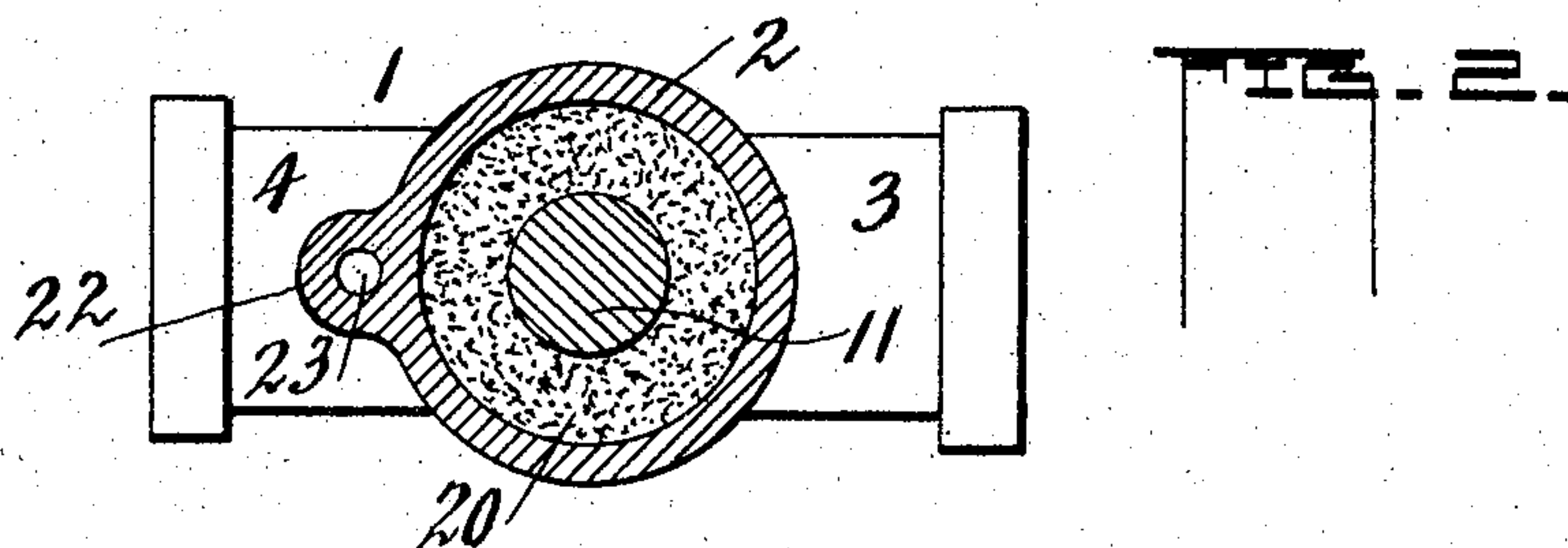
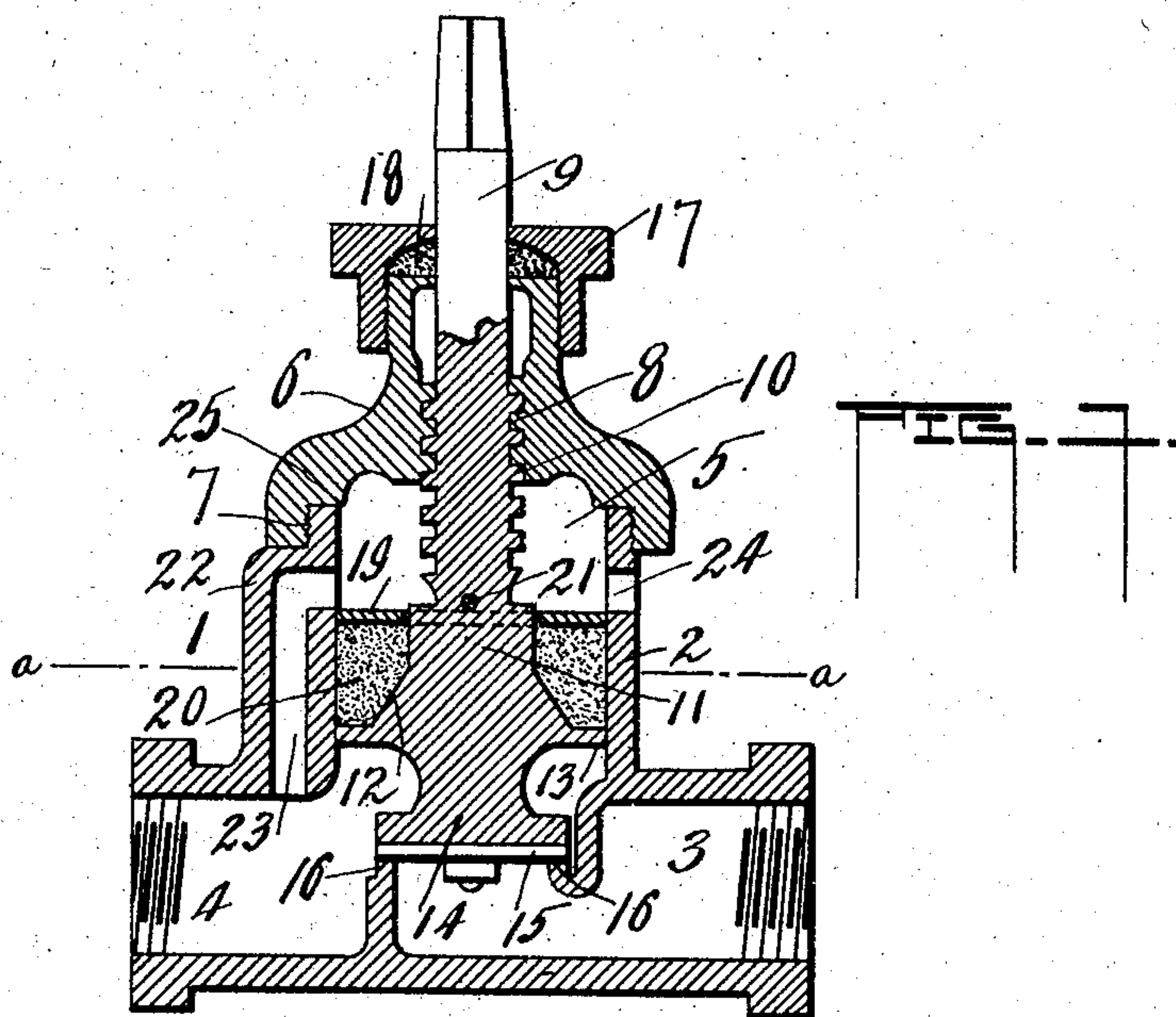


No. 781,054.

PATENTED JAN. 31, 1905.

E. H. DONAHOE.  
STOP AND WASTE COCK.  
APPLICATION FILED JUNE 23, 1904.



Witnesses:—

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# UNITED STATES PATENT OFFICE.

EDWARD H. DONAHOE, OF PEORIA, ILLINOIS.

## STOP AND WASTE COCK.

SPECIFICATION forming part of Letters Patent No. 781,054, dated January 31, 1905.

Application filed June 23, 1904. Serial No. 213,754.

*To all whom it may concern:*

Be it known that I, EDWARD H. DONAHOE, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Stop and Waste Cocks; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has reference to a new and improved stop and waste cock, and has for its object a backwater-flow from the outlet to the waste-cock through the valve-chamber therein.

The invention consists of a waste-cock having an outlet and an inlet communicating with a valve-chamber, controlled by a valve, and a waste-hole leading from the outlet of the waste-cock into the top of the valve-chamber, and an outlet-hole in the opposite wall of the waste-cock, which communicates with the chamber and the waste-hole when the valve is closed.

Further objects and aims of the invention will be understood from the following description and the drawings forming a part thereof, in which—

Figure 1 is a vertical transverse section through the waste-cock, and Fig. 2 is a plan in cross-section through the valve-chamber and the waste-hole as the same would appear on the line *a a* of Fig. 1.

In the drawings, 1 denotes the body of the waste-cock, having the tubular portion 2 and the laterally-extended threaded tubular portions 3 and 4. The tubular portion 2 contains within its walls a valve-chamber 5, and the tubular portions 3 and 4 form an inlet to the valve-chamber and an outlet therefrom, it being understood that connection with it is had with a supply-pipe by the waste-cock, as at 3.

6 indicates the top of the waste-cock, having a threaded connection at 7 with the tubular portion 2 thereof, the same being provided with the inner threaded portion 8.

9 denotes a valve-stem having the threaded portion 10, which has screw connection with the threaded portion 8 of the top 6 of the waste-cock, the lower portion of the stem being enlarged, as at 11, which terminates in the cone-

shaped portion 12, the base of which merges into the annular flange or disk 13, the periphery of which engages the inner wall of the tubular portion 2, and 14 indicates a suitable extension or connection of the body of the valve-stem, to which is attached a composition washer 15, adapted when the valve-stem is lowered to engage with the seat portions 16, suitably arranged in the chamber of the waste-cock between the inlet and the outlet 3 and 4. The valve-stem 9 passes up through a stuffing-box 17, which has a threaded connection with the upper portion of the top 6, and 18 indicates suitable packing in the stuffing-box between the body thereof and the upper portion of the top 6.

19 denotes an annular ring of suitable material which is carried around the enlarged body 11 of the stem, its periphery engaging with the inner wall of the tubular portion 2 of the waste-cock, and between the matching face of the ring 19 and the disk or flange 13 is carried a flexible ring 20 of some suitable material. This flexible ring encircles the enlarged and cone portion of the stem 9. The annular ring 19 is retained in its normal raised position by means of a pin 21 passing through the body of the stem.

The wall of the tubular portion 2 of the waste-cock is provided with the longitudinally-extended swelled portion 22, in which is arranged a waste-hole 23, leading from the outlet 4 up and into the chamber 5, and in the wall of the tubular portion 2, opposite to the opening of the waste-hole into the chamber 5, is disposed an outlet-opening 24. When the valve-stem is in its lowermost position, as seen in Fig. 1, the annular ring thereof is just beneath the opening of the waste-holes 23 and 24 into the chamber 5.

In the practical application of my improved stop and waste cock connection is made with a supply-pipe at 3, and a faucet or some other suitable connection is made with the cock, as at 4. By the attachment of a valve or hand-wheel to the squared upper end of the valve-stem the same may be raised so as to remove the washer 15 from the seats 16 and form communication between the inlet 3 and the outlet 4. As the valve-stem is raised the



annular ring 19 will come in contact with an offset or flange 25 of the top 6, and the continued raising thereof will cause the enlarged portion 11 of the stem to pass through the ring, which will compress the flexible ring 20, pressing it down tightly over the cone-shaped portion 12 of the stem, which will cause the same to expand and impinge the inner wall of the tubular portion 2 and be held tightly over or against the upper end of the waste-opening 23 and the outlet-opening 24 thereof, making the same water-tight under pressure. The water which will then enter the waste-cock will pass out through the outlet-opening 4.

15 Closing down the stem 9 will release the pressure on the flexible ring 20 and permit it and the annular ring 19 to assume its former shape, substantially as is seen in Fig. 1, and upon the closing down of the washer 15 on the valve-seat 16 any waste water in the pipe attached to the outlet 4 flows up through the waste-hole 23 into the chamber 5 and out through the opening 24, the outlet 4 and the pipe connected therewith remaining empty

25 until the valve is again turned on.

The chamber 5 of the waste-cock being straight and smooth and the flange 13 and the ring 19 being fitted closely to the walls of the said chamber and working up and down therein would remove any projection that might adhere to the wall of the chamber, and thereby prevent any destruction to the flexible ring 20, facilitating in constructing a stop and waste-pipe which would not easily get out of repair. The waste-hole is very positive, as the same has a good large waterway and no small complicated holes to fill up with foreign substances in the water.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a device of the class described, the combination of a casing having a chamber communicating with an inlet and an outlet, a valve-stem for controlling communication between the inlet and outlet, the same provided with a cone-shaped body and an annular flange, an annular ring carried on the stem, a flexible ring between the annular ring and the flange of the stem, and a waste-opening in the wall of the casing having communication with the outlet thereof and having an outlet through the chamber.

2. In a device of the class described, the combination of a casing having an inlet and an outlet and a chamber communicating therewith, a waste-opening leading from the outlet through a wall of the casing to the upper por-

tion of the chamber, and an outlet in the wall of the upper portion of the chamber opposite to the waste-opening, a stem operating in the chamber having a cone-shaped body portion and a flange integral with the body of the stem, a loose ring encircling the stem above the cone-shaped portion thereof and held in its normal raised position by a pin passing through the stem, and a flexible ring surrounding the cone-shaped portion of the stem between the flange and ring aforesaid, adapted, when the stem is raised, to be compressed and close the waste-opening and the outlet thereof in the chamber.

3. A stop and waste cock having a valve-chamber and an inlet and outlet communicating therewith, a top for the chamber, a valve-stem having a threaded connection with the top and having its lower portion thereof cone-shaped and provided with an integral flange, a loose ring carried around the stem above the cone portion thereof, a flexible ring on the cone portion of the stem interposed between its flange and the loose ring, a waste-opening leading from the outlet through the wall of the chamber and into the upper portion thereof, a waste-opening in the opposite wall of the said upper portion of the chamber, the said waste-openings adapted to be closed by the raising of the stem and compressing the flexible ring by pressure of the loose ring with a suitable offset of the said chamber.

4. In a stop and waste cock, the combination of a casing having a cylindrical chamber communicating with an inlet and an outlet, a valve-stem to move the valve proper to and from the valve-seat, a secondary valve in the said chamber, composed of two rings engaging the walls of said chamber, the lower ring integral with the valve-stem, the other ring sliding on the said stem, a flexible ring interposed between the said rings and around a cone-shaped body, the loose ring bearing against the head of the chamber when the valve proper is open, to compress the flexible ring and swell it against the waste-openings 23 and 24, the said secondary valve covering these openings when the valve proper is open, and allowing communication between these said openings above the secondary valve when the valve proper is closed.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD H. DONAHOE.

Witnesses:

CHAS. W. LA PORTE,  
CORA C. JOHNS.