No. 898,386. PATENTED SEPT. 8, 1908.

J. G. NAGLE.

ANGLE COCK.

APPLICATION FILED JUNE 17, 1908.

Fig. 1.

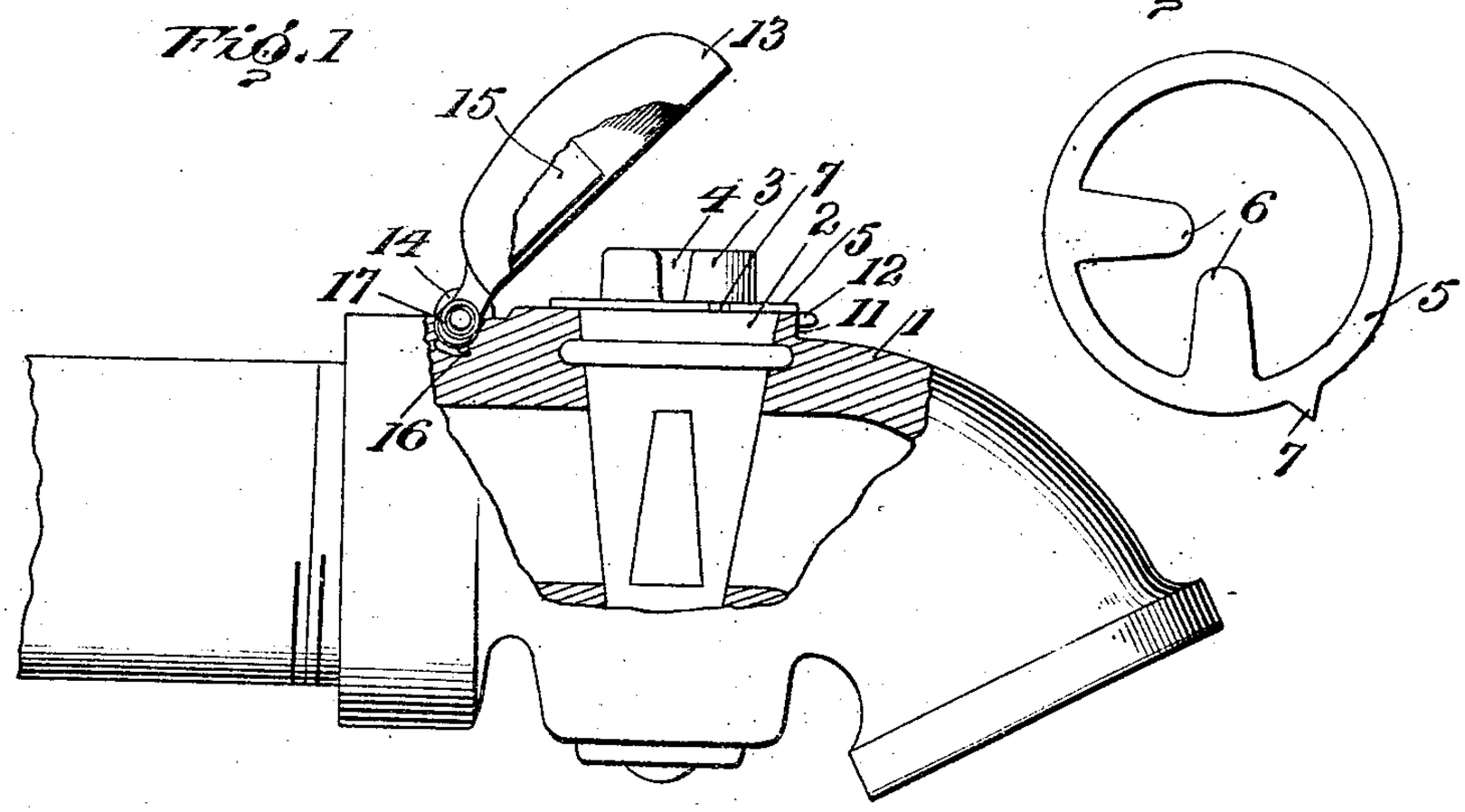


Fig. 2.

Fig. 5.

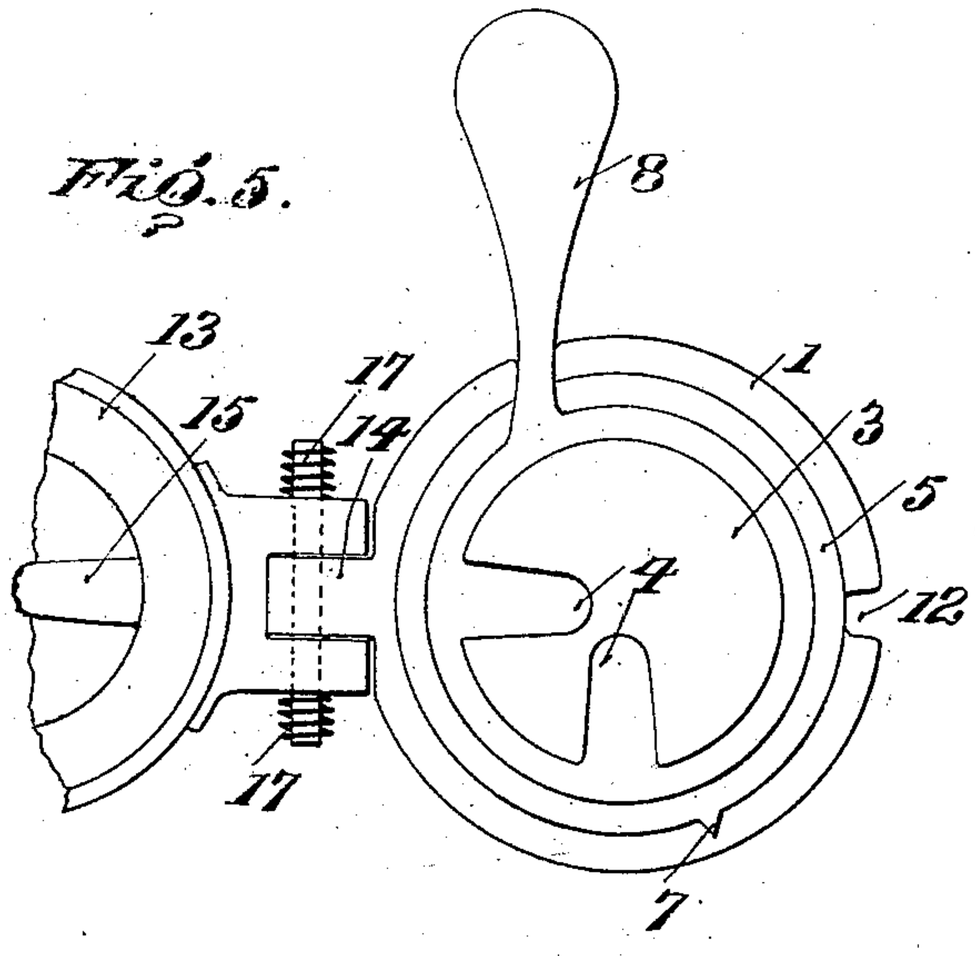


Fig. 3.

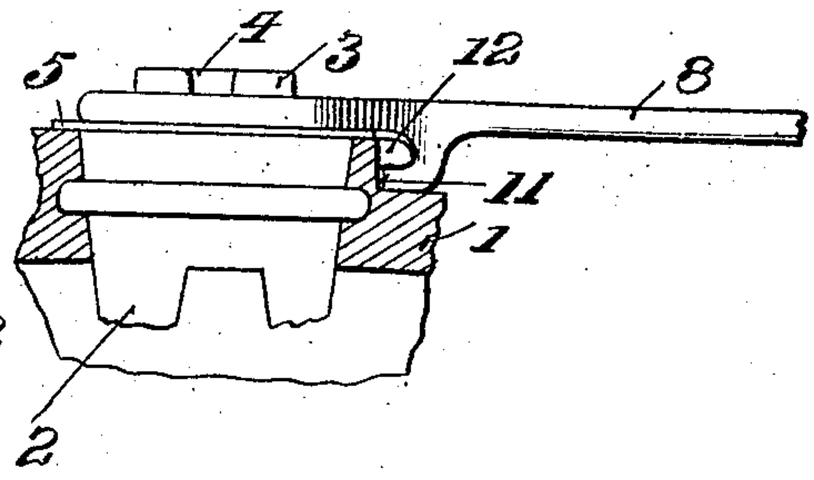
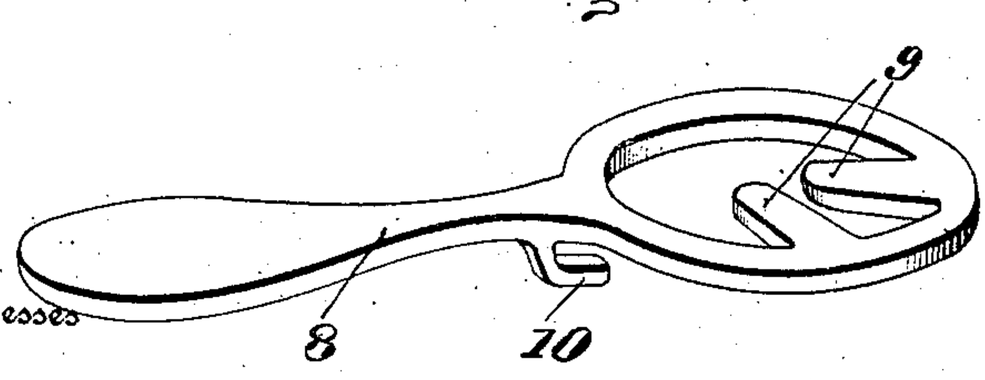


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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ANGLE-COCK.

No. 898,386. Specification of Letters Patent. Patented Sept. 8, 1908.

Application filed June 17, 1908. Serial No. 438,998.

To all whom it may concern:

Be it known that I, JOHN G. NAGLE, a citizen of the United States, residing at Niles, in the county of Berrien and State of Michigan, have invented certain new and useful Improvements in Angle-Cocks, of which the following is a specification.

In the operation of air brakes upon railway trains it is customary to interpose a number of angle cocks in the length of the train pipe and much annoyance and considerable damage is frequently occasioned by the opening and closing of these angle cocks by unauthorized parties.

The object of the present invention has been to overcome this difficulty by the provision of a novel means for locking the plug of an angle cock or similar valve either in an open or a closed position.

The invention further contemplates a locking device of this character which admits of a ready manipulation of the valve and embodies indicating means for showing the position of the valve.

For a full understanding of the invention and the merits thereof, and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a side elevation of an angle cock constructed in accordance with the invention, portions being broken away. Fig. 2 is a detail view of the indicator plate. Fig. 3 is a sectional view through the upper portion of the valve showing a wrench as applied to the stem for turning the plug. Fig. 4 is a detail view of the wrench. Fig. 5 is a top plan view, portions being removed.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

For the purpose of illustration the locking device embodying the present invention is shown as applied to an angle cock which is similar to those in common use and comprises a casing 1 having a rotary plug 2 mounted therein, the passage through the casing being controlled by turning the plug. The upper end of the plug is formed with a stem 3 which projects upwardly above the casing 1 and is provided with a pair of radially disposed notches 4 which are disposed at an angle to each other. An indicator plate 5 is provided with an opening to receive the stem 3 and also with the fingers 6 which project within the opening and are designed to enter the notches 4 to lock the indicator plate with the stem. Projecting from the edge of the plate 5 is a pointer 7 which travels between the cover and the top of the casing and serves to indicate whether or not the valve is in an open or a closed position.

For the purpose of turning the plug to open or close the valve a removable wrench 8 is utilized, the wrench being formed with a socket to fit over the stem 3 and also with the projections 9 which extend into the opening and are designed to enter the notches 4 to produce an interlocking connection with the stem. Projecting downwardly from the wrench is a curved lip 10 which is designed to travel within a groove 11 upon the exterior of the valve casing 1 as the wrench is turned to rotate the plug. The opposite ends of the groove 11 communicate with upwardly extending channels 12 and when the wrench 8 has been moved into such a position as to either open or close the valve the curved lip 10 is disposed immediately under one of the channels 12. It will thus be obvious that the wrench may be readily applied to the stem 3 or removed therefrom as desired when the plug is turned into such a position that the valve is either open or closed, but that when the valve is in an intermediate position the curved lip 10 will prevent removal of the wrench.

For the purpose of preventing an operator from applying the wrench to the stem with the curved lip projecting up instead of down the notches 4 in the stem are flared upwardly and the projections 9 of the wrench have a corresponding formation. With this construction it will be obvious that when the wrench has been reversed as above mentioned the projections 9 will not enter the notches 4 and the wrench can not be applied to the stem. The invention further contemplates means for locking the plug 2 against movement after the wrench 8 has been removed and for this purpose a cover 13 is utilized, the said cover being pivotally mounted upon a lug 14 projecting from the casing 1 and being provided upon its interior with a wing 15 designed to enter either one of the notches 4 to hold the plug against rotary movement. The pivot end of the cover is provided with the rearward extensions 16

which are designed to engage the casing to limit the upward movement of the cover and prevent the same from being moved beyond a vertical position. In the present instance the cover can only be lifted through an angle of approximately forty-five degrees and with this construction it will be obvious that as soon as the cover has been released the action of gravity will again move the same into a closed position. A pair of coil springs 17 are also provided at the pivot end of the cover and serve to normally swing the cover into a closed position.

Having thus described the invention, what is claimed as new is:

1. The combination of a valve embodying a rotary plug, a stem projecting from the plug, a removable wrench adapted to have an interlocking connection with the stem for turning the plug, and a cover upon the valve adapted to engage the stem to lock the plug against movement.

2. The combination of a valve embodying a rotary plug, a stem projecting from the plug and formed with a notch, a removable wrench adapted to be applied to the stem and to engage the notch for turning the plug, and a cover applied to the valve and formed with a wing adapted to engage the notch to lock the plug against movement.

3. The combination of a valve embodying a rotary plug, a stem projecting from the rotary plug, an indicator plate applied to the stem so as to rotate therewith and indicate the position of the valve, a removable wrench adapted to detachably engage the stem for rotating the plug, and a cover applied to the valve and adapted to engage the stem to lock the plug against movement.

4. The combination of a valve embodying a casing having a rotary plug mounted therein, the casing being provided with a groove communicating at its ends with upwardly extending channels, a stem projecting from the plug and formed with a notch, a removable wrench adapted to engage the stem and the notch therein to turn the plug, the said wrench being formed with a returned lip which travels within the groove in the casing and is opposite one of the channels at the ends of the groove when the valve is in either an open or a closed position, and a cover mounted upon the valve casing, the said cover being provided with a wing for engaging the notch in the stem to lock the plug against movement.

5. The combination of a valve embodying a casing having a rotary plug mounted therein, the casing being formed with a groove communicating at its ends with upwardly extending channels, a stem projecting from the plug and formed with a notch, an indicator plate applied to the stem and provided with means for engaging the notch whereby the indicator plate is caused to rotate with the stem to indicate the position of the valve, a removable wrench adapted to be applied to the stem and to engage the notch therein for turning the plug, the wrench being formed with a returned lip which travels within the groove and is opposite one of the channels when the valve is either in an open or a closed position, and a cover hinged upon the casing and formed with a wing designed to engage the notch in the stem to lock the plug against movement.

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

JOHN G. NAGLE. [L. S.]

Witnesses:

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CHAS. G. STOWELL.