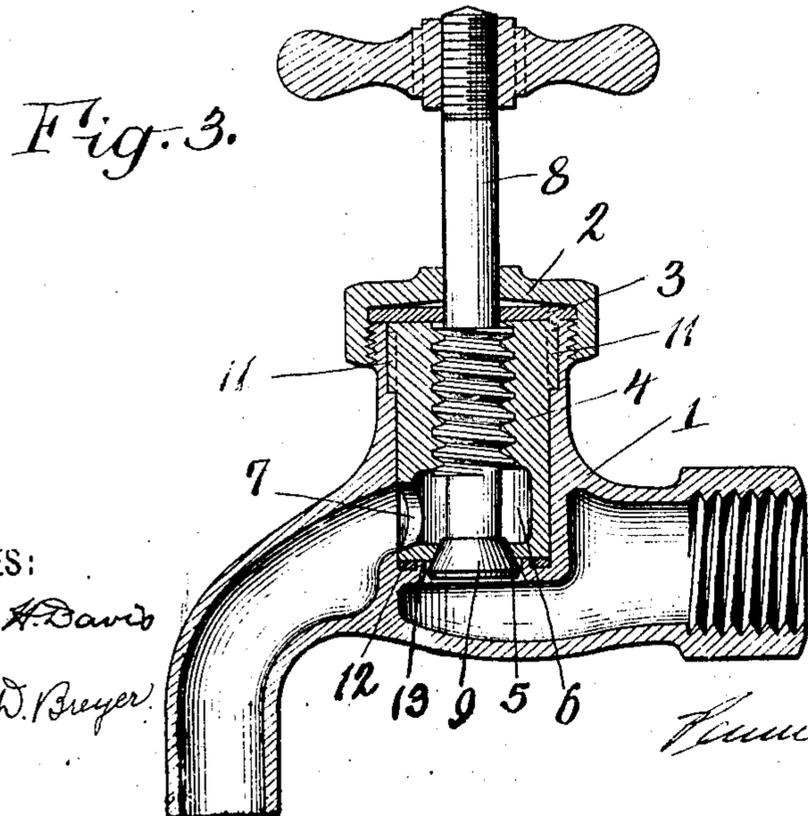
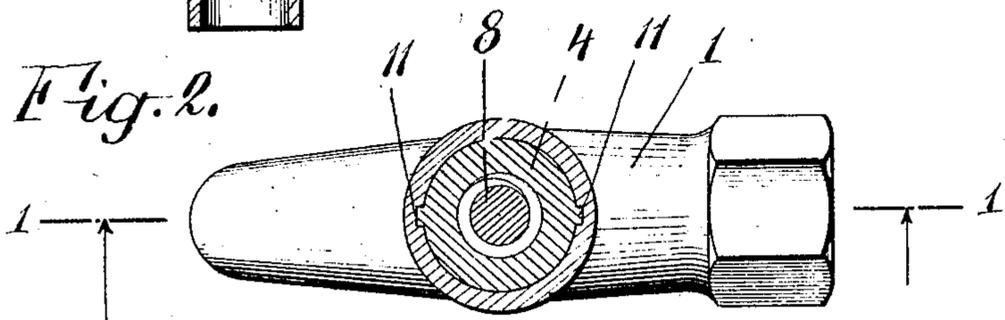
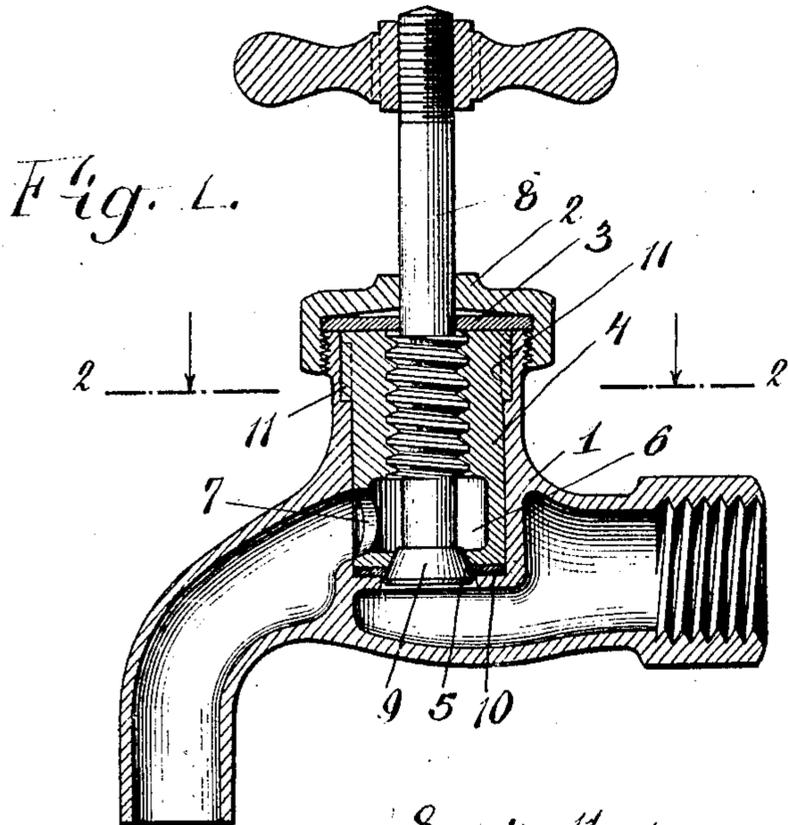


A. R. BONFIELD, JR.
 COMPRESSION COCK OR BIB.
 APPLICATION FILED JULY 11, 1908.

925,679.

Patented June 22, 1909.



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UNITED STATES PATENT OFFICE.

ALFRED R. BONFIELD, JR., OF BROOKLYN, NEW YORK.

COMPRESSION COCK OR BIB.

No. 925,679.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALFRED R. BONFIELD, Jr., a citizen of the United States, residing at Brooklyn, in the county of Kings, State of New York, have invented certain new and useful Improvements in Compression Cocks or Bibs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention aims to provide an improved compression cock or bib of a simple and efficient form, which may be cheaply constructed and easily repaired. To this end the valve stem, the valve and the valve seat, are so made as to be removable as a single piece, from the casing of the bib, so that all of the parts which are liable to wear may readily be removed and repaired, or, if beyond repair, replaced by new parts. The improvements may be employed in the original construction of bibs or cocks, or they may be employed for the purpose of repairing worn out bibs or cocks of standard construction.

In the drawings, Figure 1 is a central section of the preferred form of the invention; Fig. 2 is a plan view on the line 2—2 of Fig. 1 and Fig. 3 is a central section showing the application of my improvements to the repair of a bib or cock of the ordinary type.

In the preferred form of my invention, as illustrated in Figs. 1 and 2, the casing 1 does not differ from the casing commonly used, excepting that the annular shoulder at the upper edge of the valve seat, which is commonly present, may be dispensed with, the opening through the diaphragm in the bib being merely a circular opening without any upstanding flange, as indicated in Fig. 1. This casing is provided with the ordinary cap 2 through which the valve stem passes, and with a washer 3, or any other suitable packing material. The main features of my improvements are embodied in the valve member 4 which has a ground valve seat 5 which comes into place immediately above the ordinary opening in the diaphragm of the bib and which communicates with a chamber 6 within the member 4, this chamber being in communication with the outlet of the bib through the opening 7. The member 4 in its upper part, is screw-threaded to receive the valve stem 8, which carries the cone-valve 9. It will be observed that contrary to the com-

mon type of compression bib, the valve in my improved bib closes upwardly so that not only does the pressure of the water act in a direction to close the valve, but the surface of the valve and of the valve seat are always subjected to a thorough washing by the flow of water. It will be noted that the bottom of the valve member 4 is perfectly flat and located wholly above the diaphragm or partition in the casing on which it is seated, said bottom being merely bored out in a suitable way to form the conical valve seat; and as the edges of the valve seat are not turned down to engage the partition, the valve opening is made independent of the opening in the partition, that is to say, the valve seat may be made of different sizes within certain limits without regard to the size of the opening in the partition. In order that a clockwise movement of the handle may close the valve, and a counter-clockwise movement of the handle open the valve, as is customary in compression bibs, I preferably make the screw-threads on the stem and in the member 4 left-handed, instead of right-handed, though it will be understood that this is in no way essential to my invention, since the other features of the invention may be used without it.

In the drawings I have illustrated an improved means for securing the handle of the bib to the valve stem. As is well known, the handles are commonly secured to the valve stems by forming a square-head on the upper end of the valve stem which fits into a square recess in the handle, the parts being held together by a screw which screws into the upper end of the stem. This connection is one of the features of a compression bib which most frequently needs repair, since, if the holding screw becomes loose, the square corners on the upper end of the valve stem and in the handle become worn, so that the handle slips on the stem without turning it. To avoid this I may form on the upper end of the valve stem, as shown in Fig. 1, a screw-thread of a very small pitch, the pitch being considerably smaller than the pitch of the screw-thread in the member 4. These threads may be very closely fitted in brass work so that the handle may be tightly screwed onto the stem and the resistance to turning made very many times greater than the resistance to the turning of the threads in the member 4, so that the handle will effectively turn the stem without working

loose. It will be understood, however, that this feature of my invention, though it is a useful one, is not essential to the other features and may, or may not be used, as the particular constructor desires.

Between the diaphragm of the bib and the lower end of the member 4, I place an elastic washer 10, and the member 4 is of such a length that it fits tightly between this washer and the washer 3, so that when the cap 2 is screwed down the member 4 compresses the washer 10 to make a tight fit. This is ordinarily sufficient to hold the member 4 from turning, but to give additional security and in order that the member 4 may always be inserted in such position that the opening 7 registers with the outlet of the bib, I may provide the wings or lugs 11, which fit into corresponding recesses in the walls of the casing. In order to make a perfectly watertight connection between the partition or diaphragm and the bottom of the valve member 4 the washer 10 extends completely from the cylindrical wall inclosing said valve member to the valve seat and it is bored out conically to form a continuation of the valve seat, as shown.

In Fig. 3 I have illustrated the application of my improvements to the repair of a bib of the ordinary type. In this case there is shown the annular flange 13 which is commonly present in such bibs and which forms the valve seat for the downwardly closing valve commonly used. My improvements may be applied to repair such a bib in which the threads on the inner wall of the casing have become stripped, or in which the valve seat has become worn, and since the member 4 carries the valve, the valve stem, and the valve seat, it constitutes in effect an entirely new mechanism, which may be quickly and

cheaply placed within a worn out bib to repair it.

What I claim is:—

1. In a compression bib, the combination of a casing having a ported partition, a member seated at its lower end on said partition and provided above the same with a conical valve seat registering with the port of the partition, and a valve stem threaded in said member and carrying a fixed conical valve movable upwardly to co-act with said valve seat.

2. In a compression bib, the combination of a casing having a ported partition or diaphragm, a member having a flat bottom seated on and located wholly above said partition and the port therein, said bottom being provided with an opening forming a valve seat, and a valve stem threaded in said member and carrying a valve movable upwardly to co-act with said valve seat.

3. In a compression bib, the combination of a casing having a horizontal partition provided with a port, a valve member with a flat bottom located wholly above said port and having an opening forming a conical valve seat registering therewith, a washer interposed between said bottom and the partition and extending completely to the valve seat, the opening of the washer forming a continuation of the valve seat, and a valve stem threaded in said member and carrying a fixed conical valve movable upwardly into the opening of the washer and the valve seat.

In testimony whereof I affix my signature, in presence of two witnesses.

ALFRED R. BONFIELD, JR.

Witnesses:

LAURA B. PENFIELD,
E. S. VAN KEUREN.