No. 724,912. PATENTED APR. 7, 1903.

F. H. MOBLEY.

LOCK FOR ANGLE COCKS OR THE LIKE.

APPLICATION FILED SEPT. 29, 1902.

NO MODEL.

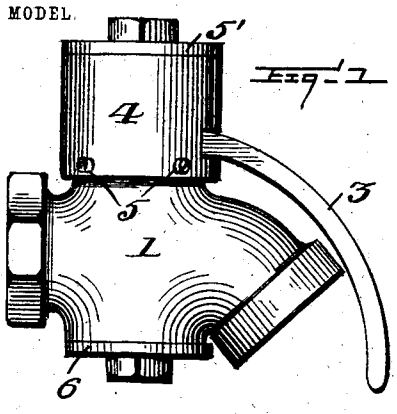



Fig. 1.

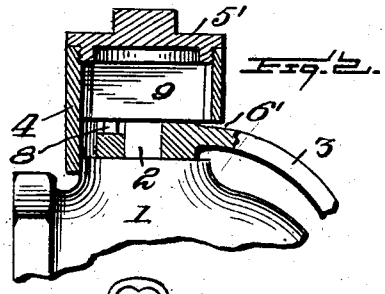



Fig. 2.

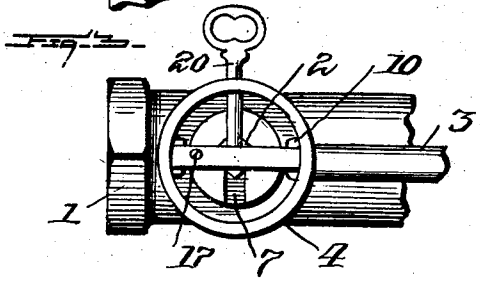



Fig. 3.

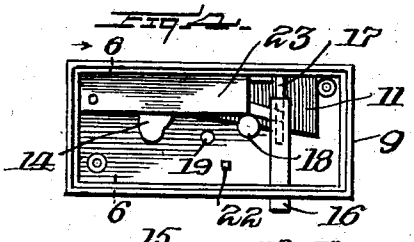



Fig. 4.

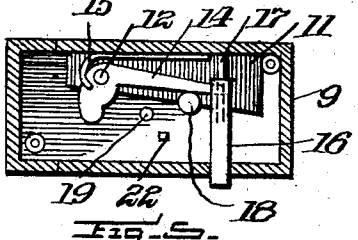



Fig. 5.

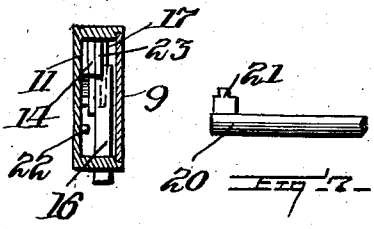



Fig. 7.

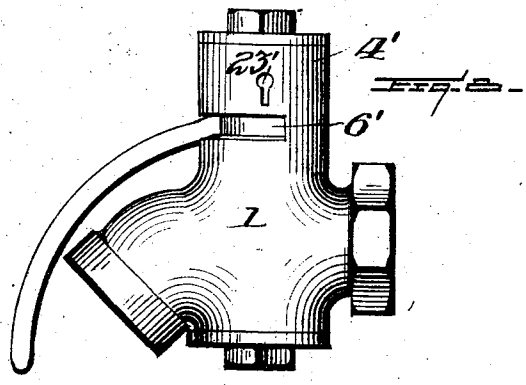



Fig. 8.

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# UNITED STATES PATENT OFFICE.

FRANK H. MOBLEY, OF ALLEGHENY, PENNSYLVANIA.

## LOCK FOR ANGLE-COCKS OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 724,912, dated April 7, 1903.

Application filed September 29, 1902. Serial No. 125,212. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK H. MOBLEY, a citizen of the United States of America, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Locks for Angle-Cocks or the Like, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in angle-cock locks, and while the invention particularly is designed and adapted for use in connection with an angle-cock such as is employed in connection with air-brakes for railways yet the invention broadly aims to provide a lock by means of which the plug of the valve may be locked either in the closed or open position, whether such valve be in the form of an angle-cock or other style of plug-valve.

In the operation of air-brakes in connection with railway-trains it is the custom to employ angle-cocks at various points in the air-line for the purpose well known in the art. As either the opening or closing of these cocks by unauthorized persons is liable to cause considerable damage, it is desirable that the plug of the cock be locked in such a manner that only those having authority and possessing the necessary form of key to unlock the same may operate the valve of the cock so as to open or close the same, as may be desired.

To this end my invention comprises a casing which is carried by the casing of the angle-cock and has arranged therein a lock having a spring-pressed locking-bolt which is adapted to engage with the stem of the plug-valve or with the head of the operating-handle secured to the said valve in such a manner as to retain the plug in the open or closed position, according to the position to which it has been moved.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate like parts throughout the several views, in which—

Figure 1 is a side elevation of the angle-cock with my improvements in position thereon. Fig. 2 is a central sectional view through the lock-casing, the angle-cock being partly broken away. Fig. 3 is a top plan view of a part of the angle-cock, showing the cap or cover plate of the lock-casing removed and the operating-key in position for operating the lock. Fig. 4 is an enlarged detached detail plan view of the lock, the one side plate thereof being removed. Fig. 5 is an enlarged central longitudinal sectional view of the lock, one of the wards being removed. Fig. 6 is an enlarged transverse vertical sectional view on the line 6 6 of Fig. 4. Fig. 7 is an enlarged detail plan view of a part of the operating-key. Fig. 8 is a side elevation of the angle-cock, showing the lock-casing integral with the valve-casing instead of detachable therefrom.

My improved lock may be attached to the ordinary angle-cocks or like valve which are now in use, or the angle-cocks or valve may be especially constructed in accordance with my invention. With the angle-cocks which are now in use the lock-casing may be attached to the valve-casing, and where the angle-cocks are being constructed in accordance with my invention the lock-casing may be made an integral part of the valve-casing.

In the accompanying drawings, 1 indicates the casing of the angle-cock, which is not shown in detail, being of any ordinary form of construction. As is well known, the plug-valve 2 is fitted in the casing 1 of the angle-cock, and where these cocks are employed in connection with air-brakes it is the custom to attach an operating-lever 3 to the hub of the plug-valve 2 to afford a means for operating said valve. In instances where I attach my improved lock direct to the angle-cock already in use I provide a lock-casing 4, which may be secured to the casing 1 by tap-screws 5 or in any other suitable manner, and I preferably close this casing at its top by means of a cap 5′, of a similar form of construction to the cap 6, which is employed at the lower end of the angle-cock casing. The lock-casing 4 is provided at one side with a cut-away portion 6′, through which the operating-lever 3 extends and in which slot it operates. The operating-lever 3 is fitted onto the stem 2 of the plug-valve, and the hub of this lever is provided with notches 7 and 8, the latter of which receives the locking-bolt to hold the

plug-valve in the open position and the former of which receives the locking-bolt to hold the plug-valve in the closed position.

My improved lock comprises a rectangular lock-casing 9, which is held within the casing 4 by small lugs or strips 10, carried on the inner face of the casing 4. Arranged within the casing 9 is a plate 11, which has its edge against the upper wall of the casing 9 and carries a pin 12, upon which a tumbler 14 is pivotally mounted. This tumbler is at all times under the tension of a spring 15, which has its one end engaged in the tumbler, the other end of said tumbler engaging in the recess in the inner face of the locking-bolt 16. This locking-bolt is hollow at its upper end to receive the guide-pin 17, carried in the upper wall of the casing, while the lower end of the locking-bolt projects normally below the lower edge of the casing. The throw of the locking-bolt and tumbler is limited by a stop-pin 18. The locking-casing carries a pin 19 to receive and position the operating-key 20. The ward 21 of this key is so constructed as to pass the ward 22, carried by the lock-casing, and the plate 23, mounted on top of the tumbler and key, has an additional ward for the lock.

After the above-described parts of the mechanism have been placed within the casing, as seen in Fig. 4, the side plate 23 is placed in position and is secured by screws passing through and engaging in the opposite side plate, as in the usual construction of locks. In Fig. 8 I show a lock-casing 4′ integral with the angle-cock casing 1. Where my improved lock is to be applied to angle-cocks being constructed, this form may be employed, and where it is desired to apply the lock to angle-cocks already in use the detachable casing is employed. The casing 4 or 4′ is provided in its side wall at a point above the slot 6′ with a keyhole 23′, through which the key 20 is inserted, so as to operate the lock.

We will assume that the valve is turned to the open position, which is that shown in the different figures of the drawings, and it is desired to unlock the valve and move the same to the closed position. The operator inserts the key 20 through the keyhole 23 and engages the key on the pin 19. By turning the key the notched corners pass wards 22 and 23, allowing the longer portion of the key to engage with the tumbler 14, raising said tumbler and carrying the locking-bolt 16 therewith, thus removing said locking-bolt from its engagement in the notch 8. The lever 3 may then be moved around at right angles to this former position, and when the key is removed from the casing the support for the tumbler 14 will have been removed and the spring 15 will force the locking-bolt downwardly to engage in the recess or seat 7 to lock the valve in the closed position. With the form of lock employed by me it will be observed that the key serves to hold the tumbler and locking-bolt elevated while the lever 3 is being operated, which is of material advantage, since the operator may insert the key into the lock, release the locking-bolt, and then operate the valve by the same hand, since the key holds the locking-bolt elevated. As soon as the key is turned backward in the opposite direction the locking-bolt is forced downwardly into engagement with its notch or recess and against the locking-valve.

While I have herein shown and described a practical form of my invention, yet it will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. In a lock for angle-cocks, the combination of a valve-casing, a valve mounted therein, an operating-lever secured to the stem of said valve, notches in the hub of said lever, a lock-casing mounted on said valve-casing, a guide-pin secured therein, a plate mounted in said lock-casing, a tumbler pivotally mounted on said plate, a spring mounted on the lock-casing for depressing said tumbler, a locking-bolt mounted in the casing, a recess therein to slidably receive said guide-pin, said tumbler engaging said locking-bolt to normally depress the same into engagement with the notches in the operating-lever to lock the same, and means for withdrawing the said locking-bolt from locked position, substantially as described.

2. In a lock for angle-cocks, the combination with a valve-casing, a valve mounted therein, an operating-lever secured to the stem of said valve, recesses formed in the hub thereof, of a lock-casing mounted in the valve-casing, locking means arranged therein, said means comprising a plate mounted on said lock-casing, a spring-pressed tumbler pivotally mounted thereon, a locking-bolt engaged by said tumbler and operating through said lock-casing, said bolt having a recess therein for the reception of a guide-pin, a guide-pin mounted in the said casing adapted to slidably seat in the recess of the locking-bolt, said locking-bolt being normally depressed by its spring into locking engagement with the notches of the operating-lever, and means for withdrawing said bolt from its locked position to permit the turning of said operating-lever, substantially as described.

3. In a lock for angle-cocks and the like, the combination with a valve-casing, a valve therein, an operating-lever connected to the stem of the valve, having recesses formed in the hub thereof, of a lock-casing carried by said valve-casing, an opening therein for the reception of a key, a lock mechanism arranged therein comprising a spring-pressed tumbler pivotally mounted on a plate secured in said casing and engaging a locking-bolt, said locking-bolt mounted in the casing, a guide-pin

therefor adapted to slide in a recess therein, said bolt being normally seated in the recesses of the operating-lever to lock the same, and a key adapted to engage with the tumbler to raise the bolt out of locked position thereby permitting the turning of the said lever, substantially as described.

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

FRANK H. MOBLEY.

Witnesses:
A. M. WILSON,
WM. F. BRUNNER.