

No. 685,406.

Patented Oct. 29, 1901.

C. N. MARCELLUS.
FLUSH TANK.

(Application filed Feb. 12, 1900.)

(No Model.)

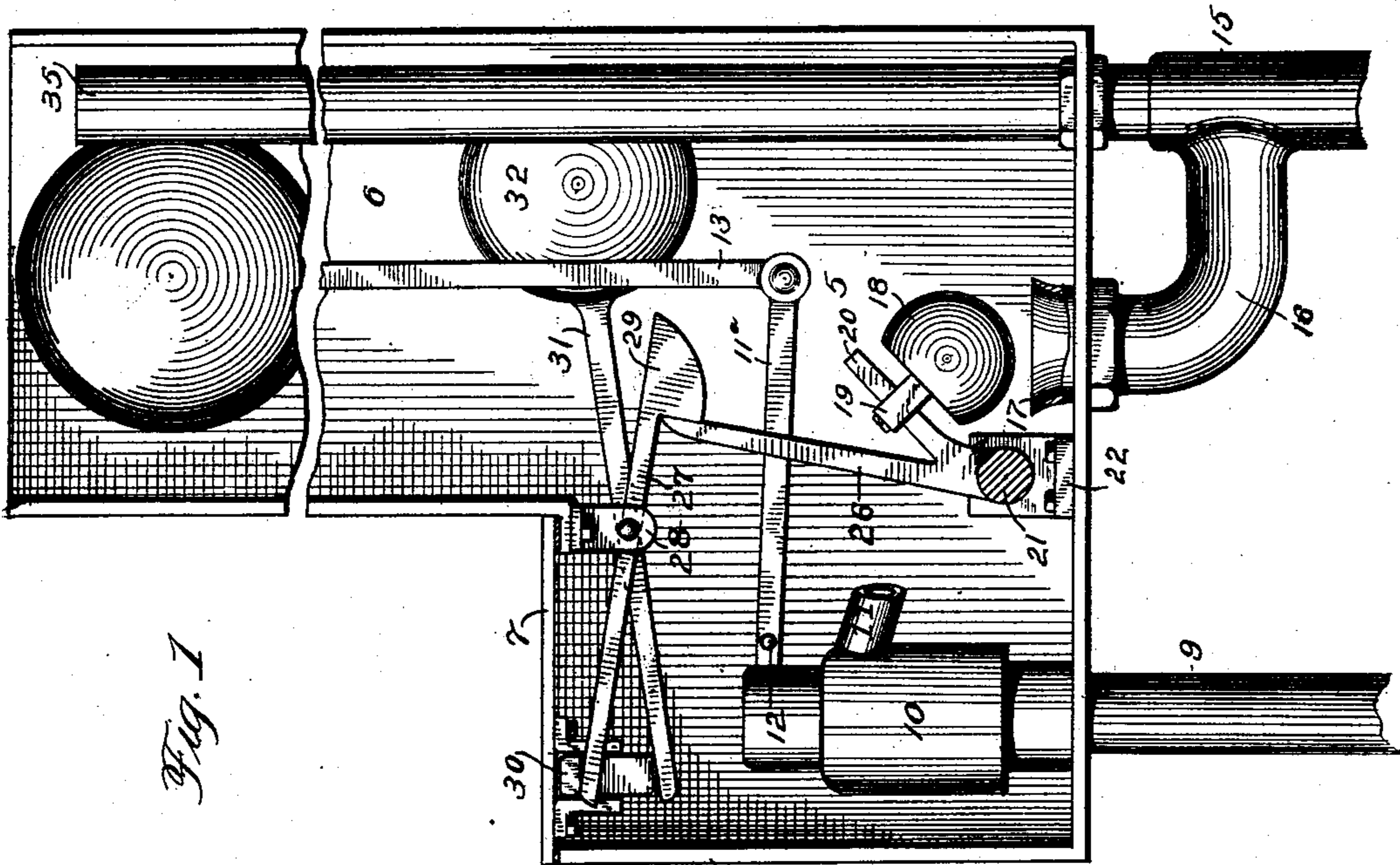
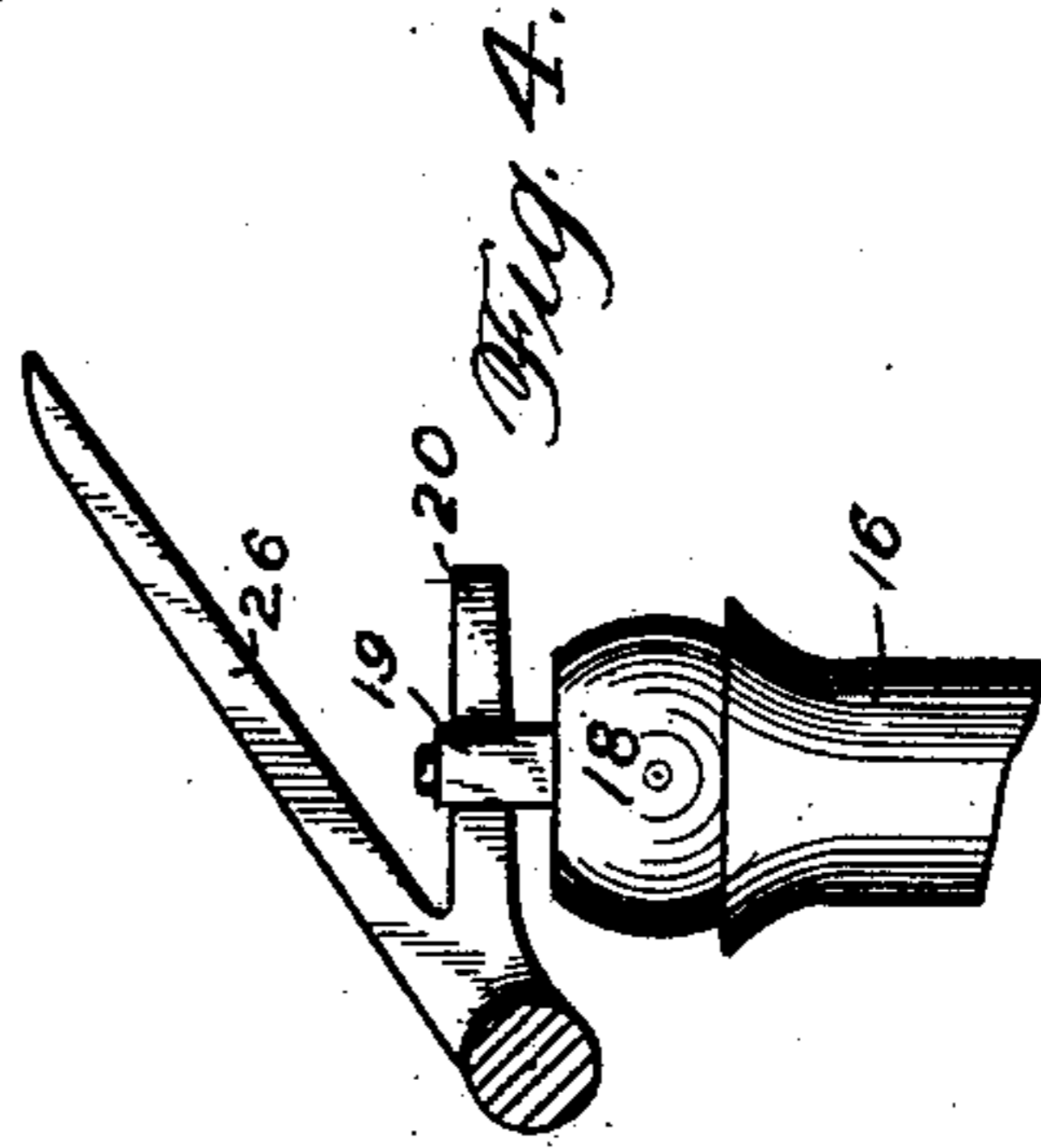
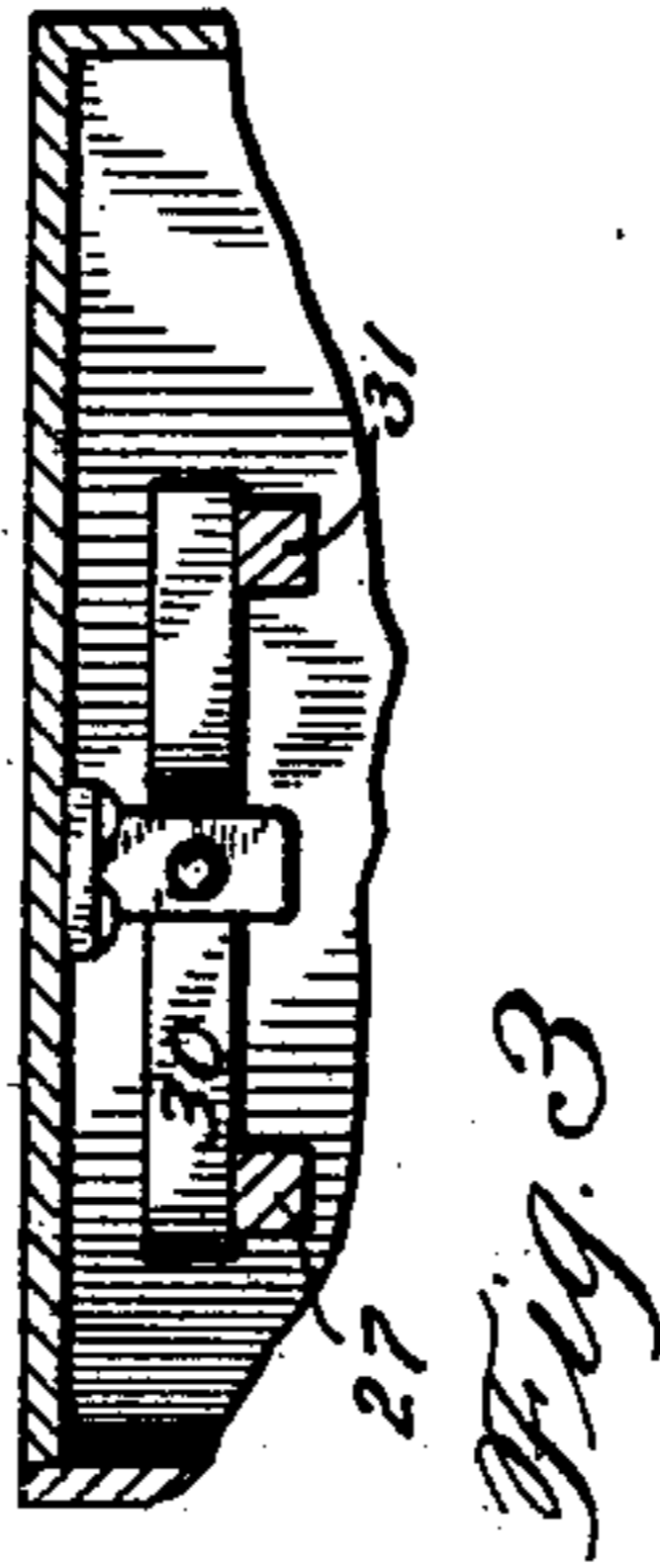
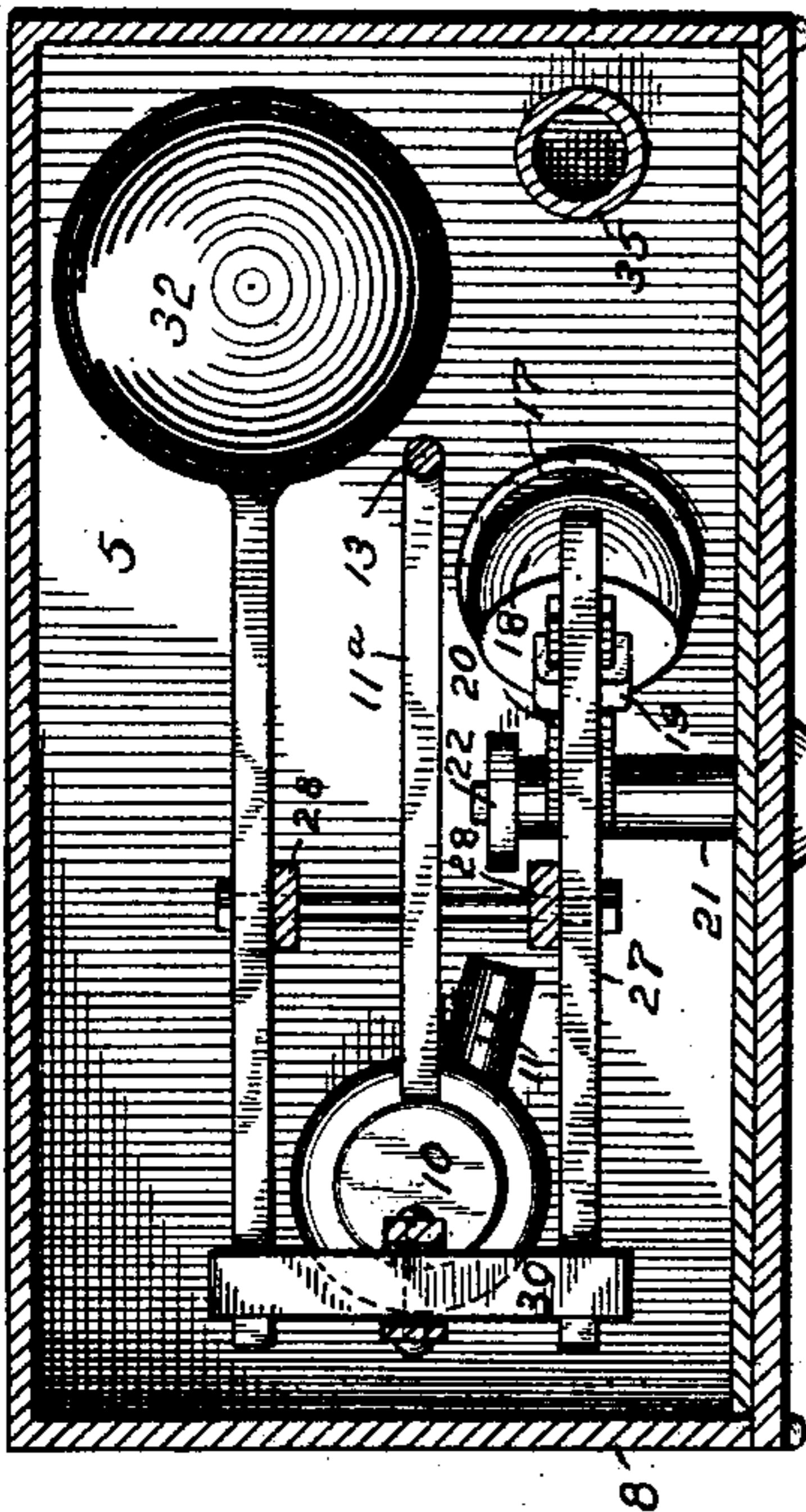


Fig. 1

Witnesses
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By his Attorneys,

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UNITED STATES PATENT OFFICE.

CHARLES N. MARCELLUS, OF TOLEDO, OHIO.

FLUSH-TANK.

SPECIFICATION forming part of Letters Patent No. 685,406, dated October 29, 1901.

Application filed February 12, 1900. Serial No. 4,969. (No model.)

To all whom it may concern:

Be it known that I, CHARLES N. MARCELLUS, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented a new and useful Flush-Tank, of which the following is a specification.

This invention relates to flush-tanks in general, and more particularly to that class employed in connection with closets or may be employed wherever else periodical flushing is to be secured; and the object of the invention is to so form the tank and to so construct and arrange the mechanism therein that the tank may be concealed in most part in the wall of the bath-room with only a small portion thereof projecting.

A further object of the invention is to provide a construction in which separate floats will be employed for opening and closing the water-supply and for closing the water-outlet.

In the drawings forming a portion of this specification, and in which similar numerals of reference designate like and corresponding parts in the several views, Figure 1 is a view showing the tank with a side removed and illustrating the mechanism therein, a portion of the tank being broken away to permit illustration on a large scale. Fig. 2 is a section on line 2 2 of Fig. 1. Fig. 3 is a detail sectional view of a portion of the casing of the tank and illustrating in elevation the latch-tripping lever. Fig. 4 is a detail view showing the upper end of the drain-pipe and the plug in engagement therewith.

Referring now to the drawings, the present flush-tank is substantially L-shaped and comprises an enlarged lower portion 5 and a narrowed upwardly-extending portion 6, this tank being formed in any suitable manner, but preferably of cast-iron, with a movable plate 7 upon the upper face of the base 5 to permit application and removal of the interior mechanism. In practice this tank 5 is placed in a recess in a wall and between the studding in such a position that the outer end only of the base portion will project beyond the face of the wall. Leading to this projecting portion 8 of the base is a water-supply pipe 9, which enters through the bottom of the tank and is provided with a common form of valve 10, adapted to be raised to permit the water to flow into the tank and

to be lowered to cut off the flow of water, the water-supply from this valve to the tank being passed directly through a discharge-spout 11. For operating this valve mechanism a lever 11^a is suitably fulcrumed, as shown at 12, and has one end connected with the valve mechanism 10, while an upright rod 13 is connected with the other end and supports a hollow ball or other form of float 14, which lies in the upwardly-extending portion 6 of the tank. When this float is raised under the influence of the body of water in the tank, the valve 10 is lowered and the supply of water is cut off. When the water is withdrawn from the tank, the ball 14 drops and the valve 10 is raised to open the supply-pipe, when the water passes through the spout 11 and into the tank.

A flush-pipe 15 has an arm 16, which is extended through the bottom of the tank and has a plug-seat 17 at its end within the tank. In order to close the flush-pipe to maintain a body of water in the tank, a valve 18 is provided, this valve being shaped to fit closely and easily into the seat 17 and form a plug therefor. The valve or plug 18 has a stem 19, through the medium of which it is slidably mounted upon an arm 20, extending radially from a shaft 21, which is journaled in the side of the tank and in a bearing-block 22 therein, this shaft 21 being passed exteriorly of the tank and having a lever 23 at its outer end, which may be operated to rotate the shaft in one direction and raise the plug from its seat. This lever 23 has an operating-handle 24 at one end to operate the shaft and raise the plug, and when the handle is released the weight 25 at the opposite end of the lever turns the shaft 21 and re-seats the plug 18 in its seat 17.

It is of course necessary to provide some means for holding the plug raised to permit the entire contents of the tank to pass out through the flush-pipe, and for this purpose the shaft 25 has a second radially-extending arm 26, which projects upwardly and into the tank and is adapted for engagement by a latch 27. This latch is in the form of a lever pivoted between ears 28, attached to the top of the projecting portion 7 of the tank, and one end of this lever is weighted or enlarged to form a head 29, which holds the lever nor-

mally tilted in one direction. The lower face of this head 29 is arc-shaped, as shown, and this face lies in the path of upward movement of the finger or arm 26, so that as the arm is moved upwardly it will engage this arc-shaped face and will press the lever upwardly until it has passed beyond the head, when the lever will drop and the head will engage the arm to hold it in its raised position and with the plug 18 out of the seat 17. Upon the opposite end of the lever 27 from the head 29 there rests one end of a pivoted lever 30, which is adapted for movement to press the adjacent end of the lever 27 downwardly and move the head 29 upwardly from engagement with the arm 26 to permit the shaft 21 to turn and reseal the plug, the resealing of the plug being assisted by the column of water discharged from the spout 11 against the flat adjacent side of the plug.

In order to operate the lever 30 to reseal the plug after the contents of the tank have passed off, a lever 31 has one end engaged with the under face of the lever 30 at the opposite end from the lever 27, and upon the opposite end of the lever 31 is mounted a float 32, which may be in the form of a hollow ball, as indicated.

The operation of this construction is as follows: Supposing the tank to be full of water, the levers 27, 30, and 31, as also the float 32, the valve 10, and its connected parts, will be in the same position as shown in Fig. 1 of the drawings. If the lever 23 then be operated, the arms 20 and 26 will be raised, when the plug 18 will be moved from the seat 17, and the arm 26 after engaging the head 29 of the lever 27 will move the head upwardly and will pass behind the head, when the head will drop and all the parts will be in the position shown in Fig. 1. The water in the tank then runs through the arm 16 to the drain or flush pipe 15 and drains the tank. When the water in the tank drops to the proper point, the float 14 will move downwardly and will operate the lever 11 to open the valve 10. This opening of the valve 10 will permit water from the supply-pipe to run into the tank, but at a lesser rate than the outflow, so that the level of the water in the tank continues to drop. After the level of the water has reached the float 32 the continued drain of water lowers this float, when the lever 31 operates the lever 30, which in turn operates the latch-lever to trip it and release the arm 26 and permit the plug 18 to fall. The engaging face of the plug 18, however, is spheroidal, so that the rush of water through the seat 17 acts to force the plug away from its seat, so that the plug does not engage its seat until the entire contents of the tank are drained away. The plug then enters the seat to close the flush-pipe, and the level of the water in the tank gradually rises. As the water rises it raises the float 32 to permit the engagement of the arm with the latch at the next operation of the crank 23, after which the water reaches the float 14

and moves it upwardly to close the valve 10. Should the valve 10 not be closed completely, the excess of water may pass outwardly through an overflow-pipe 35, which is connected with a flush-pipe 15, as illustrated.

It will of course be understood that in practice the flush-tank may be made of any suitable material and that the upwardly-extending portion may have any suitable cross-sectional outline, it being only necessary that it only have such a depth as not to project beyond the face of the wall.

What is claimed is—

1. A flush-tank comprising an enlarged lower portion and an upwardly-extending and reduced portion, a supply-pipe communicating with the tank, a valve mechanism for the supply-pipe located in the lower enlarged portion of the tank, a float for operating said valve mechanism and located in the upper reduced portion of the tank, a drain-pipe leading from the base of the tank, a shaft passed into the bottom of the tank, a valve for the drain-pipe carried by said shaft, a latch mechanism for holding the valve in raised position, and a float within the lower portion of the tank and adapted to operate the latch to release the valve.

2. A flush-tank comprising an upper reduced portion and a lower enlarged portion projecting forwardly beyond the upper portion, a supply-pipe leading through the bottom of the forwardly-projecting portion and having a regulating-valve, a float disposed in the upper reduced portion of the tank and connected with the valve for operating it, a drain-pipe communicating with the bottom of the tank, a shaft passed into the bottom of the tank and having a valve for movement thereby to close and open the drain-pipe, a latch-lever pivoted in the bottom of the tank for engagement with the drain-valve to hold it inoperative, and a second and normally-submerged float in the lower portion of the tank and having connections for operating the latch-lever to release the drain-valve.

3. A flush-tank having a drain-pipe, a rock-shaft having diverging arms, a valve carried by one of the arms for opening and closing the drain-pipe, a latch-lever lying normally in the path of movement of the second arm of the rock-shaft for engagement therewith to hold the valve at times in open position, a float having connections with the latch for operating it to release the arm to permit the valve to close, said float being adapted to lie normally in position to permit the latch to engage the arm of the shaft when the float is supported by the water in the tank, and a lever connected with the rock-shaft to move the arms thereof to engage the latch and raise the valve.

4. A flush-tank comprising an enlarged lower portion and an upwardly-extending and reduced portion, a supply-pipe communicating with the tank, a valve mechanism for the supply-pipe located in the lower enlarged por-

tion of the tank, a float for operating said
valve mechanism and located in the upper re-
duced portion of the tank, a drain-pipe lead-
ing from the base of the tank, a shaft passed
5 into the bottom of the tank, a valve for the
drain-pipe carried by the shaft, a latch
mechanism for holding the valve in raised
position, and a float within the lower portion
of the tank and adapted to operate the latch
10 to release the valve, the drain-pipe valve ly-

ing in the path of discharge from the inlet-
pipe for movement thereby in the direction
of the seat.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in 15
the presence of two witnesses.

CHARLES N. MARCELLUS.

Witnesses:

GUS F. MAHON,
IRA C. TABER.