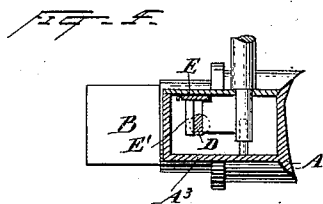
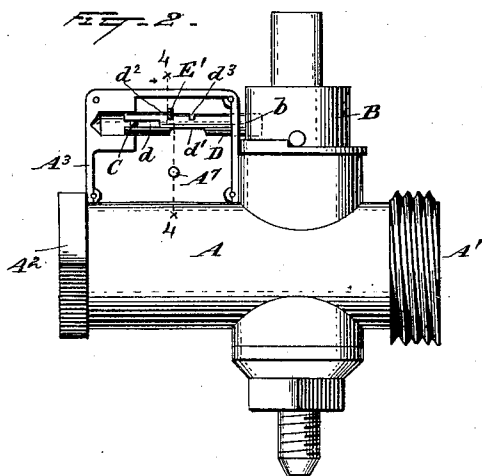
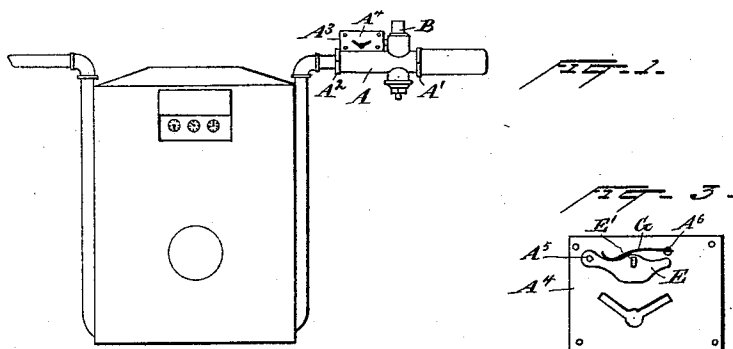


(No Model.)

P. ZIMMERMANN, Jr.
STOP COCK AND ANALOGOUS VALVES.

No. 475,530.

Patented May 24, 1892.



Witnesses
Morris A. Clark.
Charles R. Searle.

Inventor
P. Zimmermann, Jr.
By his Attorney
James D. Peterson

UNITED STATES PATENT OFFICE.

PETER ZIMMERMANN, JR., OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO HIMSELF, AUGUSTUS M. MILLER, AND WILLIAM B. MILLER, OF SAME PLACE, AND ROBERT H. CUNNINGHAM, OF PATERSON, NEW JERSEY.

STOP-COCK OR ANALOGOUS VALVE.

SPECIFICATION forming part of Letters Patent No. 475,530, dated May 24, 1892.

Application filed January 4, 1892. Serial No. 416,931. (No model.)

To all whom it may concern:

Be it known that I, PETER ZIMMERMANN, JR., a citizen of the United States, residing in the city and county of New York, in the State of New York, have invented a certain new and useful Improvement relating to Stop-Cocks, of which the following is a specification.

The invention will apply to any form of stop-cock or valve which opens and closes by being revolved or partially revolved on its axis. I will describe it as applied to an ordinary stop-cock for controlling by the proper agents of a gas company the supply of gas to a house or manufactory.

It has long been practiced to apply locks in the form of a detachable lock—padlock. Such require fittings, flanges, arms, or other special equipments to allow their application, and withal are liable to misplacements and loss. There have been plans for inclosing a lock within the plug; but such require a large plug. There have been efforts to construct a locking means as a part of the cock, having a bolt engaging in a recess in the plug of the cock; but, as heretofore made, such have been insufficient. I have discovered a compact form of lock mechanism with a large stout tumbler carrying a dog and, with an efficient operating-spring, may be inclosed in a casing of proper form and limited size made integral with the body of the cock, with one side formed separately and permanently attached after the work is put in. I have made such a lock. The bolt is cylindrical with a notch on one side to receive the key and two notches on the opposite side to alternately receive the dog. Efficient guides for the bolt are produced by simply drilling a cylindrical hole. The bolt is prevented from turning by splitting the end by sawing or otherwise and introducing a wire transversely, which shall be received in such split.

My invention provides effective and durable means for securing and moving the bolt, and consequently holding and releasing the plug of the cock.

The accompanying drawings form a part of this specification and represent what I con-

sider the best means of carrying out the invention.

Figure 1 is a view on a scale showing the invention applied to a cock adjacent to a gas-meter. Fig. 2 is a corresponding front view of the cock and its securing means on a larger scale. Fig. 3 represents the front plate of the lock detached, and Fig. 4 is a vertical section on the line 44 in Fig. 2. It shows the key in the act of lifting the tumbler preparatory to throwing the locking bolt.

Similar letters of reference indicate corresponding parts in all the figures where they appear.

A is the body of the cock, certain portions being designated when necessary by super-numerals, as A' A², &c. The nozzle A' connects with a pipe leading to the street-main. The nozzle A² connects with the gas-meter. A compact casing A³ is cast in one with the parts A' and A² and constitutes the main body of the lock-casing. The separately-formed plate A⁴ is strongly riveted to serve as a cover.

B is the plug of the cock, in all respects like an ordinary plug, except that it is bored radially to a sufficient depth at the point *b*, adapting it to receive the bolt. By making the key-hole V-shaped the key does not require to be fully revolved, but only to be partially revolved, before it can be withdrawn.

D is the bolt of the lock, guided at each end in a hole bored in the casing A³ and having its rear end split by a saw-key, as indicated by *d*, and receiving the transverse pin or wire C, which is inserted in the casing and prevents the bolt from turning on its axis. A notch *d'* on the under side of the bolt allows the wing of the key to engage and the bolt to be thrown by partially turning the key. Two notches *d*² and *d*³ are formed in the upper side of the bolt D, as shown. E is a tumbler raised and lowered by the key and turning on a pin or stud A⁵. It is pressed downward by the spring G, set in the post A⁶, and provided with a dog E', adapted to engage in either of the notches *d*² or *d*³, as they shall be presented to it. A⁷ is a key-post firmly set in the casing

and engaging in the ordinary axial hole in the end of the key. The wing of the key is so formed and proportioned that when its outer edge engages in the notch d' to throw the
5 bolt endwise a shoulder on the key also engages under the properly-formed lower edge of the tumbler E and lifts it against the force of the spring G, and thus lifts the dog E' out of engagement with the bolt. When the bolt
10 is fully thrown, the tumbler E is allowed to sink again and the dog E' engages in the notch d^2 and holds it, allowing the key to be withdrawn. The guides for the bolt are produced by simply drilling. The lock-casing A³, being
15 extended a little above the cock proper, allows this simple mode of construction. The transverse pin or wire C is set in a smaller hole drilled at right angles thereto.

20 Modifications may be made by any good mechanic without departing from the principle or sacrificing the advantages of the invention. The forms and proportions of the parts

may be changed within wide limits. I can use two or more tumblers; but I esteem such complication to be generally inexpedient. 25

I claim as my invention—

In a cock for gas or other fluids, the bolt D, provided with a split d and notches d' d^2 d^3 , in combination with the tumbler E, carrying the dog E' and the spring G and permanently
30 closed in the lock-case A³, made integral with the body of the cock and having the permanently-closed front A⁴ with the V-shaped key-hole, and the transverse pin C, engaged in the
35 split d of the bolt, all arranged for joint operation as herein specified.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

PETER ZIMMERMANN, JR.

Witnesses:

GEO. J. F. KEMBLE,
LOUIS J. ZIMMERMANN.