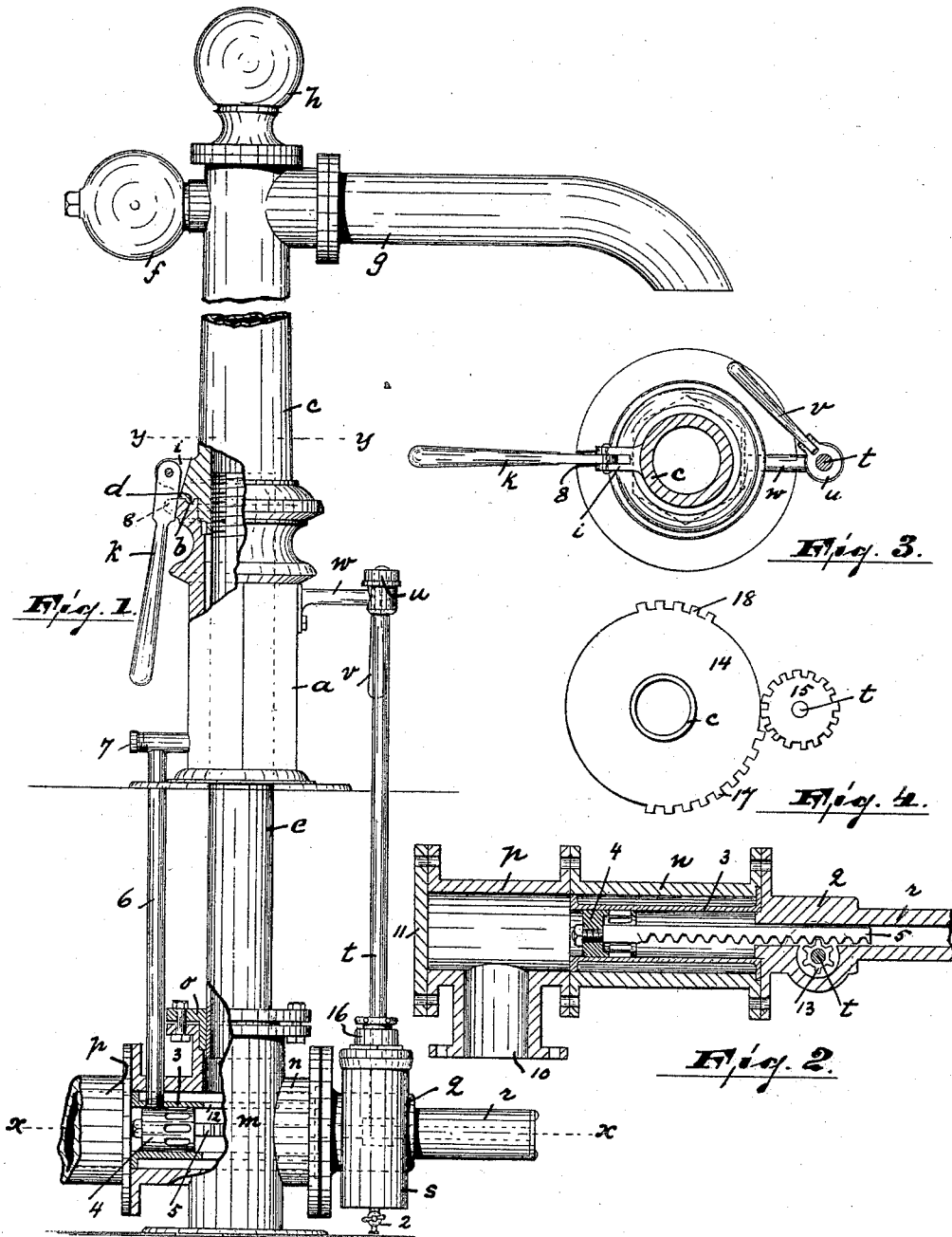


(No Model.)

A. SCHEID.
WATER CRANE.

No. 498,818.

Patented June 6, 1893.



WITNESSES:

Wm. J. Moll
O. H. Johnston

INVENTOR:

Adam Scheid

BY

Gartner & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

ADAM SCHEID, OF HARRISON, NEW JERSEY.

WATER-CRANE.

SPECIFICATION forming part of Letters Patent No. 498,818, dated June 6, 1893.

Application filed February 3, 1893. Serial No. 460,847. (No model.)

To all whom it may concern:

Be it known that I, ADAM SCHEID, a citizen of the United States, residing in Harrison, county of Hudson, and State of New Jersey, have invented certain new and useful Improvements in Water-Cranes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to a new and useful improvement in water cranes or movable towers especially adapted for use in filling the water tanks of railway engines, and it consists in the novel construction and arrangement of the crane or tower, its combination with a hydrant, the novel arrangement and construction of the valve and its gearing for turning on or off the water, and of the various details of construction and combination of parts hereinafter set forth and claimed.

The invention is illustrated in the accompanying drawings in which—

Figure 1, is a side elevation of my improved water crane, certain portions being broken away. Fig. 2, is a horizontal section taken on the line $x-x$ Fig. 1. Fig. 3 is a horizontal cross section taken on the line $y-y$, Fig. 1, and, Fig. 4, is a diagrammatic view showing a method of connecting the tower with the valve operating rod.

In the drawings a represents the casing or shell having at its upper end a grooved collar b and fastened at the lower end to the casing of the cistern or well. Supported on the grooved collar b of this casing a is the stand pipe c of the tower, having at its lower end a collar d furnished with an annular flange adapted to rest in the groove of the collar b . This stand-pipe c is connected by screw or other connection at its lower end to the water pipe e , extending through and below the casing a into the cistern. Near the top of this stand pipe c is arranged the outlet pipe g of the tower, counter-balanced by ball weight f

in the usual manner. At the top of the stand pipe c is also placed a solid cap h with intermediate washer, the latter not being shown in the drawings.

Above the collar d and in one side of the stand pipe c is an enlargement or projection i to which the hand lever k is pivoted. This hand-lever k is adapted, when the tower is not in use, to fall by gravity into a slot 8 in the collar b of the casing a , thus locking the casing and stand pipe firmly together. The pipe e enters the bushing o arranged at the top of the upwardly extending portion m of the piston chamber n . Said piston chamber n is arranged at right angles to the center line of water pipe e and is connected at one end with the pipe p having inlet pipe 10 and cap 11 . The opposite end of the piston chamber n is connected to a block or casing q having an extending portion or guide r and on one side an upwardly extending casing or chamber s . Said chamber s is provided at its lower end with an outlet cock 2 and at its upper end with the bushing 16 through which the rod t passes. To said rod t and within said casing s is secured a pinion 13 adapted to engage the toothed rack 5 , the inner end of which is removably secured to the valve piston 4 provided with a series of elongated slots, and adapted to operate in bushing 3 arranged in the piston chamber n . Said bushing 3 is also provided with a series of longitudinal slots 12 as clearly shown in Fig. 1 of the drawings. The upper end of rod t has its bearing in the bracket w which is secured to and projects from casing a . To the top of said rod is attached a collar u to which is pivotally secured the handle v . Through bushing 3 and piston chamber n extends a hydrant pipe 6 , the outlet of which is arranged above the cistern and is closed by the removable cap 7 .

In Fig. 4 of the drawings I have shown a method of connecting the revolving stand-pipe c with the valve operating rod t , so that when the stand pipe and its outlet are moved in either direction the valve will be operated. To accomplish this I attach above the collar d to the stand pipe c a disk 14 provided with gear sections 17 and 18 on its periphery, and

to an extension of the rod *t* I attach or secure a pinion 15 adapted to gear with the disk and its gear sections 17 and 18 in the manner hereinafter described.

5 The operation is as follows: The stand pipe *c* and the water pipe *e* may be rotated in either direction by means of the handle *k* in the usual well known manner. To operate the piston valve 4, the rod *t* is turned in either
10 direction by the handle *v*, thus advancing or retracting the rack 5 by means of the pinion 13. If for instance the rod *t* is turned to the left (Fig. 2) a half revolution, the piston 4 is advanced from the chamber *n* into the pipe
15 *p*, and water will flow from inlet 10 through pipe *p* and through the perforations in the piston 4 and bushing 3 into the pipe *m* and from thence into the water pipe *e* and the
20 stand pipe *c* and outlet *g*. If however the rod *t* is turned toward the right one revolution, the piston 4 is retracted by rack 5 from the mouth of chamber *n* and past the perforations in bushing 3, when the water is allowed to enter said chamber *n* from the pipe
25 *p* through the perforations of bushing 3. When the hydrant 6 only is to be used, the rod *t* may be turned a quarter revolution to the right, thus retracting the piston 4 a distance, only sufficient to let the water pass
30 from pipe *p* into pipe 6, but not through the perforations in the bushing.

In the diagram shown in Fig. 4, a method is shown of gearing the stand-pipe *c* and rod *t* together, as has been heretofore explained.
35 It will be observed that the teeth section 18 of the disk 14 contains a smaller number of teeth than there are in teeth section 17. This is necessary because, when the disk 14 and the stand pipe are turned to the right, the teeth
40 18 will turn the disk 15 and rod *t* and pinion 13 to the left, thus advancing the rack 5 and piston 4, while, when the disk 14 and the stand pipe are turned to the left, the teeth 17 will turn disk 15, rod *t* and pinion 13 to the right,
45 thus retracting the rack 5 and piston 4. It is obvious, that in advancing the piston 4 but a short distance is needed to be traversed to open the valve, while in retracting, the piston must traverse a longer distance to clear
50 the slots in the bushing 3.

I do not intend to limit myself to the precise form and construction shown and described, as various modifications may be made therein, without departing from the spirit of my invention.

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

1. The combination of a water pipe of a water crane with a hydrant pipe, both having a common inlet pipe at their lower ends, and with a perforated piston valve adapted when advanced in said inlet pipe to open said water pipe and when retracted to open successively the hydrant and the water pipe, substantially
65 as described.

2. The combination of an inlet pipe provided with a perforated bushing, a perforated piston valve adapted to slide in said bushing, the water pipe for a water crane arranged above said bushing and in communication with the inlet pipe through the perforations in said bushing, a hydrant pipe entering said bushing and means for advancing and retracting said piston valve in said bushing, all arranged so that when said piston valve is advanced the inlet to the water pipe is opened and when retracted the inlets to the hydrant and water pipes are successively opened, substantially as described.

3. The combination of the perforated piston valve, the rack attached thereto, a pinion adapted to operate said rack, a rod secured to said pinion and adapted to operate the same, a toothed disk attached to the rod, with the rotating stand pipe of a water tower carrying a disk having two sections of teeth of unequal number, said disk being geared to and adapted to operate the toothed disk of the rod, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 31st day of January, 1893.

ADAM SCHEID.

Witnesses:

ALFRED GARTNER,
HENRY E. EVERDING.