

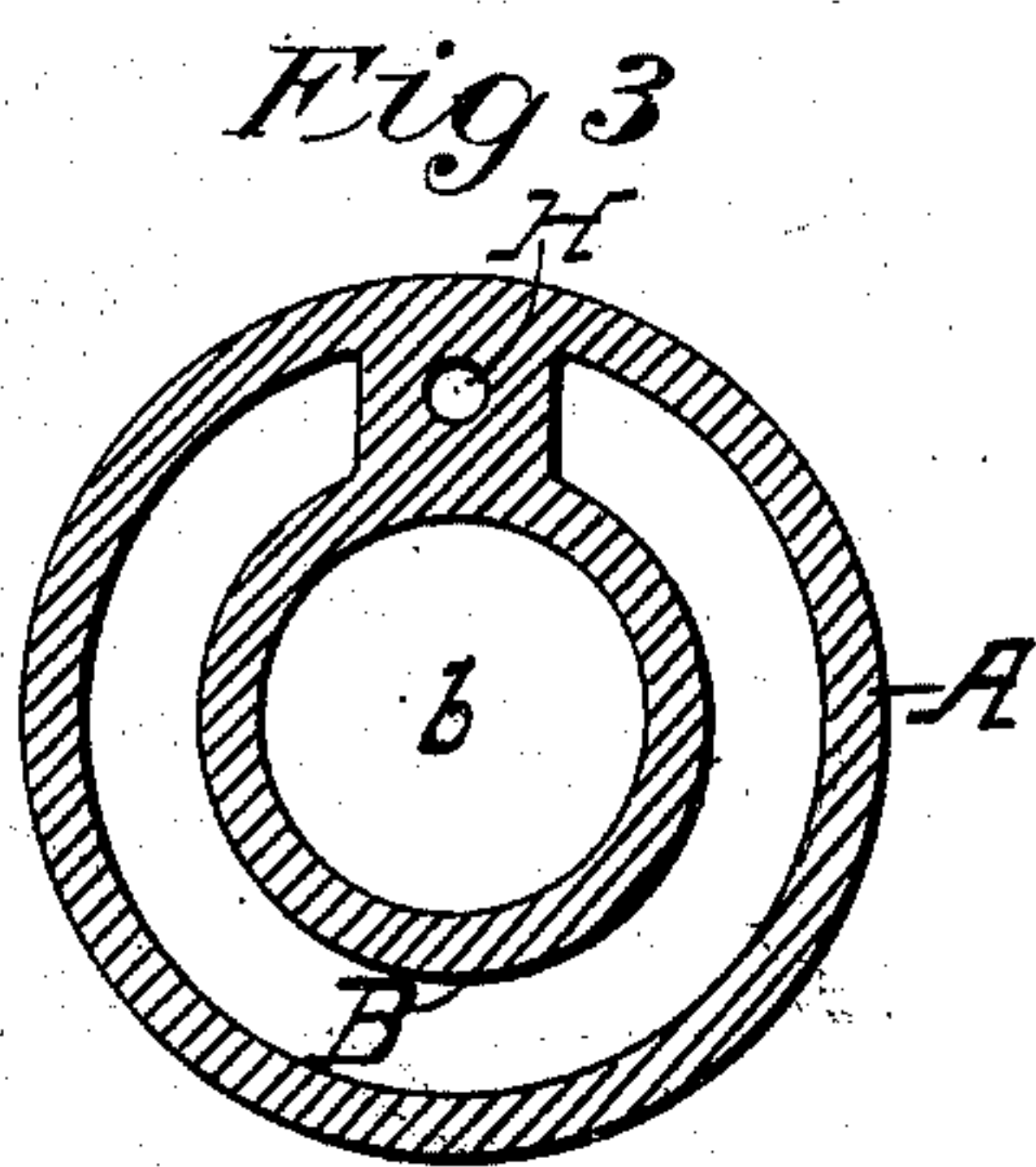
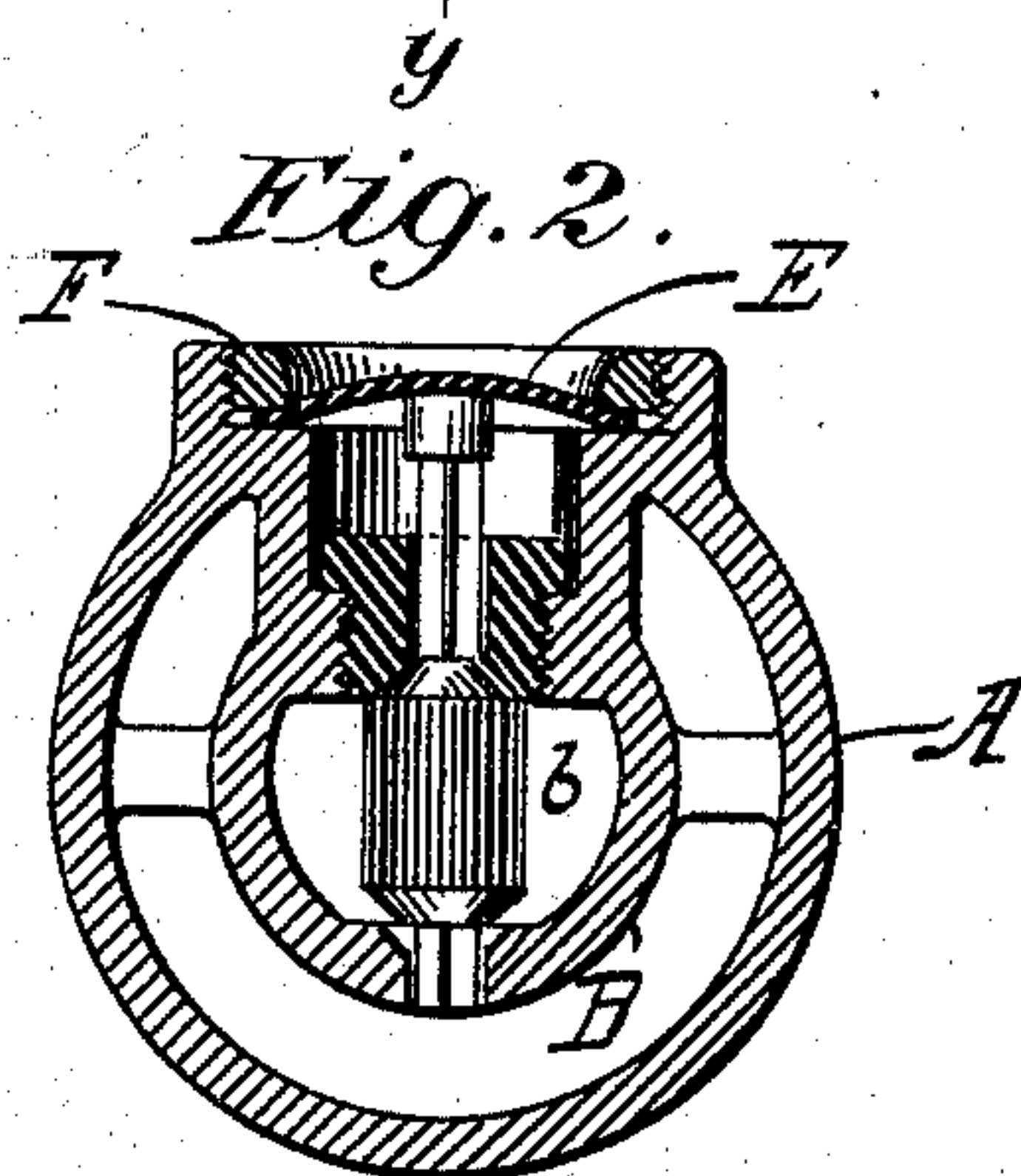
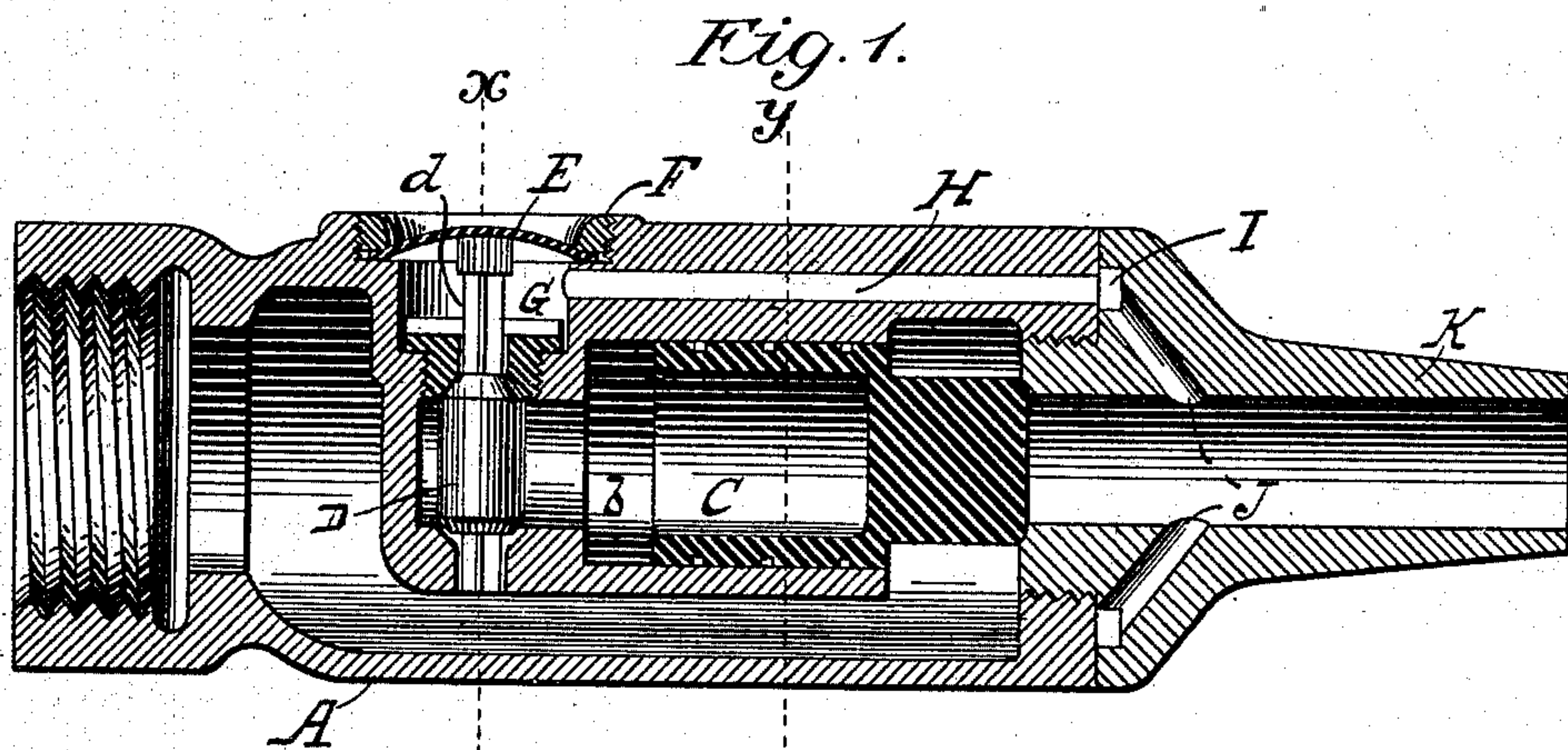
No. 681,172.

Patented Aug. 20, 1901.

M. KOENIG.  
AUTOMATIC CUT-OFF VALVE.

(Application filed Apr. 8, 1901.)

(No Model.)



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## AUTOMATIC CUT-OFF VALVE.

SPECIFICATION forming part of Letters Patent No. 681,172, dated August 20, 1901.

Application filed April 8, 1901. Serial No. 54,778. (No model.)

*To all whom it may concern:*

Be it known that I, MATTHEW KOENIG, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Automatic Cut-Off Valves, of which the following is a specification.

My invention relates to that class of automatic cut-off valves which are held open manually and which automatically cut off the flow of the fluid when released from the hand of the user; and my improvements consist of certain novel features whereby the pressure of the fluid passing through the valve is made to operate the cut-off mechanism, as is hereinafter more particularly pointed out and claimed.

In the drawings, Figure 1 represents a longitudinal section of a hose-nozzle embodying my improved construction of valve. Fig. 2 is a cross-sectional view of the hose-nozzle, taken on the line *xx* of Fig. 1; and Fig. 3 is a cross-sectional view of the same, taken on the line *yy* of Fig. 1.

Similar letters of reference designate similar parts in all the drawings.

A is the body of the valve, which in the drawings I have shown as being a hose-nozzle; but it will be readily understood that my improved form of valve is also applicable to other forms of liquid-conducting conduits.

The body A of the valve is provided with a hollow core or interior sleeve B integral with the body A and containing a main slide-valve C and a smaller controlling-valve D, a stem *d* of which extends up through a side opening in the valve-body A and is covered by an elastic disk E, held in place by the collar F, threaded into the body A. From the chamber G a channel H extends through the body of the valve and connects with an annular groove I in the nosepiece of the nozzle which opens into the interior of the nozzle through the channels J J. It will be seen that when the nosepiece K is screwed onto the body A an open channel will always be formed through the chamber G, channel H, groove I, and channels J J into the interior of the hose-nozzle without regard to the particular distance which the nosepiece may be turned in screwing it onto the body.

When the fluid pressure—as, for instance, water—enters the body of the valve, it forces up the valve D, and filling the chamber *b* forces the valve C forward into its seat, closing the main outlet to the hose-nozzle. At the same time the pressure crowds the small valve D against its upper seat, thus effectually cutting off the water at both points. The pressure of the liquid will hold both these valves in position and will keep the supply cut off until it may be desired to use it. When it is desired to use the water, the valve D is forced down by pressing upon the elastic disk E, thus closing its lower and opening its upper port. The pressure of the water will then force back the main valve C into the chamber B, the water behind the valve finding escape through the upper port of the valve D, the chamber G, the channel H, the groove I, and the channels J J into the discharge-channel beyond the main valve. So long as the valve D is held down by the pressure, as of the thumb, the main valve C will be kept open and the water will continue to flow freely; but whenever the pressure is removed from the stem of the valve D the pressure of the water in the body of the valve will at once force the valve D up into its upper seat, and the water passing through the lower port of the valve D will fill the chamber *b* and at once drive the main valve C forward into its seat, closing the main outlet-channel.

It will be seen that my improved form of valve is peculiarly suitable for use with hose where it is desirable to have the water ready for instant use and also where to prevent waste it is desirable that the flow should be automatically cut off as soon as the water is no longer needed. This renders my improved device particularly suitable for breweries and factories, where much water is wasted unless a simple and effective automatic cut-off device is attached to the hose through which it is used; but I do not desire to limit myself to the use of my improved device in a hose-nozzle, as it is manifest that it might be used in many other places for automatically cutting off the flow of liquid.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—



1. The combination, in an automatically-closing valve, of a valve casing or shell provided with a main fluid-channel, a pressure-chamber formed in an interior sleeve within said valve-casing, a main valve sliding in said pressure-chamber and adapted to close the main fluid-channel, an inlet-port of less area than the main valve from the main fluid-channel behind the main valve into said pressure-chamber, an outlet-port from said pressure-chamber discharging beyond the main valve, a secondary piston-valve controlling said inlet and outlet ports and provided with an operating-stem extending through a lateral opening in the valve-casing, substantially as described.

2. The combination, in an automatically-closing valve, of a valve casing or shell provided with a main fluid-channel, a pressure-chamber formed in an interior sleeve within said valve-casing, a main valve sliding in said pressure-chamber and adapted to close the main fluid-channel, an inlet-port of less area than the main valve from the main fluid-channel behind the main valve into said pressure-chamber, an outlet-port from said pressure-chamber discharging beyond the main valve, a secondary piston-valve controlling said inlet and outlet ports and provided with an operating-stem extending through a lateral opening in the valve-casing, such lateral opening being provided with a flexible covering over said valve-stem, substantially as described.

3. The combination, in an automatically-closing valve, of a valve casing or shell provided with a main fluid-channel, a pressure-chamber formed in an interior sleeve within said valve-casing, a main valve sliding in said pressure-chamber and adapted to close the main fluid-channel, an inlet-port of less area than the main valve from the main fluid-channel behind the main valve into said pressure-chamber, an outlet-port from said pressure-chamber discharging beyond the main valve, a secondary piston-valve controlling said inlet and outlet ports and provided with an operating-stem extending through a lateral opening in the valve-casing, such lateral opening being provided with a flexible covering composed of an elastic disk over said valve-stem, substantially as described.

4. The combination, in an automatically-closing valve, of a valve casing or shell provided with a main fluid-channel, a pressure-chamber formed in an interior sleeve within said valve-casing, a main valve sliding in said pressure-chamber and adapted to close the main fluid-channel, an inlet-port of less area than the main valve from the main fluid-channel behind the main valve into said pressure-

chamber, an outlet-port from said pressure-chamber discharging beyond the main valve, a secondary piston-valve controlling said inlet and outlet ports and provided with an operating-stem extending through a lateral opening in the valve-casing, such lateral opening being provided with a flexible covering composed of an elastic disk over said valve-stem, held in place by a threaded collar, substantially as described.

5. The combination, in an automatically-closing valve, of a valve casing or shell provided with a main fluid-channel, a pressure-chamber formed in an interior sleeve within said valve-casing, a main valve sliding in said pressure-chamber and adapted to close the main fluid-channel, an inlet-port of less area than the main valve from the main fluid-channel behind the main valve into said pressure-chamber, an outlet-port from said pressure-chamber discharging through a channel in said valve-casing into the main fluid-channel beyond the main valve, a secondary piston-valve controlling said inlet and outlet ports and provided with an operating-stem extending through a lateral opening in the valve-casing, such lateral opening being provided with a flexible covering composed of an elastic disk over said valve-stem, held in place by a threaded collar, substantially as described.

6. The combination, with a valve casing or shell, provided with main and secondary discharge-channels of a detachable nosepiece, adapted to be screwed into said valve-casing, and provided with a main discharge-channel, corresponding with the main discharge-channel of the valve-casing, and also provided with a secondary discharge-channel connecting with the secondary discharge-channel of the valve-casing and also with the main channel of the nosepiece at all points of relative rotation of the casing and nosepiece, substantially as described.

7. The combination, with a valve casing or shell, provided with main and secondary discharge-channels, of a detachable nosepiece, adapted to be screwed into said valve-casing, and provided with a main discharge-channel, corresponding with the main discharge-channel of the valve-casing, and also provided with a secondary channel formed by an annular groove connecting with the secondary discharge-channel of the valve-casing and also with the main channel of the nosepiece, through a discharge-duct, at all points of relative rotation of the casing and nosepiece, substantially as described.

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Witnesses:

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