H. F. SCHROEDER.

WASTE COCK.

APPLICATION FILED MAR. 27, 1908.

925,955. Patented June 22, 1909.

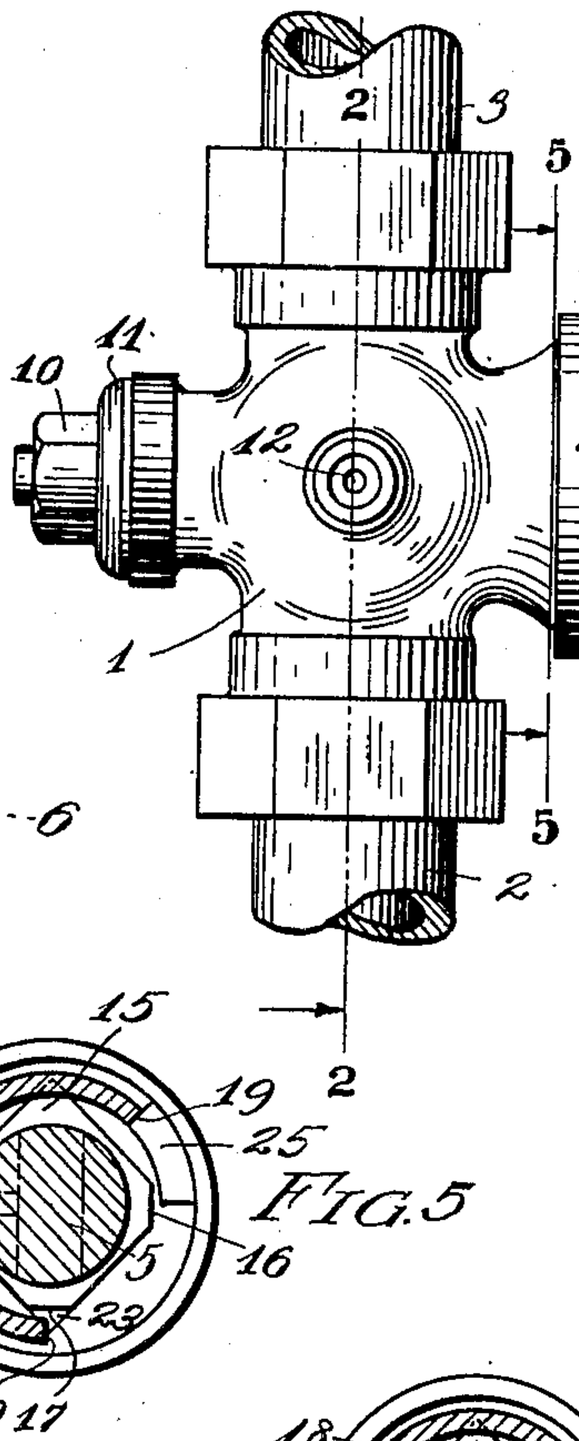

FIG. 1

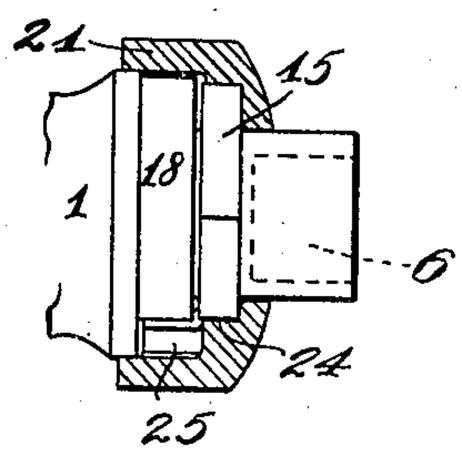

FIG. 4

FIG. 5

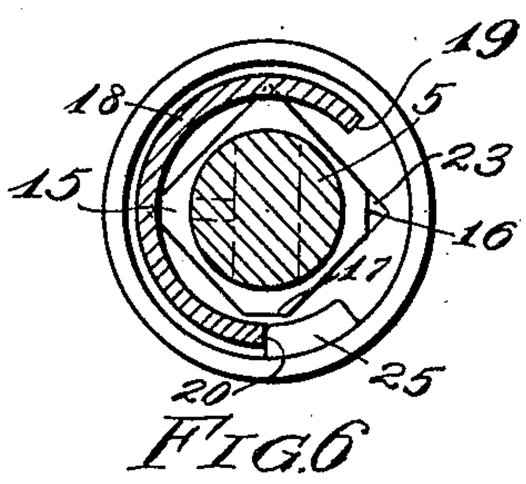

FIG. 6

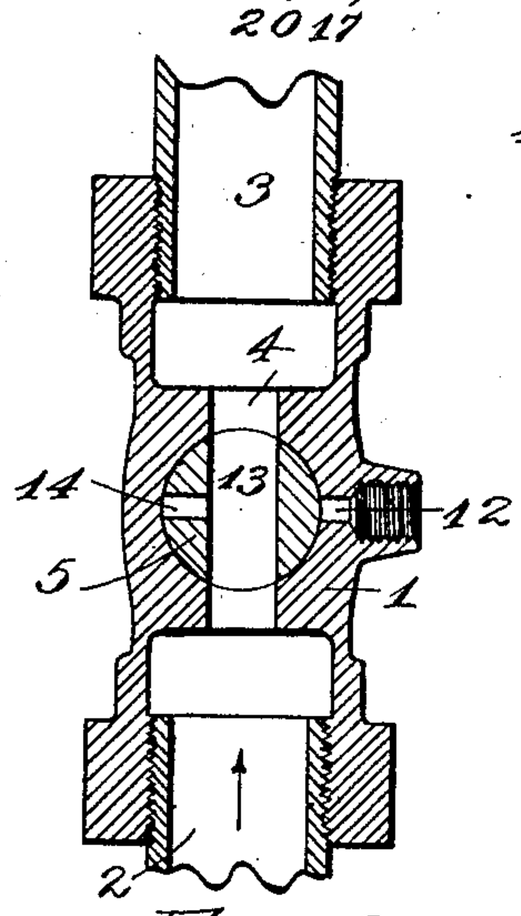

FIG. 2

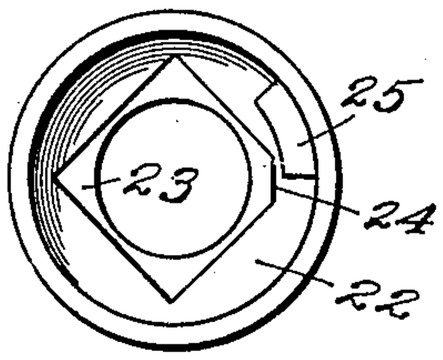

FIG. 7

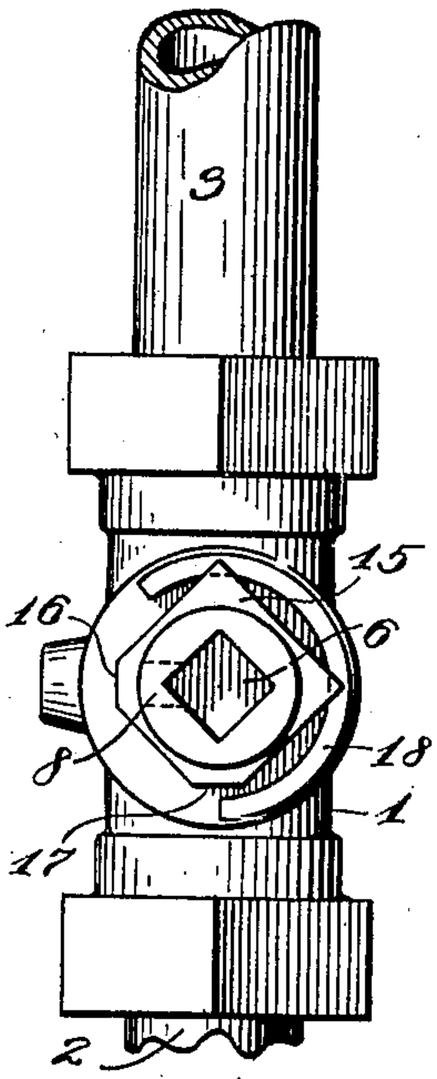

FIG. 3

WITNESSES:

Brennan B. West.

Nathan F. Fretter

INVENTOR,

Henry F. Schroeder,

BY Bates, Fouts & Hull,

ATTYS.

UNITED STATES PATENT OFFICE.

HENRY F. SCHROEDER, OF CLEVELAND, OHIO.

WASTE-COCK.

No. 925,955. Specification of Letters Patent. Patented June 22, 1909.

Application filed March 27, 1908. Serial No. 423,512.

To all whom it may concern:

Be it known that I, HENRY F. SCHROEDER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Waste-Cocks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to an improvement in combined stop and waste cocks, and more particularly to that type of such cocks wherein a cap is carried by the plug and provided with a stop projection adapted to engage co-acting stops carried by the casing in which the plug rotates.

The invention relates more particularly to the construction of the plug and of the cap, whereby the rotation of the plug may be limited to bring the same into open or draining position and whereby the cap if accidentally set to cause the plug to drain or waste in the wrong direction, may be adjusted to reverse the direction of waste without material delay, and the necessity for disassembling the valve.

Generally speaking, the invention may be defined as consisting of the combinations of elements embodied in the claims and illustrated in the drawings, wherein—

Figure 1 represents a side elevation of a combined stop and waste cock constructed in accordance with my invention; Fig. 2 represents a longitudinal sectional view on the correspondingly numbered line of Fig. 1, looking in the direction of the arrows; Fig. 3 represents a side elevation of said cock with the cap and operating handle removed; Fig. 4 represents a detail, partly in section and partly in elevation, of the cap, plug and part of the casing; Fig. 5 represents a sectional view on the correspondingly numbered line of Fig. 1, looking in the direction of the arrows; Fig. 6 represents a view similar to Fig. 5, showing the cap adjusted a quarter of a turn to vary the positions of the through and waste ports of the plug; and Fig. 7 represents an elevation of the interior of the cap.

Describing the parts by reference characters, 1 denotes the valve casing having inlet and outlet connections to which are connected respectively an inlet pipe 2 and an outlet pipe 3. The casing is provided with a central longitudinal bore 4 for the flow of liquid therethrough. 5 denotes the plug, which extends transversely of said bore and is generally tapered or frusto-conical in shape, as is common with plugs of this type, being provided at its larger end with a square or rectangular socket 6 for the reception of the operating handle 7 and having an aperture 8 for the reception of a set screw 9 by which the handle and the cap are secured in place. The opposite end of the plug is provided with a nut 10 and washer 11.

The valve casing is provided with a lateral drain outlet 12 which communicates with the recess in the valve body wherein the plug 5 is mounted and is adapted to register with the through-port 13 in said plug when the latter is turned at right angles with respect to the positions shown in Figs. 1 and 2. This through-port is shown as of the same diameter as bore 4. Plug 5 is also provided with a drain port 14 extending at right angles and communicating with port 13 and adapted, when the plug is turned about 90° to the right from the position shown in Fig. 2, to drain the outlet pipe 3 through ports 14, 13, and outlet 12. Plug 5 is provided with a flange 15 preferably integral therewith. This flange is square and has two adjacent corners thereof cut away at 16 and 17. The valve casing 1 is provided with an outwardly projecting flange 18, which extends in proximity to flange 15. A portion of this flange is removed or cut away, whereby a pair of shoulders 19 and 20 are provided, such recessed portion occupying somewhat more than a quarter of the entire circumference of the flange.

21 denotes a cap which is adapted to be applied to the outer end of plug 5 and is provided with a skirt adapted to extend around and embrace flange 18. This cap is provided within the inwardly-extending flange 22 thereof with a square socket 23, formed as a recess in said flange, one of the corners whereof is cut away at 24, corresponding to corners 16 and 17 on flange 15.

25 denotes a lug which is formed within the skirt of cap 21 and which is located adjacent to the corner 24, said lug having one of its vertical edges opposite the central portion of face 24 of the socket 23.

In assembling the parts, the plug will be turned with the port 13 in register with the passageway through the valve casing and with the drain port 14 arranged opposite to

the waste outlet 12. In this position, the flange 15 will be in the position shown in Figs. 3, 5 and 6. The cap 21 will be applied to said plug in the manner shown in Fig. 5; that is to say, with lug 25 in engagement with shoulder 19 of flange 18. The distance between shoulders 19 and 20 is sufficiently greater than 90° to provide for lug 25. With the parts in the positions shown, cap 25 can be applied to the plug only in one of the two positions shown respectively in Figs. 5 and 6, owing to the fact that flange 15 has only two corners (viz: 16 and 17) that can receive the corresponding corner 24 of socket 23. With the parts arranged as shown in Figs. 1, 2, 3 and 5 the cap should be applied in the position shown in Fig. 5, viz: with the lug 25 in substantial engagement with shoulder 19. When in this position, and with the handle 7 arranged as shown in Fig. 1, water may flow directly through plug 5 and through outlet pipe 3. When it is desired to shut off the flow of water through the valve, handle 7 is turned upwardly to the right until lug 25 engages shoulder 20. This cuts off the flow of water from below the valve and drains the pipe 3 through port 14, port 13 (which now extends transversely of the passageway 4) and outlet 12. It frequently happens, however, that valves of this kind will be installed with the cap in reverse position; that is to say, with the cap in such position that, when the valve is rotated by its handle to turn the through-port at right angles to the bore 4 of the casing, port 14 will communicate with pipe 2, whereby there will be a continuous waste of water from the inlet pipe through outlet 12. To correct this, it will be necessary only to remove the cap a sufficient distance to enable socket 23 to clear flange 15, whereupon the cap may be rotated a quarter turn to bring the lug 25 against shoulder 19, then by slipping the cap inwardly upon the plug, the recess or socket in the cap will engage the flange 15 properly, and the plug can be operated only in a proper manner by its handle to drain from the outlet pipe instead of from the inlet pipe. It is only necessary, if the parts are arranged so that the plug will drain from the wrong direction, to turn the plug to open position, shift the cap a quarter-turn with reference to the plug and slide it in place upon the plug, whereupon the plug can only be rotated to vent or drain from the outlet pipe. The set screw 9 not only secures handle 7 in place within the socket 6, but serves to retain the cap 21 in position.

I claim:—

1. In a combined stop and waste cock, the combination of a valve casing having an inlet and an outlet connection and a drain outlet intermediate therebetween and having a pair of stops, a plug mounted within said casing and having a through-port adapted to register with the inlet and outlet connections and also having a drain port communicating with said through-port, an angular projection on said plug having two of its corners cut away, and an operating member adapted to be fitted to said plug and having an annular socket corresponding to said flange but having only one of the corners cut away, said member being provided with a lug or projection adapted to engage said stops, substantially as specified.

2. In a combined stop and waste cock, the combination of a valve casing having an inlet and an outlet connection and a drain outlet intermediate therebetween, said casing being provided with a pair of stops, a plug mounted within said casing and rotatable with respect to said stops and having a through-port adapted to communicate with said connections and a drain port communicating with said through-port, an angular projection on said plug having two of its corners cut away, and an operating member mounted on said plug and having an angular socket therein corresponding to said angular flange but having one of its angular corners cut away, and a lug or projection adjacent to the last-mentioned corner of said socket and overhanging the same, said lug or projection being positioned to engage the stops on said casing, substantially as specified.

3. In a combined stop and waste cock, the combination of a casing having an inlet and an outlet connection and a drain outlet intermediate therebetween, said casing being provided with a pair of stops, a plug mounted in said casing and rotatable with respect to said stops, said plug having a through-port and a drain port communicating therewith and provided with an angular projection located beyond said stops, some of the corners of said projection being cut away, and a cap on said plug comprising an inwardly extending flange and a skirt, said flange being provided with a central aperture for the reception of the end of the plug and having an angular recess corresponding to the angular projection but having a less number of its corners cut away than is the case with the projection, a lug or projection extending longitudinally of said skirt and adapted to engage said stops, and an operating handle for said cap substantially as specified.

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

HENRY F. SCHROEDER.

Witnesses:
J. B. HULL,
BRENNAN B. WEST.