

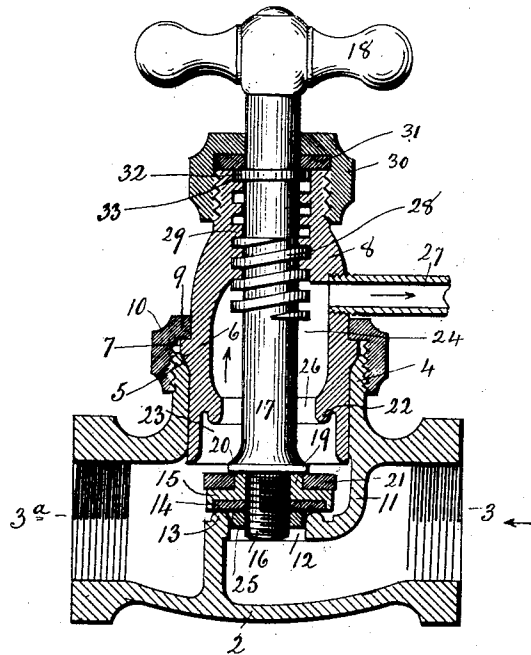
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W. G. NEWTON.
UNIVERSAL COMPRESSION STOP AND WASTE COCK.

APPLICATION FILED JUNE 11, 1903.

NO MODEL.



Witnesses.
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UNITED STATES PATENT OFFICE.

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UNIVERSAL COMPRESSION STOP AND WASTE COCK.

SPECIFICATION forming part of Letters Patent No. 751,869, dated February 9, 1904.

Application filed June 11, 1903. Serial No. 160,986. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. NEWTON, of New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Universal Compression Stop and Waste Cocks; and I do hereby declare the following, when taken in connection with the accompanying drawing and the numerals of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification and represents a view in vertical section of my improved cock shown closed to the entrance of service-water and open to the discharge of waste water.

My invention relates to an improved universal compression stop and waste cock, the object being to produce a simple, convenient, effective, and reliable device which is constructed with particular reference to simplicity and durability.

With these ends in view my invention consists in a compression stop and waste cock having certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claim.

In carrying out my invention as herein shown I employ a body 2, having its inlet and outlet ends 3 and 3^a provided with internal threads for the reception of the threaded ends of the service-pipes (not shown) of the service-water system in which the cock is interposed. The said body is also formed with an externally-threaded neck 4, located at a right angle to the said ends 3 and 3^a and having its inner edge beveled to form an annular bearing-surface 5 for the reception of a correspondingly-beveled annular bearing-surface 6, forming the inner part of a shoulder 7, made integral with and encircling a rotatable chambered head 8. The square outer edge of the said shoulder 7 is engaged by the inwardly-extending flange 9 of a union 10, which is internally threaded for being screwed upon the externally-threaded outer end of the neck 4. The said union 10 draws the beveled surfaces 5 and 6 together, these surfaces being fitted to form what is known as a "ground-joint." In set-

ting the cock to be used in different situations the chambered head 8 may be turned in the body 2 so as to occupy any desired relation thereto. Then when it has been set as desired the union 10 is screwed down to bring the beveled surfaces 5 and 6 into close contact. This capacity for adjustment gives the cock its so-called "universal" character. It will be perceived that in my improved cock no packings are necessary for this adjustment. The said body 2 is formed with a winding partition or web 11, which entirely separates its inlet end 3 from its outlet end 3^a, except for a water-port 12, formed through the said partition 11, the outer surface of which is formed with a slightly-raised horizontally-arranged valve-seat 13, forming the stop-valve seat of the cock and arranged concentric with the said water-port 12. This valve-seat 13 coacts with the washer-like stop-valve packing 14. The stop-valve packing 14 is located entirely within a cup-like casing 15, which is internally threaded to adapt it to be applied to the threaded stud 16, formed at the inner end of the spindle 17, which is furnished at its outer end with a handle 18. The said casing 15 is formed at its outer end with a hub 19 the end of which engages with the squared inner face of a shoulder 20, formed upon the spindle at the base of the stud 16 thereof. Between the flat outer face of the casing 15 and the shoulder 20 of the spindle 17 I interpose a flat washer-like waste-valve packing 21, which coacts when the cock is open with the waste-valve seat 22, which is located at or near the bottom of a circular shut-off chamber 23, formed within the inner end of the head 8. It will be observed that the packing 21 is just a trifle larger in diameter than the casing 15, which does not make any contact with the wall of the shut-off chamber 23. The inner edge of the lower end of the chamber 23 is slightly beveled, so as to act as a guide for the packing 21 when the same enters the chamber, at which time the service-water is entirely or nearly cut off from the waste-pipe 27. If the packing 21 fits very closely within the shut-off chamber, the service-water will be completely cut off from the waste-pipe.

from the beginning of the opening of the cock up to the time of the seating of the packing 21 upon the seat 22 in the bottom of the shut-off chamber; but in any event the packing 21 will fit the shut-off chamber so closely that the amount of water which escapes, if any, through the waste-pipe during the operation of the opening of the cock will be very inconsiderable. The waste-valve packing 21, the cup-like casing 15, and the stop-valve packing 14 are all firmly held in place upon the threaded stud 16 by means of a nut 25 bearing against the lower face of the packing 14 and screwed upon the outer end of the threaded stud 16. The said shut-off chamber 23 is connected with the waste-chamber 24 by a large circular passage 26, formed in the head 8, which is provided with a waste-pipe 27, leading directly out of the outer end of the waste-chamber. It is to provide for pointing this waste-pipe 27 in any desired direction that the cock is made with its so-called "universal" feature.

The spindle 20 is furnished about midway of its length with a heavy compression screw-thread 28, which takes into a corresponding thread 29, formed within the outer end of the head 8, the said compression screw-threads 28 and 29 being located virtually above the path taken by the waste or service water in its passage through the waste-chamber 24 of the cock. At its outer end the chambered head 8 is externally threaded for the reception of a stuffing-box cap 30, containing a packing-washer 31, which is prevented from entering the outer end of the thread 29 by a fender in the form of a metal guard-ring 32, set into a recess 33, formed within the extreme outer end of the chambered head 8.

When my improved cock is closed, as shown by the drawing, its spindle is turned inward and downward, so as to force its stop-valve packing 14 firmly upon its stop-valve seat 13, whereby the direct passage of any water from the inlet service-pipe through the body 2 into the house or system is cut off. At this time, however, any waste water from the house may enter the outlet end of the body and flow inward and upward over the packing 21 and through the shut-off chamber 23 and passage 26 into the waste-chamber 24 and out through the waste-pipe 27. To open the cock for the inlet of service-water, the spindle is turned outward, with the effect that almost immediately after the packing 14 lifts away from the seat 13 the packing 21 enters the shut-off chamber 23, so that the entrance of water into the chamber 24 is entirely or substantially cut off prior to being completely cut off by the forcing of the packing 24 against the seat 22, which, so to speak, closes the waste.

I particularly wish to point out that when the cock is fully open the packing 22, the casing 15, and the packing 14 are all virtually

housed within the shut-off chamber 23 and are thus largely protected from the action of the service-water flowing through the body of the cock. I also wish to point out that by unscrewing the union 10 the chambered head, with the spindle and valve, may be removed from the body 2 without disturbing any other parts of the cock. When the chambered head has been removed from the body as described, the stop-valve packing 14 and the waste-valve packing 21 are fully exposed and may be replaced, if desired, without in any way disturbing the spindle 17 or, indeed, by doing anything more than to remove the nut 25 and the casing 15. This provision of ready access to the packings without disturbing any part of the valve is a point of great convenience.

It is apparent that in carrying out my invention some changes in the construction herein shown and described may be made. I would therefore have it understood that I do not limit myself to the exact construction shown, but hold myself at liberty to make such departures therefrom as fairly fall within the spirit and scope of my invention.

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

In a compression stop and waste cock, the combination with a body containing a valve-seat and furnished with an externally-threaded neck having its inner edge beveled to form an annular bearing-surface, of a chambered head having a circumferential shoulder formed with a beveled bearing-surface coacting with the bearing-surface before mentioned to form a ground-joint, and the said head being formed at its extreme inner end with a shut-off chamber, with a valve-seat located at the bottom of the said shut-off chamber, with a waste-chamber, and with a passage leading from the said valve-seat to the said waste-chamber; a waste-pipe leading out of the said waste-chamber, a spindle mounted in the outer end of the said chambered head, a stop-valve packing carried by the spindle and coacting with the valve-seat in the said body, a waste-valve packing carried by the spindle and coacting with the side walls of the shut-off chamber and with the valve-seat at the bottom thereof, and a union-nut applied to the neck of the body and coacting with the shoulder of the chambered head for drawing the said two beveled bearing-surfaces into contact, whereby when the cock is open the packings are located within and protected by the shut-off chamber.

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

WILLIAM G. NEWTON.

Witnesses:

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