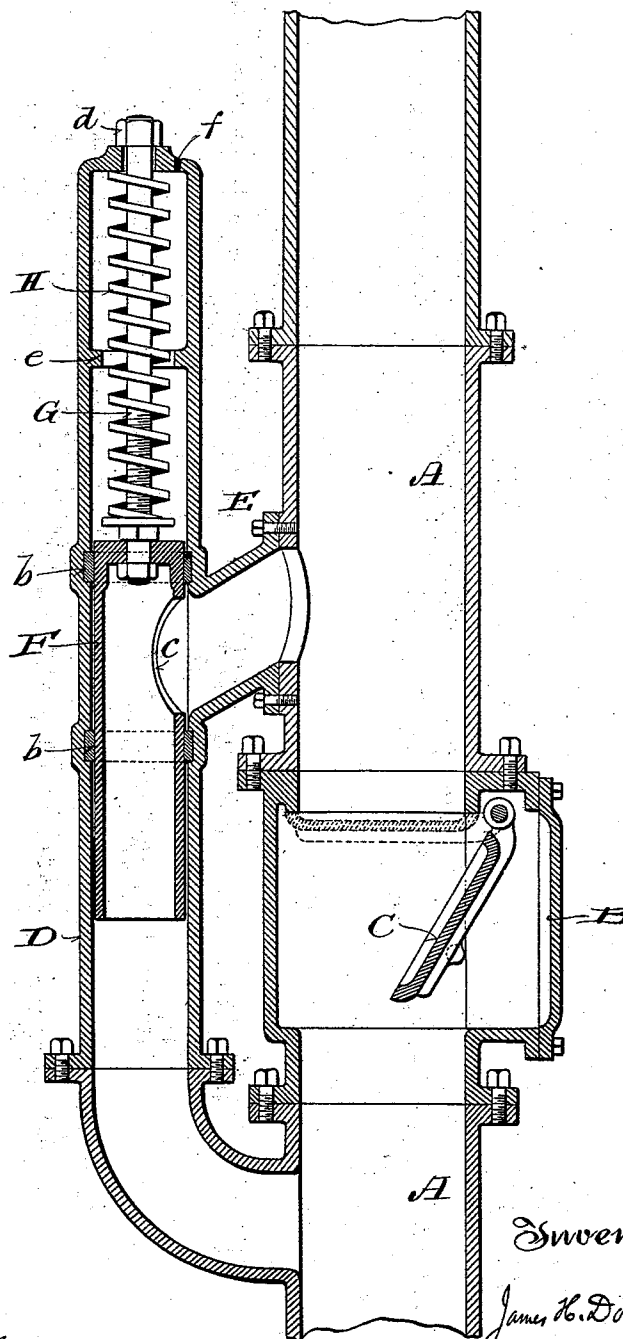


(No Model.)

J. H. DOUSMAN.
AUTOMATIC CHECK VALVE.

No. 531,304.

Patented Dec. 25, 1894.



Witnesses
Geo. W. Loring.
H. E. Oliphant

Inventor
James H. Dousman
By H. G. Underwood
Attorney

UNITED STATES PATENT OFFICE.

JAMES H. DOUSMAN, OF MILWAUKEE, WISCONSIN.

AUTOMATIC CHECK-VALVE.

SPECIFICATION forming part of Letters Patent No. 531,304, dated December 25, 1894.

Application filed November 21, 1893. Serial No. 491,529. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. DOUSMAN, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Automatic Check-Valves; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide a valve for use in connection with a water or other fluid supply system, whereby a stand-pipe, elevated tank or other reservoir forming part of the system will be cut-off at a predetermined pressure and likewise opened on a decrease of this pressure; and to this end said invention consists in certain peculiarities of construction and combination of parts hereinafter described with reference to the accompanying drawing and subsequently claimed.

The drawing represents a sectional view of a valve constructed according to my invention and in position for use.

Referring by letter to the drawing A represents a portion of water-way (or other fluid-way) that serves to connect a service-main and storage receptacle such as a stand-pipe, elevated tank or other reservoir, and in one form of my invention, as herein shown, this water-way may include a casing B containing a hinged valve C, but any suitable form of check-valve may be substituted. Leading from the water-way A on one side of the valve is a chamber D, and a branch E connects the chamber and said water-way on the other side of said valve.

The chamber D is provided with seats for packing-rings *b* that surround a cut off herein shown as a cylindrical piston F, the latter being closed at that end farthest from the water-main and provided with an opening *c* that comes in and out of register with the branch E above specified.

Connected to the closed end of the piston, by any suitable means, is a rod G that extends through an opening in the end of the chamber D farthest from the water-main, and said rod is provided with a nut *d* or other suitable stop opposed to said end of the chamber to limit movement of said piston in one direction, movement in the opposite direction be-

ing limited by an annular shoulder *e* or analogous means within said chamber.

Surrounding the rod G ahead of the piston is a spiral spring H having any degree of resistance that may be desirable, and the end of the chamber D in opposition to the spring may be provided with an air-port *f* to facilitate the working of said piston.

As herein shown the chamber D is of less diameter than that of the water-way A and the proportions of these diameters may be indefinitely varied without departure from my invention, although it is not essential to the success of the latter that there be any variation of said diameters.

When a check-valve C is employed in connection with the chamber D the arrangement of parts herein shown is adjacent to the service-main with which the water-way A is connected, and when the impetus of the current from said water-way is sufficient to overcome the dead weight resistance of said valve, the latter will be automatically closed against its seat, as shown by dotted lines. The valve being closed, the water is diverted into chamber D and again finds its way into the water-way A through the piston opening *c* and the branch E of said chamber. The spring H being of a predetermined resistance it will begin to yield when the water-pressure against the piston overcomes said resistance, and as the pressure increases said piston will gradually move ahead to entirely cut-off the supply from the water-way to the storage receptacle, this condition continuing until the pressure against the aforesaid piston decreases enough to permit expansion of said spring, or the pressure in the service main is less than that of the water accumulated in said storage receptacle, and in the latter event the check-valve C will automatically open.

From the foregoing it will be seen that a storage-receptacle can be automatically cut-off from a service-main when the pressure in the latter is increased to a material extent, as is usually the case in time of fire, and it also follows that this automatic cutting-off of the storage-chamber from the service-main will occur when said storage-receptacle is properly filled and a normal pressure maintained in the service-main.

Having now fully described my invention,

what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a fluid-way leading from a service-main to a storage-receptacle,
5 a check-valve arranged in the fluid-way, a chamber having openings communicating with said fluid-way in opposite directions from the check-valve, a hollow piston arranged within the chamber and provided with
10 an opening normally in register with the chamber-opening ahead of said check-valve, and a spring of predetermined resistance opposing forward movement of the piston, substantially as set forth.
- 15 2. The combination of a fluid-way leading from a service-pipe to a storage-receptacle, a

check-valve arranged in the fluid-way, a chamber having openings communicating with said fluid-way in opposite directions from the check-valve, a cut-off for the chamber opening ahead of said check-valve and a spring of predetermined resistance opposing forward movement of the cut-off, substantially as set forth.

In testimony that I claim the foregoing I
25 have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

JAMES H. DOUSMAN.

Witnesses:

H. G. UNDERWOOD,
N. E. OLIPHANT.