J. C. HUXHOLD.

PRESSURE RETAINING DEVICE FOR AIR BRAKES.

APPLICATION FILED JUNE 1, 1909.

951,566.

Patented Mar. 8, 1910.

2 SHEETS—SHEET 1.

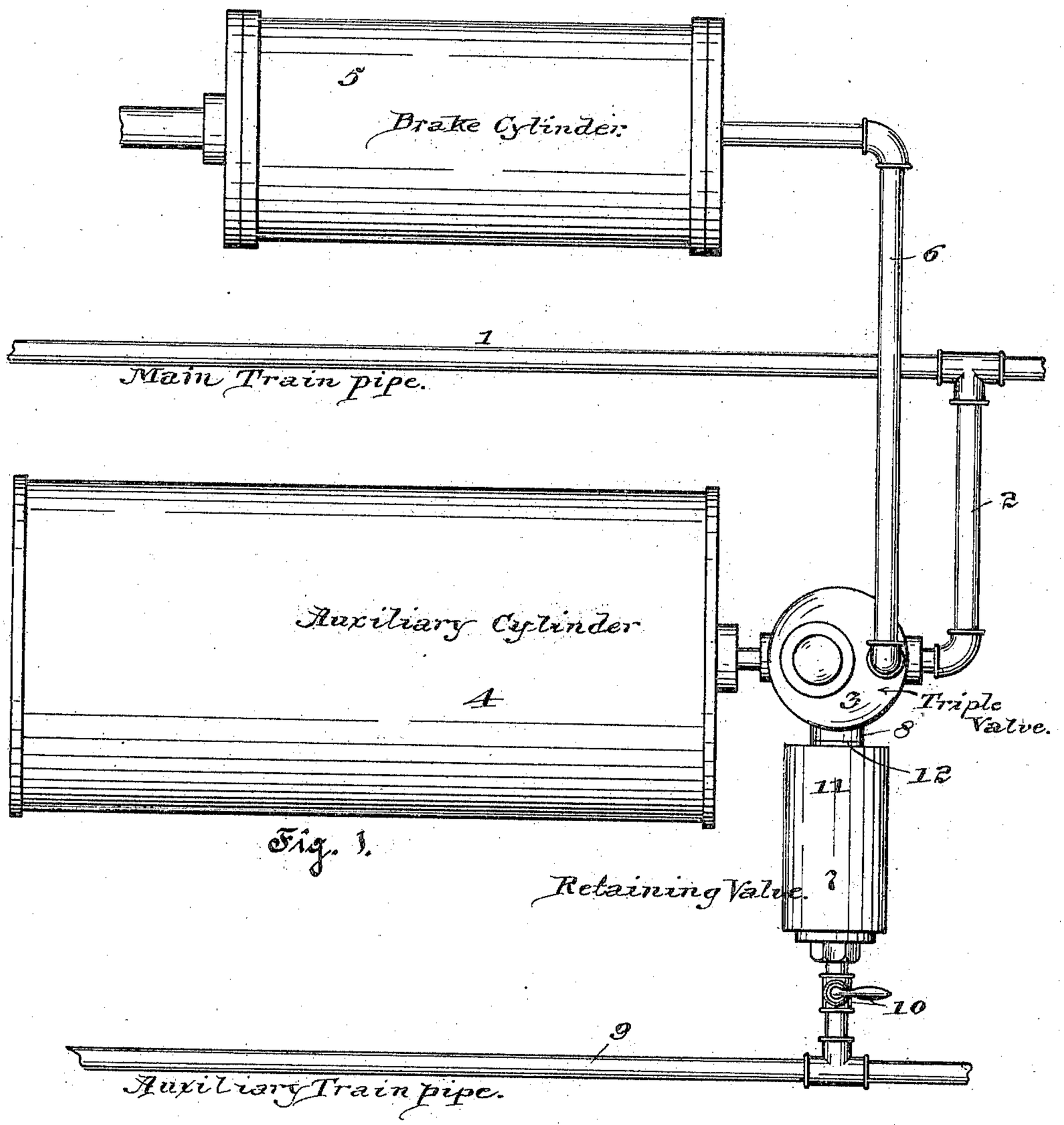

Fig. 1.

Witnesses:
H. St. Griffin
W. E. Smith

Inventor:
John C. Huxhold
By Joshua R. H. Topp
his Attorney.

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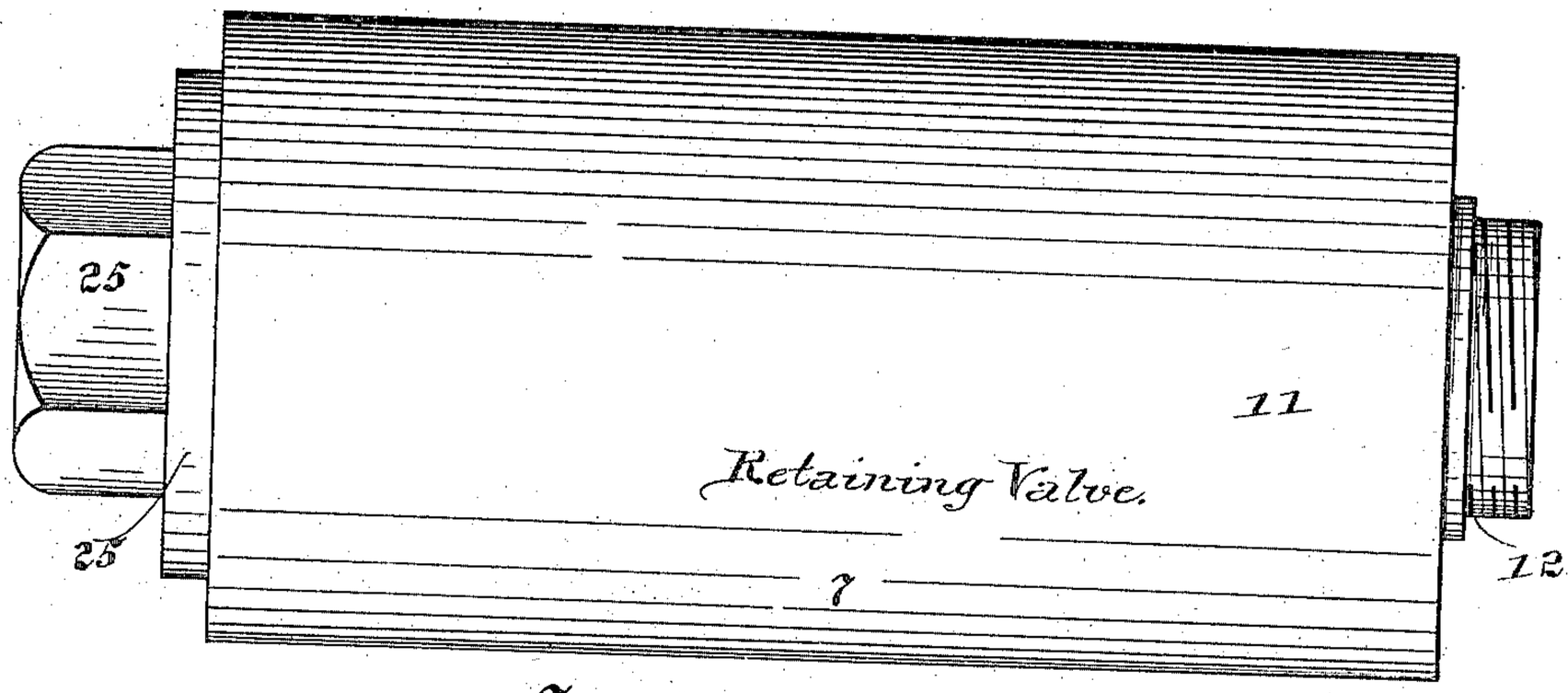

Fig. 2.

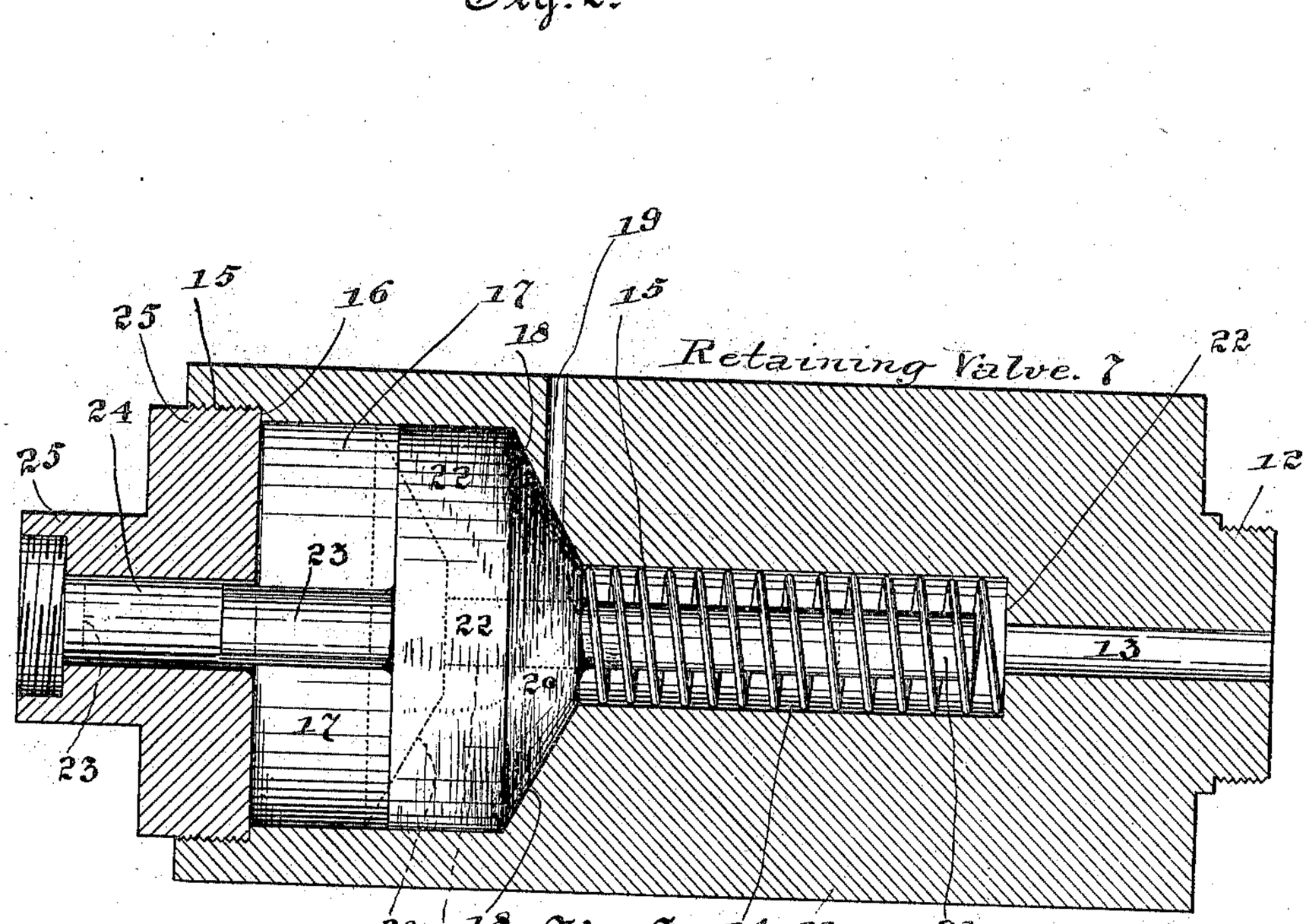

Fig. 3.

Witnesses:
H. St. Griffin
W. F. Smith

Inventor:
John C. Huxhold
By Johnson & Porter
his Attorney.

UNITED STATES PATENT OFFICE.

JOHN C. HUXHOLD, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO WARREN J. ARMSTRONG, OF PULLMAN, ILLINOIS.

PRESSURE-RETAINING DEVICE FOR AIR-BRAKES.

951,566. Specification of Letters Patent. Patented Mar. 8, 1910.

Application filed June 1, 1909. Serial No. 499,349.

To all whom it may concern:

Be it known that I, JOHN C. HUXHOLD, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Pressure-Retaining Devices for Air-Brakes, of which the following is a specification.

My invention relates to improvements in air-brakes of the Westinghouse type, the object of the invention being to provide a new and improved means designed to permit the engineer to directly control the retaining valves with a view of retaining the full pressure of the brake cylinders by closing the triple valve exhaust ports.

A further object of my invention is to provide an air-operated retaining valve connected to the triple valve and to an auxiliary train pipe, said valve to be held normally in such a position as to not interfere with the exhausting from the triple valve.

Other objects will appear hereinafter.

With these objects in view my invention consists in the novel construction and arrangement of parts which will be hereinafter fully described and more particularly pointed out in the appended claims.

My invention will be more readily understood by reference to the accompanying drawings forming a part of this specification, and in which—

Figure 1 is a plan view of brake apparatus embodying my invention, Fig. 2 is a side elevation of the retaining valve, and Fig. 3 is a central section thereof, certain parts being shown in elevation.

Referring now to the drawings, 1 designates the main train pipe, 2 a branch pipe leading therefrom and communicating with the triple valve 3; 4 the auxiliary cylinder; 5 the brake cylinder, and 6 the pipe leading thereto from the triple valve 3. The retaining valve 7 is screwed into the triple valve 3 so as to connect with the exhaust port thereof which is located in the center of the boss 8. The retaining valve 7 is also connected to the auxiliary train pipe 9, leading to the locomotive cab, a cut-out valve 10 being provided in connection with each retaining valve whereby any one of which may be thrown out of operative connection with said auxiliary train pipe.

Although not shown in the drawings, the auxiliary train pipe may have flexible connections similar to the rubber tube connections in the regular main train pipe, and any well known means may be provided in the locomotive cab for creating an air pressure in said auxiliary train pipe.

The preferred form of retaining valve is shown in detail in Fig. 3 and comprises a cylindrical body 11, having a reduced threaded portion 12 adapted to screw into the boss 8 containing the triple valve exhaust port. An axial bore 13 is provided in the threaded portion 12 to connect with the triple valve exhaust port (not shown), said bore leading to an enlarged axial bore 14 adapted to receive the helical spring 15. In the other end of the valve a threaded portion 15, a shoulder 16, and a large axial bore 17 is provided, the puppet valve-seat 18 being formed between the portions 14 and 17. Leading from the valve-seat 18 is a port 19 which forms an exit for the exhaust from the triple valve when the puppet valve 20 is not seated on said valve-seat. The helical spring 15 surrounds the puppet valve stem 21 and seats on the shoulder 22 at the end of the bore 14, said spring being adapted to hold the valve 20 in the normal open or dotted line position. Formed integral with the valve 20 is a piston 22 adapted to reciprocate in the portion 17, the reduced extension 23 of said piston having a loose fit in the axial perforation 24 of the nut 25. The extension 23 is in alinement with the valve stem 21 and is provided to insure the proper longitudinal movement of the piston 22 and the valve 20.

The piston 22 is normally in the dotted line position and when forced to the full line position by means of the pressure of the air entering through the perforation 24 the bore 19 is closed, thus preventing the escape of the triple valve exhaust and producing the desired result of retaining the air pressure in the brake cylinders.

Various slight changes may be made in the general form and arrangement of parts described without departing from my invention, and hence I do not restrict myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the claims.

Having described my invention what I

claim as new and desire to secure by Letters Patent is:

1. In a device of the class described, a cylindrical retaining valve having a reduced threaded portion screwed into the triple valve, an axial bore in said threaded portion communicating with the exhaust port of said triple valve, said bore leading to an enlarged axial bore having a shoulder at one end thereof, a helical spring in said enlarged bore seated on said shoulder and surrounding the stem of a puppet valve provided in the device, a threaded portion and a large bore in the end of the retaining valve opposite said reduced portion, a seat for said puppet valve disposed between said last-named bore and said enlarged axial bore, a port leading to the atmosphere provided in said seat, a piston integral with said puppet valve adapted to reciprocate in said large bore, a reduced extension on said piston in alinement with said stem, and a nut screwed into last named threaded portion having an axial perforation in which said extension is loosely fitted, said puppet valve being seated by means of air pressure on said piston and unseated and returned to the normal position by means of said spring acting thereon, substantially as described.

2. In a device of the class described, in combination with an air-brake triple valve, a retaining valve screwed to an exhaust port boss projecting from said triple valve, an axial bore in said retaining valve in communication with said exhaust port, an enlarged axial bore leading from said first named bore, a helical spring in said last named bore, a valve seat leading from said enlarged axial bore, a port in said valve seat leading to atmosphere, a puppet valve having a valve stem surrounded by said spring, the latter being adapted to maintain said puppet valve in the normal or open position, an auxiliary train pipe connecting said retaining valve with the locomotive cab, and means in said retaining valve for closing said puppet valve and said port when acted upon by air pressure under the control of the engineer, substantially as described.

3. In a device of the class described, a triple valve and an auxiliary train pipe having a retaining valve interposed therebetween, means whereby the exhaust from said triple valve may flow into a valve space provided in said retaining valve, a puppet valve and seat in said retaining valve, a port in said seat to permit the exhaust to flow directly to atmosphere, and a piston integral with said puppet valve adapted to close the same and said port when acted upon by air-pressure under the control of the engineer, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN C. HUXHOLD.

Witnesses:
JOSHUA R. H. POTTS,
HELEN F. LILLIS.