

Albert F. Allen,
Hose Pipe or Hydrant Valve.

117853

Fig. 1.

PATENTED AUG 8 1871.

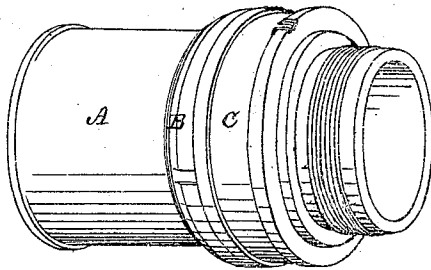


Fig. 2.

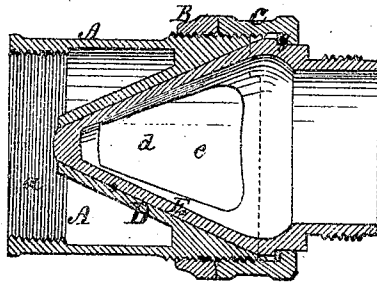
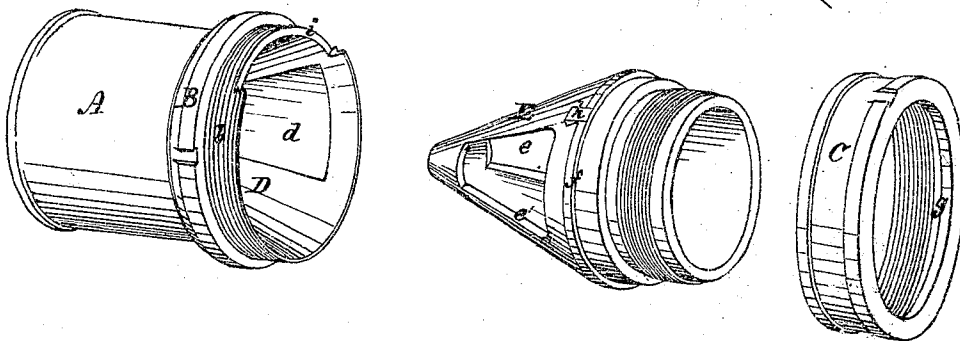


Fig. 3.



Witnesses.

Phil. H. Hopper,
J. A. Jackson,

Inventor.

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UNITED STATES PATENT OFFICE.

ALBERT F. ALLEN, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN HOSE-PIPE VALVES.

Specification forming part of Letters Patent No. 117,853, dated August 8, 1871.

To all whom it may concern:

Be it known that I, ALBERT F. ALLEN, of the city and county of Providence and State of Rhode Island, have invented a new and useful Hose-Pipe or Hydrant-Valve.

My invention consists in certain novel combinations and arrangements of a valve-chamber, an inverted conical valve-seat having a conical exterior, and a hollow conical valve.

Referring to the drawing, Figure 1 represents, in perspective, one of my valves contained within a hose-pipe connection. Fig. 2 represents the same in longitudinal vertical section. Fig. 3 represents, separately, in perspective, the supply-chamber and valve proper.

For the purpose of illustration I will describe my valve as adapted for use with a hose-pipe.

A is the valve or supply-chamber. It is cylindrical and provided at its hose end with an interior screw, *a*, for connection with a hose-coupling. Beyond this screw the interior of the supply-chamber is enlarged to a greater diameter. The other end of the supply-chamber is externally enlarged at *b*, and provided with a circumferential screw for receiving a lock-nut or ring, B, and a coupling-ring or collar, C, hereafter more particularly described. D is the valve-seat. It consists of a conical shell with a turned or ground interior and a rough exterior. It is connected with and forms a part of the walls of the supply-chamber at its large end. Its tip extends into the supply-chamber longitudinally toward the immediate source of supply. The axis of the cone is parallel with the longitudinal central line of the supply-chamber. Two ports, *d* and *d'*, are cut through the sides of the cone. They are triangular in outline, and extend from a point near its tip to the large end. The area of the two openings or ports is a little less than one-half of the superficial area of the seat. E is the valve proper. It also consists of a conical shell with a turned or ground exterior and a rough interior. Its exterior is fitted to the interior of the valve-seat. Two ports, *e* and *e'*, are cut through its periphery, corresponding in size and form with the ports *d* and *d'* already described. The exterior of the valve is provided with a shoulder, *f*, with which a rim, *g*, on the coupling-ring C engages for holding the valve to its seat when the ring is screwed to the valve or supply-chamber. After having been so connected the lock-nut or ring B is turned up tight

against the coupling-ring to prevent its turning. The outer end of the valve proper is provided with a screw-thread for connecting therewith a hose-pipe. At the base of the cone on the valve, in its exterior periphery, is a stop-block, *h*, which, when the valve is in position, projects into a shouldered space, *i*, cut in the adjacent edge of the valve or supply-chamber, and confines the rotary movement of the valve within the limits of the shouldered space. When the stop-block is against one shoulder the valve is open; when against the other it is closed, the ports being, accordingly, in or out of coincidence. As exhibited in the drawing, the base of the hose-pipe is exhibited with a lesser diameter than the hose with which it is to be employed. By having the valve and its seat conical within and without it becomes practicable to give the ports an area or delivery capacity but slightly less than that of the hose, and equal to or greater than the delivery capacity of the hose-pipe. Constructed as described, a little more than a quarter-turn of the valve opens or closes it.

It is obvious that my valve is applicable to many uses, and, when desired, may be as well operated by a vertical valve-stem, properly connected, as it can by the application of power to its periphery, as herein described. For hydrants and other analogous purposes where a quickly-operated cut-off is desired, and one which will not materially obstruct the water-way, my valve is particularly valuable.

My valve is readily combined with a hose-coupling in a manner which will be readily obvious to persons skilled in the art. This valve, in connection with hose and hose-pipes, has a special value for use with my automatic relief-valve, patented April 18, 1871, as it places the flow of water under the complete control of the hose-men, and gives them, however remote from the engine they may be, the power to readily communicate with the person in charge of the engine or pump.

I am aware that hydrant-valves operated by valve-stems have heretofore been constructed with conical valve-seats and valves; but in such cases the cones have been projected in a direction corresponding with the direction of the water-flow. Therefore the water, on its course to delivery through such valves, enters the conical interior, finds exit at opposite ports, and the two currents thus formed subsequently unite above or

beyond the apex of the cone. I am not aware that any such were ever constructed with a view to obtaining great delivery capacity. In my improved valve the cones project into the valve or supply-chamber toward the immediate source of supply. The bases of the cones are as large as the interior of the adjacent chamber will admit, and they are also extended or lengthened as far as is practicable. By this arrangement or construction I am enabled to give my two semi-triangular delivery-ports a delivery capacity nearly equal to the delivery capacity of the hose or pipe with which the valve is used. The water, in its course to delivery, surrounds the exterior of the conical seat, and the currents which enter from the opposite ports at once unite within the valve into a solid column, and thus proceed to final delivery.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In combination with a valve or supply-chamber, the inverted conical valve-seat, with conical exterior, extending into the chamber toward the immediate source of supply, and the hollow rotary valve, the two being provided with corresponding elongated triangular ports, substantially as described, for the purposes specified.

2. The inverted conical valve-seat D with a conical exterior, the valve-chamber A and the hollow rotary valve E, the two being provided with corresponding elongated triangular ports, combined substantially as described, and operated peripherically, as and for the purposes specified.

ALBERT F. ALLEN.

Witnesses:

HENRY MARTIN,
CHARLES SELDEN.