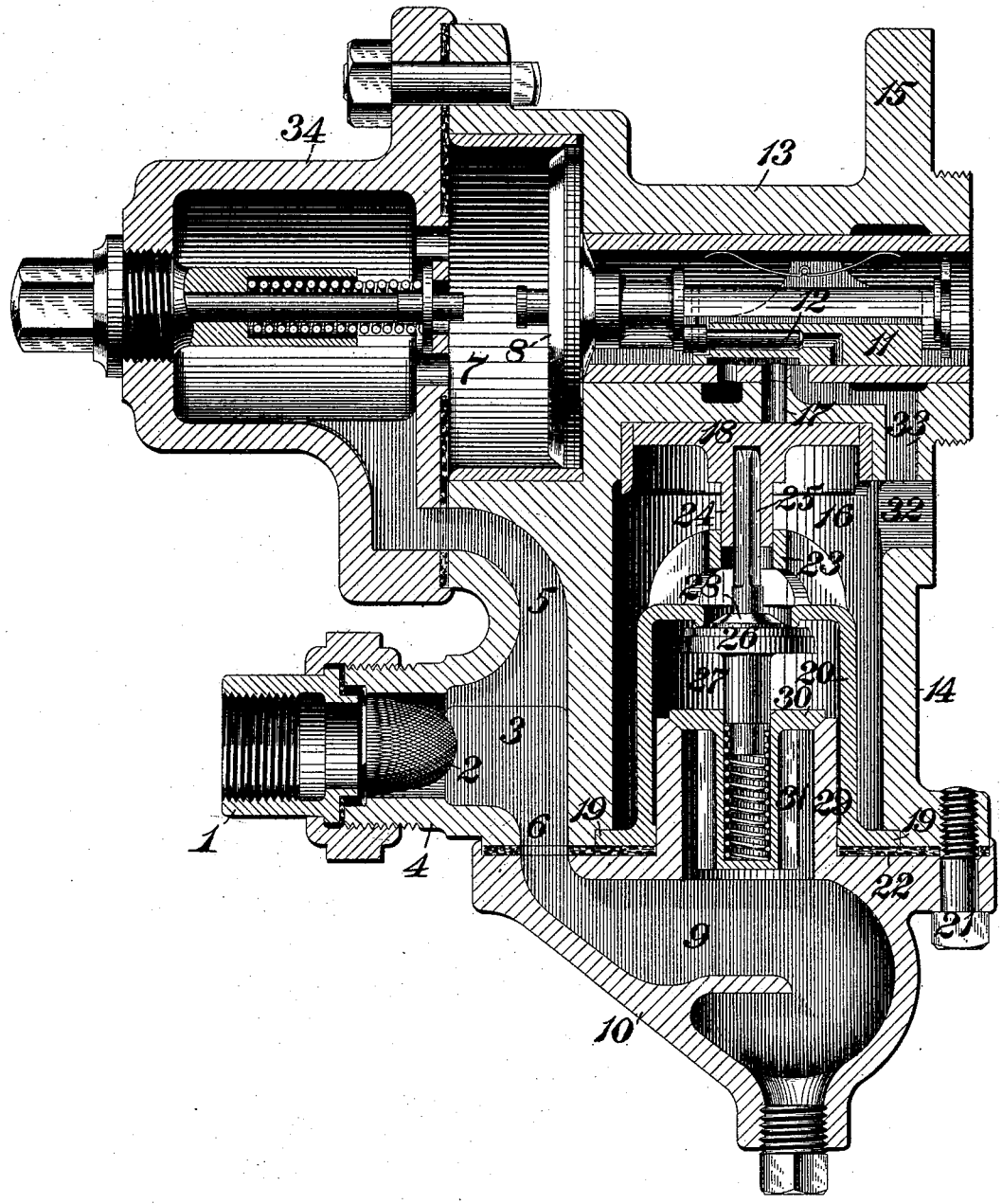
(No Model.)

H. H. WESTINGHOUSE.

QUICK ACTING TRIPLE VALVE.

No. 489,441. Patented Jan. 3, 1893.



WITNESSES:

T. J. Hogan.

F. E. Gaither.

INVENTOR,

H. H. Westinghouse,

By Johnson & Dew Bell.

Att'y.

UNITED STATES PATENT OFFICE.

HENRY HERMAN WESTINGHOUSE, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE WESTINGHOUSE AIR BRAKE COMPANY, OF SAME PLACE.

QUICK-ACTING TRIPLE VALVE.

SPECIFICATION forming part of Letters Patent No. 489,441, dated January 3, 1893.

Application filed October 6, 1892. Serial No. 448,042. (No model.)

To all whom it may concern:

Be it known that I, HENRY HERMAN WESTINGHOUSE, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered a certain new and useful Improvement in Quick-Acting Triple Valves, of which improvement the following is a specification.

The object of my invention is to provide a new and improved construction of quick acting triple valves for automatic fluid pressure brakes; and to this end it consists in a novel construction of the triple valve casing and the quick acting devices whereby the main body of the triple valve may be permanently secured to the train pipe, or to a branch therefrom, and to the brake cylinder or auxiliary reservoir, and whereby any or all of the parts of the triple valve may be readily and conveniently accessible and removable for cleaning or repair without breaking or disturbing these permanent connections.

The improvement claimed is hereinafter fully set forth.

The accompanying drawing is a longitudinal central section of a quick acting triple valve illustrating an application of my invention.

The main body, 13, of the triple valve, is provided with a flange, 15, by means of which it may be secured to the brake cylinder head, or to the auxiliary reservoir, as is usual in the Westinghouse system. An extension, or enlargement, 14, of the main body 13, of the triple valve, which is cast integral therewith, has formed upon it a nozzle, 4, for connection with the train pipe, or a branch from it; and this enlargement 14 of the main body forms a casing for the quick acting devices. The train pipe connection communicates through the strainer, 2, with a passage, 3, having branches 5 and 6, one of which leads to the chamber 7 in which the triple valve piston 8 is located, and the other to the chamber 9, in the cap, 10, below the quick acting devices. The slide valve, 11, graduating valve, 12, and piston, 8, are, in the instance shown, of the same form, and connected in the same manner as in Patent No. 376,837, to Geo. Westinghouse, Jr., January 24, 1888; and the method of operation of the triple valve and quick acting devices is substantially the same as in said patent, but my improvement is not, in any wise limited to triple valves of the specific form therein shown.

The quick acting devices are located in a chamber, 16, formed in the extension, or enlargement, 14, of the main body of the triple valve, and the lower end of this chamber is covered by the cap 10, which may be removed to permit examination or removal of the quick acting devices without breaking or disturbing the joints between the main body of the triple valve and the train pipe, or between the main body of the triple valve and the brake cylinder head or auxiliary reservoir.

The quick acting or emergency piston, 18, is located at one end of the chamber 16, in position to be acted on by air from the auxiliary reservoir, which is admitted to the chamber 16, through the passage 17, when the slide valve 11 is brought to the emergency position. At the opposite end of the chamber, 16, the flange, 19, of a tubular casing 20 is let into a recess in the face of the extension, 14, and clamped or held in place by the cap 10, which is secured by the bolts 21, a gasket 22 being placed between the parts to form a tight joint. The tubular casing 20 projects inwardly some distance from the flange 19, and forms a dividing partition between the chamber 27 and the upper end of the chamber 16, which is in open communication with the brake cylinder. A port or passage, 28, in said partition, is controlled by the quick-action valve 26. A guide 23 is formed on the upper end of the tubular casing 20, for guiding the stem 24 of the piston 16, and the stem 24 acts as a guide for the stem 25 of the quick acting valve 26. The cap 10 is provided with a tubular extension 29, which projects into the casing 20 and has a valve seat on its inner end for a check valve 30, which controls the passage 31 through the extension 29.

When an emergency application of the brakes is made, the triple valve admits air from the auxiliary reservoir through the passages 33 and 32 to the brake cylinder, and through the passage 17 to the piston 18, which then moves down and unseats the valve 26, thereby releasing the air from the chamber 27 and permitting the train pipe pressure to

lift the check valve 30. Air then passes from the train pipe through the passages 6, 9, and 31, chamber 27, passage 28, chamber 16, and passage 32, to the brake cylinder.

With my improved construction, the main body of the triple valve casing being secured to the brake cylinder head or auxiliary reservoir by means of bolts through the flange 15, and to the train pipe by means of the nozzle 4 formed on the main body of the triple valve casing, a rigid permanent structure is secured which remains intact, when, in making an examination or repairs it becomes necessary to remove either the cap 34 covering the piston chamber 7, or the cap 10 covering the quick acting devices.

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

1. In a fluid pressure automatic brake mechanism, the combination of a triple valve casing, an extension formed integral therewith, a piston chamber formed in said extension, a tubular casing extending from the face of the extension into the chamber and provided with a passage controlled by a quick acting valve, a cap connected to the face of the extension and having a tubular projection extending into the tubular casing, and a check valve seating in the tubular casing and controlling a passage through the projection from the cap, substantially as set forth.

2. In a fluid pressure automatic brake mechanism, the combination of a triple valve casing, an extension formed integral therewith, and having a nozzle or connection for attachment to the train pipe, a piston chamber formed in the extension, a tubular or cap shaped casing extending from the face of the extension into the piston chamber and provided with a passage controlled by a quick acting valve, a cap connected to the face of the extension and having a projection extending into the tubular casing and a check valve within the tubular casing seating on the inner end of the projection and controlling a passage through the same, substantially as set forth.

In testimony whereof I have hereunto set my hand.

HENRY HERMAN WESTINGHOUSE.

Witnesses:
J. SNOWDEN BELL,
T. J. HOGAN.