No. 848,137. PATENTED MAR. 26, 1907.

W. H. SMITH.

STOP AND WASTE COCK.

APPLICATION FILED MAR. 2, 1906.

Fig. 1.

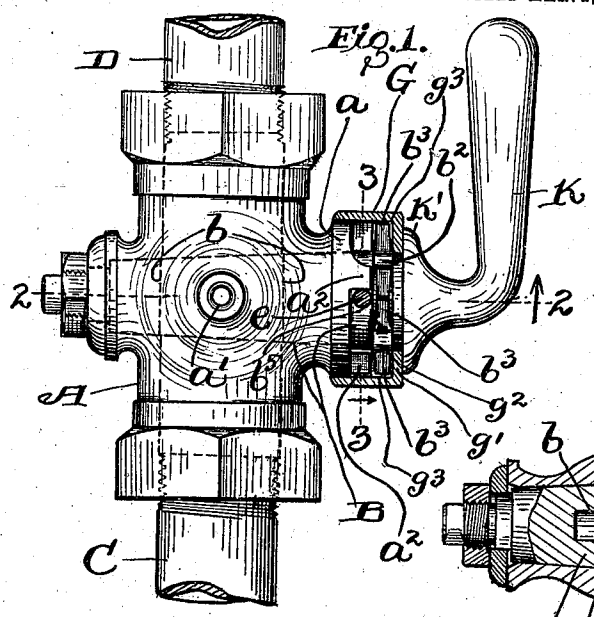


Fig. 2.

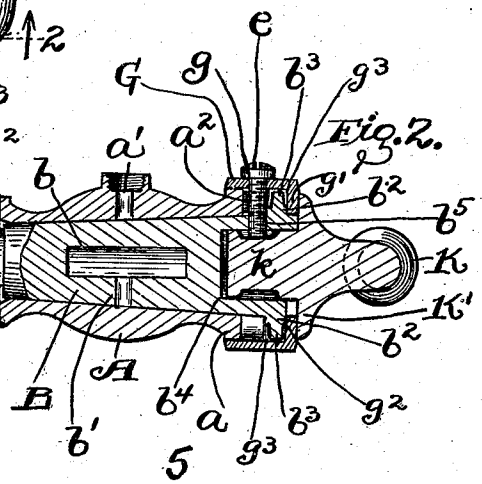


Fig. 3.

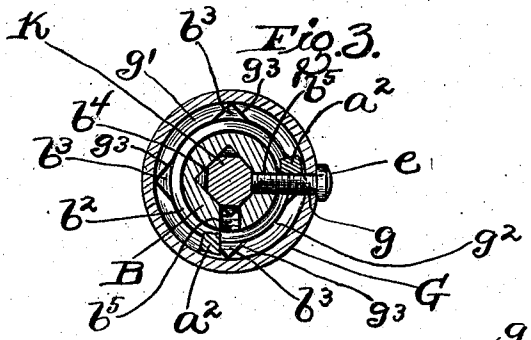


Fig. 4.

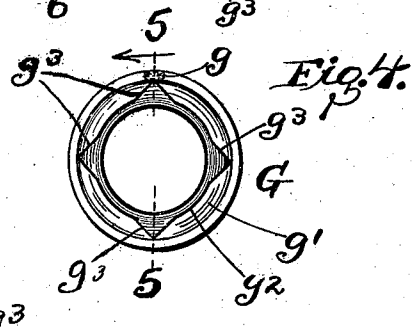
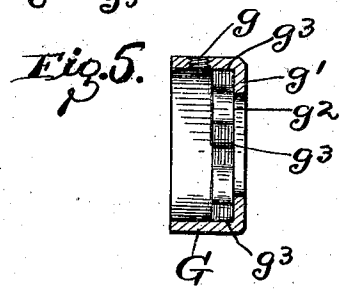


Fig. 5.



WITNESSES:

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STOP AND WASTE COCK.

No. 848,137. Specification of Letters Patent. Patented March 26, 1907.

Application filed March 2, 1906. Serial No. 303,833.

To all whom it may concern:

Be it known that I, WILLIAM H. SMITH, a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Stop and Waste Cocks; and I 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 pertains to make and use the same.

This invention relates to improvements in right and left hand stop and waste cocks.

The primary object of this invention is to provide an improved operative connection between the valve-forming plug of the stop and waste cock and the sleeve which surrounds the diametrically larger end of the plug.

With this object in view and to the end of realizing other advantages hereinafter appearing this invention consists in certain peculiarities of construction and combinations of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a stop and waste cock embodying my invention, and in this figure the plug surrounding sleeve is shown in section. Fig. 2 is a section on line 2 2, Fig. 1, looking in the direction indicated by the arrow. Fig. 3 is a section on line 3 3, Fig. 1, looking outwardly. Fig. 4 is an inner end view of the plug surrounding sleeve of the stop and waste cock. Fig. 5 is a section on line 5 5, Fig. 4, looking in the direction indicated by the arrow.

Referring to the drawings, A indicates the body or casing of my improved stop and waste cock, and B represents the valve-forming tapering plug, which is rotatably seated in the valve-casing and has a lateral port b, adapted to establish communication between the water-supply pipe C and the pipe D to be supplied or drained, as the case may be, which pipes are connected in the usual manner with the casing A. One of the side walls of the port b is provided with a waste-hole b', and the casing A has a waste-hole a' formed at one side of the plug, and the arrangement of the parts is such that when the plug is turned to bring its waste-hole b' in line with the pipe D the port b of the plug shall be in open relation with the waste-hole a' in the casing, and when the plug is turned, as shown, with the port b in line with the pipes C and D, a free passage for water from the pipe C through the casing and plug is formed. The construction and operation of the herein-before described parts of a stop and waste cock are, however, too well known to require further description and illustration in this specification.

The casing A is provided with an annular flange a, which surrounds the diametrically larger end portion of the plug B a suitable distance from the outer extremity of the said portion of the said plug, which flange is provided at its outer side with two stop-forming lugs a^2, which are spaced circumferentially of the plug such a distance that their adjacent and stop-forming faces are arranged at a right angle to each other and spaced apart one-fourth of the distance around the plug.

The stops a^2 project toward the outer extremity of the diametrically larger end portion of the plug about one-half the distance between the flange a and the said extremity, and the said portion of the plug is provided externally centrally between the said extremity and the said stops with an annular flange b^2, which is provided with four lugs b^3, spaced equidistantly circumferentially of the said flange, which lugs project laterally of the plug and are gradually reduced in size toward their free extremities.

The diametrically larger end portion of the plug is provided with a square hole or socket b^4, which extends inwardly a suitable distance from the outer extremity of the said portion of the plug.

The plug is provided at adjacent corners of the socket or hole b^4 and next adjacent or in close proximity to the inner side of the flange b^2 with two screw-threaded holes b^5, which extend from the periphery of the plug to and connect with the hole b^4. The holes b^5 are arranged, therefore, at a right angle to each other, and the one or the other hole is engaged by a correspondingly externally screw-threaded stop-forming screw e, according as the device is to be used as a right-hand or left-hand stop and waste cock. The screw e extends into engagement with the engaging hole b^5 through a correspondingly-screw-threaded hole g, formed in a sleeve G, which surrounds the plug and extends around the stop-bearing flange a of the casing.

The sleeve G is provided at its outer end and internally with an annular flange g', which is annularly recessed in its inner side, as at g^2, to fit over the flange b^2 on the plug. The surrounding wall of the recesss g^2 is provided with as many notches g^3 as there are lugs b^3 on the flange b^2. The lugs b^3 and the notches g^3 mutually engage and fit each other and establish operative connection between the sleeve G and the plug B. It will be observed, therefore, that the sleeve G is provided with interior portions which snugly embrace the lugs b^3 on the plug, and the stop formed by the screw e is revoluble with the rotation of the plug.

A handle K for turning the plug is provided, which handle is provided at its inner end with a square lug k, which extends into the socket or hole b^4 in the plug and is engaged by the inner end of the screw e.

The plug B is in position at the one or the other extremity of its rotary movement, according as the revoluble stop e is arranged next adjacent to the one or the other of the stationary stops a^2.

The handle K is provided with an annular flange K′, which covers the joint formed between the flange g' of the sleeve G and the plug B.

By the construction hereinbefore described it will be observed that strain upon the screw e during the rotation of the plug is avoided and the ingress of dust and dirt to the mutually-engaging surfaces of the lugs b^3 and notches g^3 is prevented.

What I claim is—

1. In a stop and waste cock, a body or casing, a tapering plug seated in the casing and provided in its diametrically larger end with two holes arranged at or approximately at a right angle to each other and extending inwardly from the periphery of the plug; a stop-forming member revoluble with the rotation of the plug and engaging one of the said holes and projecting a suitable distance outwardly beyond the peripheral surface of the plug; two stationary stops on the casing, which stops are suitably spaced circumferentially of the stop-bearing portion of the plug and arranged at opposite sides respectively of the revoluble stop, with the arrangement of the parts such that the revoluble stop is arranged next adjacent or in close proximity to the one or the other stationary stop according as the plug is at the one or the other extremity of its rotary movement; a sleeve surrounding the stop-bearing portions of the plug and casing, which sleeve is provided at its outer end and internally with an annular flange which surrounds the plug, and means for turning the plug, and there being an annular flange formed on the plug between the outer extremity of the sleeve-surrounded portion of the plug and the stops on the casing, which flange is provided with a plurality of lugs spaced circumferentially of the plug, and the flange of the sleeve being provided in its inner side with an annular recess whose surrounding wall has notches engaged by the lugs on the plug, with the mutual engagement of the said lugs and notches establishing operative connection between the sleeve and the plug.

2. In a stop and waste cock, a body or casing, a tapering plug seated in the casing and provided in its diametrically larger end with two holes arranged at or approximately at a right angle to each other and extending inwardly from the periphery of the plug; a stop-forming member revoluble with the rotation of the plug and engaging one of the said holes and projecting a suitable distance outwardly beyond the peripheral surface of the plug; two stationary stops on the casing, which stops are suitably spaced circumferentially of the stop-bearing portion of the plug and arranged at opposite sides respectively of the revoluble stop, with the arrangement of the parts such that the revoluble stop is arranged next adjacent or in close proximity to the one or the other stationary stop according as the plug is at the one or the other extremity of its rotary movement; a sleeve surrounding the stop-bearing portion of the plug and casing, which sleeve is provided at its outer end and internally with an annular flange which surrounds the plug, and means for turning the plug, and there being an annular flange formed on the plug between the outer extremity of the sleeve-surrounded portion of the plug and the stops on the casing, which flange is provided with a lug projecting laterally of the plug, and the sleeve being provided interiorly with a notch engaged by the said lug so as to establish operative connection between the sleeve and the plug.

3. In a stop and waste cock, a body or casing; a tapering plug seated in the casing and provided in its diametrically larger end with two holes arranged at or approximately at a right angle to each other and extending inwardly from the periphery of the plug; a stop-forming member revoluble with the rotation of the plug and engaging one of the said holes and projecting a suitable distance outwardly beyond the peripheral surface of the plug; two stationary stops on the casing, which stops are suitably spaced circumferentially of the stop-bearing portion of the plug and arranged at opposite sides respectively of the revoluble stop, with the arrangement of the parts such that the revoluble stop is arranged next adjacent or in close proximity to the one or the other stationary stop according as the plug is at the one or the other extremity of its rotary movement; a sleeve surrounding the stop-bearing portions of the plug and casing, and means for turning the plug, and there being a plurality of lugs

formed on and spaced circumferentially of the plug between the outer extremity of the sleeve-surrounded portion of the plug and the stops on the casing, which lugs are embraced by portions of the sleeve so as to establish operative connection between the sleeve and the plug.

4. In a stop and waste cock, a body or casing, a tapering plug seated in the casing and provided in its diametrically larger end with two holes arranged at or approximately at a right angle to each other and extending inwardly from the periphery of the plug; a stop-forming member revoluble with the rotation of the plug and engaging one of the said holes and projecting a suitable distance outwardly beyond the peripheral surface of the plug; two stationary stops on the casing, which stops are suitably spaced circumferentially of the stop-bearing portion of the plug and arranged at opposite sides respectively of the revoluble stop, with the arrangement of the parts such that the revoluble stop is arranged next adjacent or in close proximity to the one or the other stationary stop according as the plug is at the one or the other extremity of its rotary movement; a sleeve surrounding the stop-bearing portions of the plug and casing, which sleeve is provided at its outer end and internally with an annular flange which surrounds the plug, and means for turning the plug, and there being several lugs formed on and spaced circumferentially of the plug between the outer extremity of the sleeve-surrounded portion of the plug and the stops on the casing, and the flange of the sleeve being provided in its inner side with notches which are engaged by the said lugs so as to establish operative connection between the sleeve and the plug.

5. In a stop and waste cock, a body or casing, a tapering plug seated in the casing and provided in its diametrically larger end with two holes arranged at or approximately at a right angle to each other and extending inwardly from the periphery of the plug; a stop-forming member engaging one of the said holes and projecting a suitable distance outwardly beyond the peripheral surface of the plug; two stationary stops on the casing, which stops are suitably spaced circumferentially of the stop-bearing portion of the plug and arranged at opposite sides respectively of the stop-forming member of the plug; a sleeve surrounding the stop-bearing portion of the plug, which sleeve has a hole engaged by the stop-bearing member of the plug, and means for turning the plug, and there being a plurality of lugs formed on and projecting laterally and spaced circumferentially of the plug between the outer extremity of the sleeve-surrounded portion of the plug and the stops on the casing, which lugs are reduced in size toward their free ends, and the sleeve being provided at its outer end and centrally with a flange embracing the plug, which flange is provided in its inner side with notches engaged by the lugs on the plug.

In testimony whereof I sign the foregoing specification in the presence of two witnesses.

WILLIAM H. SMITH.

Witnesses:
C. H. DORER,
B. C. BROWN.