

(No Model.)

G. VINING.
VALVE.

No. 478,665.

Patented July 12, 1892.

Fig. 1

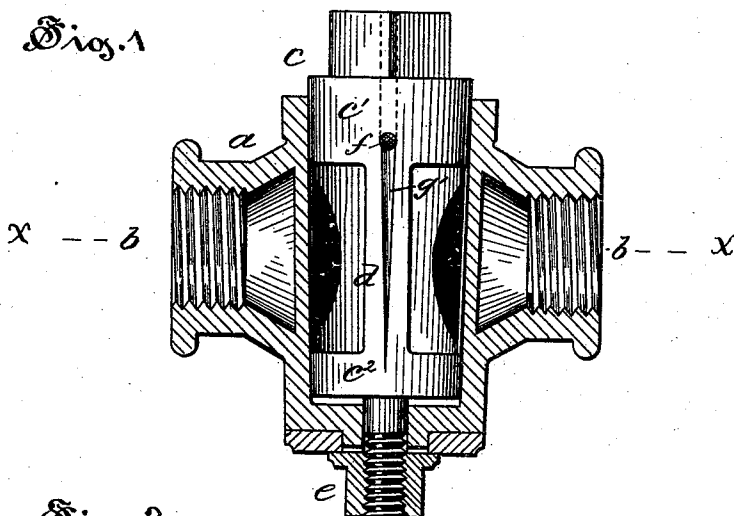


Fig. 2

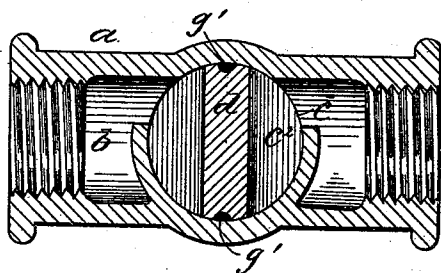
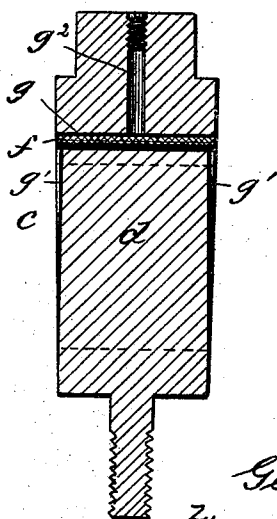


Fig. 3



Witnesses:

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Inventor,

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UNITED STATES PATENT OFFICE.

GEORGE VINING, OF HARTFORD, CONNECTICUT.

VALVE.

SPECIFICATION forming part of Letters Patent No. 478,665, dated July 12, 1892.

Application filed August 18, 1890. Serial No. 362,353. (No model.)

To all whom it may concern:

Be it known that I, GEORGE VINING, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Valves, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

My invention relates to the class of fluid cocks or valves that are adapted to be placed in a line of pipe for the purpose of controlling the flow of steam, water, or other fluid through the pipe; and its object is to provide a device of this class that shall be comparatively simple in construction and efficient in operation, while at the same time providing means for the ready lubrication of the moving parts.

To this end my invention consists in the combination of the several parts making up the cock or valve as a whole, as more particularly hereinafter described, and pointed out in the claim.

Referring to the drawings, Figure 1 is a view in vertical lengthwise section through a valve embodying my improvement. Fig. 2 is a detail view in section of the valve-body on line *xx* of Fig. 1, showing the diaphragm and the fluid-way. Fig. 3 is a detail view, in central cross-section, of the device at right angles to the plane of view in Fig. 1.

In the accompanying drawings the letter *a* denotes the body of the valve, that is preferably cast to shape with a fluid-way *b*, the hubs at the end of the fluid-way being provided with a screw-thread or like means of attaching the valve to a pipe. The fluid-way is enlarged in the gate-chamber, so as not to contract the way in a manner to diminish the flow of fluid through the valve-body. The gate *c*, that is preferably tapered and fits a tapered gate-socket in the valve-body, extends completely through it from top to bottom and is provided with the circular heads *c'* *c''*, that are usually integral with the gate, the center portion of which is cut away or thinned down, as at *d*, providing what is substantially a diaphragm, the edges of which are of sufficient width to efficiently close the fluid-way by contact with the sides of the gate-socket in the valve-body when the gate

is turned with the diaphragm crosswise of the fluid-way. As shown in Fig. 3, the fluid passes at one side of the gate and rises in the opposite side, serving to contain the diaphragm when the valve is opened. As soon as the gate is turned the end of the diaphragm begins to project into the fluid-way and to cut off the flow of fluid. The gate is held in place by a nut *e*, that is screwed upon a threaded stem on the lower end of the gate that projects through the valve-body, and it is held by frictional contact of the tapered sides in the gate-socket against lengthwise play in the socket.

An automatic oiling device *f* is provided in a wick or like fibrous substance located in a transverse chamber *g*, formed completely through the gate and communicating at its opposite ends with the groove *g'*, that extends along the edge of the diaphragm at opposite ends of this socket or opening *g*. A tubular connection *g''* extends from the chamber in which the wick is located to a point easy of access from the outside of the gate, usually in the center of the latter, and this tube is closed at its upper end with a screw turned into a threaded socket. This tubular chamber may be filled with oil, and the wick serves as an aid in storing and providing means for the proper lubrication of the gate.

An advantage offered by my improved form of valve is that the pressure of liquid upon the gate within the gate-socket is as strong in its tendency to lift the gate as it is to depress it, the pressures being balanced by the opposing surfaces of the heads that project beyond the central thin portion of the gate.

Another advantage resides in the fact that a gate constructed as described, having a comparatively thin portion, is manufactured cheaper than in a form where the full surface has to be finished.

Another advantage is found in the fact that when the gate is closed there is no chamber within the gate-socket where water or like fluid is retained. The chamber is at all times open to the inlet or the outlet passage, with no chance of the bursting of the valve by the freezing of any fluid within the chamber.

I claim as my invention—

In a fluid-valve, in combination with a valve-

body, a tapered rotary plug having a thin central portion, a transverse chamber extending through the plug, the grooves located in the edges of the thin central portion of the
5 plug and extending downward from the transverse chamber, an opening from the transverse chamber to the top of the plug, and a

fibrous packing located in the transverse chamber, all substantially as described.

GEORGE VINING.

Witnesses:

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