

No. 780,116.

PATENTED JAN. 17, 1905.

J. N. MOEHN.
VALVE MECHANISM.
APPLICATION FILED DEC. 28, 1903.

Fig. 1.

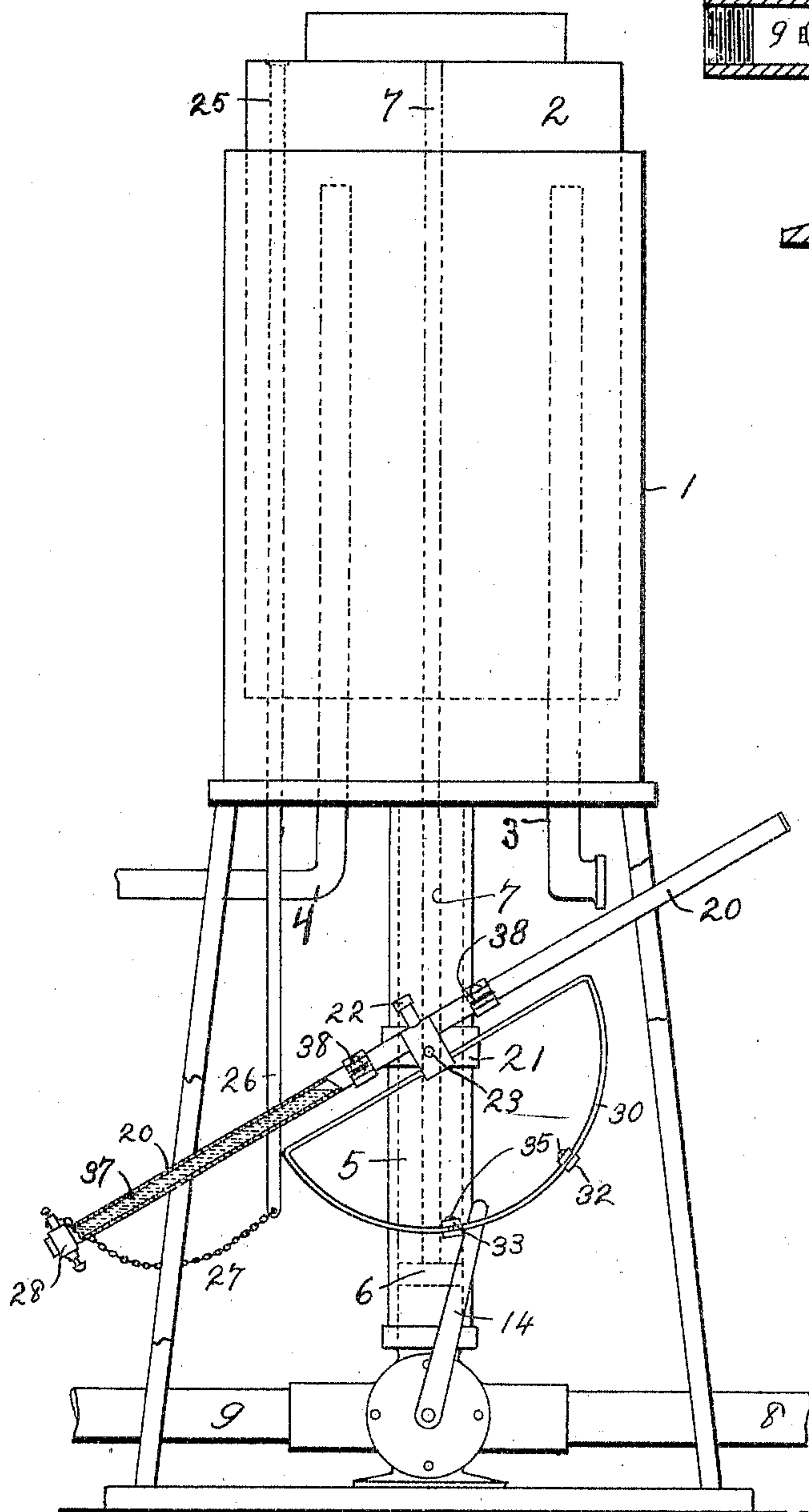


Fig. 2.

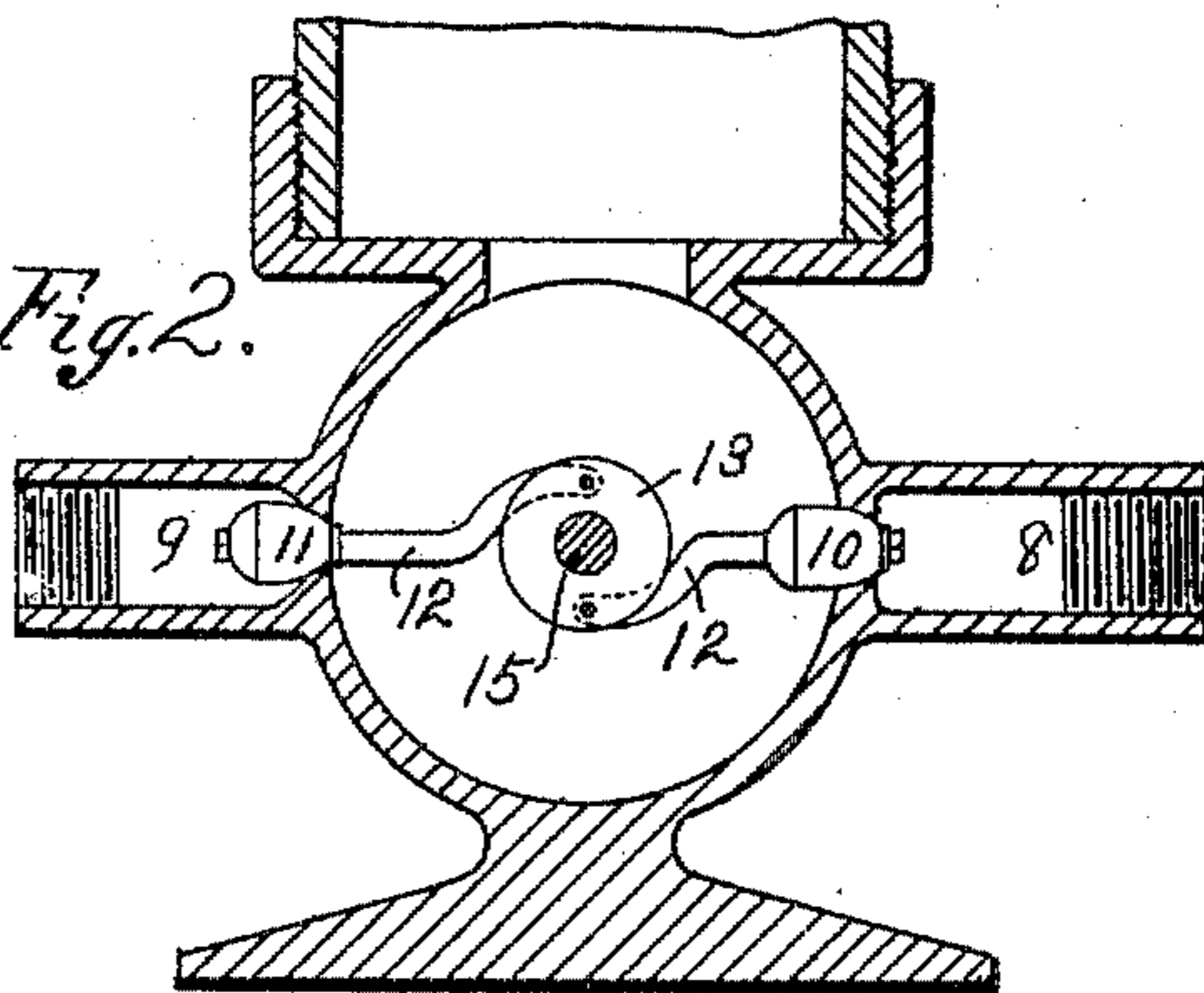
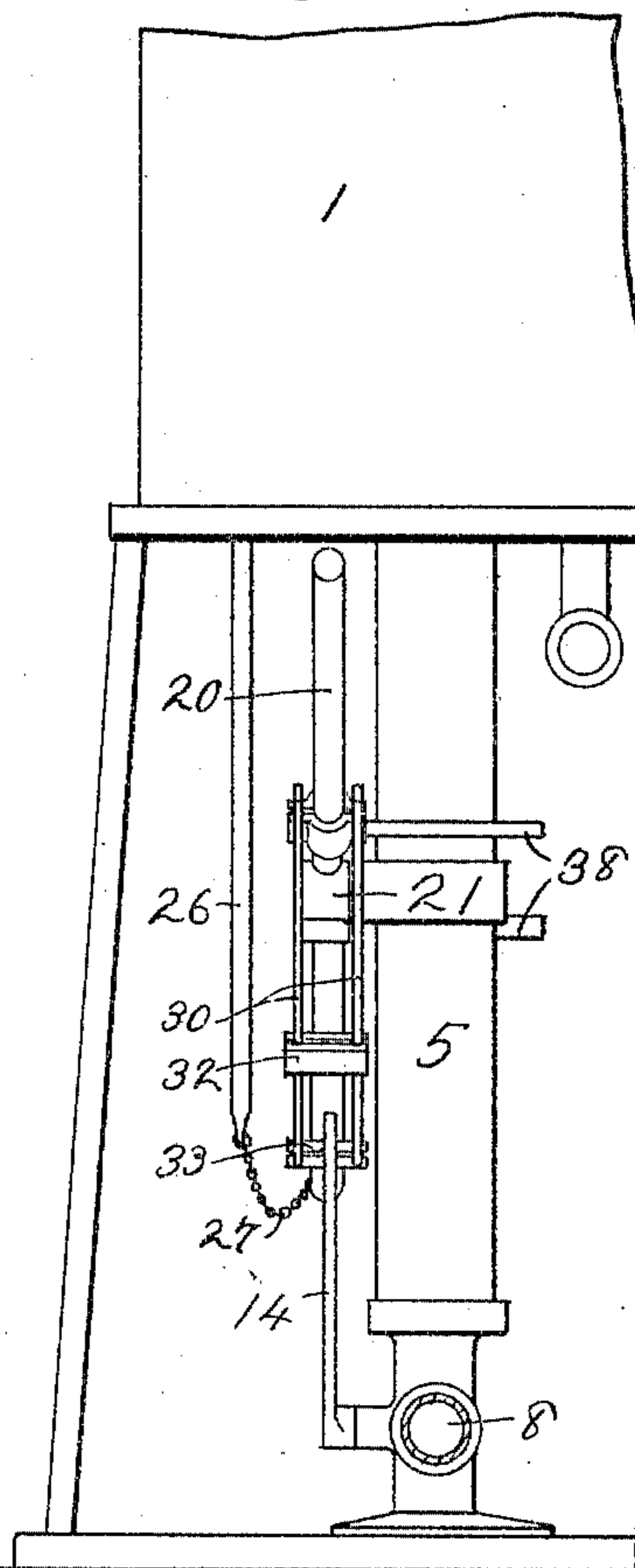


Fig. 3.



WITNESSES:

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JOHN N. MOEHN, OF MILWAUKEE, WISCONSIN.

VALVE MECHANISM.

SPECIFICATION forming part of Letters Patent No. 780,116, dated January 17, 1905.

Application filed December 28, 1903; Serial No. 186,835.

To all whom it may concern:

Be it known that I, JOHN N. MOEHN, a citizen of the United States, residing at Milwaukee, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Valve Mechanism, of which the following is a specification.

My invention relates to improvements in valve mechanism, with especial reference to the class of such mechanism used for operating carbureting apparatus by hydraulic power.

The object of my invention is to provide a mechanism which can be operated with little expenditure of power, so that it will not interfere with the pressure of the gas in the bell, but which will exert a comparatively high degree of pressure to shift the valve with a positive movement.

In the following description reference is had to the accompanying drawings, in which—

Figure 1 is a side elevation of my invention. Fig. 2 is a vertical sectional view of the valve-ports, valves, and the lower end of the hydraulic jack. Fig. 3 is a detail view of the valve mechanism and a portion of the carbureting apparatus drawn at right angles to Fig. 1.

Like parts are identified by the same reference characters throughout the several views.

In the drawings, 1 represents a water-tank; 2, a gas-bell arranged to reciprocate vertically in the tank.

3 is a gas-inlet pipe, and 4 a service-pipe.

A hydraulic jack is used for elevating the bell, this being accomplished through the medium of piston 6 and rod 7. (Indicated by dotted lines in Fig. 1.) To operate the jack, water is admitted thereto through the inlet-pipe 8 and discharged therefrom through the outlet-pipe 9, the admission and discharge of the water being controlled by valves 10 and 11, respectively, Fig. 2. The valve-stems 12 are connected to the bell-crank 13 and operated through the medium of an exterior lever 14 and a rock-shaft 15, on which the bell-crank is mounted.

The parts above described may all be of any ordinary construction.

To actuate the valves, a sealed tubular lever 20 is adjustably mounted in a block 21,

pivotaly supported from a cylinder of the jack 5.

22 is a removable plug closing an inlet-aperture in the tube 20. One end of the tube is connected to the gas-bell 2 by means of an arm 25, depending rod 26, and chain 27. The latter is preferably secured to the tube by means of an adjustable collar 28.

A segmental bracket 30 is connected with the block 21 and provided with bars 32 and 33, which are positioned for engagement with the upper end of the valve-actuating lever 14. The bars 32 and 33 are adjustably secured to the bracket 30 by clamping-screws 35.

The tube 20 is partially filled with liquid, preferably a liquid having a high specific gravity, such as quicksilver, whereby the lower end of the tube 20 will be weighted by the liquid flowing to that end of the tube when the latter is tilted upon the pivot-pin 23.

In Fig. 1 the parts are shown with the bell 2 at the beginning of its upward stroke, the inlet-valve 10 being open and water under pressure being admitted from the pipe 8 under the piston 6 of the jack to lift the bell. During the completion of its upward movement motion will be communicated from the bell through the medium of the arm 25, rod 26, and chain 27 to lift the left-hand end of the tube 20, which tilts upon the pivot 23 until the liquid 37 is caused to flow to the right-hand end, whereupon the weight of the liquid will additionally depress that end of the tube with a positive movement, causing the bar 32 to engage and actuate the lever 14 and reverse the position of the valves, closing the inlet-valve 10 and opening the outlet-valve 11 for the discharge of the power-water from the jack. When the gas-bell 2 has descended sufficiently to cause the chain 27 to pull downwardly on the raised left-hand end of the tube 20, this end of the tube will be again depressed by the chain until the liquid 37 flows into it and further depresses it and again reverses the position of the valves and admits a further supply of power-water to the jack from the inlet-pipe 8. It will thus be observed that the tube 20 acts as a weighted lever for operating the valve, in which the weight is shifted from one end of such lever to the other

through the medium of the gas-bell 2. The arms 32 and 33 are adjusted from time to time in accordance with the wear of the valves. Stop-arms 38 are used to relieve the pressure upon the valves, these arms being clamped to the tubular lever 20 in such a position that one of them will contact with the jack simultaneously with each adjustment of the valves. This relieves the valves from the shock of impact.

In referring to Fig. 3 it will be observed that the bracket 30 is provided with two side bars, between which the lever 14 extends. The bars 32 and 33 serve as cross-bars of the bracket.

While the invention is described as applied to a carbureting-machine, I do not limit the scope of my claims to such use, it being obvious that the same mechanism may be employed for a great variety of purposes.

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

1. The combination with a valve and valve-lever; of a controlling-lever having a central pivotal support; a weight movable on said lever to opposite sides of the pivot; means for actuating the controlling-lever to shift said weight from one side of the pivot to the other, whereby the weight is made effective to cause a further movement of the lever; a segmental

bracket connected with the controlling-lever and provided with projections arranged to engage the valve-lever during the final movement of the controlling-lever in either direction, said projections being adjustable on the bracket to regulate the stroke of the valve-lever.

2. The combination with a valve and valve-lever; of a controlling-lever having a central pivotal support; a weight movable on said lever to opposite sides of the pivot; means for actuating the controlling-lever to shift said weight from one side of the pivot to the other, whereby the weight is made effective to cause a further movement of the lever; a bracket, connected with the controlling-lever and provided with projections arranged to engage the valve-lever during the final movement of the controlling-lever in either direction; said projections being adjustable on the bracket to regulate the stroke of the valve-lever and said controlling-lever being provided with adjustable stops to limit its movement in either direction.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN N. MOEHN.

Witnesses:

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