

2 Sheets—Sheet 1.

No. 515,514.

Patented Feb. 27, 1894.

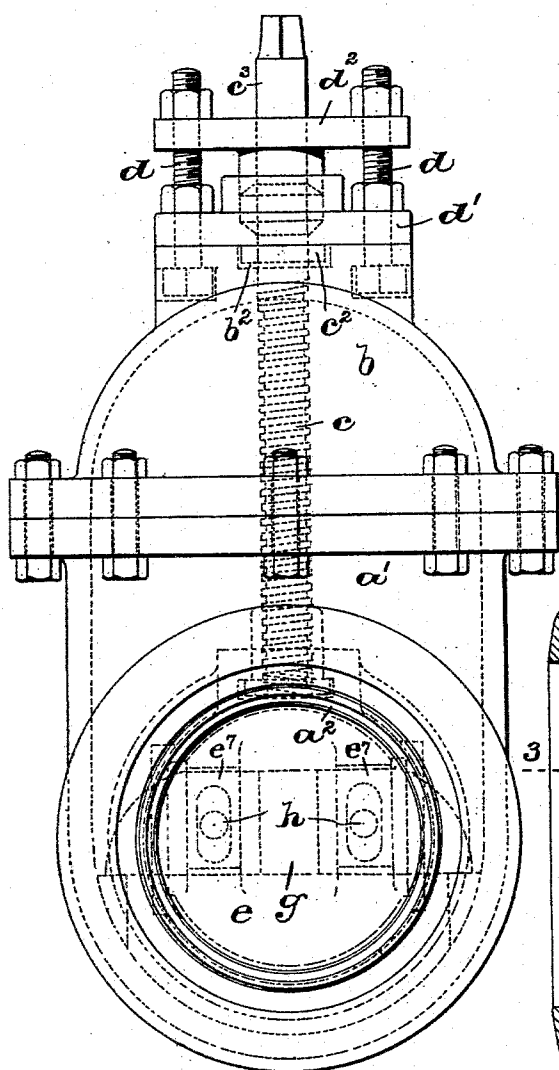


Fig. 1

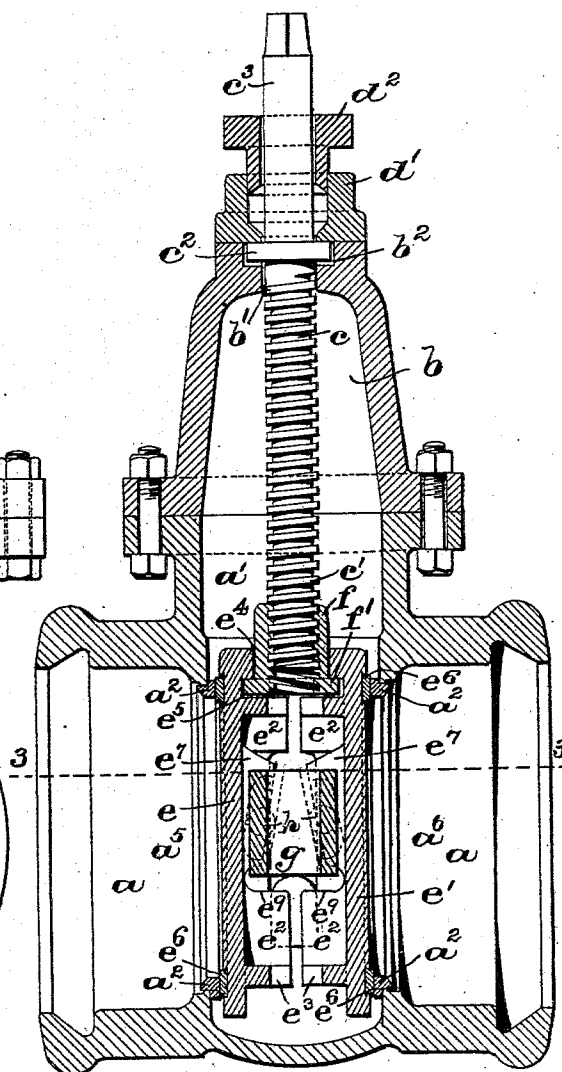


Fig. 2

WITNESSES:

Am. Marsh.
Fred. Schuster.

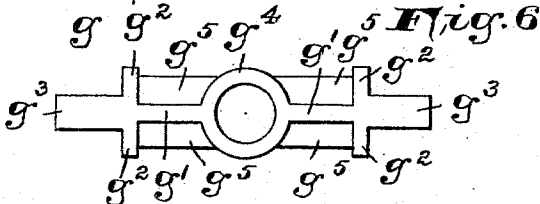
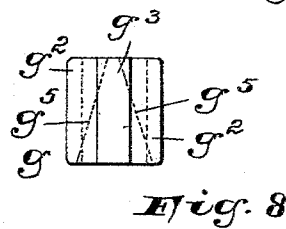
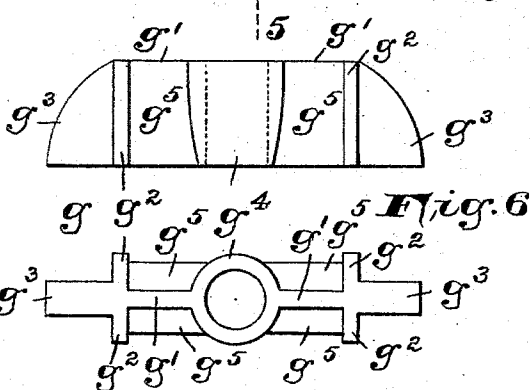
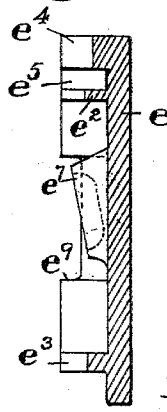
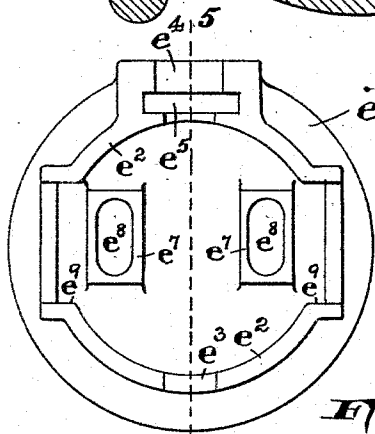
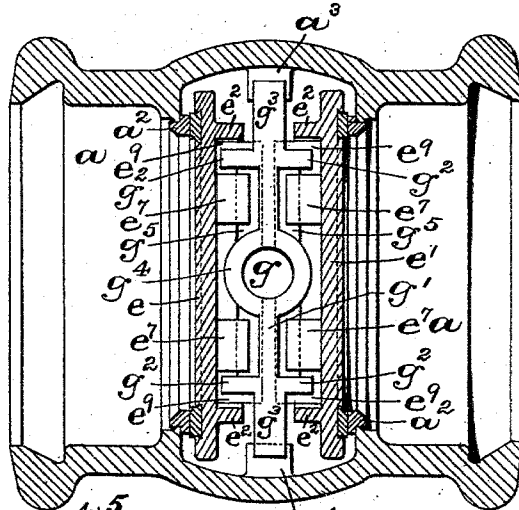
INVENTOR:

Harvey H. Burrill,
BY Fred C. Gaentzel, ATT'Y.

H. H. BURRITT.
VALVE.

No. 515,514.

Patented Feb. 27, 1894.



WITNESSES:

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Fred Schlueter.

INVENTOR :

Harvey H. Burritt,
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UNITED STATES PATENT OFFICE.

HARVEY H. BURRITT, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE BURRITT MANUFACTURING COMPANY, OF NEW JERSEY.

VALVE.

SPECIFICATION forming part of Letters Patent No. 515,514, dated February 27, 1894.

Application filed July 28, 1893. Serial No. 481,697. (No model.)

To all whom it may concern:

Be it known that I, HARVEY H. BURRITT, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Valves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My present invention has for its primary object to provide a valve in which, by a slight movement, after the valve is closed, the valve disks are brought to firmly bear against their valve seats, whereby the valve is securely closed.

The invention therefore consists in the general construction of valve herein set forth, as a new article of manufacture, and also in certain novel arrangements and combinations of parts, such as will be hereinafter more fully set forth and finally embodied in the clauses of the claim.

In the drawings herewith accompanying, Figure 1 is an end view of my improved form of valve. Fig. 2 is a longitudinal vertical section of the same, and Fig. 3 is a horizontal section of the valve, taken on line 3—3 in said Fig. 2. Fig. 4 is a view of one side of one of the valve disks, and Fig. 5 is a vertical section of the same, taken on line 5—5 in said Fig. 4. Fig. 6 is a side view of a yoke or cross-bar used in connection with the valve disks in my present form of construction of valve. Fig. 7 is a top view of the same, and Fig. 8 an end view of said yoke or cross bar.

Similar letters of reference are employed in each of the above described views to indicate corresponding parts.

In said drawings, *a* represents the valve case; provided in the top with a suitable opening *a'* upon which is secured in any convenient manner a hollow cap *b*, having a perforation *b'*, which is suitably enlarged, as at *b²*, and as will be clearly seen from Fig. 2. In said perforation or opening *b'* of the cap *b* is rotatively arranged a valve stem *c* provided on its lower portion with a screw-threaded

portion *c'*. On said valve stem and loosely arranged in said enlarged portion *b²* of said opening or perforation *b'*, is an enlargement or collar *c²* formed integral with said valve stem, or said enlargement or collar *c²* may be made in the form of a ring which is slipped upon the stem *c* and then secured thereto in any convenient manner, as will be clearly understood. Secured to said cap *b* by means of suitable bolts *d*, see Fig. 1, is a perforated plate *d'* provided with the usual form of stuffing box *d²*, through which projects the end *c³* of the valve stem for raising or lowering the valve disks and thereby opening or closing the valve. Said plate *d'* which is secured to the top of said hollow cap *b*, forms, with said enlarged portion *b²* of the opening *b'*, a chamber in which said collar *c²* on the valve stem is retained, but is free to rotate therein. This allows of the valve stem *c* to be freely turned in either direction, but prevents the stem from moving upward or downward and holds the stem at all times in its proper position. On the lower end of said screw-threaded valve stem *c*, I have arranged a screw-threaded sleeve *f* provided with a square or angular flange *f'*. In said valve casing *a*, as will be seen from Figs. 2 and 3, are arranged the valve disks *e* and *e'*, each of which is formed on its inner surface, with the inwardly projecting flange *e²*, substantially as illustrated more especially in Fig. 4. Said flanges are provided at the bottom with the grooved portions *e³* and at the top with the grooved portions *e⁴* and the recessed portions *e⁵*, which portions *e³* and *e⁴*, when the said valve disks are in position in the valve case, form openings for the valve stem *c*, while the flange *f'* on the sleeve *f* fits into the recessed portions *e⁵* which prevent said sleeve from turning with said screw *c*, and, when the valve stem is turned, said sleeve which moves up and down upon the screw-thread of the said stem, causes the valve disks *e* and *e'* to be raised or lowered, as the case may be. Each valve disk is provided with a suitable ring *e⁶*, of non-corrosive metal, which forms the face of the disk, said rings *e⁶* coming in close contact with rings *a²* in said valve case, as will be clearly seen from Fig. 3.

Each valve disk *e* and *e'* is provided with

suitable lugs e^7 which incline toward the bottom, as will be evident from Figs. 2 and 5, and are hollowed to form an oblong recess e^8 in each, as shown more especially in Fig. 4.

5 Arranged between said valve disks e and e' is a yoke or cross bar g , as clearly shown in Fig. 3, and said yoke or cross bar is provided with a central longitudinal rib g' having a centrally arranged opening or hole, as shown

10 in Fig. 7. Near both ends of said rib g' are oppositely projecting arms g^2 from which extend longitudinally with said rib g' suitable supports g^3 . Between said arms g^2 and the collar g^4 formed around said central opening

15 in said yoke or cross bar g are arranged the inclined webs or portions g^5 , as is clearly shown in the plan view in Fig. 7, and as is indicated in dotted outline in Fig. 8. In said valve case a are two oppositely placed lugs

20 or ears a^3 and a^4 , as clearly shown in Figs. 1 and 3, and the purpose of which will be more clearly described hereinafter. Loosely and movably arranged in said oblong recesses in said lugs e^7 and riding on the said inclined

25 webs g^5 of said yoke or cross bar g , are small balls or rollers h , as indicated in dotted outline in Figs. 1 and 2, which balls or rollers are made of any suitable hard metal, and may be tempered and coppered to prevent

30 them from rusting.

The operation of the device is as follows:—

When the valve is closed, as is clearly shown in Fig. 2, said supports g^3 of the cross bar or yoke g rest upon the lugs or ears a^3 and a^4

35 in the valve casing, while the balls or rollers h are tightly wedged in between the inclined webs g^5 of the said cross bar or yoke and the recesses e^8 in each disk e and e' . Now, when the valve stem c is turned to raise the valve

40 disks, said sleeve f moves upwardly on the screw-thread c' , whereby said plates are raised, and by bringing the edges e^9 of the herein above mentioned flanges e^2 in contact with the lower edges of the supports g^3 on the bar

45 or yoke g , the latter is raised with the disks e and e' to a position within the chambered cap b , thereby permitting a free passage for the water or other liquid to be conveyed

50 through the valve, as will be clearly understood. When the valve stem is turned to close the valve, said disks e and e' and also the yoke or bar g move downwardly, and when the disks have been lowered to such a

55 point that they nearly close the openings a^5 and a^6 in the valve case a , the supports g^3 on said bar or yoke will come in contact with the lugs a^3 and a^4 in the valve case, thus holding said bar or yoke in this position. At the same

60 time the disks are permitted to travel still further in their downward course, but said balls or rollers h in the oblong recesses e^8 will ride on said inclined webs g^5 of the bar or yoke g , whereby said valve disks e and e' are

65 forced forwardly in opposite directions, causing their facing rings e^6 to closely bind against the rings a^2 in the valve casing a , whereby the valve is firmly closed. Of course it will

be evident that I can dispense with the use of said balls or rollers h , in which case the inclined lugs e^7 will ride directly upon the inclined webs g^5 , as will be clearly understood; but I prefer to use the balls or rollers h , as in that case there is less friction, and the parts are less liable to rust and stick when the valve has not been used for sometime. It will thus

75 be seen that the mechanism is extremely simple and not liable to get out of order, and the several parts can be easily removed for repairs, when necessary.

Of course it will be evident that certain changes in the arrangement and combinations of parts may be made without departing from the scope of my invention, and I therefore do not wish to limit my invention to the exact form and construction of valve herein shown.

The mechanism herein shown and described is especially well adapted for different classes of valves and especially gate valves, and is also well adapted for the use of valves in hydrants.

Having thus described my invention, what I claim is—

1. In a valve, the combination, with the chamber thereof, of the two-part valve, consisting of valve disks e and e' , each provided with a pair of downwardly inclining lugs having oblong recesses therein, balls or rollers in said recesses, and a bar or yoke between said disks, said bar or yoke having a central opening formed by a collar g^4 , longitudinally arranged ribs extending on opposite sides from said collar, and a pair of inclined webs g^5 on each side of said ribs, against which said balls or rollers ride, substantially as and for the purposes set forth.

2. In a valve, the combination, with the chamber thereof, of the two-part valve disks e and e' , each provided with a pair of downwardly inclining lugs having oblong recesses therein, balls or rollers in said recesses, and a yoke or bar between said valve-disks, having inclined ribs against which said balls or rollers ride, substantially as and for the purposes set forth.

3. In a valve, in combination, with the valve case, provided with oppositely placed lugs or ears a^3 and a^4 , a screw-threaded valve stem, a pair of valve disks, a yoke or bar between said disks adapted to be supported by said lugs or ears a^3 and a^4 , when the valve is closed, and said bar or yoke being adapted to be raised by said disks when the valve is being opened, and means on said bar or yoke and said valve disks for forcing said valve disks forward in opposite directions when the valve is nearly closed, said means consisting essentially of inclined lugs on said valve disks, having oblong recesses, balls or rollers in said recesses, and inclined webs on said bar or yoke, against which said balls or rollers ride, substantially as and for the purposes set forth.

4. The herein described valve, comprising therein a valve casing a , a chambered cap b , a screw-threaded stem c , a sleeve f having a

flange f' , valve disks e and e' engaging with said flanged sleeve f and adapted to be raised thereby when said valve stem is turned, and means, connected with said valve disks for forcing said disks forward in opposite directions when the valve is nearly closed, said means consisting essentially of inclined lugs on said valve disks, having oblong recesses, balls or rollers in said recesses, and a bar or yoke g having inclined webs against which said balls or rollers ride, substantially as and for the purposes set forth.

5. The herein described valve, comprising therein a valve casing a , a chambered cap b , a screw-threaded stem c , a sleeve f having a flange f' , lugs a^3 and a^4 in said valve casing, valve disks e and e' engaging with said flanged sleeve f adapted to be raised thereby when said valve stem is turned, a yoke or bar between said valve disks adapted to be sup-

ported by said lugs a^3 and a^4 , when the valve is closed and said bar or yoke being adapted to be raised by said disks when the valve is being opened, and means on said bar or yoke and said valve disks for forcing said valve disks forward in opposite directions when the valve is nearly closed, said means consisting essentially of inclined lugs on said valve disks, having oblong recesses, balls or rollers in said recesses, and inclined webs on said bar or yoke, against which said balls or rollers ride, substantially as and for the purposes set forth.

In testimony that I claim the invention set forth above I have hereunto set my hand this 26th day of July, 1893.

HARVEY H. BURRITT.

Witnesses:

FREDK. C. FRAENTZEL,
FRED SCHLUETER.