

B. C. HAY.
BALL-CHECK VALVES FOR SEWERS.

No. 193,605.

Patented July 31, 1877.

Fig. 1.

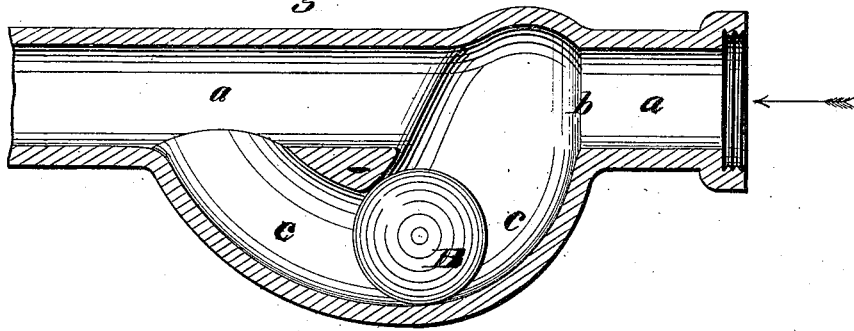


Fig. 2.

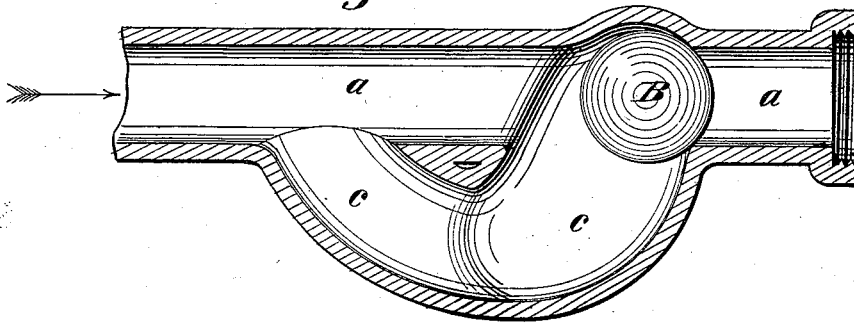
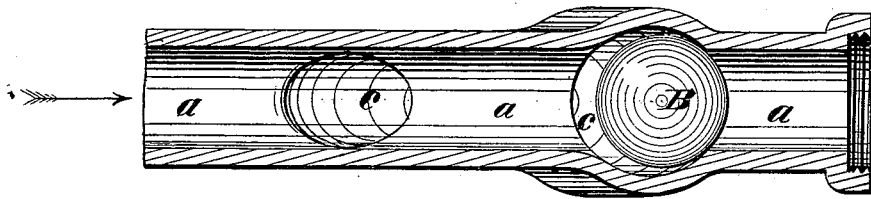


Fig. 3.



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UNITED STATES PATENT OFFICE.

BUSHROD C. HAY, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR,
BY MESNE ASSIGNMENTS, OF ONE-HALF HIS RIGHT TO GEORGE A.
BASSETT, TRUSTEE, OF JAMESTOWN, NEW YORK.

IMPROVEMENT IN BALL CHECK-VALVES FOR SEWERS.

Specification forming part of Letters Patent No. **193,605**, dated July 31, 1877; application filed
June 19, 1877.

To all whom it may concern:

Be it known that I, BUSHROD C. HAY, of Washington, in the county of Washington and District of Columbia, have invented certain Improvements in Ball Check-Valves for Sewers, &c., of which the following is a specification.

My invention consists in providing the valve case or body, in rear of the valve seat or throat, with a diverging channel, into which the valve passes when it leaves the seat, and through which the reflux water passes against the ball, to drive the same to its seat; the construction and arrangement of parts being such that when the ball is back the water is allowed a direct unobstructed passage, and that when the water commences a reverse movement it closes the valve with quickness and certainty.

Figure 1 represents a longitudinal central section of my valve open; Fig. 2, a similar view, showing the valve closed; Fig. 3, a longitudinal transverse section of the valve closed.

A represents the body of the valve, having a straight unobstructed passage, *a*, for the water through it from end to end, with a contracted throat or seat, *b*, for the ball-valve B, as usual.

C represents the diverging channel or passage leaving the main channel or bore, in rear of and near the valve-seat, and joining the bore again at a point farther in the rear.

The mouth or end of the side channel nearest the throat is enlarged in such manner that the ball is permitted to fall back therein, away from the throat, to one side, and entirely clear of the main bore, as shown in Figs. 1 and 2. In order to facilitate the lateral movement of the ball, the side passage is inclined and contracted below the ball, at the junction with the main bore, in the manner

shown, so that the ball naturally rolls away from the throat when relieved from the counter-pressure of the water.

The action of the valve is as follows: During the outward flow of the water the ball remains in the mouth of the side channel, and the water passes by it and out directly through the main bore; but the instant that a reflux movement of the water commences it passes into the rear end of the side channel, and, acting against the ball from the rear, drives the same instantly to its seat or throat, effectually preventing the backward passage of water through the latter.

The body may be made of any suitable form and size, and of any suitable material, in one or more pieces, provided the diverging channel is retained. The ball used may also be made of any material suitable for the purpose. In practice, it is preferred to make the entire body in one piece, as shown, and to use a hollow rubber ball, inserted by compressing it and passing it in through one end, and then permitting it to expand.

Having thus described my invention, what I claim is—

1. In a ball-valve case or body, a diverging passage or channel, *c*, substantially as shown and described, for the purpose of permitting the ball to fall back out of the main bore or passage, and of allowing the reflux water to act against the ball from the rear, in order to drive it to its seat.

2. In a check-valve case or body, a side channel, *c*, arranged to direct the reflux water against the valve proper, in order to force the same to its seat.

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Witnesses:

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