No. 783,447. PATENTED FEB. 28, 1905.

J. C. MELOON.

INDICATOR FOR GATE VALVES.

APPLICATION FILED JULY 9, 1902.

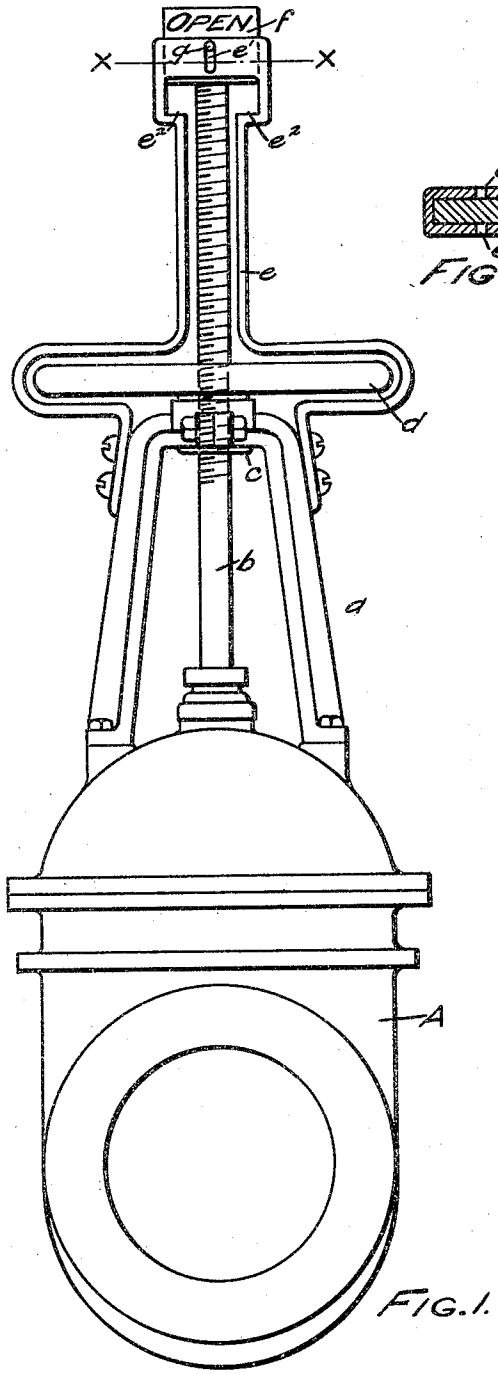


FIG. 1.

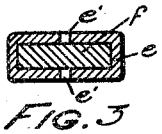


FIG. 3

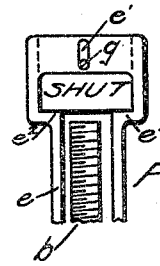


FIG. 2.

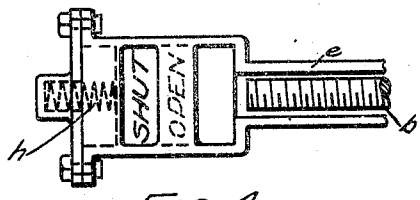


FIG. 4.

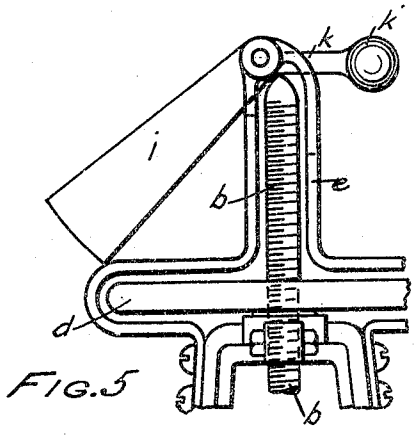


FIG. 5

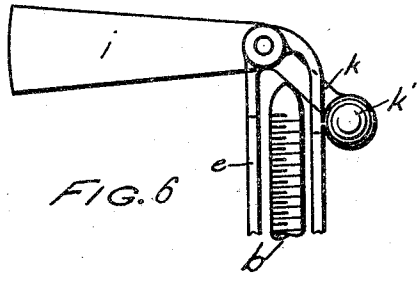


FIG. 6

WITNESSES,

Catherine G. Bradley.

James H. Thurston

INVENTOR,

Jonathan C. Meloon,

By Wilmarth C. Thurston,

ATT'Y.

No. 783,447. Patented February 28, 1905.

UNITED STATES PATENT OFFICE.

JONATHAN C. MELOON, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO GENERAL FIRE EXTINGUISHER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

INDICATOR FOR GATE-VALVES.

SPECIFICATION forming part of Letters Patent No. 783,447, dated February 28, 1905.

Application filed July 9, 1902. Serial No. 114,880.

To all whom it may concern:

Be it known that I, JONATHAN C. MELOON, of the city and county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Indicators for Gate-Valves; and I do hereby declare the following specification, taken in connection with the accompanying drawings, forming a part of the same, to be a full, clear, and exact description thereof.

This invention is especially adapted for use in connection with that type of gate-valves which are provided with an outside screw and yoke and in which the screw is secured to the valve and travels therewith in opening and closing the valve.

The object of the invention is to provide an indicator which will indicate whether the valve is open or closed and by means of which it may be readily determined what the position of the valve is and to what extent it is open or closed.

To that end the invention consists in providing the valve with an indicator which embodies a slide or other movable part adapted to be moved or operated by the valve-screw in opening or closing the valve.

Referring to the drawings, Figure 1 is an end view of an outside screw and yoke gate-valve of the form in which the nut revolves in the yoke and the hand-wheel is secured to the nut and held against endwise movement. Fig. 2 shows the upper end of the valve-screw and indicator with the parts in a different position. Fig. 3 is a section on the line $x\,x$, Fig. 1. Figs. 4, 5, and 6 show modifications to be referred to.

Referring to Fig. 1, A represents the valve-casing provided with the usual yoke a. The valve is not shown; but it is to be understood that the valve-screw b is rigidly secured to the valve and so that the valve and valve-screw move together in opening or closing the valve. c is the nut, which is mounted in the yoke so as to turn therein, but held against endwise movement. d is the hand-wheel. Secured to the yoke a is a frame or standard e, which is preferably of the form shown. In the upper part of this frame there is formed a slot or opening in which the plate f is arranged to slide. Slots e' are formed in the two cross-pieces of the frame e, into which slots extend pins or studs g, projecting from the plate f, said pins serving to guide the plate f and also to limit the movement thereof. The plate f preferably has the words "Open" and "Shut" cast or otherwise formed thereon.

Assuming the valve to be closed or partly closed, the plate f will be in the position shown in Fig. 2, with its lower edge resting on the shoulders e^2 e^2, formed on the frame e. When, now, the valve is opened, the end of the valve-screw, moving outward, will as it approaches the limit of its outward movement come in contact with the lower edge of the plate f, and the continued outward movement of the valve-screw will serve to raise said plate into the position shown in Fig. 1 and in which position the word "Open" will be exposed to view and the word "Shut" be housed or concealed. Whenever the valve is closed or is moved toward its closed position, the inward movement of the valve-screw will permit the plate f to fall by gravity back to the position shown in Fig. 2, in which position the word "Open" will be concealed and the word "Shut" exposed to view, as indicated in said figure. It will be noted that the plate f will thus come to its lower position and the word "Shut" be thus exposed before the valve is entirely closed and, in fact, when the valve is only moved a comparatively short distance from its full-open position. This is not only not objectionable, but is desirable, because it is desired in many cases, and especially in automatic sprinkler systems, to give notice when the valve is only partially closed or is in any other than a full-open position. It will also be observed that the position of the plate f will itself indicate whether the valve is open or closed and that it is not necessary to have the words "Open" and "Shut" on the plate. It will also be noted that the bottom edge of the plate f will serve as a gage by means of which it may be readily determined on inspection what the position of

the valve is, if other than fully open, and to what extent the valve is closed.

It sometimes happens that these gate-valves are installed with the yoke and screw projecting horizontally instead of vertically, as shown in Fig. 4. As in this position of the parts gravity would not act to move the plate *f*, a spring *h* is employed for the purpose. In the construction shown in Fig. 4 the plate *f* is made longer than in the arrangement shown in Figs. 1 and 2. As shown in Fig. 4, the valve-screw is moved away from the plate *f* and said plate has been moved to the right by the spring *h*. When the valve-screw is moved to the left, as it will be in moving the valve to its full-open position, the plate *f* will be moved to the left and so as to house or conceal the word "Shut" and expose the word "Open" in its place. This movement of the plate serves to compress the spring *h* and so that when the valve-screw is moved to close the valve the plate *f* will be moved to the right by said spring.

In Figs. 5 and 6 there is shown a semaphore arrangement which is likewise adapted to be operated by the movements of the valve-screw in opening and closing. The semaphore-blade *i* is pivoted at the upper end of the frame E. An arm *k*, projecting from the blade *i*, is arranged in the path of the valve-screw *b*, said arm *k* being provided with a suitable weight *k'*. When the valve is opened, the end of the valve-screw, which is preferably beveled, as shown, comes in contact with the arm *k* and raises the same to the position shown in Fig. 5, thereby depressing the semaphore-blade *i* to an inclined position, as shown in Fig. 5, which may be regarded as the position of safety. Whenever the valve is moved from the position of fully open, the inward movement of the valve-screw away from the arm *k* will permit the weight *k'* to fall, and thus raise the semaphore-blade to a horizontal position, as shown in Fig. 6, which position will indicate "danger"—that is, that the valve is not in its full-open position.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the valve-screw of an outside screw and yoke valve, of a standard or frame, and an indicator supported on said standard and adapted to be operated by the valve-screw in opening and closing the valve, substantially as described.

2. The combination, with the valve-screw of an outside screw and yoke valve, of a standard or frame, and a movable indicator supported on said standard and adapted to be moved into one position by the movement of the valve-screw in one direction, and to be moved into another position when the valve-screw is moved in the other direction, substantially as described.

3. The combination, with the valve-screw of an outside screw and yoke valve, of a standard or frame, and an indicator-plate arranged to slide in said standard and adapted to be engaged by the valve-screw and moved thereby into one position when the valve is fully opened, and to be moved into another position when the valve is closed or partly closed, substantially as described.

4. The combination, with the valve-screw of an outside screw and yoke valve, of a standard or frame, and a movable indicator-plate supported on said standard, said plate having suitable indicating words or marks thereon to indicate that the valve is open or closed, as the case may be, and adapted to be operated by the valve-screw to expose the proper word or mark to indicate the position of the valve, substantially as described.

JONATHAN C. MELOON.

Witnesses:
W. H. THURSTON,
J. H. THURSTON.