

**No. 692,797.**

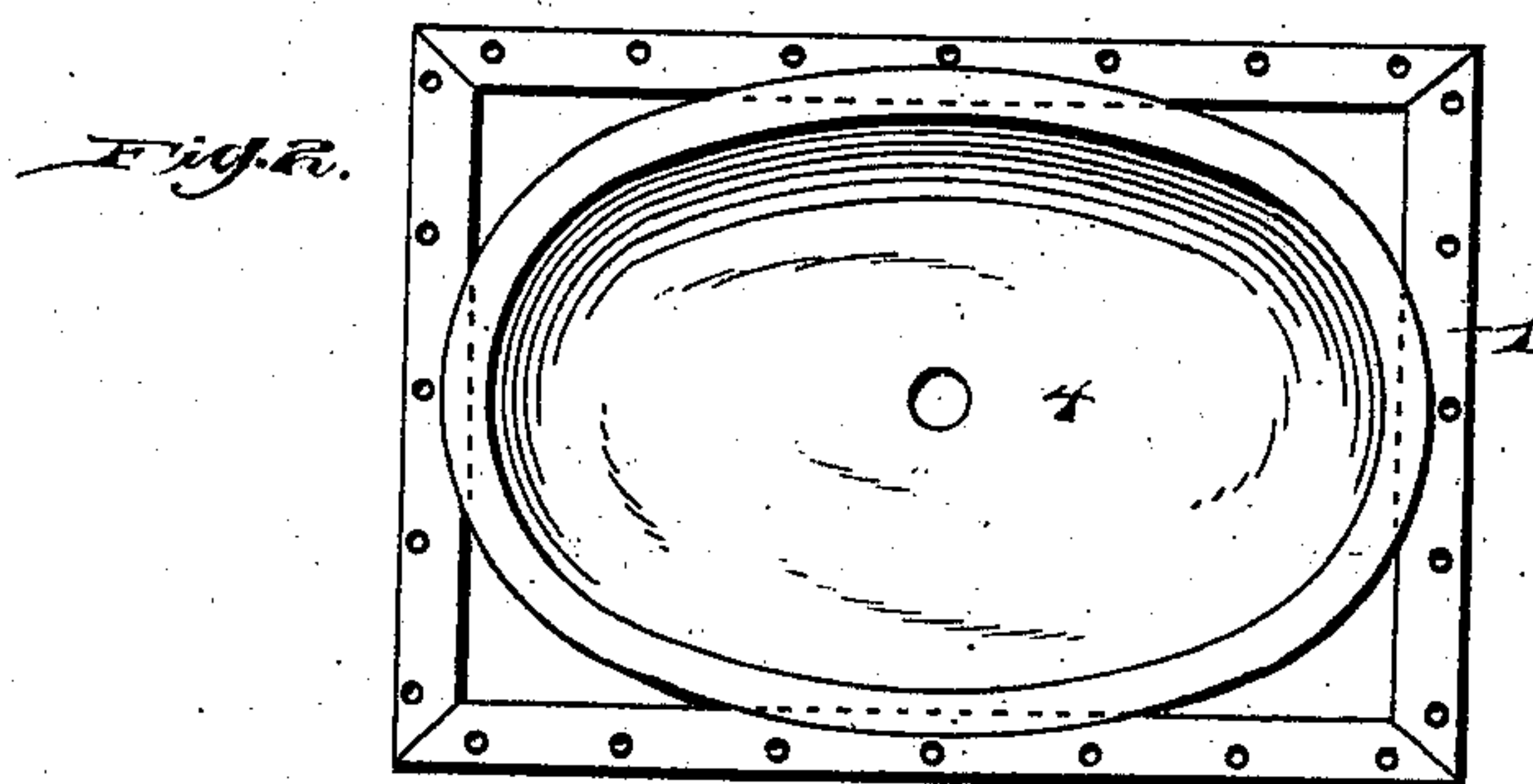
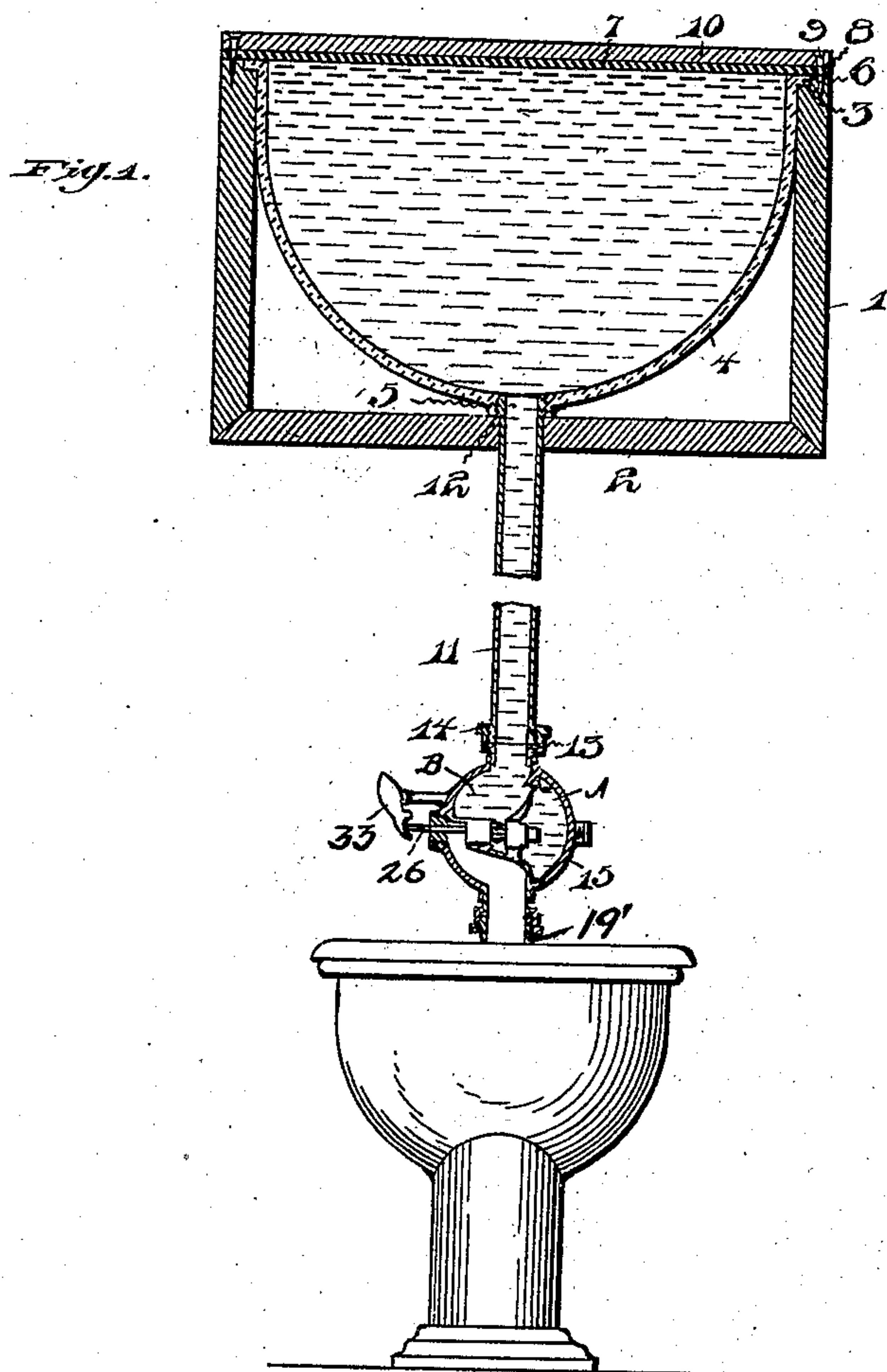
**Patented Feb. 4, 1902.**

**J. F. RODGERS.**  
**FLUSH TANK AND VALVE.**

(Application filed Sept. 13, 1900.)

(No Model.)

**2 Sheets—Sheet 1.**



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Inventor.  
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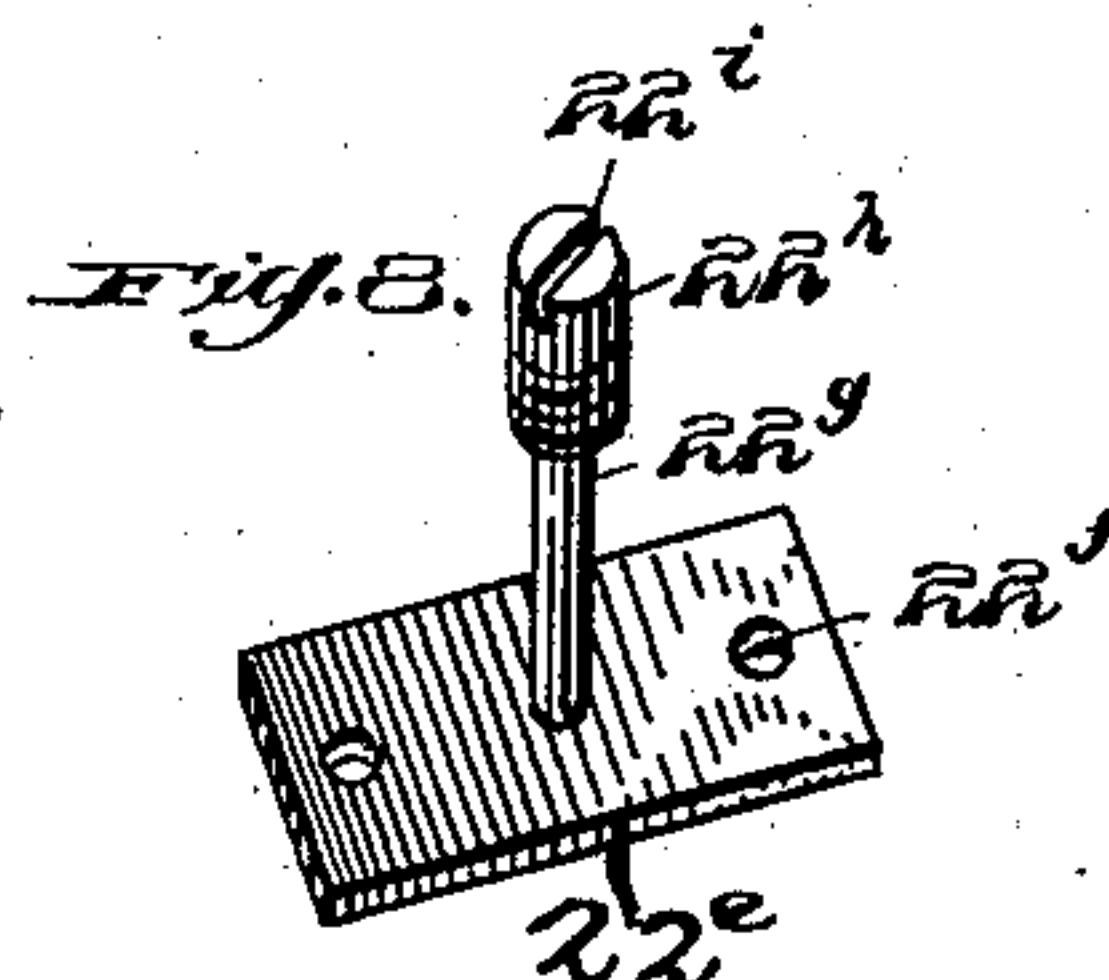
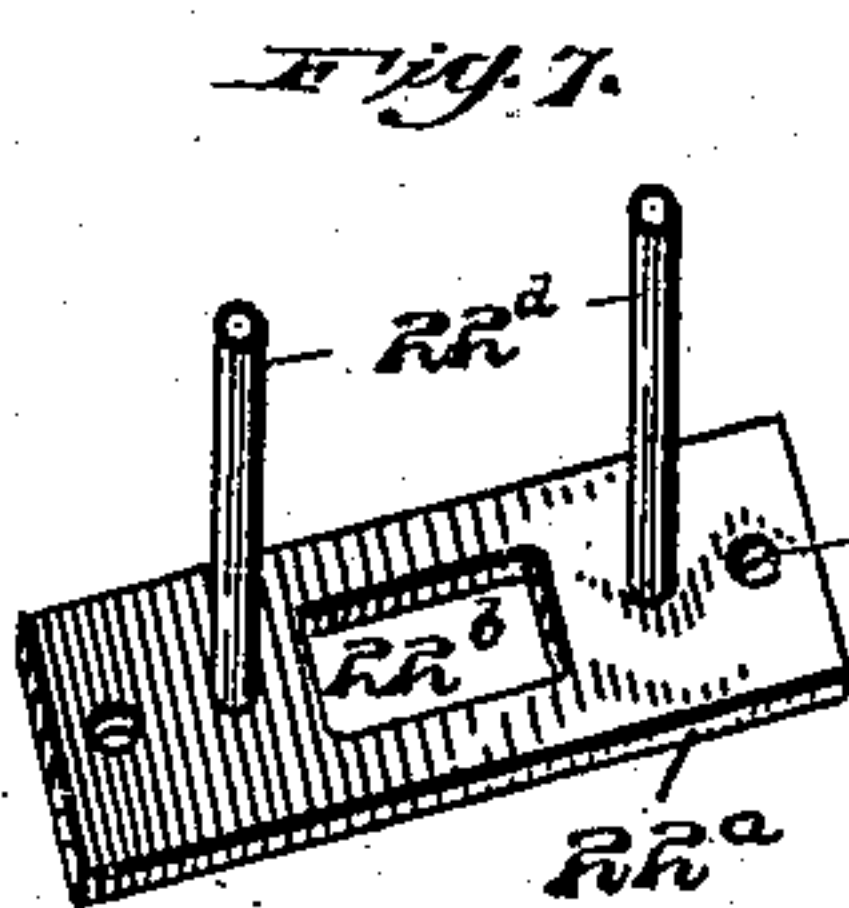
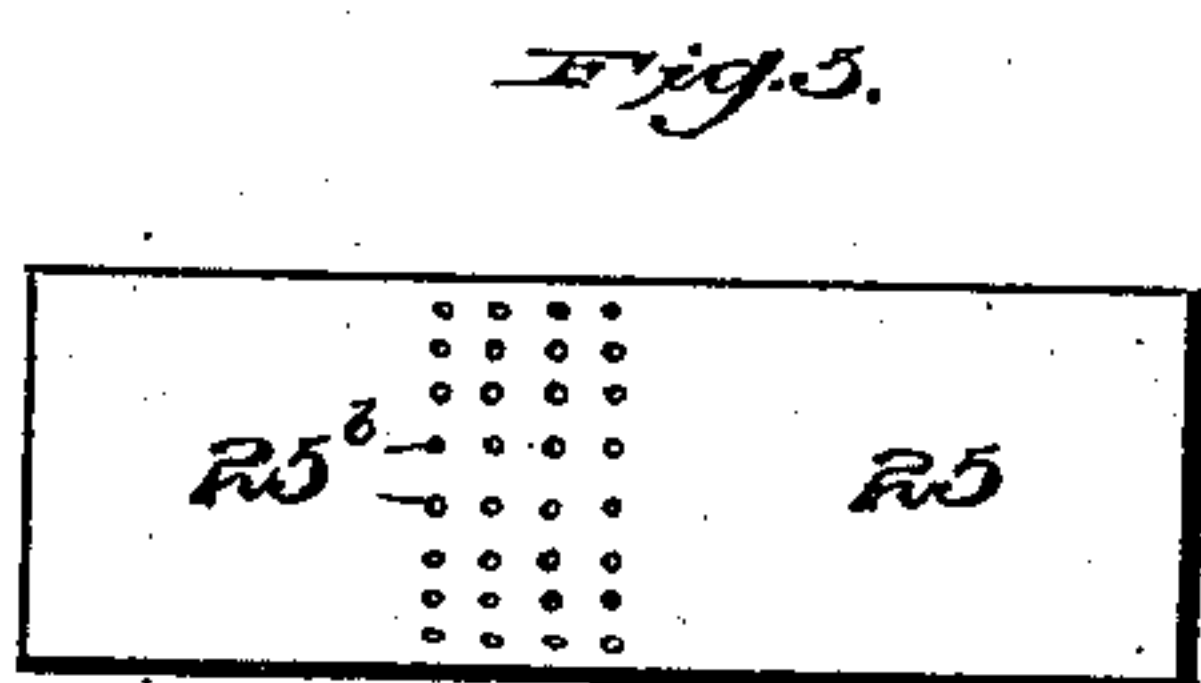
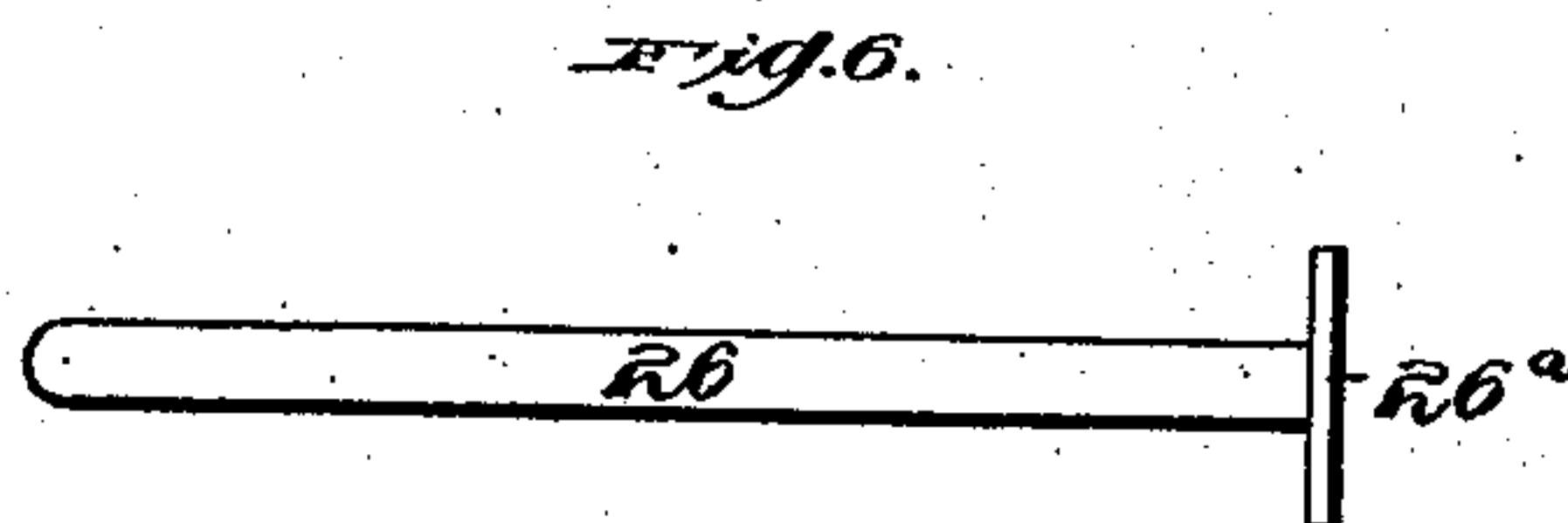
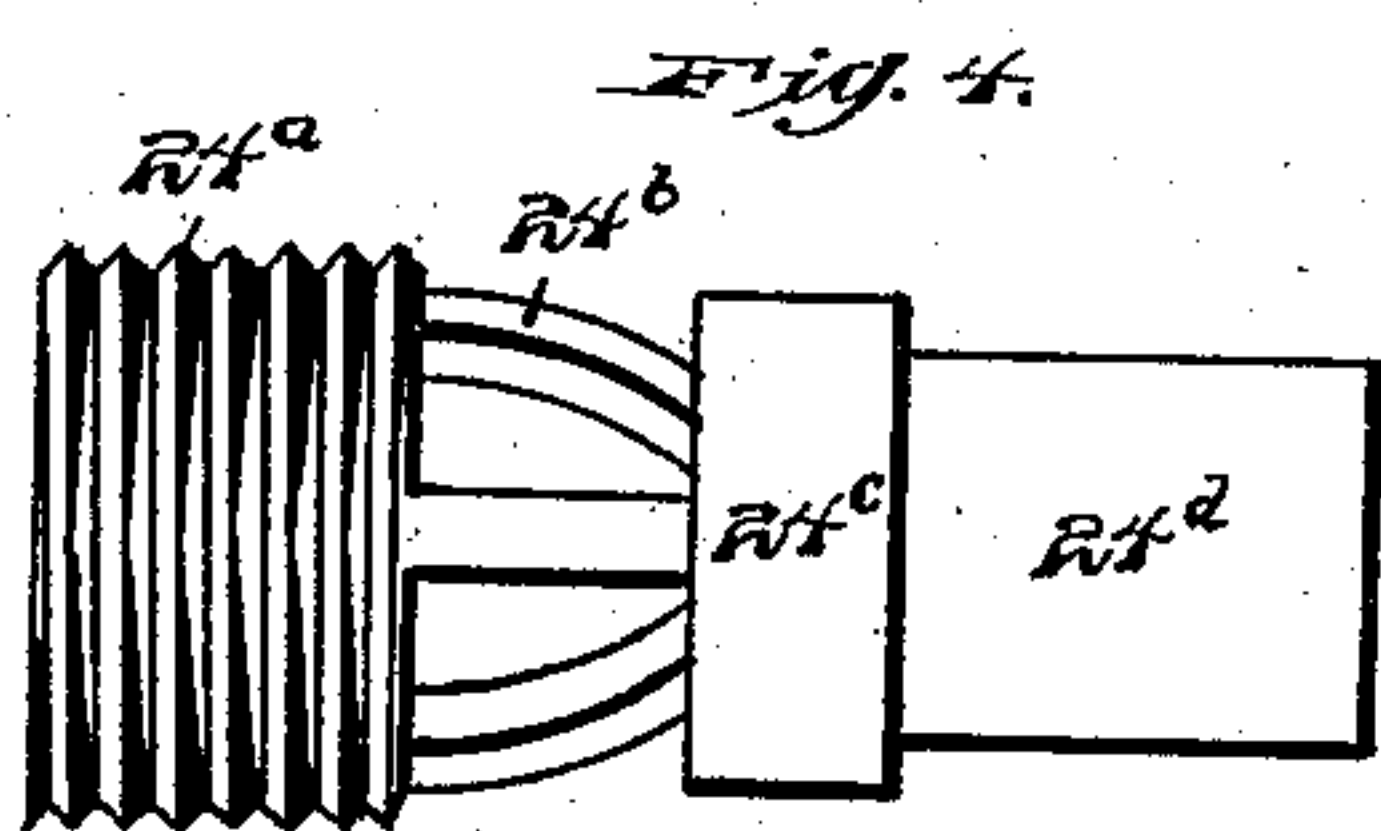
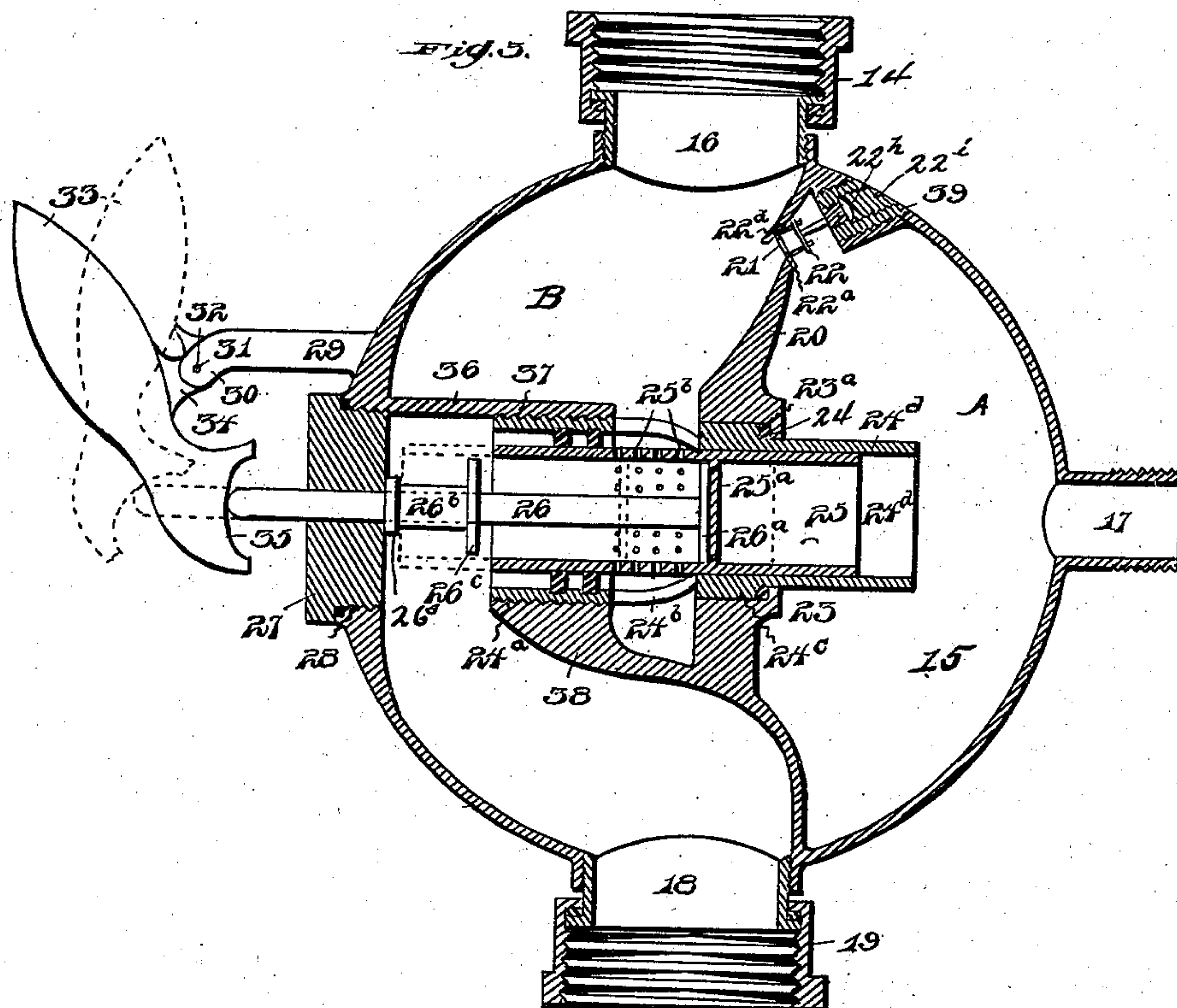
**Patented Feb. 4, 1902.**

**J. F. RODGERS.**  
**FLUSH TANK AND VALVE.**

(Application filed Sept. 13, 1900.)

(No Model.)

**2 Sheets—Sheet 2.**



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# UNITED STATES PATENT OFFICE.

JOHN F. RODGERS, OF CHARTIERS TOWNSHIP, PENNSYLVANIA.

## FLUSH TANK AND VALVE.

SPECIFICATION forming part of Letters Patent No. 692,797, dated February 4, 1902.

Application filed September 13, 1900. Serial No. 29,951. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN F. RODGERS, a citizen of the United States of America, residing in Chartiers township, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Flush Tanks and Valves; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in flushing-tanks, and has for its object the provision of novel means whereby closets and the like may be easily flushed.

The invention has for its further object to provide flushing means that when operated will be almost noiseless and will effectually obviate the noise that is caused by the operation of flushing-tanks now in general use and operated upon the well-known siphon principle.

The herein-described invention further aims to construct a flushing-tank wherein an overflow of water will be impossible; furthermore, wherein a constant pressure is obtained at all times to flush the bowl.

Another object of my invention is to construct a device of the above-described character that will be extremely simple in its construction, strong, durable, comparatively inexpensive to manufacture, easily operated, and highly efficient in its operation.

With the above and other objects in view the invention finally consists in a novel construction, combination, and arrangement of the different parts to be hereinafter more particularly described, and specifically pointed out in the claim.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals throughout the several views indicate like parts, and in which—

Figure 1 is a vertical sectional view of my improved invention of flushing-tank, showing the same attached in position to the closet. Fig. 2 is a top plan view of the tank. Fig. 3 is an enlarged vertical sectional view of the casing and valves. Fig. 4 is a side elevation of the guide in which the main valve operates. Fig. 5 is a side elevation of the slide-valve. Fig. 6 is a like view of the valve-stem. Fig.

7 is an enlarged perspective view of a portion of the rectangular valve and valve-seat. Fig. 8 is a perspective view of the other portion of the regulating-valve, showing the valve proper and the valve-stem attached thereto.

In the drawings, 1 indicates an outer casing of wood or other suitable material provided centrally of its bottom with an opening 2 and on its upper edge is recessed, as at 3, these recessed portions forming seats for the reception of the flange or rim of the tank 4, that is located within the outer casing 1. This tank 4 is provided centrally of its bottom with a threaded aperture 5, which registers with the opening 2 in the bottom of the casing. The tank is sealed at its top by a plate 7, which rests on the flange at the top of the tank, and, together with the cover 10, is securely fastened to the casing 1 by screws 9, engaging into apertures 8 in the upper edge of the casing.

A discharge and supply pipe 11 is threaded at its upper end into the aperture 5 of the tank, having threads 12 for this purpose, the lower end of this pipe being also provided with threads 13 to receive a coupling 14 for connecting the pipe 11 with a spherical valve-casing 15. This casing is provided with the supply and discharge opening 16, that registers with the pipe 11, and centrally of one side with an inlet 17, to which the water-supply pipe (not shown) is connected. In its lower end this casing is provided with a discharge-opening 18, and a coupling 19 connects the casing at the point of discharge with the discharge-pipe 19', leading to the bowl.

The ports 16 18 are opposite each other, and within the valve-casing to one side of these ports is a vertical partition or wall 20, provided at a point near the port 16 with an opening 21, in which is mounted a valve-seat 22<sup>a</sup>, having a central opening 22<sup>b</sup> and provided near each end with an aperture 22<sup>c</sup>, adapted to receive means, such as screws, for securing the plate in position in the opening 21 by the engagement of the fastening means with the partition 20. This valve-plate 22<sup>a</sup> carries upwardly-inclined guide-rods 22<sup>d</sup>, adapted to enter apertures 22<sup>f</sup>, provided therefor in the regulating-valve 22<sup>e</sup>, and thus guide this valve in its movement. The valve 22<sup>e</sup> is carried on a valve-stem 22<sup>g</sup>, that is rotatably connected to the valve and provided with a threaded head 22<sup>h</sup>, having a slot 22<sup>i</sup>



in its outer end, by which the stem may be rotated by the insertion of a screw-driver or like tool in the slot. This threaded head engages in a threaded nipple 39, provided therefor in the valve-casing 15.

The partition 20 is provided with a centrally-arranged opening 23, in which is mounted a sleeve 24<sup>d</sup>, which serves as a guide for the tubular slide-valve 25, having an interior partition 25<sup>a</sup> and provided with a series of circumferentially-arranged discharge-ports 25<sup>b</sup>. The guide-sleeve 24<sup>d</sup> carries a bushing or collar 24<sup>c</sup>, between which and the shoulder 24, formed in the partition 20, is arranged a packing-ring 23<sup>a</sup>. Connected to the end of the guide-sleeve having the bushing or collar 24<sup>c</sup> is a series of arms 24<sup>b</sup>, which at their outer ends carry or are connected to a threaded collar 24<sup>a</sup>, which engages in threads 37, provided therefor in a bracket 38, carried by the partition 20. This bracket 38 has an integral horizontally-extending portion 36, which acts as a partition to divide the interior of the valve-casing at one side of the partition 25 into an upper and a lower chamber.

The valve-casing 15 is provided at the side opposite to the inlet 17 with a threaded opening 28, closed by a plug 27, in which plug is slidably mounted a valve-stem 26. This valve-stem extends into the sliding valve 25 and carries on its inner end a valve 26<sup>a</sup>. Slidably mounted on the valve-stem is a sleeve 26<sup>b</sup>, having a boss 26<sup>d</sup> on one end and a guide on the other end. The valve-stem 26 and valve 25 are operated by means of a lever 33, having a seat 35 to engage the outer end of the valve-stem, the lever being pivotally mounted in the bifurcated outer end 30 of a bracket 29, carried by the casing 15, directly above the plug 27. The lever is pivoted by a pin 32, engaging in apertures 31 in the bifurcated end of the bracket 29 and in the ear or lug 34 of the lever, this pin acting as the fulcrum for the lever.

The operation of the device is as follows: The regulating-valve 22 is adjusted so as to give the desired action in the flushing, and the inlet-port being open the water under the inlet-pressure fills the chamber A and chamber B of the valve-casing, the inlet and discharge pipe 11, and tank 4, as shown in Fig. 1 of the drawings. The flushing of the bowl may now be obtained, and to accomplish this the operating-handle 23 is pulled downward from the position shown in dotted lines of Fig. 3 to the position shown in full lines, same view, so as to bring the seat 35 of the same into engagement with the end of the valve-stem 26, operating the slide-valve and opening the passage for the water to the bowl. When the pressure on the operating-handle is relieved, the water-pressure from the inlet being greater than the pressure of the water in the tank, pipe 11, and chamber B immediately acts upon the slide-valve, so as to again close the same and automatically close the passage for the water to the bowl. The ac-

tion of the flushing may be varied by the regulating-valve, so as to admit a greater or less quantity of water to vary the pressure and consequent action in the flushing. If the valve 22 is opened to a considerable extent, so as to permit a free flow of water there-through from the chamber A to the chamber B, the initial pressure in the chamber A is reduced to a certain extent, consequently relieving the pressure against the valve, so that said valve will close much more slowly and a relatively longer flushing of the bowl will take place. If, however, the valve 22 is closed to such an extent as to materially restrict the passage of water between the chambers A and B, the pressure in the chamber A will be relatively increased, and as a result the main valve will be more quickly moved to its closed position, and thereby shortening the time of the flushing operation.

It is obvious from the above that by simply opening and closing the regulating-valve a large or small quantity of water can be admitted through the same, which will produce a more gradual operation of the said valve.

When the valve is placed adjacent to the bowl, as shown in Fig. 1, the lever may be manipulated by hand, though it will be readily apparent that in case the valve is located at a point out of reach of the hand a chain or cord may be attached to the lever for operating the same, or other attachments well known in the art, such as a rod connecting with the seat, may be employed.

In view of the above it will be noted that various changes may be made in the details of the construction of the herein-described flushing-tank without departing from the general spirit of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a flushing apparatus, the combination with the tank, of a combined supply and discharge pipe connected thereto and to the bowl to be flushed, a valve-casing in said pipe and in communication with the water-supply, a partition or wall in said valve-casing provided with a centrally-arranged opening and an inlet-port, a regulating-valve controlling the admission of water through said inlet-port to regulate the flushing action, a guide-sleeve mounted in said central opening, a slide-valve arranged in said sleeve and adapted to be normally closed under pressure of the water from the water-inlet, and means for operating said valve to open the same to permit the flushing of the bowl, substantially as described.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

JOHN F. RODGERS.

Witnesses:

JOHN DOWNEY,  
M. E. HARRISON.