

974,563.

Patented Nov. 1, 1910.



Wm. Geiger
N. W. Munday.

Inventor:

Ira G. Fosler

By Munday, Everts, Adcock & Clarke,

Attorneys

UNITED STATES PATENT OFFICE.

IRA G. FOSLER, OF CHICAGO, ILLINOIS.

AUTOMATIC PRESSURE-CONTROLLER FOR WATER AND OTHER PIPES.

974,563.

Specification of Letters Patent.

Patented Nov. 1, 1910.

Application filed January 6, 1908. Serial No. 409,466.

To all whom it may concern:

Be it known that I, IRA G. FOSLER, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Automatic Pressure-Controllers for Water and other Pipes, of which the following is a specification.

My invention relates to pressure controllers for water distributing and other pipes.

The object of my invention is to provide an automatic pressure controller of a simple, efficient and durable construction, by means of which the pressure of water or other fluids in pipes may be efficiently regulated and controlled, and an approximately even pressure maintained in the distributing or other pipes, however the number, size or area of the discharge outlets or nozzles may vary from time to time; and by which excessive increase in pressure as the outlets are shut off or reduced in number, and danger of damaging results to pipes, hose or pump from unnecessary high pressure may be entirely avoided, as well as the labor and expense of attending the pumps or water supply, and by means of which the ordinary life of a water distribution system may be substantially doubled through preventing all strain caused by the maintaining of unnecessarily high pressure while only a small portion of the outlets or distributing system is in use.

My invention consists in the means I employ to practically accomplish this object or result as herein shown and described.

In the accompanying drawing forming a part of this specification, Figure 1 is a diagrammatic view, partly in elevation and partly in section illustrating a water distribution system provided with my automatic pressure controller. Fig. 2 is a cross section on line 2—2 of Fig. 1 and Fig. 3 is an enlarged vertical section of the pressure gage.

In the drawing, A represents a water supply pipe, B a pump, C a water distribution pipe furnished with a series of outlets or nozzles *c*, D an electric motor for driving the pump through the connecting belt E. All of these parts may be of any well known or suitable kind or construction.

F is the pressure gage, the cylinder *f* of which is connected by a pipe or union *C*² with the water distributing pipe C and pump B, and the piston *f*¹ of which has a spring *f*² surrounding its stem *f*³ and abut-

ting at one end against the piston and at its other end against the adjusting nut *f*⁴ so that the piston may move up and down under tension of the spring as the water or other fluid pressure in the gage cylinder *f* varies.

G is a box or case inclosing the pressure gage and the other parts of the automatic pressure controller. The cylinder of the pressure gage is secured to the case G by screws *g*, and its piston stem *f*³ reciprocates up and down in suitable guide *g*¹ also secured to the case or box G. The piston stem of the pressure gage is furnished with adjustable collars *f*⁵ fixed thereto by set screws *f*⁶ so that its position on the piston stem may be adjusted as required.

H is a bell crank lever having a forked arm *h* fitting astride the piston stem of the pressure gage and adapted to be engaged by the collars *f*⁵ thereon. This bell crank lever H is provided with an upright arm *h*¹ connected by a link K of fiber or other insulating material with the blade or movable member M of a switch which is adapted to contact with a switch member N to close or open the electric circuit P by which the current is supplied to the electric motor D by which the pump B is driven. The upright arm *h*¹ of the bell crank lever H has a slotted connection with the connecting link K so that the bell crank lever may have a slight movement in either direction without operating the switch. The bell crank lever H is pivoted to the frame or box G at *h*² and its upright arm *h*¹ is connected by a spring *h*³ and link *h*⁴ with a pin or pivot point *h*⁵ on the box or case G directly below the fulcrum or pivot *h*² of the bell crank lever H so that when the bell crank lever is moved sufficiently to cause the upright arm *h*¹ to pass the dead center, the tension of the spring *h*³ will move the switch M either to open the circuit and stop the motor and pump or to close the circuit and start the motor and pump according as the piston stem moves upward because of increase of pressure beyond the degree required or moves downward because of decrease of pressure below the degree required.

By operation of my pressure controller, the pressure of the water or other fluid in the pipes of the system may be accurately controlled and regulated and maintained constantly at the uniform pressure desired; as the moment the pressure rises above the

point for which the controller is adjusted, it operates to automatically stop the electric motor and pump and the moment the pressure falls below the point required for which the controller is set, the circuit is instantly closed and the electric motor and pump set it operation.

I claim:—

1. A pressure controller comprising a pressure gage having a cylinder, piston and spring, a bell crank lever having an arm engaged by the piston stem and having its other upright arm provided with a spring connection extending past the fulcrum of said bell crank lever so that when said last mentioned arm of said lever is moved by the piston stem of the pressure gage past the dead center, said spring connection will aid in operating the lever, and a switch connected to and operated by the upright arm of said lever substantially as specified.

2. A pressure controller comprising a pressure gage having a cylinder, piston and spring, a bell crank lever having an arm engaged by the piston stem and having its other arm provided with a spring connection extending past the fulcrum of said bell crank lever so that when said last mentioned arm of said lever is moved by the piston stem of the pressure gage past the dead center, said spring connection will aid in operating the lever, and a switch connected with and operated by said bell crank lever, one end of said spring being connected at a fixed point to the frame and the other end thereof being connected to said lever substantially as specified.

IRA G. FOSLER.

Witnesses:

H. M. MUNDAY,
EDMUND ADCOCK.