(No Model.)

P. G. VAN WIE.

GLOBE COCK OR VALVE.

No. 250,405. Patented Dec. 6, 1881.

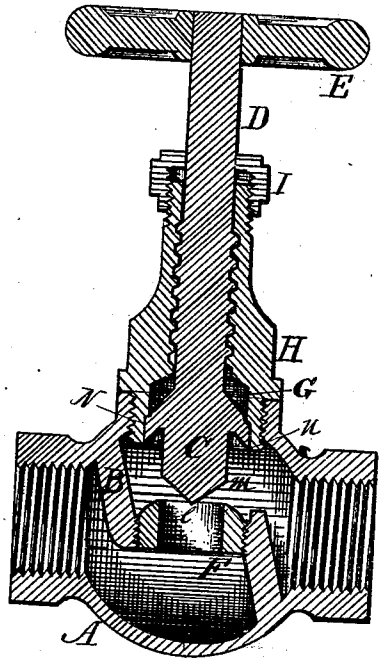


Fig. 1.

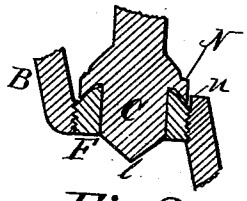


Fig. 2.

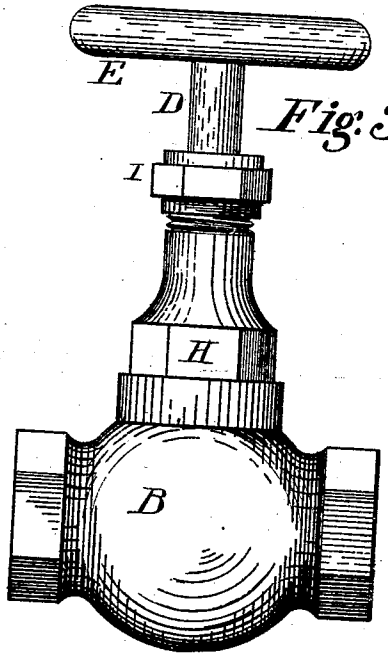


Fig. 3.

Witness:
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UNITED STATES PATENT OFFICE.

PETER G. VAN WIE, OF CLEVELAND, OHIO.

GLOBE COCK OR VALVE.

SPECIFICATION forming part of Letters Patent No. 250,405, dated December 6, 1881.

Application filed November 24, 1880. (No model.)

To all whom it may concern:

Be it known that I, PETER G. VAN WIE, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Globe Cocks or Valves, which improvements are fully set forth in the following specification and accompanying drawings.

This invention relates to certain improvements in globe cocks or valves; and it consists in providing said cocks with a peculiar valve and valve-seat, the object of which is to so control and regulate the flow or passage of steam, vapor, or liquid through the said valve in such a manner that the points or parts of contact of the said valve and its seat, which are used for closing or shutting off, are so located and arranged that said parts are entirely relieved from the injurious or damaging effects from the flow of steam under pressure, now so common in the usual cone-shaped valve and seat. This result I accomplish by making the valve-opening with straight parallel sides, and making the valve-closer in the form of a stopper or plug with straight parallel sides and fitting into said opening some distance, and also providing said stopper or plug with an annular flange or projection having a cone-shaped cavity surrounding said stopper or plug, which, when the valve is closed, fits and rests over the outer upper edge of the valve-seat.

In the accompanying drawings, Figure 1 is a longitudinal and vertical section of a globe-valve, showing my improvements with valve open. Fig. 2 is a detached view of the valve and seat in section. Fig. 3 is an exterior elevation of the aforesaid globe cock or valve.

A is the body of the globe valve or cock, which is of the usual form. B is the partition in the said body, whereby, in connection with the closed valve, the passage of steam, gas, vapor, or liquid is arrested. C is the valve, which may be a part of or attached to the valve-stem D. E is the handle, attached to the stem D, for operating the valve. F is the valve-seat, which may be removable or constitute a part of the partition. G is a recess in the cap H, into which the valve passes when opened. I is the packing-nut on the valve-stem. N is an annular flange on the valve C, having its under side recessed, so as to fit over the outer edge of the seat F.

In the usual construction of globe cocks or valves the surfaces of the valve and valve-seat, which are in contact and form the joint when the valve is closed, also comprise the surfaces between which the steam passes in its flow through the valve. These surfaces are thus subjected to the cutting and injurious effects of the rapid flow of steam between them, and are soon impaired thereby, and are liable to become loose-jointed, and will not shut sufficiently tight to prevent the escape of steam. The said surfaces consequently require frequent regrinding to keep them in order. This objection I entirely overcome by my construction and arrangement of valve and its seat, which is by placing the joint-surfaces out of reach of the current of steam and arresting the current of steam while the valve is closing upon or opening from its seat by presenting surfaces to the action of the steam which, if cut or defaced, do not injure the joint-surfaces.

The operation of my valve is as follows: In closing, the lower extremity or point *l* of the valve C first enters the opening in the seat F, the passage of the steam is gradually arrested, and the quantity regulated as the valve is screwed down until the edge *m* has entered the opening of the seat; then the pressure and current of the steam is so much arrested that the outer edge, *n*, of the flange N of the valve C is permitted to form a steam-tight joint on the outer portion of the upper surface of the valve-seat F, as shown in Fig. 2. In opening the valve the outer edge, *n*, leaves its seat, while the plug or stopper is still within the opening in the valve-seat F, thus relieving the pressure on the joint at the outer edge, *n*, while opening. When the valve is open it passes into the recess G and comes in contact with the cap H at the shoulder *p*, thereby preventing the passage of steam to the valve-stem and packing, thus relieving the packing and valve from the pressure and injurious effects of the steam.

The valve-seat F is usually made of brass, and may be made removable, so that the body

of the valve may be made of iron; otherwise the whole body would have to be made of brass. This is designed to economize the construction of the valve, the opening where the cap H is placed being sufficiently large to enable the brass bushing for valve-seat to be easily inserted.

Having described my invention, I claim—

1. In a globe cock or valve, the combination of the straight parallel-sided valve C, having the annular flange or projection N, and the conical point, with the straight parallel-sided valve-seat F, beveled to receive the flange N, substantially as specified.

2. In a globe cock or valve, the combination of a straight parallel-sided valve, C, having annular flange or projection N, and the conical point, with the recessed cap H, substantially as specified.

3. In a globe cock or valve, the combination of a removable valve-seat, F, beveled to receive the flange N, with the body A, having partition B, and valve C, having flange N, substantially as shown and described.

P. G. VAN WIE.

Witnesses:
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