No. 860,914. PATENTED JULY 23, 1907.

R. M. HALEY.

AUTOMATIC CONTROLLING VALVE.

APPLICATION FILED AUG. 11, 1905.

Fig. 1.

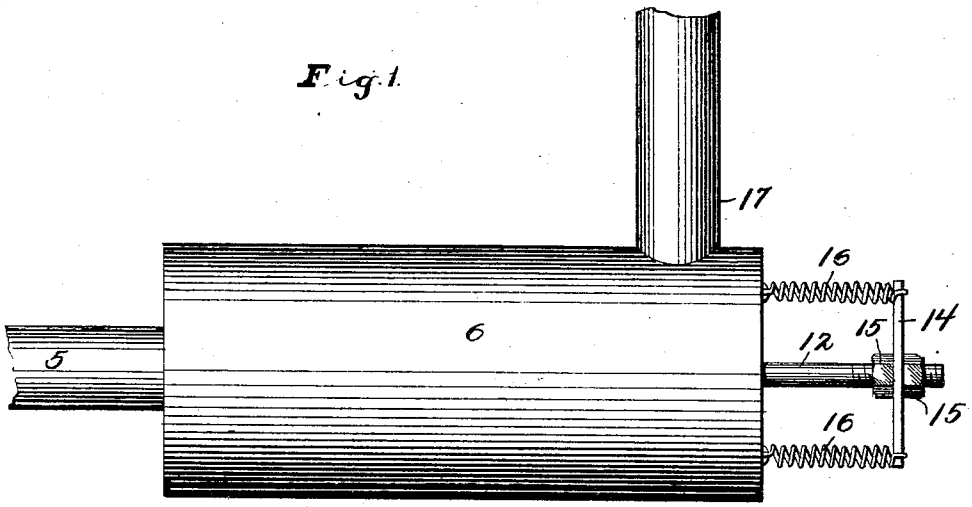
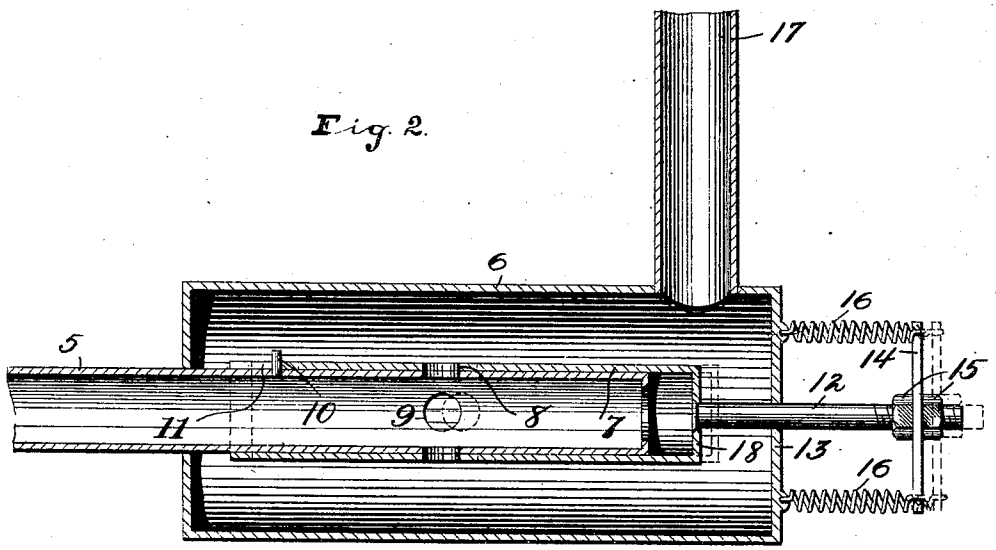


Fig. 2.



Witnesses

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AUTOMATIC CONTROLLING-VALVE.

No. 860,914. Specification of Letters Patent. Patented July 23, 1907.

Application filed August 11, 1905. Serial No. 273,709.

To all whom it may concern:

Be it known that I, ROBERT M. HALEY, a citizen of the United States, residing at Fostoria, in the county of Seneca and State of Ohio, have invented certain new and useful Improvements in Automatic Controlling-Valves, of which the following is a specification.

My invention relates to an automatic controlling valve adapted to control the speed of a spring motor driven pump when attached to the discharge pipe of said pump.

It is a well known fact that when a spring motor is freshly wound, it possesses more power than when it has nearly run down and it is the object of the present invention to provide a valve which will automatically decrease the back pressure upon the pump as the motor runs down.

Further objects and advantages of the invention will be set forth in the detailed description which now follows.

In the accompanying drawing: Figure 1 is a side elevation of a valve constructed in accordance with the invention, and, Fig. 2 is a vertical section of the valve.

Like numerals designate corresponding parts in both of the figures of the drawing.

Referring to the drawing, the numeral 5 designates the discharge pipe of a spring motor driven pump, not shown. This pipe extends into and is inclosed by a casing 6. A sleeve 7 is slidably disposed upon the end of the pipe and said sleeve is provided with ports 8 which are adapted to register with ports 9 formed in the end of the discharge pipe. A pin 10 carried by the discharge pipe enters a slot 11 formed in the sleeve to prevent said sleeve from turning, while permitting longitudinal movement of the sleeve with relation to the exhaust pipe. A stem 12 is connected to the sleeve and projects through the end wall 13 of the casing 6. The outer end of this stem passes loosely through a cross bar 14 and nuts 15 threaded upon said cross bar, serve to adjust the position of the bar with relation to the stem.

One end of springs 16 are secured to the casing 6, while the opposite ends of said springs are secured to the cross bar 14. A discharge pipe 17 leads from the casing 5.

The operation of the device is as follows: The water from the discharge pipe passes through the ports 9 and 8 to the interior of the sleeve 6. The pressure of this water is brought to bear against the interior of the end wall 18 of the sleeve 7. The pressure of this water tends to force the sleeve outwardly against the tension of the springs 16. When this is done, the ports 8 and 9 only partially register with each other, as is illustrated in dotted lines in Fig. 2. Consequently but a limited amount of water can be forced into the casing 6 and out of the discharge pipe 17. This is the condition that exists when the spring motor is freshly wound. As the spring of the motor runs down and the motor begins to loose power, the pressure in the discharge pipe 5 will consequently drop. When this pressure is reduced, the spring 16 again bring the ports 9 and 8 into registration with each other and the increased outlet thus provided, reduces the back pressure upon the pump and permits the weakened power of the spring motor to drive the pump at the predetermined rate.

From the foregoing description, it will be seen that simple and efficient means are herein provided for accomplishing the objects of the invention, but while the elements shown and described are well adapted to serve the purposes for which they are intended, it is to be understood that the invention is not limited to the precise construction set forth, but includes within its purview such changes as may be made within the scope of the appended claims.

Having now fully described my invention, what I claim and desire to secure by Letters Patent is,

1. In a controlling valve, the combination with a casing, of an inlet pipe leading to said casing and an outlet pipe leading from said casing, a sleeve slidably disposed upon the inlet pipe, said inlet pipe having ports formed therethrough and said sleeve likewise having ports formed therethrough adapted to register with the ports of the inlet pipe, a stem secured to the sleeve and projecting through said casing to the exterior thereof, and spring tensioning devices to which the end of said stem is connected.

2. In a controlling valve, the combination with a casing, of an inlet pipe leading to said casing and an outlet pipe leading from said casing, a sleeve slidably disposed upon the inlet pipe, said inlet pipe having ports formed therethrough and said sleeve likewise having ports formed therethrough adapted to register with the ports of the inlet pipe, a stem secured to the sleeve and projecting through said casing to the exterior thereof, spring tensioning devices to which the end of said stem is connected, and means for varying the tension of said devices.

3. In a device of the character described, the combination with the discharge pipe of a pump, of a casing into which said discharge pipe projects, a sleeve closed at one end which is slidably disposed upon the end of said discharge pipe, said discharge pipe and said sleeve having ports formed therethrough which are adapted to be brought into alinement with each other, a stem secured to the sleeve and projecting through the end of the casing, a bar through which said stem projects, a tension nut threaded upon said stem and bearing against the bar, springs connected to the outer ends of the bar and to the casing, and an outlet pipe leading from the casing.

4. In a device of the character described, the combination with the discharge pipe of a pump, of a casing into

which said discharge pipe projects, a sleeve closed at one end which is slidably disposed upon the end of said discharge pipe, said discharge pipe and said sleeve having ports formed therethrough which are adapted to be brought into alinement with each other, a stem secured to the sleeve and projecting through the end of the casing, a bar through which said stem projects, a tension nut threaded upon said stem and bearing against the bar, springs connected to the outer ends of the bar and to the casing, an outlet pipe leading from the casing, and means for preventing the sleeve from turning with relation to the pipe upon which it slides.

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

ROBERT M. HALEY.

Witnesses:
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M. B. SCHLEY.