

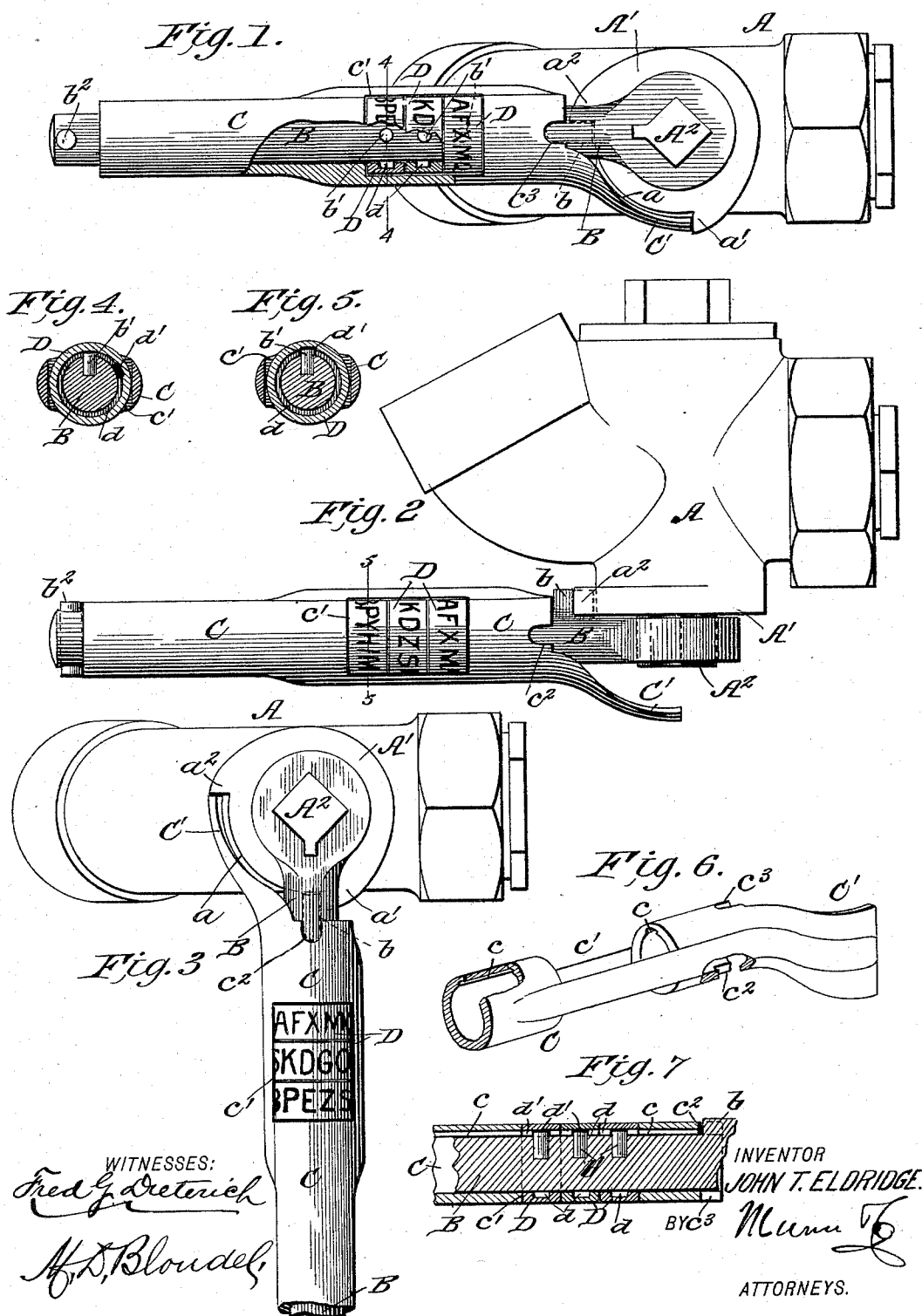
(No Model.)

J. T. ELDRIDGE.

LOCKING STOP COCK FOR TRAIN PIPES OF AIR BRAKE SYSTEMS.

No. 527,327.

Patented Oct. 9, 1894.



UNITED STATES PATENT OFFICE.

JOHN TURNER ELDRIDGE, OF MURFREESBOROUGH, NORTH CAROLINA.

LOCKING STOP-COCK FOR TRAIN-PIPES OF AIR-BRAKE SYSTEMS.

SPECIFICATION forming part of Letters Patent No. 527,327, dated October 9, 1894.

Application filed February 21, 1894. Serial No. 500,969. (No model.)

To all whom it may concern:

Be it known that I, JOHN TURNER ELDRIDGE, a citizen of the United States, residing at Murfreesborough, in the county of Hertford and State of North Carolina, have invented certain new and useful Improvements in Locking Stop-Cocks for Train-Pipes of Air-Brake Systems, of which the following specification contains a full, clear, and exact description, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view (partly broken away) of the under side of a No. 4 Westinghouse angle-cock with my improvements applied, the cock being locked in its open position. Fig. 2 is a side elevation with the locking sleeve in position to permit the cock to be closed. Fig. 3 is a similar view to Fig. 1 with the cock closed, the handle being turned a quarter turn and the sleeve turned or reversed to lock the cock closed. Figs. 4 and 5 are details on lines 4—4 Fig. 1 and 5—5 Fig. 2 respectively and Figs. 6 and 7 are details.

The train pipe which extends from end to end of every car equipped with the Westinghouse air brake system is provided at each end just under the platforms with a stop cock both of which stop cocks are opened for the free passage of air through the train pipe when the train is made up and the several train pipes are coupled. It frequently happens that some unauthorized person will close a stop cock just before the train starts from the station thus rendering the engineer powerless to control the supply of air necessary for the operation of the brakes.

My invention has for its object to provide such stop cocks with a locking mechanism which will permit them to be quickly locked when opened and if desired also to lock the cocks when closed.

The invention will be first described and then specifically pointed out in the claims.

A represents a train pipe stop cock known as No. 4 of the Westinghouse make. A' is its casing provided at its lower end with a segmental recess *a* the ends of which are formed by shoulders or lugs *a'* *a*² and A² is the stem of the plug or valve.

B is the handle projecting outwardly from the stem A² and provided on its upper side

with a lug *b* which works in the recess or space *a* between lugs *a'* *a*², the lug *b* engaging the lug *a*² when the cock is opened and engaging the lug or shoulder *a'* when the cock is closed.

So far the parts are of the usual construction and I will now describe my improvements.

Upon the lower side of the handle near its inner end are two or more longitudinally aligned pins or studs *b'* for a purpose to be presently described.

C is the locking sleeve free to turn on the handle B and also having a limited longitudinal movement thereon the said sleeve being held against removal by a stop *b*² at the outer end of the handle B. This sleeve C is provided with a longitudinal internal groove *c* to allow it to pass the pins or studs *b'* and it is cut away on its opposite sides adjacent to said studs or pins to form an open chamber *c'* within which I place a series of permutation rings D which rings are provided with internal annular grooves *d* and intersecting transverse grooves *d'* which operate in connection with the studs or pins *b'* as will be hereinafter described.

The inner end of the sleeve C is provided at its upper and lower sides with notches *c*² *c*³ which alternately engage the outer edge of the lug *b* when the sleeve is slid inwardly to be locked and the said sleeve is further provided at its inner end with an extension or arm C' which when the sleeve C is moved inwardly and locked will engage the shoulder *a'* when the cock is to be locked in its open position and will engage the shoulder *a*² when the cock is to be locked in its closed position.

The outer sides of the rings are each provided with letters or other characters and when the rings are turned to bring the three letters which form the "combination" into longitudinal alignment the three transverse slots or grooves *d'* will register with the pins *b'* and the sleeve B will then be free to be moved outwardly on the handle and rotated thereon.

The operation is as follows: When the parts are in the position shown in Fig. 1, where the cock is closed, it is simply necessary to bring the permutation rings into proper position to permit the sleeve C to be operated and then

give the handle B a quarter turn to bring its lug b against the shoulder a^2 , then turn the sleeve C to bring its arm or extension C' in the path of lug a' then move the sleeve inwardly (the alignment of the slots d' and pins or studs b' permitting this) until the said arm or extension C' abuts against said shoulder a' and the slot c' receives the outer edge of the stop lug b . The rings D are now turned to bring the pins b' into the annular grooves d' which of course locks the sleeve against longitudinal movement while the recess c^2 and lug b prevent rotation of the sleeve.

The operation of unlocking the valve to close it and to lock it closed will be perfectly obvious from the foregoing.

I desire it understood that my invention includes within its scope the placing of the pins b' on the interior of the rings and forming of the grooves d d' on the handle as such is the direct reversal of the parts. Moreover the handle B instead of projecting at right angles from the valve stem may form the longitudinal extension of the valve stem in the form of a spindle.

In some instances I may manufacture and sell the handle and its locking attachments separate from the valve as the handle may be sold to replace those now in use or I may apply the locking sleeve, the rings and the pins b' to the handles now on the cocks.

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

1. The combination with the stop cock and its operating stem or handle of the sliding locking sleeve inclosing said stem or handle and adapted to abut at its inner end against the valve casing and a permutation locking mechanism carried by the sleeve and stem or handle and forming a permanent part thereof to lock said sleeve against the casing and prevent the cock from being operated substantially as set forth.

2. The combination with the valve stem or handle of a locking sleeve or handle turning and sliding thereon to abut against the valve casing and prevent rotation of the valve, and a locking mechanism carried by the sleeve and stem or handle to prevent longitudinal and rotary movement of the sleeve substantially as set forth.

3. The combination with the stop cock and

its operating handle having a stop lug working between the two lugs or shoulders on the casing, of a locking sleeve movable on the handle and adapted at its inner end to engage said handle lug and one of the said casing lugs and a locking mechanism locking the said sleeve to the handle and preventing the cock from being operated, substantially as set forth.

4. The combination with the stop cock the casing of which is provided with two lugs or shoulders between which a stop lug on the handle works, of a locking sleeve mounted on the handle and having a slotted or recessed forward end to engage said stop lug and prevent rotation of the sleeve an extension or arm at the forward end of the sleeve to engage the casing and prevent turning of the handle and a series of locking rings to lock the sleeve to the handle substantially as set forth.

5. The combination with the valve handle having a stop lug near its inner end of the locking sleeve on the handle provided at its inner end with a slot or recess to engage said lug and with an extension or arm to contact with a valve casing, an open chamber between the ends of the sleeve a series of rings turning in said chamber and interlocking pins and grooves between the inner faces of the ring and the adjacent surface of the handle to lock the sleeve against longitudinal movement on the handle, substantially as set forth.

6. The combination with the stop cock handle having a stop lug near its inner end to work between lugs or shoulders on the valve casing and also provided with a series of longitudinal aligned pins, of a sleeve having a longitudinally extending internal groove to permit it to slide past the pins, and an open chamber between the ends of the sleeve, a series of permutation rings mounted on the handle within said chamber and provided with transverse and annular internal grooves to operate in connection with said pins, the said sleeve being provided at its front end with an arm or extension to engage the cock casing and with a recess or notch to engage the handle stop lug substantially as set forth.

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Witnesses:

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