(No Model.)

A. BERGÈS.

VALVE.

No. 314,784. Patented Mar. 31, 1885.

Fig: 1.

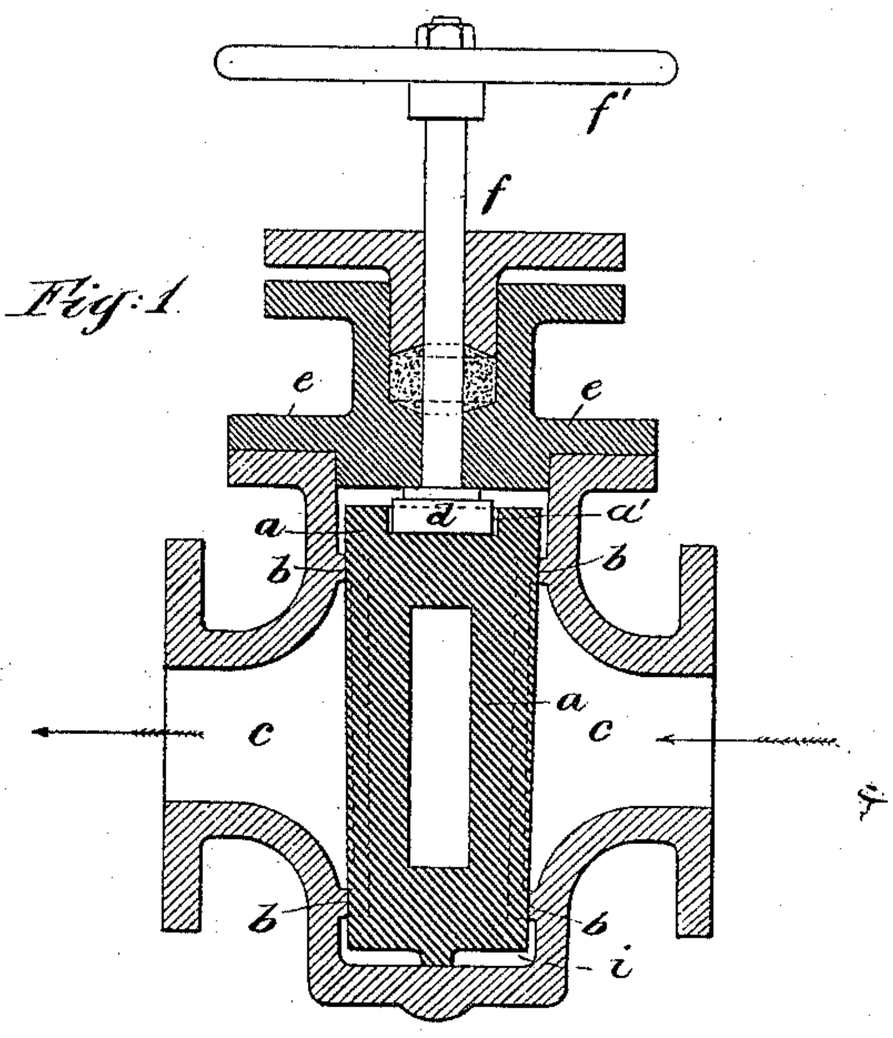


Fig: 2.

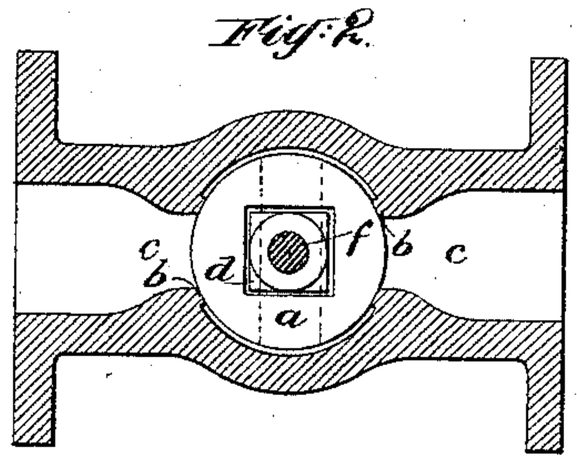
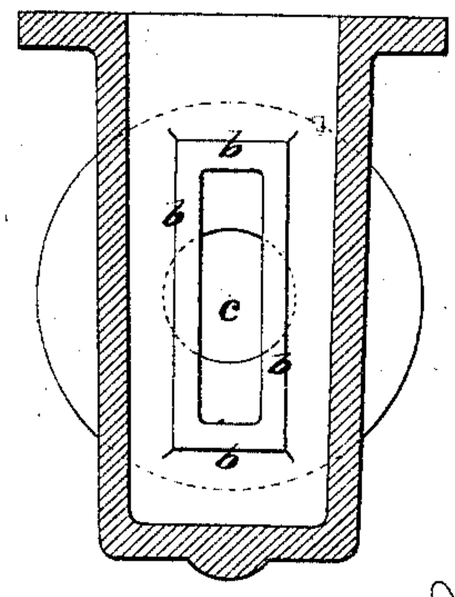


Fig: 3.



WITNESSES—

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UNITED STATES PATENT OFFICE.

ARISTIDE BERGÈS, OF GRENOBLE, ISÈRE, FRANCE.

VALVE.

SPECIFICATION forming part of Letters Patent No. 314,784, dated March 31, 1885.

Application filed March 15, 1884. (No model.) Patented in France December 20, 1882, No. 152,764.

To all whom it may concern:

Be it known that I, ARISTIDE BERGÈS, of Grenoble, in the Department of Isère, in the Republic of France, have invented certain new and useful Improvements in Cocks for Water and other Fluids, of which the following is a specification.

The invention is intended more particularly for cocks which are to be subjected to fluids under great pressures; but it may be of some advantage in many ordinary situations.

The accompanying drawings represent a specimen of my improved cock. They show the novel parts, with so much of the ordinary parts as is necessary to show their relation thereto.

Figure 1 is a central vertical section through the cock complete. Fig. 2 is a horizontal section, partly in plan, and Fig. 3 is a vertical cross-section through the casing alone.

Similar letters of reference indicate like parts in all the figures.

The part corresponding to the ordinary "plug" is marked *a*. I will call it the "plug," although it does not completely fill the space in the casing, like an ordinary plug, but is forced by the pressure of the water, aided by other forces, if necessary, against the discharge side of the case, and makes a perfectly tight fit on a raised ridge or internal lip, *b*, around the discharge-orifice *c*, while it is a little out of contact with the casing at all other points, or nearly all other. It is but slightly coned or tapered. It may be cylindrical, if preferred. A square recess, *a'*, in the end of the plug *a* receives a loosely-fitting square end, *d*, of a pin or shaft, *f*, which is turned at will by the aid of a hand-wheel, *f'*. This shaft is supported in a removable cover, *e*, for the top of the case, and is applied and removed therewith. Being loosely fitted in the recess in *a*, these parts may be out of line without involving any mischief. It is important that the plug be guided in its turning motion by the approximately close contact of the interior of the casing. I make a sufficient internal rim, *b*, around the orifice *c* on the receiving side of *a* to properly guide the plug; but it should not be a tight contact. The water or other fluid under pressure should flow past the joint on the receiving side of the plug and raise the pressure to the maximum in the space *i* at each end of the plug, and also in the slight space along the sides. The only surfaces which make fluid-tight contacts are the body of the plug *a* with the rim *b* on the delivery side, the stuffing-box around the shaft *f*, and of course the surfaces of contact between the cover *e* and the case. The bottom of the case may be closed, as shown. As the pressure of the fluid on the coniform sides of the plug and on the lower end is the same as the pressure on the upper end of the plug, there is a balance of these forces under all conditions, with no tendency of the plug *a* to move endwise either upward or downward. The cover *e* may be held firmly by screw-threads, or by any other efficient means. When the cock is made of small size, it may have the rim *b* wider in proportion, so as to afford a sufficient bearing to insure tightness. It is important that there be a little play to allow the plug to be easily forced over against the delivery side of the case and make a tight contact with the nicely-finished face of the rim *b* on that side without necessitating any movement of the shaft *f* and head *d*.

I claim as my invention—

1. In combination with the plug *a*, the casing having an internal rib or rim, as *b*, surrounding the discharge-orifice *c*, and having spaces, as *i*, between said casing and plug, to allow a balance-pressure on the plug, as set forth.

2. In a cock in which a loose plug is held to a rim surrounding the discharge-orifice by the fluid-pressure, the combination, with the casing having such rim *b*, of the plug *a*, having recess *a'*, and the shaft *f*, having its end *d* fitting loosely in said recess, whereby the force of the fluid will be enabled to carry the plug to its seat *b* without interfering with the action or bearings of said shaft, as set forth.

3. The combination of the casing, having rims *b b* surrounding the entrance and discharge apertures *c c*, with spaces *i* between said rims, the loose plug *a*, and the operating-shaft *f*, having its end fitting loosely in said plug, as and for the purposes set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ARISTIDE BERGÈS.

Witnesses:
ROBT. M. HOOPER,
EUG. DUBAIL.