

C. JENKINS.
 ANGLE COCK FOR TRAIN PIPES.
 APPLICATION FILED JUNE 19, 1908.

952,743.

Patented Mar. 22, 1910.

FIG. 1

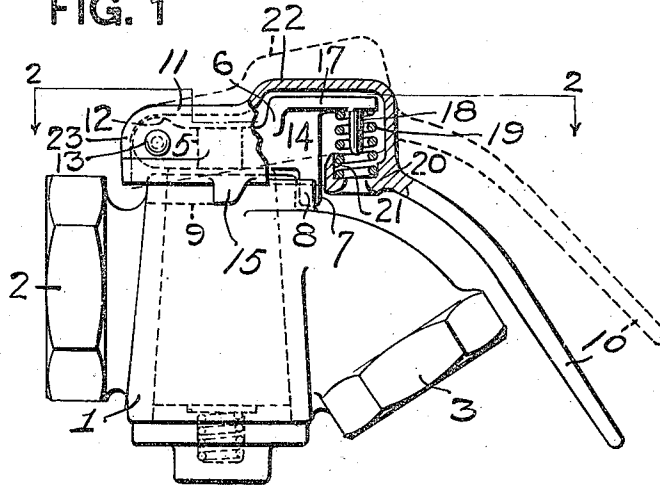


FIG. 3

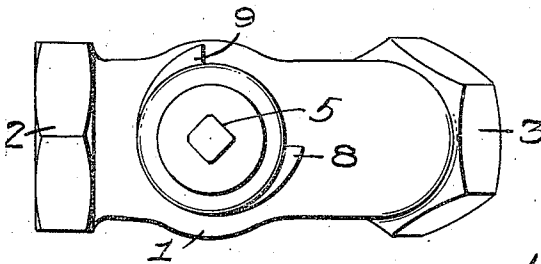


FIG. 2

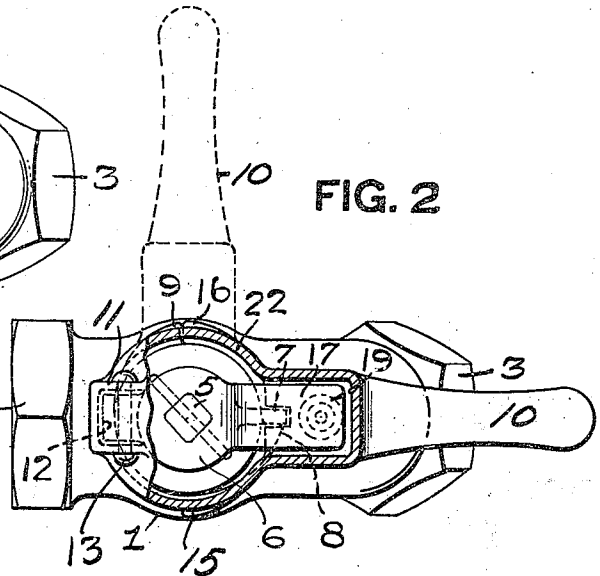


FIG. 5

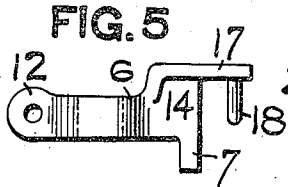


FIG. 6

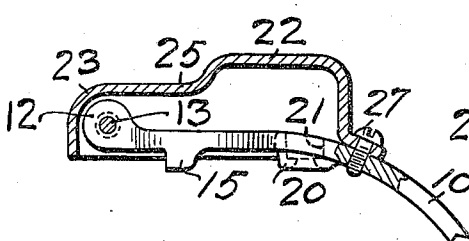
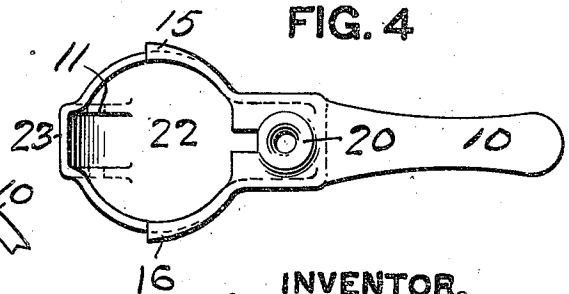


FIG. 4



WITNESSES.

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ANGLE-CKOCK FOR TRAIN-PIPES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES JENKINS, a resident of Aspinwall, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Angle-Cocks for Train-Pipes, of which the following is a specification.

This invention relates to what are known as angle cocks for air brake train pipes.

The object of the invention is to improve such angle cocks in order to prevent the same from being accidentally turned and either cutting off the air to the rear end of the train or opening the rear end of the train pipe to the atmosphere and also to prevent these valves from freezing up with snow and sleet so they can be more easily operated and in less time than heretofore.

The invention comprises the construction and arrangement of parts hereinafter described and claimed.

In the accompanying drawing Figure 1 is in part a side view and in part a vertical section of the cock showing the same in closed position and in dotted lines showing the handle lifted; Fig. 2 is a horizontal section on the line 2—2, Fig. 1; Fig. 3 is a plan view of the valve with the handle removed; Fig. 4 is an inverted view of the handle; Fig. 5 is an elevation of the detent member; and Fig. 6 is a vertical section showing a modification.

At the end of each railway car the train pipe is provided with a cut-off valve, technically known as an angle cock, usually some form of rotary valve working in a suitable casing. My invention is an improvement in this character of valves. In the drawings it is shown as comprising an ordinary plug angle cock now in general use in air brake systems although the invention is adapted to a rotary cut-off valve of any construction.

As shown, the valve comprises a suitable casing 1 having a threaded coupling 2 at one end for connection to the train pipe and a similar coupling 3 on the other end to which the hose is connected. The casing is provided with a vertical valve seat or opening in which works the rotary plug provided with the usual opening therethrough for connecting the two ends of the casing when in one position and for closing the connection between the same when in the other position.

The plug is provided with a stem 5 projecting above the upper end of the casing and having connected thereto a cross head or member 6 which is provided with a downwardly projecting detent 7 arranged to contact with either of the two stops 8 and 9 on the valve casing and serving to stop and position the plug valve in its open and closed positions. The valve is operated by a handle 10 having a bifurcated end 11 surrounding the member 6 and top of the valve and pivotally connected to the projection 12 on the said member 6 by means of a pivot pin 13. The projection 12 extends substantially diametrically opposite to the projection 14 which carries the detent 7. The handle is provided with a pair of downwardly projecting detents 15 and 16 arranged to cooperate with the stops 8 and 9 and lock the valve against accidental turning. When the valve is closed the detent 15 on the handle engages the stop 8 on the casing and when the valve is open the detent 16 on the handle engages the stop 9 on the casing. In order to turn the valve it is necessary to first lift the handle, the same swinging on the pivot 12 until the detent on the handle is free from the stop on the casing when the handle and valve can be given a quarter turn, and when the handle is released it drops so that the other detent engages the other stop on the casing.

The valve mechanism so far described is old. It is open to two objections, one being the fact that under the jolting of the train and the vibration of the train pipe the handle is liable to jump upwardly and disengage its detent from the casing and if any part of the brake rigging should disconnect when this happens, it is liable to catch the angle cock handle and turn the cock. One object of my invention is to overcome this difficulty. To this end I provide a spring which positively holds the handle in its depressed position and which does not permit the handle to jump under the jolting of the train. This spring may be variously applied. As shown in the drawings the projection 14 is extended to form an arm 17 which is provided on its lower face with a guide pin or lug 18 around which the spiral spring 19 is placed, and the handle is provided with a thickened portion 20 having

therein a socket 21 for receiving the lower end of said spring. This spring is of such strength that it requires some effort to lift the handle out of locking position in order to
 5 turn the cock, but will not yield under the momentum of the handle caused by the jolting of the train. It positively holds the handle in its depressed or locking position and absolutely prevents the angle cock from
 10 accidentally turning.

Another objection to the old form of angle cock is the fact that in winter time the snow and sleet gathers on top of the same and fills up the space between the bifurcated
 15 handle and cross head or member. This frequently freezes so that it makes it impossible to raise the lever and turn the cock without first removing the ice. The train hands usually take any convenient implement
 20 and pound the valve to break out the ice. This not only takes time, but frequently the handle or some part of the valve is broken or injured so that the valve cannot be operated at all.

Another improvement in my valve consists in providing a hood or cover for the entire top of the valve so as to prevent freezing and the difficulty just stated. This
 25 cover or hood preferably is an integral part of the handle, the same comprising the main or hood portion 22 formed integral with the handle and connecting the bifurcated portions thereof and extending forwardly beyond the projection 17 and rearwardly so as
 30 to entirely cover the pivot joint extending down behind the same as shown at 23. On the sides of the handle this hood forms an apron which projects downwardly below the top face of the valve casing, thus forming a
 40 complete cover fitting over the handle and top portion of the valve casing. If desired this hood may be in a separate piece, as shown at 25, Fig. 6, pivoted on the pivot pin 12 and secured to the handle at the forward
 45 end by suitable means, such as bolt 27. The cover prevents snow and sleet from getting into the movable parts of the valve operating mechanism and therefore overcomes the difficulty stated.

A valve or cut-off cock provided with the improvements described is prevented from accidental turning and is also prevented from freezing up so that it can always be easily operated.

While the valve has been shown as the conventional rotary cock, it is understood that the improvements are applicable to a rotary cut-off valve of any type having a stem to which the operating handle is connected.
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What I claim is:

1. In a train pipe cut-off valve, the combination of a casing provided with a pair of limiting stops, a rotary valve in said casing

and provided with a member having a detent arranged to cooperate with the limiting stops on the casing in the open and closed positions of the valve, a handle having a pivotal connection with the valve and provided with a pair of locking detents arranged to cooperate with the stops on the casing, and a spring arranged to hold said handle in its locking position.

2. In a train pipe cut-off valve, the combination of a casing provided with a pair of limiting stops, a rotary valve in said casing, a member secured to said valve and provided with a detent arranged to engage said limiting stops in the open and closed positions of the valve, a handle having a pivotal connection with said member and provided with a pair of locking detents arranged to cooperate with the stops on the casing, a projection on the detent member, and a compression spring between said projection and
 85 handle.

3. In a train pipe cut-off valve, the combination of a casing provided with a pair of limiting stops, a rotary valve in said casing, a cross member carried by said valve and provided with a detent arranged to engage the limiting stops on the casing in the open and closed positions of the valve, a handle pivoted to one end of the cross member, and a spring arranged between the
 95 opposite end of the cross member and the handle and arranged to hold said handle in its locking position.

4. In a train pipe cut-off valve, the combination of a casing provided with limiting stops, a rotary valve in said casing, a member carried by said valve and provided with a detent arranged to engage the stops on the casing, and a bifurcated handle surrounding said member and pivoted thereto and provided with locking detents cooperating with the stops on the casing, said handle being provided with a hood covering the upper end of the valve and the pivot of the handle and projecting down to the upper end of the
 110 casing.

5. In a train pipe cut-off valve, the combination of a casing provided with limiting stops, a rotary valve in said casing provided on its upper end with a member provided with a detent arranged to cooperate with said stops, a handle surrounding said member and pivoted thereto and provided with locking detents cooperating with the stops on the casing, a spring between said member and handle and arranged to hold the latter in its locking position, said handle being provided with a hood covering the upper end of the valve, the spring, and the pivot pin and having a depending portion projecting over the upper end of the casing.
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6. In a train pipe cut-off valve, the combination of a casing, provided with a pair

of limiting stops, a rotary valve in said casing and provided with a member having a detent arranged to cooperate with the limiting stops on the casing in the open
5 and closed positions of the valve, a handle having a pivotal connection with the valve and supporting a pair of locking detents arranged to cooperate with the stops on the

casing, and a spring arranged to hold said detents in locking position. 10

In testimony whereof, I have hereunto set my hand.

CHARLES JENKINS.

Witnesses:

JOHN S. CORT,
F. W. WINTER.