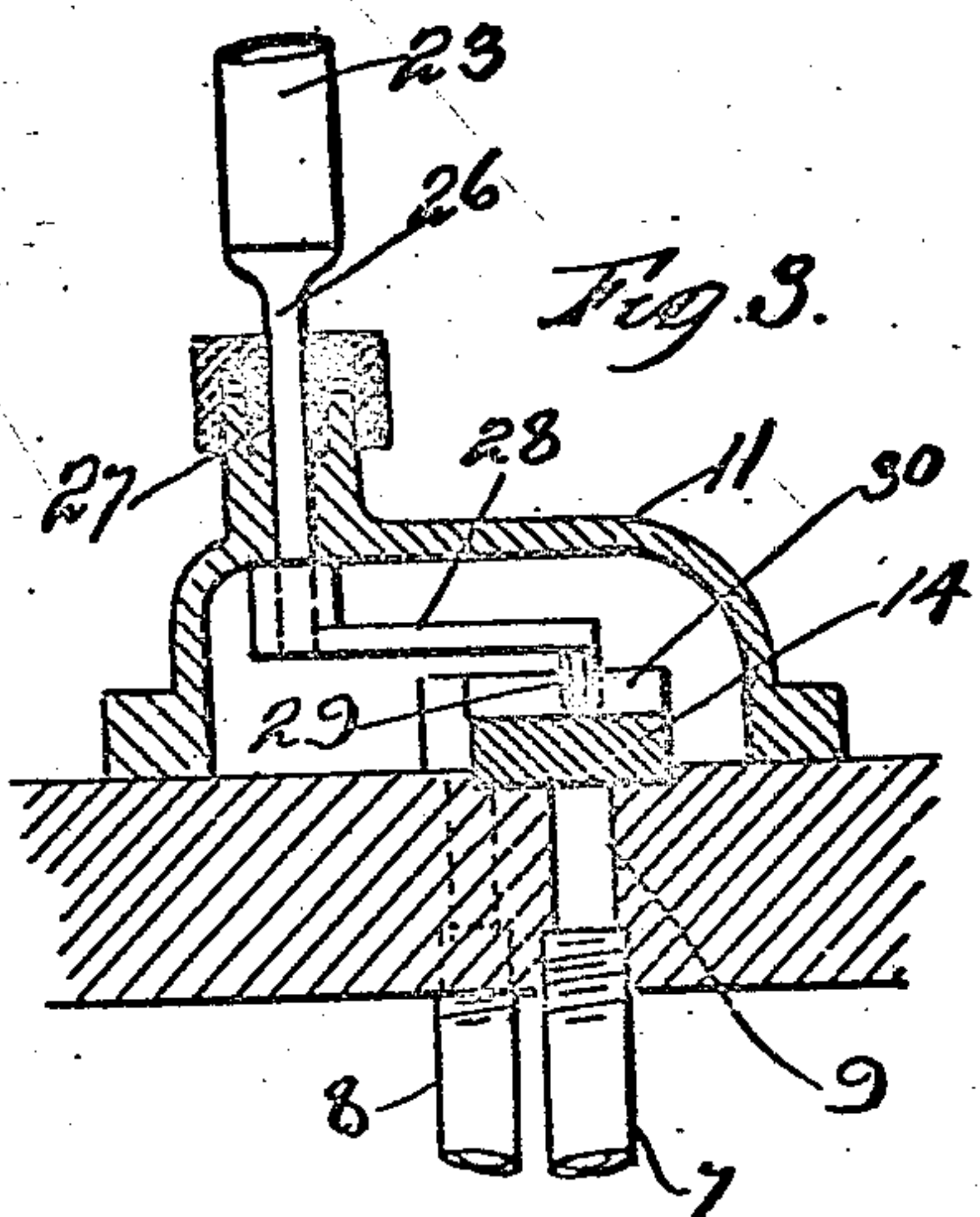
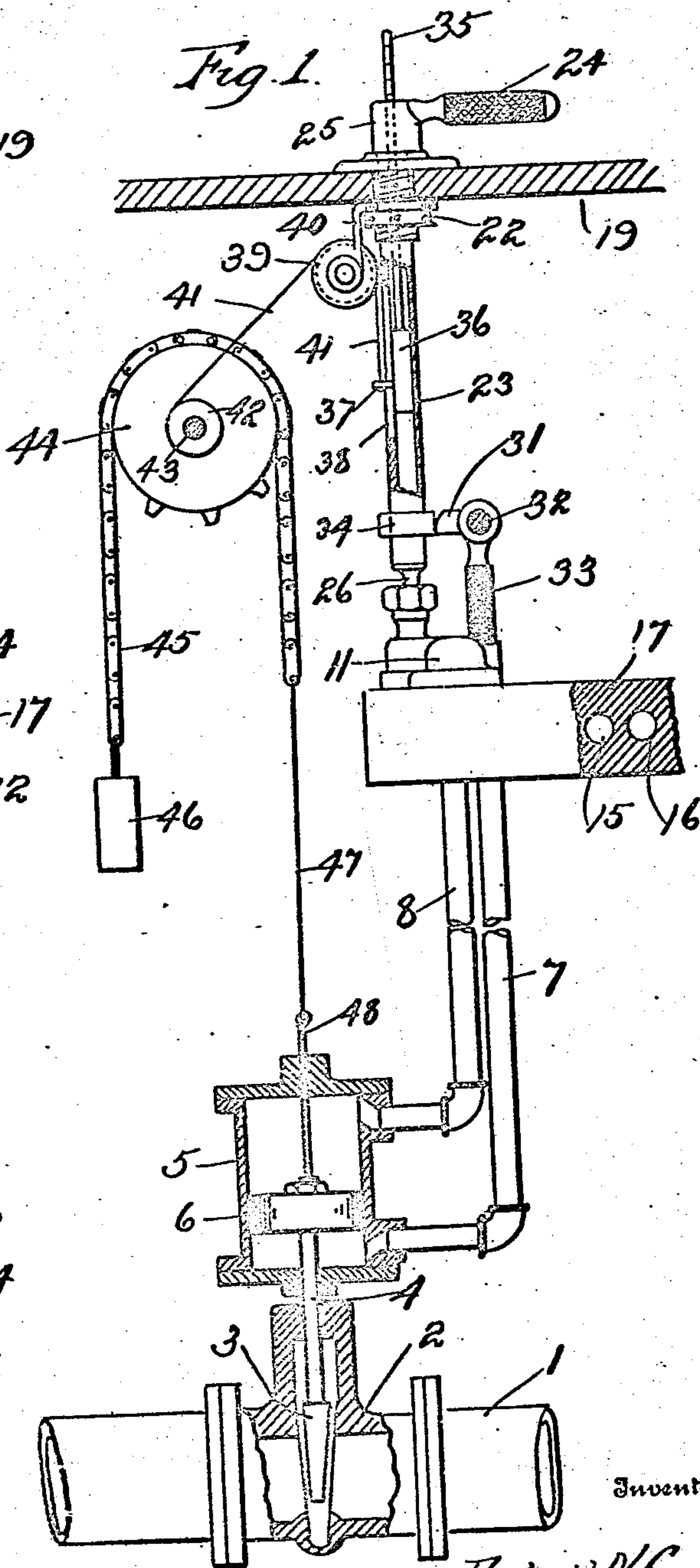
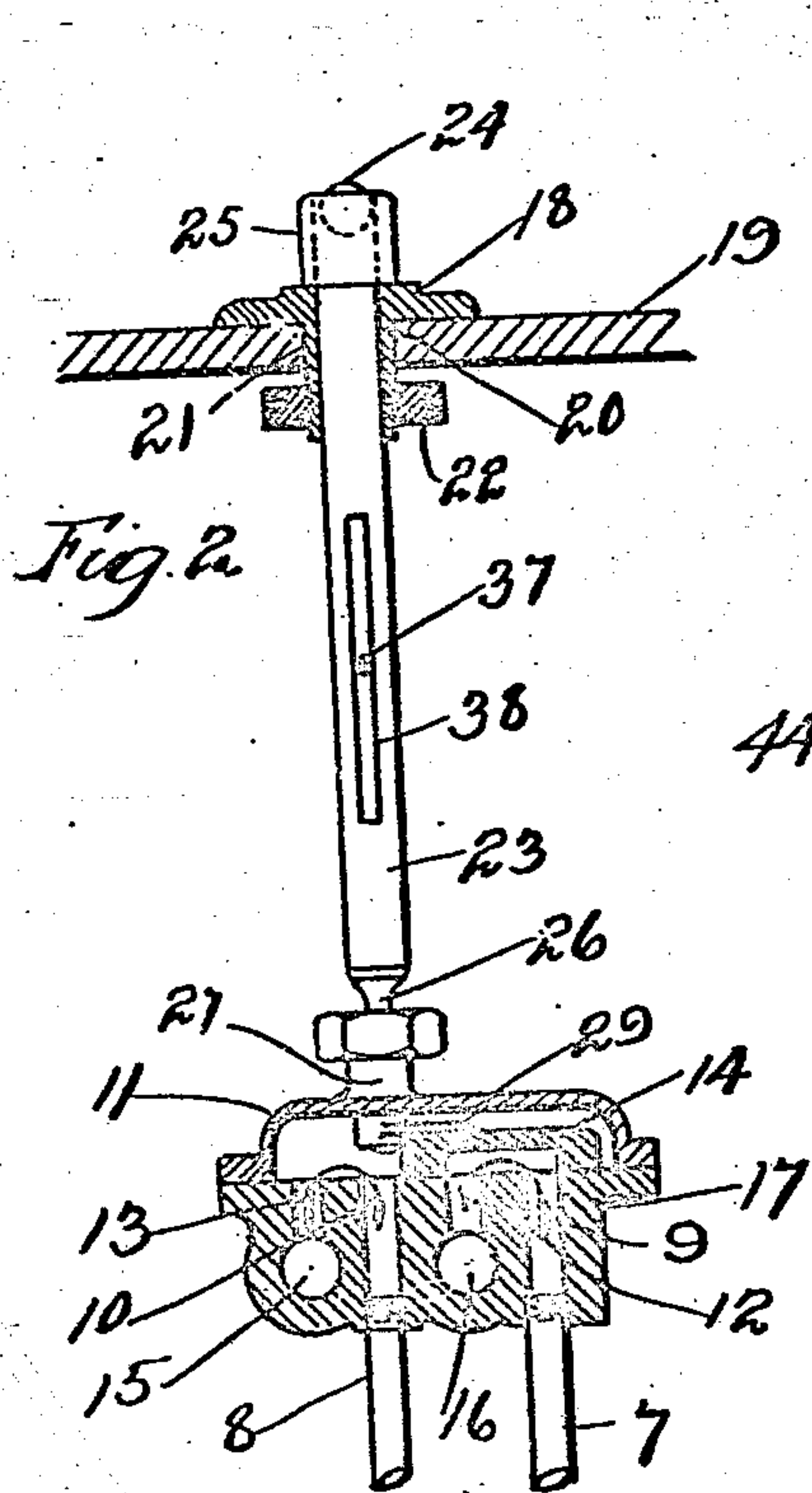


F. N. CONNET.
VALVE POSITION CONTROLLING AND INDICATOR DEVICE.
APPLICATION FILED JAN. 3, 1907.

899,029.

Patented Sept. 22, 1908.



Witnesses

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FREDERICK N. CONNET, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO BUILDERS IRON FOUNDRY, OF PROVIDENCE, RHODE ISLAND, A CORPORATION.

VALVE-POSITION CONTROLLING AND INDICATOR DEVICE.

No. 899,029.

Specification of Letters Patent.

Patented Sept. 22, 1908.

Application filed January 3, 1907. Serial No. 350,623.

To all whom it may concern:

Be it known that I, FREDERICK N. CONNET, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Valve-Position Controlling and Indicator Devices, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in devices for manipulating hydraulically operated valves and has for its object to provide a simple and effective hand operated auxiliary valve for controlling the hydraulic pressure by which a main valve may be automatically operated, and a further object of the invention is to provide a simple means for indicating the position of the said main valve or the amount of opening in the same.

My improved device is more particularly adapted for use on an operating table in filtration plants where an indicating device of this character is required to be both efficient in its operation, simple in construction and neat in its appearance, and to this end I employ an upright tubular stem extending through the top of the table to the upper end of which stem is secured an operating handle while the lower end is operatively connected to an auxiliary valve, whereby the movement of said handle actuates said valve to cause said main valve to be operated by water pressure.

An essential feature of my invention is that a gage spindle is held within the tubular stem and is arranged to be moved vertically therein by the movement of the main valve and in proportion to said movement so that the amount projecting above said stem indicates the amount of opening of said main valve.

The invention is fully set forth in this specification and more particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1—is a side elevation of my device partly in section showing the same operatively connected to control the action of a hydraulically operated valve, and also showing the indicator operating means. Fig. 2—shows a side ele-

vation of the auxiliary valve in section and a front view of the tubular stem. Fig. 3—is an enlarged view illustrating the manner of operatively connecting the tubular stem to the auxiliary slide valve by means of a lever.

Referring to the drawings, at 1 is the main pipe in which is located the main valve 2. This valve is shown partly in section and in a conventional form, the gate being represented at 3 and the stem 4 extending up into a cylinder 5 and is attached to the piston 6 which piston is adapted to be moved either up or down in said cylinder by a water pressure entering through the pipes 7 or 8, each of which pipes serves in a double capacity which is to conduct either the pressure or the exhaust according to the direction of movement required of the piston. The upper ends of these pipes 7 and 8 communicate through the ports 9 and 10 with the auxiliary valve chamber 11 mounted on the rail 17. Also communicating with this chamber 11 are the exhaust and pressure ports 12 and 13 which ports also connect with the main conducting apertures or passageways 15 and 16 located in said rail 17. A D-shaped auxiliary slide valve 14 is adapted to be moved so as to admit the pressure from port 13 into either of pipes 7 or 8 and at the same time connect the opposite pipe with the exhaust port 12. The collar 18 is mounted on the operating table 19, the hollow neck of said collar 20 passing through the hole 21 in the table and the threaded nut 22 secures the same in place. Passing through this collar and neck is the hollow valve stem or shaft 23 to the upper end of which is secured the operating handle 24 by its hub 25. The lower end of this stem is reduced at 26 forming a portion of small diameter that projects down through the stuffing box 27 in the upper part of the valve chamber 11, and on its end is fixed a lever 28, the outer end 29 of which engages a recess 30 in the valve 14 so that when the operating handle 24 is moved either to the right or to the left the valve 14 receives a corresponding motion. In order to lock this stem in any desired position and prevent the same from being inadvertently moved I have provided a cam 31 mounted on the shaft 32 to be actuated by means of

the handle 33 so that when said handle is turned down into the position shown in Fig. 1 the said cam engages the collar 34 fixed to said stem and binds and holds the same securely from moving. Located within this hollow stem or shaft and adapted to slide vertically therein is the gage spindle 35 which is graduated at its upper end. To the lower end of this spindle is fixed an enlarged portion 36 designed to fit the hollow center portion more closely, but also adapted to move freely therein. To this enlarged portion is fixed a finger or pin 37 which extends out through the slot 38 formed through the wall of the tubular stem. The idler pulley 39 is supported on the bracket 40 which bracket is bound and held by the nut 22 against the underside of the table 19. The cord 41 leads from the pin 37 over said idler pulley and down to the small drum 42 mounted on the shaft 43. Also mounted on and fixed to this shaft 43 is the sprocket wheel 44 over which is led the sprocket chain 45 to one end of which chain is secured the counterbalance weight 46, while the opposite end of the chain is connected by means of the cord 47 to the end of the spindle 48. This spindle 48 extends down through the cylinder head and is attached to the piston 6 within. The movement of this piston either up or down through the sprocket chain and connections described rotates the sprocket wheel 44, the rotation of which sprocket also rotates the drum 42 on which is wound the cord 41. The movement of this drum therefore in one direction winds the cord 41 around the same drawing upward the gage spindle to extend above the upper end of the tubular stem, while an opposite movement of said drum unwinds the cord therefrom and allows said spindle to drop downward into said stem, the amount of said spindle projecting above said stem indicating the amount of opening of the main valve.

The apparatus is very simple and inexpensive in construction, is easy to manipulate and effective in its operation, and by its use the main valve may be easily operated and the position of the valve gate readily determined by a glance at the indicator which is always in plain sight.

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

1. In a device of the character described, the combination of an automatically operated main valve, an auxiliary valve for controlling the action of said main valve, a shaft by means of which said auxiliary valve is moved, and means in said shaft for indicating the opening through said main valve.

2. In a device of the character described, the combination of a hydraulically operated main valve, a valve auxiliary to said main valve, a shaft through which said auxiliary valve is moved, and mechanically actuated means in said shaft for indicating the opening through said main valve.

3. In a device of the character described, the combination of a hydraulically operated main valve, a valve auxiliary to said main valve, a hollow stem by which said auxiliary valve may be moved, and means in said stem for indicating the opening through said main valve.

4. In a device of the character described, the combination of a hydraulically operated main valve, a valve auxiliary to said main valve, a hollow stem by which said auxiliary valve may be moved, and mechanically actuated means in said stem for indicating the opening through said main valve.

5. In a device of the character described the combination of a hydraulically operated main valve, a valve auxiliary to said main valve, a hollow stem by which said auxiliary valve is moved, a graduated spindle in said stem, and means for moving said spindle in said stem to indicate the position of said main valve.

6. In a device of the character described, a hydraulically operated main valve, a slide valve auxiliary to said main valve, a stem by which said slide valve may be moved, and means in said stem indicating the position of said main valve.

7. In a device of the character described, the combination of an automatically operated main valve, a valve auxiliary to said main valve, a hollow stem by which said auxiliary valve may be moved, means for locking said auxiliary valve in any desired position, and means in said stem for indicating the position of said main valve.

8. A device of the character described, comprising a hydraulically operated main valve, a slide valve auxiliary to said main valve, a hollow stem by which said slide valve may be moved and a graduated spindle in said stem arranged to indicate the position of said main valve.

9. A device of the character described, comprising a hydraulically operated main valve, a valve auxiliary to said main valve, a hollow stem by which said auxiliary valve may be moved, an operating handle on said stem, a graduated spindle in said stem, mechanically actuated means for raising and lowering said spindle in said stem to indicate the opening in said main valve, and means for locking said stem in any desired position.

10. A device of the character described, comprising a hydraulically operated main

valve, a valve auxiliary to said main valve, a hollow stem by which said auxiliary valve may be moved, an operating handle on said stem, a graduated spindle in said stem, a sprocket chain and wheel actuated to move in time with said main valve, a drum rotated in time with said sprocket, and means whereby said spindle is caused to move up and

down in the stem by the movement of said drum.

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

FREDERICK N. CONNET.

Witnesses:

WM. R. TILLINGHAST,
HOWARD E. BARLOW.