

L. B. THORÉ.

BALL COCK.

APPLICATION FILED DEC. 26, 1907.

Patented Feb. 16, 1909.

2 SHEETS—SHEET 1.

912,632.

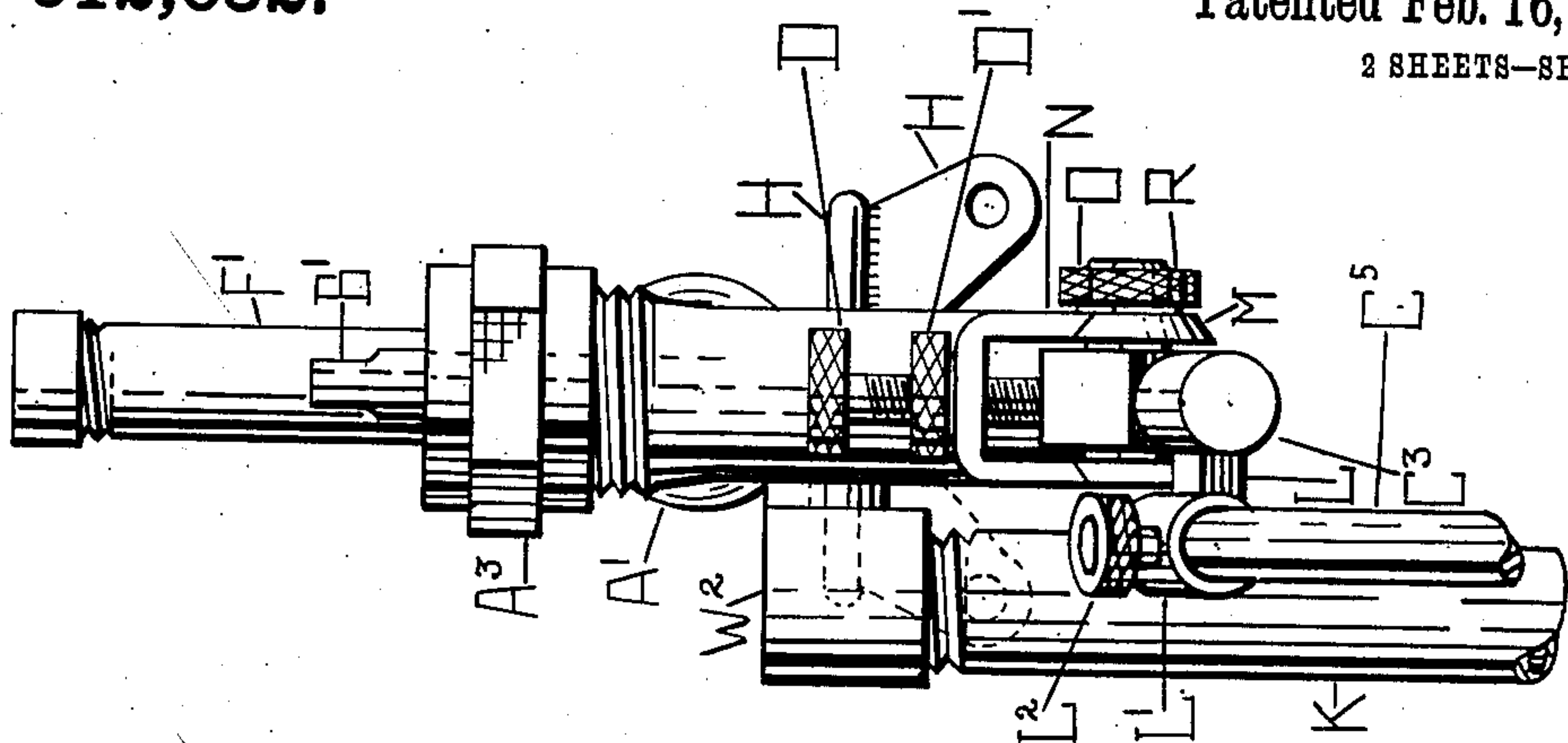


Fig. 2

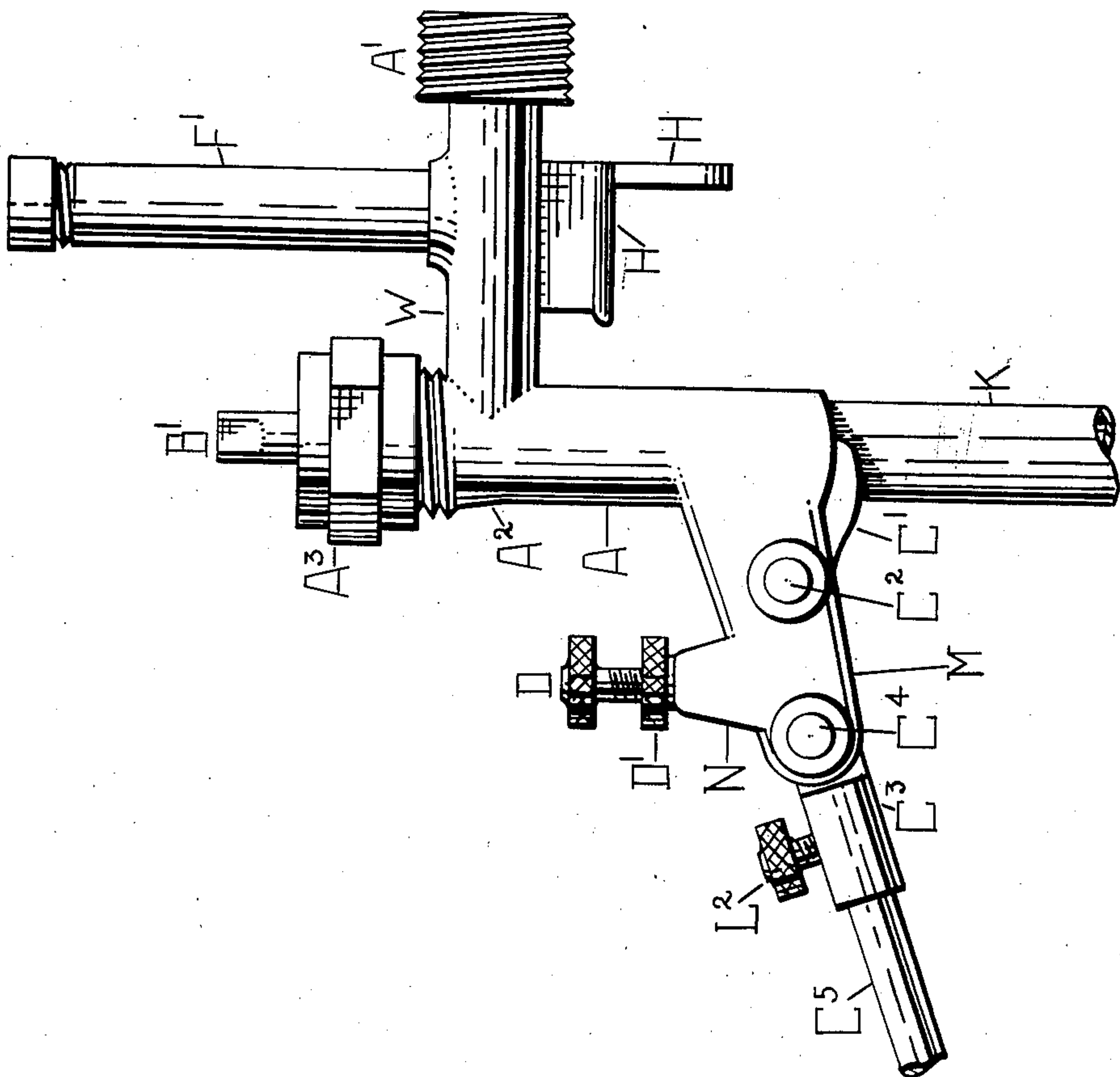


Fig. 1

WITNESSES:

V. H. Thore
W. P. Thore

INVENTOR

Louis B. Thore

L. B. THORÉ.

BALL COCK.

APPLICATION FILED DEC. 26, 1907.

912,632.

Patented Feb. 16, 1909.

2 SHEETS—SHEET 2.

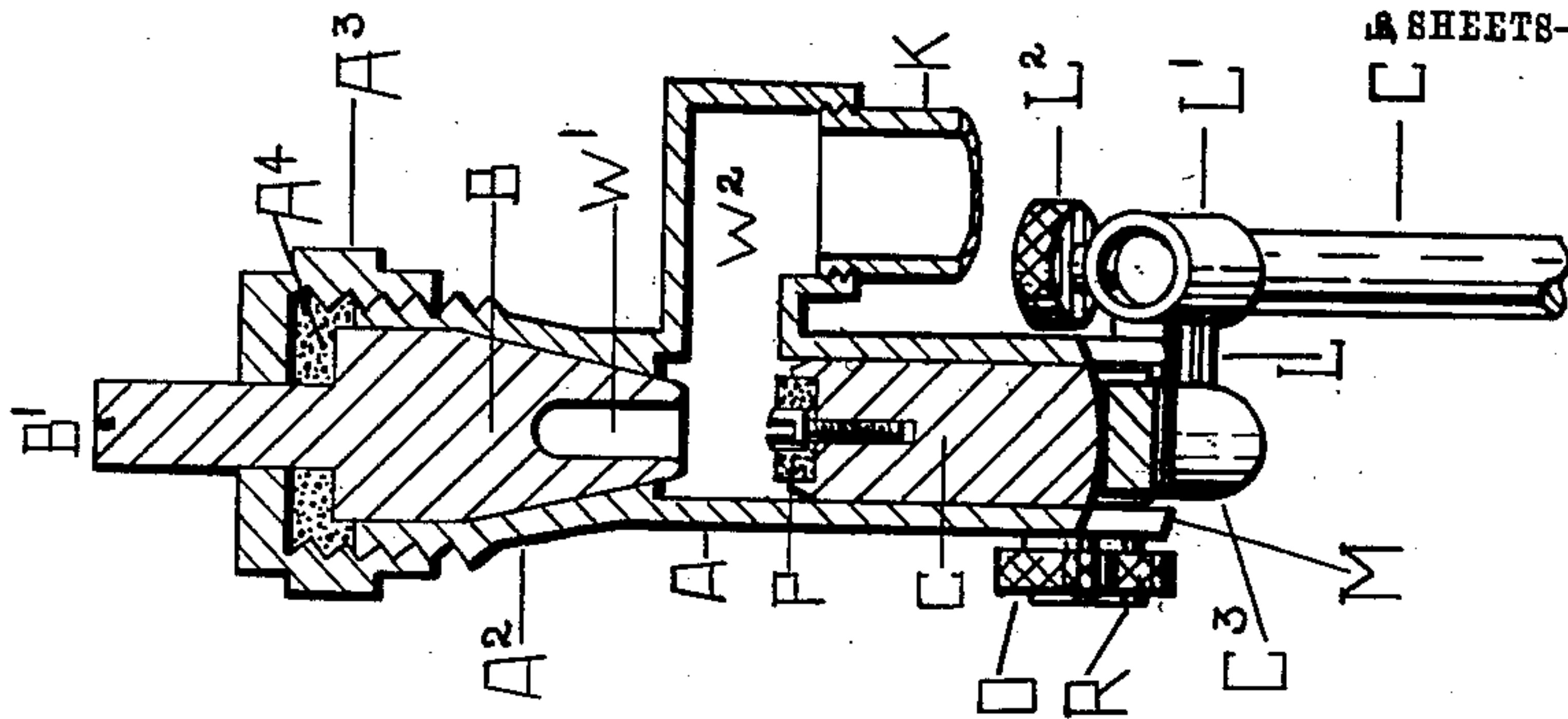


Fig. 4

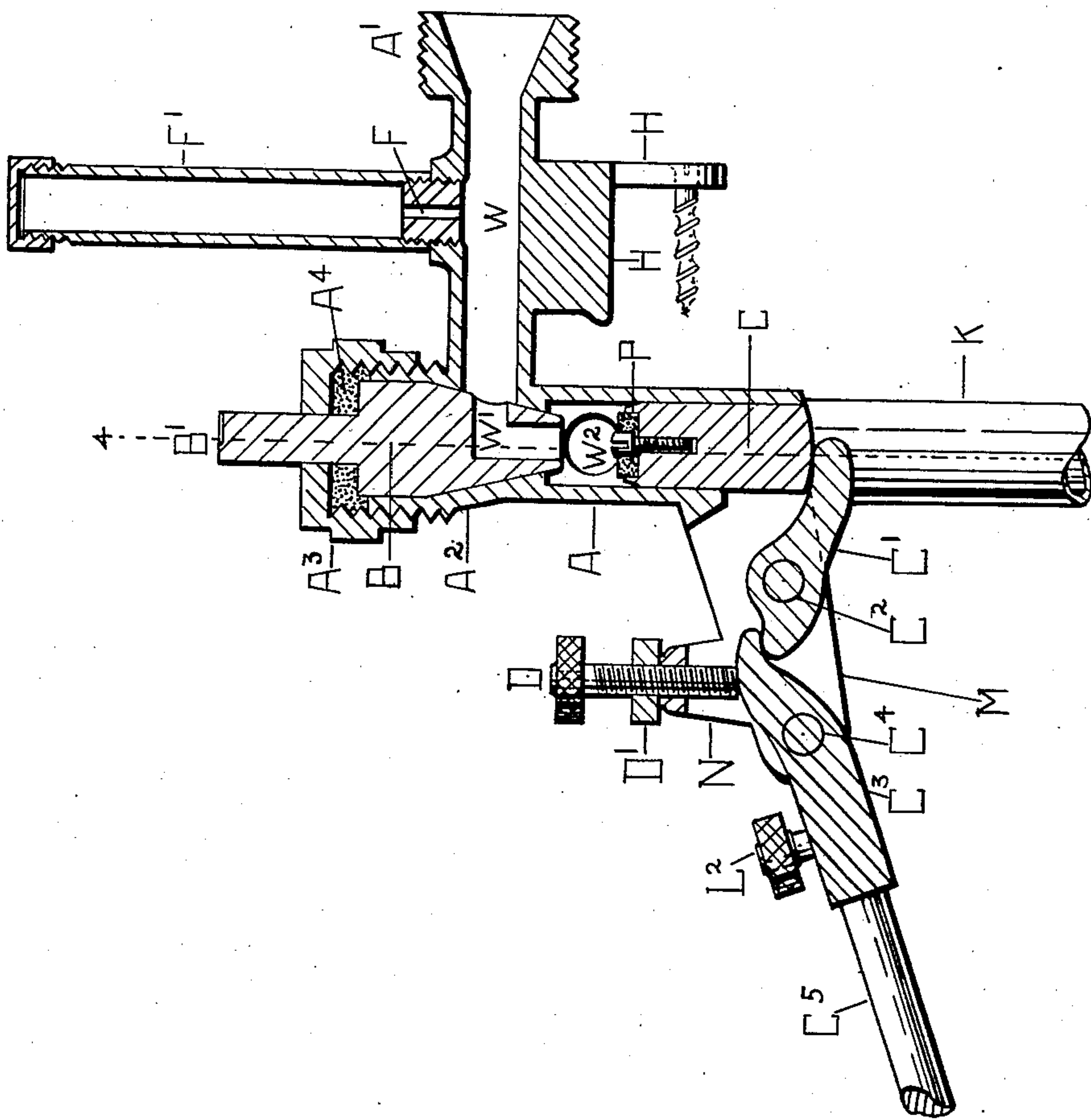


Fig. 3

WITNESSES:
V. H. Thore
W. P. Thore

INVENTOR.
Louis B. Thore

UNITED STATES PATENT OFFICE.

LOUIS B. THORÉ, OF BOSTON, MASSACHUSETTS.

BALL-COCK.

No. 912,632.

Specification of Letters Patent.

Patented Feb. 16, 1909.

Application filed December 28, 1907. Serial No. 408,217.

To all whom it may concern:

Be it known that I, LOUIS B. THORÉ, a citizen of the United States, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Ball-Cocks, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to improvements in ball-cock apparatus and consists in important changes and additions which may be best understood by reference to the full description in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of my apparatus; Fig. 2 is a front elevation of the same; Fig. 3 is a vertical longitudinal section taken through the center; Fig. 4 is a cross-vertical section taken on line 4—4 of Fig. 3.

In the drawings A represents the body part of the cock and H H the projections extending downward and outward for convenience in fastening the cock to the walls of the tank. The part A¹ is for connection with the service pipe. The head A² of the cock has within it a rotatable key B which is held in place by the screw cap A³ which also holds a suitable packing A⁴ for preventing leakage; the stem B¹ is used for turning the key B when it is desired to cut off the flow of water for repairing or for any other purpose. This key B is removable so that its seating face can be repaired and the interior of the cock can be cleaned, that is, freed from sediment, etc. The lower end of the key B has a water way W¹ which connects with the water way W when the apparatus is in working order. It will be noticed that the water way W¹ is much smaller than the way W. The capacity of the way W¹ may be varied in different keys so as to adapt the device to different heads of water; for instance, the higher the pressure of water in the service pipe the smaller the water way in the key B will be made; thus the same body part of the cock may be used for different pressures.

The gravity piston C drops by its own weight and also by the force of water pressure at its upper end when not held up by the action of the float; the upper end of the piston C has attached by a screw or otherwise a suitable packing P as shown in Figs. 3 and 4. The packing P is set in a recess made in the upper end of the piston C. In

the drawings Figs. 3 and 4, the piston is shown in the position it occupies when the cock is open and the water flowing.

The action of the float or ball (not shown) is as follows: When the water rises in the tank the stem C⁵ of the float which goes through the tubular socket L¹ and which is attached to the arm L and thereby to the finger C³ which swings on the pivot C⁴, causes finger C³ to depress the outer end of the short lever C¹, pivoted on C², and causes the inner end to act against the lower end of the piston C and force it upward, thus bringing the packing P in contact with the lower end of the key B and closing the water way W¹, that is, regulating and preventing the flow of water into the tank; a set screw D working through a bridge N serves as an adjustable stop or gage for the movement of the terminal finger piece C³, thus controlling the movement of the float downwardly; a check nut D¹ holds the adjusting screw D in the desired position. By releasing the set screw D to its limit the finger C¹ will fall so as to let the piston C drop out for the purpose of repairing the packing P. By turning the set screw D down to its limit it forces the finger C³ down onto the lever C¹ which pushes the piston C against the seat at the bottom of the key B, and closes the cock, thus making a shut-off independent of the float, and closing the cock when the float and stem are detached for repairs.

When the flow of water leaves the key B it passes into the water way W², Fig. 4, and thence downward into the pipe K and thence into the tank.

The pipe F¹ is attached to the screw plug F and serves as an air chamber to relieve the shock from the sudden checking of the flow of water. The screw plug F has a hole through its center as indicated in Fig. 3.

For convenience in adjusting the working length of the stem C⁵ of the float (not shown) I have the following-described device: A short arm L extends laterally from the part C³ (see Fig. 2) and has at its end a tubular socket piece L¹, which is provided with a set screw L². Thus when it is desired to shorten the stem C⁵ of the float it can be put through the said tubular socket piece and shortened as much as desired, and then secured by the set screw L².

The arms M, shown in all the drawings, extend from the sides of the body A, and

between them the terminal finger C³ and the lever C¹ operate and through them the pivots C² and C⁴ pass. Said pivots terminate in the thumb screws O and R. and can be used to
5 release the said terminal finger and lever.

The arms M are united and kept rigid by the bridge N.

Claims.

1. In a ball-cock apparatus, a body part
10 which has screw connections for an inlet and outlet pipe, respectively, and a main water way, a valve casing, a head having a ground seat and containing a key, an unattached gravity piston valve with a valve packing
15 (p) operating in the said casing, the key having a passage therethrough and a projecting seating face, two side arms which extend from and are attached to the said body part, a separate finger and lever pivotally
20 fastened between the said side arms, a float and stem, said finger and lever operated by said float and stem to cause the valve to seat on the said face, a stationary bridge on the said side arms, a set screw in said bridge
25 operating on said finger, the key being adapted to close said main waterway, to allow the float and stem to be detached for repairs; as and for the purpose set forth.

2. In a ball-cock apparatus, a body part
30 which has screw connections for an inlet and outlet pipe, respectively, and a main water way, a valve casing with an opening at the top and bottom, a head having a ground seat and containing a key, an unattached gravity
35 piston valve with a valve packing (p) operating in the said casing, the key having a passage therethrough and a seating face that projects into and below the said top opening of said casing, two side arms which extend
40 from and are attached to the said body part, a separate finger and lever pivotally fastened between the said side arms, a float and stem, said finger and lever operated by the said float and stem to cause the valve to seat

on the said face, a stationary bridge on the
45 said side arms, a set screw in the said bridge operating on said finger, said finger being adapted to control the movement of said lever and to cause the lever to hold said valve in said casing, the key being adapted to close
50 said main waterway, to allow the float and stem to be detached for repairs, as and for the purpose set forth.

3. In a ball-cock apparatus, a body part
55 which has screw connections to an inlet and outlet pipe, respectively, and a main waterway, a valve casing with an opening at the top and bottom, a head having a ground seat and containing a key, an unattached gravity piston valve with a valve packing (p) oper-
60 ating in the said casing, the key having a passage therethrough and a seating face that projects into and below the said top opening of said casing, two side arms that extend
65 from and are attached to the said body part, a separate finger and lever pivotally fastened between the said side arms, a float and stem, said finger and lever operated by the said float and stem to cause the valve to seat on
70 the said face, a stationary bridge on the said side arms, a set screw in said bridge being adapted to control the movement of the said finger, lever and valve, in combination, to hold said valve in said casing and to allow
75 said lever to tilt so that the said valve can drop out of the said bottom opening of said casing, the key being adapted to close said main waterway to allow the valve to be de-
80 tached for repairs; as and for the purpose set forth.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, on this twelfth day of December A. D. 1907.

LOUIS B. THORÉ.

Witnesses:

W. P. THORÉ,
V. H. THORÉ.