

L. W. DANIELS.
GAGE COCK.
APPLICATION FILED MAR. 25, 1912.

1,039,652.

Patented Sept. 24, 1912.

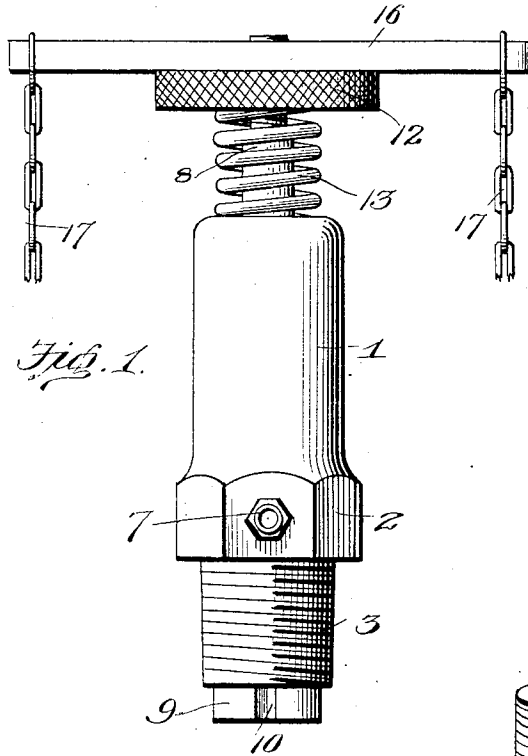


Fig. 1.

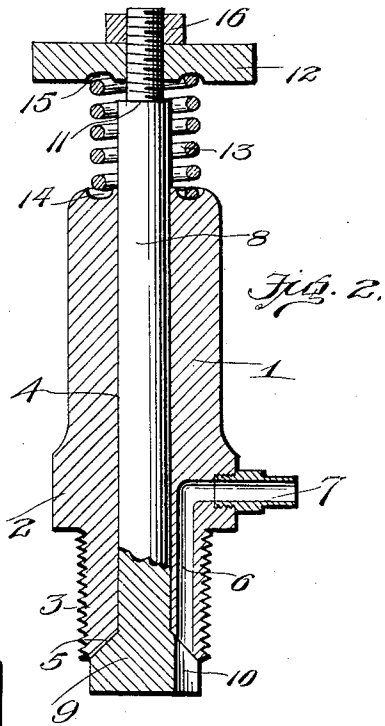


Fig. 2.

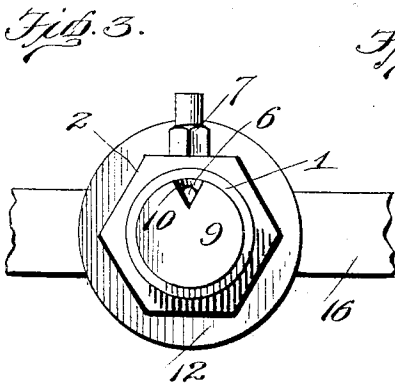


Fig. 3.

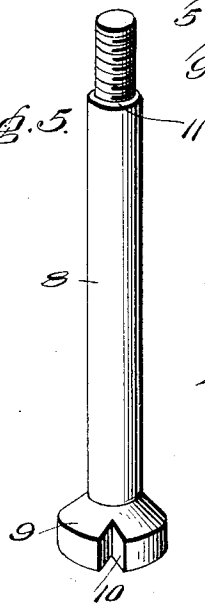


Fig. 5.

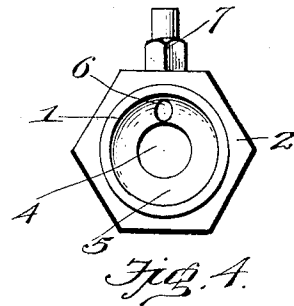


Fig. 4.

Witnesses
E. Hunt.
J. R. Pierce

Inventor
Louis W. Daniels
by *A. B. Wilson & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

LOUIS W. DANIELS, OF MANISTEE, MICHIGAN.

GAGE-COCK.

1,039,652.

Specification of Letters Patent.

Patented Sept. 24, 1912.

Application filed March 25, 1912. Serial No. 686,101.

To all whom it may concern:

Be it known that I, LOUIS W. DANIELS, a citizen of the United States, residing at Manistee, in the county of Manistee and State of Michigan, have invented certain new and useful Improvements in Gage-Cocks; and I do 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.

This invention relates to improvements in gage cocks.

One object of the invention is to provide a gage cock having an improved construction and arrangement of valve, the operation of which will keep the seat clean and prevent the accumulation of scale thereon.

Another object is to provide a gage cock which will be simple, durable and inexpensive in construction, efficient and reliable in operation and which may be readily employed as a water glass valve.

With these and other objects in view, the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings; Figure 1 is a side view of my improved gage cock; Fig. 2 is a central longitudinal section thereof; Fig. 3 is an inner end view; Fig. 4 is an inner end view of the casing with the valve removed and showing more particularly the valve seat and the arrangement of the discharge passage of the cock; Fig. 5 is a perspective view of the valve and its stem removed from the casing.

My improved gage cock comprises a casing 1, which may be of any suitable shape and is here shown as having a cylindrical outer portion provided near its inner end with a squared wrench engaging portion 2 and having its inner end threaded as at 3 for screwing into the boiler or other device to which the same is applied. The casing 1 is provided with a centrally disposed bore or passage 4 and has in its inner end a tapered valve seat 5. In one side of the inner portion of the casing is arranged a discharge passage 6, the inner end of which opens through the valve seat 5 and the outer end of which opens through one side of the squared wrench engaging portion 2 of the casing. In the outer or discharge end of

the passage is screwed or otherwise secured a discharge nipple or spout 7.

Slidably and revolubly mounted in the bore or passage 4 of the casing is a valve stem 8 having on its inner end a conically shaped valve 9 which is adapted to engage the seat 5 and which is operated by said stem to open and close the cock. In one side of the valve is formed a longitudinally disposed V-shaped notch 10, the upper end of which opens through the upper side of the valve whereby when the latter is turned by the valve stem 8, said notch will be brought into alinement with the passage 6 thereby opening the cock. By forming the notch 10 in the manner described, the upper edges of the same will engage the tapered valve seat 5 and when the valve is turned, will act as scrapers for removing any scale which may accumulate on the valve seat, thus keeping the latter clean, so that the valve will form a fluid tight engagement therewith.

The outer end of the valve stem 8 projects a suitable distance beyond the end of the casing 1 and has its extremity reduced and threaded to form a shoulder 11. Adapted to be screwed onto the reduced extremity of the valve stem is a valve operating head or disk 12. Arranged on the projecting end of the valve stem 8 between the head 12 and the outer end of the casing 1 is a coiled spring 13 the pressure of which is exerted to hold the valve 9 in fluid tight engagement with the seat 5. It will be noted that the outer end of the casing 1 is provided with an annular recess 14, while the inner side of the head 12 is provided with a similar annular recess 15. The recesses 14 and 15 form seats for the ends of the spring and hold the latter in concentric relation to the valve stem 8, thus preventing the spring from binding on the stem. The reduced threaded extremity of the valve stem preferably projects a short distance beyond the head 12 and on said projecting end of the stem is arranged a cross bar or lever 16 to the ends of which are connected chains 17 which extend downwardly to within convenient reach of the operator. The cross bar or lever 14 and chains 15 are employed only when the gage cock is located out of reach of the operator.

A gage cock constructed as herein shown and described will operate equally well un-

der all pressures, does not require packing, has a self cleaning valve and possesses many advantages which will be obvious to any one skilled in the art to which this invention appertains. By arranging the spring on the outer end of the casing, said spring is removed from the heat and is kept cool by the atmosphere, so that the spring retains its tension indefinitely. In the usual form of gage cocks wherein the spring is inclosed within the casing the heat to which the spring is subjected sooner or later affects the tension thereof and necessitates the renewal of the spring.

By arranging the valve and its operating mechanism as herein shown the valve may be quickly opened and closed by turning the stem thereof to the right or to the left and by providing the conical shaped valve and tapered seat, which in practice will be ground to a perfect fit, a fluid tight engagement is provided between these parts by the action of the spring on the outer end of the valve stem.

My improved gage cock may be readily converted into a water glass valve by removing the discharge nipple 7 and arranging in place thereof, any suitable coupling nipple and packing by means of which a fluid tight engagement is provided for the end of a water glass.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the

principle or sacrificing any of the advantages of the invention as claimed.

Having thus described my invention, what I claim is;

A gage cock comprising a casing having a threaded reduced end and a centrally disposed bore extending the entire length thereof, the lower end of the bore terminating in a tapered valve seat, a valve stem slidably and revolvably arranged in the bore of the casing, a conical shaped valve forming the lower end of the stem and projecting below the lower end of the casing, said valve having a notch formed in its edge and adapted for registry with an opening in the valve seat, a discharge nipple projecting from one side of the casing and in communication with a vertical passage formed in one side of the casing and notch in the valve, the upper inclined notched portion of the valve providing means for removing scales or other accumulations from the valve seat, an adjustable disk secured to the upper reduced end of the valve stem, a coiled spring encircling the stem and disposed between the upper end of the casing and disk, an operating arm mounted upon the stem and in binding contact with the disk, whereby the latter is locked in an adjusted position, and means attached to the bar for turning the valve stem for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LOUIS W. DANIELS.

Witnesses:

CHARLES N. BELCHER,
T. J. ELTON.