

UNITED STATES PATENT OFFICE.

LOUIS N. DAVIS, OF WESTCHESTER, PENNSYLVANIA.

VALVE.

SPECIFICATION forming part of Letters Patent No. 735,719, dated August 11, 1903.

Application filed October 29, 1902. Serial No. 129,204. (No model.)

To all whom it may concern:

Be it known that I, LOUIS N. DAVIS, a citizen of the United States, residing at Westchester, in the county of Chester and State of Pennsylvania, have invented certain Improvements in Valves, of which the following is a specification.

This invention relates to gage-valves, and is adapted for effecting a determinate regulation of the amount of water, steam, gas, or other fluid that shall pass therethrough. It is designed to provide means whereby a valve may be readily set, so that the definite proportion desired of its total capacity may be passed therethrough.

A further object is to provide for the automatic packing and lubrication of the mechanism when employing steam. It is also designed to provide a simple and economical construction of reliable operation.

The nature and characteristic features of the invention will more fully appear by reference to the following description and the accompanying drawings in illustration thereof, of which—

Figure 1 represents an elevation of an ordinary valve-casing with my improvements applied thereto. Fig. 2 is a vertical sectional view of the construction illustrated in Fig. 1. Fig. 3 is a sectional view taken on the line 3 3 of Fig. 2. Fig. 4 represents an elevation of the stationary cylinder forming the valve-seat with the cap fixed thereto. Fig. 5 represents a plan view of the graduated nut or cap having the valve-stem passing therethrough. Fig. 6 represents an elevation of the construction shown in Fig. 5, and Figs. 7, 8, 9, and 10 represent developed views of successive relations of the cock to its seat and the indicator to the graduated cap.

As shown in the drawings, the casing 1, having the branches 2 and 3, is provided with a screw-cap 4, having connected therewith the hollow stem or sleeve 5 and the hollow cylinder 6, the cylinder having the internal grooves 7, the ports or perforations 8, and the tapered surface 9, fitting in the seat 10 of the casing. A hollow cylinder 11, having the ports or perforations 12 adapted to register with the perforations 8, forms a cock movable in the hollow cylinder 6, providing a seat therefor, and a stem 13, connected with

the cock, projects upward through the sleeve 5 and the cap 14 thereon and terminates in the handle 15, being provided with the pin 16, adapted to be engaged by the graduated notches 17 and the stops 18 of the cap. A coiled spring 19 is sleeved on the stem 13 within the sleeve 5 and bears against the nut 14 and the cock 11 to hold the latter in place and to hold the pin or indicator 16 in the position to which it may be turned as in its relation to the notch 17 of the graduated scale with which it is engaged.

In setting the valve or moving it from the closed position when the indicator 16 is in contact with a pin 18 the handle 15 is lifted and turned until the indicating-pin 16 can be dropped into the required notch 17, which indicates the position of the cock for effecting the proportionate opening of the valve desired, the spring holding the parts in the position to which they have been brought. There is then in registration either one, two, three, or four of the ports 8 of the seat and the ports 12 of the cock, permitting the flow of one-fourth, one-half, three-fourths, or all of the total capacity from the branch 2 to the branch 3. For this proportionate arrangement the cock is provided with two tiers of perforations, of which the upper tier has two and the lower tier four perforations alined so that upon the revolution of the cock they will register with the four perforations of the seat to successively increase the port area. It will be understood that the number of holes in the respective cylinders may be varied to provide the proportion flow desired.

In the use of steam or other condensing fluid its tendency to work between the seat 6 and the cock 11 results in filling the capillary grooves 7 with the water of condensation, which provides a packing or seal for the joint as well as a bearing and lubricant for the valve.

Having described my invention, I claim—

1. In a valve, a casing having branches, an outer cylinder seated therein and having a plurality of ports through which said branches communicate, and an inner cylinder revoluble in said outer cylinder and having a plurality of ports adapted to register with the ports of said outer cylinder, the ports of said cylinders being arranged so as

to permit various numbers to be brought into registration to vary the flow of fluid therethrough, substantially as specified.

2. In a valve, a casing having branches, a
5 cap thereon, a cylinder depending from said cap and seated in said casing, said cylinder having a plurality of ports through which said branches communicate, and a revoluble
10 cylinder telescoping with said first cylinder and having a plurality of ports adapted to register with the ports of said first cylinder, the ports of the said cylinders being arranged
15 so as to permit various numbers to be brought into registration to vary the flow of fluid therethrough, substantially as specified.

3. In a valve, a casing, a cap for said casing, a sleeve projecting upwardly from said cap, a cylindrical valve-seat extending downwardly from said cap into said casing, said
20 seat having one or more ports, a cylindrical

valve having one or more ports adapted to register with the port or ports of said seat, the respective ports being adapted for the determinate regulation of the flow of fluid therethrough, a stem fixed to said valve and
25 extending through said sleeve, a pin fixed to said stem for indicating and holding the position of said valve, a graduated scale on said sleeve having notches for engaging said pin, and a spring on said stem for holding said pin
30 in engagement with the respective notches, substantially as specified.

In testimony whereof I have hereunto set my hand, this 27th day of October, A. D. 1902, in the presence of the subscribing witnesses. 35

LOUIS N. DAVIS.

Witnesses:

JOHN F. MCBRIDE,
DAVIS BEAUMONT.