T. B. ELLWOOD.

ANGLE COCK DEVICE.

APPLICATION FILED OCT. 23, 1909.

1,131,224. Patented Mar. 9, 1915.

Fig. 1

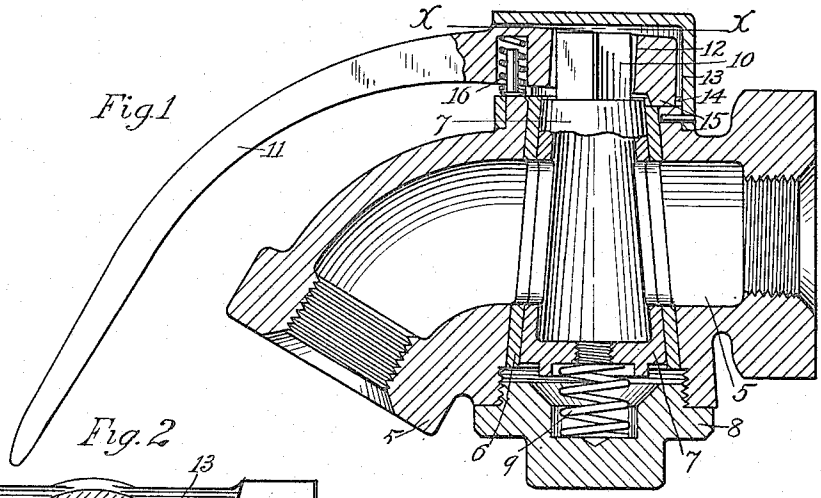


Fig. 2

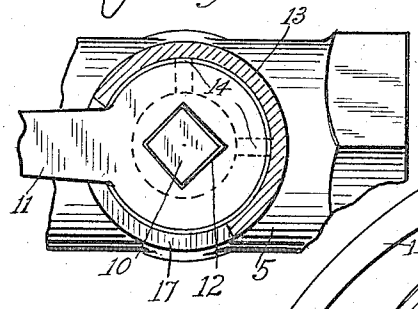
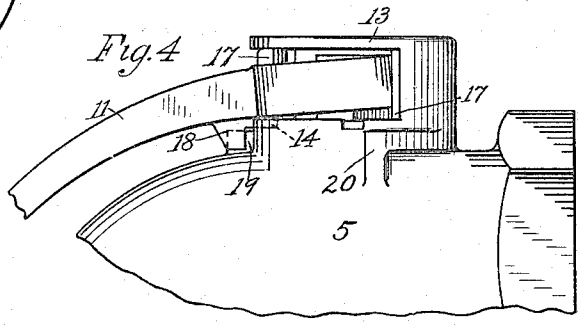


Fig. 3

Fig. 4



WITNESSES

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UNITED STATES PATENT OFFICE.

THOMAS B. ELLWOOD, OF MARSHALL, TEXAS, ASSIGNOR TO THE WESTINGHOUSE AIR BRAKE COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

ANGLE-COCK DEVICE.

1,131,224. Specification of Letters Patent. Patented Mar. 9, 1915.

Application filed October 23, 1909. Serial No. 524,160.

To all whom it may concern:

Be it known that I, THOMAS B. ELLWOOD, a citizen of the United States, residing at Marshall, in the county of Harrison and State of Texas, have invented new and useful Improvements in Angle-Cock Devices, of which the following is a specification.

This invention relates in general to stop cocks for controlling the flow of fluids and more particularly to what are known as angle cocks for use in train pipes of air brake and other fluid pressure systems upon railway cars. In this class of service it is important that these cocks should not become accidentally turned after being set to the desired position, and for the purpose of locking the same against accidental movement it has heretofore been proposed to provide a pivoted handle adapted to have a vertical or oscillating movement and which in one position prevents the turning of the cock but when oscillated on its pivot to its other position permits the free turning of the cock.

The object of my present invention is to provide an improved self-locking angle cock of this type which is of simple and durable construction, composed of few parts and adapted to be readily manipulated by the trainmen.

One feature of my improvement consists in dispensing with the use of all pivot pins for the handle while at the same time providing for its free oscillating movement relative to the cock or valve.

Another feature consists in protecting the upper or exposed end of the cock from injury by contact with other objects which might force the cock or valve off its seat, also excluding dirt, snow and ice, and preventing the removal of the handle when the cock is in its position in the casing.

These and other features of my improvements will now be more fully described and claimed, reference being had to the accompanying drawing in which,

Figure 1 is a vertical section of an angle cock embodying my improvements; Fig. 2 a horizontal section taken on the line x—x of Fig. 1; Fig. 3 a vertical section showing a slight modification; and Fig. 4 a side elevation of the upper portion of an angle cock showing a further slight modification.

According to the well known construction of angle cocks, the same comprises a casing 5 containing a hollow tapered bushing 6 in which is located the tapered plug cock or valve 7 which extends through the opening in the top of the casing and bushing and is provided with a key-square 10 or other form of projection on which the handle is to be mounted. The lower opening through which the bushing and plug are inserted is closed by a nut 8 and a light spring 9 holds the plug in its tapered seat.

According to one feature of my improvements I provide the handle 11 with an opening 12 corresponding to the projection 10 of the cock-key but of larger size in order to allow sufficient play to permit of a free oscillation of the handle vertically relative to the cock. The handle is thus loosely mounted on the cock-key and a guard 13 is provided to prevent the removal of the handle when the plug cock is in its place in the casing.

Notches 14 may be formed in the casing for engaging a projection 15 on the handle when the same is turned to either its open or closed position and thereby lock the handle against accidental movement. In order to turn the handle it may be oscillated, that is raised or depressed, to disengage the projection from the recess or notch in the casing, and then turned freely to the other position.

According to the construction shown in Fig. 1 the handle is normally maintained in its raised position by means of the spring 16 with the projection or locking means engaging one of the notches, and this is released by depressing the handle when it is desired to turn the same to the other position; while, as shown in Fig. 3, the handle is normally in its lowest position when locked and is adapted to be raised in order to release the locking means and turn the cock. In this latter modification the spring may also be employed to assist in holding the handle in its normal locked position but if the weight of the handle is sufficient for this purpose of course the spring may then be dispensed with.

It is evident that any suitable form of locking means operated by the vertical movement of the handle may be employed.

The guard 13 for retaining the handle may be of any suitable or preferred design but I prefer to construct the same in the form of a cylindrical or closed cap extending over the top of the cock-key and head

of the handle and having a slot 17 of sufficient length and width in the side of said cap to allow for the vertical and horizontal movements of the handle. In this case the end walls of the slot may form the stops for limiting the movement of the handle to the open and closed positions or, if preferred, the handle may have a lug 18 for engaging the usual stop lugs 19 and 20 on the cock casing, as indicated in Fig. 4.

It will be apparent that the guard or cap 13 may be rigidly fixed upon the casing in any desired manner either by means of screws as indicated in Figs. 1 and 3, or formed integrally therewith, as shown in Fig. 4, and in the former case it will also be evident that my improvement may be applied to the old form of angle cock already in service by merely removing the old handle and substituting my improved handle and attaching the protecting guard or cap to the cock casing.

In order to remove or replace the handle it is of course necessary to remove the nut 8 and withdraw the plug cock whereupon the handle may be readily withdrawn or inserted through the slot in the cap.

It will now be seen that I have provided an improved self-locking cock of the type having a vertically movable handle but of simple and durable construction composed of few parts and free from troublesome pivot pins. Also that the improved inclosing cap forms an efficient protection for preventing injury or displacement of the plug cock as well as excluding dirt, snow and ice therefrom and at the same time retains the handle in its loosely mounted position on the cock-key.

Having now described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A stop cock device comprising a casing, a plug cock therein, an oscillating handle loosely and freely mounted on the plug cock and a guard rigidly fixed upon said casing for preventing removal of the handle in all positions thereof.

2. A stop cock device comprising a casing, a plug cock therein, an oscillating handle loosely and detachably mounted on said plug cock with the capacity of vertical movement relative thereto, and a guard for retaining the handle on the plug cock.

3. A stop cock device comprising a casing, a plug cock therein, a handle loosely and freely mounted on said plug cock with the capacity of oscillatory movement relative thereto, locking means operated by the movement of the handle, and a guard for retaining the handle on the plug cock.

4. A stop cock device comprising a casing, a plug cock therein, a handle loosely and detachably mounted on said plug cock with the capacity of vertical oscillatory movement relative thereto, and a guard rigidly fixed upon said casing for retaining the handle on the plug cock.

5. A stop cock device comprising a casing, a plug cock therein, a handle loosely mounted on said plug cock and free from connection thereto and adapted to be vertically oscillated, locking means operated by said vertical movement, and a guard fixed upon said casing for retaining the handle on the plug cock.

6. A stop cock device comprising a casing, a plug cock mounted therein and provided with a key end, a handle having a key shaped opening loosely conforming to the contour of the key end to permit vertical movement of the handle, and a cap secured to the casing and completely covering the end of the plug cock for retaining the handle in place.

7. A stop cock device comprising a casing, a plug cock therein, a handle loosely and freely mounted on said plug cock with the capacity of vertical movement, locking means operated by said movement, and a cap having a slot for the handle, said cap being fixed upon the casing and completely covering the end of the plug cock.

In testimony whereof I have hereunto set my hand.

THOMAS B. ELLWOOD.

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."