

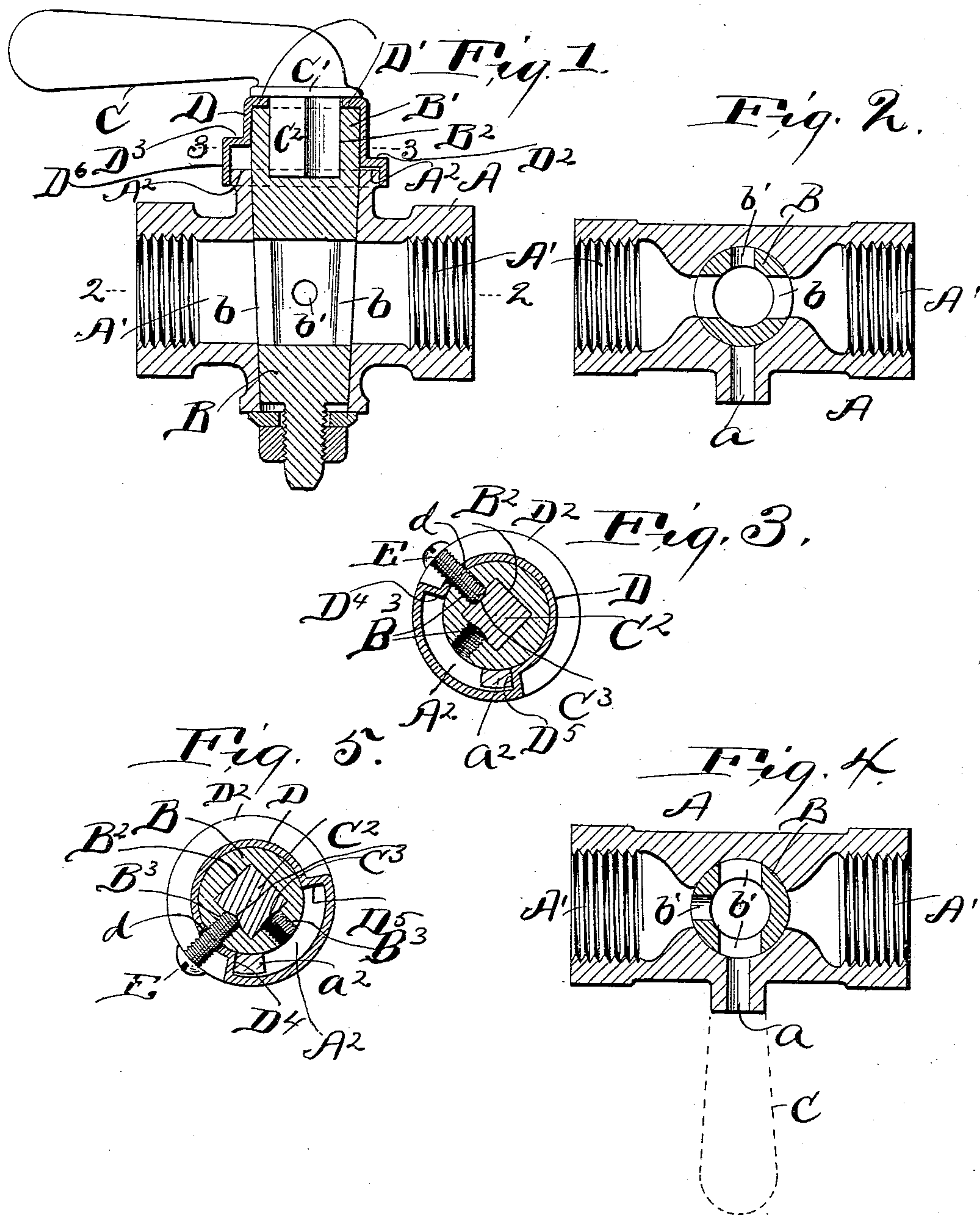
(No Model.)

2 Sheets—Sheet 1.

F. A. RADCLIFFE.
STOP AND WASTE COCK.

No. 555,123.

Patented Feb. 25, 1896.



Witnesses,
E. B. Gilchrist
[Signature]

Inventor
Frank A. Radcliffe
[Signature]
By M. D. Suggitt & Co.
his Attorneys

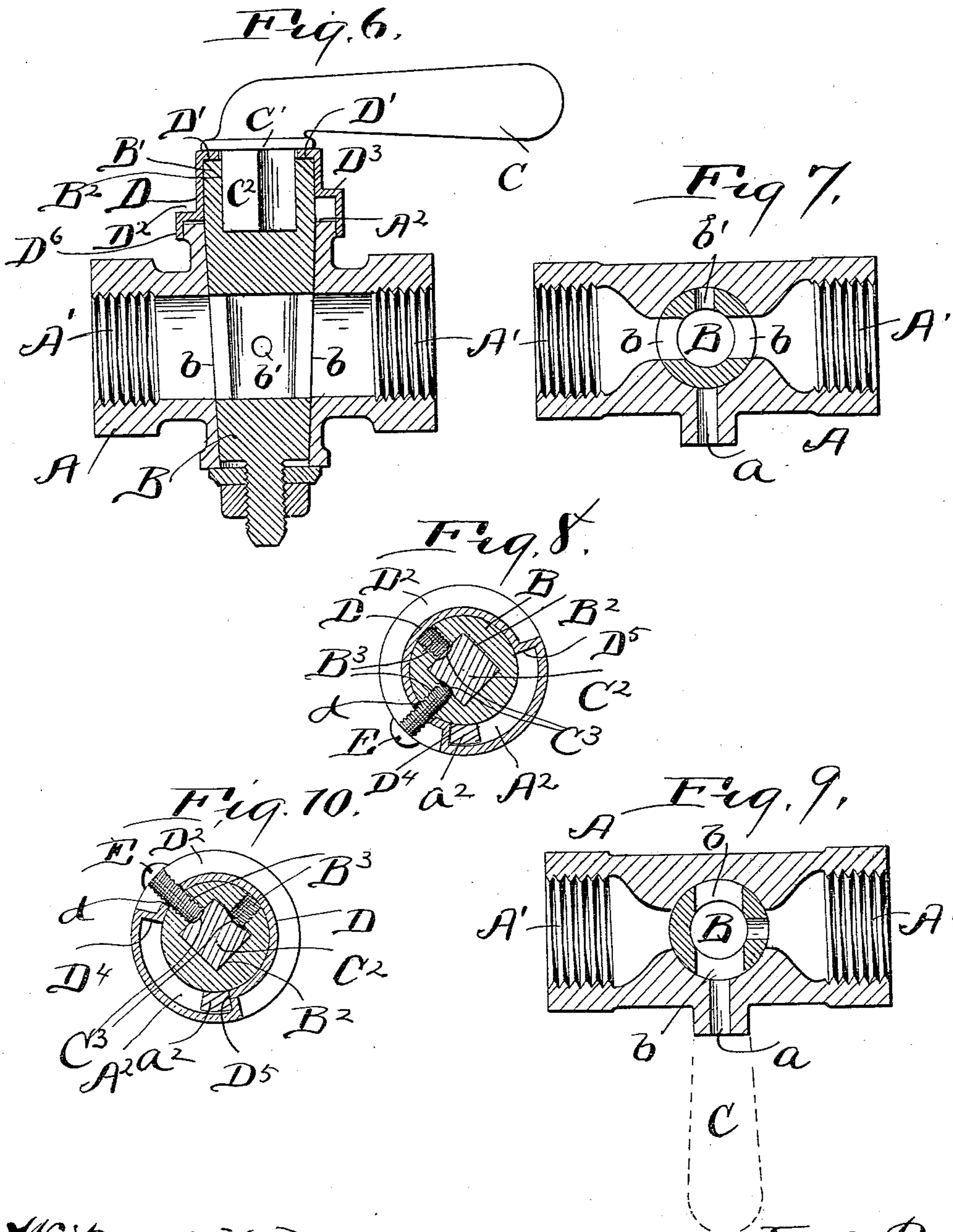
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UNITED STATES PATENT OFFICE.

FRANK A. RADCLIFFE, OF CLEVELAND, OHIO.

STOP AND WASTE COCK.

SPECIFICATION forming part of Letters Patent No. 555,123, dated February 25, 1896.

Application filed August 15, 1895. Serial No. 559,325. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. RADCLIFFE, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Stop and Waste Cocks; and I do 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.

My invention relates to improvements in combined right and left handed stop and waste cocks; and it consists in the peculiarities of construction and combinations of parts hereinafter described and pointed out in the claim.

In the accompanying drawings, Figure 1 is a side elevation, mostly in central vertical section, of a stop and waste cock embodying my invention. The parts in this figure are shown in position for use as a left-handed cock. Figs. 2 and 3 are sections on line 2 2 and line 3 3, respectively, Fig. 1, looking in the direction of the arrows. In the position of parts shown in Figs. 1, 2, and 3 the lateral port through the tapering plug registers with and establishes continuity in the passage-way through the valve-casing. Figs. 4 and 5 are sections corresponding with Figs. 2 and 3, except that in the position of parts shown in Figs. 4 and 5 the waste-hole in the plug registers with the discharging end of the passage-way through the valve-casing, and communication between the two ends of said passage-way is interrupted, and the port through the valve communicates with the waste-hole in the valve-casing, and the position of the handle in the position of parts shown in said Figs. 4 and 5 is indicated in dotted lines in Fig. 4. Figs. 6, 7, 8, 9, and 10 correspond with Figs. 1, 2, 3, 4, and 5, respectively, except that the parts in the last five figures are shown in position required to form a right-handed cock.

Referring to the drawings, A represents the casing of my improved stop and waste cock, and B designates the tapering plug or valve that is suitably seated in a corresponding chamber in the valve-casing, and has a lateral port *b* adapted to establish continuity in the passage-way *A'* through the valve-casing. One of the side walls of plug B is provided

with a waste-hole *b'* that is adapted to communicate with the one or the other end of the passage-way through the valve-casing by turning the plug or valve upon its axis in the direction and to the extent required, and the arrangement of parts is such that when the plug or valve is actuated to bring said waste-hole *b'* in line with the passage-way through the valve-casing port *b* of the plug or valve shall be in open relation with waste-hole *a* extending laterally through one side of the valve-casing.

It is not considered necessary to illustrate the stop and waste cock attached to the water-supply pipe or to the pipe to be supplied with water. Suffice it to state that one end of the valve-casing is adapted to connect with the supply-pipe, and the other end with the pipe to be supplied.

A handle C, hereinafter referred to, is provided for turning the plug.

I would here remark that the device is considered right or left handed according as the right or left hand end of the passage-way through the valve-casing is the discharging end of said passage-way.

The tapering plug of my improved stop and waste cock at its larger end terminates in a circular extension *B'*, that extends outside of the valve-casing, as shown in Figs. 1 and 6, and is provided centrally with a pocket *B²*, that extends from the outer extremity of the aforesaid circular member of the plug inwardly a suitable distance and is angular in cross-section, as shown in Figs. 3, 5, 8, and 10. The valve-casing at the inner end of the circular portion of the plug (that portion of the plug that extends outside of the valve-casing) is provided with an annular shoulder *A²*. A sleeve D embraces member *B'* of the plug and at its outer end is provided with an internal annular flange or seat, *D'*, engaging the outer end of and resting upon said circular member *B'* of the plug, as shown in Figs. 1 and 6. Sleeve D is preferably stamped from a single piece or blank of sheet metal and nicely embraces the outer end of the circular member *B'* of the plug.

Sleeve D, adjacent to shoulder *A²* on the valve-casing, is flanged laterally and outwardly, as at *D²*, which flange *D²* extends about two-thirds of the distance circumfer-

entially of sleeve D. Sleeve D, diametrically opposite the central portion of flange D², but somewhat nearer to the outer extremity of the sleeve, is bent or flanged laterally and outwardly, as at D³, which flange D³ extends the remaining distance circumferentially of the sleeve. The extremities D⁴ and D⁵ of flange D² form shoulders that are adapted to engage opposite sides, respectively, of a lug a² formed upon shoulder A² of the valve-casing, and hence when sleeve D is placed in position with one of its shoulders D⁴ D⁵ engaging one side of lug a² the plug, when the sleeve is operatively secured thereto, can only be turned in one direction and a distance equal to the interval between the opposite side of said lug and the other of said shoulders. Hence one of shoulders D⁴ D⁵, in conjunction with one side of lug a² on the valve-casing, forms a stop to limit the movement of sleeve D and connected plug or valve and operating-handle in the one direction, and the other of said shoulders, in conjunction with the opposite side of said lug on the valve-casing, constitutes a stop to limit the movement of said parts in the opposite direction.

I would here remark that the operating-handle at its inner end is provided with an annular flange or shoulder C', that engages the outer side of internal flange or seat, D', of sleeve D and thereby excludes the ingress of dust or dirt into sleeve D and pocket B² from the outer end of the sleeve. The handle at the inner side of flange C' is provided with an angular projection C², that corresponds with and engages pocket B² in the plug and establishes operative connection between the handle and plug.

Sleeve D is operatively secured to the plug by means of a screw E that extends through a hole d in said sleeve and through a correspondingly-threaded hole B³ in the handle-engaged member B' of the plug, and at its inner end preferably engages a depression C³ formed in the angular projection of the operating-handle, as shown very clearly in Figs. 3, 5, 8 and 10, and I would here remark that member B' of the plug must be provided with two screw-receiving holes d, arranged at right angles to each other and radially to the axis of the plug, as shown in said figures, one of which holes is for the purpose of receiving the securing-screw when the parts are in position for use as a right-handed cock, and the other hole being for the purpose of receiving the screw when the parts are assembled for use as a left-handed cock.

In the use of the device as a left-handed stop and waste cock the parts are assembled as shown in Figs. 1 and 2. In Fig. 1 the port through the plug or valve is shown in line with the passage-way through the valve-casing and the operating-handle extends in the direction of that end of the valve-casing that is designed to be attached to the pipe to be supplied. Hence the handle is turned to the left in cutting off the supply to said pipe and in order

to drain said pipe. (See Fig. 4, wherein the port through the plug or valve is shown communicating with the waste-hole in the valve-casing, and wherein the waste-hole in the plug or valve is shown in communication with that end of the passage-way through the valve-casing that is adapted to communicate with the pipe to be supplied.) The arrangement of parts in Figs. 1, 2 and 3 is such that when the plug or valve is in position with its port establishing continuity in the passage-way through the valve-casing shoulder D⁵ of sleeve D shall engage the right-hand side of lug a² on the valve-casing and waste-hole b' in plug or valve B shall be at the rear and consequently closed, and when the parts are turned to the left in order to interrupt continuity in the passage-way through the valve-casing shoulder D⁴ of sleeve D shall come into engagement with the left-hand side of the lug on the valve-casing, as shown in Fig. 5, and the waste-hole in the plug or valve is brought into line with that end of the passage-way through the valve-casing that is adapted to connect with the pipe to be supplied, as shown in Fig. 4.

In order to use the device as a right-handed stop and waste cock, the arrangement hereinbefore described is reversed so far as sleeve D and the operating-handle are concerned—namely, the operating-handle, as shown in Fig. 6, extends to the right or in the direction of that end of the valve-casing that is adapted to connect with the pipe to be supplied. In the case of the right-handed stop and waste-cock, therefore, shoulder D⁴ of sleeve D, when the plug or valve is in position establishing continuity in the passage-way through the valve-casing, engages the left-hand side of the lug on the valve-casing, as shown in Fig. 8, and in order to interrupt continuity in said passage-way and thereby cut off the supply to the pipe to be supplied and to drain said pipe the operating-handle and consequently sleeve D and the plug or valve are turned to the right until shoulder D⁵ of said sleeve engages the right-hand side of the lug on the valve-casing, as shown in Fig. 10, thereby bringing the waste-hole in the plug or valve into open relation with that end of the passage-way through the valve-casing that will connect with the pipe to be supplied and bringing the port through the plug or valve into communication with the waste-hole in the forward side of the valve-casing, as shown in Fig. 9.

Flanges D² and D³ of sleeve D at their outer edges terminate in the downwardly-projecting annular member D⁶, that snugly embraces that portion of the valve-casing that is provided with annular shoulder A², and thereby excludes ingress of dust and dirt into sleeve D from below.

Concluding I would remark that my invention resides, essentially, in adequate means for effectually excluding dust and dirt from between the plug and embracing-casing, so

that the plug is not liable to be soon worn and rendered leaky, and, briefly described, my improved construction essentially involves a casing having a circular head provided with the annular shoulder A^2 and the plug having a circular end projecting through said head and provided with an angular pocket engaged by the correspondingly-shaped lug of the handle C, that has an annular shoulder or flange overlapping the outer face of the internal annular flange, D' , formed at the outer end of sleeve D, that snugly embraces the circular end of the plug, and said internal flange, D' , of the sleeve overlaps the outer extremity of the circular end of the plug, by which construction dust and dirt are practically excluded from ingress to the plug between the handle and plug; also, sleeve D at its inner end essentially terminates in the circular member D^6 , that snugly embraces the aforesaid circular head of the casing, and it is therefore apparent that dust and dirt are practically excluded from access to the plug from the inner end of said sleeve.

What I claim is—

The combination with the casing A having the passage-way A' , waste-hole a , and a circular head provided with the annular shoulder A^2 that has the lug a^2 formed thereon, the tapering plug B seated within said casing, and

provided with a port b and the waste-hole b' and having its larger end extending through the aforesaid head and terminating in a circular portion projecting outside of the casing, and provided with an angular pocket B^2 and the two screw-threaded holes B^3 , of the sleeve D embracing said projecting cylindrical portion of the plug and provided with the internal annular flange D' overlapping the outer end of the projecting portion of the plug, said sleeve being provided with a lateral hole d and the internal shoulders D^4 and D^5 , and being further provided with annular member D^6 snugly embracing the aforesaid circular head of the casing, the screw E extending through said hole d in the sleeve and engaging one of the screw-threaded holes in the plug, and the handle or lever C provided with the angular lug or projection C^2 and having an annular shoulder or flange overlapping the outer face of the aforesaid internal flange of the sleeve, all arranged and operating substantially as shown, for the purpose specified.

In testimony whereof I sign this specification, in the presence of two witnesses, this 17th day of June, 1895.

FRANK A. RADCLIFFE.

Witnesses:

C. H. DORER,

ELLA E. TILDEN.