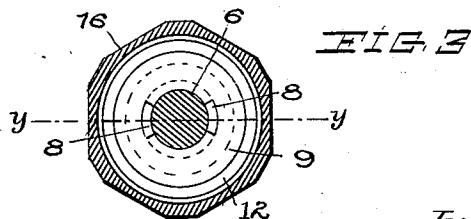
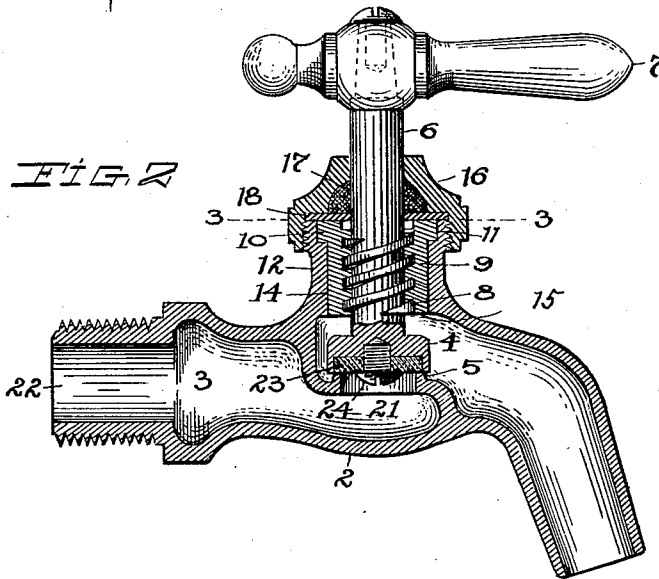
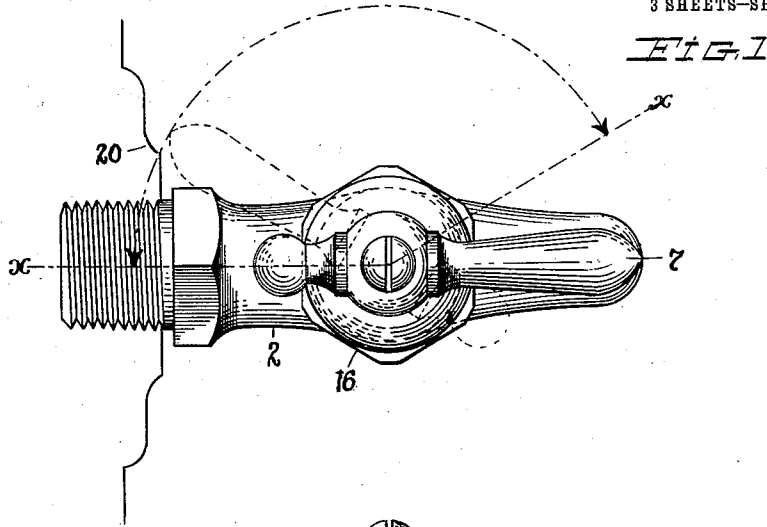


J. H. GLAUBER.
BIB AND COCK.
APPLICATION FILED NOV. 12, 1910.

1,007,553.

Patented Oct. 31, 1911.

3 SHEETS—SHEET 1.



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3 SHEETS-SHEET 2.

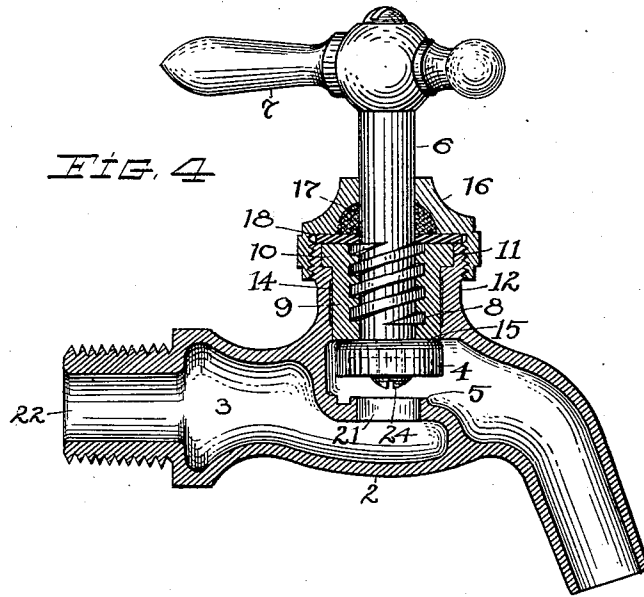


FIG. 5

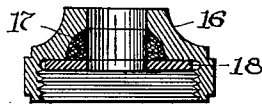


FIG. 7

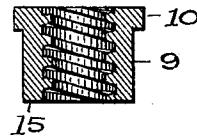


FIG. 6

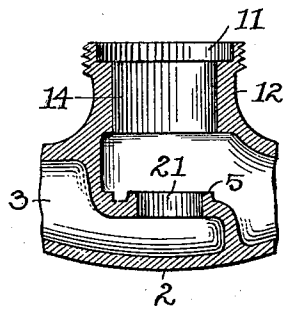
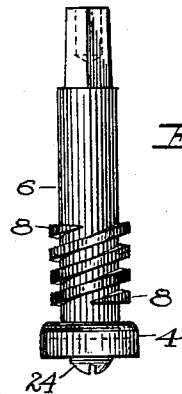


FIG. 8



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3 SHEETS—SHEET 3.

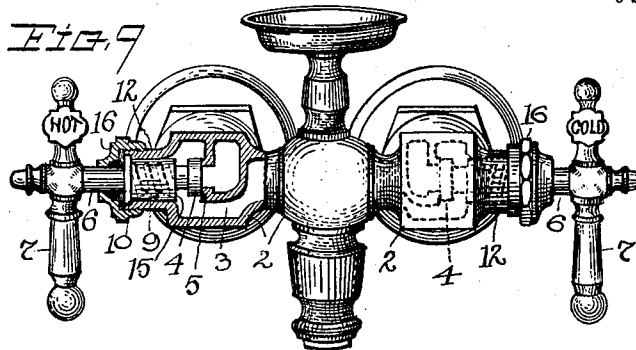


Fig. 10

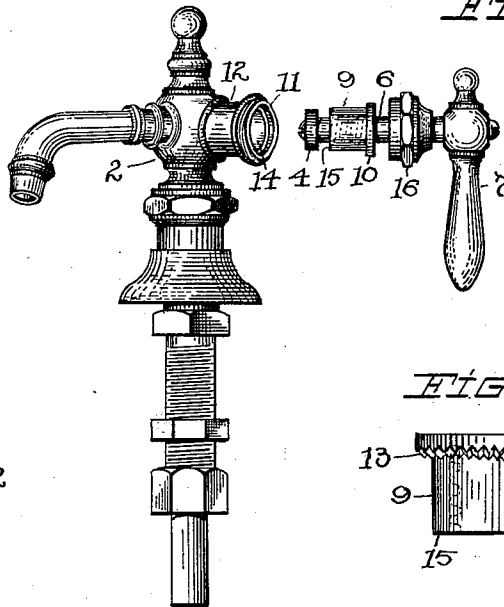


Fig. 11

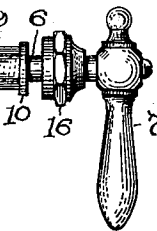


Fig. 12

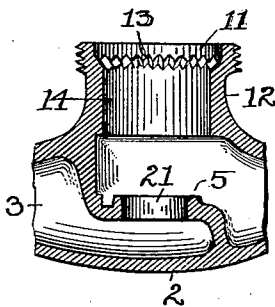
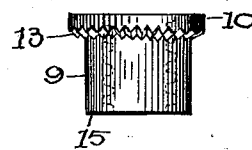


Fig. 13



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UNITED STATES PATENT OFFICE.

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1,007,553.

Specification of Letters Patent.

Patented Oct. 31, 1911.

Application filed November 12, 1910. Serial No. 592,043.

To all whom it may concern:

Be it known that I, JOSEPH H. GLAUBER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Bibs and Cocks, of which the following is a specification.

My invention relates to improvements in bibs and cocks, and the improvement consists in a construction and arrangement of parts substantially as herein shown and described and more particularly pointed out in the claims.

My object is to produce a bib or cock of simple construction in which the screw-seat for the valve stem may be removably and rotatably secured to provide numerous new and useful results, viz;—primary setting of the stem and its screw-seat to properly aline the handle in the commonly accepted position with the body of the cock; changeable setting of the stem and screw-seat to meet adverse conditions preventing full opening of the valve; adjustable setting of the stem and its screw-seat to restore said stem and its handle to original set position after constant use and excessive wear at the valve seat; definitely limiting the opening of the valve and turn of the stem and handle by the screw-seat regardless of change or adjustment rotarily of the stem and screw-seat jointly; eliminating integral threads internally of the body extension, thereby permitting its production in a cheaper and more advantageous way, and finally, simplifying assembling of the operating parts in manufacture and actual use.

A further important object is to be found in the provision made for a large waterway at the valve-seat, the largest possible size being obtainable in every standard size of bib or cock by the use of a separate removable screw-seat. The advantage in this is cumulative as it will be seen that with a large waterway only a slight end movement of the valve stem is required to set the valve in full open position, hence a slight turn of the handle is sufficient, hence no excessive pitch of thread is required and hence self-opening of the valve is prevented by the water pressure, particularly when heavy, variable, or pulsating pressures are met with.

Figure 1 is a top plan view of a bib or cock, the full lines of the handle showing a closed position of the valve and the dotted lines a full open position. Fig. 2 is a verti-

cal section centrally through the bib or cock showing the valve in closed position. Fig. 3 is a cross section and plan view on line 3—3, Fig. 2, showing the entrance of the double threads in the top of the screw-seat, line *y—y* indicating the position of the handle and cock as seen in Figs. 1 and 2. Fig. 4 is a similar view to Fig. 2, but showing the valve wide open as occurs when raised to its limit and engaged with the bottom end of screw-seat 9. Fig. 5 is a separate sectional view of the cap nut, and Fig. 6 a sectional view of the body, partly broken away, and with all the working or detachable parts removed. Fig. 7 is a sectional view of the screw-seat alone, and Fig. 8 is a side elevation of the screw-stem and its valve, without the handle. Fig. 9 is a front perspective partly in section of a double bath cock having my improvement incorporated therein, and Fig. 10 is a perspective of a basin cock, partly dismantled. Fig. 11 is a side elevation of the handle, cap nut, valve-stem and screw-seat, all as appears when jointly removed from the hollow extension seen at the left in Fig. 10. Fig. 12 is a sectional view of a bib or cock showing a serrated seat in the body for a toothed or serrated flange on the screw-seat, the latter being illustrated in side elevation by Fig. 13.

In the accompanying drawings I have elected to show three different forms of compression bibs and cocks embodying my improvement, this to the end that its applicability and advantages may be better understood. All such bibs and cocks, however, are alike in certain essentials, although their shape and style may vary according to their place of use. Thus each comprises a body —2— having a main water passage —3— adapted to connect with the water supply, and outflow of water through this passage is controlled by a valve —4—, which may be more or less tightly compressed upon valve seat —5— by screw stem 6 having handle 7 at its outer end. This handle may be of the form shown, or of any other acceptable form, but in any event the same is generally related or alined in predetermined set positions in respect to some portion of the body, so that symmetry of design is observed, and an open and closed position of the valve immediately noted. Set positions are also often necessary on account of index characters placed either on the bib or cock, or upon the

handle, generally the latter. As shown, handle 7 is a separate removable member secured upon stem 6 in fixed relation thereto, and consequently in fixed radial relation to the terminals of screw threads 8 formed upon the stem. With my invention handle 7 may be also integral with stem 6, or fastened thereto in any permanent way. The valve end 4 of the stem is also at a fixed distance from the threads. All such fixed relations have heretofore made it difficult to properly set the stem and handle without resorting to special operations involving great care and skill, or needless loss of time and labor. And even then only a primary setting was obtained, and no provision made for adjustment and change to meet adverse conditions, or wear subsequently. My improvement, on the contrary, may be manufactured simply and cheaply, and primary setting operations may proceed after the parts are completely assembled, and further, other set adjustments may also be made subsequent to primary setting without alteration of the slightest kind. This improvement therefore comprises a removable and rotatable screw-seat 9 for threaded stem 6 in the form of a ring or sleeve having an annular flange 10 at one end adapted to rest within an annular recess 11 in the top of tubular extension 12 of body 2. In Figs. 12 and 13, I show the bottoms of both flange 10 and recess 11 as serrated or struck up with corresponding small teeth 13 which interlock and positively prevent accidental rotation of screw-seat 9 from set positions. Bore 14 of tubular extension 12 is of substantially the same length as screw-seat 9 which is designed to fit therein for independent rotation. Threads 8 on stem 6 have their counterpart in screw-seat 9, and are preferably of plural number to provide the requisite pitch to open and close valve 4 quickly and fully by a relatively short radial throw of handle 7. The end play of valve 4 is positively limited by valve seat 5 and the bottom end 15 of screw-seat 9, thereby definitely fixing the extent of rotation of stem 6 and radial sweep of handle 7. Stem 6 is further supported by a cap nut 16 having screw engagement with extension 12, and a conical packing ring 17 and loose fiber washer 18 serve to make water tight union between the parts. Washer 18 rests flush upon the top of screw-seat 9 and also upon the top edge of extension 12, and when nut 16 is screwed tightly in place the joint is sealed and screw-seat 9 firmly locked against independent rotation. However, it must also be obvious that when nut 16 is slightly loosened, rotation of screw-sleeve 9 will occur upon rotation of stem 6, particularly when end movement of stem 6 is checked as in the event of valve 4 resting upon valve-seat 5. The resultant greater friction between the

threads on the stem and screw-seat as compared with the lesser friction at washer 18 is the cause of this, and the action is utilized to good purpose in all setting operations. Thus, when primary setting of the handle is desired, say in alining handle 7 parallel with body 2 or its spout, stem 6 is rotated until valve 4 is sealed tightly, and then further rotation occurs until handle 7 is exactly or approximately alined in the position desired. No fixed relations of the screw-threads in respect to each other and valve-seat 5 will prevent this setting, as screw-seat 9 will revolve with the stem when fixed relations are established. Locking of the parts in set position is then obtained by nut 16.

In Fig. 1 an arbitrary construction is shown wherein the two radially dotted lines $x-x$ represent the maximum radial play of handle 7 and the full lines and dotted lines of handle 7 show the same relative radial play. The latter indicates the proper and accepted setting, whereas lines $x-x$ indicate an improper and undesirable setting—one which would not permit a full opening of the valve, as handle 7 would strike the wall or wall plate 20 before completing its maximum movement.

Valve 4 comprises the enlarged inner end of stem 6 and this enlargement is of greater diameter than the threaded portion of the stem, as it obviously may well be, bore 14 being sufficiently large enough to permit its passage therethrough. Opening 21 in valve seat 5 may therefore be correspondingly enlarged to give free outflow of water, and in Fig. 2 the diameter of intake end 22 of passage 3 is the same as valve opening 21. The diameters may vary—the showing being only comparative, but manifestly this construction allows a larger waterway in the seat than if the threads were made in extension 12 and its internal diameter thereby reduced, as is the practice. A large waterway 21 permits full opening of the valve with but slight end movement and rotation of stem 6 and the pitch of threads 8 may be correspondingly lessened. Extreme pitches of threads are objectionable as high pressures, looseness of the parts occasioned by wear and so forth cause self-opening of the valve and prevent setting thereof in part-open positions.

A fiber or other sealing washer 23 is removably secured within the recessed end of valve 4 by a screw 24 as usual, and when worn down this washer may be replaced. If a thicker or thinner washer is substituted, a change in the relative alinement of the handle to body 2 is at once noted, but this can be remedied in my improvement by unlocking screw-seat 9 and rotating the same co-jointly with and by stem 6 until the fault is corrected. The same remedy may be had

if washer 23 becomes worn and permits a greater end movement of the valve stem, and an increased throw of the handle—a particularly objectionable fault in faucets and bath cocks having handles 7 which point downward in the closed position of the valve (see Figs. 9 and 10) and wherein the handle is caused to turn backward and off the central position.

A basin equipment generally includes separate right and left hand faucets, and when a faucet or cock of the construction shown in Fig. 10 is used, a turn upward of the side handle is required to open either faucet, necessitating reverse threading of the stems and screw-seats for this purpose. But with my improvement no threading of the body is required, and the same bore will receive either a right or left hand screw-seat and stem when it is of advantage. Moreover, when the screw-seat 9 becomes badly worn, a new one can be substituted without discarding the main parts of the cock. This is of advantage, but is only secondary to my general purpose. Double bath cocks are also made right and left handed, and both handles are turned forwardly and up to open the faucet. This necessitates a left-hand thread for a right hand cock, and vice-versa. But in my improvement the bores are made plain and the screw-seats removable and rotatably adjustable, thereby permitting interchange of the valve stems and their screw-seats from one side to the other, and a different setting of the handles to meet unusual demands.

Among other advantages, screw-seat 9 may be made of bronze or other good wearing metal, permitting the body of the faucet to be made of a cheaper or softer metal. Then tapping of screw-seat 9 may also proceed apart from the cock which avoids possible destruction of the valve-seat by the tapping tool as now sometimes occurs, and tapping is simplified as the threads extend through from end to end of the screw-seat. A separate removable screw-seat also permits interchangeability of different kinds of screw-seats and stems in the same style of body, which is of advantage when a plumber finds that a slow-thread instead of a quick-thread is preferred for any reason. Substitution of a screw-seat 9 having a slow-thread may then be resorted to, and substitution of

a screw-seat either longer or shorter than as generally provided may also be had to change the degree of rotation of stem 6 and handle 7.

What I claim is:

1. A bib or cock body having a main water passage and a valve seat, a valve and a rotatable stem therefor having a quick-acting thread externally, a handle for said stem, and a removable sleeve rotatably secured within said body having an internal quick-acting thread coöperatively engaged with said rotatable stem and said parts being adapted to limit rotation of the handle to a partial turn and permit joint rotation of the sleeve and stem by a continued rotation of the handle in primary setting and alining operations.

2. A bib or cock having a valve seat and a body extension opposite said seat provided with an annular recess at its upper end and a plain bore therethrough, in combination with a screw-threaded sleeve removably and rotatably mounted within said bore and having an annular flange seated within said recess flush with the top of said extension, a valve having a screw-threaded stem engaged with said screw-seat, a seating washer of greater diameter than said screw-seat resting flush upon the tops of both said sleeve and extension, a cap nut above said washer to secure said sleeve and stem in set positions, and a handle for said stem.

3. A bib or cock body having a tubular extension and a separate screw-seat removably and rotatably mounted therein, said screw-seat having plural threads internally, and means to secure said screw-seat in different radial positions within said extension, in combination with a valve stem having plural threads externally and provided with a valve adapted to engage the lower end of said screw-seat to limit rotative movement of the stem to a partial turn, and a fixed handle at the top of said stem adapted to be alined with said body by joint rotative movement of said stem and screw-seat.

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

JOSEPH H. GLAUBER.

Witnesses:

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F. C. MUSSUN.