(No Model.)

G. A. ROBERTS.

STAND PIPE.

No. 535,555. Patented Mar. 12, 1895.

Fig. 1.

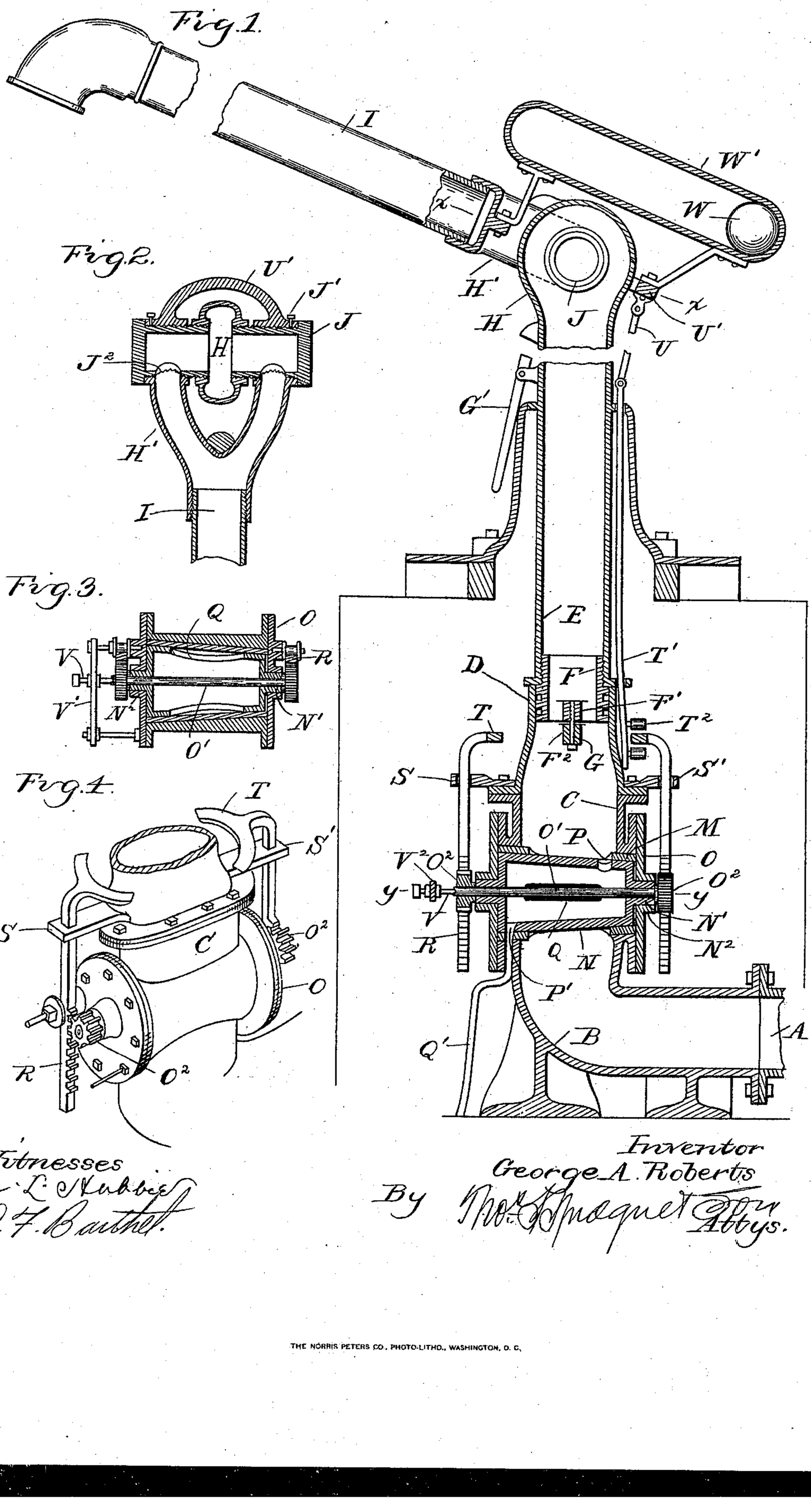

Fig. 2.

Fig. 3.

Fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE A. ROBERTS, OF THREE RIVERS, MICHIGAN.

STAND-PIPE.

SPECIFICATION forming part of Letters Patent No. 535,555, dated March 12, 1895.

Application filed September 19, 1893. Serial No. 485,855. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. ROBERTS, a citizen of the United States, residing at Three Rivers, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Stand-Pipes, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention consists in the peculiar construction of the hinge joint between the vertical section and the spout; further in the peculiar construction of the controlling valve; further in the peculiar construction of the actuating mechanism for said controlling valve and in the construction of the drain valve.

The invention further consists in the peculiar construction, arrangement and combination of the various parts.

In the drawings, Figure 1 is a vertical, central section through a standpipe embodying my invention, reduced in height by breaking out a portion of the vertical section above the ground. Fig. 2 is a horizontal section on line *x x* in Fig. 1. Fig. 3 is a horizontal section on line *y y* in Fig. 1. Fig. 4 is a detached perspective view of the valve casing and valve operating mechanism.

A is the supply pipe extending from a suitable source of water supply. B is the elbow at the end thereof, its outer end being upturned to support the vertical section of the pipe. Upon the top of the elbow is the valve casing C which in turn supports the bottom section D of the vertical portion of the standpipe.

E is a rotary vertical section having a flange at its lower end engaging the upper edge of the section D.

F is a screw-threaded packing nipple screwed into the lower end of the section E and extending into the upper end of the section D with suitable packing rings to make a tight joint. F′ is a cross-bar in this nipple and F^2 is a cross bar in the section D.

G is a bolt centrally of the stand-pipe and passing through the two cross bars, as plainly shown in Fig. 1.

The rotary section is provided with a suitable lever G′ by means of which it may be turned so as to bring the spout over either of the tracks between which it is located or arranged parallel with the tracks between the two.

The section E is provided with a flattened head H centrally apertured.

I is the spout which at its rear end is divided into the two bifurcations H′ adapted to embrace the head H. The central aperture in the head is screw-threaded as are the bifurcations of the spout, to receive the screw-threaded nipples J as plainly shown in Fig. 2. When in position the nipples are secured to the spouts by any suitable means, such as the set screws J′ so that the rotary movement of the spout in relation to the vertical section will cause the spout to turn the nipple which will work in the screw threads at the joint with an increasing binding effect as the spout is lowered, thereby forming a tight joint. The nipples are provided with ports J^2 communicating with the bifurcations of the spout. This construction enables me to form a rigid joint for the spout without the use of packing of any kind, and without the use of rubber hose ordinarily employed in such structures at the joint, adding greatly to the life and rigidity of the structure over constructions now in use.

In place of securing the nipple to the spout by the set screws, it is evident that they may be held stationary by set screws on the vertical section or head, and the spout may be turned on the nipples instead of having the nipples turn in the head.

The valve casing C is provided with a tapering aperture in which I insert a tapering sleeve M, preferably of non-corrosive material, and in this sleeve I insert a tapering plug N. The plug is provided at the ends with journals N′ adapted to be supported in the corresponding bearing N^2 in the caps O of the valve casing.

O′ is a shaft passing centrally through the plug, which is made hollow and at each end of the shaft I secure pinions O^2, by means of which the plug may be turned.

P and P′ are drain ports arranged in the plug between the supply ports Q so located that when the supply ports register with the supply passage of the pipe, the drain ports are shut and when the supply ports are closed the drain ports register with the upper ver-

tical section to drain the same, the drainage being carried off through the discharge pipe Q'. The plug is actuated by means of the rack bars R supported in suitable guides S S' on valve casing, carrying at their upper ends the circles or segments T.

T' is a rod or bar having bearings preferably formed by means of rollers T^2 above and below the segments, and this bar is connected by means of the connecting bar U with the extension U' in rear of the pivotal point of the spout.

The parts being thus constructed and arranged, their operation is as follows: The parts being in the position shown in Fig. 1 it is evident that any water in the spout or vertical section of the pipe will drain out through the port P into the plug and thence out of the plug through the port P' and discharge pipe Q'. To supply water to the spout, the operator turns the rotary section by means of the handle G' over the desired track and then drawing down upon the spout engages it with the supply opening in the tender tank. The downward movement of the spout will raise the rod T' which engaging with the segment T will lift the rack R and turn the shaft and with it the plug a quarter of a turn, so that the discharge ports Q in the plug register with the supply pipe in the vertical section of the stand-pipe thereby admitting the water. When the operator lifts the spout the rack will be lowered, the valve turned and the water shut off, the stand-pipe draining in the manner previously set forth.

It will be observed that the plug N is supported on journals at the end, independent of the casing M in which it turns thereby greatly reducing the friction of the plug and preventing its binding. The plug may be adjusted by means of a set screw V passing through a cross-bar V' at the end of the plug and engaging the shaft O'.

While I have shown the valve operated by the motion of the spout, I do not desire to limit myself to such a construction as it is evident that the same valve may be operated if desired by independent mechanism.

The spout is counterbalanced by means of a ball W running in a way W' supported on the spout above its pivotal point.

What I claim as my invention is—

1. In a stand pipe, the combination of a valve casing, a plug valve therein, a central shaft passing through said valve, pinions on the ends of said shaft, racks engaging said pinions, and actuating means therefor, substantially as described.

2. In a stand-pipe, the combination of a conduit, having a hinged discharge spout, a valve casing therein, a plug valve therein, a shaft for said valve, pinions on the ends of said shaft, racks engaging said pinions, and means for actuating said racks by the movement of the spout, substantially as described.

3. In a stand-pipe, the combination of a rotatory pipe having a hinged discharge spout, a valve casing, a rotary valve therein, a shaft extending through said valve, pinions on said shaft, racks engaging said pinions, segments at the lower end of said racks, an actuating rod having bearings adapted to engage said segments when over the tracks, and connection between the rod and spout, substantially as described.

4. In a stand pipe the combination with a vertical section, of the swinging spout section and a joint between the sections consisting of a bifurcated extension of one section, threaded apertures formed in the other section and threaded nipples fixedly secured in the arms of the bifurcation, their inner ends meshing with the threads of the operatives, substantially as described.

5. In a stand pipe, the combination with a vertical section, of a swinging spout section and a pivotal connection between the sections comprising a hollow sleeve angularly supported by one section and having a pivotal screw-threaded engagement with a threaded aperture in the other section, substantially as described.

6. In a stand-pipe the combination of the vertical rotatory section having a transverse screw threaded aperture therethrough, of a spout bifurcated at its inner end to embrace the upper end of the vertical section, and screw threaded nipples having their outer ends closed, secured in the bifurcations and engaging with its threads the screw threaded bearings in the vertical section, substantially as described.

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

GEORGE A. ROBERTS.

Witnesses:

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OTTO F. BARTHEL.