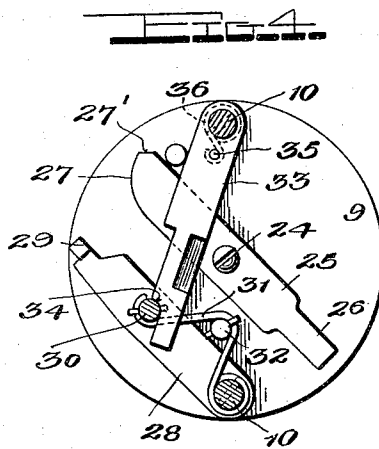
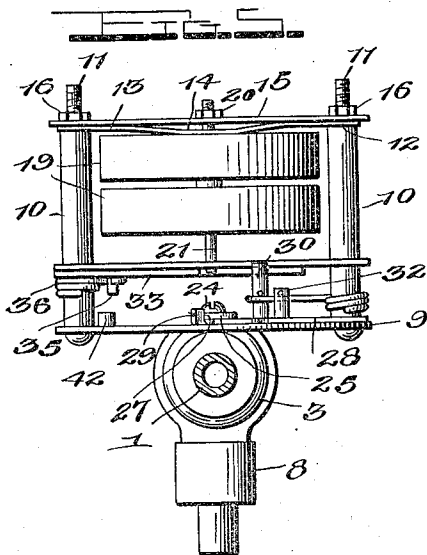
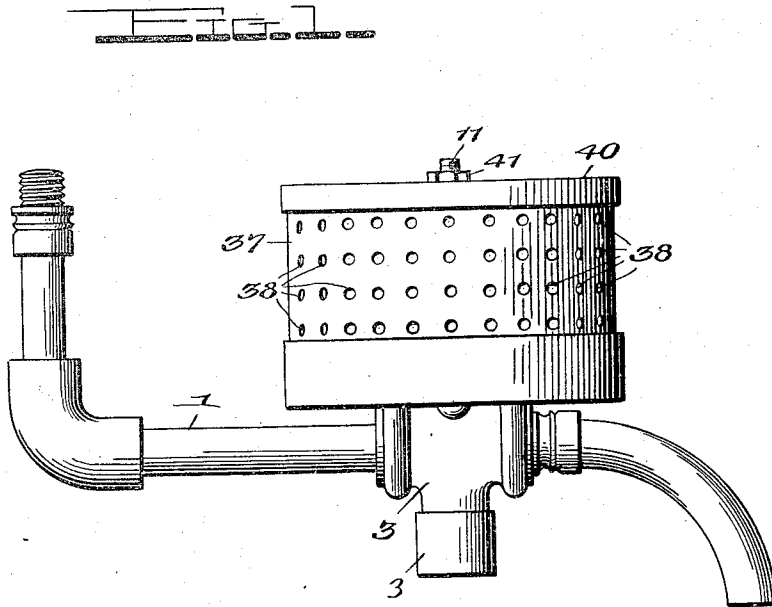


C. E. EGAN.
 AUTOMATIC VALVE CONTROLLING MECHANISM FOR WATER PIPES AND THE LIKE.
 APPLICATION FILED OCT. 18, 1915.

1,200,928.

Patented Oct. 10, 1916.
 2 SHEETS—SHEET 1.



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Witnesses
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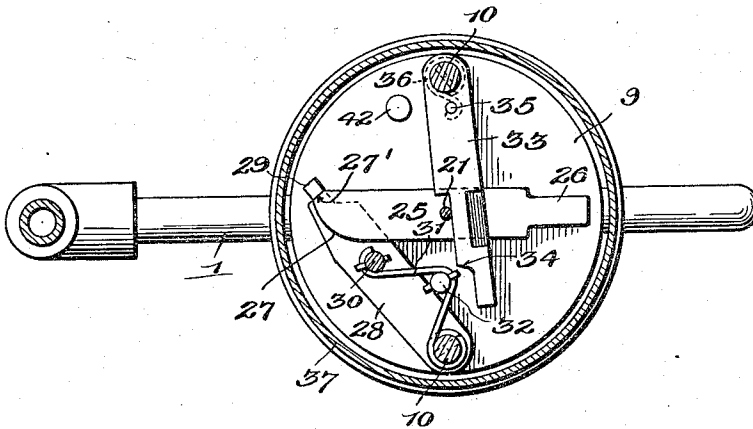
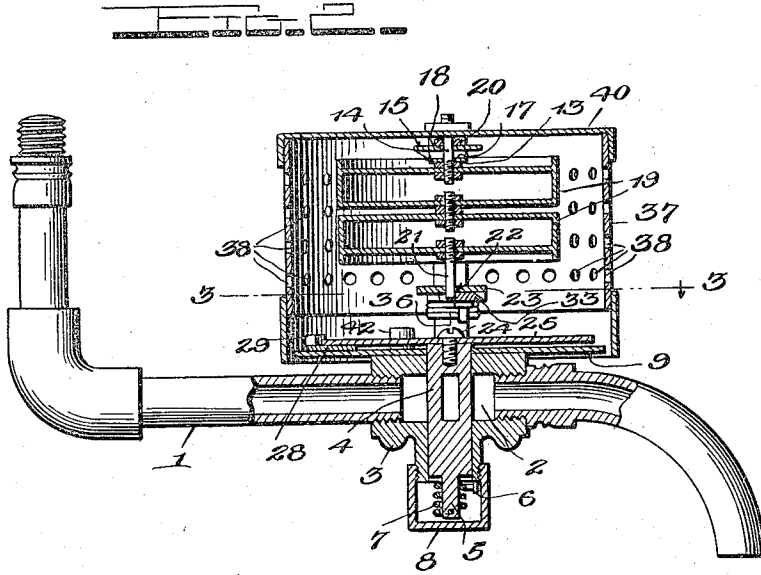
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UNITED STATES PATENT OFFICE.

CHARLES E. EGAN, OF CHARLESTON, WEST VIRGINIA, ASSIGNOR OF ONE-FOURTH TO GEORGE P. MATTHEWS AND RANKEY A. GOFF, ONE-FOURTH TO GEORGE T. CHOUNIS, AND ONE-HALF TO WADE H. GUTHRIE, ALL OF CHARLESTON, WEST VIRGINIA.

AUTOMATIC VALVE-CONTROLLING MECHANISM FOR WATER-PIPES AND THE LIKE.

1,200,928.

Specification of Letters Patent.

Patented Oct. 10, 1916.

Application filed October 18, 1915. Serial No. 56,506.

To all whom it may concern:

Be it known that I, CHARLES E. EGAN, a citizen of the United States, residing at Charleston, in the county of Kanawha and State of West Virginia, have invented certain new and useful Improvements in Automatic Valve-Controlling Mechanism for Water-Pipes and the like; and I do 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.

This invention relates generally to improvements in valves and more particularly to an improved means for operating valves.

One object of the invention is to provide a means for automatically operating a valve when a predetermined temperature has been reached.

Another object of the invention is to provide a device of this character which will be simple, strong, durable and inexpensive in construction, efficient and reliable in operation, and well adapted to the purpose for which it is designed.

With these and other objects in view the invention consists of certain novel features of construction, the combination and arrangement of parts which will be hereinafter fully described and claimed.

In the accompanying drawings in which similar reference numerals designate like parts throughout the several views, Figure 1 is a side elevation of a device constructed in accordance with this invention, showing it applied to a water pipe; Fig. 2 is a vertical sectional view through the same; Fig. 3 is a detail sectional view taken on the line 3-3 of Fig. 2 showing the arrangement of levers when the same are in operative position; Fig. 4 is a similar view showing the arrangement of levers when the same are in inoperative position; and Fig. 5 is a rear elevation of the device with the housing removed.

Referring more particularly to the drawings 1 represents any suitable water pipe having arranged therein a valve 2, the latter comprising a casing 3 having therein a rotary apertured plug 4, the lower end of which is reduced at 5. Depending from the lower end of the casing 3 is a lug 6 to which is secured one end of a coiled spring 7, the latter being disposed around the reduced end

5 of the plug 4 and secured at its other end thereto, whereby said plug 4 will be moved to opened position when released by means hereinafter to be described. A cap 8 is secured to the lower end of the casing 3 around the spring 7 and the lug 6 to prevent dust and dirt from collecting on these parts and also to provide a packing for the plug 4.

The upper side of the casing 3 is provided with a circular plate 9 and rising from the latter is a pair of diametrically opposite upright supporting standards 10 which may be secured thereto in any suitable manner. The upper ends of the standards 10 are reduced at 11 to provide shoulders 12 upon which rest the apertured ends of a spring metal strip 13, the intermediate portion of which is curved downwardly at 14, and disposed above the strip 13 is a bar 15 having apertured ends clamped on the aforesaid reduced ends 11 of the standards 10 by nuts 16. Extending through aligned apertures 17 in the strip 13 and bar 15 is a bolt 18 having its lower end secured to a suitable thermostat 19. The upper end of this bolt 18 is provided with a nut 20 by which the thermostat 19 may be adjusted vertically, which will be understood without further description. The lower end of the thermostat 19 carries a pin 21 which extends through an aperture 22 in a bar 23, the latter being secured at its ends in any suitable manner to the standards 10.

The upper end of the plug 4 extends above the plate 9 and is provided with a lever 25 secured thereto by a bolt 24, the said lever 25 being provided with a handle 26 at one of its ends and with a cam 27 at its other end, the rear edge of this cam 27 being disposed angularly as at 27'. Disposed in a plane below the lever 25 is a lever 28 pivoted at one of its ends to one of the standards 10 and provided at its other end with an upstanding lug 29, the latter acting in the capacity of a stop for the angular edge 27' of the before mentioned lever 25. The lever 28 carries an upright pin 30 having secured thereto in any convenient manner one end of a spring 31 which passes around a pin 32 carried by the plate 9 and having its other end coiled around and secured to said standard 10. It may be seen that this spring 31 holds the lever forwardly. Pivoted at one of its ends to the other standard 10 in a plane above the

lever 25 is a lever 33, one edge of which is cut away to provide an inclined shoulder 34. Depending from the lower edge of this lever 33 is a pin 35 around which passes one end of a spring 36, the latter being coiled around and secured to the last mentioned standard 10 to force the lever 33 backwardly.

Surrounding the above described parts is a cylindrical housing 37, the walls of which are provided with rows of apertures 38. This housing 37 is provided with a top 40 having diametrically opposite apertures through which extend the reduced ends 11 of the standards 10, said reduced ends 11 being provided with nuts 41 to detachably clamp said housing in position.

With the levers arranged as in Fig. 4, the housing 37 is detached and the lever 25 is moved until the cam 27 engages and passes beyond the lug 29 carried by the lever 28, the latter under the tension of the spring 31 moving inwardly and holding the lever 25 in the position shown in Fig. 3, the angularly disposed edge 27' of the lever engaging the lug 29. The lever 33 is then swung forwardly and the lower end of the pin 21 coming into engagement with the adjacent beveled edge of the former, is lifted and passed over the same and into engagement with the rear edge of the lever thereby holding it in its forwardmost position. The device being thus set in its operative position and the thermostat adjusted to operate slightly above the freezing point of water, as the temperature reaches that point, the thermostat contracts as will be readily understood, and draws the pin 21 upwardly out of engagement with the edge of the lever 33, thereby releasing the latter which moves rearwardly, and the inclined shoulder 34 coming into contact with the pin 30 causes the lever 28 to move rearwardly until the lug 29 moves out of engagement with the angular edge 27'. The lever 25 being thus released, swings under the tension of the spring 7 to the position shown in Fig. 4 into engagement with the stop 42, thereby opening the plug 4 so that the water contained in the pipe 1 may pass therethrough.

This device may be used for a great variety of purposes, but it is especially adapted

as an antifreezing attachment for water service pipes, automobile radiators, and the like, as when the temperature reaches a predetermined point the valve automatically opens, thereby allowing the water to flow which, as will be readily understood, prevents the latter from freezing. However, it is equally adapted for use in connection with heating systems to keep the temperature of the buildings above a fixed point.

Various changes in form and proportion may be resorted to without departing from the spirit of this invention, and hence I do not wish to be limited to the structure herein described other than that set forth in the appended claims.

I claim:—

1. The combination with a valve having a self-opening plug therein, of a lever carried by said plug, a second lever engaged with the former for retaining said plug in closed position, a third lever, a pin in engagement with the latter for normally holding the same in operative position, and a thermostat connected to said pin, said thermostat actuating the latter at predetermined temperatures whereby to release the third named lever from engagement with the first named lever to allow said plug to open.

2. The combination with a valve having a self-opening plug therein, of a lever carried by said plug, a spring actuated lever in engagement with the former for retaining said plug in closed position, an additional spring actuated lever, a pin in engagement with the latter for holding the same in operative position, and a thermostat connected to said pin, the former actuating the latter at predetermined temperatures, whereby to release the last named spring actuated lever for disengaging the first named spring actuated lever from engagement with the first mentioned lever to allow said plug to open.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES E. EGAN.

Witnesses:

R. T. GILES,
PAUL EGAN.