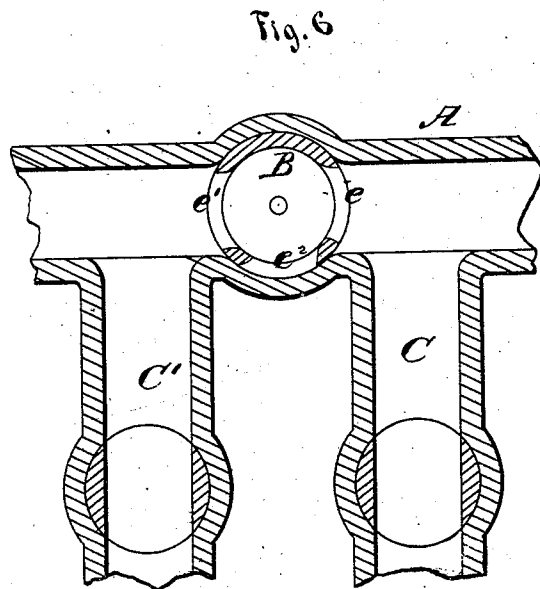
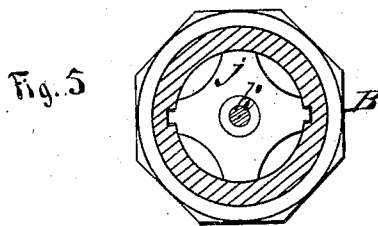
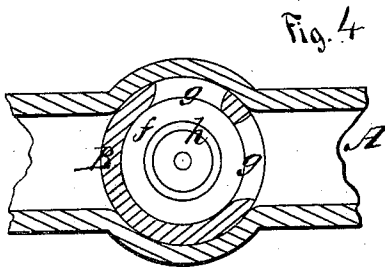
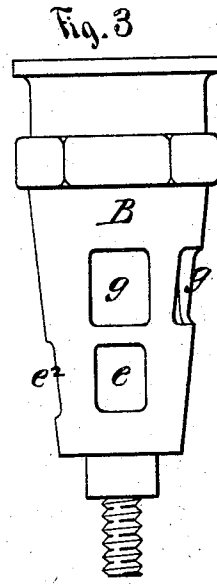
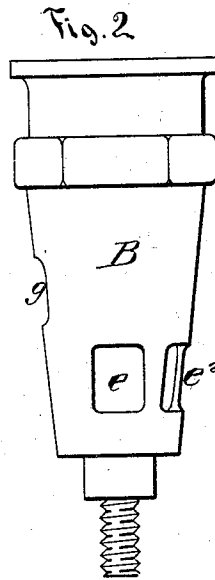
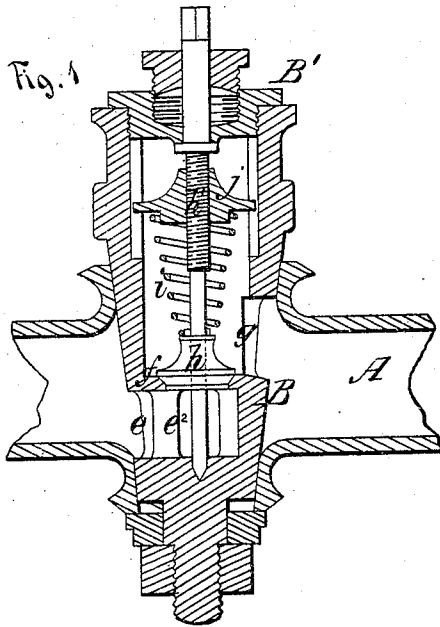


E. MILLER.  
Valve-Plugs.

No. 150,343.

Patented April 28, 1874.



Witnesses.  
George E. Upham.  
Robert Everett.

Inventor.  
Ezra Miller  
Chipman & Foscar & Co  
Attys.

# UNITED STATES PATENT OFFICE.

EZRA MILLER, OF NEW YORK, N. Y.

## IMPROVEMENT IN VALVE-PLUGS.

Specification forming part of Letters Patent No. **150,343**, dated April 28, 1874; application filed January 28, 1874.

### CASE B.

*To all whom it may concern:*

Be it known that I, EZRA MILLER, of New York, in the county of New York and State of New York, have invented a new and valuable Improvement in Valve-Plugs; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a vertical sectional view of my valve-plug. Figs. 2 and 3 are side elevations of the same. Figs. 4, 5, and 6 are horizontal sections of the same.

This invention has relation to a valve or cock plug which is applicable to my improved water-registering apparatus, for which application for Letters Patent of the United States was made by me on the 3d day of January, A. D. 1874.

The object of my present invention is to so construct the valve or cock plug above referred to that, while it serves the purpose of regulating the flow of water through the main pipe and registering mechanism, it will automatically prevent any sudden check or variation in the force of water in the main from materially influencing the said registering mechanism, as will be hereinafter explained.

The following is a description of my improved valve or cock plug:

In the annexed drawings, A designates the main pipe, to which the cock-plug B is applied, and C C' designate two branch pipes, one of which, C, leads to a registering mechanism, (not necessary to be represented in the drawing,) and the other pipe, C', leads from said mechanism back again into the pipe A. The cock-plug B is located in the pipe A between the ends of the pipes C C', and is constructed with three ports, *e e' e''*, below a valve-seat diaphragm, *f*, and also with two ports, *g g*, above this diaphragm. When the two ports *e e'* are fully in line with the main pipe A, water will not flow through the pipes which lead to and from the registering mechanism; but

by turning the cock about its axis more or less, any desired amount of the water may be diverted from a direct course through the main pipe, and caused to flow through the pipes C C'. When this latter adjustment is made the port *e''* will be more or less exposed in line with the main pipe A, and when this port *e''* is adjusted fully into line with the main pipe all the water from the latter will be diverted through the branch pipes. Above the diaphragm *f* the plug B is chambered, to receive a valve, *h*, a spring, *i*, and an adjustable nut, *j*, which latter is on a screw-threaded valve-stem, *h'*. The valve *h* is seated on the diaphragm *f*, and is held down on its seat by means of the spring *i*, which is compressed between the valve and the nut *j*, as shown in Fig. 1. This nut *j* is adjustable up and down by turning the valve-stem, but it (the nut) is prevented from turning by means of short wings on it, which are received into grooves made vertically into the bore of the plug B. The valve-stem *h'* passes through the cap B' of the plug B, and through a packing suitably applied thereto, and it has a prismatic head for receiving a turn-key, by means of which the pressure of the spring *s* on the valve *h* can be nicely adjusted. Valve *h* is applied loosely on its stem. The object of the yielding valve is to prevent any sudden increase in the flow of water through the main pipe A from reacting, to any great degree, on the registering mechanism, for, should a sudden shock occur in the main pipe, the valve *h* will rise, and allow a quantity of water to pass through the plug B above the diaphragm, and thence through the ports *g g*, and thus modifying the shock.

I do not under this application claim a registering mechanism combined with the improved regulating-cock, as such mechanism forms the subject of my application for a patent filed January 3, 1874, and above referred to.

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

1. A valve-plug having a diaphragm, *f*, with yielding relief-valve, and below the same both

entry and exit ports on opposite sides, and above the same exit-ports only, substantially as specified.

2. The valve-plug B, constructed with ports  $e$   $e^1$   $e^2$  below the diaphragm  $f$ , and with ports  $g$   $g$  above this diaphragm, in combination with valve  $h$ , screw-stem  $h'$ , spring  $i$ , and nut  $j$ , substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

EZRA MILLER.

Witnesses:

J. F. DUINKERKE,  
JOHN BISSELL.