

(No Model.)

A. G. KINYON.  
HOSE COUPLING.

No. 559,389.

Patented May 5, 1896.

Fig. 1.

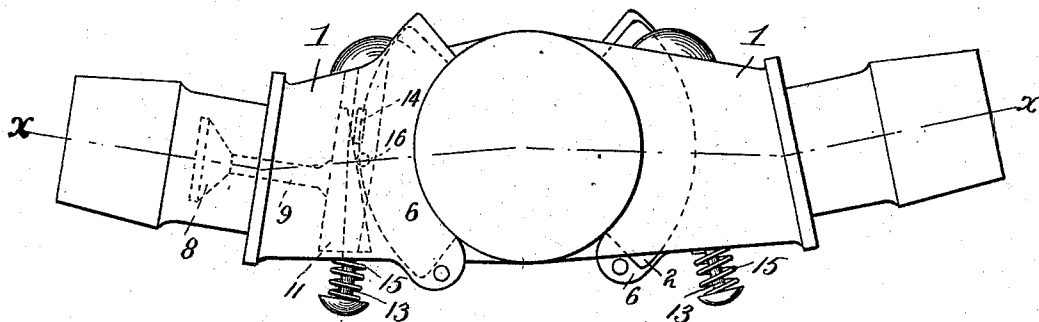


Fig. 2.

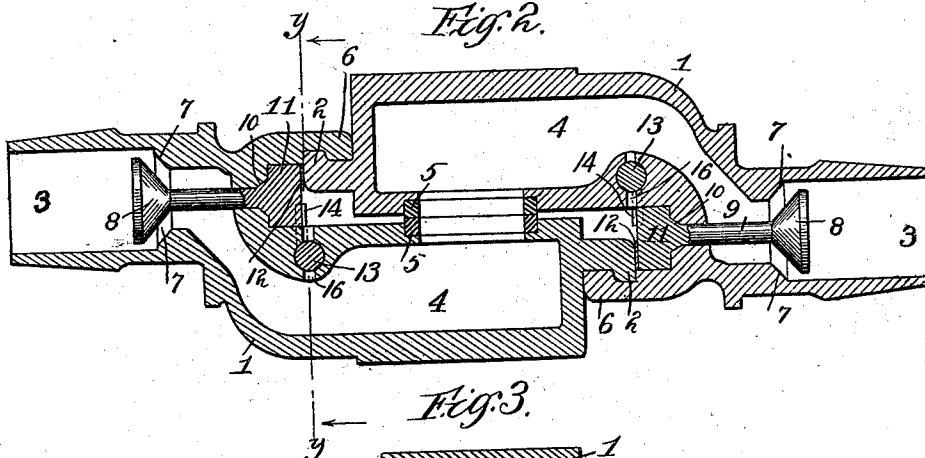


Fig. 3.

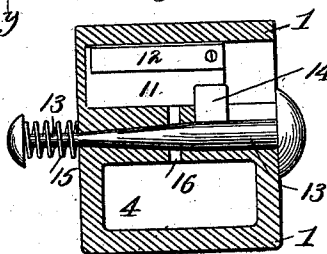
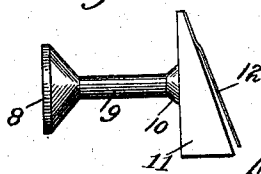


Fig. 4.



Witnesses

Wm. M. Rhein

Wm. J. Fleming

Inventor  
Alonzo G. Kinyon  
by Brown and Darby  
Attys

# UNITED STATES PATENT OFFICE.

ALONZO G. KINYON, OF ELGIN, ILLINOIS, ASSIGNOR TO JAMES M. BARR, OF ST. PAUL, MINNESOTA.

## HOSE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 559,389, dated May 5, 1896.

Application filed March 23, 1894. Serial No. 504,818. (No model.)

*To all whom it may concern:*

Be it known that I, ALONZO G. KINYON, a citizen of the United States, residing at Elgin, in the county of Kane and State of Illinois, have invented a new and useful Hose-Coupling, of which the following is a specification.

This invention relates to hose-couplings, and particularly to couplings for hose employed in steam or air brake mechanism for railroad-trains.

The main object of this invention is to avoid the use of angle-cocks heretofore employed in mechanism of this character, and which are necessary to be turned on or off where a coupling or an uncoupling is made, thus avoiding accidents resulting from the negligence, inattention, or forgetfulness of those whose duty it is to effect a coupling, or to malicious tampering with the coupling mechanism.

A further object of the invention is to provide a simple, effective, easily-manipulated coupling for steam or air hose-pipes employed in railway brake mechanism which will automatically set the brakes and notify the engineer when the coupling is broken, whether intentionally, maliciously, or accidentally.

With these objects in view the invention consists in the construction, location, and relative arrangement hereinafter more fully described, as shown in the accompanying drawings, and finally pointed out in the appended claims.

In the drawings, Figure 1 represents in plan view a hose-coupling embodying my invention. Fig. 2 is a longitudinal central vertical section taken on the line *x x*, Fig. 1. Fig. 3 is a vertical transverse section taken on the line *y y*, Fig. 2, looking in the direction of the arrows. Fig. 4 is detail view of the main valve.

The same reference-signs are employed to designate the same parts wherever they occur throughout the drawings.

In carrying out my invention I employ the main body portion 1 1 of the couplings now in use, and which are provided with the usual tips 2 2, air or steam passages 3 3, chambers 4 4, rubber gaskets 5 5, and flanges 6 6. At the point where the passage 3 communicates with chamber 4 I provide a valve-seat 7, adapted to receive a valve 8, having a stem 9 and carrying a wedge-shaped block 11 at

the other end thereof and having a valve 10, as shown. The stem 9 of said valve and block is adapted to be received in a passage-way or perforation in the body part 1 of the coupling at a point where block 11 will be in position to be engaged by the lip or tongue 2 of the other part of the coupling, and the valve portion 10 of said block is adapted to be received in a seat formed in the outer mouth of said passage-way, as clearly shown in Fig. 2.

The operation of this part of my invention is as follows: When the coupling is made as shown in Fig. 2, the lip 2 of one section thereof comes in contact with the inclined side of wedge-shaped block 11 and forces the same inwardly, thus seating the valve 10 and unseating the valve 8. This causes the compressed air or steam contained in the hose to pass freely through the valve-opening 7 and into the communicating chambers 4 4, thus connecting up the two adjacent cars. When an uncoupling is effected and block 11 is relieved of the engagement thereagainst of lip 2, the pressure against the face of valve 8 causes said valve to seat itself in the valve-opening 7, thus cutting off the supply of compressed air or steam.

The usual construction of brake mechanism is for the brakes to become set automatically when the air or steam pressure is relieved from the train-pipes. My coupling is designed for use in connection with such an arrangement. It will be observed and understood, however, that my invention is equally applicable to constructions wherein the brake mechanism is otherwise operated.

In order to make provisions for wear and for variations in the length of lips or projections 2, so that notwithstanding such wear or variations the valves 8 and 9 will be opened and closed, respectively, when a coupling is made, I secure a leaf-spring 12 to the face of block 11 in position to be engaged by the lip 2 instead of the lip engaging directly with the face of said block.

In order to hold block 11 and consequently valves 8 and 10 in the position as shown in Fig. 2, thus avoiding accidental disarrangement of the parts, I provide a headed pin or bolt 13, adapted to be received in a transverse perforation through the main or body

portion 1 of the coupling, as shown, and mount thereon a wing or flange 14, adapted to engage the inclined face of block 11 and hold the same in position to maintain valve 8 open. This bolt or pin 13 is made longitudinally movable and a spring 15 serves to keep it normally in a position for wing or flange projection 14 to engage the face of block 11. By moving said bolt endwise in a direction to compress the spring the wing or projection 14 may be moved out of engagement with block 11. I provide the shank of bolt 13 with a taper, as shown, (see Fig. 3,) and a perforation 16 is provided which opens communication from the chamber 4, through the perforation in which bolt 13 is seated, to the outer air, as shown more clearly in Figs. 2 and 3, and the tapering shank of bolt 13 acts as a valve to close said perforation 16.

The operation of this part of my invention is as follows: When an uncoupling is to be effected, bolt 13 is moved by hand endwise, so as to remove wing or projection 14 from the path of movement of block 11. This movement opens passage 16. The air or steam escaping therethrough causes a diminution of the pressure in the pipes throughout the length of the train-pipe and consequently sets the brakes, thus warning the engineer. The uncoupling is then effected and valve-opening 7 is closed by the movement of valve 8, caused by the pressure against the face thereof, with nothing bearing against the face of the block 11, carried by the other end of the stem of said valve, to oppose its seating.

While I have shown and described in detail a construction embodying the principles of my invention, I desire it to be understood that I do not limit myself to the exact details, proportions, and locations shown, as many variations therefrom would readily suggest themselves to persons skilled in the art without departing from the spirit or scope of my invention; but,

Having now fully described my invention and set forth a preferred form of construction in which it has been embodied, and having pointed out its function and mode of operation, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A hose-coupling comprising a coupling-block provided with the usual engaging lip and projection for maintaining two half-blocks in engagement with each other when a coupling has been effected, a hose-pipe communicating with each coupling-block, a valve arranged therein and operated with pressure contained therein to normally close the same and adapted to be unseated by the engagement therewith of the engaging projection on the adjacent half-block when a coupling has been effected; as and for the purpose set forth.

2. A hose-coupling comprising a coupling-block provided with the usual engaging lip and projection for maintaining two half-

blocks in engagement when a coupling has been effected, a hose-pipe, a valve arranged therein longitudinally with respect thereto, operated by the pressure therein to normally close said pipe, a wedge-shaped block carried by the stem of said valve, said wedge-shaped block adapted to be engaged by the usual said projection on an adjacent half-block when a coupling has been effected, whereby said valve is unseated and held open against the pressure on said valve when a coupling has been effected; as and for the purpose set forth.

3. In a hose-coupling the combination of two hose-pipes a coupling-block formed on the end of each of said pipes, each provided with the usual lip and projection, whereby when said coupling-blocks are united they are maintained in engagement with each other, a valve arranged in each of said pipes and operated by the pressure therein to close the same, the stem of each valve adapted to be engaged by the projection on the adjacent section when a coupling has been effected, whereby it is unseated and held in open position against said pressure when a coupling has been effected.

4. In a hose-coupling for railway brake mechanism a coupling-block, a hose-pipe, a valve arranged therein longitudinally with respect thereto, and operated by the pressure in said pipe to normally close the same, said valve adapted to be opened when a coupling is effected by the engagement therewith of the engaging lip or projection on an adjacent coupling-block, in combination with means carried by said coupling-block and independent of the valve-opening devices for maintaining said valve in its open position; as and for the purpose set forth.

5. In a hose-coupling for railway brake mechanism a coupling-block provided with the usual engaging lip and projection for maintaining two half-blocks in engagement with each other when a coupling is effected, a hose-pipe, a valve arranged therein longitudinally with respect thereto and operated by pressure contained therein to normally close the same, said valve adapted to be unseated by the engagement therewith of the engaging lip or projection on an adjacent half-block when a coupling is effected, in combination with means interposed between said valve and projection or lip to take up wear and to accommodate for varying lengths and sizes of projections; as and for the purpose set forth.

6. In a hose-coupling for railway brake mechanism a coupling-block provided with the usual engaging lip and projection, a hose-pipe, a valve arranged therein longitudinally with respect thereto and operated by the pressure contained in said pipe to normally close the same, said valve adapted to be unseated by the engagement therewith of the engaging lip or projection on an adjacent half-block when a coupling is effected, and a spring carried by said valve and arranged to take up

wear and accommodate for varying lengths or sizes of projection; as and for the purpose set forth.

7. In a hose-coupling for railway brake mechanism, a coupling-block provided with the usual engaging lip and projection for maintaining two half-blocks in engagement with each other when a coupling is effected, a hose-pipe, a valve operated by pressure contained in said pipe to normally close the same and adapted to be unseated by the engagement therewith of the engaging lip or projection on the adjacent half-block when a coupling is effected, in combination with a bolt extending through said coupling-block, arranged to be operated from the exterior thereof and adapted to engage said valve when unseated and hold the same in open position; as and for the purpose set forth.

8. In a hose-coupling, a pipe, a coupling-block, a valve arranged therein to normally close said pipe, a bolt adapted to pass transversely through said block and having a wing or projection thereon, said wing or projection adapted to engage said valve to maintain the same in its open position, said bolt adapted to be operated by hand from the exterior of said coupling-block to release the valve.

9. In a hose-coupling, a coupling-block, a valve arranged therein adapted to be nor-

mally seated, a bolt adapted to pass transversely through said block and having a wing or projection thereon, arranged to engage said valve to hold the same in its open position, a spring acting upon said bolt to normally hold it in position to engage said valve, said bolt adapted to be operated by hand from the exterior of said block and against the action of said spring to permit the seating of said valve; as and for the purpose set forth.

10. In a hose-coupling a coupling-block, a valve therein adapted to be normally seated, an auxiliary valve-opening connecting with the interior of said block, a longitudinally-movable bolt or pin, having a wing or projection, and operating as a valve for said auxiliary valve-passage, and adapted when moved to, open or close said passage-way, said wing or projection adapted to engage the main valve and maintain the same in its open position; as and for the purpose set forth.

In testimony whereof I have hereunto set my hand, this the 19th day of March, 1894, in the presence of two subscribing witnesses.

ALONZO G. KINYON.

Witnesses:

JAMES REED,  
S. E. DARBY.