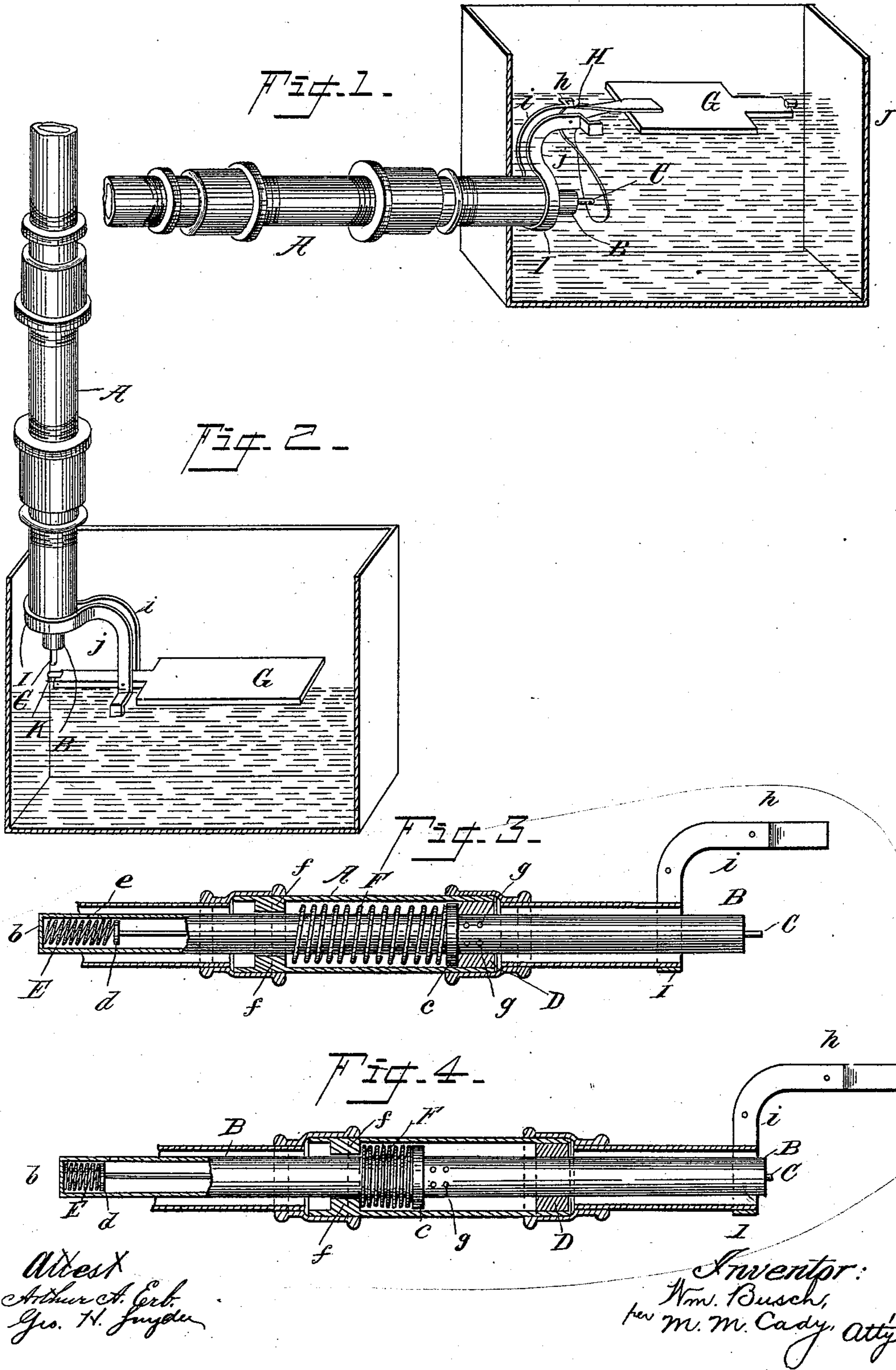


(No Model.)

W. BUSCH.
REGULATOR FOR WATER SUPPLY.

No. 539,117.

Patented May 14, 1895.



UNITED STATES PATENT OFFICE.

WILLIAM BUSCH, OF HAZEL GREEN, WISCONSIN.

REGULATOR FOR WATER-SUPPLY.

SPECIFICATION forming part of Letters Patent No. 539,117, dated May 14, 1895.

Application filed November 16, 1894. Serial No. 529,080. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BUSCH, a citizen of the United States, residing at Hazel Green, in the county of Grant and State of Wisconsin, have invented certain new and useful Improvements in Regulators for Water-Supply; and I do hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to provide means for regulating the flow of water from a tank or water supply to the receptacle for use, with particular reference to the supply of water for different classes of stock on farm.

It consists in arranging two or more valves in the supply pipe and automatically operating them in such manner that the supply of water may be increased or diminished or shut off altogether.

In explaining the details, attention is invited to the accompanying drawings forming a part hereof, in which—

Figure 1 is a perspective of a supply-pipe with operating-float when the tube is laid in nearly a horizontal plane and taking the water from some distant fountain. Fig. 2 is a perspective of Fig. 1 when the water is to be taken from the tank above the watering-trough. Fig. 3 is a longitudinal section of the supply-pipe when the supply of water is shut off, and Fig. 4 is a longitudinal section of the same when there is the greatest flow of water.

Like letters denote corresponding parts in all of the drawings.

The body of the supply pipe A, is made somewhat larger near the discharge end, for holding the valves and their accompanys, presently to be described. Inserted within this body A, is a tube B, closed at its inner end *b*. Within the tube B, is a valve or plunger *d*, having a stem C, which projects somewhat beyond the outer end of the tube B, when the valve is closed, and by which the valve *d*, is opened. Between the valve *d*, and the outer end and within the tube, is coiled a spring E, for holding the valve *d*, below the inlet hole *e*, in the tube B. Around the tube B, and within the supply pipe A, is secured the packing D, to prevent any water flowing out of the pipe A, through the tube

B. Near the inner end of the tube B, is one inlet hole *e*, and near its middle are several inlet holes *g, g, g*; the hole *e*, being for the purpose of allowing a small stream of water to escape through it into the tube B, and out to the watering trough, and the holes *g, g, g*, for increasing the supply of water even to the full capacity of the tube B. Upon the tube B, is secured a strap or shoulder *c*, and there is another shoulder *f*, on the inner side of the body A. Between these shoulders *c, f*, and around the tube B, and within the pipe A, is coiled a spring F, for closing the holes *g, g, g*, by forcing the pipe B, outwardly until the holes *g, g, g*, are within the packing D.

For the purpose of automatically opening the holes *g, g, g*, and allowing the water to flow through the tube B, into the trough, there is fastened to the outer end of the supply pipe A, a collar I, having two arms *i, j*, between the outer ends of which arms is pivoted a float G, through its arm H, at *h*, which float always rests upon the water in the watering trough J. The outer end of said arm extends to a convenient position for impinging against the outer end of the rod C, and the end of the tube B.

In Fig. 2, in the end of the arm H, of the float G, there is also pivoted a block K, more particularly for leveling or directing the pressure against the end of the rod C, and pipe B, so that such pressure shall always be in a line parallel with the rod and tube. The supply tank not shown, and the trough J, may be of any well known construction. The tank may be a cistern where it can conveniently be set in the side of a hill and the water taken from such cistern through the supply pipe A, and run under ground in such a manner that the stock will not be liable to injure it.

The details of my construction may be varied somewhat to suit the convenience of the places in which they are to be used.

The mode of operating is as follows: Starting with a full supply of water in the watering trough J, when the animals have used a portion, the float G, will fall down with the water until the arm H, impinges against the outer end of the rod C, forcing the valve *d*, past the inlet *e*, and compressing the spring E. Then the water from the outside of the tube B, and within the pipe A, will flow

through the hole *e*, and run out into the trough J. If there be only a small number of stock drinking, the supply of water through the hole *e*, will be sufficient, but if there be
 5 need of a greater amount of water, the float G, will continue to drop down, forcing the tube B, into the pipe A, until the holes *g, g, g*, are outside of the packing D, when the water will flow in not only through the hole *e*, but
 10 also the holes *g, g*, and if there be a sufficient number of holes, the flow of water will be to the full capacity of the tube, into J, and when there is sufficient water in the trough J, the float G, will rise and the spring F, will
 15 force the tube B, downward through the pipe A, and at the same time the holes *g, g*, under the packing D, thereby closing the same, leaving a small stream of water still running into the trough J, through the hole *e*, and if there
 20 be no further use of water when the water through the hole *e*, has filled the trough J, sufficient to raise the float and remove the pressure from the end of the rod C, the spring E, will force the valve *d*, past the hole *e*, and
 25 shut off all water supply to the trough J. It will be seen by this mode of construction that the quantity of water may be increased or diminished or shut off altogether automatically.

Having now described my invention and its
 30 mode of operation, what I claim, and desire to secure by Letters Patent, is—

1. A supply pipe provided with a shoulder near its inner end, an endwise moving pipe, extending through the shoulder and the closed
 35 outer end of the supply pipe, and provided with a collar and two openings, or sets of open-

ings, inside of the supply pipe; a spring applied to the endwise moving pipe for returning it to position, a spring actuated valve placed in the perforated endwise moving pipe, 40 and having the outer end of its stem to extend beyond the end of the endwise moving perforated pipe; and a means for operating both the endwise moving pipe and the valve placed therein, the parts being combined and 45 arranged to operate, substantially as shown.

2. In a water supply regulator, a stationary supply pipe, open at its inner and closed at its outer end, an endwise moving spring actuated pipe, passing through the outer closed end of 50 the supply pipe, and provided with perforations near each end, a spring actuated valve placed inside of the endwise moving pipe, and a mechanism for moving first the valve and then the endwise moving pipe, the parts being 55 combined substantially as described.

3. In a water supply regulator, the main supply pipe A, provided with a packing D at its outer end, and an internal shoulder *f*, placed near its inner end, combined with the 60 endwise moving perforated pipe B, provided with the shoulder C, the spring F, the spring placed in the inner end of the pipe, the valve placed in the pipe, and a mechanism for operating first the valve and then the pipe B 65 substantially as set forth.

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

WILLIAM BUSCH.

Witnesses:

M. M. CADY,
 Z. E. GROAT.