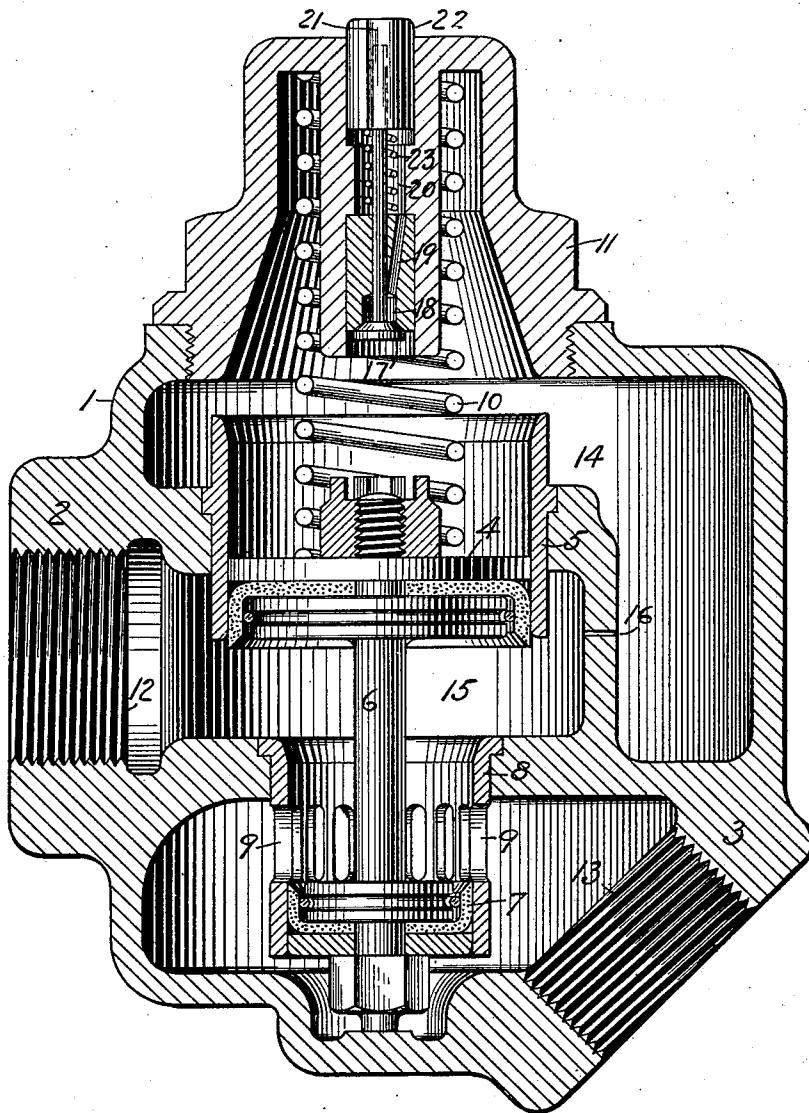


No. 727,039.

PATENTED MAY 5, 1903.

G. WESTINGHOUSE.
AUTOMATIC FLUID PRESSURE BRAKE APPARATUS.
APPLICATION FILED AUG. 1, 1900.

NO MODEL.



WITNESSES:

Jas. B. Macdonald
J. Custer

INVENTOR,

George Westinghouse,
by T. J. Hogan, Atty.

UNITED STATES PATENT OFFICE.

GEORGE WESTINGHOUSE, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE WESTINGHOUSE AIR BRAKE COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

AUTOMATIC FLUID-PRESSURE BRAKE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 727,089, dated May 5, 1903.

Application filed August 1, 1900. Serial No. 25,539. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WESTINGHOUSE, a citizen of the United States, residing in Pittsburgh, county of Allegheny, State of Pennsylvania, have invented or discovered a certain new and useful Improvement in Automatic Fluid-Pressure Brake Apparatus, of which improvement the following is a specification.

The object of my invention is to provide an improvement in automatic fluid-pressure brake apparatus; and to this end my invention consists in new and improved means for closing the ends of the section of train-pipe on a car when it becomes necessary to couple or uncouple the sections of hose between two cars without applying the brakes or wasting a considerable quantity of air.

In the accompanying drawing, which illustrates an embodiment of my invention, I have shown my improvement applied to an angle-fitting which is adapted to be located between the end of the rigid section of pipe on a car and the flexible hose on which a half-section of a detachable pipe-coupling is secured.

The construction shown in the drawing is intended to take the place of the angle-cock which is usually employed at each end of the rigid section of train-pipe under a car, the valve-casing 1 being provided with a nozzle 2 for connection to the rigid section of train-pipe under a car and with a nozzle 3 to receive a nipple to which the flexible hose is secured. The passage through the casing which is controlled by the valve device will normally be open, as shown in the drawing, whether the train-pipe be charged with fluid under pressure or not, and the end of the flexible hose to which the coupling is secured should be closed by a dummy coupling when not coupled with a section of hose on another car.

A movable abutment or piston 4 is fitted to slide in a bushing 5, secured in the casing, and is connected by a stem 6 to a piston-valve 7, which is fitted to slide in a bushing 8, having openings 9 therethrough. A spring 10 bears at one end on the screw-cap 11 and at the other end on the piston 4 and tends to hold the piston 4 and the piston-valve 7 down,

so as to open the ports 9 in the bushing 8, and thereby establish communication between the passages 12 and 13 in the nozzles 2 and 3.

The chamber or space 14 above the movable abutment or piston 4 is connected with the space 15 below the piston by means of a small passage 16, which permits a gradual charging of the chamber 14, and a valve 17, which is normally held closed by a spring 23, permits when opened a release of fluid under pressure from the chamber 14 to the atmosphere through the passages 18, 19, and 20 and through the groove 21 in the side of the cap-piece or button 22 on the valve-stem.

When the train-pipe is charged with fluid under pressure and it is desired to close the passage through the casing at either end of a car for the purpose of permitting uncoupling or coupling of the flexible hose at the same end of the car, fluid under pressure in the chamber 14 may be released to the atmosphere by pressing down on the button 22 and unseating the valve 17. The release of fluid-pressure above the piston will then permit the fluid under pressure below the piston to overcome the pressure of the spring 10 and to move the piston 4 and piston-valve 7 upward, so as to close the ports 9 in the bushing 8 and cut off communication between the passages 12 and 13.

After the valve 17 is closed and before it is again opened the flexible hose connected with the nozzle 3 may be coupled to a section of hose on another car, or it may be uncoupled and be closed at the end by a dummy coupling. The valve 7 will remain in position to close the passage through the bushing 8 until the chamber 14 is sufficiently charged with fluid under pressure through the small passage 16 to permit the spring 10 to force the piston 4 and valve 7 downward and open the ports or passages 9, and this interval of time will be sufficient for connecting or disconnecting and closing the end of the flexible hose.

While I have shown a piston and valve provided with cup-leather packing to prevent leakage, my invention is not limited to that particular construction, as either the piston or

valve, or both, may be otherwise constructed. For example, the piston and valve may be of the form in which a metallic packing-ring is employed, and the chamber 14 may be charged 5 by leakage around the piston or through a passage in the piston or through a groove in the bushing 5.

I claim as my invention and desire to secure by Letters Patent—

- 10 1. In an automatic fluid-pressure brake apparatus, the combination, with a train-pipe, of a valve for controlling the train-pipe passage, a movable abutment or piston for operating the valve by variations of fluid-pressure 15 on opposite sides of the abutment or piston, and a manually-operated valve for releasing fluid under pressure from one side of the abutment or piston for closing the train-pipe passage, independently of variations in 20 train-pipe pressure.
- 25 2. A valve-casing adapted to be connected to a train-pipe, a valve in the casing for controlling the passage of air through the train-pipe, a movable abutment or piston for operating the valve, a chamber on one side of the abutment or piston which is adapted to be charged with fluid under pressure, and a manually-operated valve for releasing fluid under pressure from the chamber for closing 30 the passage through the train-pipe, independently of variations in train-pipe pressure.
- 35 3. A valve-casing adapted to be connected to a train-pipe, a valve in the casing for controlling the passage of fluid under pressure through the train-pipe, a movable abutment

or piston for operating the valve, a spring for holding the valve open, and a manually-operated valve for releasing fluid under pressure from one side of the abutment to permit the closing of the passage through the train-pipe. 40

4. A valve-casing provided with passages adapted to be connected to the rigid section of train-pipe under a car and to a flexible hose at the end of the car, a valve for controlling communication between the passages, a movable abutment or piston connected to the valve, a spring for holding the valve open, a chamber on one side of the abutment or piston, a restricted passage through which fluid 45 under pressure may be supplied to the chamber, and a manually-operative valve for releasing fluid under pressure from the chamber. 50

5. In a fluid-pressure brake apparatus, the combination, with a section of train-pipe, of 55 a local controlling-valve, for controlling the passage through the pipe, a movable abutment, or piston, for operating the valve by variations of fluid-pressure on the abutment or piston, and means for varying the pressure 60 on one side of the abutment, or piston, for operating the valve independently of variations in train-pipe and auxiliary-reservoir pressure. 65

In testimony whereof I have hereunto set my hand.

GEO. WESTINGHOUSE.

Witnesses:

R. F. EMERY,
JAS. B. MACDONALD.