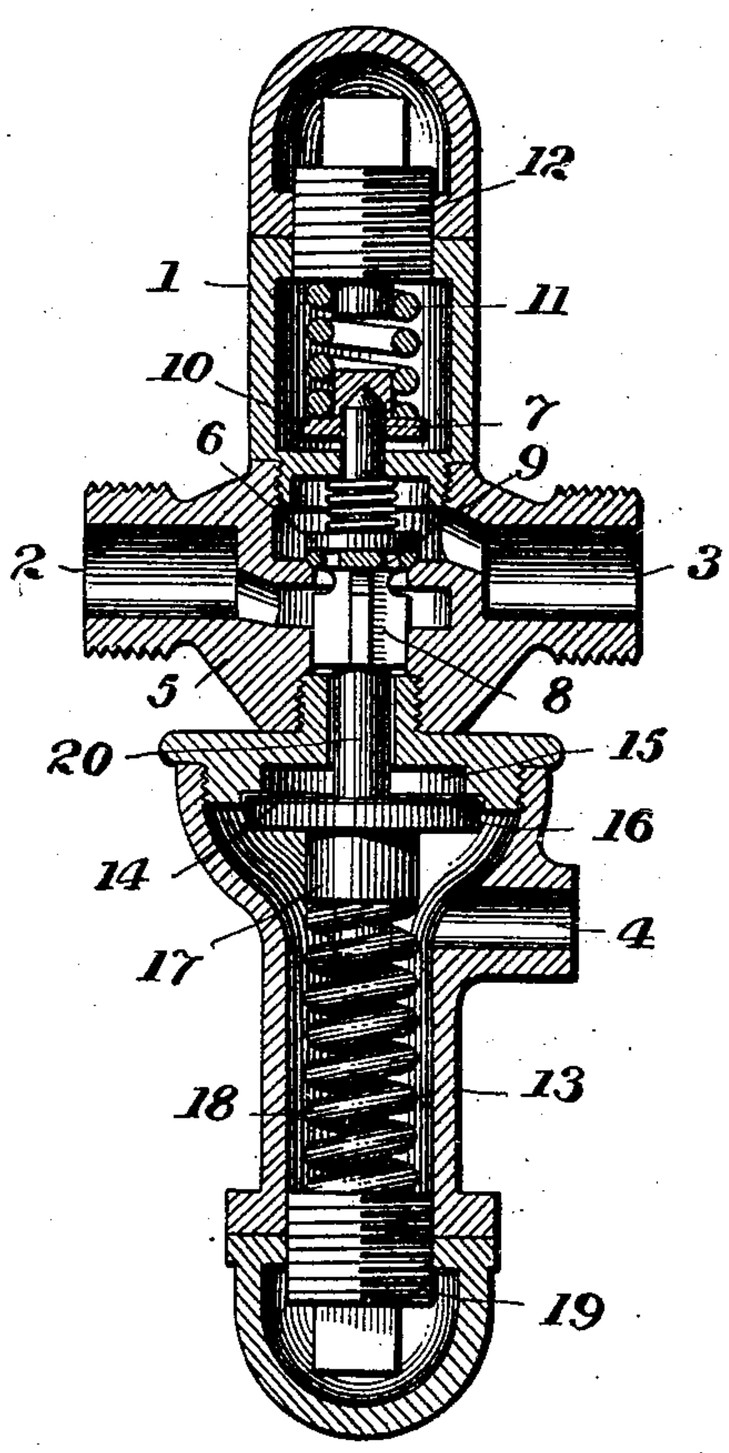
No. 865,370. PATENTED SEPT. 10, 1907.

C. M. FESSLER.

RETAINING VALVE.

APPLICATION FILED MAY 27, 1907.



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RETAINING-VALVE.

No. 865,370. Specification of Letters Patent. Patented Sept. 10, 1907.

Application filed May 27, 1907. Serial No. 375,912.

To all whom it may concern:

Be it known that I, CHARLES M. FESSLER, a citizen of the United States, residing at Sunbury, in the county of Northumberland and State of Pennsylvania, have invented new and useful Improvements in Retaining-Valves, of which the following is a specification.

This invention relates to air brakes, and is an improvement in automatic retaining valves arranged to hold the full pressure on the brakes of a train while the auxiliary reservoir is being recharged and the releasing does not take place until the full pressure is obtained in the auxiliary reservoir and to which the retaining valve is set.

The invention is especially applicable to the Westinghouse type of air brake and is used to recharge the brake cylinder while the train is going down grade or when there is leakage in the brake cylinder from any cause.

The various features of the invention will be hereinafter more fully described and explained in connection with the accompanying drawing which is a side elevation of the improved valve.

The valve 1 is connected to the triple valve of an air brake system by the port or connection 2; to the brake cylinder by the port or connection 3; and to the train line by the port or connection 4.

The retaining valve 1 is provided with a casing or body preferably made in several sections or parts. In the section 5 is a valve 6 fitting over the stem 7 of the winged valve 8 which has openings or perforations 9, said valve 8 acting as a seat for valve 6. On the upper end of stem 7 is a washer 10 which is pressed upon by spring 11 fitting against the screw plug 12 which is used to regulate the tension of the said spring 11.

The section 13 of the casing is connected with the train pipe by means of the connection or port 4 and contains a piston which is composed of a disk 14 loosely mounted on a stem and fits against a shoulder 15. Directly under the disk 14 is an adjusting washer 16. The stem on which the disk 14 is mounted is screwed into the body 17 on the lower side of which presses a spring 18, the said spring 18 fitting against the upper side of screw plug 19 which is used to regulate the tension of the spring 18. On the upper side of the shoulder 15 is a stem 20 which fits against the lower side of the winged valve 8.

The operation of the invention is as follows: Air from the triple valve is forced from said valve, by the releasing of the pressure from the train line, passes through connection 2, ports 9 of winged valve 8 raises valve 6 and passes through connection 3 into brake cylinder and is stored there during the operation of the brake. The air in brake cylinder is prevented from returning by the valve 6 seated on the winged valve 8. The air cannot be released from said brake cylinder until the increased pressure from the train line and the pressure of the spring 18 acting on the piston is greater than the pressure of air in the brake cylinder and the pressure of spring 11 on valve 8. The said springs may be adjusted to any desired pressure.

When the increased pressure in the train line is equal to the pressure in the auxiliary reservoir and equal to the pressure set in retainer, the air passes through connection 4 under disk 14 which raises valve 8 and allows the air from brake cylinder to pass under said valve 8, through connection 2 to triple valve and through triple valve to the atmosphere. This operation may be performed any number of times and is especially useful when going down grades or when there is a leakage in the brake cylinder from any source.

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

1. A retaining valve having triple valve and brake cylinder ports and connections, a valve between said ports, a perforated release valve fitting against said valve, a spring pressed piston fitting against said release valve for operating the same, and means for admitting train pipe pressure to said piston.

2. A retaining valve casing having the triple valve and brake cylinder ports or connections, a valve between said ports or connections, normally held in place by the pressure from the brake cylinder, a perforated release valve fitting against said valve, a piston fitting against said release valve, and means for admitting train pipe pressure to said piston.

3. A retaining valve comprising a valve casing having triple valve and brake cylinder ports or connections, a valve between said ports seated on a perforated release valve, a piston for operating said release valve actuated by abnormal train line pressure, and means for admitting the train line pressure to said piston.

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

CHARLES M. FESSLER.

Witnesses:
C. F. SHIPMAN,
C. W. CLEMENT.