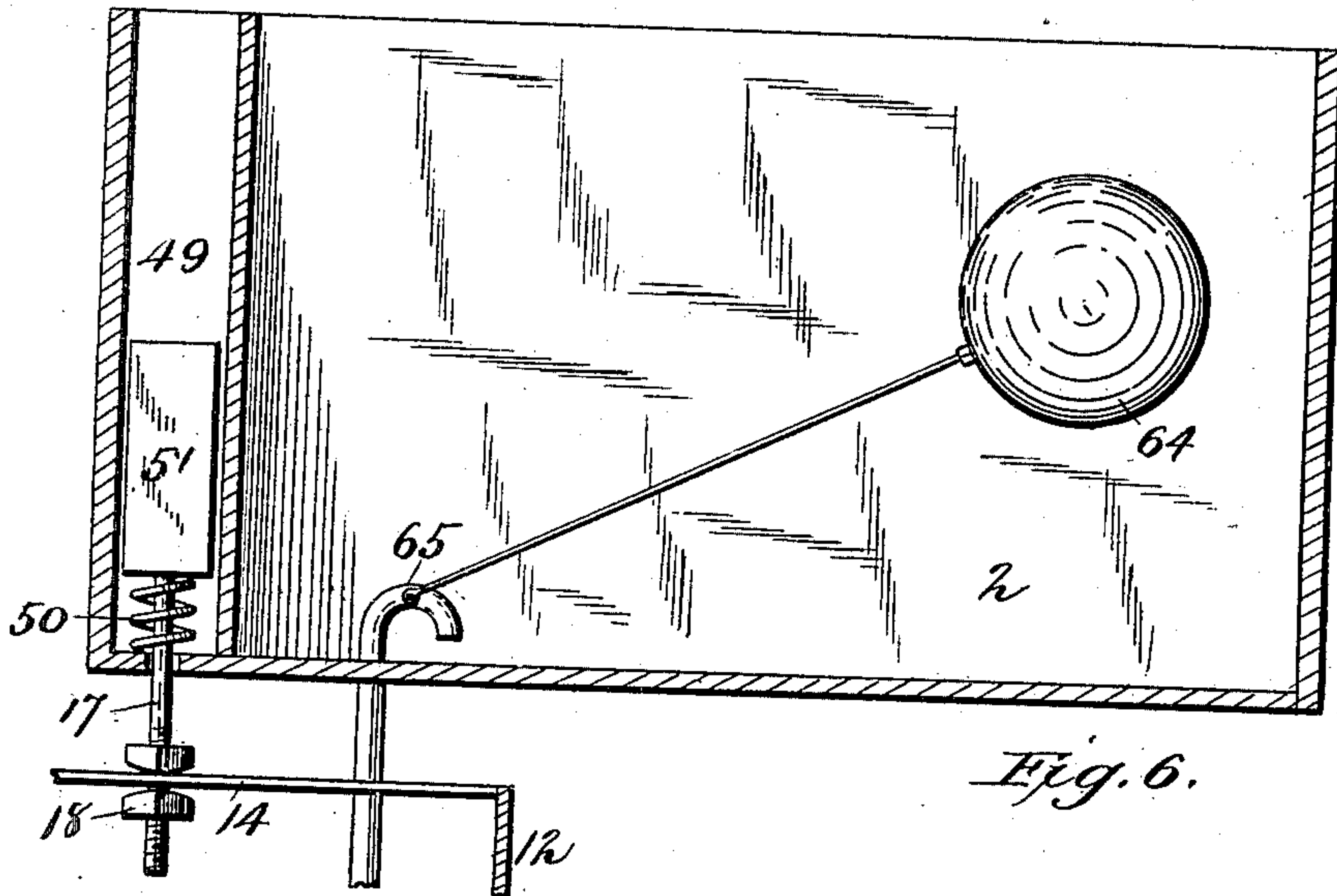
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

WILLIAM H. OSBORN, OF LOUISVILLE, KENTUCKY.

WATER-CLOSET FLUSHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 668,999, dated February 26, 1901.

Application filed May 29, 1900. Serial No. 18,427. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. OSBORN, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented new and useful Improvements in Water-Closet Flushing Apparatus, of which the following is a specification.

My invention relates to water-closet flushing apparatus; and the objects of the same are to provide simple, efficient, and reliable means for flushing the closet automatically after the same has been used and to also provide automatic means for refilling the bowl after the flushing operation has been effected.

Another object of my invention is to provide means operated by a hinged seat for the closet which will cut off the water-supply when weight is applied to the seat and which will open the valves when the weight is removed to both flush the closet and refill it.

I attain these objects by means of the construction shown in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of a water-closet made in accordance with my invention. Fig. 2 is a side view of the same. Fig. 3 is a plan view of the apparatus in the water-tank, the cover of which has been removed to more fully illustrate the interior mechanism. Fig. 4 is a side view of the flushing-valve. Fig. 5 is a central vertical section through said valve and valve-seat. Fig. 6 is a sectional view through the tank. Fig. 7 is a plan view of the mechanism for operating the flushing-valve. Fig. 8 is a plan view of the under side of the seat, showing the hinge and the lever for operating it.

Like numerals of reference designate like parts wherever they occur in the different views.

In said drawings the numeral 1 designates a water-closet bowl of any suitable or preferred construction, and 2 is a water-tank of the usual form and of any desired capacity. The seat 3 for the bowl is provided with a hinge consisting of a plate 4, secured to the under side at the rear of said seat, said plate having four lugs 5, provided with aligned perforations 6 for the pintle-rod 7, which connects the seat to the lugs 8, formed on a plate 9, rigidly secured to the bottom of the water-

tank 2. The plate 4 has a projecting portion 10, which forms a bearing-surface for an antifriction wheel or roller 11, journaled in the upturned end of a lever 12, pivoted to an arm or bracket 13, rigidly secured to the bottom and front side of the tank. The lever 12 is provided with a lateral arm 14, extending outward from its rear end, and a rod 15 extends through this arm and is secured in place therein by lock-nuts 16, fitted to said rod at the top and bottom of said arm. Another rod 17 is secured to the arm 14 by lock-nuts 18, and by means of these lock-nuts the rods 15 and 17 may be adjusted to regulate the leverage necessary to properly operate the flush-valve. The rod 15 extends up at the side of the tank and is held in place by a guide or keeper 19, secured to a wear-plate 20, attached to the side of the tank. At the upper end of rod 15 a weighted trip 21 is pivoted, this trip having a rounded end 22 and a weight 23 at the opposite end. A lever 24 is pivoted to the wear-plate 20 at 25 and has a hooked arm 26, which normally lies in the path of the trip 21, and an arm 27 is pivotally connected to a vertical rod 28, which extends through a keeper or guide 29, secured to the tank. The upper end of rod 28 is connected to the arm 30 of a rock-shaft 31, journaled in keepers 32 on the tank and having an arm 33, terminating in a loop 34. A bolt 35 is seated in this loop and provided at its upper end with an adjusting-nut 36 for the links 37 of a chain connected at one end to the nut and at the opposite end to an inverted cup-valve 38. This valve consists of a hollow sheet-copper shell, having a flange 39 at its open end, and a rubber gasket 40 seated behind the flange, said gasket having an outwardly-flaring seating-surface designed to form a watertight joint when it rests upon the valve-seat 41 at the upper end of the flushing-pipe 42, which connects with the closet. An L-shaped overflow-pipe 43 connects with the flushing-pipe 42, immediately under the valve-seat 41. Surrounding the upright portion of the pipe 42 is a collar-clamp 44, which is adjustably secured to the pipe 43 by the screw 45. Formed on the clamp 44 is a lug 46, having an aperture 47, which forms a pivot-bearing for a wire bail or lever 48, the opposite end of said bail being attached to the valve-cup 38 at its

upper end. The clamp 44 is adjustable on the overflow-pipe 43 to change the fulcrum-point of the bail or lever 48.

The vertical rod 17 extends up through the bottom of the tank and into a separate apartment 49 in said tank. A spring-buffer 50 surrounds the rod 17, and a weight 51 is attached to the upper end of said rod.

A small L-shaped pipe 52 is connected by its horizontal member 53 to the lower portion of the overflow-pipe 43. The vertical member 54 of the pipe 52 has secured near its upper end a clamp similar to 44, having an adjusting-screw 55 and an upwardly-curved arm 56. Pivoted to the arm 56 is valve-lever 57, having a valve 58 at one end thereof, said valve adapted to rest upon the seat 59 to form a water-tight joint. The opposite end of the valve-lever 57 is provided with an upright rod 60, said rod being threaded at 61 near its upper end to accommodate an adjustable float 62, which may be a hollow copper ball having a central threaded tube 63 passing through it.

An ordinary ball-float 64, connected up in the usual manner to a supply-cock 65, may be used in connection with my apparatus.

It will be noticed that my apparatus is operated entirely from the seat 3, and for this reason my improvements may be applied to any closet-bowl without change in structure of said closet. It will also be obvious that in my apparatus there are no unsightly and cumbersome weights and other mechanism in full view about the seat.

The operation of my invention is as follows: The seat 3 when not in use is held slightly elevated at its front portion by the roller 11 on the lever 12. When the seat is depressed by the weight of a person upon it, the lever 12 is elevated at its rear end, thus raising the rod 17 and its weight 51 and also pushing the rod 15 upward to permit the flush-valve 38 to fall upon its seat and arrest the flushing mechanism. When the person arises from the seat 3, the weight 51 will fall upon the spring-buffer, so as to be noiseless, and will operate the lever 12 to pull down the weighted trip 21 to move the lever 24 and through the connections 27, 28, 31, and 37 raise the flushing-valve 38 to flush the closet. When the trip 21 has passed the hooked arm 26 of the lever 24, the cup-valve 38 will fall on its seat 41 and shut off the flushing-stream. The water in the tank will at this time be sufficiently low to open the valve 58 to refill the bowl through pipe 52, and the stream will continue until said valve is closed by its adjustable float.

I am aware that changes in detail may be resorted to without departing from the spirit and scope of my invention. I do not, therefore, desire to be limited to the exact construction shown and described.

Having thus fully described my invention, what I claim is—

1. In a flushing apparatus for water-closets, a lever pivoted to the tank and operated by the depression of the closet-seat, a rod attached to said lever and carrying a pivoted gravity trip-lever at its upper end, in combination with a pivoted lever actuated by said trip-lever and connections for opening a flushing-valve inside the tank.

2. The water-tank, the seat-lever, the weighted trip-lever, the lever actuated by the trip, the rock-shaft, the cup-valve for flushing the closet, and a weight connected to the seat-lever for opening the valve, substantially as described.

3. In a flushing attachment, a hinged seat, a lever actuated by said seat, a trip operated by said lever, a rock-shaft operated by said trip, a cup-valve suspended from said rock-shaft, an overflow-pipe, a refilling-pipe connected to said overflow-pipe, and a valve at the upper end of the refilling-pipe, said valve being controlled by an adjustable float, substantially as described.

4. In a flushing apparatus, a hinged seat, a seat-lever having a friction-roller journaled at its outer end and bearing under the seat, a rod connected to the long arm of said lever and extending up into the tank, a weight secured to the end of said rod, and a spring-buffer under the weight, a trip actuated by the seat-lever to close the flushing-valve when the hinged seat is depressed, said weight serving to open said valve when the seat is raised by the seat-lever, substantially as described.

5. A hinged seat, a lever actuated by said seat, two upright rods connected to said lever, one of said rods passing up through the bottom of a water-tank into a separated compartment, a weight on the end of said rod, a buffer-spring under the weight, the other rod sliding in guides at the side of the tank and carrying a weighted trip for actuating a rock-shaft connected to a flushing-valve, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM H. OSBORN.

Witnesses:

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M. DUNCANSON.