

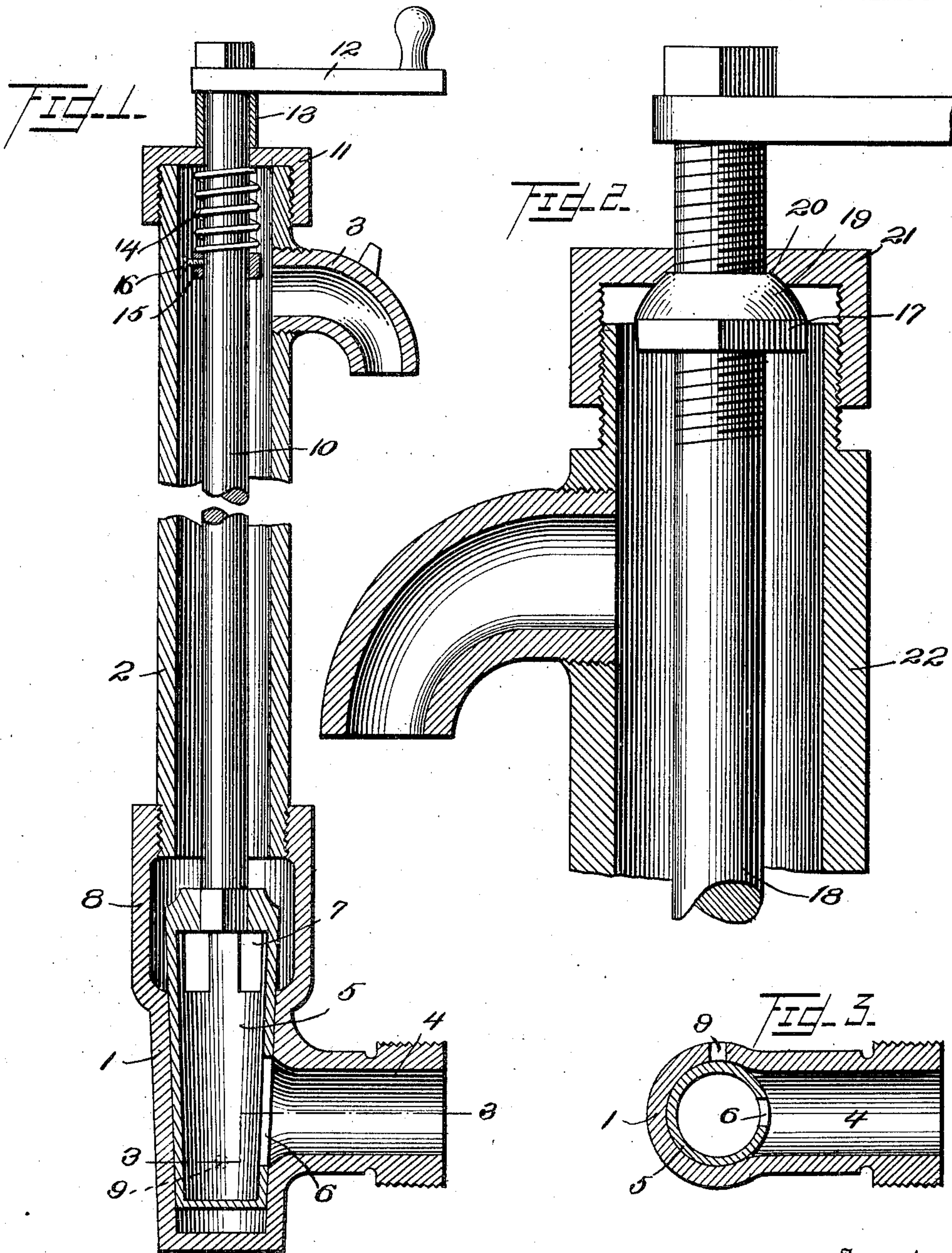
F. T. LAKE.  
HYDRANT.

APPLICATION FILED OCT. 6, 1910.

998,782.

Patented July 25, 1911.

2 SHEETS—SHEET 1.



Witnesses

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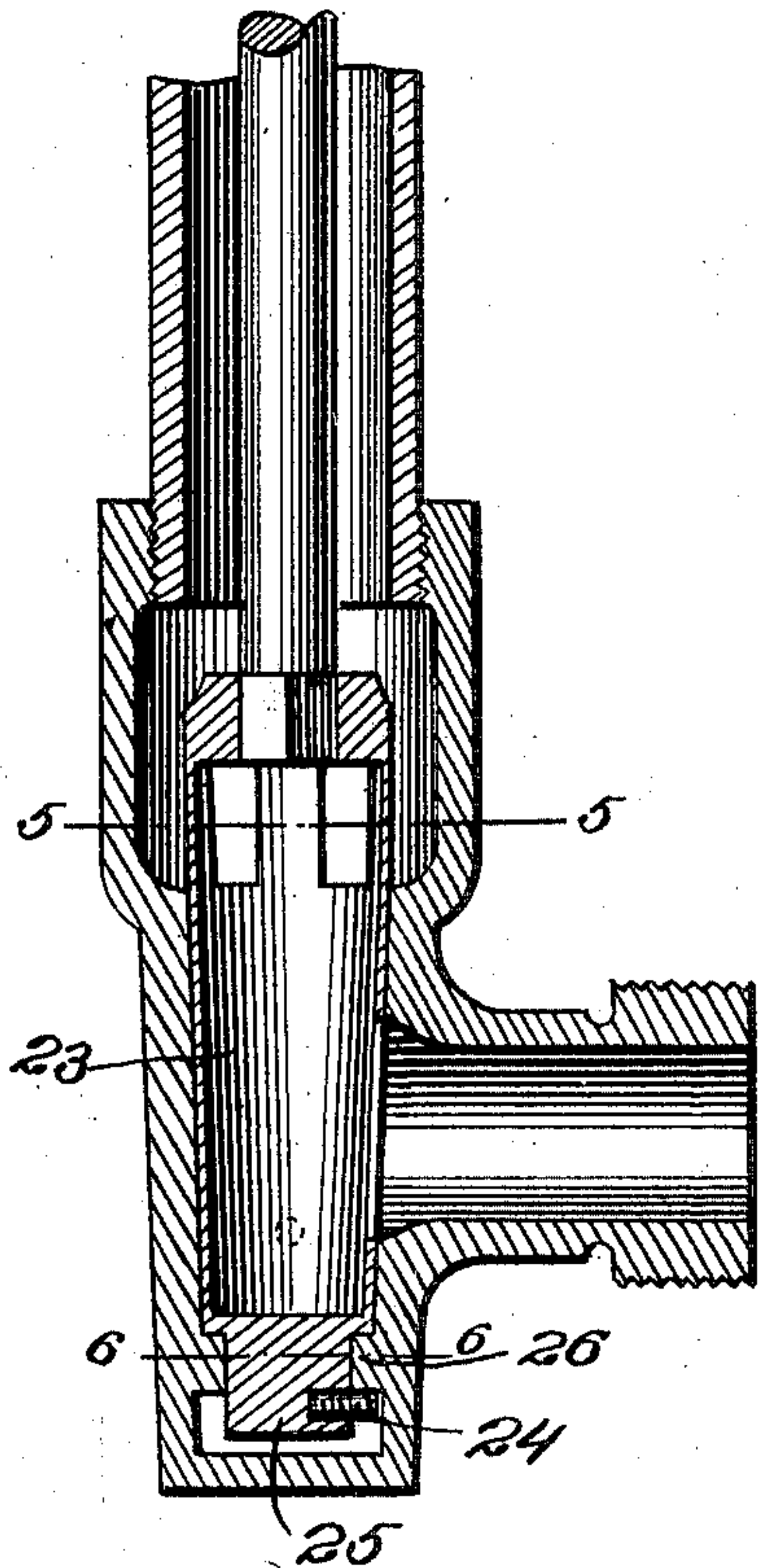
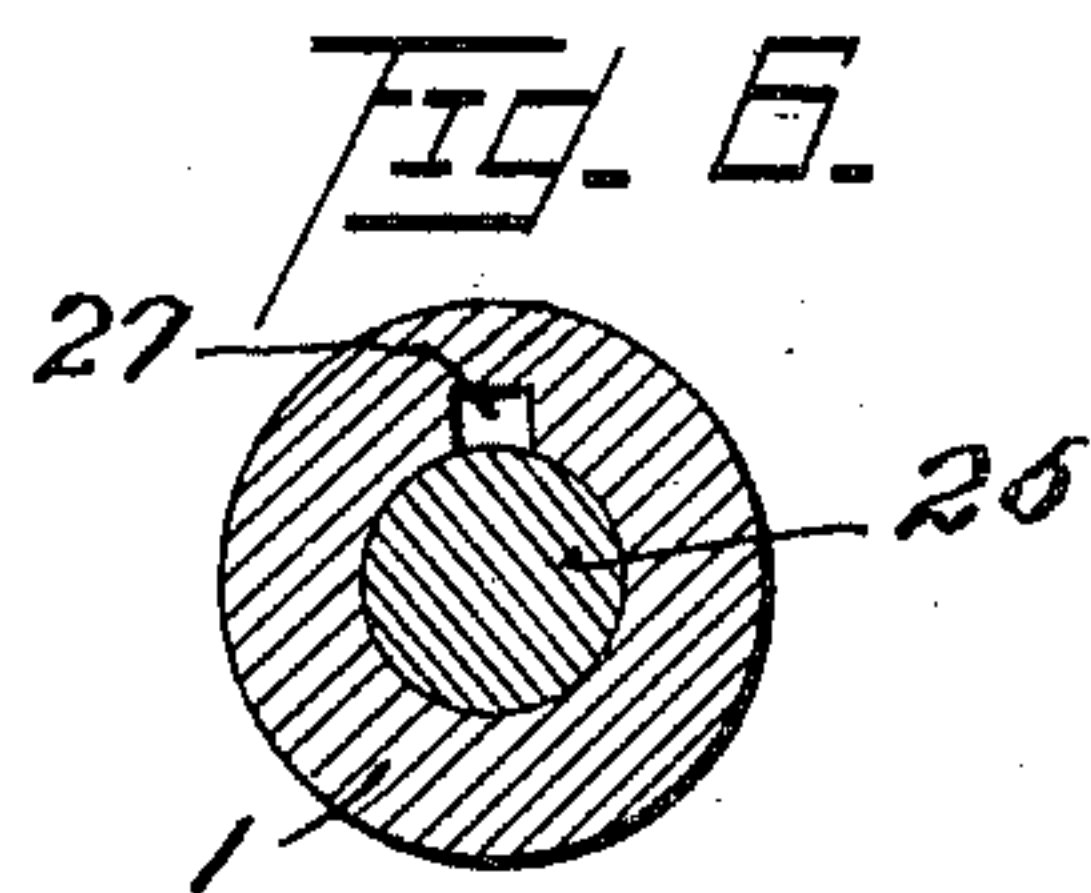
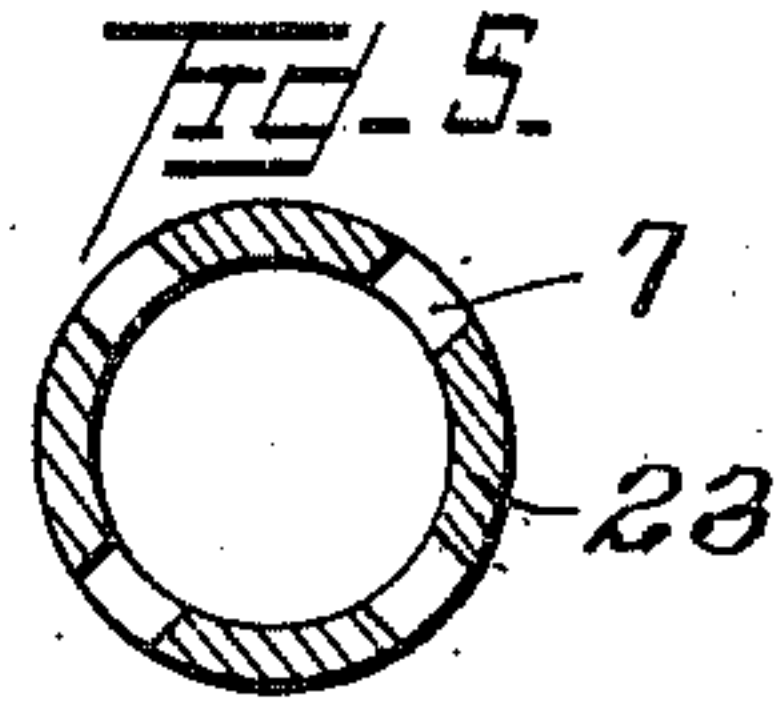
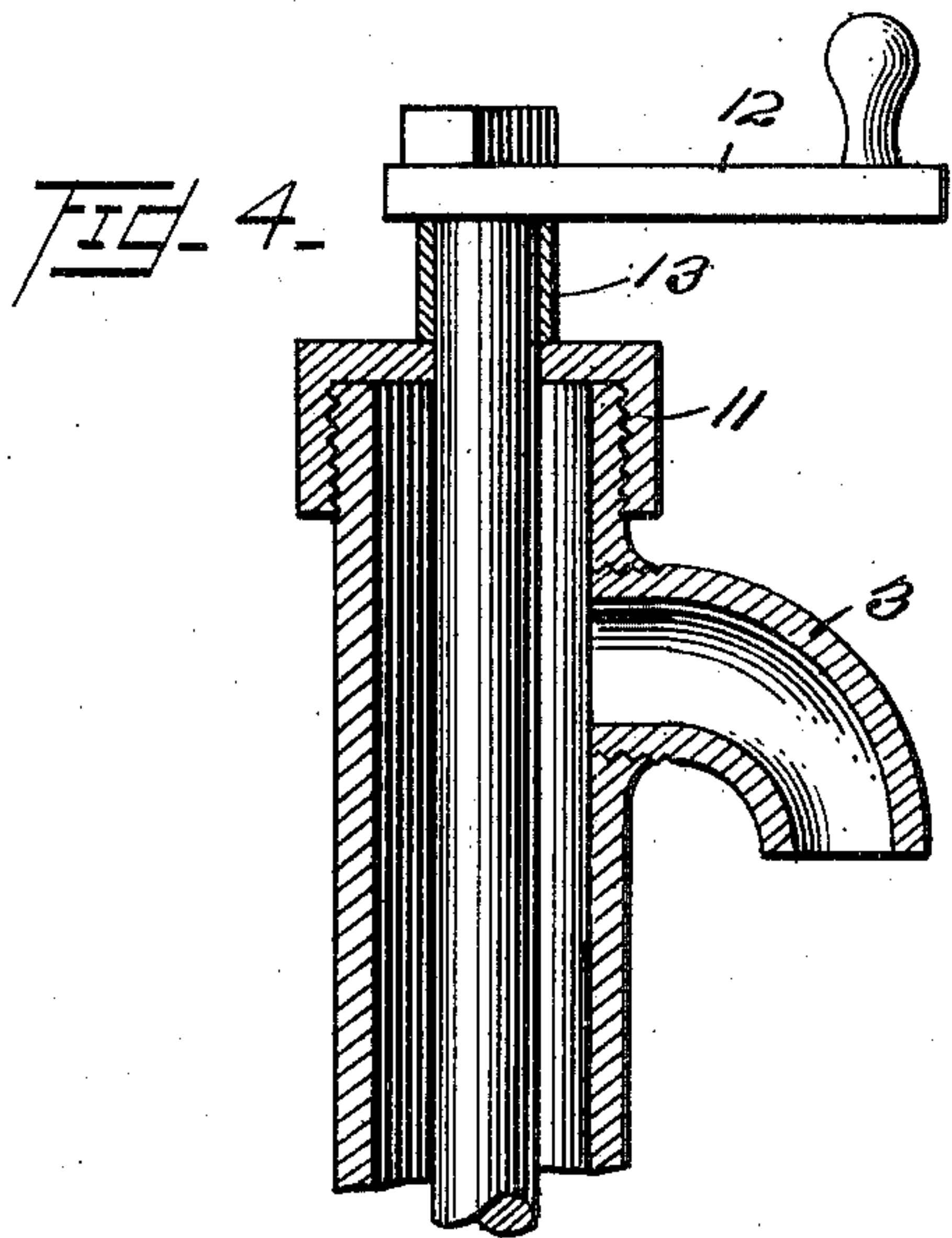
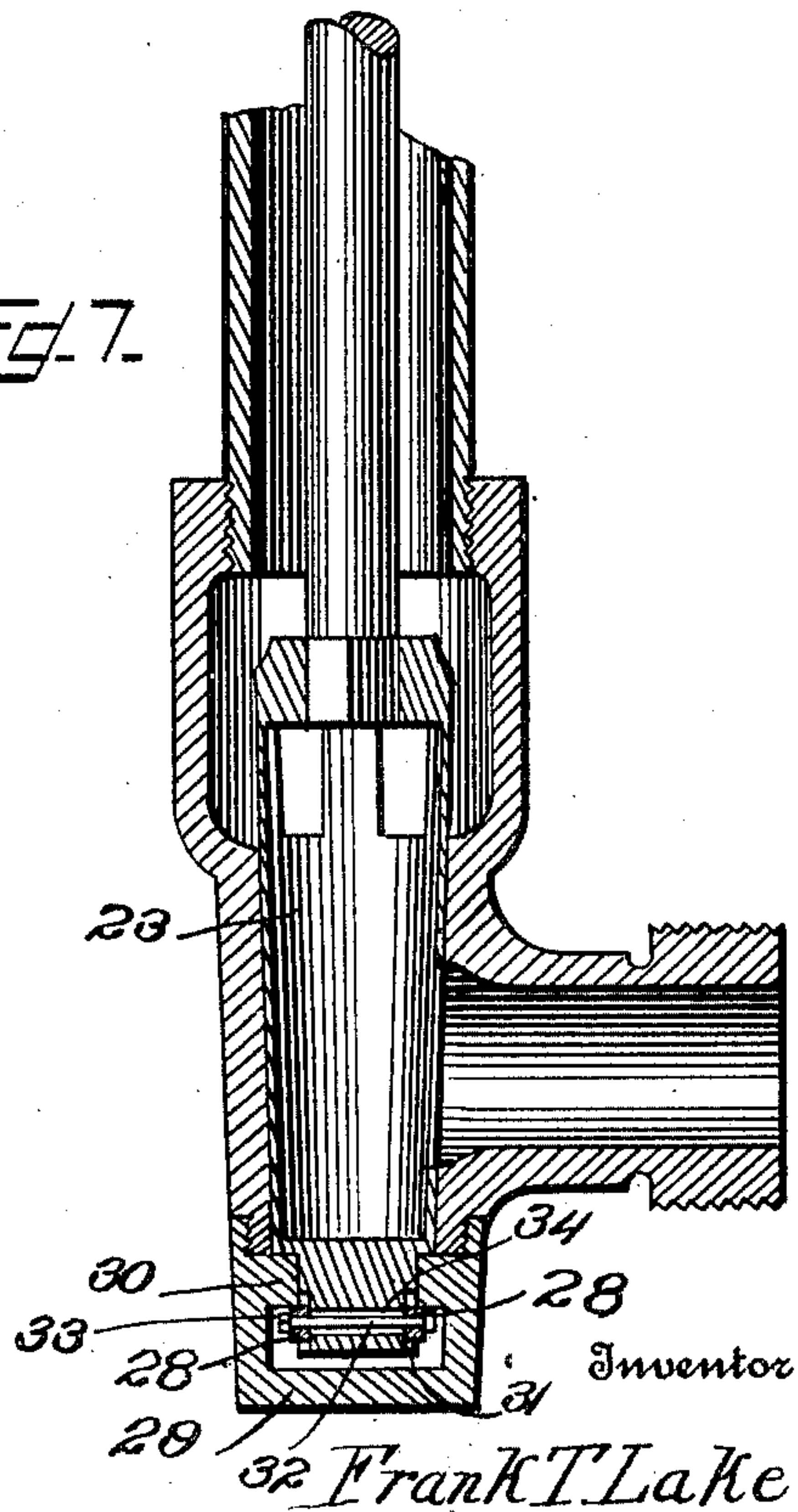


FIG. 7.



Witnesses

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# UNITED STATES PATENT OFFICE.

FRANK T. LAKE, OF PHILADELPHIA, PENNSYLVANIA.

## HYDRANT.

998,782.

Specification of Letters Patent.

Patented July 25, 1911.

Application filed October 6, 1910. Serial No. 535,663.

*To all whom it may concern:*

Be it known that I, FRANK T. LAKE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Hydrants, of which the following is a specification.

My invention relates to improvements in hydrants, an object of the invention being to provide an improved hydrant in which the plug is insured a tight joint with the casing, is maintained in proper relation with the casing at all times, and which may be quickly adjusted in the event of wear.

A further object is to provide improved means for maintaining a downward pressure on the conical plug of a hydrant, said plug having an opening communicating with the inlet, and outlets communicating with a vertical pipe for conveying the water to the spout.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings: Figure 1, is a broken view in longitudinal section illustrating one form of my improvements. Fig. 2, is a similar view of the upper portion of the hydrant illustrating a modification. Fig. 3, is a view in section on the line 3—3 of Fig. 1. Fig. 4, is a view in longitudinal section similar to Fig. 1 illustrating a modification. Fig. 5, is a view in section on the line 5—5 of Fig. 1, showing the plug only. Fig. 6, is a view in section on the line 6—6 of Fig. 4, and Fig. 7, is a view of another modification.

Referring to the construction shown in Fig. 1, 1 represents the hydrant casting or boxing which is located in the ground, and is internally screw threaded in its upper end to receive the barrel 2, which latter is adapted to project above the ground, and is provided with a spout 3.

The boxing 1 constitutes a casting having an integral inlet 4 to be connected to the supply pipe (not shown), and the vertical portion of the boxing constitutes a conical valve case in which a conical hollow valve 5 is located, and is provided with an inlet 6 to register with the inlet 4.

The upper portion of valve 5, which is provided with an annular series of openings 7, projects into a chamber 8 formed in the upper portion of the boxing, and with which the barrel 2 communicates, so that the passage of water, when the valve is opened, is through inlets 4 and 6 into the valve, thence through the opening 7 into the chamber 8, and thence up the barrel and out the spout.

9, represents a drain outlet, which is adapted to register with the inlet 6 when the plug is turned to closed position, allowing the water in the barrel to escape and prevent any freezing in the barrel.

To operate the valve, a rod 10 is provided which extends through the barrel, is secured at its lower end to the valve, and at its upper end projects through a cap nut 11, which is screwed onto the upper end of the barrel. On the extreme upper end of the rod 10, a crank arm 12 is secured to turn the rod, and a spacing sleeve 13 is preferably provided between said crank arm and the cap nut 11.

To maintain a constant downward pressure on the conical valve 5, so as to insure a tight engagement in the valve case, a coiled spring 14 is located around rod 10, and bears at one end against cap nut 11, and at its other end against a ring 15 secured on the rod by means of a screw 16 exerting downward pressure on the rod.

Instead of providing the spring 14, as shown in Fig. 1 for pressing the valve downward, I might employ a structure such as illustrated in Fig. 2, in which a nut 17 is screwed onto a threaded portion of rod 18, designed to operate the valve. The upper portion of this nut 17 is rounded as illustrated at 19, and bears in a recess 20 in a cap nut 21, so that by adjusting the cap nut 21 on the barrel 22, rod 18 may be moved downwardly to secure the desired pressure on the valve, and cause a tight juncture between the valve and the valve case.

In the modification illustrated in Fig. 4, a conical valve 23 is held downward by means of a pin 24, which is located in a downward extension 25 on the valve, and moves below an internal annular shoulder 26 in the boxing. This flange 26 is provided at one point with a notch 27 to allow the pin 24 to be entered, and also allow the valve to be readily removed from the top by



simply turning the valve to an unusual position, where the pin 24 will register with notch 27.

In the modification illustrated in Fig. 7, blocks 28 are mounted to slide in grooves 31 in the lower end of the plug 23, and are clamped at various adjustments by means of a bolt 32 and nut 33, said bolt passed through openings in the blocks and through a slot 34 in the plug. These blocks bear against the lower face of an internal flange 30 in a screw-threaded cap 29. The cap is screwed on the casing, and the flange 30 is provided with notches (not shown) through which the blocks may pass when the plug is inserted in the casing, and when the plug is turned the blocks will be positioned out of register with said notches which will be the normal position of the parts.

Various other slight changes might be made in the general form and arrangement of parts described without departing from my invention, and hence I do not limit myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a hydrant, the combination with a boxing having a conical valve case, and an enlarged chamber in its upper portion, of a hollow conical valve in said casing, having an inlet to register with the inlet of the boxing, and an annular series of openings in its upper portion communicating with the chamber, a barrel screwed into the upper

end of said chamber, a spout on said barrel, a rod projecting up through the barrel and secured to the valve, and means for holding said valve in its lowered position, substantially as described.

2. In a hydrant, the combination with a boxing having a conical valve case, and an enlarged chamber in its upper portion, of a hollow conical valve in said casing, having an inlet to register with the inlet of the boxing, and an annular series of openings in its upper portion communicating with the chamber, a barrel screwed into the upper end of said chamber, a spout on said barrel, a rod projecting up through the barrel and secured to the valve, and means for exerting downward pressure on said valve, substantially as described.

3. In a hydrant, the combination with a boxing having a conical valve case, and an enlarged chamber in its upper portion, of a hollow conical valve in said casing, having an inlet to register with the inlet of the boxing, and an annular series of openings in its upper portion communicating with the chamber, a barrel screwed into the upper end of said chamber, a spout on said barrel, a rod projecting up through the barrel and secured to the valve, and means for adjusting said valve downwardly, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK T. LAKE.

Witnesses:

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C. E. POTTS.