

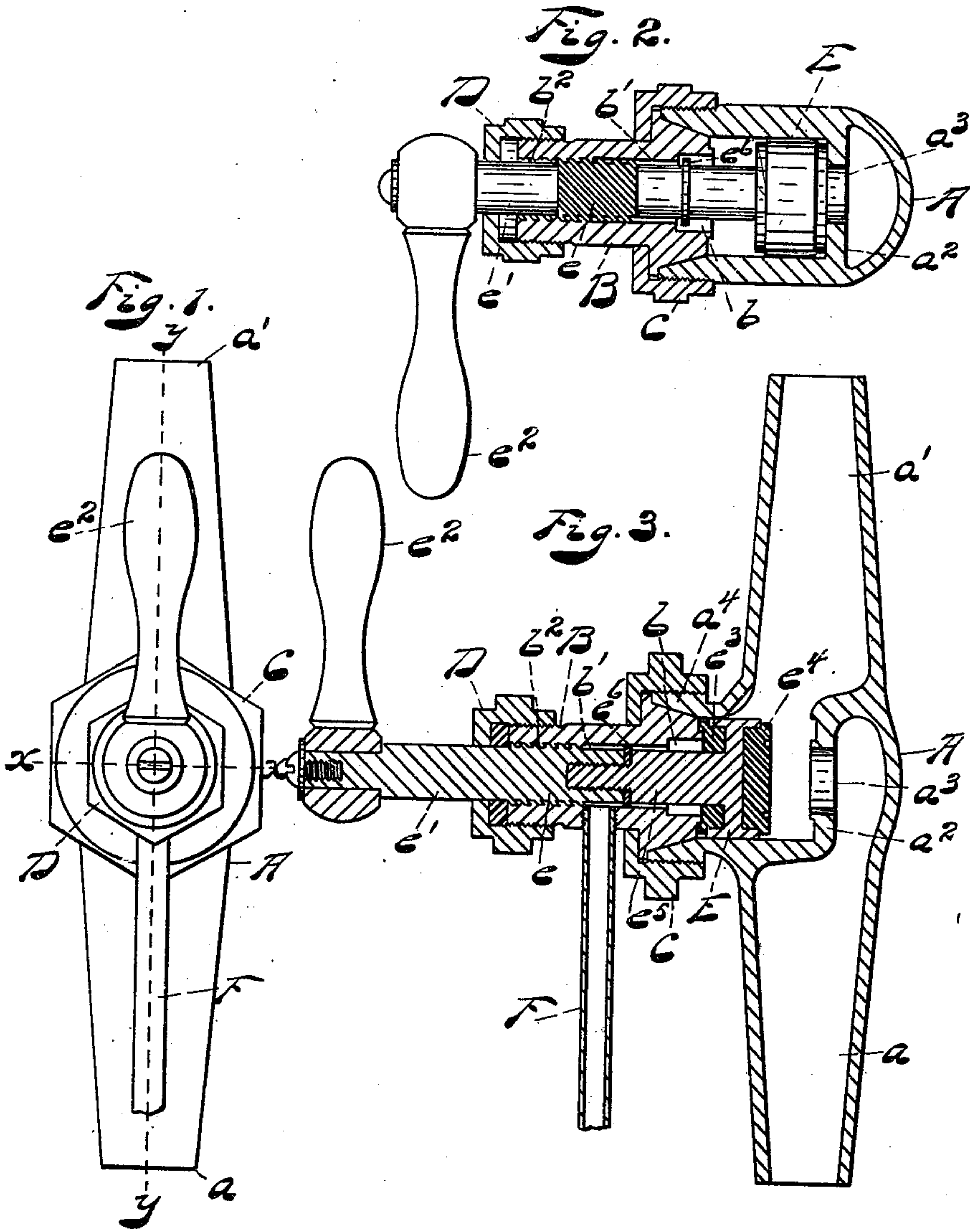
No. 672,078.

G. H. HARRINGTON.  
STOP COCK.

Patented Apr. 16, 1901.

(Application filed June 11, 1900.)

(No Model.)



Witnesses:

Emil Kopp.  
Ermina Lyford

Inventor:

George H. Harrington  
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# UNITED STATES PATENT OFFICE.

GEORGE H. HARRINGTON, OF CINCINNATI, OHIO.

## STOP-COCK.

SPECIFICATION forming part of Letters Patent No. 672,078, dated April 16, 1901.

Application filed June 11, 1900. Serial No. 19,843. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE H. HARRINGTON, a citizen of the United States of America, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Stop-Cocks, of which the following is a specification.

The object of my invention is a stop-cock from the waste-port of which water will neither spurt when the cock is being opened nor leak if the cock should be left in a partially-opened position, in which the valve may be thrown rapidly to and from its seat, and in which the parts are few and simple in construction. This object is attained by the means described in the annexed specification and illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of a stop-cock embodying my invention in its open position. Fig. 2 is a horizontal transverse sectional view of the same, taken upon line  $x x$  of Fig. 1, showing the valve in its closed position. Fig. 3 is a vertical transverse sectional view taken upon line  $y y$  of Fig. 1, showing the valve open.

Referring to the parts, case or shell A has an admission-port  $a$ , a discharge-port  $a'$ , a diaphragm  $a^2$ , with a port  $a^3$  therein connecting the admission and discharge ports and upon which the valve E seats, and a lateral annular extension  $a^4$ , which is interiorly beveled to seat a lateral tubular branch B. Tubular branch B is coupled to shell A by a flanged ring C. Upon its upper end is a packing-gland D. At its lower end it has a cup-shaped recess  $b$ , above that a bore  $b'$  of less diameter, and above that an interiorly-screw-threaded portion  $b^2$  to engage the threads of a worm  $e$ , which is formed upon the upper piece  $e'$  of the valve-stem. Into bore  $b'$  is tapped a waste-tube F. The threads of worm  $e$  are made at a steep pitch, so that one-fourth of a revolution of the handle  $e^2$ , which is secured upon the valve-stem, will throw the valve either from its seat open to its fullest limit or from its fullest limit to its closed position, so that when the valve is open, as shown in Figs. 1 and 3, handle  $e^2$  occupies a vertical position and that when it is closed

Valve E consists of a disk which has an

annular flange at its periphery forming a chamber upon each of its sides, within each of which is seated a rubber washer  $e^3 e^4$ . Said disk is formed integral with the lower piece  $e^5$  of the valve-stem. The end of piece  $e^5$  is reduced and screw-threaded to fit into the lower interiorly-screw-threaded end of piece  $e'$ , between which and piece  $e^5$  is secured a leather disk  $e^6$ .

When valve E is closed, as shown in Fig. 2, disk  $e^6$  stands within recess  $b$  just below bore  $b'$ , so that the water left in the pipe above the valve may pass around it into bore  $b'$  and out through waste-tube F; but if the valve be lifted the least distance from its seat disk  $e^6$  is carried by the valve-stem into bore  $b'$  and effectually cuts off communication between shell A and waste-tube F, as shown in Fig. 3, so that water can neither squirt out through the latter while the valve is being opened, nor leak out through it should the cock be left in a partially-opened position.

What I claim is—

1. The combination of a case having an admission and a discharge port, a diaphragm between them a port in the diaphragm connecting the admission and the discharge ports, a tubular branch coupled to the shell imperforate except at the waste-port and communicating with the discharge-port, a valve seated upon the diaphragm to open and close the connecting-port, a valve-stem connected to the valve and extending into the tubular branch leaving a chamber between it and the walls of said branch, means for reciprocating the stem to carry the valve to and from its seat, a waste-port in the tubular branch at said chamber, and a disk upon the stem at a point such that in the closed position of the valve it stands just below said chamber to allow the waste water to pass around the disk and escape and as soon as the valve is raised enters said chamber and cuts off communication between the shell and the waste-port, substantially as shown and described.

2. The combination of a case having an admission and a discharge port, a diaphragm between the ports having a port in it connecting them, a tubular branch imperforate except at the waste-port coupled to the case in communication with the discharge-port and having at its upper end an interiorly-

screw-threaded part, a waste-port in said branch, a valve in the case seated upon the port in the diaphragm, a valve-stem connected to the valve and extending up through  
5 the tubular branch, a worm upon the stem to engage the threads in said branch, a disk upon the the stem to enter the tubular branch just as the valve is raised from its seat and cut off communication between the case and the waste-port, and a handle upon the stem 10 for rotating the valve-stem to carry the valve to and from its seat, substantially as shown and described.

GEORGE H. HARRINGTON.

Witnesses:

W. F. MURRAY,  
EMMA LYFORD.