3 Sheets--Sheet 1.

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Water Stop-Gates.

No. 147,809. Patented Feb. 24, 1874.

Fig. 4

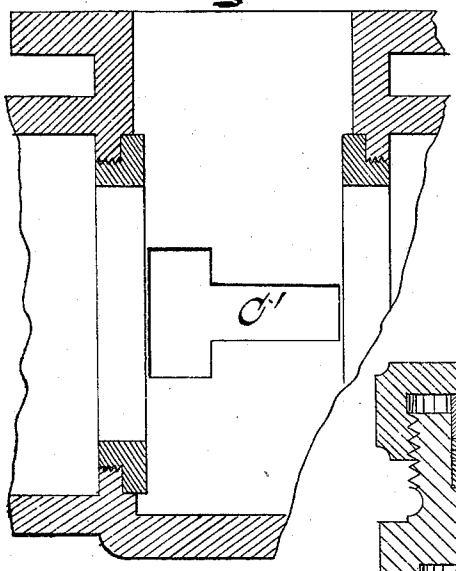

Fig 1

WITNESSES

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Fig 2

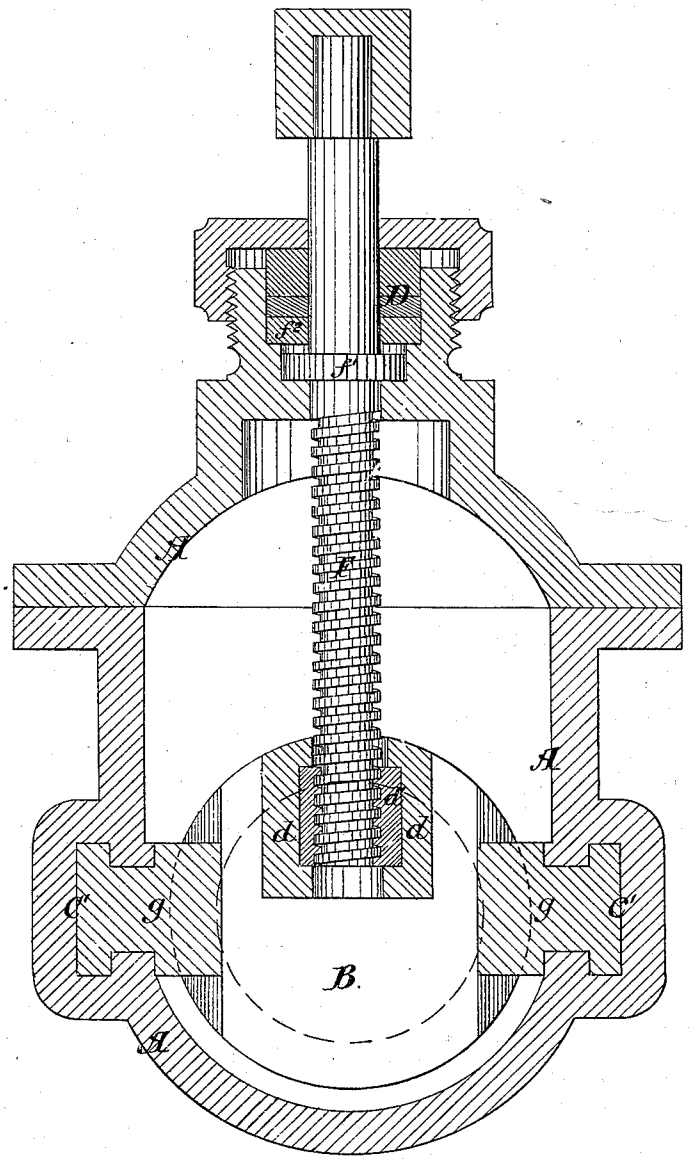

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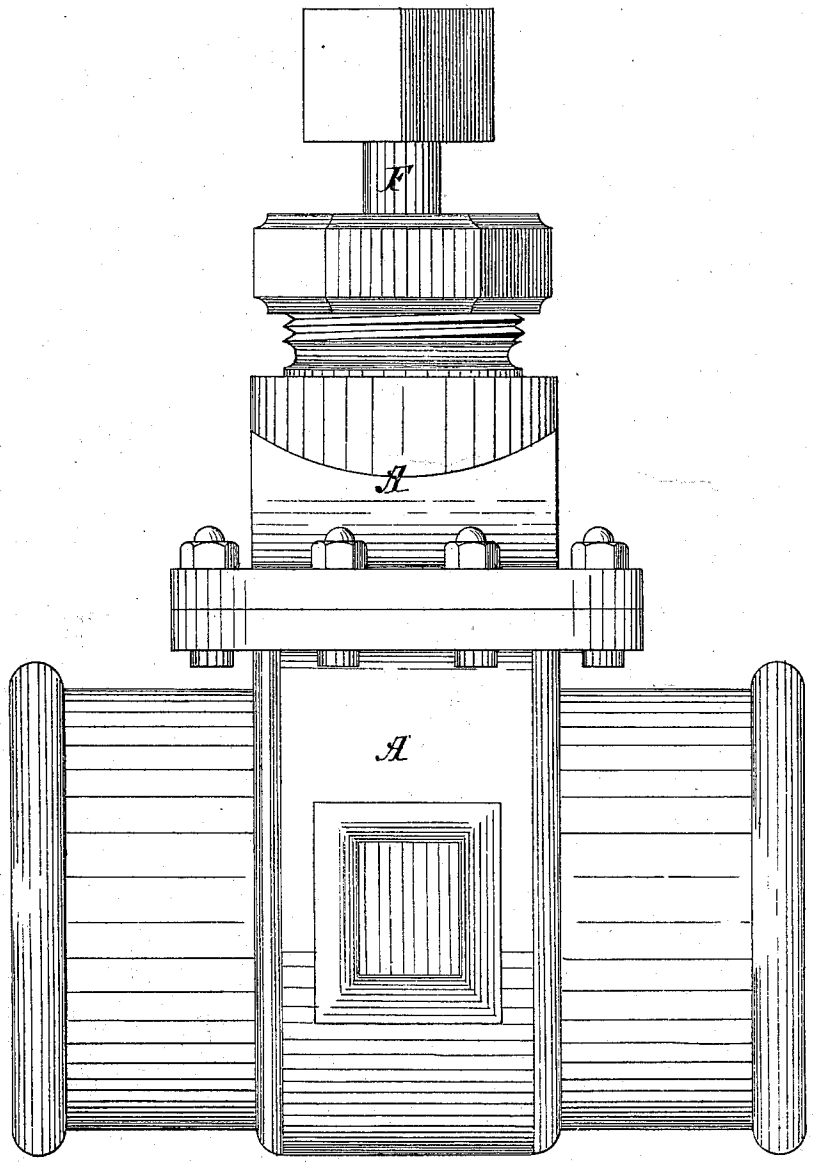
Fig 3



WITNESSES

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UNITED STATES PATENT OFFICE.

EDWARD ARMSTRONG, OF ALLEGHENY, PENNSYLVANIA.

IMPROVEMENT IN WATER-STOP GATES.

Specification forming part of Letters Patent No. **147,809**, dated February 24, 1874; application filed November 29, 1872.

To all whom it may concern:

Be it known that I, EDWARD ARMSTRONG, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Water-Stop Gates; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in the construction of stop-valves or water-gates to be used for steam, water, air, gas, or any other purpose for which such valves are applicable.

In the accompanying drawings, Figure 1 is a longitudinal section, Fig. 2 a cross-section, and Fig. 3 a side elevation, of my improved stop-valves. Fig. 4 is a sectional detail view, illustrating one of the elongated recesses in the casing.

The same letters indicate similar parts in all the views.

The two parts of the valve-casing A A are securely bolted together, as shown. B B are two circular valves, which, when screwed down to position in Figs. 1 and 2, fit, on their outer sides, against the valve-seats C C, the said valve-seats being screwed on. On the back or inner side of each valve B B are two raised planes, *b b'*, which stand at an angle to the back of said valves. There is also formed on the back of each valve a piece, *d*, having in it a rectangular recess, in which is loosely fitted a suitable nut, *d'*. This nut *d'* is tapped, and receives the working screw E, which passes upward through the casing A into the stuffing-box D. Upon the screw-spindle F a collar, f^1, is formed, fitting freely into the recess formed at the lower part of the stuffing-box D to receive it. This recess is made a little deeper than the collar f^1. A metal ring, f^2, is placed immediately over said collar f^1, upon which ring is placed a gum or other suitable packing, and which is held in position by any ordinary form of gland, as will be seen by reference to Figs. 1 and 2 of the accompanying drawings. A small space is left between the collar f^1 and ring f^2, the object of which being to prevent any undue friction on said collar f^2, however tightly the gland may be screwed down. By this arrangement the screw will always work freely, the small amount of back-lash caused being of no importance. On each side of the lower part of casing A a suitable recess, C', is formed, to receive a T-headed or otherwise suitably-shaped pin, *g*.

All the parts of the cock having been fitted together, the pins *g g* resting loosely in their seats, the valves B B are screwed down. The inwardly-projecting ends of the pins, acting upon the inclined planes *b b'* upon the back of the valves, force them laterally until firm contact is established between them and their seats C C. The valves, at the same time, arrange the pins in proper position relatively to them, and the pins, while maintained in this position, are locked to the case, preferably by casting lead or composition metal into the recesses. The recess A' in the upper part of casing A serves to retain and guide the valves B B when raised.

The operation of my improvements is as follows: The action of closing is accomplished by turning the screw F, whereby the valves B B are carried downward, this motion being continued until the inclined planes *b b'* come in contact with the pins *g g*, when, by still further continuing the action, the valves B B are separated from each other, and forced firmly against the valve-seats C C. The gate is then tightly closed.

From the method of connection used in my improvement, the valves B B are able to conform themselves to any irregularities of, or want of parallelism between, the seats C C.

It will be observed that when the valve is fully opened, the valves B B are raised entirely clear of the passage-way, thus leaving an opening the full size of the chamber.

An advantage claimed for these valves is, that the seats C C being faced up before fitting into their places in casing A, the whole valve may be at once fitted together without any previous fitting into position.

In the accompanying drawings, the screw F is shown fixed, and the valve rising upon it; but I wish it to be understood that I may, if desired, place the nut *d'* in the stuffing-box, and so cause the screw itself to rise, instead of remaining stationary, as here shown.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The T-headed pins *g g*, in combination with the correspondingly-formed elongated recesses C′ C′ in the casing, which, while retaining the pins, permit their automatic lateral adjustment in the act of fitting the valves, substantially as and for the purpose specified.

2. The valve-rod F, the collar f^1 of which is seated in a recess in the case somewhat deeper than the thickness of said collar, in combination with the loose metallic ring f^2 and packing f^3, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own, I affix my signature in presence of two witnesses.

EDWARD ARMSTRONG.

Witnesses:

GEORGE B. M'NULTY,

DAVID L. SMITH.