

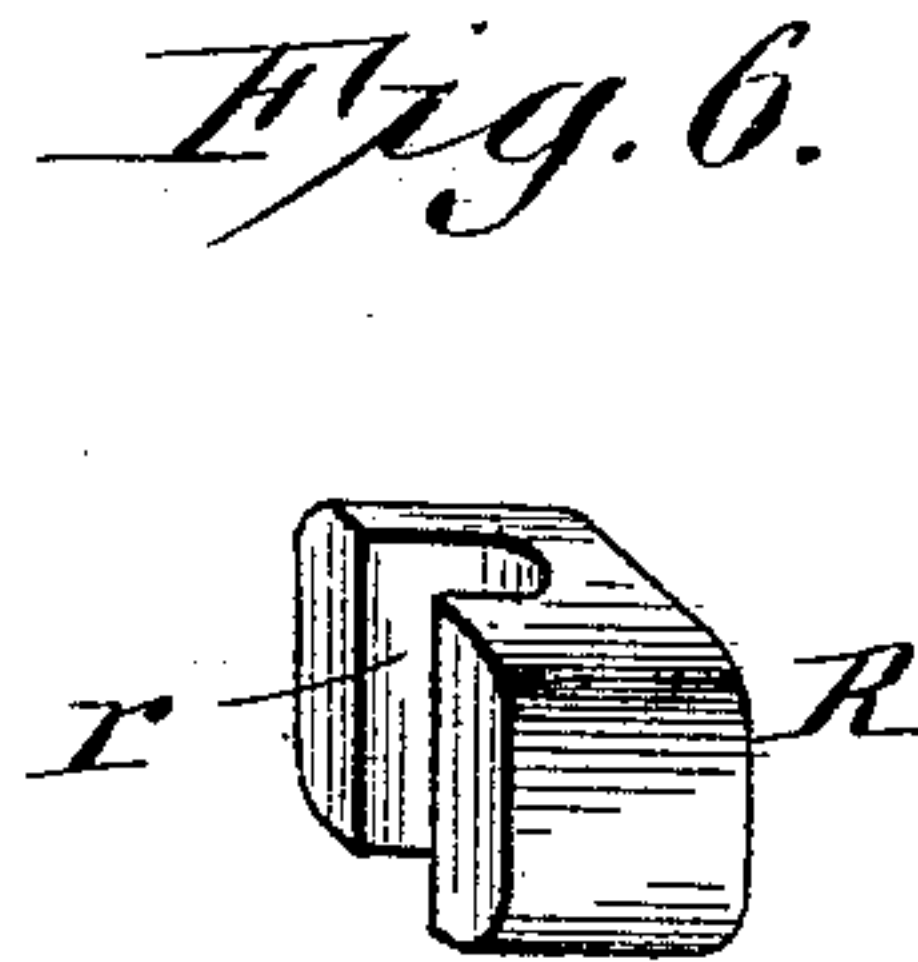
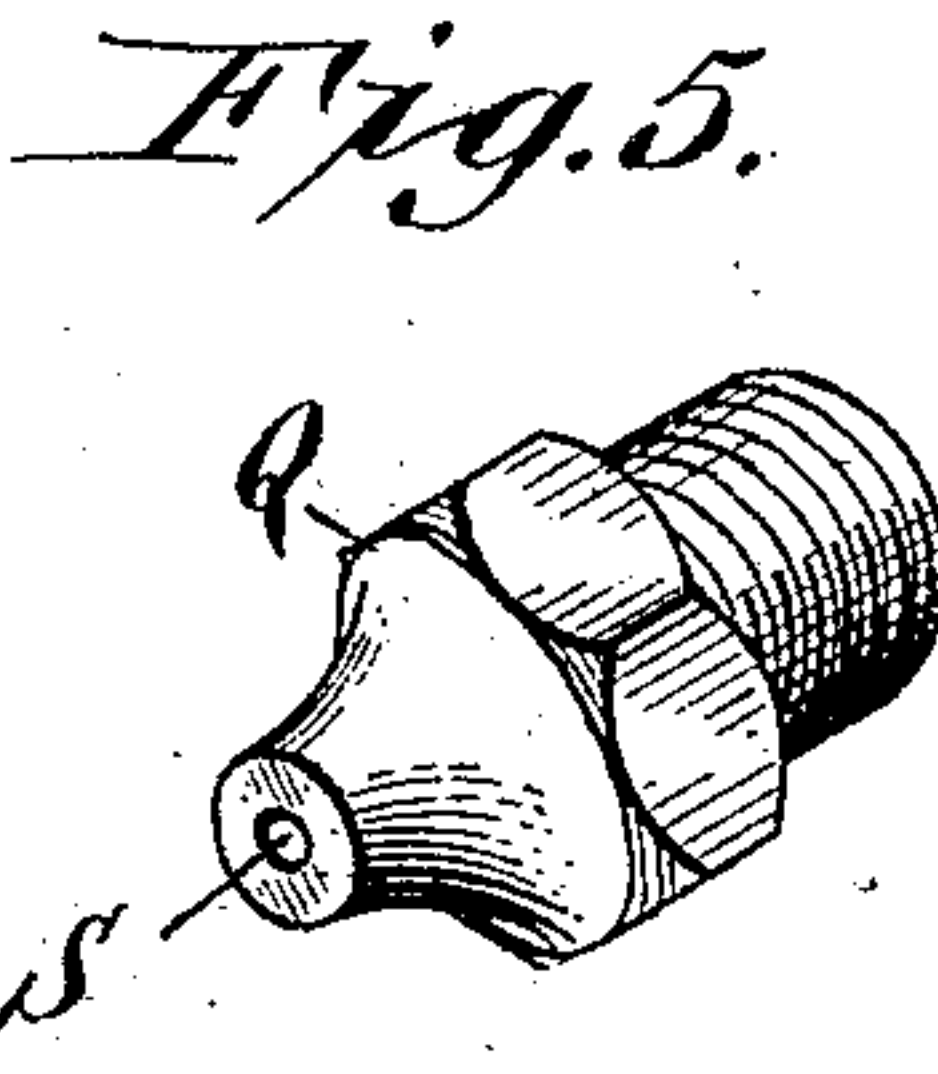
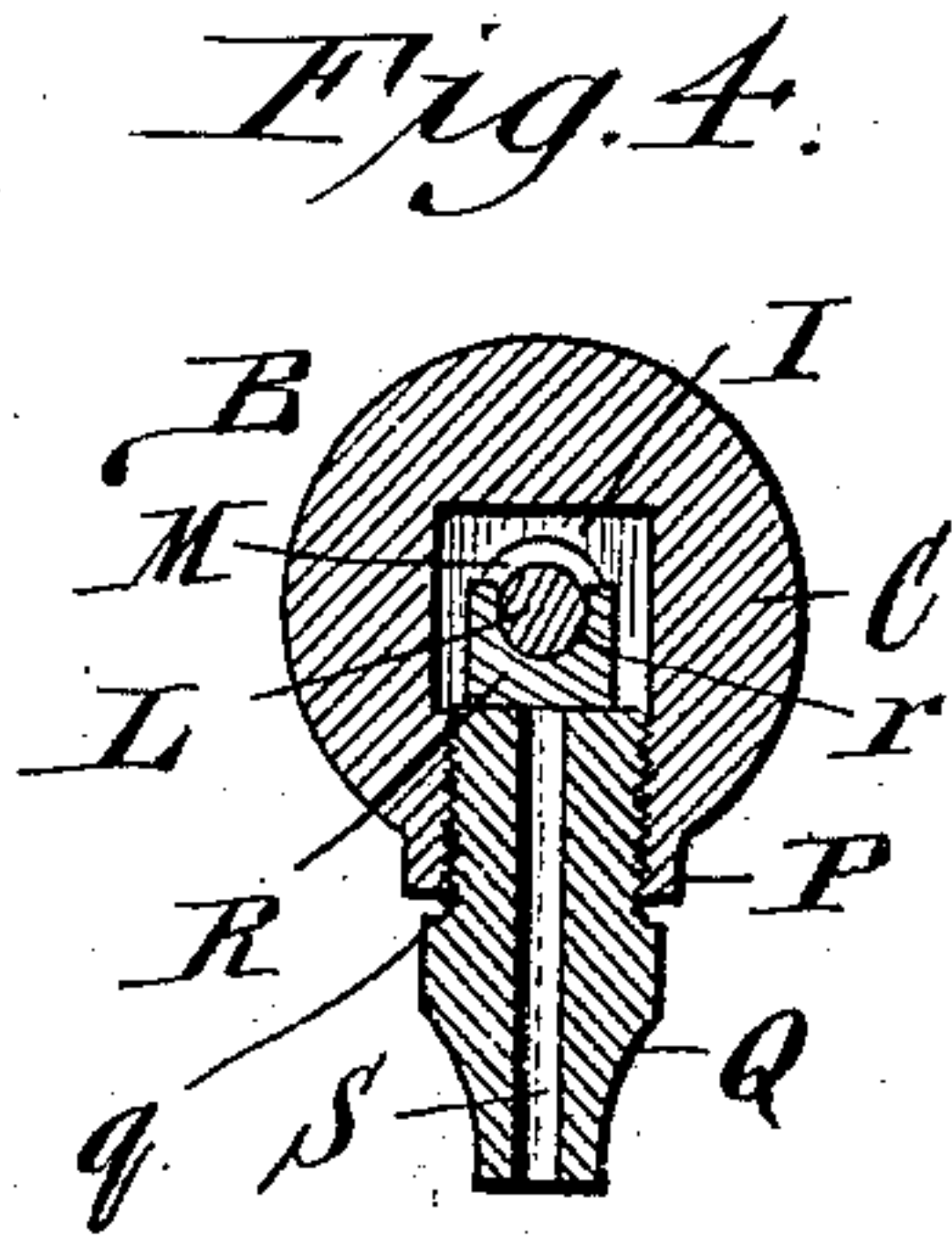
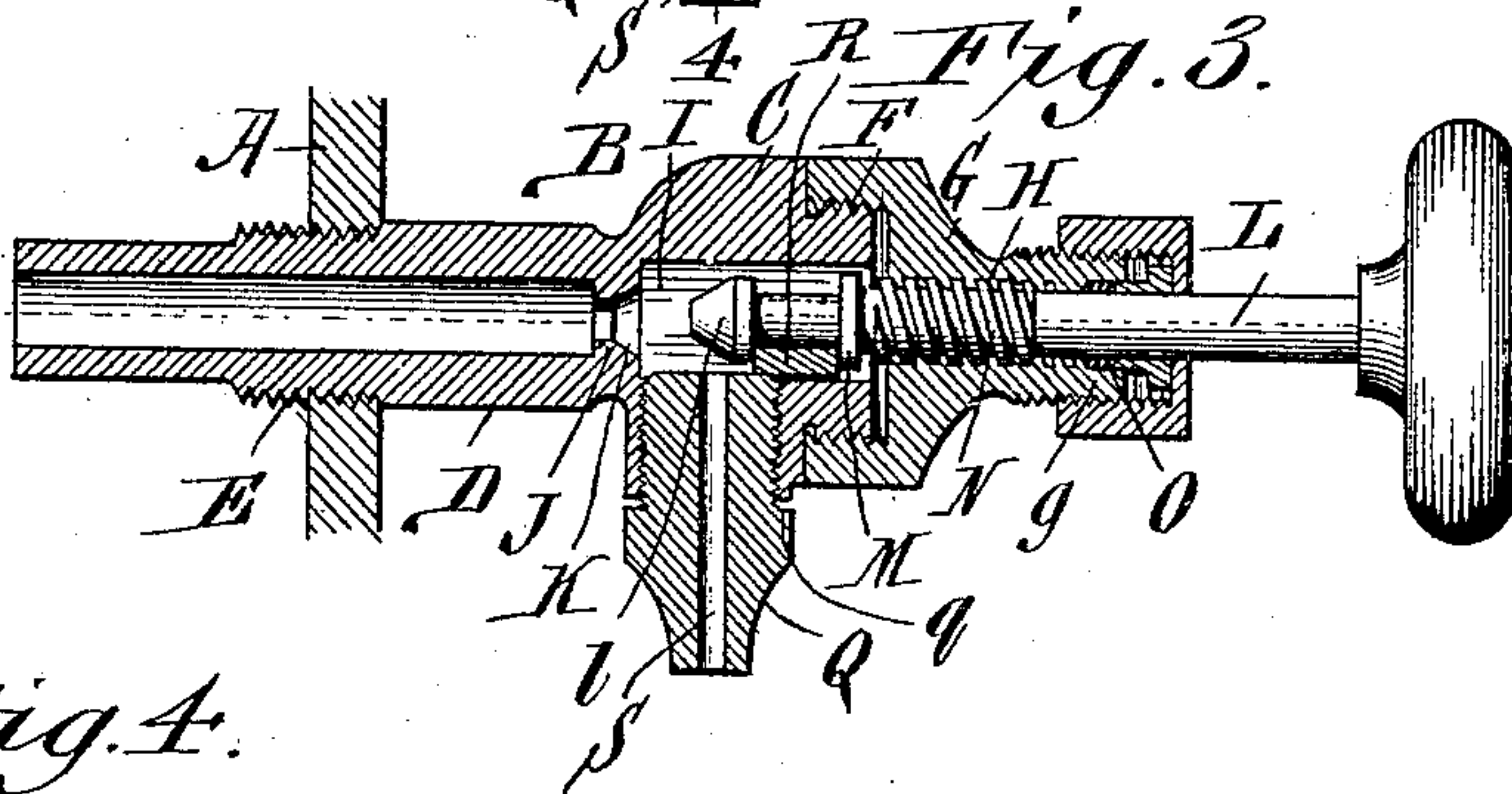
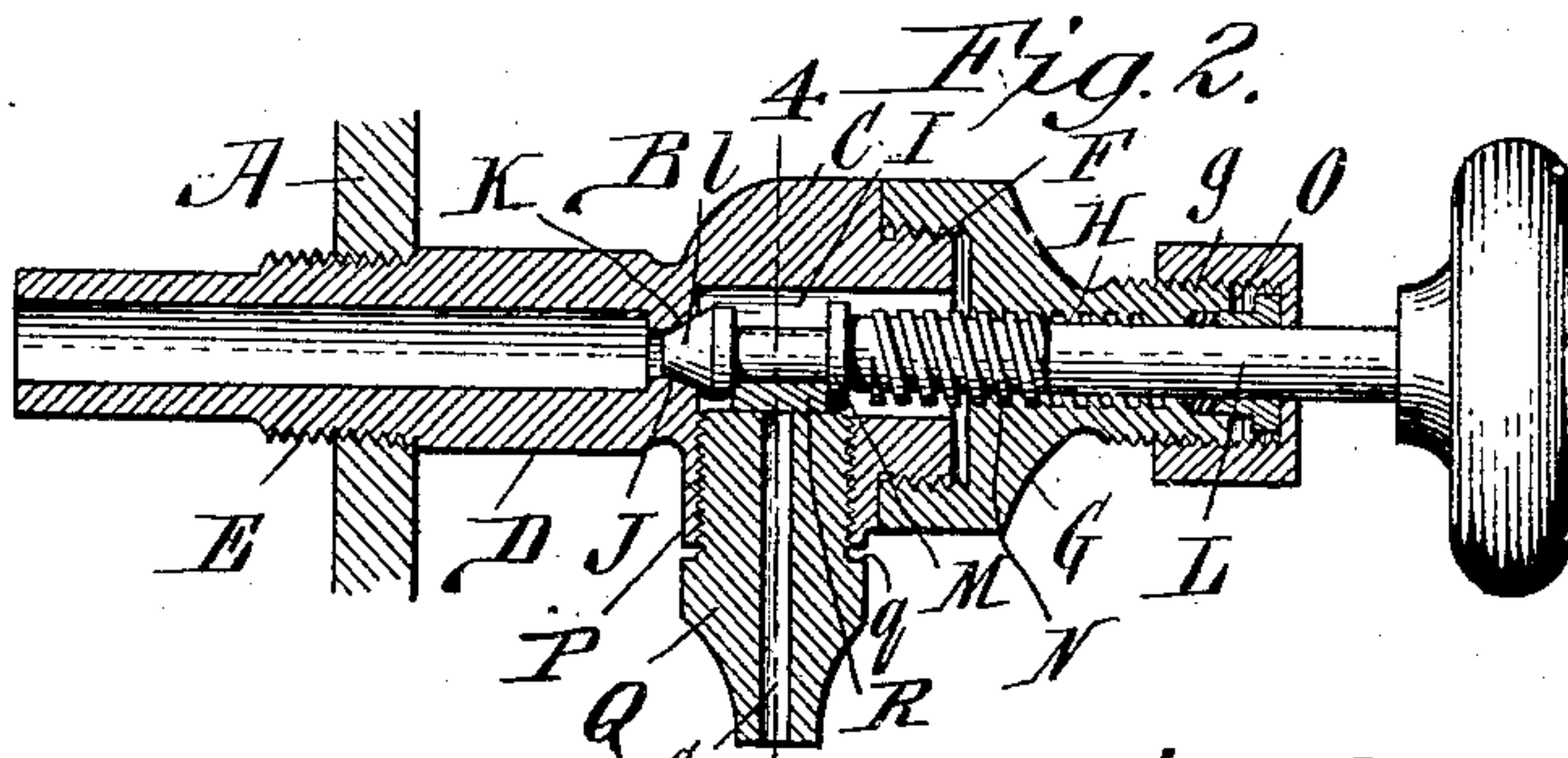
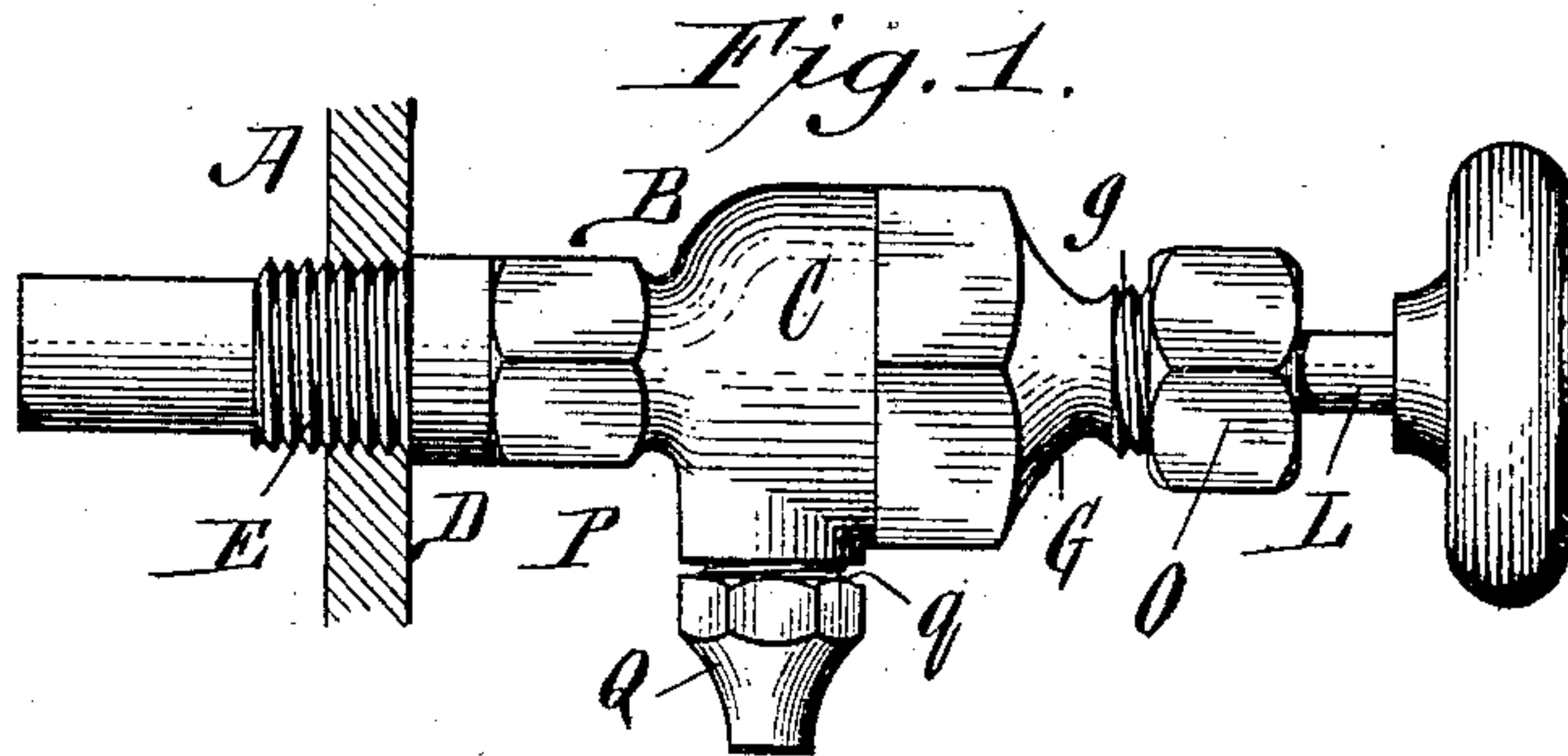
J. R. DOLPH.

VALVE.

APPLICATION FILED DEC. 6, 1907.

908,759.

Patented Jan. 5, 1909.



Witnesses:
Harry D. Rapp.
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UNITED STATES PATENT OFFICE.

JAMES R. DOLPH, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF TO JAMES I. BARKER,
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VALVE.

No. 908,759.

Specification of Letters Patent.

Patented Jan. 5, 1909.

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To all whom it may concern:

Be it known that I, JAMES R. DOLPH, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Valves, of which the following is a specification.

My invention relates to valves, and more particularly to that type of valve known as gage-cocks; it having for its primary object provision for closing both the inlet and outlet of the valve-casing.

Another object of my invention is to provide two valves and coöperating valve-seats, and means whereby one of said valves may be removed for regrinding while the other is closed against its seat; to provide a rotatable conical valve and a slidable valve working in conjunction therewith; and to otherwise improve on valves of this type.

To these ends the invention consists in the construction, arrangement and combination of parts to be hereinafter described and particularly pointed out in the subjoined claims.

In the drawings in which my invention is embodied in the form of a gage-cock,—Figure 1 is a side elevation of the same threaded into the wall of the boiler. Fig. 2 is a central longitudinal section showing both valves in closed position. Fig. 3 is a similar view showing both valves open. Fig. 4 is a cross-section taken on line 4—4, Fig. 2. Fig. 5 is an enlarged detached perspective view of the combined slide-valve seat and outlet-nozzle. Fig. 6 is an enlarged perspective view of the slide-valve.

Referring now to the drawings in detail, like letters of reference refer to like parts in the several figures.

A represents the wall of the boiler into which the gage-cock B is threaded. In the particular embodiment herein shown, said cock comprises a hemispherical body C from which extends an entrance tube D having a threaded portion E which is threaded into the wall of the boiler. The body is provided with a threaded portion F onto which a cap G is threaded, said cap having an externally threaded extension *g* and being provided with a threaded central bore H. The interior of the body is cored out to form a square chamber I which is separated from the tube D by a partition J in which is formed an inlet-opening, ground to form a bevel valve-seat K.

L designates a valve-rod having a conical valve *l* at its inner end, a collar M a short distance from said valve, and screw-threads N adjacent said collar which are adapted to thread into the centrally threaded bore H of the cap G. At the end of the extension *g* of said cap, a packing-box O of common construction is provided, thus preventing leakage at such point.

The body of the gage-cock has a lateral boss P which is cored out and tapped to receive a threaded outlet-nozzle Q whose inner end is flat and serves as a valve-seat for a slide-valve R held between the valve *l* and the collar M on the valve-rod, so that when the latter is revolved it moves the slide-valve on its valve-seat, closing the outlet S extending centrally through the nozzle Q. The slide-valve is provided with a longitudinal groove *r* in which the valve-rod fits, and said valve is therefore held against lateral movement, while the valve *l* and collar M prevent its moving lengthwise on the valve-rod.

As clearly shown in Figs. 2 and 4, the slide-valve is smaller than the threaded nozzle Q, so that upon unscrewing said nozzle from the body of the gage-cock, the slide-valve may be removed. In this manner either the slide-valve or the inner flat end of the outlet-nozzle Q may be reground to provide a secure seating for the slide-valve; or, if necessary, both said valve and said nozzle may be reground. When the gage-cock is in use the conical-valve I is normally unseated and the slide-valve R closes the passage S. In order to ascertain the level of the water in the boiler, or when it is desired to open the outlet-opening in the nozzle Q for any other reason, the valve-rod L is unscrewed to cause the slide-valve to be drawn outward. In order to close said slide-valve it is simply necessary to turn the valve-rod in the opposite direction until the flow of steam or water is shut-off, and when in this position, the conical-valve remains unseated. If for any reason it is found necessary or desirable to regrind the slide-valve or its seat, the valve-rod may be rotated to bring the conical-valve *l* securely against its seat, after which the outlet-nozzle Q may be unscrewed and the slide-valve removed through the opening in which said nozzle is held. The water or steam in the boiler cannot therefore escape while the

slide-valve and its seat are being put in proper condition.

As clearly shown in the drawings, the threaded outlet-nozzle Q has a shoulder q, and it can therefore be threaded into the body of the gage-cock until the said shoulder bears against the boss P. The nozzle, however, is never threaded into the boss far enough to bring said shoulder against the boss, which allows for regrinding of the slide-valve seat and permits the nozzle to be threaded into its receiving-opening, so that at all times, its inner flat end will provide a proper seat for the slide-valve R. The double valve arrangement makes it possible to regrind the slide-valve at any time without the slightest reduction of steam pressure in the boiler, so that when the valve-seat becomes worn it will not be necessary to wait until the boiler is out of use before regrinding.

Having thus described my invention, what I claim is,—

1. In a valve, the combination with a casing having an inlet and an outlet, of a valve-stem having a valve closing said inlet and a flat-valve closing said outlet, said flat valve being removable through said outlet when said conical valve closes said inlet.

2. In a valve, the combination with a casing having an inlet and a removable member provided with an outlet and a valve-seat, of a rotatable valve-rod threaded to provide combined longitudinal and rotatable movement, a valve at the end of said valve-rod adapted to close said inlet, and a slide-valve actuated by the valve-rod and adapted to close the outlet in said removable member.

3. In a valve, the combination with a casing having a cap and an inlet, of a valve-rod threaded into said cap and having a valve at its inner end adapted to close said inlet and

a collar a short distance from said valve, a nozzle threaded into said casing and having its inner end flat and serving as a valve-seat, said nozzle having an outlet-passage extending from end to end thereof, and a slide-valve held between the conical valve and the collar on said valve-rod and adapted to seat against the flat inner end of said nozzle, said nozzle being removable from the valve-casing and said slide-valve being removable through the opening in which said nozzle is held.

4. In a valve, the combination with a casing having an inlet and a removable nozzle provided with a outlet-passage and having its inner end serving as a valve-seat, of a valve-rod threaded for movement in said casing and having a conical valve at its inner end adapted to close said inlet and a shoulder a short distance from said conical valve, a slide-valve having a longitudinal groove in which said valve-rod fits, said slide-valve being held between said conical-valve and the collar on said valve-rod and adapted to bear against and slide on the inner face of said nozzle so as to close the outlet passage therein.

5. In a valve, the combination with a casing having an inlet and a lateral outlet, of a rotatable and longitudinally movable valve-stem having a valve for closing said inlet and carrying a slide valve for closing said outlet, said slide valve being removable from said stem.

In testimony whereof, I have affixed my signature in the presence of two subscribing witnesses.

JAMES R. DOLPH.

Witnesses:

ELLA C. PLUECKHAHN,
EMIL NEUHART.