

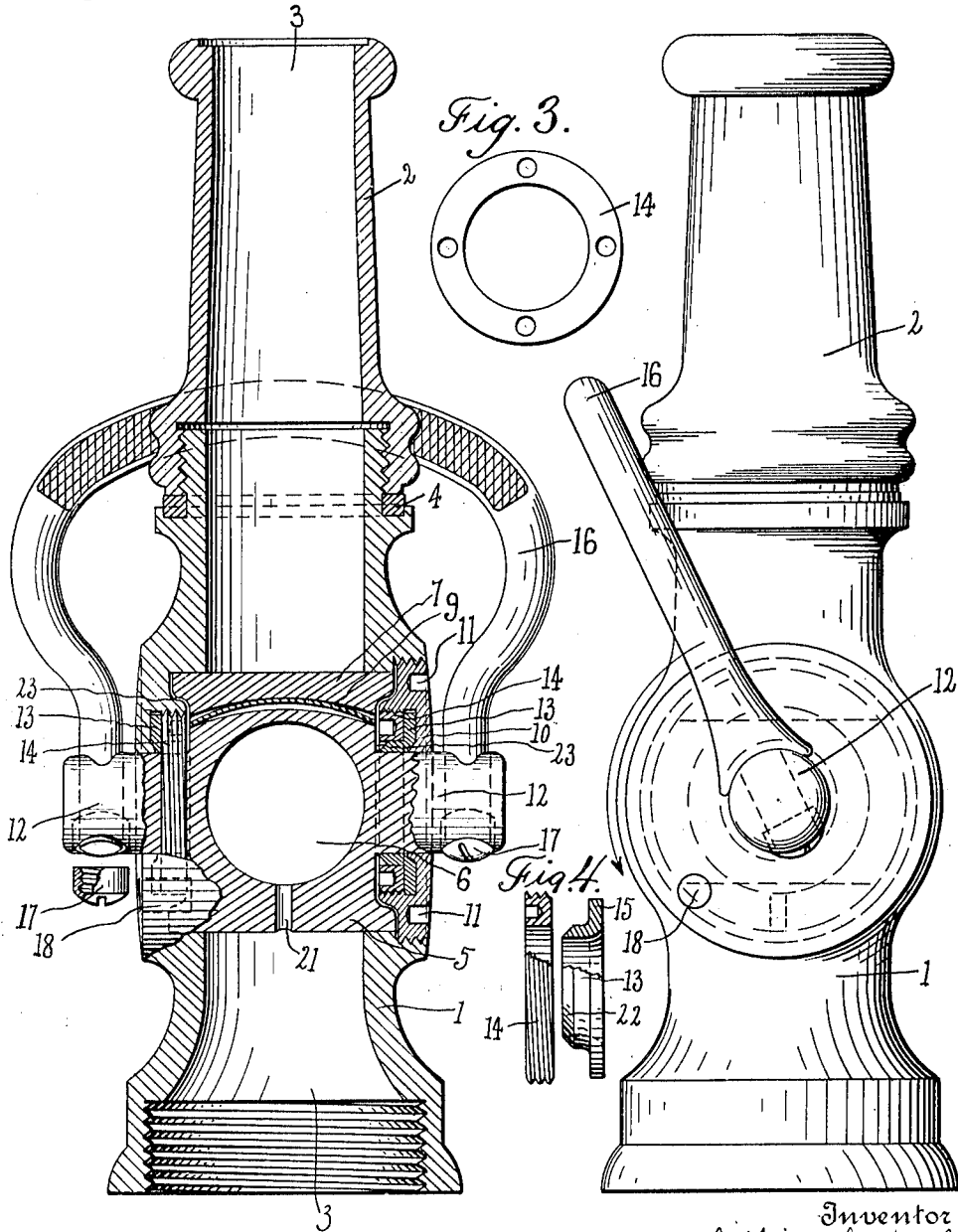
W. G. HAWLEY.
SHUT-OFF NOZZLE.
APPLICATION FILED SEPT. 19, 1917.

1,309,732.

Patented July 15, 1919.
2 SHEETS—SHEET 1.

Fig. 1.

Fig. 2.



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Fig. 5.

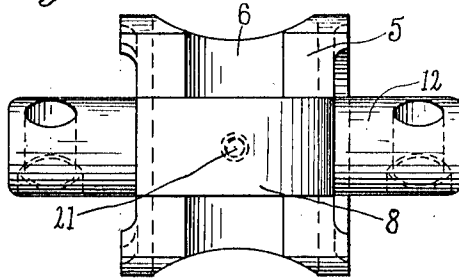


Fig. 6.

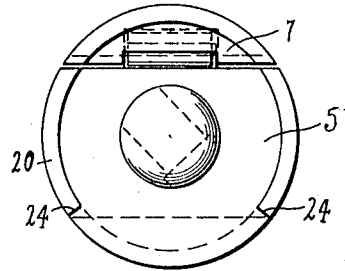


Fig. 7.

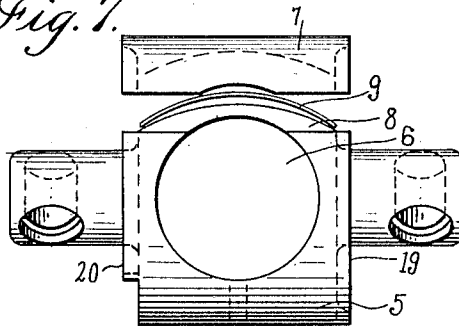


Fig. 8.

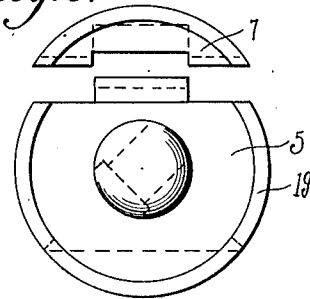


Fig. 9.

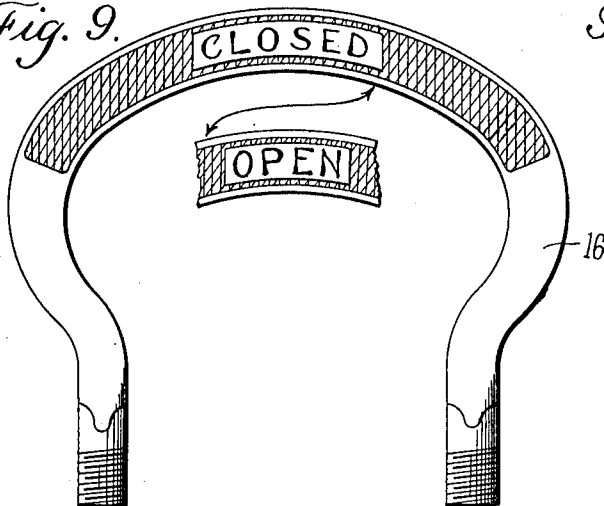
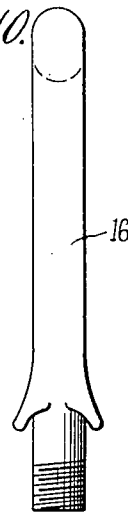


Fig. 10.



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UNITED STATES PATENT OFFICE.

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SHUT-OFF NOZZLE.

1,309,732.

Specification of Letters Patent.

Patented July 15, 1919.

Application filed September 19, 1917. Serial No. 192,095.

To all whom it may concern:

Be it known that I, WILLIAM G. HAWLEY, a citizen of the United States, residing at Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Shut-Off Nozzles, of which the following is a specification.

My invention relates to shut-off nozzles such as are used in connection with fire hose, fire engines and the like; and has for its object to provide an improved shut-off nozzle which is simple and efficient. Other objects and features of the invention will be hereinafter described and pointed out in the appended claims.

In the accompanying drawings which illustrate the preferred embodiment of my invention, and in which like reference numerals designate like parts,—

Figure 1 is a central vertical section of the complete shut-off nozzle, parts being shown in elevation. In this figure, the device is in closed or shut-off position;

Fig. 2 is an elevation taken at right angles to Fig. 1;

Fig. 3 shows the retaining ring in plan, and

Fig. 4 shows the retaining ring partly in section together with a similar view of the flanged packing over which it fits;

Fig. 5 is a top plan view of the valve plug, the valve segment being removed;

Fig. 6 is a side elevation of the valve plug and segment looking in from the left-hand side of Fig. 7, the segment being in position on the plug;

Fig. 7 is an elevation of the valve plug and segment taken at right angles to Fig. 6, the segment being out of position;

Fig. 8 is a side elevation looking in from the right-hand side of Fig. 7;

Figs. 9 and 10 are views of the operating handle.

A body portion 1 having a tip 2 attached thereto, is provided with a passage 3 extending therethrough. Said tip 2 is attached to the body portion 1 by being screw-threaded thereon, the connection being made watertight by means of a gasket 4. The body portion 1 is further formed with a recess or pocket, extending transversely of passage 3, for the reception of valve plug 5 and packings 13 with retaining rings 14. The valve plug 5 is journaled in body portion 1 cen-

trally of said recess or pocket and extends transversely across passage 3. A passage 6 provided in valve plug 5 is adapted to register, when the nozzle is in open position, with the passage 3. A circular opening is provided in one side wall of body portion 1 for the insertion or removal of plug 5 or its associated parts, the body portion about said opening being screw-threaded for the reception of plate 10, which latter has holes therein so that it may be turned by a suitable wrench. This plate 10 forms a part of body portion 1 and is provided with a bearing for one of the journals 12.

The plug 5 is cut away at one side parallel with its axis, leaving a central longitudinal radial projection 8 and having the cut-away parts intersecting passage 6 on each side of rib 8. Associated with the valve plug 5 is a complementary segment portion 7 formed with a recess to fit over the radial projection 8 of the valve plug 5. Disposed within said recess, between the projection 8 and the segment portion 7, is an arched leaf spring 9 which tends to force segment portion 7 radially outward. It will thus be seen that when the nozzle is in closed position, as in Fig. 1, the segment portion 7 will be forced radially outward into close contact with the adjacent walls of the recess or pocket in body portion 1 and will effectively close the passage 3.

The passage 6 is common to both plug 5 and segment portion 7 so that any liquid pressure in said passage 6 will, when the nozzle is in closed position, be exerted between the plug and its segment to assist spring 9 in forcing segment portion 7 radially outward to close passage 3. A passage 21 in plug 5 permits liquid to pass from body portion 1 into the passage 6 so that this pressure may always be utilized when the nozzle is in this position.

The journals 12 of the plug 5 are each provided with a flanged flexible packing 13, preferably of leather, held in position by a retainer ring 14 (shown in detail in Figs. 3 and 4). This retainer ring 14 is adapted to be screwed into position in the recess of body portion 1 and to fit over the packing 13 to hold it in close contact with its journal 12; while at the same time engaging the flange 15 of said packing and holding it securely in place against the body portion 1. The packing 13 is tapered toward

the end 22 adjacent plug 5 in order that any liquid pressure occurring in space 23 may tend to force the packing 13 into more intimate contact with journal 12. It will thus
 5 be seen that a water-tight packing is provided which is simple and efficient, and which may easily be adjusted or taken out and renewed if necessary.

A handle 16, for the purpose of rotating
 10 or turning plug 5 together with its segment portion 7 to open or close the nozzle, passes through the outer ends of and is secured to the journals 12 by means of the screw-nuts 17. The plug 5 and its segment portion
 15 7 when in position form a substantially complete cylindrical structure, having a flange 19 extending about the complete periphery on one side, and another flange 20 extending only partially about the periphery on the
 20 other side. A stop pin 18 mounted in the body portion 1 is adapted to engage the ends 24 of this latter flange 20 to limit the turning movement of plug 5.

It will be obvious that minor modification
 25 may be made without departing from the spirit of my invention.

I claim:

1. In a shut-off nozzle, the combination

of a body portion having a longitudinal passage and a transverse recess, a plug hav- 30
 ing a transverse passage journaled in said recess, said plug being formed with a radial projection and cut away at one side of said projection to intersect said passage, and a complementary segment portion associated 35
 with said plug and having a central recess fitting over said projection and a side portion forming a portion of the wall of said transverse passage.

2. In a shut-off nozzle, the combination of 40
 a body portion having a longitudinal passage and a transverse recess, a revoluble plug disposed in said recess across said passage and formed with a radial projection, a recessed complementary segment portion 45
 fitting over said plug projection and normally closing said passage, said plug and segment portion having a common transverse passage in communication with the space between the plug and the segment, and 50
 an auxiliary passage for admitting liquid from said body portion into said common passage to provide a pressure tending to force said segment portion outward.

WILLIAM G. HAWLEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."