

SAMUEL J. PEET.  
Stop Valve.

No. 124,850.

Patented March 19, 1872.

Fig. 1.

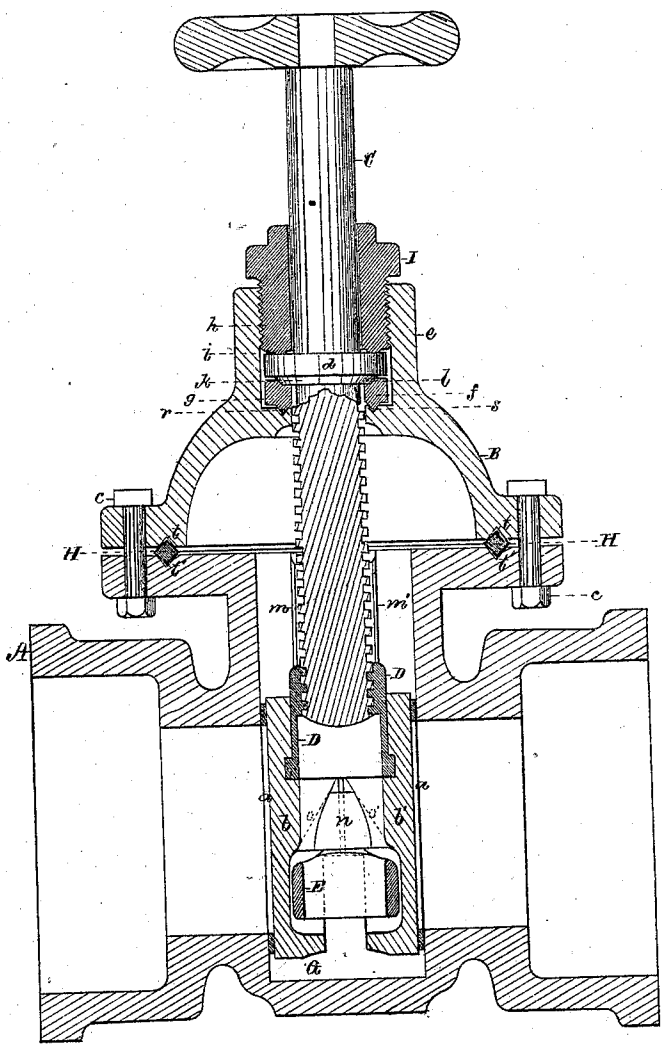
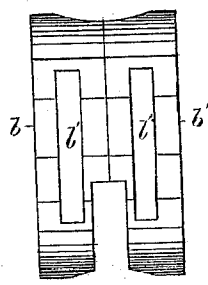


Fig. 3.



Witnesses.

C. E. Stone

A. C. Hale

S. J. Peet.

by his attorney.

A. R. Hale

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Fig. 2.

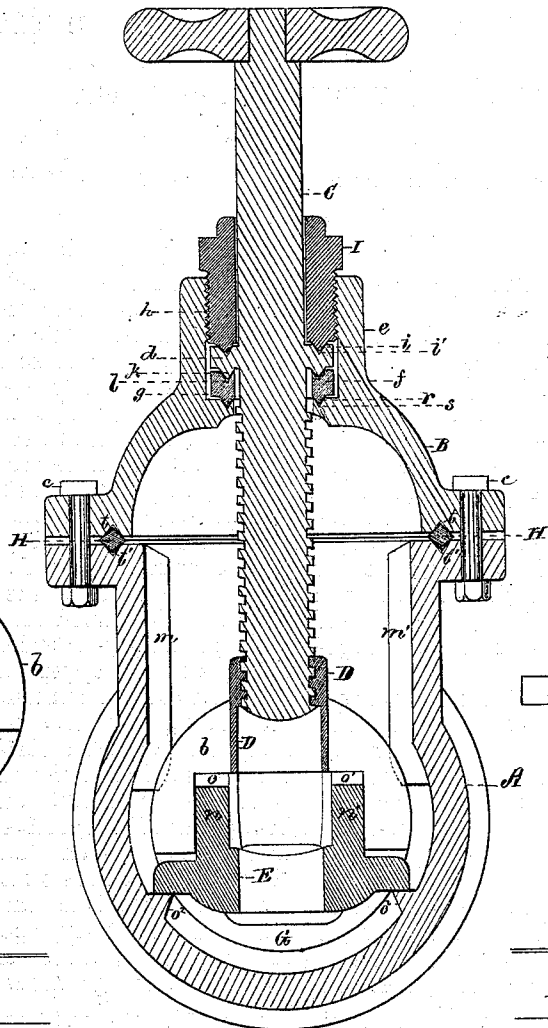


Fig. 4.

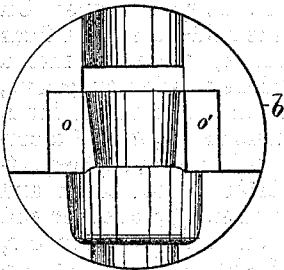
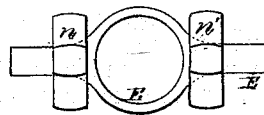


Fig. 6.



Witnesses.

L. E. Stone

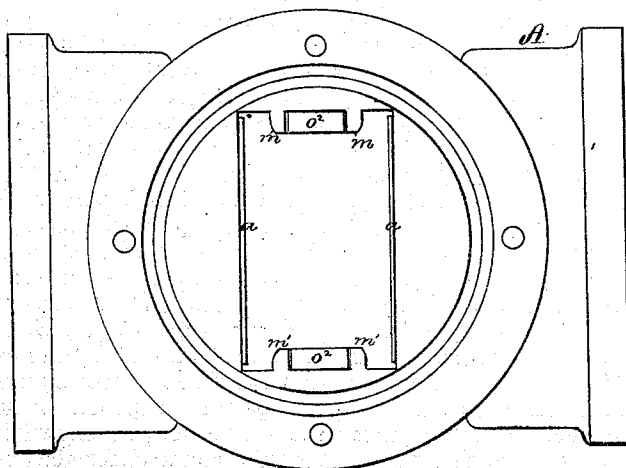
F. C. Hale.

S. J. Peet.

by his attorney.

F. P. Hale

Fig. 5.



# UNITED STATES PATENT OFFICE.

SAMUEL J. PEET, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN STOP-VALVES.

Specification forming part of Letters Patent No. 124,850, dated March 19, 1872.

*To all whom it may concern:*

Be it known that I, SAMUEL J. PEET, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Water-Gate or Valve; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figures 1 and 2 represent vertical sectional views, taken at right angles to each other, of a water-gate or valve embodying my invention. Fig. 3 is a side view of the duplex valve or pair of valve-plates or disks. Fig. 4 is an inside view of one of the disks. Fig. 5 is a top view of the shell or case with the bonnet removed; and Fig. 6 is a top view of the wedge-plate and wedges.

My invention has for its object the production of a water-gate or valve whose metallic joints or connections shall be nearly or perfectly water and steam tight; and consists in the peculiar method of packing the stem and bonnet of the shell and closing the valve-disks upon their seats, whereby the said object is attained.

In the said drawing, A denotes the shell or case of the valve through which a straight passage for the flowage of water or steam is made. *a a'* are two seats, which are formed on the internal opposite sides of the said passage and against which the two valve-disks *b b'* close. B is the bonnet, whose flanged base is connected with the flanged top of the shell by means of screws, *cc*, &c., passing through the two flanges. For the purpose of making a perfectly-tight connection between the bonnet and the shell, I form, in the contiguous faces of each of the flanged parts thereof, an annular V-shaped groove, *tt'*, of corresponding diameters. Within these channels or grooves I apply an annulus, H, of a double V, or diamond-shape, in cross-section. This packing I make of lead, and so construct the same that its angles or upper and lower apices shall not impinge against the bottoms of the grooves, but so that their sides shall abut against the sides or inclined parts of the channel, whereby four packed joints shall be made, and by screwing down the afore-mentioned screws *cc* a most perfect and reliable connection of the parts will be insured. C is the stem, which extends down through the neck of the bonnet, and car-

ries on its lower end a flanged traversing-nut, D, to which the valve-disks *b b'* are affixed. On the said stem is an annular collar, *d*, which is disposed within the neck *e* of the bonnet and rests upon a brass or metallic washer, *f*, which, in turn, rests upon the bottom of the chamber *g* of the neck. I is a screw-nut, which screws into the said neck and down upon the collar *d*, the same serving to prevent any longitudinal movement of the stem, while it allows it to rotate upon its axis.

For the purpose of perfectly packing the stem I make use of the following means: On the lower surface of the said screw I, I form a circular V-shaped rib, *i*, which fits into a correspondingly-formed depression or groove, *i'*, made in the upper surface of the collar *d*, a similar-shaped annulus or rib, *k*, and a corresponding channel, *l*, being formed, respectively, on the under surface of the collar and the top surface of the washer *f*; another and similar annular rib, *r*, and fellow groove *s*, being formed, respectively, on the under surface of the washer and the bottom of the chamber *g*. All the series of annular ribs are ground and so formed that the vertices of their angles shall not impinge against the bottom of the grooves, but so made that each shall have two bearing-surfaces upon opposite walls thereof, whereby a double protection is afforded at each joint, such ribs being forced down upon their seats by means of the screw *h*, with any desirable degree of force, whereby a most perfect steam or water tight connection is insured. The said disks *b b'* are guided in their vertical movements by means of channels *l' l'*, formed, respectively, on the opposite sides of the disks, (as shown in Fig. 3,) operating in conjunction with vertical ribs, *m m' m m'*, disposed on opposite walls of the shell, as shown in Fig. 5. Each of the said disks is connected independently and loosely with the flanged traversing-nut D, and each has two inclined recesses, *o o'*, formed in its inner face to receive two wedges, *n n'*, disposed near the ends of a wedge-carrying plate, E, through which the stem slides, the said plate being stopped in its downward movement by means of projections or lugs *o<sup>2</sup> o<sup>2</sup>*, disposed on the inner surface of the valve-shell, as shown in Fig. 2. G is a recess or chamber formed underneath the disks when at their lowest position, the same being

to receive any sediment that may be in the water, or which may be removed from the valve-seats by the closing of the disks. The employment of the double wedges is designed for large-sized water-gates, they being especially useful when the valve-plates used are more than a foot in diameter, as a single wedge arranged centrally between the two disks would admit of too great oscillation of the disks while being opened and closed.

The operation of the disks and wedges is as follows: To close the valve or the disks upon their seats we have simply to rotate the screw-stem in the proper direction. The disk being hung to the traversing-nut D, and carrying the wedge-plate and wedges between them will be forced downward until the projecting ends of the wedge-plate strike upon the lugs  $o^2 o^2$ , when the wedges become stationary, and by their action against the inclines on the inner faces of the disks the latter will be forced in close contact with their seats. To open the disks the stem is to be rotated in the opposite direction to that used in closing them. As soon as the disks begin to start they are instantaneously relieved from their

pressure against their seats, so as to produce but little friction or wear of either the disks or their seats. The employment of the two wedges arranged as described serves to preserve the disks from too great lateral play under the pressure of the water or steam while being operated.

Having described my invention, what I claim is as follows:

1. As a metallic packing for the stem of a valve, an annular V-shaped rib and its fellow groove, or series of such ribs and grooves, formed in the appliances disposed around the stem and forced into contact by means of the cap-screw  $h$ , in manner and for the purpose set forth.

2. The combination of the wedge-plate E, the two wedges  $n n'$ , lugs  $o^2 o^2$ , with the disks  $b b'$ , the stem and traversing-nut D, the whole being constructed, arranged, and applied together and within the shell of the valve, in manner and for the purpose specified.

SAMUEL J. PEET.

Witnesses:

F. P. HALE,

F. C. HALE.