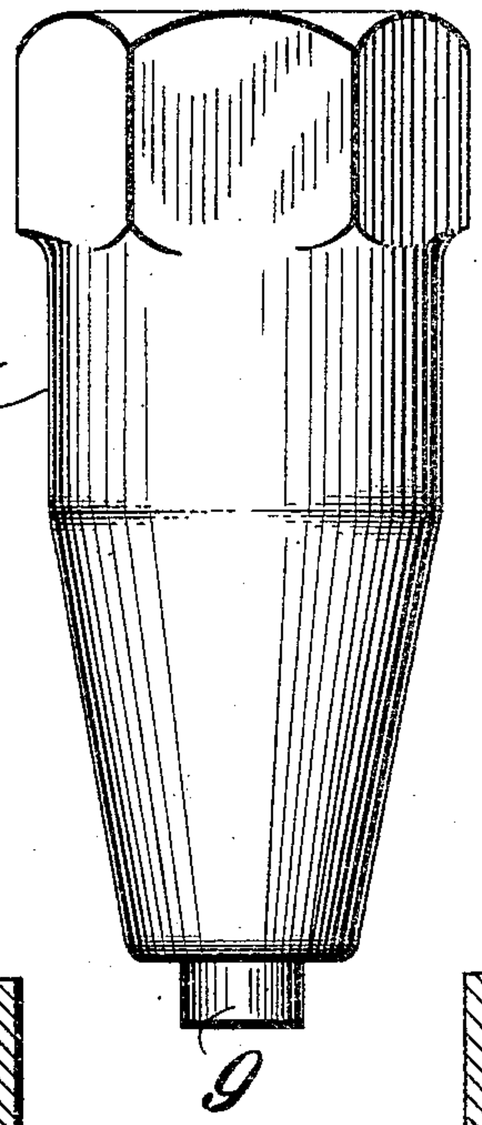
W. COLE.

VALVE.

APPLICATION FILED JUNE 15, 1909.

934,286. Patented Sept. 14, 1909.

Fig. 1.



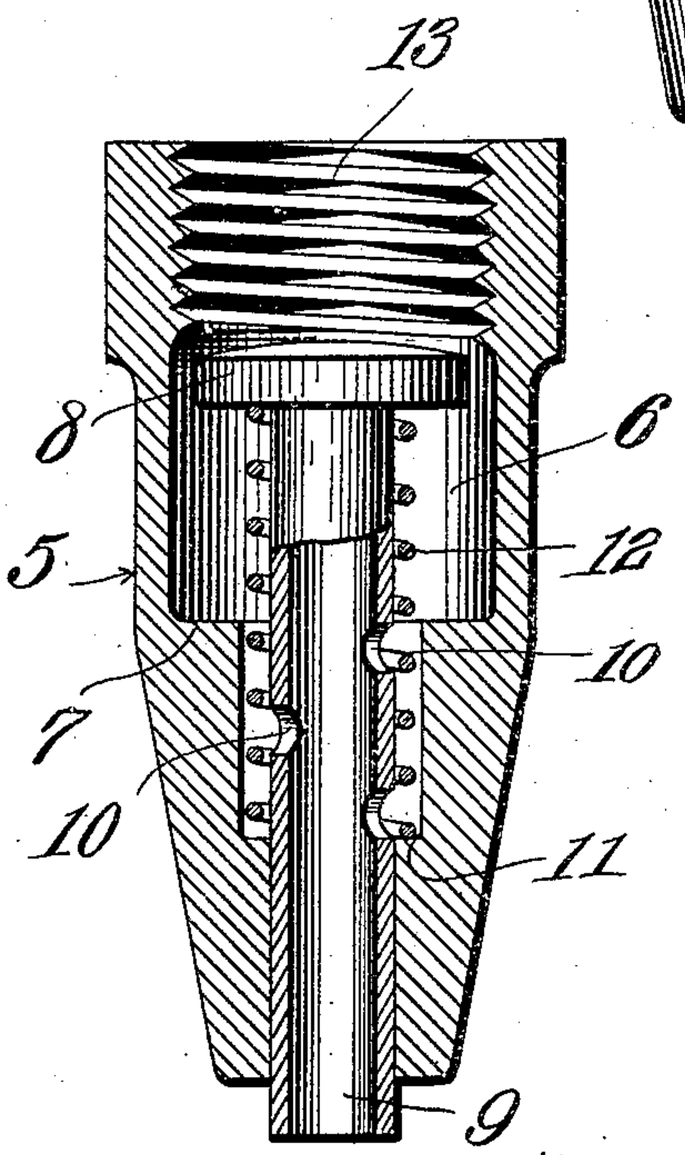


Fig. 2.

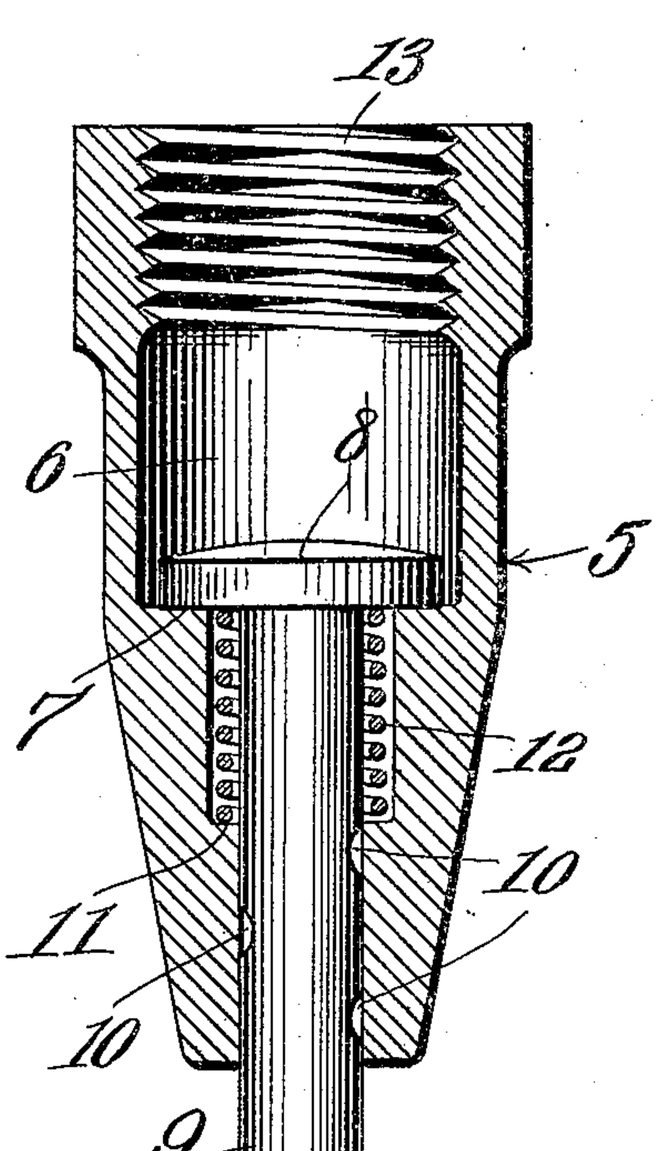


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM COLE, OF MINA, PENNSYLVANIA.

VALVE.

934,286. Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed June 15, 1909. Serial No. 502,353.

To all whom it may concern:

Be it known that I, WILLIAM COLE, a citizen of the United States, residing at Mina, in the county of Potter and State of Pennsylvania, have invented a new and useful Valve, of which the following is a specification.

This invention relates to a check and drain valve for steam and water lines designed to automatically drain the line when the pressure is shut off, and its object is to provide a valve of this kind which is simple in structure, reliable in operation, and which can be readily connected up anywhere on the line.

With the above stated objects in view, the invention consists in the novel construction and arrangement of parts to be hereinafter described and claimed, reference being had to the drawing hereto annexed in which,

Figure 1 is an elevation of the valve, Fig. 2 is a central vertical section showing the valve in open position, Fig. 3 is a view similar to Fig. 2 showing the valve closed.

Referring to the drawing, the casing 5 of the valve is cylindrical in form and tapered in the direction of its discharge end. The bore 6 of the casing is formed with a shoulder 7 which is the seat of the valve 8, the latter being in the shape of a disk from which extends a tubular stem 9 open at its outer end, and having side openings or ports 10. Below the shoulder 7, the bore of the valve casing is reduced, said reduced portion having different diameters whereby a shoulder 11 is had on which one end of a spring 12 seats, said spring being coiled around the stem 9 and engaging at its opposite end the valve 8. The spring serves to normally hold the valve unseated. The stem 9 has a working fit in that portion of the bore having the smallest diameter, and the spring 12 is located in that portion of the bore having the next greater diameter. The inlet end of the bore 6 has a screw threaded portion 13 whereby connection is made with the line on which the valve is to be employed.

In practice, the valve 8 is held closed by the pressure in the line. When there is no pressure in the line, the valve is opened by the spring 12, and drainage then takes place through the ports 10 and the open end of the stem 9. The stem 9 also serves to guide the valve. When the valve is closed the ports 10 are within the contracted portion of the bore below the shoulder 11, and as the stem fits snugly in said portion of the bore, there will be no leakage through the stem. The valve 8 by its engagement with the seat 7 prevents leakage to that portion of the bore which is occupied by the spring 12. When the valve is off its seat, the ports 10 are located between the shoulders 7 and 11, the uppermost of said ports not rising above the shoulder 7, and the lowermost of said ports is so positioned with respect to the shoulder 11 that all the water entering the bore above said shoulder is drained into the stem 9.

The valve herein described is automatic in operation, it is simple in construction, and therefore not liable to get out of order, and it effectually serves the purpose for which it is designed.

Having thus described my said invention, what I claim as new and desire to protect by Letters Patent is:

A valve comprising a casing having a bore formed with a pair of shoulders, and contracted at one end, one of said shoulders being a valve seat, a valve engageable with said seat, a tubular stem carried by said valve, and extending into the contracted end of the bore at a working fit, and a spring coiled around the stem between the valve and the other shoulder, said stem being open at its outer end, and having side ports located between the shoulders when the valve is open, and within the contracted end of the bore, and closed thereby, when the valve is seated.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM COLE.

Witnesses:

E. N. BURDIC,

W. W. LOWELL.