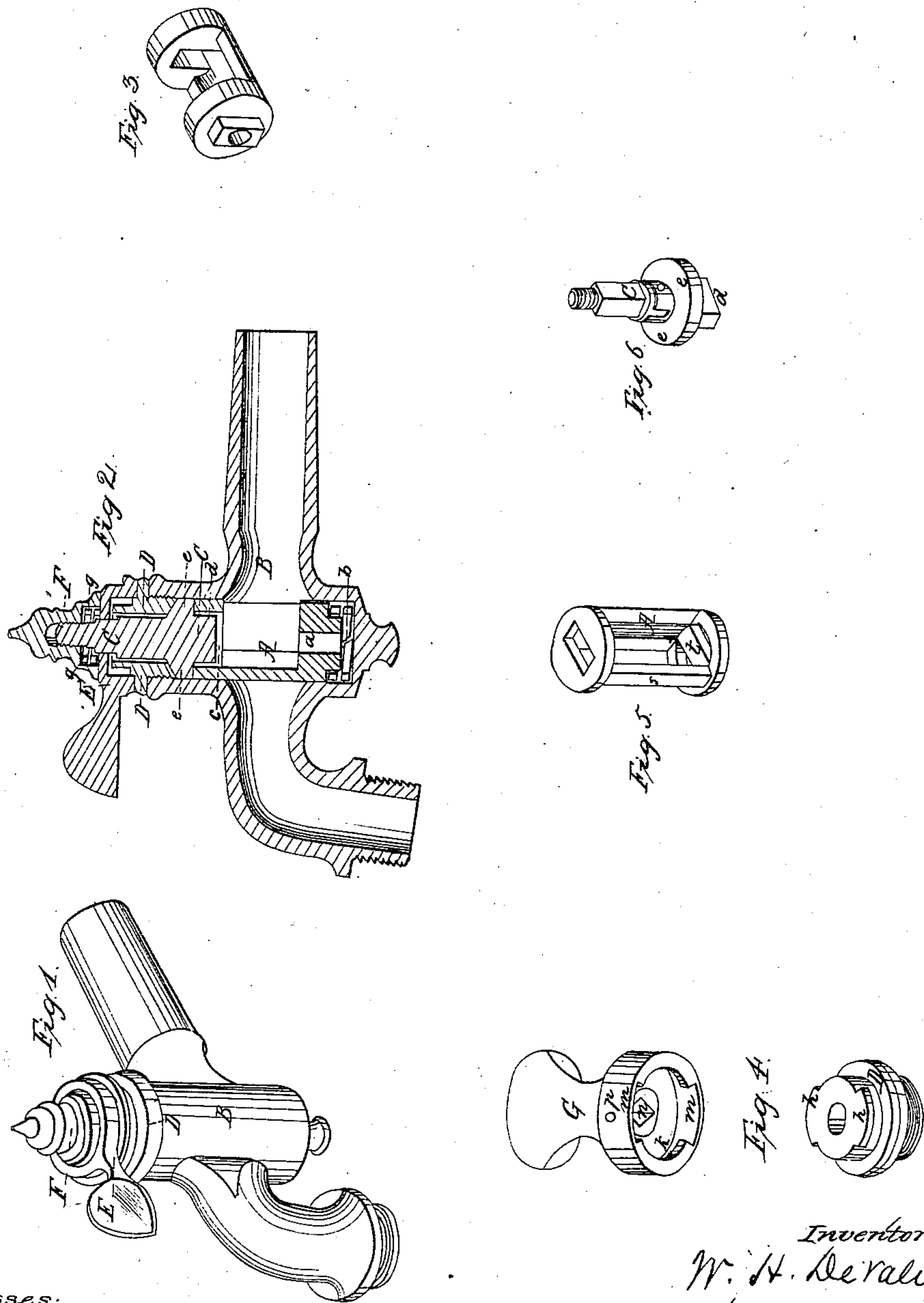


W. H. De Valin,

Cock.

No 84,617.

Patented Dec. 1, 1868.



Witnesses:

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Inventor:

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by

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his atty.

United States Patent Office.

W. H. DE VALIN, OF SACRAMENTO, CALIFORNIA.

Letters Patent No. 84,617, dated December 1, 1868.

IMPROVED STEAM, GAS, AND WATER-STOP-COCK.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that I, W. H. DE VALIN, of Sacramento, in the county of Sacramento, and State of California, have invented certain new and useful Improvements in Steam, Gas, and Water-Stop-Cocks; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a stop-cock made in accordance with my invention.

Figure 2 represents a longitudinal vertical section of the same.

Figures 3, 4, 5, and 6 are views of detached parts and modifications hereinafter explained.

My invention relates to stop-cocks, such as described in Letters Patent, No. 54,305, granted to me, May 1, 1866, that is to say, cocks in which a plug or valve is combined with a chamber formed within the case, but outside of the valve, in such manner as to allow steam, water, or gas to pass through the valve, and lift and press it against its seat, for the purpose of preventing leakage.

My object in the improvements which are the subject of the present patent, is to allow the valve and other working-parts to accommodate themselves to the wear in the direction of the pressure, without cramping or interfering with each other, thereby increasing the durability and effectiveness of the cock.

To accomplish this result, I proceed as follows:

The valve or plug A, which has its seat in the case B, and is provided with an aperture, *a*, for the admission of the fluid or liquid into the chamber *b*, for the purposes set forth in the above-mentioned Letters Patent, is separate from its stem, C, but has formed in its top an opening, *c*, which receives a tenon, *d*, on the lower end of the valve-stem, the opening being slightly longer than the tenon, as shown in fig. 2, to allow for the wear and consequent movement of the valve.

The stem is provided with a flange, *e*, the under side of which is in contact with the valve, while its upper face fits against the base of the cap D, which closes the valve-chamber of the cock.

The contiguous faces of the cap and the flange should form a tight joint, and they may be made either flat, or concave and convex, as shown in the drawings.

When they have the latter form, the curves should be true segments of the same circle, so that any oscillation of the stem, when it is operated, will not cause its displacement, nor throw it from its seat.

In order to still further prevent this oscillation from being productive of any injurious effects, the stem may be jointed at a point above the flange *e*, as shown in fig. 6, thus allowing it to work somewhat in the manner of a ball in a socket.

The stem passes up loosely through the cap D, and its square upper end is received in a square socket, cut through the handle E, by which the stem, and, consequently, the valve is operated.

The handle is recessed so as to fit over the cap D, which thus forms the support or bearing upon which the handle turns, thereby removing from the stem all strain when the handle is moved, and bringing such strain upon the cap D, which, having no connection with the valve or other working-parts, is much better calculated to resist it.

In order to hold the handle in place, a cap or thimble, F, is screwed down upon the screw-threaded upper end of the valve-stem in the manner shown in fig. 2.

This cap is recessed so as to receive a spiral or other spring, *g*, which encircles the valve-stem, and is compressed between the inner face of the cap, F, and the upper face of the handle.

By the action of the spring and cap, the handle is not only held down in place, but the flange *e* of the stem is at all times held tightly against its seat.

Instead of the handle E, the same kind of handle employed in ordinary cocks may be used; or the cap D may have formed upon its upper part flanges or rings, *h*, of sectoral shape, which will work in grooves *k* formed in the handle or knob G, as shown in fig. 4, portions, *m*, of the interior of the recessed knob being cut away so as to admit of the insertion or withdrawal of the wings.

The square upper end of the valve-stem is received in the correspondingly-shaped socket *n* of the knob.

When the knob and cap are united, a screw or pin inserted in the hole *p* will prevent the knob from being turned far enough to disengage the wings from their grooves, and will also serve as a stop or guide in opening or closing the cock. When this device is used, it is quite necessary that the spring should be placed within the case and under the valve.

I have shown in fig. 5 the form of valve I prefer to employ in large cocks.

The bar *s* at the back is intended to stiffen the valve, and the piece *t*, extending across the aperture in the bottom, serves as a centre, to finish it.

The valve may be made with a double face, like an ordinary plug.

Having now described my invention, and the manner in which the same is or may be carried into effect,

What I claim, and desire to secure by Letters Patent, is as follows:

1. In a stop-cock, in which the valve or plug is arranged within the case, in the manner described, I claim the combination of the valve with a disconnected flanged valve-stem, having its seat or bearing against the cap by which the valve-chamber is closed, and held in place by means of a handle, arranged and operating substantially as herein described.

2. The combination and arrangement of the valve-stem and cap for closing the valve-chamber; with the handle for operating the stem, and the cap and spring for retaining the handle in place, and holding said stem up in its seat, substantially as herein specified.

3. A stop-cock, such as described, having the valve-

stem, formed in two parts, hinged together above the point where the stem bears or fits against the cap, for closing the valve-chamber.

4. The recessed and grooved handle and knob, and the flanged or winged cap, in combination with the valve-operating stem, said parts being constructed and arranged to operate, as herein shown and specified.

In testimony whereof, I have signed my name to this specification, before two subscribing witnesses.

W. H. DE VALIN.

Witnesses:

EDW. CADWALADER,
JAMES ANTHONY.